Baie James Lithium Mine Project

First Information Request

June 2019

CONTENTS

GENERAL COMMENTS

The Canadian Environmental Assessment Agency (the Agency) would like to remind Critical Elements Corporation (the Proponent) that the components cited in section 5(1) of the Canadian Environmental Assessment Act (2012) (CEAA 2012) comprise the following:

> 5 (1) For the purposes of this Act, the environmental effects that are to be taken into account in relation to an act or thing, a physical activity, a designated project or a project are
>
> (a) a change that may be caused to the following components of the environment that are within the legislative authority of Parliament:
>
> (i) fish and fish habitat as defined in subsection 2(1) of the *Fisheries Act*,
>
> (ii) aquatic species as defined in subsection 2(1) of the *Species at Risk Act*,
>
> (iii) migratory birds as defined in subsection 2(1) of the *Migratory Birds Convention Act, 1994*, and
>
> (iv) any other component of the environment that is set out in Schedule 2;
>
> (c) with respect to aboriginal peoples, an effect occurring in Canada of any change that may be caused to the environment on (i) health and socio-economic conditions,
>
> (ii) physical and cultural heritage,
>
> (iii) the current use of lands and resources for traditional purposes, or
>
> (iv) any structure, site or thing that is of historical, archaeological, paleontological or architectural significance.

The Proponent will also have to consider components cited in subsection 19(1) of the CEAA (2012):

(a) the environmental effects of the designated project, including the environmental effects of malfunctions or accidents that may occur in connection with the designated project and any cumulative environmental effects that are likely to result from the designated project in combination with other physical activities that have been or will be carried out;

(b) the significance of the effects referred to in paragraph (a);

(c) comments from the public — or, with respect to a designated project that requires that a certificate be issued in accordance with an order made under section 54 of the *National Energy Board Act*, any interested party — that are received in accordance with this Act;

(d) mitigation measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the designated project;

(e) the requirements of the follow-up program in respect of the designated project;

(f) the purpose of the designated project;

(g) alternative means of carrying out the designated project that are technically and economically feasible and the environmental effects of any such alternative means;

(h) any change to the designated project that may be caused by the environment;

(i) the results of any relevant study conducted by a committee established under section 73 or 74; and

(j) any other matter relevant to the environmental assessment that the responsible authority, or — if the environmental assessment is referred to a review panel — the Minister, requires to be taken into account.

Review of the environmental assessment

For any questions that require a review of the environmental assessment with respect to a valued component, the proponent must provide an update on the following aspects:

- description of potential effects,
- mitigation measures,
- description of residual effects,
- cumulative effects assessment, and
- monitoring and follow-up program.

Examples cited

The examples cited in this information request are not exhaustive and are provided for guidance purposes only. All relevant information that would address the deficiencies noted in this request must be provided.

Explanation for missing elements of information

An explanation should be provided by the Proponent if no information is given for one or more of the elements requested in this information request.

Mapping

To facilitate the understanding of the project elements and the anticipated effects, the Agency suggests adding the footprint of the main infrastructure of the project superimposed on the maps presented. For example, this superposition on Map 6-13 of the Environmental Impact Assessment would make it possible to visualize the location and the surface areas of the planned infrastructure in relation to recent forest fires.

Translation

This document is a translation of the French version of the Information request #1. In case of discrepancy, the French version shall prevail.

IDENTIFICATION AND ASSESSMENT OF ENVIRONMENTAL EFFECTS

Study Area

CEAA-1	Local Study Area
ECCC-7	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.1 Geographical Frameworks and Project Study Areas Section 6.1.2 Local Study Area

CONTEXT AND RATIONALE:

In Section 6.1 of the Environmental Impact Assessment, the local study area shown in Map 6-1 seems off-centre in relation to the project's right of way. Map 6-5, for example, shows that the project's different infrastructure are located in the southern part of the study area and slightly to the west.

THE PROPONENT MUST:

A) Justify the use of a local study area off-centre in relation to the project's infrastructure.

Project Assessment Method

CEAA-2	Definition and Determination of the Intensity Criterion
ACÉE	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.1 Impact Assessment Method Section 7.1.3 Impact Assessment

CONTEXT AND RATIONALE:

In section 7.1.3 of the Environmental Impact Assessment, the proponent indicates that to measure the intensity of the impact, three criteria are analyzed: intensity, scope and duration. In the explanation given of the intensity analysis, the proponent indicates that the value associated with a component considers its ecosystemic and/or socioeconomic role, as well the value awarded to it by the stakeholders consulted. This means that the environmental components that are the object of legal or regulatory protection, the protection of which is the object of a consensus or that plays an essential role in their environment (ecosystem, sociocultural or economic value, etc.) are considered to have a high value and that, on the contrary, the environmental components that arouse little interest and the conservation and protection of which are of little concern to the community are considered to have a low value.

The definitions, as presented for each degree of intensity, do not make it possible to determine how these roles or values are considered:

- High intensity: the impact endangers the environmental integrity of the component or substantially or irreversibly changes the component or its use.
- Medium intensity: the impact leads to a reduction in the quality or use of the component but does not compromise its environmental integrity.
- Low intensity: the impact imperceptibly destroys or changes the quality, use or integrity of the component in the environment.

Nor are the ecosystemic and/or socioeconomic roles or values mentioned in the analysis of the intensity of the project's environmental impacts on each component.

THE PROPONENT MUST:

A) Indicate how the ecosystemic and/or socioeconomic role (the value) assigned to a component influences the intensity assessment. For example, what does a "high value" imply for the degree of intensity?
B) Adjust the definitions of the degrees of intensity in order to incorporate the role or the value. As needed, present custom definitions for each valued component. For example, the proponent could develop distinct definitions for the biological components and for the components of the physical environment.
C) Review the intensity assessment for each component once the definitions are adjusted.

CEAA-3	Definition and Determination of the Extent Criterion
ACÉE	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.1 Impact Assessment Method Section 7.1.3 Impact Assessment

CONTEXT AND RATIONALE:

In section 7.1.3 of the Environmental Impact Assessment (EIA), the proponent mentions that the extent of the impact depends on the area of the territory or the proportion of inhabitants affected. The extent can be regional, local or pinpoint:

- Regional extent: the impact is felt in the entire study area (in an area larger than the study area) or a large proportion of its population.
- Local extent: the impact affects a limited portion of the study area or its population.
- Isolated extent: the impact affects a reduced space or a few individuals of the study area.

The definitions, as presented, do not allow a clear distinction between local scope and pinpoint scope. Without an established definition, a "reduced space" (pinpoint scope) could be considered equivalent to a "limited portion" (local scope). Likewise, a "limited portion" of a population (local scope) could be considered equivalent to "a few individuals" (pinpoint scope). The proponent also uses the "local study area" from time to time to assess the scope as local, whereas this area is not part of the definition given at the beginning of the methodology (e.g. in section 7.2.3).

Moreover, throughout the EIA the proponent does not use a consistent vocabulary to describe the scope, for example:

- In section 7.2.2 (Hydrogeology), in the operating phase, "The extent of the impact is deemed local because the changes to the groundwater flow regime will occur within a radius of up to 1.7 km around the pit".
- In section 7.2.3 (Hydrological Regime) in the rehabilitation and post-rehabilitation phase, "Its extent will be local, since the impacts will occur within the local study area".
- In section 7.2.4 (Water and Sediments) in the construction phase, "The extent is local given that the contamination would occur in an area confined to work site".

This change of vocabulary is confusing and does not allow an understanding of the scope determined (see French version of this document for a better understanding).

Finally, this analysis does not account for the particularities of certain components. For example, in the case of wildlife species, a "local" scope would not have the same impact on caribou as on a micromammal.

THE PROPONENT MUST:

A) Clarify the scope definitions with a more precise and distinctive vocabulary. As required, specify (quantitative) to clarify the definitions.
B) Adjust the scope definitions to consider the particularities of certain components. As required, present custom definitions for certain valued components. For example, the proponent could develop distinct definitions for large mammals, different from the definitions applicable to the hydrogeological aspects.

C) If it uses areas to support its definitions, such as a "local" scope, define them clearly and present them on a map.
D) Review the assessment of the scope for each component once these elements are adjusted.

CEAA-4	Definition and Determination of the Duration Criterion
ACÉE	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.1 Impact Assessment Method Section 7.1.3 Impact Assessment

CONTEXT AND RATIONALE:

In section 7.1.3 of the Environmental Impact Assessment (EIA), in the explanation given of the duration, the proponent indicates that this criterion accounts for the intermittent nature of the impact.

It is also mentioned that the duration of the impact refers to the period during which the project's impacts will be felt in the environment:

A) Long term: the impact is felt continuously or discontinuously for the entire duration of the project. Most often this is a permanent and irreversible impact.
B) Medium term: the impact is felt temporarily (continuously or discontinuously) throughout the construction phase, or during certain periods (operation and rehabilitation) of the project.
C) Short term: the impact is felt temporarily (continuously or discontinuously) during a limited portion of the period of the work during the construction phase, or at precise and limited times (operation and rehabilitation) of the project.

The definitions, as presented, do not allow a clear distinction between "certain periods" (medium term) and "precise and limited times", which could be considered equivalent. Moreover, the intermittent nature of the impact is not distinctive from one duration to another; it is always considered "continuous or discontinuous" and thus seems superfluous.

As analyzed by the proponent in the EIA, an impact could occur during any phase of the project, continuously and discontinuously, and be "short term" or "medium term", whereas it should be considered to be "felt continuously or discontinuously for the entire duration of the project".

For example, in Section 7.2.1 of the EIA, the proponent assesses the impact on soil erosion for the construction phase as "short term", because this could be manifested throughout that period. For the operating phase, the proponent assesses the impact as "medium term", because this may occur throughout the mine's operating period. Then, for the rehabilitation phase, the proponent assesses the impact as "short term", because it will only be felt during the rehabilitation phase. Thus, by dividing the assessment of the impact on soil erosion into project phases, the proponent ends up underestimating the criterion of duration of the impact, even though it may be felt continuously or discontinuously throughout the duration of the project (long-term).

Finally, the proponent does not indicate the reversible or irreversible nature of each of the effects. This information will be required by the Agency to assess the significance of the residual effects of the project.

THE PROPONENT MUST:

A) Clarify the definitions of the duration with a more precise and distinctive vocabulary. As required, specify times or periods (quantitative) to clarify the definitions.
B) Reconsider the intermittent nature of the impacts and distinguish it from one definition to another.
C) Once the definitions are clarified and adjusted, review the assessment of the duration for each component and ensure that the assessment matches the definitions established.
D) During assessment of the intensity of the impact for each component, indicate if the impact will be reversible or irreversible.

PROJECT REALISATION ALTERNATIVES

Alternative Analysis Methodology

CEAA-5	Alternative Analysis Methodology—Value Scale
ECCC-2	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Chapter 3 Project Alternatives

CONTEXT AND RATIONALE:

The information presented in Chapter 3 of the Environmental Impact Assessment on the approach adopted to assess the project realisation alternatives and the information concerning the scales used to assess the indicators is insufficient.

In Section 3.2.3, the proponent indicates that: “The indicators were then assessed, qualitatively or quantitatively, using a scale from 1 (worst) to 5 (best)”. The terms “worst”, “neutral” and “best” should refer to a scale corresponding to these qualifying scores. As a fictitious example, for the investment cost, the proponent could establish a scale of values indicating that, for a cost over $100 M, the score would be 1 (worst); for a cost between $50 M and $100 M, the score would be 3 (neutral); and for a cost under $50 M, the score would be 5 (best or better).

Another example, in Table 3–7, wherw the score of 1 is awarded to the criterion “surface water quality impacts”, while it is 2 for the criterion “groundwater quality impacts”. Although these scores are realistic, there is not enough information on the description of the scale used to be able to assess them. In another example, in Table 3-3 of the EIA, in criterion “4.4: landscape”, a score of 2 (best) is awarded to option 2 and a score of 0 (neutral) is awarded to the other options, even though it is option 2 that presents a maximum elevation of the biggest stockpile (330 m versus 280–300 m).

The above comments are valid for the entire section on project realization alternatives concerning the approach adopted and the lack of details on the scoring scale.

Finally, the Agency recommends that the proponent evaluate the possibility of conducting a sensitivity analysis to complete the exercise to ensure the reliability of the results obtained.

THE PROPONENT MUST:

A) Provide the details on the approach adopted to assess the alternatives, including the information regarding the value scales established to score the different criteria.

CEAA-6	Alternative Analysis Methodology—Category Weighting
ACÉE	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Chapter 3 Project Alternatives

CONTEXT AND RATIONALE:

The information presented in Chapter 3 of the Environmental Impact Assessment on the choice of weighting used for analysis of the options does not explain how this weighting was determined. For example, for the analysis of the stockpile location alternatives (Table 3-2), the proponent uses the following weighting: environment = 4, technique = 1, economic = 3 and socioeconomic = 2; while for the technological alternatives for wastewater treatment (Table 3–6), the proponent uses this one: economic = 5, technical = 3 and environment = 2.

The same applies to the weight assigned to each indicator of the same category. For exemple, in the case of analysis of the stcokpile location alternatives (Table 3-3), the justification of these choices is not given.

THE PROPONENT MUST:

A) Justify the choice of weighting used for each category and indicator in the analysis of the alternatives.

Waste Rock, Tailings and Overburden Stockpiles Location Alternatives

CEAA-7	Justification of the Location of Waste Rock, Tailings and Overburden Stockpiles
ECCC-3	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 3.1 Waste Rock, Tailings and Overburden Stockpiles

CONTEXT AND RATIONALE:

In section 3.1 of the Environmental Impact Assessment, concerning the different stockpile location options presented, the proponent does not explain how the alternatives account for the results of the studies it conducted (e.g. geotechnical and hydrogeological studies) and whether the chosen option is based on their conclusions.

The issues of acid drainage and leaching of metals for the four options are not presented. For example, co-disposal of tailings and waste rock could induce different leaching characteristics from those that would be presented by segregated disposal management of these same materials. The analysis of the alternatives should include, in particular, an analysis of the leaching characteristics of the two waste rock and tailings management modes: co-disposal and segregated disposal.

In addition, the proximity of the waste rock stockpile and the tailings to watercourses could have an impact on their water quality (e.g. via the resurgence of leachate waters from the waste rock stockpiles). This aspect should be considered and discussed in the analysis of the alternatives.

THE PROPONENT MUST:

A) Explain how the results of specialized studies (e.g. geotechnical and hydrogeological studies) were used to determine the options chosen for the location of the waste rock, tailings and overburden stockpiles.
B) Justify the choice of location and the disposal method of the waste rock and the tailings, considering the potential impact of each option on the quality of groundwater and surface water, including the issues of acid drainage and leaching of metals.
C) In the analysis of the alternatives, including an analysis of the leaching characteristics of the two waste rock and tailings management modes, namely co-disposal and segregated disposal.

CEAA-8	Consideration of Water Management at the End of Operations
NRCan	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 3.1 Waste Rock, Tailings and Overburden Stockpiles EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.2.2 Hydrogeology

CONTEXT AND RATIONALE:

In section 3.1 of the Environmental Impact Assessment, the analysis of the options to situate the waste rock and tailings stockpiles led to the selection of Option 2. From an environmental point of view Option 1 would allow wise use of the immense retention capacity of the dewatered pit at the end of operations. The runoff water from the stockpile captured by the retention basis could then be channelled to the pit. Moreover, part of the percolating water under the stockpile would be drawn to the pit by the steep convergent hydraulic gradient. Since most of the leachable species in the stockpile should be mobilized in the first decades after the operation, the contact water most altered would be contained in the pit instead of being discharged directly into a stream. Since the pit filling time is estimated at 120 to

170 years, the contact water would have a very long residence time before eventual decantation of the pit to the neighbouring streams. During that time, natural attenuation processes, such as the development of stratification in the pit water, could also reduce the impact of its eventual release into the environment.

THE PROPONENT MUST:

A) Assess and justify the necessity of redoing the analysis of the alternatives, considering, for Option 1, the positive points related to the potential retention capacity of the dewatered pit at the end of the operations.

CEAA-9	Location of Peripheral Ditches and Watersheds
ECCC-4A ECCC-32	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 3.1 Waste Rock, Tailings and Overburden Stockpiles

CONTEXT AND RATIONALE:

In the description of the waste rock stockpile location options in Section 3.1 of the Environmental Impact Assessment, the proponent indicates for each options if there will be peripheral ditches and their number, but without locating them on Map 3-1 or describing them. In addition, the watersheds are not indicated on this map. These characteristics are necessary to examine the different options proposed.

For example, the comparison of Maps 3-1 and 3-2 shows that for the chosen option (Option 2), the western boundary of the stockpile overlaps the watershed of watercourse CE6, while a large part of this stockpile is found in the watershed of watercourse CE2. However, Table 3-3, which presents a multicriterion analysis concerning the location of the waste rock and tailings stockpiles, indicates that only one watershed is affected by the chosen option.

THE PROPONENT MUST:

A) Provide a description of the peripheral ditches and locate them on a map.
B) Locate the watersheds on Map 3-1.
C) Update Table 3-3 concerning, for exemple, the number of watersheds and the number of pumps and reassess the analysis of the choice of location for the waste rock and tailings stockpiles.

CEAA-10	Report on Positioning of Discharge Points
ECCC-6	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 3.3 Minewater Management and Final Effluent Discharge Locations Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-3

CONTEXT AND RATIONALE:

In the answer to the concordance (A-3), the proponent mentions that "an exercise of optimization and minimization of the project environmental footprint was done in parallel with the Environmental Impact Assessment as soon as site information was acquired and after completion of site biophysical inventories. Thus, the impact assessment was conducted according to a project alternative least damaging to the environment while ensuring the optimization of procedures and of required safety measures." The methodology, analysis and results of the optimization exercise are required to justify the selection of the location of the mine effluent discharge points in watercourses CE2 and CE3.

THE PROPONENT MUST:

A) Present the methodology, analysis and results of the optimization exercise justifying the selection of the location of the mine effluent discharge points in watercourses CE2 and CE3.

DESCRIPTION OF THE PROJECT

Mine Layout

CEAA-11	Description and Location of the Components
ECCC-9	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.2 Mine Site General Arrangement Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-4

CONTEXT AND RATIONALE:

In Section 4.2 of the Environmental Impact Assessment, certain elements associated with the project are missing or unidentified on the mine site layout map (Map 4-1).

THE PROPONENT MUST:

A) Locate and identify the following components on Map 4-1 of the Environmental Impact Assessment:
   - remote landfill (LETI);
   - concrete batch plant;
   - warehousing area for dangerous materials and waste;
   - infrastructure related to manufacturing and storing explosives (emulsion storage, detonator storage, garage, etc.);
   - power lines within the boundaries of the project area.

Preparatory Work

CEAA-12	Quarries and Borrow Pits
ECCC-9A	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.4 Preparatory Work Section 4.4.3 Quarry and Borrow Pits Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-4

CONTEXT AND RATIONALE:

In the answer to the concordance (A-4), the proponent gave information on the borrow pits. However, the description of the activities related to the borrow pits (BE-03) and the quarry is incomplete and these components were not completely integrated into the analysis of the project's environmental impacts.

THE PROPONENT MUST:

A) Describe how the quarry and the borrow pit situated outside the project's footprint will be operated, particularly their area, the location of the access roads, water management and the description of their operation in general.
B) Integrate these components into the environmental impact analysis, indicate the mitigation measures necessary to reduce these impacts and, where applicable, integrate them into the cumulative effects analysis of the project.

CEAA-13	Concrete Batch Plant
ECCC-9B ECCC-18 ECCC-46	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.4 Preparatory Work Section 4.4.4 Laydown and Concrete Batch Plant Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-4, Appendix CEAA-4

CONTEXT AND RATIONALE:

In section 4.4.4 of the Environmental Impact Assessment, the proponent refers to the concrete batch plant. However, the information contained in this section is insufficient to determine the operation of the concrete batch plant, management of its effluents and emissions, and this plant's impacts on the receiving environment. In the answer to the concordance (A-4), the proponent generally describes a concrete batch and provides, in Schedule CEAA-4, a diagram and a photograph of an example of a concrete batch plant it could use. The proponent does not include the analysis of the changes to the environment caused by the activities related to the use of the concrete batch plant, particularly the impacts on water quality.

THE PROPONENT MUST:

A) Provide the location of the washing areas for the equipment and the cement mixers.
B) Provide information relating to the mode of operation of the plant.
C) Present information relating to management and treatment of contaminated water.
D) Describe the extraction of necessary clean water and management of wastewater, including washwater from equipment and from trucks, if applicable.
E) Specify the wastewater collection, storage and treatment mode before its release into the environment.
F) Specify if cement silos and cement additives are anticipated and if they are equipped with a dust collector.
G) Specify if storage areas for aggregates and other materials are anticipated.
H) As applicable, describe the handling of the materials associated with the concrete batch plant.
I) Integrate these components into the environmental impact analysis, indicate the mitigation measures necessary to reduce these impacts and, where applicable, integrate them into the cumulative effects analysis of the project.

CEAA-14	Wells and Drinking Water Treatment Station
ECCC-13	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.9 Water Management Section 4.9.2 Infrastructure

CONTEXT AND RATIONALE:

In section 4.9.2 of the Environmental Impact Assessment, the proponent mentions that "The potable water supply will include a treatment station and insulation or heat trace of the piping to the camp and the treatment site. The location of the wells has not been determined and work on this project component is going." The information concerning this infrastructure thus is not provided.

THE PROPONENT MUST:

A) Specify the location and the characteristics of the wells that will be installed.
B) Describe the work related to the drinking water treatment station.
C) Provide the location of the station and the pipe.
D) Integrate these components into the environmental impact analysis, indicate the mitigation measures necessary to reduce these impacts and, where applicable, integrate them into the cumulative effects analysis of the project.

CEAA-15	Power Line
ECCC-9F ECCC-67	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.11 Other Infrastructure EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 8.5 Projects, Activities or Events Linked to VECs and VSCs

CONTEXT AND RATIONALE:

In Section 4.11 of the Environmental Impact Assessment, the proponent describe the activities related to connection of the power line (portion of the line within the boundaries of the project area) but this description is incomplete. In the answer to the concordance (A-4), the proponent indicates that the projected route "would probably entail the least amount of additional impacts on the biophysical and social environments considering the use of already impacted areas". Although this activity is the responsibility of Hydro-Québec, the proponent should give a description of the activities necessary for its construction and integrate them into the analysis of the project's environmental impacts.

Aim section 8.5, the proponent considered the construction of several power lines in the cumulative impact assessment but does not account for the one related to the project, which could require up to 11 km of new lines. The construction of this new line would probably cause habitat losses or alterations and will create potential movement corridors.

THE PROPONENT MUST:

A) Describe the activities related to the connection of the power line (portion of the line within the boundaries of the project area);
B) Integrate these components into the environmental impact analysis, indicate the mitigation measures necessary to reduce these impacts and, where applicable, integrate them into the cumulative effects analysis of the project.

CEAA-16	Work on the James Bay Highway
ECCC-15	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.4 Preparatory Work Section 4.4.1 Transportation Section 4.11 Other Infrastructure Section 4.11.2 Site Access Road

CONTEXT AND RATIONALE:

In Section 4.4.1 of the Environmental Impact Assessment, the proponent indicates that "Minor upgrades to increase safety will be made to the James Bay road at km 382. Turning lanes will be added in to and out of the site at the point of contact between the James Bay road and the site access road". The proponent does not give details on this work and does not mention who will be in charge of it.

THE PROPONENT MUST:

A) Indicate who will be responsible for planning and implementing the performance of the modification work on the James Bay Highway. If this is not its responsibility, the proponent must indicate its involvement in this component.
B) Summarily describe the stages and timelines of this work.
C) Integrate deforestation, clearing and stripping into the Environmental Impact Assessment, provide for the mitigation measures necessary for the reduction of the impacts of these components and, when applicable, integrate them into the cumulative impact analysis of the project.

Project Infrastructure and Activities

CEAA-17	Infrastructure and Activities Related to Explosives
ECCC-9D NRCan	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 2.4 Regulatory Framework Section 4.5 Extraction Section 4.11 Other Infrastructure Section 4.11.10 Explosives Magazine

CONTEXT AND RATIONALE:

In Section 4.11.10 of the Environmental Impact Assessment, the proponent mentions that it will have emulsion and ammonium nitrate storage for blasting requirements. Pumping the emulsion from a tank truck to the silo and from the silo to the mobile explosives manufacturing unit constitutes manufacturing within the meaning of Section 53 (c) of the *Explosives Regulations, 2013*. Moreover, explosives manufacturing would necessitate a manufacturing licence issued by Natural Resources Canada under paragraph 7 (1) of the *Explosives Act* to allow performance of the project. A garage with a washing room could also be required on the site for maintenance of the mobile units.

The detailed description of the explosives-related activities is missing or incomplete and these components are not integrated into the analysis.

THE PROPONENT MUST:

A) Describe the activities related to the manufacturing and use of explosives and the description of the infrastructure related to these activities.
B) Integrate these components into the environmental impact analysis, indicate the mitigation measures necessary to reduce these impacts and, where applicable, integrate them into the cumulative effects analysis of the project.

CEAA-18	Stockpiles, Dikes and Embankments
ECCC-10	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.4 Preparatory Work Section 4.8 Stockpiles

CONTEXT AND RATIONALE:

In Section 4.8 of the Environmental Impact Assessment, the description of the different layers deposited in the design of the stockpiles and dikes does not necessarily correspond to the description shown in the figures. For exemple, the Figure 4–7 shows a dike downstream and a berm upstream of the waste rock and tailings co-disposal stockpile. This figure should be more detailed to correspond to the text of page 4–49.

Moreover, the proponent does not indicate what the sources of the materials would be. For example, in Section 4.8.3, the proponent refers to topsoil, crushed rocks and other materials, but without describing the source of these materials. In the same section, the proponent indicates that the "proposed berm will be 1.5 m high. Stone (0-600 mm) of adequate material will be used to build the pad to the requested elevation."

Concerning the design of the embankments and ditches, three times on page 4–18, the proponent mentions diagrams without referring to which figure of the document it relates.

THE PROPONENT MUST:

A) Detail the figures and diagrams of the Environmental Impact Assessment so that they correspond to the descriptions of the design of the stockpiles, dikes, embankments and ditches and make them easier to understand.
B) Indicate the diagrams to which sections 4.4.5.2 and 4.4.5.4 of the Environmental Impact Assessment refer in the description of construction of the embankments and ditches.
C) Describe the source of the different materials required for construction of the stockpiles and dikes.

CEAA-19	Management of Residual Materials and Hazardous Waste
ECCC-9C	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.4 Preparatory Work Section 4.4.4 Laydown and Concrete Batch Plant Section 4.10 Emissions, Discharges and Waste Management Section 4.10.3 Residual Materials Section 4.10.4 Hazardous Waste

CONTEXT AND RATIONALE:

In Section 4.4.4 of the Environmental Impact Assessment, the proponent indicates that the site of the concrete batch plant will be converted into a storage yard when construction is completed and indicates on page 4–5 that this site will be reconverted into a dry storage space. Details are missing on the storage mode of residual materials on this site and the storage duration and capacity.

THE PROPONENT MUST:

A) Present a layout diagram of the storage areas of the different categories of residual materials and hazardous waste enumerated in Tables 4–23 and 4–24 of the Environmental Impact Assessment.
B) Specify the mode, duration and capacity of storage on the site, by category of residual materials and hazardous waste.
C) Indicate how it plans to assure the sealing of the storage areas and the safety of the premises.

CEAA-20	Description of Mechanical Work
ECCC-12	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.4 Preparatory Work Section 4.4.2 Logistics

CONTEXT AND RATIONALE:

In Section 4.4.2 of the Environmental Impact Assessment, the proponent mentions that “mechanical work on machinery will be initially done off-site, then in the MSA, once a leak prevention system is installed”, but without describing this work.

THE PROPONENT MUST:

A) Specify the mechanical work that will be performed off-site and present on a map the location where this work will be carried out.
B) Integrate these components into the environmental impact analysis, indicate the mitigation measures necessary to reduce these impacts and, where applicable, integrate them into the cumulative effects analysis of the project.

Transportation Occasioned by the Project

CEAA-21	Transportation of Concentrate, Workers, Residual Materials, Equipment and Supplies
ECCC-9E ACÉE	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.4 Preparatory Work Section 4.4.1 Transportation Section 4.10.3 Residual Materials Section 4.12 Concentrate Transport to Matagami Section 4.14 Execution of the Project EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.4 Impact on the Social Environment Section 7.4.2 Infrastructure Section 8.5 Projects, Activities or Events Linked to the VECs and VSCs

CONTEXT AND RATIONALE:

In Section 4.12 of the Environmental Impact Assessment (EIA), the description of the two-way truck trips for transportation of concentrate from the mine site to the Matagami transshipment centre is incomplete.

According to the information contained in the EIA, the project site would accommodate between 75 and 280 workers during the construction phase and between 240 and 370 workers during the operating phase. For their transportation, the proponent, in Section 4.4.1, indicates that it envisages organizing chartered flights from Québec cities to an airport in the region and will provide a shuttle service between this airport and the mine site. The proponent does not provide information on the frequency of the flights and the number, frequency and schedules of the shuttle service for each of the construction and operating phases.

In Section 4.4.1, the proponent indicates that the equipment and supplies will travel to the site by truck, passing through Matagami. The proponent does not indicate the number, frequency and schedules of this road transportation for the different construction and operating phases.

In Section 4.10.3, the proponent indicates that it plans to have the residual materials transported by truck to an external facility managed by a third-party contractor. As applicable, the proponent will have to specify the final disposal site of the residual materials and specify what the transportation of these materials represents in terms of road traffic.

It is only in Section 7.4 that the proponent inventories all the types of transportation occasioned by the project. These inventories are not detailed enough, nor are they detailed by a phase of the project.

In Section 8.5, the proponent considered a lot of infrastructure in the cumulative impact assessment but does not account for the road transportation associated with these projects, including the project under study.

THE PROPONENT MUST:

A) Provide details regarding the number (two-way trips), frequency and schedules of the trucks for transportation of concentrate to the Matagami transshipment centre.
B) Provide details about the frequency of the chartered flights and the number, frequency and schedules of the shuttle service for each phase of the project.
C) Provide details about the number, frequency and schedules of the trucks for transportation of equipment and supplies for each phase of the project.
D) Provide details about the destinations, number, frequency and schedules of the trucks for transportation of each category of residual materials and hazardous waste and for each phase of the project.
E) Integrate these transportation elements into the environmental impact analysis, indicate the mitigation measures necessary to reduce these impacts and, where applicable, integrate them into the cumulative effects analysis of the project.

Execution of the Project

CEAA-22	Work Schedule
ECCC-8	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 1.5 General Project Description Section 1.5.9 Project Schedule Section 4.14 Project Execution Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-37

CONTEXT AND RATIONALE:

Section 1.5.9 of the Environmental Impact Assessment does not contain a schedule, while Figure 4–13 presents a schedule of the project, although it indicates the major activity phases of the project (e.g. construction, operation) and the years.

The schedule of activities related to the project should describe the time of year, the frequency and the duration of the activities associated with the project in order to allow a better understanding of the assessment of the project's environmental impacts on certain environmental components.

THE PROPONENT MUST:

A) Present a work performance schedule according to the months of the year and the restricted periods for wildlife, for all the activities associated with the project.
B) Present a table that shows all the restricted periods that would be applied by the type of work, specifying the protection objective related to this period (species or species group concerned) for the construction phase, if the time of performance of each construction stage can be targeted with certainty.

HYDROGEOLOGY AND HYDROGEOLOGY

Hydrogeological Model

CEAA-23	Flow Model in Transient Mode
NRCAN-4	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.2.6 Hydrogeology Section 7.2.2 Hydrogeology EIA Reference: Specialized Study on Hydrogeology, Section 7.3

CONTEXT AND RATIONALE:

In Section 4.14 of the Environmental Impact Assessment (EIA), the proponent indicates in Figure 4–13 that the activities on the site will last 23 years, from 2020 (start of construction) to 2043 (site closure). In comparison, pit flooding at the end of operations will last between 120 and 170 years (Section 7.2.2). During operations, the drawdown of the water table caused by pit dewatering will reach 220 m (Map 7-1 of the EIA, Map 16 of the Specialized Study on Hydrogeology). The proponent projects that this dewatering will reduce the base flow of stream CE4 by 52% and will have a significant but unspecified impact on the level of Lake Kapisikama (Section 7.2.2).

A groundwater flow model in transient model would allow a more rigorous determination of the pit flooding time and documentation of the intensity and duration of the impacts of the base flow and the level of the lake in watershed CE4.

THE PROPONENT MUST:

A) Present a groundwater flow model in transient model to study the restoration of the hydrogeological regime at the end of dewatering and its final steady state.

CEAA-24	Water Balance
NRCAN-1	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 6.2.6 Hydrogeology Section 7.2.2 Hydrogeology EIA Reference: Specialized Study on Hydrogeology, Section 7.3

CONTEXT AND RATIONALE:

In Table 30 of Section 7.3 of the Specialized Study on Hydrogeology (SSH), the proponent presents a water balance for the calibrated groundwater flow model in permanent regime. Among the components of the balance, water inflows from storage are noted by the proponent, as well as outflows to storage. However, by definition, there is no change in storage in a permanent flow regime. In other words, there should be no storage components in the water balance of Table 30 of the SSH.

According to Natural Resources Canada, the proponent seems to have diverted the FEFLOW software to transient mode up to the achievement of a permanent regime for digital convergence reasons. In this case, Table 30 would indicate that the permanent regime has not been reached because the storage inflows and outflows are not equal. The calibrated model of Section 7 of the SSH then would be wrong.

The flow model developed in Section 6 and 7 of the SSH represents the basis of the environmental impact forecasts described in Section 8 and Section 7.2.2 of the EIA. Among these impacts are the drawdown of the water table in the wetland regions and the catchment of base flow in the neighbouring streams and lakes, which are habitats for fish and other aquatic species. Given the possibly erroneous calibrated model, the results of the modelling cannot be accepted in complete confidence.

THE PROPONENT MUST:

A) Explain the presence of storage terms in the water balance of Table 30 of the Specialized Study on Hydrogeology.

B) In the event the model is wrong, provide a revised modelling study, including a revised calibration and revised forecasts for the environmental impacts related to pit dewatering.

CEAA-25	Calibrated Flow Model for Simulation Purposes
NRCAN-2	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 6.2.6 Hydrogeology Section 7.2.2 Hydrogeology EIA Reference: Specialized Study on Hydrogeology, Sections 8 and 9

CONTEXT AND RATIONALE:

In Section 8.1 of the Specialized Study on Hydrogeology (SSH), the proponent describes the changes made to the calibrated flow model in order to perform simulations in prediction mode of the effects of pit dewatering on the neighbouring wetlands, lakes and streams (for year 18, at the end of operations). However, this modified model does not include the waste rock and tailings stockpiles, the overburden stockpiles, and the associated retention basins. The runoff and percolation from these mine components probably represent significant flows in the flow model used to determine the environmental impacts.

In Section 9.3 of the SSH, the proponent mentions: "Hydrogeological modelling is also in progress to verify the environmental impacts of the implementation of the stockpile. This modelling will make it possible to estimate the percolation flows under the future stockpile and verify the potential impact on groundwater quality". However, this modelling is not provided.

THE PROPONENT MUST:

A) Update the Specialized Study on Hydrogeology with the "current modelling" mentioned.
B) Present a flow model that includes all the significant mine components (stockpiles, retention basis), including the pit.

CEAA-26	Sensitivity Study on the Results of Digital Modelling
NRCAN-3	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 6.2.6 Hydrogeology Section 7.2.2 Hydrogeology EIA Reference: Specialized Hydrogeology Study, Section 8

CONTEXT AND RATIONALE:

In Section 8.5 of the Specialized Study on Hydrogeology (SSH), the proponent conducts a sensitivity study of the digital modelling results. Table 36 presents the pit dewatering flows for the different scenarios considered. However, the base flows of neighbouring runoffs corresponding to the different scenarios must also be presented. This information is relevant for the assessment of the impacts of pit dewatering on fish habitat.

THE PROPONENT MUST:

A) Present the base streamflows for the different scenarios of the sensitivity study.

Impacts on the Hydrogeological and Hydrological Regimes

CEAA-27	Water Management—Infrastructure
CEAA	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.9 Water Management EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.2.3 Hydrological Regime

CONTEXT AND RATIONALE:

In Section 7.2.3 of the Environmental Impact Assessment, the proponent indicates that no water extraction will be done in the watercourses for the requirements of the project. However, the freshwater requirements are multiple, for example, for concentrator operations, fire protection, dust control, service buildings, the garage and drinking water needs.

THE PROPONENT MUST:

A) Specify how the freshwater requirements will be met for the concentrator, fire protection, dust control, service buildings and the garage.
B) Provide an estimate of the water volume that will be extracted from the groundwater wells to meet the drinking water needs and, as applicable, the other freshwater requirements of the project.

CEAA-28	Assessment of the Intensity of the Hydrogeological Impacts
CEAA	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.2.2 Hydrogeology

CONTEXT AND RATIONALE:

In Section 7.2.2 of the Environmental Impact Assessment, the proponent mentions that in the construction phase, “the duration will be short because the restoration of steady-state groundwater flow conditions will occur once the work is completed”. In the operating phase, “the duration of the impact will be long because the flow regime will be altered throughout the operation phase”. Then, in the rehabilitation phase, it is mentioned that its “duration is estimated to be long because it will take a number of years for the rock formation to return to a state of equilibrium”. Finally, “Stopping pumping activities will have a positive effect on hydrogeology in the post-rehabilitation phase, allowing a new natural equilibrium to be gradually reached in the environment”. The proponent mentions that “The pit is expected to fill up in 120 to 170 years”.

THE PROPONENT MUST:

A) Specify if the “balance” that will be attained after the work will be the same as under the conditions before the work.
B) Clarify if somt hydrogeological impacts would be irreversible.
C) Reassess the intensity of the hydrogeological impact in every phase of the project, particularly the degree of intensity.

CEAA-29	Assessment of the Intensity of the Hydrological Impact
CEAA	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.1.3 Impact Assessment Section 7.2.3 Hydrological Regime

CONTEXT AND RATIONALE:

In Section 7.1.3 of the Environmental Impact Assessment, the proponent defines a high intensity as follows : substantially or irreversibly changes the component or its use.

In Section 7.2.3 of the Environmental Impact Assessment, the proponent indicates that in the rehabilitation and post-rehabilitation phase, “Since the areas affected will be as large as during operations, changes are expected to the hydrological regime.The intensity of the impact is therefore considered moderate.” However, the proponent mentions “permanent encroachments” on watersheds and a “permanent impact” on the topography of the watersheds, and then adds that “its duration [is] long, since the change will be permanent”.

THE PROPONENT MUST:

A) Reassess the intensity of the hydrological impact in every phase of the project, particularly the degree of intensity.

SURFACE WATER AND GROUNDWATER

Surface Water and Groundwater

CEAA-30	Groundwater Analyses of the WSP-PW03 Well Pumping Test
NRCAN-5	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 6.2.8 Surface Water and Groundwater Quality Section 7.2.4 Water and Sediments EIA Reference: Specialized Study on Hydrogeology, Section 5

CONTEXT AND RATIONALE:

In section 7.2.4 of the Environmental Impact Assessment, the proponent assess that during the post-rehabilitation phase of the project, the water quality in the pit could deteriorate, because part of the precipitation would be exposed to the rock walls. The proponent also declares that the hydrogeological regime should return to its original state and that the filled pit would decant to stream CE3. Given this scenario, the final pit water quality is a concern.

To estimate this quality (Section 5.1 of the Specialized Study on Hydrogeology), the proponent analyzed the groundwater from the pumping test in well WSP-PW03 located in the mineralized zone of the pit. The results (Table 19) indicate that the water contains Na-CO3 with a total dissolved solids (TDS) value of 132 to 140 mg/L. However, another analysis of this well conducted on 2018-02-04 (Tables 18 and 20) shows water contains mixed cations and CO3 with a high concentration of Mn (649 µg/L), a lower TDS value (70 mg/L), a pH of 5.07 and relatively high specific conductivity (543 µS/cm), which contradicts the fairly low TDS value. Given these ambiguities and the mediocre ionic balance for many samples (Section 5.2.9), a more detailed pit water quality study is required.

THE PROPONENT MUST:

A) Develop a more rigorous estimate of the final pit water quality, based on the geochemistry of the groundwater and leaching tests for the different types of base and cap rock. This estimate must include the pH, the major ions and the dissolved metals.

B) Compare the estimate developed for water quality in receiving stream CE3.

C) Produce a quantitative analysis to assess the possibility of chemical stratification in the flooded pit.

CEAA-31	Overall Impact of the Project on the Quality of Surface Water and Groundwater During the Different Phases of the Project
ECCC-45 NRCAN-10	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.8.2 Waste Rock and Tailings EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.1.2 Anticipated Impacts of Project Section 7.1.3 Impact Assessment Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-81

CONTEXT AND RATIONALE:

In Table 7-3 of the Environmental Impact Assessment (EIA), the proponent presents the interrelation of the anticipated impacts. However, the project's overall impact on the quality of surface water and groundwater during the different phases of the project is not presented. Several significant sources with potential effects, such as the release of mine effluents, are not indicated.

Moreover, the proponent mentions in Section 4.8.2 of the EIA: "WSP is currently developing a hydrogeological model to verify the percolation rates below the waste rock stockpile. The results of that study in conjunction with the results of additional geochemical test work in progress, will determine the final design of the infrastructure". The results of the hydrogeological model and the sealing measures chosen will be necessary to determine the impact of waste rock and tailings storage on the quality of groundwater and surface water.

The surface water shows a relatively low pH and dissolved oxygen concentration. This, associated with the high As and Cr concentrations in the waste rock and ore, gives reason to anticipate significant environmental impacts. The formation of acid mine drainage and contaminated neutral drainage risks amplifying the acidification of the receiving environments and mobility of the metals and metalloids present. The results of the analyses or models that could predict the concentrations of contaminants in the effluents, the watercourse and the groundwater are missing. Factors such as groundwater resurgence from below stockpiles, minewater quality, etc. are factors that should be taken into account in impact prediction. More precisely, the information presented is not detailed enough to allow quantification of the potential changes in the quality of groundwater and surface water caused by leaching and the risk of acid mine drainage.

A water and mass balance model could be used. This type of model is very useful to prove that the water management plan will assure an adequate water supply for the projected flows and volumes, that it will minimize the impacts on the receiving environment and that it will include measures to limit the environmental impacts. To guide the proponent, here is an example of a guidance document for the production of water and mass balance models, used in Yukon: http://www.env.gov.yk.ca/publications-maps/documents/mine_water_balance.pdf

THE PROPONENT MUST:

A) Provide results on the project's impacts on the surface water and groundwater quality of the receiving environment, particularly those potentially caused by leaching and the risk of acid mine drainage from the waste rock and tailings, ore and overburden stockpiles and quantify these impacts.
B) Include the results of the studies, models or other sources estimating the quality of surface water and groundwater. The results obtained must be compared to the *Canadian Water Quality Guideline* of the Canadian Council of Ministers of the Environment for the protection of aquatic life for the different phases of the project, as well as the standards of the *Metal and Diamond Mining Effluent Regulations* when the mine will be subject to them.
C) Provide analytical results that show the probability of some of the apprehended impacts. In practice, use the long-term kinetic test results to determine, as applicable, the time necessary to trigger mine drainage (acid and/or neutral) or leaching of metals, in order to complete the assessment of the potential impacts of the different mining materials.
D) Provide a complete study of the mobility of leachable metals and metalloids in order to predict their mobility by runoff from the waste rock stockpiles to their availability in the surface water and their ecotoxicity.

CEAA-32	Breaches Created in the Stockpiles in the Rehabilitation Phase
ECCC-47	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.9.6 Rehabilitation Phase

CONTEXT AND RATIONALE:

In Section 4.9.6 of the Environmental Impact Assessment, the proponent indicates that breaches will be made in the waste rock and overburden stockpiles during the rehabilitation phase, without providing the location of the breaches or the details of their design. This information is necessary to determine where the flow areas of the waste rock and overburden stockpiles will be located.

THE PROPONENT MUST:

A) Provide the location and dimensions of the breaches that will be made in the waste rock and overburden piles and indicate the watercourses likely to receive the runoff water, as applicable.

CEAA-33	Groundwater Monitoring Program
ECCC-69	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 10.4.2 Groundwater Monitoring

CONTEXT AND RATIONALE:

À la section 10.4.2 of the Environmental Impact Assessment, the proponent indicates that the groundwater will be monitored for dissolved metals (Ag, Al, As, B, Cd, Co, Cr, Cu, Fe, Li, Mn, Mo, Ni, Pb, Se, Sb, Sn, Sr, Ta, Ti, U, V, Zn). Mercury is not included on the list of metals to be monitored. However, the geochemical tests revealed that the mining materials potentially contain leachable mercury.

Moreover, Map 10-1 shows the water quality monitoring wells and does not show wells between the overburden pile and watercourse CE3.

THE PROPONENT MUST:

A) Include mercury on the list of dissolved metals to be monitored in the groundwater.
B) Add a groundwater sampling well to its network between the overburden pile and watercourse CE3. If not, justify the reasoning.

Water Management

CEAA-34	Water Management During the Construction Phase
ECCC-29	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.9 Water Management Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-9 and Schedule CEAA-10

CONTEXT AND RATIONALE:

In Section 4.9 of the Environmental Impact Assessment, minewater management is presented. The infrastructure and the route of the water through them can be visualized on Map 4–8, for the operating phase only. For the construction phase, the information concerning water management and the construction details of the management infrastructure, particularly the watercourse diversion activities, are not described in enough details to review them. Moreover, the information concerning the permanent or temporary water management infrastructure or systems is not presented according to the evolution of the construction work.

In the answer to the concordance (A-9), the proponent indicates that "Details of infrastructure construction development is still unknown, but this type of construction usually follows the same stages" and the order of the work is described in generally without being specific to the project.

Moreover, Maps CEAA-10-1 and CEAA-10-2 of the concordance answer document show a pumping sector linked to the waste rock and tailings pile without showing a pumping station. The proponent does not describe when construction is scheduled for the sedimentation pond of the waste rock and tailing pile and whether it involves a pump to return the water to the water treatment unit. The details concerning the evolution of water management in the construction phase in the waste rock and tailings pile are missing.

THE PROPONENT MUST:

A) Complete the information concerning water management during the construction phase, containing the construction details of the permanent and temporary water management infrastructure and systems,

including the watercourse diversion, dewatering or deposition activities required (location, methods, schedules) and the activities related to the concrete batch plant that have potential impacts on water quality.

B) Present the permanent and temporary infrastructure or systems according to their order of appearance in the evolution of the construction phase and specify the water quality objectives sought.

CEAA-35	Mapping Illustrating the Evolution of the Infrastructure During the Construction Phase
ECCC-30	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.9 Water Management Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-10 and Schedule CEAA-10

CONTEXT AND RATIONALE:

In the answer to the concordance (A-10), Map CEAA-10-1 does not completely show the route (and the directions of flow, pumping stations and collection ditches) of all the water on the site, including the trajectory of the water between the pumping stations and the water treatment plant (WTP).

THE PROPONENT MUST:

A) Show on Map CEAA-10-1 the complete trajectory of all the water on the site and for all the relevant infrastructure in the construction phase, including the trajectory the water will follow between the different pumping sectors and the WTP. This description will include, in particular, the direction of flow, the pumping stations, the collection ditches and the discharge points.

B) Map the relevant details, to an appropriate scale, of construction of the infrastructure and the permanent and temporary water management systems, allowing validation of the explanations provided.

CEAA-36	Effluent Treatment Systems During the Construction and Operating Phases
ECCC-4B ECCC-31	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 1.5.5 Water Management Section 4.9 Water Management Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-11 and Schedule CEAA-10

CONTEXT AND RATIONALE:

In the answer to the concordance (A-11), concerning treatment of effluents during the construction phase, the proponent mentions only the treatment of suspended particulate matter and possible petroleum products. The information on the capacity of the systems to treat all the contaminants is missing.

In the answer to the concordance (A-11), the proponent indicates that "Water management during construction shall be conducted via the same clean water network as during operation". Yet the description of the flow of clean water in operation (dotted mauve line on Map 4–8 of the Environmental Impact Assessment (EIA) and Map CEAA 10-1 of the concordance answer document) is incomplete, given that the water from zone P5 stops at the pit and the clean water network located east of the industrial and administrative zone runs along pumping zones P2 and P3 to flow away from the site. Map CEAA-10-1 thus does not show how the water will be routed from the clean water network to the sedimentation pond of the overburden pile. Moreover, Map CEAA-10-1 does not indicate where the water will be pumped from the contact ditches (green lines on Map CEAA-10-1). For example, it would be essential for the understanding of water management to know if the water following the contact ditch of sector P4 will be pumped to sector P2 or P3 via the P4 pump.

Finally, the proponent does not describe the activities that will be undertaken to manage the water that will accumulate in the waste rock and tailings pile. Table 3-3 of the EIA indicates that there is no pump in the main sedimentation pond

(water rock pile) for the chosen option. The trajectory of the water between this pond and the water treatment plant (WTP) is not explained or indicated on Map 4–8 of the EIA. Moreover, in Section 1.5.5 of the EIA, the proponent indicates that the raw water "shall be directed to the concentrator from the main retention pond". Thus, part of the water from the sedimentation pond located in the waste rock and tailings pile will go to the WTP for treatment and the other part will go to the concentrator. No map in the EIA indicates this trajectory.

THE PROPONENT MUST:

A) Include detailed information on the effluent treatment systems during the construction phase and on their capacity to treat the different types of contaminants in the water.
B) On Map CEAA-10-1, illustrate how the water will be routed from the clean water diversion network to the sedimentation pond and the complete trajectory of the contact water between the pumping stations.
C) Map the trajectory of the water from the waste rock and tailings pile to the WTP and to the concentrator and indicate if the water will flow by gravity or if a pump will be used.
D) In the analysis, include the treatment of the water that will accumulate in the waste rock and tailings pile.

CEAA-37	Mapping of the Domestic Wastewater Treatment Facilities
ECCC-5	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 3.2 Domestic Wastewater Treatment Section 3.3 Minewater Management and Final Effluent Discharge Points

CONTEXT AND RATIONALE:

In Section 3.2 of the Environmental Impact Assessment, the proponent justifies the selection of the type of domestic wastewater treatment technology. The system chosen "requires a service building (3 m x 4 m) to accommodate dosage pumps for phosphorus removal and the disinfection unit (UV lamp) at the exit of the Ecoflo". The proponent does not present the location of these facilities.

Concerning the positioning of the sanitary effluent, the proponent mentions: "The final choice will be made following further work based on technical and environmental considerations (characterization results, field visit, request for Effluent Discharge Objectives [EDOs] to be filed, etc.)."

THE PROPONENT MUST:

A) Map and present information regarding the positioning of the domestic wastewater treatment facilities, including the service building for the disinfection and phosphorus dosing units and the location of the sanitary effluent.

CEAA-38	Detailed Mapping of the Route of the Water for All Phases of the Project
ECCC-33	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.9 Water Management Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-62

CONTEXT AND RATIONALE:

In Section 4.9 of the Environmental Impact Assessment (EIA), water management the operating phase is presented and the infrastructure and the route of the water through them can be visualized in Map 4–8. However, Map 4–8 is not detailed enough for a good understanding of the route of all the water, particularly from one infrastructure to another. For example, the route of the water from the sedimentation pond of the industrial and administrative sector to the main sedimentation pond is not indicated. The sampling stations for water quality monitoring are not indicated on Map 4–8, but their positioning is necessary for an adequate analysis of water management.

It is difficult to relate Figure 4–11 and Map 4–8 of the EIA, given that certain elements are hard to identify. For example, it must be possible to differentiate the different sedimentation ponds. In addition, Figure 4–11 of the EIA shows two water treatment plants (WTP), while Map 4–8 shows only one. If water returns to the WTP, the diagram in Figure 4–11 must indicate this more clearly.

Several maps using different scales would be necessary to locate the elements of Figure 4–11 on the site.

Finaly, the trajectories of the water between the different pumping stations and the water treatment unit do not appear on Map CEAA-10-1 of the concordance answer document or on Map 4–8 of the EIA.

THE PROPONENT MUST:

A) Map in detail and to an appropriate scale the route of the water on the site, for all phases of the project. All the relevant structures must be identified on the map, particularly the different sedimentation or retention ponds, the pumping stations, the piles and the sampling stations for water quality monitoring.
B) On Map CEAA-10-1 (construction) and Map 4–8 (operation) of the EIA (exploitation), indicate the trajectory the water will follow between the different pumping stations and the WTP. Provide an enlargement of the industrial and administrative zone including only pumping zones P1, P2 and P3 to better visualize of the details of the flow in this zone.
C) Adequately identify the different elements to relate Figure 4–11 to Map 4–8. Modify the map to avoid the confusion caused by the use of the terms “WTP” (in French, *UTP*) in the text and “water treatment unit” (in French, *unité de traitement des eaux*) on the map.

CEAA-39	Description of the Flow of Minewater North of the Waste Rock Pile and the Main Sedimentation Pond
ECCC-34	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.9 Water Management

CONTEXT AND RATIONALE:

Map 4–8 of the Environmental Impact Assessment shows a sedimentation pond within the waste rock and tailings pile and a sedimentation pond located in the administrative and industrial zone, but the destination of these waters is not illustrated. Moreover, Map 4–8 shows only part of the sedimentation pond of the waste rock and tailings pile.

THE PROPONENT MUST:

A) Describe the flow of the minewater north of the waste rock and tailings pile, including the water of the sedimentation pond in the operating phase.
B) Indicate if there will be a pumping station in all the sedimentation ponds for the purpose of returning the water to the water treatment unit (WTP).
C) Present a map showing an enlargement of the industrial zone in order to allow vitalization of the flow in this sector, particularly the trajectory of the water between the sedimentation pond of the waste rock and tailings pile and the WTP.

CEAA-40	Information About the Role and Location of the Drainage Ditches
ECCC-35	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.8.2 Waste Rock and Tailings Answers to the Canadian Environmental Assessment Agency’s questions and comments—Concordance Stage: A-64

CONTEXT AND RATIONALE:

In Section 4.8.2 of the Environmental Impact Assessment (EIA), drainage ditches are mentioned without describing their role or their location.

In the answer to the concordance (A-64), the proponent indicates that "For the construction phase, refer to answers A-9 to A-11. For the operation phase, all available information is presented in the EIA." However, the role and location of the drainage ditches are not provided either in answers A-9 to A-11 in Section 4.8.2 of the EIA.

THE PROPONENT MUST:

A) Provide detailed information about the drainage ditches, particularly their role and their location. Integrate these ditches into the cross sections of Figures 4–7 to 4–10 of the EIA.

CEAA-41	Minewater
ECCC-36	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.9.2 Infrastructure

CONTEXT AND RATIONALE:

In Section 4.9.2 of the Environmental Impact Assessment, the proponents does not indicate whether pond P4 of Table 4–17 contains minewater and Map 4–8 is unclear on this subject.

THE PROPONENT MUST:

A) Provide the details of the complete path of the minewater, indicate it on Map 4–8 and specify which water will be managed in pumping sector P4.

CEAA-42	Information Concerning the Sealing Measures at the Bottom of the Piles and Contact Water Ditches
ECCC-37	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.8.3 Ore

CONTEXT AND RATIONALE:

In Figure 4–10 of the Environmental Impact Assessment, illustrating the cross-section of the ore pile, the proponent indicates the presence of a geomembrane at the bottom of the pile. However, in Section 4.8.3, the geomembrane is not mentioned. This information is necessary for the analysis of the water quality impacts.

THE PROPONENT MUST:

A) Present detailed and complete information concerning the sealing measures at the bottom of the ore pile, particularly concerning the presence of a geomembrane.

CEAA-43	Watersheds of the Explosives Storage Zone
ECCC-38	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.9.2 Infrastructure

CONTEXT AND RATIONALE:

In Section 4.9.2 of the Environmental Impact Assessment, the proponent presents the list of watersheds that will flow to the main sedimentation pond (located in the waste rock and tailings pile), without accounting for the watershed of the explosives storage zone (P5) for the calculation of the maximum capacity of the main sedimentation pond.

THE PROPONENT MUST:

A) Describe if the calculation of the maximum capacity of the main sedimentation pond principal accounts for the watershed of the explosives storage zone. If not, justify the reasoning.
B) Revise the calculation based on the watershed of the explosives storage zone, as applicable.

CEAA-44	Service Roads
ECCC-39	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.11.3 Service Roads

CONTEXT AND RATIONALE:

In Section 4.11.3 of the Environmental Impact Assessment, the proponent indicates that the mine site will have two service roads : "WTP and waste rock stockpile and dike: 1,650 m long; Explosives magazine: 1,690 m long. The ditch system will divert clean water into the environment and direct contact water toward the water management infrastructure".

The information on the sealing of these ditches and the risk of contamination caused by an accidental spill is not provided.

THE PROPONENT MUST:

A) Describe the means implemented to ensure the sealing of the ditches along the service roads.
B) Explain how the contamination of the water in contact with the roads will be avoided, particularly due to the potential risk of spills of petroleum products and other contaminants.

CEAA-45	Efficiency of the Water Treatment Plant (WTP)
ECCC-40 NRCAN-9	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.6 Ore Treatment Section 4.9 Water Management

CONTEXT AND RATIONALE:

On page 4–55 of the Environmental Impact Assessment, the proponent indicates that for the first nine years of operation, the water treatment unit will include "Physicochemical stage consisting of coagulation-flocculation (with coagulant, flocculant and possibly lime)". The proponent does not explain if analyses were done to determine that this type of treatment would be sufficient to meet the effluent water quality standards and objectives. Nor is it indicated what solutions are envisioned in the event the proposed treatment system would not allow these objectives to be met.

Moreover, the presence of high concentrations of As necessitates rigorous treatment and management of arsenic with ferric oxyhydroxide sludge. The use of sodium nitrate in the dense medium separation process should be evaluated due to the high solubility of nitrate salts.

THE PROPONENT MUST:

A) Explain on which studies or analysis it relied to determine that the minewater treatment system will be efficient to meet the water quality standards and objectives.
B) In the event the proposed treatment system would not allow achievement of the effluent water quality objectives, discuss the solutions envisaged.
C) Provide examples of other treatment systems operating under similar conditions to justify the chosen treatment system.
D) Given that the tailings contain very few nitrates from the dense medium separation process, assess the impact of the salts present in the effluents on leaching of the metals and metalloids present in the environment. Provide an estimate of the metal and metalloid concentrations in the effluents, as well as the physicochemical treatment parameters.

Impact on Water Quality

CEAA-46	Compliance of Water From the Overburden Pile
ECCC-41	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.2 Mine Site General Arrangement Section 4.9.2 Infrastructure EIA Reference: Specialized Study on Geochemistry

CONTEXT AND RATIONALE:

Map 4-1 of the Environmental Impact Assessment (EIA) illustrates the water treatment plan (WTP). In Section 4.2, the proponent mentions: “A WTP is positioned near the northern basin. There are two clean water discharges: one from the water collected from the waste rock stockpile and the other from the water collected from the overburden stockpiles”.

However, according to the results of the Specialized Study on Geochemistry, all the mining materials of the project (waste rock, tailings, ores and overburden (clay only) are considered “leachable” according to Directive 019 on the Mining Industry of the ministère de l’Environnement et de la Lutte contre les changements climatiques. The surface water and resurgence water from the different piles, including the overburden pile, could contain concentrations of metals and suspended particulate matter.

Moreover, in Section 4.9.2 of the EIA, the proponent mentions that: “The WTP is designed to treat the water from the water retention basin and the occasional inflow from the overburden stockpiles’ settling pond (if any non-compliances are measured)”. The proponent does not mention analyses to determine non-compliance of water from the sedimentation pond of the overburden pile.

THE PROPONENT MUST:

A) Justify and explain its basis for affirming that water from the overburden pile will be “clean”.
B) Prove that the collection and treatment system for water from the sedimentation pond of the overburden pile and the other mitigation measures will allow collection and treatment, if required, of all minewater before its release into the environment.
C) Provide the details of the analyses that will be done to determine the compliance of water from the sedimentation pond of the overburden pile with the *Fisheries Act* and the *Metal and Diamond Mining Effluent Regulations*.

CEAA-47	Determination of the Intensity of the Impact on Water
ACÉE	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.1.3 Impact Assessment Section 7.2 Impacts on the Physical Environment Section 7.2.4 Water and Sediments

CONTEXT AND RATIONALE:

In Section 7.2.4 of the Environmental Impact Assessment, the proponent assesses that, in the construction phase, “Its duration is rated as short since it is limited to the period of construction”. In the operating phase, “During operation, the impact is felt on a discontinuous basis, therefore the duration is moderate”. Then, in the rehabilitation phase, the proponent indicates that “The duration is short since site rehabilitation will be conducted over a one-year period”.

The proponent adds that in the post- rehabilitation phase, “The quality of the pit lake water could deteriorate since part of the water from precipitations will be exposed to the rock walls. In addition, post-rehabilitation activities will recreate surface runoff conditions similar to initial conditions. The groundwater flow regime is expected to essentially return to its original state. The pit lake will have an outflow toward creek CE3. When the infrastructure for water management on the site is dismantled, the surface water’s physicochemical nature will return to its initial condition”.

According to the information presented by the proponent, the assessments of the duration do not correspond to the definitions of the methodology presented at the beginning (section 7.1.3).

THE PROPONENT MUST:

A) Specify if the water quality condition that will be achieved after the work will be the same as before the work.
B) Clarify if the impact on the “water and sediments” component must be qualified as reversible or irreversible.
C) Review the assessment of Intensity of the impact on the “water and sediments” component for all phases of the project.

SOILS AND SEDIMENTS

Description of Soil Quality

CEAA-48	Depth of Soil Samples
ECCC-27	EIA Reference: Specialized Study of the Natural Background Level in Soils

CONTEXT AND RATIONALE:

In the specialize study of the natural background level in soils, the proponent does not specify the depth of the samples analyzed and whether the statistical analysis accounts for the depths.

THE PROPONENT MUST:

A) Provide the depth of the samples used for the analyses.
B) Specify if the statistical analysis accounted for the variation in depth of the sample and, if not, justify the reason.

CEAA-49	Contaminants Present in Soils
NRCan-7	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.2 Physical Environment Section 6.2.9 Soil and Sediment Quality EIA Reference: Specialized Study on Geochemistry

CONTEXT AND RATIONALE:

In Section 6.2.9 of the Environmental Impact Assessment, the presence of contaminants, such as chromated copper arsenate (CCA) from storage of treated wood in soils, was identified on the site and near the remote landfill (LETI). Analyses are presented for metals and metalloids, but contamination by potentially carcinogenic organic compounds, associated with the presence of these wastes, was not assessed. Chromium speciation analysis was performed to predict its mobility and toxicity, but similar analyses were not conducted for arsenic.

The Agency recommends that the proponent conduct analyzes of pentachlorophenol, creosote, dioxins and furans.

THE PROPONENT MUST:

A) Conduct an arsenic speciation analysis in water, soil and sediments for the remote landfill (LETI) watershed up to CE5.

CEAA-50	Construction Materials and Mapping of Lithology Types
ECCC-42	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.4 Preparatory Work Section 4.4.3 Quarry and Borrow Pits Section 4.4.5.3 Borrow Pit Material Testing Section 4.7 Geotechnical Characterization EIA Reference: Specialized Study on Geochemistry Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-4

CONTEXT AND RATIONALE:

The geochemical characterization data for construction materials from quarries and borrow pits is absent from the Environmental Impact Assessment (EIA). In addition, the Specialized Study on Geochemistry refers to lithology types that are not illustrated on a map.

In Section 4.4.3 of the EIA, the proponent provided a description of the borrow pits situated in the project footprint without specifying which ones will be used. In the answer to the concordance (A-4), however, it indicates that it will probably operate borrow pit BE-03 situated outside the study area.

In Section 4.4.5.3 of the EIA, the proponent indicates that: "Prior to being included in the earthworks, all construction materials from borrow pits, including coarse and fine aggregate and granular materials, will be subject to dry sieve analysis and any other testing necessary to ensure compliance. Tests will be conducted upon establishment of the borrow pits and construction quarry". The proponent does not specify what the other necessary testing involve.

THE PROPONENT MUST:

A) Provide a map presenting the lithology types related to the construction materials, as presented in the Specialized Study on Geochemistry.
B) Describe all the environmental changes related to water quality, caused by the use of the borrow pits and quarries, and include them in the analysis.
C) Provide information related to the geochemical characterization and/or any other relevant characterization of the materials that will be extracted from the quarries and borrow pits in order to determine their acid drainage and/or leaching potential.
D) Specify where the extracted materials will be used (buildings, roads, etc.) and how they will be selected, depending on their use, in order to avoid contamination of the groundwater and surface water by acid drainage and/or leaching of metals.
E) Provide more information on the "other testing necessary to enssure compliance" mentioned in Section 4.4.5.3 of the Environmental Impact Assessment.

Geochemical Characterization

CEAA-51	Equipment Used and Methods Applied
NRCan-6	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.7 Geochemical Characterization EIA Reference: Specialized Study on Geochemistry Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-75

CONTEXT AND RATIONALE:

In the different documents presented (section 4.7 of the Environmental Impact Assessment, Specialized Study on Geochemistry, and the answer to the concordance A-75), the proponent cites the methodologies used for geochemical characterization. However, the proponent does not describe the equipment used and the methods that were applied to assess the reliability of the results obtained.

According to Natural Resources Canada, the samples selected from M1, M2, V3B and I1G would not be representative of actual fractions. The chemical analyses for characterization of the soils, sediments, ores, waste rock and tailings would not be reliable due to the poor reproducibility of the metal background levels in the waste rock and ores, and the NP/AP (neutralization potential/acidity potential) ratios calculated in the waste rock (relative standard deviations of 5–44% for As in the tailings and 135% for As in the ore). Finally, the interpretation of the results of the NP/AP ratio values does not seem to reflect the publication cited (Price, 2009): a sample with [NP/AP] between 1 and 2 is capable of generating acid rock drainage.

THE PROPONENT MUST:

A) Give a description of the equipment used (particle size, pretreatment, moisture, drying, representative fractionation) and the characterization methods (grinding, digestion) that were applied.
B) Ensure that the quality assurance/quality control (QA/QC) data presents acceptable margins of error, using a sufficient number of duplicates and a representative number of samples of actual volumes.
C) Justify the interpretation of the results of the NPR values in relation to the publication cited (Price, 2009).

CEAA-52	Geochemical characterization of overburden and ore
ECCC-43 NRCan-8	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.7 Geochemical Characterization EIA Reference: Specialized Study on Geochemistry Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-74, A-75 and Schedule CEAA-75

CONTEXT AND RATIONALE:

As described in Section 4.7 of the Environmental Impact Assessment, the results of the geochemical analyses made it possible to classify the ore and overburden (unconsolidated deposits) as materials for which ground storage necessitates Level A sealing measures according to Directive 019 on the Mining Industry of the ministère de l'Environnement et de la Lutte contre les changements climatiques (MELCC). However, the proponent does not mention if kinetic tests will be conducted on the overburden, although these tests could be necessary. The analyses performed on the overburden showed that few metals were leached by the material (concentrations below the MELCC groundwater resurgence criteria in surface water). However, the results are not presented.

Regarding ore, this does not show acidogenic potential confirmed by the NP/AP (neutralization potential/acidity potential) ratio results. However, the geochemical characterization of the ore is incomplete: the number of duplicates is insufficient for this study and the relative standard deviations are substantial. In Section 9.2 of the Specialized Study on Geochemistry, the proponent indicates that "36% of the ore samples would be situated in the uncertainty zone with regard to its acid generation potential, it thus would be relevant to conduct additional tests, for example, column kinetic tests, if Galaxy wishes to store the extracted ore on site".

In the answer to the concordance (A-74), the proponent refers to Section 9.1 of the Specialized Study on Geochemistry, in which it explains that the results of the static tests on waste rock samples necessitate kinetic tests and that the results of these tests are shown in Schedule CEAA-75 of the concordance answer document. However, neither the Specialized Study nor Schedule CEAA-75 shows results of analyses performed on overburden or ore samples.

Finally, detailed mineralogical analyzes are necessary to understand the origin of the metals and metalloids present and to predict their mobility in the environment (mineral analyzes and release, alterations, oxidation potentials and leaching).

THE PROPONENT MUST:

A) Given the results of the overburden leaching tests, indicate whether kinetic tests will be required for the overburden, in the negative for why, including providing the CTEU-9 test results required by the COMEX.
B) Given that the geochemical analysis results on the ore seem to show acid generation potential, indicate whether kinetic tests will be performed on the ore. If no, explain how it plans to decide on the potential for acid rock drainage and / or leaching of the ore and indicate the measures necessary to prevent surface and groundwater contamination.
C) Conduct detailed mineralogical analyzes to understand the origin of the metals and metalloids present and predict their mobility in the environment.

CEAA-53	Geochemical Characterization of Waste Rock
ECCC-43 NRCan-8	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.7 Geochemical Characterization EIA Reference: Specialized Study on Geochemistry Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-74, A-75 and Schedule CEAA-75

CONTEXT AND RATIONALE:

In its Specialized Study on Geochemistry, the proponent indicates that the waste rock has a substantial acidogenic potential, confirmed by the NP/AP (neutralization potential/acidity potential) ratio results. The proponent adds that their As and Cr concentrations are substantial and that the CTEU-9 test results anticipate the formation of contaminated neutral drainage in addition to the probable acid mine drainage (AMD). However, this characterization is incomplete beacuse the number of duplicates is insufficient for this study and the relative standard deviations are substantial.

In the answer to the concordance (A-75), the first kinetic test results presented in Schedule CEAA-75, essential to predict the mobility of the contaminants, show a constant decrease in pH, which suggests the formation of acid mine drainage (AMD) in the long term and arsenic leaching. These tests are worrying in terms of their quality and they might have to be redone. Moreover, given the use of tap water to wash the samples, the latest measurements are skewed and do not allow interpretation "of pH stabilization". The acidity and redox potential measurements have to be redone.

Finally, detailed mineralogical analyses are necessary to understand the origin of the metals and metalloids present and predict their mobility in the environment (analyses of minerals and releases, alterations, oxidation potential and leaching).

THE PROPONENT MUST:

A) Provide all of the methodology for the kinetic tests and justify the results.
B) Perform detailed mineralogical analyses to understand the origin of the metals and metalloids present and predict their mobility in the environment.

CEAA-54	Design and Management of Mining Material Storage Areas
ECCC-44	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.4 Preparatory Work Section 4.7 Geochemical Characterization Section 4.8 Stockpiles EIA Reference: Specialized Study on Geochemistry

CONTEXT AND RATIONALE:

According to the results of the Specialized Study on Geochemistry, the four different types of mining materials (waste rock, tailings ores and overburden) each include substantial fractions of materials exceeding the "A" criteria of the *Guide d'intervention – Protection des sols et réhabilitation des terrains contaminés* (Intervention Guide – Soil Protection and Contaminated Sites Rehabilitation) of the ministère de l'Environnement et de la Lutte contre les changements climatiques (MELCC). These materials are classified as leachable according to the results of the leaching tests for mobility of inorganic species (Toxicity Characteristic Leaching Procedure, or TCLP). Acceding to the MELCC's Directive 019 on the Mining Industry, the storage of these types of materials necessitates "Level A sealing measures". The proponent does not make any mention of this obligation for the different piles planned.

THE PROPONENT MUST:

A) Explain how the design and management of the storage areas of the different mining materials will allow achievement of minewater compliance depending on the sealing of the piles and the other associated structures (e.g. ditches around the piles).

CEAA-55	Soil Decontamination During the Rehabilitation Phase
ECCC-28	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.13 Mine Rehabilitation Section 4.13.1 Contaminated Soils

CONTEXT AND RATIONALE:

In Section 4.13 of the Environmental Impact Assessment, the proponent mentions: "In all areas where petroleum product storage tanks and transfer sites were present during the construction and mining operations, the ROM pad and all petroleum product transfer sites will be sampled and analyzed to confirm the degree of contamination". However, the proponent does not mention the rehabilitation methods.

THE PROPONENT MUST:

A) Indicate how the decontamination and rehabilitation of the sectors that will have been contaminated will be performed during the closure phase.

Impact on Soil Quality

CEAA-56	Impacts on Soils After Rehabilitation of the Site
CEAA	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.2 Impacts on the Physical Environment Section 7.2.1 Soils

CONTEXT AND RATIONALE:

In Section 7.2.1 of the Environmental Impact Assessment, the proponent mentions that “Once the site has been restored, the impacts will be non-existent, since no mining activity likely to alter the soil quality will be taking place”.

THE PROPONENT MUST:

A) Specify if the mine drainage could have an effect on soil quality after the rehabilitation of the site.
B) Specify if any soil contamination that might have occurred during the different phases of the project will be removed from the site.
C) Specify if it is considered that impacts could result after the rehabilitation of the site, reassess the intensity of the impacts on the “soil” component.

Description of Sediment Quality

CEAA-57	Hydrocarbons and Arsenic in the Sediments
ECCC-48	EIA Reference: Specialized Study on the Aquatic Habitat

CONTEXT AND RATIONALE:

In Tables 18 and 19 of the Specialized Study on the Aquatic Habitat, the sediment analytical results present C_{10}-C_{50} petroleum hydrocarbon concentrations for samples CE-2A, CE-3A, CE-3B and CE-5B and arsenic concentrations for sample CE-4 higher than those of the other samples analyzed. The details and the analytical data making it possible to determine the origin of these concentrations are missing but essential to the description of the receiving environment.

THE PROPONENT MUST:

A) Provide a detailed explanation accompanied by analytical results that would allow an understanding of the C_{10}-C_{50} petroleum hydrocarbon results measured in samples CE-2A, CE-3A, CE-3B and CE-5B and the arsenic results measured for sample CE-4.

AIR AND GREENHOUSE GASES

Description of Receiving Environment

CEAA-58	Source Data
ECCC-16	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.2 Physical Environment Section 6.2.10 Air Quality

CONTEXT AND RATIONALE:

In Section 6.2.10 of the Environmental Impact Assessment, the proponent indicates that: "According to the National Pollutant Release Inventory (NPRI), the closest industrial activities are over 100 km away from the project site. Due to the project's location, air quality in the sector is then considered very good".

Due to the lack of data, the proponent uses the initial concentrations recommended for northern projects by the ministère de l'Environnement et de la Lutte contre les changements climatiques to describe air quality. Although no air quality measurement is available in the study area, the proponent could use data collected from an existing network of air quality measuring stations for a similar environment. Moreover, it is mentioned that forest fires were identified in the study area. To characterize the reference conditions properly, it would be important to analyze their impacts on air quality if they proved to be frequent enough to alter the air quality during certain periods of the year.

If no data is available, the approach adopted b the proponent could be acceptable, but it would be important to present more information to justify the use of this data.

THE PROPONENT MUST:

A) In order the characterize the air quality of the ambient environment, use data collected from an existing network of air quality measuring stations for an environment similar to the mine site. If not, justify the decision.
B) Include an analysis of the impacts of forest fires on air quality.

CEAA-59	Initial Concentrations of Dusts and Volatile Organic Compounds
ECCC-17	EIA Reference: Atmospheric Dispersion Modelling Study

CONTEXT AND RATIONALE:

In Table 1 of the Atmospheric Dispersion Modelling Study, the proponent indicates a null value for the initial concentration of volatile organic compounds (VOC) by identifying the Canadian Environmental Assessment Agency (CEAA) as the authority/organization. It would be useful to note that the air pollutant emissions coming from forest fires ($PM_{2.5}$, PM_{10}, CO, NOx, NH_3, PAH and VOC, for example) can considerably degrade the air quality on the local and provincial scale. According to Ouranos, the frequency of forest fires will increase in the years to come due to climate change (https://www.ouranos.ca/publication-scientifique/Rapport-Feux-Fore%CC%82t_2017.pdf). Thus, even though the project is located in a northern region and no standards exist in Québec relating to VOC and dustfall, Environment and Climate Change Canada recommends that those components be taken into account, estimated whenever possible and, in the case of dusts added to the modelled deposition, as applicable.

THE PROPONENT MUST:

A) Justify in detail and based on the probabilities of forest fires, why the initial VOC concentration as not included in its modelling.
B) As applicable, integrate the initial concentrations into modelling, accounting for forest fires, according to the selected period.
C) Justify more precisely the choice of not having included dusts in the initial deposition rate.
D) As applicable, integrate dust deposition into the change.

Atmospheric Dispersion Modelling

CEAA-60	Adjustment of Atmospheric Modelling of Contaminants
ECCC-18	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.2 Mine Site General Arrangement EIA Reference: Atmospheric Dispersion Modelling Study Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-80

CONTEXT AND RATIONALE:

In the answer to the concordance (A-80), the proponent indicates that "Modelling of the air dispersion shall be modified to add emissions from mobile equipment, other than vehicles (generators and concrete plant) on the site and satisfy CEAA's request. […] This analysis will be provided to the CEAA once it is finished".

THE PROPONENT MUST:

A) Include those elements in the atmospheric dispersion modelling of the contaminants:
    - The emissions from generators (indicate their number and location);
    - The emissions from the concrete batch plant and related equipment, particularly dust collectors, material storage areas and the energy supply source);
    - The emissions from truck and bus engines and the dusts generated by these components:
        i. Transportation of workers from the airport to the mine site;
        ii. Transportation of equipment and supplies;
        iii. Transportation related to management of residual materials;
        iv. Transportation of concentrate between the mine and Matagami.
B) Estimate the contribution of these components to total atmospheric emissions.
C) As applicable, document and justify the fact of not having included all the construction and operating activities in the modelling.
D) Specify the mitigation measures that will be deployed to avoid wind erosion and dust emissions.

CEAA-61	Missing Construction Activities
ECCC-21	EIA Reference: Atmospheric Dispersion Modelling Study

CONTEXT AND RATIONALE:

In the Atmospheric Dispersion Modelling Study, the proponent indicates that for the construction phase, according to the description provided, only three activities were taken into consideration in air quality modelling, namely the extraction of rock (quarry) and sand (borrow pit) and rock crushing and sieving. The peat removal, clay displacement and dike construction activities were not modelled. Map B2-1 of the modelling study does not indicate any source in relation to the development of the overburden pile (mass excavation and transportation in particular), and transportation of construction materials to the dike and the ore pile for their construction. However, the quantities

involved and the duration of these activities are not negligible. The proponent does not seem to have provided an explanation to justify its approach.

For the operation phase, the proponent adopted the same approach. No justification was presented for not considering certain activities related to the peat removal and clay displacement. It should be noted that the duration and the quantities were lower than those anticipated for the construction phase, but the proponent should still consider them.

THE PROPONENT MUST:

A) Document and justify, in detail, the fact of not having included all the construction (and operating) activities in the air quality modelling.
B) As applicable, include these sources in the modelling and assess the changes this could produce in the interpretation of the results and the conclusions of the project's air quality impacts.

CEAA-62	Total Particulate Matter Deposition Rate
ECCC-22	EIA Reference: Atmospheric Dispersion Modelling Study

CONTEXT AND RATIONALE:

In the Atmospheric Dispersion Modelling Study, the proponent presents the total particulate matter deposition rate. The proponent considered the total particulate matter deposition results on an annual basis. The presentation of the results on a monthly basis would be a relevant indicator that would allow measuring of the evolution of the deposition according to the seasons.

THE PROPONENT MUST:

A) Present the total particulate matter deposition results on a monthly basis in addition to the results presented annually, so as to allow a more adequate analysis.

CEAA-63	Emission Scenarios
ECCC-23	EIA Reference: Atmospheric Dispersion Modelling Study

CONTEXT AND RATIONALE:

In Section 3.3.3 of the Atmospheric Dispersion Modelling Study, the proponent thus specifies that "conservatively, these emission scenarios thus are tested over the entire meteorological sample in search of the worst dispersion conditions. Subsequently, to calculate the annual averages, the scenarios are weighted and combined according to their annual frequency in order to obtain a more realistic modelling result for the study period." The information provided in the text is insufficient for a good understanding and assessment of the weighting of the different scenarios. Moreover, the proponent does not specify how the combinations will be done according to the annual frequencies.

THE PROPONENT MUST:

A) Clarify and improve the approach described in order to have a better understanding of the weighting method and the annual frequency combination method.
B) Illustrate these explanations with examples, as required.

CEAA-64	Crystalline Silica
ECCC-24	EIA Reference: Atmospheric Dispersion Modelling Study

CONTEXT AND RATIONALE:

In the Atmospheric Dispersion Modelling Study, the results for the crystalline silica show, for the hourly and annual Criteria 1 at the sensitive receptors, exceedances of the Normes et critères québécois de qualité de l'atmosphère (NCQQA – Québec Air Quality Standards and Criteria) of the ministère de l'Environnement et de la Lutte contre les changements climatiques.

THE PROPONENT MUST:

A) Propose mitigation measures to ensure compliance with the Normes et critères québécois de qualité de l'atmosphère (NCQQA) regarding crystalline silica.
B) Produce a modelling of additional scenarios integrate these new measurements in order to verify their efficiency.

CEAA-65	CCME Canadian Ambient Air Quality Standards
ECCC-25	EIA Reference: Atmospheric Dispersion Modelling Study

CONTEXT AND RATIONALE:

In Table 1 of the Atmospheric Dispersion Modelling Study, all of the air quality standards and criteria considered are presented. However, the Canadian Ambient Air Quality Standards (CAAQS) of the Canadian Council of Ministers of the Environment (CCME) for nitrogen dioxide (NO_2) are not mentioned in this table.

The CCME has established new CAAQS for NO_2 effective from 2020 and 2025. Thus, the conclusions issued in the report will not reflect the comparative criteria for NO_2 beginning in the 2020s.

THE PROPONENT MUST:

A) Include the Canadian Ambient Air Quality Standards (CAAQS) of the Canadian Council of Ministers of the Environment (CCME) standards for NO_2 and update the interpretation of the results obtained (construction and operation), if applicable, to reflect these new standards.

The Project's Air Quality Impacts

CEAA-66	Dust Management Plan
ECCC-26	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.10 Emissions, Discharges and Waste Management Section 4.10.1 Air Emissions Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-34

CONTEXT AND RATIONALE:

In Section 4.10 of the Environmental Impact Assessment, the proponent mentions: "A dust management plan for the handling of waste rock and tailings was prepared for the project (Primero, 2018)". According to the proponent's In the answer to the concordance (A-34), the proponent adds that "Primero report (2018) does not include a specific section

on dust management". A dust management plan is necessary to allow an adequate examination of the changes to air quality during the different phases of the project.

THE PROPONENT MUST:

A) Provide a dust management plan to describe the methods or practices that will be deployed to minimize and control atmospheric dust emissions throughout the project lifecycle and how it will be implemented.

Greenhouse Gas Emissions

CEAA-67	Greenhouse Gas Emissions Caused by Transportation of Concentrate
ECCC-19	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.12 Concentrate Transport to Matagami EIA Reference: Volume 3—Appendix E Technical Note: Estimate of GHG Emissions Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-4 and A-80

CONTEXT AND RATIONALE:

In Schedule E of the Environmental Impact Assessment, the proponent mentions, concerning transportation of concentrate, that "the project's indirect emissions include fossil fuel combustion by buses, airplanes and transport trucks. "Indeed, the estimated quantities of greenhouse gases (GHG) emitted by the transportation of the products shipped appear among the indirect emissions sources linked to the project in the technical note (Tables 12 and 13 of Schedule E). Environment and Climate Change Canada considers that these emissions sources instead should be part of the direct emissions sources.

THE PROPONENT MUST:

A) Include greenhouse gases (GHG) emissions coming from truck engines by transportation (two-way trip) between the mine and Matagami as a direct GHG emissions source in its analysis and recalculate the emissions accordingly.

CEAA-68	Method of Calculation of Greenhouse Gas Emissions from Transportation of Concentrate
ECCC-20	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.12 Concentrate Transport to Matagami EIA Reference: Volume 3—Appendix E Technical Note: Estimate of GHG Emissions Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-4 and A-80

CONTEXT AND RATIONALE:

In Schedule E of the Environmental Impact Assessment, the proponent mentions: "The diesel consumption of vehicles and machinery was estimated according to the method proposed in the document Exhaust and Crankcase Emission Factors for Nonroad Engine Modelling—Compression-Ignition (US-EPA, 2010). The average emission rate for each vehicle model then was calculated considering the power […] for off-highway vehicles and machinery using diesel was used."

The description of the methodology for the calculation of vehicle and machinery emissions is minimal and does not allow to verify the accuracy of calculations.

THE PROPONENT MUST:

A) Base the emissions calculation method on a list of vehicles and machinery and their characteristics (power, type, age, etc.).
B) Provide examples of calculations for each source, with detailed explanations.

Air Quality Monitoring Program

CEAA-69	Air Quality Monitoring Program
ECCC-68 HC-10	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) 10.4.5 Monitoring Air Quality EIA Reference: Atmospheric Dispersion Modelling Study

CONTEXT AND RATIONALE:

In the EIA Reference: Atmospheric Dispersion Modelling Study, the results show an exceedance of the standard of the ministère de l'Environnement et de la Lutte contre les changements climatiques in the field of application for total suspended particulate matter PMT, PM_{10} and $PM_{2.5}$, and it seems that the routing would contribute to more than 75% of the modelled maximum concentrations.

As described in section 10.4.5 of the Environmental Impact Assessment, only the monitoring of total particulate matter in the air appears to have been planned for:

- "Galaxy proposes to monitor TPM when operations begin, and this will be adjusted based on the results collected. A high-volume (Hi-Vol) sampler is recommended for TPM analysis. Hi-Vol sampling will be conducted for 24 hours, from midnight to midnight the following day and once every six days for TPM. Monitoring of exposure to certain metals is also planned based on the analysis of these samples. Metals with standards based on smaller particle size distributions will first be measured by total particles. In the event that exceedances are observed, measurement of these particle sizes will be considered.

However, fine particulate monitoring ($PM_{2.5}$) is important for protecting health and verifying the effectiveness of mitigation measures. In addition, although the project was in an environment with good air quality, air quality protection for unpolluted areas is important (CCME, 2007).

THE PROPONENT MUST:

A) Introduce an air quality monitoring program for the entire life cycle of the project that includes the monitoring of the three size of particulate matter (PMT, PM_{10} and $PM_{2.5}$).

WETLANDS

Description of Wetlands

CEAA-70	Wetland Functions and Loss of Wetland Functions
ECCC-49	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.3 Biological Environment Section 6.3.1 Vegetation Section 6.3.5 Avifauna Section 7.3 Impacts on the Biological Environment Section 7.3.1 Vegetation and Wetlands Section 7.3.5 Avifauna

CONTEXT AND RATIONALE:

In Sections 6.3.1, 7.3.1, and 7.3.5 of the Environmental Impact Assessment, the proponent gives a description of the wetlands of the study area and discusses the loss of wetlands in general and as a habitat for avian fauna, including those at risk.

The functions associated with the wetlands that would be lost after the performance of the work were not described. All the wetland functions present in the study area and that could be affected by the project's activities should be described.

The proposed documentation should be consulted by the proponent : Wetland ecological functional assessment: An overview of approaches, available online: http://publications.gc.ca/site/eng/9.565284/publication.html.

THE PROPONENT MUST:

A) Identify all the functions of the wetlands of the study area and specify their importance for the avian species at risk.
B) Identify and assess the project's impacts on the wetland functions and quantify the losses of functions, particularly the loss of the habitat function for wild species, such as migratory birds and species at risk.

CEAA-71	Offsetting Wetland Losses
ECCC-50	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.3 Impacts on the Biological Environment Section 7.3.1: Vegetation and Wetlands

CONTEXT AND RATIONALE:

In Section 7.3.1 of the Environmental Impact Assessment, the proponent mentions that in order to "To make up for inevitable losses of wetlands, a compensation program will be developed to comply with MDDELCC requirements (NOR 15)".

THE PROPONENT MUST:

A) Specify if a project to offset wetland losses is required in order to comply with the requirements of the ministère de l'Environnement et de la Lutte contre les changements climatiques in matters of offsets for the delivery of projects affecting a wetland or water environment. In the affirmative, specify the type of offset that will be delivered and the objectives it seeks.
B) As applicable, give the main lines of the offsetting program and specify the function or functions that will be offset.

FISH AND FISH HABITAT

Legislative Context

CEAA-72	Applicable Acts and Regulations
MPO-4	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 2.4 Regulatory Framework Section 2.4.2 Applicable Laws and Regulations

COMMENTS FOR THE PROPONENT:

In Section 2.4 of the Environmental Impact Assessment, the regulatory framework presented does not contain any mention of the *Fisheries Act* apart from the application of the *Metal and Diamond Mining Effluent Regulations*. Nonetheless, subsection 35(1) of the *Fisheries Act* stipulates that no person shall carry on any work, undertaking or activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery.

Regarding the information received to date, and despite the application of avoidance and reduction measures, Fisheries and Oceans Canada considers that the proponent will have to obtain an authorization under paragraph 35(2)(*b*) of the *Fisheries Act* to carry out the project as described. Consequently, the proponent must propose and implement an offset plan to counterbalance the inevitable serious damage caused to fish under the project.

This compensation plan must be developed with the Cree Nation of Eastmain and the concerns trappers.

Impact of the Project on Fish and Fish Habitat

CEAA-73	Lake Kapisikama
MPO-1	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.3 Impacts on the Biological Environment Section 7.3.4 Ichthyofauna

CONTEXT AND RATIONALE:

In Table 7–12 of the Environmental Impact Assessment, the proponent mentions that the reduction of the size of the watershed and the drawdown of the water table, caused by the pit dewatering activities, will result in the gradual drying up of Lake Kapisikama.

THE PROPONENT MUST:

A) Indicate the operating year beginning in which Lake Kapisikama will suffer the impacts of the drawdown of the water table.

CEAA-74	Development of Culverts
MPO-2	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.3 Impacts on the Biological Environment Section 7.3.4 Ichthyofauna

CONTEXT AND RATIONALE:

In Section 7.3.4 of the Environmental Impact Assessment, the proponent mentions that culverts will be developed in accordance with standard NOR 05 and outside the periods defined by FAU 01.

THE PROPONENT MUST:

A) Identify the natural watercourses on which these culverts will be developed, locate these culverts and provide the plans for these developments.

CEAA-75	Physical Management of Effluents
MPO-3	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.9 Water Management EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.3 Impacts on the Biological Environment Section 7.3.4 Ichthyofauna

CONTEXT AND RATIONALE:

In sections 4.9 and 7.3.4 of the Environmental Impact Assessment (EIA), the proponent indicates the presence of effluents in watercourses CE2 and CE3, but does not give details on the final effluent discharge points in these watercourses, except for photographs of the effluent sites (Schedule D of the EIA).

THE PROPONENT MUST:

A) Detail the physical management of effluents on watercourses CE3 and CE2 (type of structure and dimensions, work method for construction, temporary works, period and duration of the work).

CEAA-76	Proposed Mitigation Measures
MPO-5	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.1 Impact Assessment Method

COMMENTS FOR THE PROPONENT:

In Table 7-5 of the Environmental Impact Assessment, the description of measure FAU 01 reads as follows: “Perform work in the water outside the different breeding periods of the species present, from September 15 to December 1, inclusively”.

The period indicated does not correspond to the low-risk periods for performance of work in the fish habitat as recommended by the DFO (http://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/freshwater-eaudouce-qc-eng.html). Thus, in the presence of brook trout the low-risk period for Nord-du-Québec runs from July 1 to August 31, and for northern pike this period runs from July 15 to April 15.

AVIAN FAUNA

Description of Avian fauna

CEAA-77	Presence of Avian Fauna and Their Use of the Study Area During the Year
ECCC-51	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.3 Biological Environment Section 6.3.5 Avifauna

CONTEXT AND RATIONALE:

In Section 6.3.5 of the Environmental Impact Assessment, the proponent describes, based on inventory data, the use of the sector during the nesting season. The description of the spring and fall use of the sector by avian fauna, presented in Section 6.3.5.3, comes mainly from a single data source (i.e. the ÉPOQ database). The data analysis methodology is not specified and the description is based on a very limited amount of data collected over a period of over 30 years. The picture presented in Table 6–49 is incomplete, particularly concerning waterfowl. The proponent could consider consulting other sources in order to complete this picture (i.e. other environmental impact study, government sources, traditional knowledge, etc.).

THE PROPONENT MUST:

A) Review and describe the user of the study area by birds during the year, particularly during the spring and fall migration periods. Special attention will have to be paid to the species valued by the Indigenous communities.
B) Specify when existing data is used, present the source and summarize the context and the methodology that support acquisition of this data. When the data allows, present the relative abundance and the distribution of each species in the study area.

CEAA-78	Results of Avian Fauna Inventories
ECCC-52	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.3 Biological Environment Section 6.3.1 Vegetation Section 6.3.5 Avifauna Section 7.3 Impacts on the Biological Environment Section 7.3.5 Avifauna EIA Reference: Specialized Study on Terrestrial and Avian Fauna Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-30

CONTEXT AND RATIONALE:

In Section 6.3.1 of the Environmental Impact Assessment, the proponent presents, particularly in Map 6–12 and Table 6–26, the vegetation groups according to four habitat categories, each of which is divided into several types of vegetation groups.

In Section 6.3.5, the proponent illustrates the avian fauna inventory sites (Map 6–20) without having superimposed the different habitats present. Contrary to the habitats presented in the vegetation section, the proponent indicates, in section 6.3.5, that the listening stations were distributed according to three habitat categories.

The various information presented makes it difficult to assess the representativeness of the inventories based on the habitats present.

Moreover, in Section 6.3.5 on avian fauna and in the Specialized Study on Terrestrial and Avian Fauna, the proponent presents little information on the inventory protocols, which do not make it possible to determine if the inventories produced allowed adequate detection of each species at risk that is or could be present in the study area.

Thus, the various information does not allow verification of whether the inventory results give a representative picture of the occupancy by each species at risk that is or could be present in the study area.

THE PROPONENT MUST:

A) On a map, identify to an appropriate scale the avian fauna inventory sites, the vegetation groups and all the infrastructure on the mine site. For each of the vegetation groups identified in Table 6–26, identify the songbird listening stations.
B) Produce a second map with the same information layers, this time to a larger scale, where the predominance will be given to the infrastructure on the mine site (similarly to Map 4–7 of Volume 1).
C) Presented in the form of a table or tables, the abundance and distribution of each species according to the different habitat types (vegetation groups). Add the number of songbirds listening stations and the proportion of the number of stations (%).
D) Prove that the avian fauna inventories were adapted for each migratory species at risk present and potentially present in the study area, that the inventory methodology (habitat types inventoried, period, numbers of stations according to the habitat availability area, etc.) was adapted to each of these species and that their potential habitats were covered sufficiently by the inventories to allow production of a representative picture of the study area.

The Project's Impact on Avian Fauna

CEAA-79	Impacts of the Use of the Offsite Borrow Pits on Migratory Birds and their Habitats
ECCC-53	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.4 Preparatory Work Section 4.4.3 Quarry and Borrow Pits Section 4.4.5 Earthwork Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-4

CONTEXT AND RATIONALE:

In Section 4.4.3 of the Environmental Impact Assessment (EIA) and in the answer to the concordance (A-4), the proponent provides some information on the quarries and borrow pits that could be used as sources of construction materials necessary for project performance. Certain borrow pits would be located within the mine site, while others, such as borrow pit BE-03, would be located offsite. Only one existing borrow pit was identified offsite on la Map 4-4 of the EIA.

Because the opening and operation of the borrow pits and quarries will necessitate deforestation and development work, the impact of this work on the valued components of the environment will have to be assessed particularly for wild species, including species at risk. Few details are given regarding the impacts of operations in the quarries and borrow pits on wild species, including species at risk.

THE PROPONENT MUST:

A) For the quarries and borrow pits that would be located outside the mine site, provide a description of the natural environment and the maximum area that would be deforested, including the access roads.

B) Assess the impacts of opening and operation of offsite quarries and borrow pits on the different valued components of the environment, particularly wild species and the species at risk.
C) Specify if additional mitigation and monitoring measures will be necessary.

CEAA-80	Impact of the Project on Migratory Birds and Their Habitats
ECCC-54	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.3 Impacts on the Biological Environment Section 7.3.5 Avifauna Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-39

CONTEXT AND RATIONALE:

In the answer to the concordance (A-39), the proponent mentions that the project's impacts on migratory birds will be minor. The development of the site, particularly by deforestation, will cause habitat loss for several bird species. The intensity of this loss might not be the same for all species. The intensity of the loss could be low for species with abundant and widely distributed populations, while the habitat loss could be greater tor species with declining populations, especially for species at risk. For these reasons, the impacts of habitat loss must be presented species by species, according to the density measured by habitat types during the 2017 inventories (Table 6–47 of the Environmental Impact Assessment) and according to the areas that will be lost or altered (permanently or temporarily) by project performance (Table 7–10 and 7–11). Special attention should be paid to the species with declining populations or for species at risk.

Certain mitigation measures related to deforestation are presented in Section 7.3.5. According to mitigation measure FAU 02, no deforestation activity would occur between June 1 and July 31 to limit the impacts on wildlife, including avian fauna. No details were provided about the method used to determine this restricted period. The period from June 1 to July 31 is too short to protect nesting of the birds and will have to be revised, or a justification will have to be provided.

The proponent should consult the Environment and Climate Change Canada website (https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods/nesting-periods.html) and the Nesting Calendar Query Tool provided by Bird Studies Canada (https://www.birdscanada.org/volunteer/pnw/rnest/warning.jsp?lang=en).

THE PROPONENT MUST:

A) Describe the project's direct negative impacts concerning the habitat loss caused by deforestation. This description of the impacts must account for the diversity and abundance of the species in terms of breeding pairs per species and per habitat type. The results may be presented by accounting for the different bird groups (waterfowl, shorebirds, land birds, etc.).
B) Revise and specify the avoidance, mitigation and/or environmental monitoring measures that will be deployed to prevent and avoid the harmful impacts on migratory birds and species at risk, particularly during site development activities, such as deforestation.
C) Revise mitigation measure FAU 02, namely the restricted period for deforestation activities, and specify the period during which nesting is most likely to be observed for most of the migratory bird species on the mine site.

CEAA-81	The Project's Impact on Nesting of Migratory Birds
ECCC-55	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.3 Impacts on the Biological Environment Section 7.3.5 Avifauna Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-28, A-30 and A-40

CONTEXT AND RATIONALE:

In the answer to the concordance (A-40), the proponent mentions that the project's potential impacts on the Common Nighthawk and the Sand Martin are considered to be insignificant.

The Sand Martin and the Common Nighthawk are two migratory bird species included on the list of species at risk (Schedule 1 of the *Species at Risk Act*), and present in the study area. The Common Nighthawk likes denuded spaces, while the Sand Martin looks for heaps or embankments where it can dig its nest.

During the construction and operating phases and even during the closure phase, the different activities on the site are likely to destroy or create environments conducive to the nesting of these two species and other bird species. The impact of mining activities that could alter the environments and affect nesting of the birds should be assessed, during all phases of the project. Measures should be identified and deployed to protect nesting of the birds during the different phases of the project.

THE PROPONENT MUST:

A) Assess the project's impacts on nesting of migratory bird species, particularly species at risk, during the construction, operating and closure phases. For this assessment, pay special attention to the alterations of the environment occasioned by the different activities on the mine site that could result in habit creation conducive to these species.
B) Describe the mitigation and monitoring measures that will be deployed to avoid the project's impacts on nesting of bird species, particularly during the operating phase.

CEAA-82	Impacts of the Use of Ponds on Migratory Birds
ECCC-56	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.3 Impacts on the Biological Environment Section 7.3.5 Avifauna Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-38

CONTEXT AND RATIONALE:

In Section 7.3.5 of the Environmental Impact Assessment, concerning the project's impacts on avifauna, the proponent identifies water management on the mine sites as a potential impact source. However, the use by avian fauna of these different ponds (retention and sedimentation) during the operating phase was not discussed in the assessment of the project's impacts on the component.

During the operating phase, several mining activities could release potentially noxious substances on the site and accumulate in the tailings facilities, piles, ponds, etc., infrastructure that might be frequented by avian fauna.

In the answer to the concordance (A-38), the proponent mentions that no potential impact of use of the mine site and the ponds on avian fauna is anticipated. The ponds that will collect the water on the mine site would not be attractive for avian fauna for different reasons, particularly the presence of nearby natural sites, etc. Moreover, the proponent specifies that the quality of the water that will be collected in the pond located north of the tailings pile is still unknown, given that the critical tests are still in progress.

THE PROPONENT MUST:

A) In light of the results of the critical tests, assess the potential impacts of the frequentation by avian fauna of the different infrastructure (tailings facilities, piles, ponds, etc.) where noxious substances could be found.
B) Specify the mitigation, surveillance and monitoring measures that will be implemented to minimize the use of these infrastructure, including the ponds, by avian fauna and avoid impacts on avian fauna.

Cumulative Impacts on Avian Species at Risk

CEAA-83	Cumulative Impact Assessment of Avian Species at Risk
ECCC-62	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 8.2 Cumulative Impact Assessment Methodology Section 8.5 Projects, Activities or Events Linked to VECs and VSCs Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-47

CONTEXT AND RATIONALE:

In Section 8 of the Environmental Impact Assessment, the proponent discusses cumulative impacts, i.e. changes in the environment caused by the project combined with the existence of other previous, current and reasonably foreseeable future activities. The cumulative impact assessment was limited to valued components, namely Chiroptera and traditional land uses by the Crees.

However, Environment and Climate Change Canada considers that the project's residual impacts on migratory birds, and more specifically on the avian species at risk, will not be zero, particularly concerning habitat loss. For this reason, the cumulative impact assessment should include all designated avian species at risk that could frequent the study area.

In the answer to the concordance (A-47), the proponent indicates that the analysis of the cumulative impacts remains unchanged, without having considered all the bird species at risk present or potentially present in the study area and that could be affected by project performance.

The cumulative impact assessment of species at risk should not be addressed as a whole. Each species at risk for which a residual (even low) impact is observed should be the subject of a cumulative impact assessment because each of them is faced with its own specific reality, threats or issues.

THE PROPONENT MUST:

A) Integrate the avian species at risk as valued components of the environment and present a cumulative environmental impacts assessment for each avian species at risk present or potentially present in the study area, considering the objectives in terms of population and distribution identified in the recovery strategies, when possible. If not, justify the reasoning.

Migratory Bird Monitoring Program

CEAA-84	Presentation of a Migratory Bird Monitoring Program
ECCC-70A	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 10.4 Environmental Monitoring During Operations

CONTEXT AND RATIONALE:

In Section 10.4 of the Environmental Impact Assessment, no environmental monitoring program was proposed for migratory birds.

Considering that migratory birds and their habitat are valued components of the environment and that the residual impacts on these components are not considered to be zero, a specific monitoring program should be devised and implemented for the different species or species groups present in or potentially frequenting the territory.

THE PROPONENT MUST:

A) Present and detail the monitoring program that will be implemented during all the phases of the project for the migratory birds present in or potentially frequenting the study area. If not, justify the reasoning.SPECIES AT RISK

Description of Chiroptera

CEAA-85	Description and Mapping of Chiroptera Habitats
ECCC-58	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.3 Biological Environment Section 6.3.6 Bats Section 7.3 Impacts on the Biological Environment Section 7.3.6 Bats

CONTEXT AND RATIONALE:

In Section 7.3.6 of the Environmental Impact Assessment, the proponent indicates that the construction and operating phases will result in the loss of 117.7 ha of habitat for Chiroptera. No description and location of the Chiroptera habitats that will be destroyed by project performance were given.

THE PROPONENT MUST:

A) Identify and describe the potential habitats for Chiroptera at risk in the study sector. Referring to the Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), the Northern Myotis (*Myotis septentrionalis*) and the Tri-colored Bat (*Perimyotis subflavus*) in Canada (https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/recovery-strategies/little-brown-myotis-2018.html)
B) Map the potential habitats in the study sector by superimposing the temporary and permanent infrastructure, and by locating the inventory stations, specifying where the presence of the species was confirmed. Identify the potential habitats that will be affected by the project.
C) Demonstrate and explain how the potential habitats of these species were covered sufficiently by the inventories.
D) As required, review the project's potential impacts on the potential Chiroptera habitat, the applicable mitigation measures and the description and assessment of the residual impacts.

Description of the Woodland Caribou

CEAA-86	Mapping of the Habitat of the Woodland Caribou, Boreal Population
ECCC-59	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.3 Biological Environment Section 6.3.2 Terrestrial Fauna

CONTEXT AND RATIONALE:

In Section 6.3.2 of the Environmental Impact Assessment, the proponent mentions that the project area is mostly disturbed by the forest fires that occurred over the past 40 years. Table 6–31 presents the disturbance rate of the woodland caribou habitat at radii ranging from 5 km to 50 km from the centre of the projected mine, while Map 6–16 illustrates the human-induced and natural disturbances within a radius up to 50 km. Thus, within a 5 km radius, the habitat is 92% disturbed, mainly due to old forest fires.

Schedule H of the Recovery Strategy for the Woodland Caribou, Boreal population (http://publications.gc.ca/collections/collection_2012/ec/En3-4-140-2012-eng.pdf), defines the biophysical

characteristics of the different types of habitats frequented by caribou to accomplish these life processes. The proponent should present these habitats, as defined in the Recovery Strategy, and assess the project's impacts on them.

THE PROPONENT MUST:

A) Describe and map to large scale all the habitats in the study area that present the biophysical characteristics of the habitat types frequented by the woodland caribou to accomplish its life processes.
B) Draw a 50-metre buffer zone around all the components of the project, including the temporary components (temporary roads, borrow pits, workers' camp, storage areas, etc.).
C) For each essential habitat type for the woodland caribou, calculate the surface area of the study area, the 500-metre buffer zone and the mine footprint.
D) In light of the new mapping of the woodland caribou's essential habitat in the study area, revise the analysis of the project's impacts on the different habitat types essential to the woodland caribou's lifecycle.
E) Quantify the losses related to the project, as well as the losses associated with the buffer zone.

CEAA-87	Information on Woodland Caribou Telemetry
ECCC-60	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.3 Biological Environment Section 6.3.2 Terrestrial Fauna

CONTEXT AND RATIONALE:

In Section 6.3.2 of the Environmental Impact Assessment, the proponent presents the picture of the use of the study area by the woodland caribou, particularly by using telemetric data from the ministère des Forêts, de la Faune et des Parcs. According to these data, only one caribou frequented the study area in winter 2008–2009. Given the lack of information on the context in which the telemetric monitoring data was collected, it is difficult to assess its value. Moreover, according to the comments of the Cree Nation Government, the telemetric monitoring data would be partial data, because a small number of individuals in the caribou herd are fitted with collars.

THE PROPONENT MUST:

A) Provide the necessary information to understand the purpose for which the telemetric data was taken. In particular, provide the goal and objectives of these studies the methodology, the choice of the individuals who were monitored, the sex, the percentage of individuals monitored, the limits of this study, etc., or provide the study consulted as reference.
B) As required, revise the description of the use of the study area by caribou and the project's impacts on caribou, considering the biases associated with the use of telemetric data.

The Project's Impact on Woodland Caribou

CEAA-88	Impacts on Woodland Caribou and Their Habitat
ECCC-61	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.3 Impacts on the Biological Environment Section 7.3.2 Large Fauna

CONTEXT AND RATIONALE:

In Section 7.3.2 of the Environmental Impact Assessment, the proponent indicates that no impact on woodland caribou is anticipated in the construction phase, given that the spices makes very little use of the study area. However, the project's impacts on the woodland caribou's essential habitat do not seem to have been considered. Although the study area was affected by several successive fire episodes, the habitat is not destroyed permanently and could become a hospitable habitat again over a horizon of a few decades. Thus, the construction and operation of the mine will lead to permanent destruction of an emerging habitat. Moreover, the loss of connectivity within the study area or within distribution area "QC6", or the increase in the facility of movement of predators, were not presented. Thus, all the harmful impacts of a project on caribou must be considered and be consistent with the recovery strategy.

To be consistent with the Recovery Strategy for the Woodland Caribou, Boreal population, the description of the potential impacts should address impacts on individuals (e.g. mortality, predation), maintenance of connectivity, the impacts on the undisturbed habitat found in the 500-metre buffer zone, and their combined impacts on the recovery objectives for the woodland caribou, Boreal population.

In Section 1.5.8, the proponent specifies that the site will be restored at the end of the work and the infrastructure will be dismantled. The areas that will not be restorable are not documented.

THE PROPONENT MUST:

A) Identify the infrastructure (pit, roads, sedimentation ponds, etc.) and specify the areas that cannot be restored in the closure phase.
B) Revise and describe all the project's impacts on the woodland caribou and their habitat and their eventual consequences for the recovery strategy's objectives.
C) Revise the proposed mitigation measures, the description of the residual impacts and the conclusion regarding the intensity of the project's residual impacts on the woodland caribou's essential habitat.
D) Present a woodland caribou surveillance program during all phases of the project, particularly for detection of the individuals who would frequent the mine site and its vicinity. Specify the content of such a surveillance program.

The Project's Impact on Species at Risk

CEAA-89	Assessment of the Project's Impacts on Species at Risk
ECCC-72	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.3 Biological Environment Section 7.3 Impacts on the Biological Environment

CONTEXT AND RATIONALE:

In Section 7.3 of the Environmental Impact Assessment, the assessment of the environmental impacts of the different phases of the project on species at risk (species listed in Schedule 1 of the *Species at Risk Act* [SARA] and species assessed by the Committee on the Status of Endangered Wildlife in Canada [COSEWIC] is succinct or incomplete for certain species), such as the wolverine and the caribou, Eastern migratory population. The assessment of the project's environmental impacts should include the species at risk that could frequent the study area (past, present, future),

including the wolverine. The proponent should also include in the Environmental Impact Assessment the species that were assessed by the COSEWIC but that are yet listed in Schedule 1 of the SARA, particularly the caribou, Eastern migratory population.

THE PROPONENT MUST:

A) Assess the environmental impacts for all species at risk that could frequent the study area, including the wolverine.
B) Assess the environmental impacts for the species assessed by the Committee on the Status of Endangered Wildlife in Canada [COSEWIC], that are not yet listed in Schedule 1 of the *Species at Risk Act* [SARA] and that could frequent the study area, particularly the caribou, Eastern migratory population.

Cumulative Impacts on Species at Risk

CEAA-90	Cumulative Impacts on Species at Risk
ECCC-57	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 8.2 Method for Assessing Cumulative Effects Section 8.5 Projects, Activities or Events Linked to VECs and VCs Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-47

CONTEXT AND RATIONALE:

In Section 8 of the Environmental Impact Assessment, the proponent discusses cumulative impacts, i.e. changes in the environment caused by the project combined with the existence of other previous, current and reasonably foreseeable future activities. The cumulative impact assessment was limited to valued components, namely Chiroptera and traditional land uses by the Crees.

However, Environment and Climate Change Canada considers that the project's residual impacts on species at risk will not be zero, particularly concerning habitat loss. For this reason, the cumulative impact assessment should include all species at risk that could frequent the study area (past, present, future), particularly the wolverine and the caribou, Boreal population. The proponent should also include in the Environmental Impact Assessment the species that were assessed by the Committee on the Status of Endangered Wildlife Species in Canada but that are yet listed in Schedule 1 of the *Species at Risk Act* (for example, caribou, Eastern migratory population).

In the answer to the concordance (A-47), the proponent indicates that the analysis of the cumulative impacts remains unchanged, without having considered all the species at risk present or potentially present in the study area and that could be affected by project performance, particularly the woodland caribou and the migratory caribou.

The cumulative impact assessment of species at risk should not be addressed as a whole. Each species at risk for which a residual (even low) impact is observed should be the subject of a cumulative impact assessment because each of them is faced with its own specific reality, threats or issues.

THE PROPONENT MUST:

A) Assess the cumulative impacts for all species at risk that could frequent the study area, particularly the wolverine and the caribou, Boreal population.
B) Assess the environmental impacts for the species assessed by the Committee on the Status of Endangered Wildlife Species that are not yet listed in Schedule 1 of the *Species at Risk Act* and that could frequent the study area, particularly the caribou, Eastern migratory population.
C) Describe the consequences of the cumulative impacts on the objectives in terms of population and distribution identified in the recovery strategies when available.

D) Assess the cumulative impacts on the woodland caribou by accounting for the different habitats required by the woodland caribou to accomplish these life processes. Describe the consequences for the following objectives:
   - Maintain the size of the local population.
   - Maintain the state of the habitat in terms of area and types of undisturbed habitats, to ensure the self-sufficiency of the local woodland caribou population. The purpose is to maintain a minimum of 65% undisturbed habitat and the availability of the biophysical attributes necessary for the woodland caribou.

Monitoring Program for Species at Risk

CEAA-91	Presentation of a Monitoring Program for Migratory Birds and Species at Risk
ECCC-70B	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 10.4 Environmental Monitoring During Operations

CONTEXT AND RATIONALE:

In Section 10.4 of the Environmental Impact Assessment, no environmental monitoring program was proposed for species at risk.

Considering that species at risk and their habitat are valued components of the environment and that the residual impacts on these components are not considered to be zero, a specific monitoring program should be developed and implemented for the different species or species groups present in or that could frequent the territory.

The monitoring program should account for the elements of the recovery strategies (when available) for each species at risk.

THE PROPONENT MUST:

A) Present and detail the monitoring program that will be implemented during all the phases of the project for each species at risk present in or that could frequent the study area.

HUMAN ENVIRONMENT

Stakeholder Engagement

CEAA-92	Future Stakeholder Involvement
CEAA	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 5.4 Information and Consultation Activities of the Stakeholders Section 5.4.2 James Bay Stakeholders Section 5.7 Ongoing Consultation Initiative and Commitment to Stakeholders Section 5.7.2 Monitoring Committee EIA Reference: Volume 3—Appendix G Stakeholers' Concerns

CONTEXT AND RATIONALE:

In section 5.4.2 and Table G-3 of Appendix G of the Environmental Impact Assessment (EIA), the proponent details the consultations that took place with various Jamesian stakeholders, including the Eeyou Istchee James Bay Regional Government (EIJBRG), Town of Matagami, Société de développement de la Baie-James (SDBJ), and Table jamésienne de concertation minière (TJCM). The proponent indicates that Jamesian stakeholders emphasized the importance of continuing to be informed throughout the duration of the project up to its closure.

In section 5.7 of the EIA, the proponent "develop sustainable relationships with stakeholders, to maximize the social and economic benefits of the project while minimizing its environmental impacts. The mining company also is sharing information on the project, specifically by holding open houses, committing to having Galaxy's community relations manager spend one week per month in the community, organizing sessions with stakeholders, posting updates on the website and maintaining direct links with employees".

In section 5.7.2 of the EIA, the proponent undertakes to set up a monitoring committee to encourage the involvement of communities affected by the project. However, this committee does not seem to include all the stakeholders affected by the project.

THE AGENCY RECOMMEND THE PROPONENT TO:

A) Specify how and how often it will ensure communication throughout the project with Jamesian stakeholders (e.g. monitoring committee or program, statutory meetings, proponent's presence at key stakeholder meetings, newsletter).
B) Propose mitigation measures to address the concerns of the Société de développement de la Baie-James (SDBJ) with respect to road infrastructure and local economic benefits.
C) Clarify if he intends to add to the monitoring committee the Société de développement de la Baie-James and the Town of Matagami. If not, justify the reasoning.
D) Clarify if he intends to setting up a program to monitor the positive impacts on the training, employment and economy of the regional communities. If not, justify the reasoning.

CEAA-93	Socio-economic Environment of the Region
CEAA	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 5.4 Information and Consultation Activities of the Stakeholders Section 5.4.2 James Bay Stakeholders Section 5.7 Ongoing Consultation Initiative and Commitment to Stakeholders Section 5.7.2 Monitoring Committee EIA Reference: Volume 3—Appendix G Stakeholers' Concerns

CONTEXT AND RATIONALE:

In section 5.4.2.2 of the Environmental Impact Assessment (EIA), the proponent reports concerns from stakeholders about the "fly-in, fly-out" phenomenon that hinders the occupancy of the Jamesian territory. On page 5–15 of the EIA, the proponent states that "the urban centres of Val-d'Or and Rouyn-Noranda are two poles that are often prioritized because of their continuous air service. Therefore, the acquisition of a continuous airport service is both a concern and a priority for Jamesian stakeholders for the maintenance and development of the region."

On pages G-16 and G-17 of Appendix G of the EIA, the Town of Matagami proposed the following measures:

- Prioritize local workforce (Jamesian and Cree), contractors and goods and services providers;
- Design schedules so that workers can settle in the area with their families;
- Create incentives to encourage people to live in the area;
- Ensure that transportation logistics do not incite workers and their families to move out of the region;
- Implement continuous airport service in Matagami;
- Consider mining investment to acquire a de-icing system for the Matagami airport, which would enable planes to land in winter;
- Galaxy should participate in a committee maximizing economic benefits (COMAX).

During the public consultation period on the EIA summary, the Town of Matagami submitted a brief in which it reiterates its concern about the retention of the local population, which could be supported with continuous air service. The Town of Matagami also indicates that it should be favoured for the construction of infrastructure related to project planning, for example the construction of megadomes to store the ore.

Based on the information provided, the proponent has not proposed any specific mitigation measures or monitoring programs/committees with regard to this stakeholder.

THE AGENCY RECOMMEND THE PROPONENT TO:

A) Specify whether or not it considered the various mitigation measures suggested by the Town of Matagami. If measures have not been adopted, indicate the reasons.
B) Specify whether it has studied different variants in its staffing strategy and document whether it is possible to avoid the "fly-in, fly-out" phenomenon or recommend alternatives to promote the retention of the Jamesian population.
C) Specify whether it has already chosen a home port for workforce transportation.
D) Specify the different scenarios planned for the location where its construction preparation operations will be located.
E) Specify which measure would be implemented to address the concerns of the Société de développement de la Baie-James regarding road infrastructure and local economic benefits, for example, a program to monitor the positive impacts on the training, employment and economy of the regional communities in which the Town of Matagami could be an active partner;
F) Propose mitigation measures to encourage the retention of Jamesian youth in the region.

INDIGENOUS PEOPLES

Consultations with Indigenous Communities

CEAA-94	Addition of the Waskaganish and Waswanipi Communities
CEAA	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Chapter 5 Public Hearings Letter from the Canadian Environmental Assessment Agency to the Proponent, dated November 30, 2018

CONTEXT AND RATIONALE:

Throughout the Agency's environmental assessment, it has added the Cree communities of Waskaganish and Waswanipi to its consultation based on their concerns about the project's impacts on increased road traffic, which could potentially affect their experience, use of resources, and access to the territory. In its letter dated November 30, 2018, concerning the concordance exercise in the Environmental Impact Assessment, the Agency asked the proponent to engage in discussions with these two communities in order to gain their perspectives and the information required for section 5 of the guidelines.

THE PROPONENT MUST:

A) Formally consult the communities of Waskaganish and Waswanipi to inform them about the project, inquire about their use of the land for traditional purposes, and gather their suggestions and concerns regarding mitigation measures.
B) Evaluate the project's impacts on the Cree communities of Waskaganish and Waswanipi.
C) Update Map 6–22 of the Environmental Impact Assessment with all the new information collected during the consultation of the Waskaganish and Waswanipi Cree communities.

Note: the proponent must inquire about the level of confidentiality required from the various sources consulted and provide the responses confidentially to the Agency, as appropriate.

CEAA-95	Addition of the RE1 and RE3 Tallymen
CEAA	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Chapter 5 Public Hearings Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-67

CONTEXT AND RATIONALE:

In the concordance exercise on the Environmental Impact Assessment, the Agency recommended that the proponent re-consult the RE1 and RE3 tallymen.

In the answer to the concordance (A-67), the proponent indicates that the initial consultations with the RE1 tallyman date back to 2012 and that he nonetheless participated in the meetings organized by the proponent. Although this tallyman initially said he had no interest in the project, he may have changed his mind, or his use of the land changed since 2012.

In the response to the concordance (A-67), the proponent states that the RE3 tallyman was not consulted because his territory is outside the study area.

As part of the Agency's assessment of the project's impacts on the Cree communities' Indigenous and treaty rights, it will assess the extent to which the increase in road traffic will affect the use of the RE3 land for traditional purposes. With the information presented in the current impact assessment, it is difficult for the Agency to comment on the severity of the impacts to rights in relation to these aspects.

THE PROPONENT MUST:

A) Re-consult the RE1 tallyman to confirm that he still has no interest in or concerns about the project and inquire about his suggestions for mitigation measures.
B) Evaluate the project's impacts on RE3 use and access, particularly considering the opinion of the RE3 tallyman, its use of the territory near the James Bay road, his concerns about the project as well as his suggestions for mitigation measures. The proponent must, among other things, consider the effects related to in relation to increased road traffic.
C) Update Map 6–22 of the Environmental Impact Assessment with all the new information collected during consultations.

Note: the proponent must inquire about the level of confidentiality required from the various sources consulted and provide the responses confidentially to the Agency, as appropriate.

CEAA-96	Study Area and Map of the Human Environment Components
CEAA	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.4 Social Environment Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-31

CONTEXT AND RATIONALE:

In section 6.4.1 of the Environmental Impact Assessment (EIA), the proponent indicates that some users of the two adjacent traplines (VC33 and VC35) have said that they would have liked the study area to be larger in order to include the north shore of Eastmain River where traditional activities are practised by their families. The proponent then goes on to state that the Eastmain River is not an environmental component likely to be affected by project activities and therefore, it was agreed to keep the boundaries as proposed.

The north shore of Eastmain River is just over 5 km from the project, which is relatively close. The proponent did not document the specific land use on this shore for VC33 and VC35 trapline users (presence of camps, valued areas, etc.). In addition, use of the RE3 trapline does not appear along James Bay Road.

In the response to the concordance (A-31), the proponent states the importance of Eastmain River in the Cree cultural landscape: " Even though the Eastmain River was diverted in 1980, it could still represent a significant cultural landscape for Crees. Its great popularity in the past and importance as a key navigable waterway (historical site and place of subsistence for past generations) imply a strong attachment to this river which, is still popular thanks to its resources. The transfer of sites of memory is still active based on information collected during consultations".

Map 6–22 of the EIA illustrates the human environment study area chosen by the proponent. Much information and relevant details appear on pages 6–140 to 6–142 of the EIA, but it is difficult to place these within the context of Map 6–22. It should be possible to identify the various areas valued for specific activities with the use of pictograms in these areas (e.g. beaver dams, goose hunting ponds, moose hunting grounds, fishing areas) directly on Map 6–22.

During the Agency's consultations, the communities of Waskaganish and Waswanipi mentioned their concerns about the deforestation caused by the project. They said they would like to know the exact locations where deforestation work will be required for the project.

THE PROPONENT MUST:

A) Re-evaluate the human environment study area, considering information collected from the RE1 and RE3 tallymen, as well as the communities of Waskaganish and Waswanipi, as applicable (see question CEAA-95).
B) Incorporate a portion of the north shore of Eastmain River into the human environment study area given its importance in the Cree cultural landscape and the role it plays in disseminating Cree knowledge.
C) On Map 6–22 of the EIA, identify the camps and locations where the traditional activities of VC33 and VC35 tallymen took place on the north shore of Eastmain River, and do the same with the RE3 tallyman if there are camps and/or activities that take place near James Bay Road.
D) On Map 6–22, specify/indicate the traditional activities taking place within the valued areas (presence of valued species, goose hunting ponds, beaver dams and conservation areas, prized fishing areas, mushroom harvest sites, etc.).
E) On Map 6–22, indicate the areas or sites that are valued for their use by non-Indigenous peoples.
F) On Map 6–22, indicate the different areas to be deforested as part of the project (including the electricity transmission line).
G) Integrate the overlay of the mining infrastructure, as shown on Map 7-5, with Map 6–22 to identify the location and areas of the planned infrastructure and add the exclusion boundary for traditional activities planned around the mine to promote user safety.

Note: the proponent must inquire about the level of confidentiality required from the various sources consulted and provide the responses confidentially to the Agency, as appropriate.

Indigenous Community Engagement

CEAA-97	Future Consultations and Monitoring Committee
CEAA	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 5.7 Ongoing Consultation Initiative and Commitment to Stakeholders Section 5.7.2 Monitoring Committee EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Chapitre 7 Identification and Assessment of Environmental Impacts Section 7.4.1 Current Use of Land and Resources for Traditonal Purposes Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-68

CONTEXT AND RATIONALE:

In section 5.7.2 of the Environmental Impact Assessment (EIA), the proponent indicates that a monitoring committee will be struck under the *Mining Act* and that it is intended to include a representative of the Eastmain Band Council, a member of the Eastmain community, and the RE2 tallyman or a member of his family.

In Table 7-5 of the EIA, the proponent includes the following measures to mitigate the project's impacts on traditional land use, the perception of the physical environment, and quality of life:

- UTT 02 – Establish and maintain a communication plan to inform the public, users and municipal authorities about the start and progress of the work;
- PER 01 – Make monitoring and environment quality monitoring reports available;
- VIE 01 – Establish an ongoing dialogue with the public through an internal community relations service and communication program.

In section 7.4.1 of the EIA, the proponent adds: "To allow them to adapt their practices to these new conditions, land users will be informed before the work begins and of its progress".

In Table G-2 of Appendix G of the EIA, the proponent states that the Eastmain community has questioned the proponent about its intention to hire a liaison officer to facilitate the hiring of Cree workers. The proponent indicates that a "liaison officer position is planned; however, the role and responsibilities have not yet been defined." In Table 68-1 of the response to the concordance (A-68), the proponent states that the community proposed hiring a liaison officer as a mitigation measure: "a Cree representative must be put in place to liaise between the Cree workers/communities and the mining company in the event of a dispute. This liaison officer or mediator will moderate problematic situations." Similarly, women and elders suggested that "a representative should be appointed to mediate between the community and the mine".

As part of the Agency's consultations, the Eastmain community raised its concerns about the quality of the aquatic environment and the project's potential impacts on aquatic habitats and the wildlife that use them. The community also indicated to the Agency that it would like to participate actively in all phases of the project, particularly with respect to monitoring the mine's operations. The community of Waskaganish raised concerns about the final mining effluent and water quality.

THE PROPONENT MUST:

A) Specify the mandate and frequency of the meetings of the monitoring committee struck under the *Mining Act*. The proponent must specify how it intends to encourage the participation of the VC33, VC35 (Eastmain), and R08 (Waskaganish) trapline tallymen in this monitoring committee during the life of the project.
B) Present how it intends to foster ongoing dialogue with the public and land users by developing, in collaboration with the RE2, VC33, VC35 (Eastmain), and R08 (Waskaganish) tallymen and their respective band councils, a complete communication plan adapted to each community, by indicating the type of information that will be shared, as well as how and how often.
C) Specify the liaison officer's role and responsibilities for each phase of the project, indicate whether they will play a role in one or more committee(s), and indicate whether it is expected that they will be proficient in the Cree language and the Cree dialects of Waswanipi and Waskaganish.

Indigenous Issues – Land and Resource Use

CEAA-98	Pressure on Resources and Recreational Activities
CEAA	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Chapitre 7 Identification and Assessment of Environmental Impacts Section 7.1.3 Impact Assessment Section 10.4 Environmental Monioring During Operations Section 10.4.6 Monitoring the Social Environment EIA Reference: Volume 3—Appendix G Stakeholers' Concerns

CONTEXT AND RATIONALE:

In Table 7-5 of the Environmental Impact Assessment (EIA), the proponent details the following mitigation measures:

- UTT 01 – Ensure workers are aware of traditional practices of Indigenous communities and the activities of Indigenous users of the territory;
- UTT 04 – Prohibit hunting and recreational fishing for workers at the mine site;
- VIE 05 – Establish with the representatives of the Cree community an annual calendar of the main traditional activities and set time slots for production stoppages based on their participation in these activities;
- UTT 03 – Conduct beaver dam inspections at regular intervals to identify any changes to the CE2 water level and flow, and notify the community of these changes.

As part of the Agency's consultations, the Eastmain community raised concerns about increased pressure from workers on fish and wildlife resources and other recreational activities in general.

In Table G-2 of Appendix G of the EIA, the proponent states that the Eastmain community expressed the desire to see the following two mitigation measures implemented:

- Set up a special hunting and fishing area, as was done with the Weh-Sees Indohoun special zone during the Hydro-Québec projects;
- Set up a security patrol to prohibit non-Indigenous workers from hunting and fishing on, or stealing equipment from, the Eastmain territory.

As part of the Agency's assessment of the project's impacts on Cree communities' Indigenous and treaty rights, it will seek to assess the extent to which Cree communities have confidence in the mitigation measures suggested by the proponent. This assessment can be conducted with regard to the level of community participation in developing these measures. With the information presented in the current Environmental Impact Assessment, it is difficult for the Agency to comment on the severity of the impacts to rights in relation to these aspects.

THE PROPONENT MUST:

A) Indicate the specific means it will use to prohibit hunting, trapping and fishing among its employees (for example, a clause in employment contracts, surveillance or search of baggage, awareness, agreement with the competent authorities) and justify the effectiveness of such a measure.
B) Assess the possibility of banning fishing and trapping equipment at the workers' camp.
C) Clarify whether complaints from Cree land users (pressures on resources, vandalism or theft, drug trafficking involving mine employees) could be referred directly to the liaison officer or the monitoring committee to be created as part of the project in order to address complaints from Cree land users.
D) Evaluate the possibility of creating, in collaboration with the RE2, VC33, VC35 and R08 tallymen, a particular protocol or mechanism for resolving conflicts in the event of problems relating to resource and land use by workers.
E) Evaluate the possibility of setting up, in collaboration with other companies or proponents who are active on the territory, competent Cree and provincial authorities, a new special hunting and fishing zone, such as that of the Weh-Sees Indohoun.

CEAA-99	Land and Resource Use – Wildlife (Except Caribou)
CEAA	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.4 Social Environment Section 7.3.4 Ichthyofauna Section 7.4 Impacts on the Social Environment Section 7.4.1 Current Use of Land and Resources for Traditonal Purposes

CONTEXT AND RATIONALE:

In section 7.4.1 of the Environmental Impact Assessment, the proponent states that "Traffic on the road network, noise, vibration and mine activities could disturb some wildlife species of interest near the mine site and road infrastructure, causing them to move to quieter sectors. Hunters and trappers may therefore have to change their practices and move as well. [...] In addition, as mentioned during the 2017-2018 consultation, their perception of the quality and taste of the wildlife hunted on the land near the mine could be affected, leading them to lose interest in this portion of their trapline.

In section 7.3.4, the proponent states that "Kapisikama Lake will gradually dry out as the pit expands. This lake has a population of yellow perch. A fish habitat compensation plan will be developed (NOR 16) to address this impact." In section 7.4.1, the proponent states that fishing, trapping (beaver, bear) and snaring (hare, etc.) are also practised and could be affected if the affected species move away or temporarily avoid the area.

As part of the Agency's consultations, the Eastmain community raised concerns about the fragmentation of habitats of culturally valued and at-risk species and those considered "sensitive" by its members such as moose, wolf and woodland caribou, as well as aquatic fauna and the project's potential impacts on their habitat. The community also indicated to the Agency that they are concerned about possible behavioural changes among large mammals due to the

presence of the mine and the workers' camp. It also expressed a concern about possible behavioural changes among the black bear around the workers' camp and the issues this could cause with respect to worker safety.

In Table 7-5, the proponent proposes the following mitigation measure:

- FAU 05 – Ensure workers are aware that it is important not to feed animals and not to leave food lying around so as not to attract wildlife near work areas.

As part of the Agency's consultations, the Waskaganish community raised concerns about the project's potential impacts on wildlife in the R08 trapline. The community said it would like to know which animals will be most affected by the project.

As part of the Agency's assessment of the project's impacts on Cree communities' Indigenous and treaty rights, it will seek to assess to what extent the project may affect land users' abilities to make use of the resources and rely on them, including the means, diversity, quantity and availability of resources and habitat in culturally significant areas. With the information presented in the current Environmental Impact Assessment, it is difficult for the Agency to comment on the severity of the impacts to rights in relation to these aspects.

THE PROPONENT MUST:

A) Present, for each species deemed sensitive by the Eastmain community, the behavioural changes listed in the literature or in reports from similar projects, for each species with regard to the presence of a mining project (behavioural changes toward humans, movement and migration, for food and reproduction). The proponent must popularize this information and group it in a single overview table intended for the Cree public (if possible, with photos and words translated into Cree).
B) Propose mitigation measures related to the modification of species behaviours, particularly for bear management in relation to workers' safety within the mine infrastructure, workers' camp and the service station area.

CEAA-100	Land and Resource Use – Caribou
CEAA	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.3 Impacts on the Biological Environment Section 7.3.2 Large Fauna Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-31-2, A-42

CONTEXT AND RATIONALE:

In section 7.3.2 of the Environmental Impact Assessment (EIA) and in the responses to the concordance (A-31-2 and A-42), the proponent indicates that it sought information from the tallymen to confirm whether woodland or migratory caribou were present in or near the study area. Based on the fact that the caribou presence was less frequent than before, the proponent inferred that hunting is less frequent than before and that it would be less so in the future, at least by the time the vegetation recovers.

The proponent does not appear to have gathered information about whether woodland and migratory caribou are being hunted at this time, how often and where this harvest, if any, occurs. The EIA remains unclear and does not provide a complete picture of this harvest for traditional purposes. Therefore, it is not possible to determine whether this hunt and the harvest rate have varied over time and how this project will affect this hunt.

The proponent does not propose any specific mitigation measures, monitoring or follow-up programs for woodland and migratory caribou since it does not feel this project will affect caribou. The proponent did not assess the project's potential cumulative impacts on these two species.

As part of the Agency's consultations, the Eastmain community raised concerns about the project's potential impacts during the mine's construction and operation, which could result in habitat loss and fragmentation for the woodland caribou, a species that it considers "sensitive".

As set out in the "Technical Guidance for assessing the Current Use of Lands and Resources for Traditional Purposes under the *Canadian Environmental Assessment Act, 2012*" (https://www.canada.ca/content/dam/ceaa-acee/documents/policy-guidance/assessing-current-use-lands-resources-traditional-purposes/current_use_final_draft-eng.pdf), the proponent must consider, as part of current use, "uses that may have ceased due to external factors […] if they can reasonably be expected to resume once conditions change".

As part of the Agency's assessment of the project's impacts on Cree communities' Indigenous and treaty rights, it will seek to assess to what extent the project may affect land users' abilities to make use of the resources and rely on them, including the means, diversity, quantity and availability of resources and habitat in culturally significant areas. The Agency will also seek to assess the possible inequity of impacts on the ability of future Cree generations to harvest caribou, a species of cultural importance for them. Based on the information in the current Environmental Impact Assessment, it is difficult for the Agency to comment on the severity of the impacts on rights with regard to these aspects.

THE PROPONENT MUST:

A) Provide an overview of past, current and projected woodland and migratory caribou use in the RE2, RE3, VC33, VC35 and R08 (and RE1 if required, see question CEAA-95). To do this, indicate the approximate annual harvest rates over the last several decades and use the time limits recommended by Cree land users to do this.
B) Document Cree knowledge regarding the fragmentation of the woodland and migratory caribou habitat in the area with regard to recent land development.
C) Propose mitigation measures, defined jointly with the Cree communities of Eastmain and Waskaganish, to decrease the project's potential impacts, including those associated with the resulting increased road traffic, on the woodland and migratory caribou harvest for current future land users.
D) Re-examine the current use of land and resources for traditional purposes monitoring program based on information on annual harvest rates for migratory and forest caribou.

CEAA-101	Land and Resource Use – Impacts of Increased Road Traffic
CEAA	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.4 Preparatory Work Section 4.4.1 Transportation Section 4.12 Concentrate Transport to Matagami Section 4.14 Project Execution Section 5.6 Galaxy's Response to Concerns, Expectations and Recommendations Regarding the Project EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.4 Social Environment Section 6.4.7 Infrastructure Section 7.4 Impacts on the Social Environment Section 7.4.2 Infrastructure

CONTEXT AND RATIONALE:

In section 6.4.7 of the Environmental Impact Assessment, the proponent states that "According to SDBJ [Société de développement de la Baie-James] data, 56,139 vehicles used James Bay road in 2014 and 55,532 vehicles in 2017, for a daily average of 150 vehicles".

In section 7.4.2, the proponent states that increased traffic associated with the project "will require a change in James Bay road users' habits: they will need to be doubly careful since they will share the road with more vehicles, many of which will be heavy vehicles. That being said, with the mitigation measures that will be implemented, drivers should be able to quickly adapt to the additional traffic that will be generated".

In Table 7-5 of the EIA, the proponent details the following mitigation measures:

- FAU 03 – Identify and report areas with the highest risk of collision with large mammals through adequate signage
- CIR 01 – Establish a traffic management plan, including the addition of signage.

The proponent does not provide details on this traffic management plan, namely, whether it includes:

- Training for truck drivers prior to the moose and goose hunt season (e.g. awareness regarding courtesy with other road users);
- The use of radios by truck drivers to promote communications between road users;
- Signage at snowmobile crossings and access areas to Cree camps and the addition of voluntary speed reductions for truck drivers in these areas, in collaboration with the relevant provincial authorities.

In section 5.6, the proponent states that during the annual goose hunt season, "The noise level of certain activities, such as upkeep of the industrial facility, will be diminished during the goose-hunting season, so as to limit impacts on hunting activities." and that "Cree workers will also receive days off during the goose-hunting season".

As part of the Agency's consultations, the Eastmain, Waskaganish and Waswanipi communities raised their concerns about the increase in road traffic on James Bay Road and its potential impacts on individual safety and accident rates, wildlife disturbance due to various nuisances (noise, light, dust), and its impacts on traditional activities (risk of collision and avoidance, especially for large mammals).

THE PROPONENT MUST:

A) Consult the RE2, RE3, VC33, VC35 and R08 (and RE1 if required, see question CEAA-95) tallymen to inquire about their travel habits on the roads and identify key locations for access to camps, snowmobile trails and wildlife crossings to improve its traffic management plan. In the event that transportation activities could be changed, explain the measures or changes that would be made. If not, justify the reasoning.
B) Evaluate the impacts of increased traffic at the service station area associated with the project on Cree communities' access to gasoline and drinking water.
C) Specify the mitigation measures that will be implemented to limit the project's impacts during the annual moose and goose hunt seasons, including the suspension of extraction activities during the goose hunt and adapting the operations' schedule based on these periods of intensive land use, by considering the tallymen affected by the project. Specify whether it intends to establish a special traffic management plan during these periods.
D) Specify the main elements of the traffic management plan.
E) Add the increase in road traffic associated with the project to the assessment of the project's cumulative impacts on the traditional land use by the Cree.

CEAA-102	Land Use and Landscape – Closure Plan
CEAA	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.2 Impacts on the Physical Environment Section 7.4 Impacts on the Social Environment Section 7.4.1 Current Use of Land and Resources for Traditonal Purposes Section 7.4.4 Quality of Life

CONTEXT AND RATIONALE:

In section 7.4.1 of the Environmental Impact Assessment (EIA), the proponent describes the future traditional use of the proposed mining site once restored: "the Cree users interviewed during the consultations remain skeptical in this regard since they believe it will not be possible to reuse the restored site because of potential contamination (Chapter 5). Galaxy is committed to restoring its mine site in accordance with MERN requirements, which aim to see sites

restored to a satisfactory state, including limiting the production and propagation of contaminants likely to harm the receiving environment, eliminating unacceptable risks to health and ensuring the safety of people [...]".

In section 7.4.4 of the EIA, the proponent states that "The negative perception associated with the site remains, is one element that was brought out during the consultation activities that took place within the Eastmain community in 2017-2018. The concerns pertain to possible contamination of the lakes and watercourses surrounding the mine, the effect on resources (fish, wildlife, plants or other natural resources) used for traditional purposes, as well as its effect on human health. Some people are also worried about the potential effects on future generations. The potential impacts on the perception of the physical environment during the post-rehabilitation phase are negative. All in all, implementation of the rehabilitation plan complies with MERN requirements, and the monitoring program arising out of those should help to minimize this impact."

As part of the Agency's assessment of the project's impacts on Cree communities' Indigenous and treaty rights, it will seek to assess the extent to which the project compromises or impairs the ability of future Cree generations to use the land and benefit from its natural heritage. With the information presented in the current Environmental Impact Assessment, it is difficult for the Agency to comment on the severity of the impacts to rights in relation to these aspects.

THE PROPONENT MUST:

A) Consult the RE2 tallymen and his family regarding the mine rehabilitation plan and the type of vegetation to be favoured for reforestation and revegetation of the ore dumps to encourage the resumption of traditional activities by future generations on the mining territory. The consultation should also focus on identifying the infrastructure that could be left in place to benefit land users.
B) Analyze these users' suggestions and justify the options chosen.
C) Specify in which year(s) of the project it plans to vegetate the waste rock stacks and whether gradual revegetation is possible.

CEAA-103	Land and Resource Use – Cumulative Impacts
CEAA	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.4 Impacts on the Social Environment Section 7.4.1 Current Use of Land and Resources for Traditonal Purposes Section 8.6 Analysis of Cumulative Effects on VCs Section 8.6.2 Land Use for Traditional Purposes

CONTEXT AND RATIONALE:

In section 8.6.2 of the Environmental Impact Assessment (EIA), the proponent describes the numerous events and projects that have had an impact on the Cree communities' land use since the 1980s (hydroelectric projects, forest fires, roads and airports, other mining projects, massive influx of non-Indigenous workers in several waves). It states that "[projects on the land] result in changes to parts of the traplines [...] which, cumulatively, can disrupt Cree activities in the long run. However, although the projects mentioned will change the way these activities are practised on the territory, they will not prevent their continuation". It adds: "The cumulative effect on land use is limited to a small area. [...] The cumulative effect on this VC could increase with completion of the potential mining projects in the area [...] Noise, light, dust, increased traffic, loss of wildlife habitat and related traditional activities will affect a growing number of users for each new project on the territory, especially since the number of users is expected to continue growing". It concludes that: "With respect to the project [...],the cumulative effect on the Crees' current use of the land and resources is considered of low intensity, point-like in extent and long-term in duration; therefore, low. The cumulative effect of the project on Cree use of the land for traditional purposes is therefore non-significant". The proponent therefore concludes that no specific mitigation or monitoring measures are required for this valued component.

Based on the various aspects that are detailed, it is difficult to understand how the proponent used its methodology to arrive at this conclusion. As part of the Agency's consultations, the Eastmain community raised concerns about potential cumulative impacts on its users in the area, particularly as a result of the Rose mining project, which would also take place in the Eastmain community's traplines (RE1). The community also said that it could not withstand

further contamination of its sources of potable drinking water: “The streams near the project flow into Eastmain River. In the event of chemical spills or infiltration, which could easily happen, enormous social and environmental impacts are to be expected near the River and on the land. Damage has already been caused by the hydroelectric projects at Eastmain River and on the land, and the Eastmain Cree and Nation’s way of life cannot absorb any more.”

THE PROPONENT MUST:

A) Justify the levels of intensity, extent and duration determined for the analysis of cumulative impacts on the Cree’s current use of lands and resources and, if necessary, re-evaluate the conclusion.
B) Present proposed measures to support the continuity of traditional activities, including the information collected from the Cree users of the territory, and explain how it intends to consider the mitigation measures they have identified, if any.
C) Indicate how it intends to ensure, in a possible synergy with these other stakeholders, that relevant mitigation measures will be put in place if cumulative impacts are perceived by the land users.

Indigenous Issues – Human Health

CEAA-104	Toxicological Risk Assessment – Baseline Data and Identification of Contaminants of Potential Concern
HC-1 HC-2	EIA Reference: Atmospheric Dispersion Modelling Study Answers to the Canadian Environmental Assessment Agency’s questions and comments—Concordance Stage: A-80, Appendix CEAA-44 and Toxicological Risk Assessment (Sanexen, 2018)

CONTEXT AND RATIONALE:

The proponent has completed a toxicological risk assessment. This is a very good practice in the context of this project. It allows for a better understanding of the project’s potential impacts on the biophysical environment.

This study is, however, largely based on data generated by atmospheric dispersion modelling. In the response to the concordance (A-80), the proponent states that “Modelling of the air dispersion shall be modified to add emissions from mobile equipment, other than vehicles (generators and concrete plant) on the site and satisfy CEAA’s request”.

In addition, in a toxicological risk assessment, all contaminants of potential concern that may be released into the environment (in water, air, soil, etc.) should be taken into account. Justifications must also be provided for any identified substances that were not taken into account. However, in section 2.4 of the toxicological risk assessment, the proponent states that “all substances that have been modelled for atmospheric dispersion have been taken into account as part of the risk assessment”.

Only substances that would be emitted into the atmosphere appear to have been considered for risk assessment.

THE PROPONENT MUST:

A) Update the toxicological risk assessment to take the enhanced atmospheric dispersion modelling into account.
B) Clarify whether substances, other than those listed in section 2.4 and Table 1 of the toxicological risk assessment, could be found in the environment as a result of project activities. Justifications must be provided for any identified substances that were not taken into account as part of the risk assessment.

CEAA-105	Toxicological Risk Assessment – Exposure Pathways
HC-3	Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: Appendix CEAA-44 and Toxicological Risk Assessment (Sanexen, 2018)

CONTEXT AND RATIONALE:

In the proponent's toxicological risk assessment, certain contaminant exposure pathways may have been underestimated. For example, contaminants that would be introduced into surface water and/or deposited on soils by way of dust (which could integrate into the food chain) were not taken into account. This could directly or indirectly modify the findings and/or recommendations in the toxicological risk assessment.

THE PROPONENT MUST:

A) Specify the various exposure pathways in the toxicological risk assessment that could have been underestimated and evaluate the potential influence of these underestimations on the assessment's findings.

CEAA-106	Toxicological Risk Assessment – Contaminant Monitoring
HC-4	Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: Appendix CEAA-44 and Toxicological Risk Assessment (Sanexen, 2018)

CONTEXT AND RATIONALE:

The toxicological risk assessment and comments in Appendix 3 of this study indicate, among other things, the potential underestimation of certain exposure pathways and calculated risk indices greater by unit since they only take exposure to background noise into account. Since this means that the level to which human receptors are currently exposed to (via air, water, soil, foodstuffs)—without considering the project's contributions—could result in potential adverse impacts on health, an environmental monitoring program based on the protection of human health is necessary.

THE PROPONENT MUST:

A) Propose an environmental monitoring and follow-up program for relevant contaminants in the various media (e.g. drinking water, air, soil, traditional food, etc.) based on criteria for the protection of human health. This monitoring would, in particular, confirm the hypotheses and findings in the toxicological risk assessment.

CEAA-107	Toxicological Risk Assessment – Comments on Methodology
HC-i	Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: Appendix CEAA-44 and Toxicological Risk Assessment (Sanexen, 2018)

COMMENTS FOR THE PROPONENT:

In the toxicological risk assessment, the proponent has calculated the average exposure dose (i.e. it has amortized a dose for a certain period of exposure over a longer duration, for example, in the case of the exposure scenario for the service station area, it amortized 25 weeks of exposure over 52 weeks). However, this practice can lead to an underestimation of the health risks.

Exposure amortization should be avoided unless there is sufficient scientific justification for the chemical substance and exposure scenario.

Guidelines for evaluating exposures that are discontinuous or short-term are described in the following documents:

- Health Canada. 2010. Federal Contaminated Site Risk Assessment in Canada. Part V: Guidance on Human Health Detailed Quantitative Risk Assessment for Chemicals (DQRAChem). Contaminated Sites Division, Safe Environments Directorate, Ottawa.
- Health Canada. 2013. Federal Contaminated Site Risk Assessment in Canada: Interim Guidance on Human Health Risk Assessment for Short-Term Exposure to Carcinogens at Contaminated Sites. Contaminated Sites Division, Safe Environments Directorate, Ottawa.
- Health Canada. 2016. FCSAP memorandum: Introductory guide to the assessment of human health risks posed by contaminated sites due to chronic and non-chronic exposure to chemicals. Contaminated Sites Division, Safe Environments Directorate, Ottawa.

CEAA-108	Traditional Food - Baseline Data
HC-5	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.3 Biological Environment Section 6.3.1 Vegetation

CONTEXT AND RATIONALE:

In section 6.3.1 of the Environmental Impact Assessment, the proponent has presented a chemical analysis of plants of traditional interest for Aboriginal people. This is a very good approach considering, in particular, the importance of these resources for the First Nations and the concerns expressed by some of them with regard to the potential contamination of traditional food. This analysis can also help to demonstrate the effectiveness of mitigation measures in limiting the release of contaminants into the environment.

However, the proponent does not appear to have performed a chemical analysis of other resources harvested by the First Nations as tradional food (e.g. sturgeon, beaver).

THE PROPONENT MUST:

A) Perform a chemical analysis of other resources harvested by the First Nations as tradional food (e.g. sturgeon, beaver) in collaboration with them. This collaboration could help identify species that, if any, should be monitored.

CEAA-109	Traditional Food – Quality Monitoring
HC-7	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.4 Impacts on the Social Environment Section 7.4.1 Current Use of Land and Resources for Traditonal Purposes Section 7.4.4 Quality of Life Section 8.6.2 Land Use for Traditional Purposes Section 8.6.2.4 Cumulative Effects Table 7-5 List of Applicable Mitigation Measures Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: Appendix CEAA-44 and Toxicological Risk Assessment (Sanexen, 2018)

CONTEXT AND RATIONALE:

According to the information found in the environmental impact study, the potential contamination of traditional food seems to be a major concern for the users of the territory:

- Section 7.4.1: “as mentioned during the 2017-2018 consultation, their perception of the quality and taste of the wildlife hunted on the land near the mine could be affected, leading them to lose interest in this portion of their trapline”.
- Section 7.4.1: “It should be noted, however, that the Cree users interviewed during the consultations remain skeptical in this regard since they believe it will not be possible to reuse the restored site because of potential contamination”.
- Section 7.4.3: “The negative perception associated with the site remains, is one element that was brought out during the consultation activities that took place within the Eastmain community in 2017-2018. The concerns pertain to possible contamination of the lakes and watercourses surrounding the mine, the effect on resources (fish, wildlife, plants or other natural resources) used for traditional purposes, as well as its effect on human health. Some people are also worried about the potential effects on future generations”.
- Section 8.6.2.4: “Users worry about the risk of contamination of resources and the water system as well as an increase in cancer rates due to contaminants in the food chain. They also worry about contamination of vegetation, especially by dust. This worry is even greater among Cree users located between the three mines”.

At table 7-5, the proponent intends to make available the environmental quality monitoring reports. However, without specific monitoring of the quality of traditional food, it may be difficult to communicate the risks (or lack thereof) to the population.

A monitoring program for traditional food quality should be implemented by the proponent, given that:

- Traditional foods play an important part in the diet of Cree communities;
- It is important that the communities do not avoid this resource because they assume it is contaminated by activities of the project;
- The concentrations of certain contaminants (present in the environment) already appear to be above the threshold concentration for carcinogenic effects;
- Compliance with environmental regulations by itself may not be enough to provide an acceptable measure of health protection.

THE PROPONENT MUST:

A) Propose a program to monitor the quality of traditional food in the context of the need to protect human health, in collaboration with the users of the territory. This monitoring would, in particular, confirm the hypotheses and findings in the toxicological risk assessment.

CEAA-110	Drinking Water Quality
HC-8 CEAA	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 4.9 Water Management EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.4.3 Perception of Physical Environment Section 9.4 Preliminary Emergency Response Plan

CONTEXT AND RATIONALE:

In section 7.4.3 of the Environmental Impact Assessment, the proponent indicates that the drinking water wells at the km 381 Truck Stop appear to be important sources of drinking water for the Cree:

- “We note that the Cree users of the territory also go there to get drinking water when they live in their camps. There are two sources of drinking water in this area. No construction activity is likely to impact the drinking water wells of the km 381 Truck Stop”.

The draft emergency contingency plan does not specify whether measures have been planned to mitigate the potential impact of potential spills/accidents on sources of drinking water in the study area. For example, in the event of a spill/accident, does the contingency plan provide for prompt notification of the proprietor of the wells at the truck stop and of recreational users of waterways.

THE PROPONENT MUST:

A) Specify the mitigation measures included in the contingency plan to mitigate the potential impacts of potential spills/accidents on sources of drinking water in the study area.
B) Specify whether drinking water monitoring will be conducted at the truck stop as many users in the area are obtaining water from this location and evaluating the feasibility of making these results publicly available. If not, justify the reasoning.

CEAA-111	Air Quality
HC-9 CEAA	Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-4, A-15, A-80

CONTEXT AND RATIONALE:

In its response to the concordance, the proponent provides some information related to the potential impacts of road transport on air quality:

[Only in the French version of the EIA]: "Cree users of the territory believe that some disturbance will be experienced during the operational period beyond the limits of the area defined for air quality and soundscape modelling studies.";

A-4: "[…] the "Transportation and Traffic" item in the construction and operation phases includes local traffic between the borrow pits and the project boundaries, as well as the transportation of the concentrate to the Matagami transloading facility";

A-4: "There is very little additional information on the elements mentioned at this stage of the project. Here is the additional information available:"

A-80: "Modelling of the air dispersion shall be modified to add emissions from mobile equipment, other than vehicles (generators and concrete plant) on the site and satisfy CEAA's request. An analysis is being prepared as to see if the additional contribution of emissions from truck motors and dust generated by transport (coming-going) between the mine and Matagami will be perceptible in the modelling. This analysis will be provided to the CEAA once it is finished".

THE PROPONENT MUST:

A) Evaluate the impacts of the project and the cumulative impacts of increased traffic on the road network, during all phases of the project, on the health of Aboriginal peoples.
B) If impacts are anticipated, propose additional mitigation measures for these aspects to protect the human health of land users and their quality of life.

CEAA-112	Monitoring Programs of Effects of the Project on Cree Communities
CEAA	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.4 Social Environment Section 6.4.3 Territory Planning and Development Section 7.4 Impacts on the Social Environment Section 7.4.1 Current Use of Land and Resources for Traditonal Purposes Section 10.3 Environmental Surveillance Section 10.4 Environmental Monioring During Operations Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-68

CONTEXT AND RATIONALE:

In section 7.4.1 of the Environmental Impact Assessment (EIA), the proponent states: "Overall, the significance of the impact on land use during the operation phase is considered moderate".

Environmental monitoring and follow-up programs (Sections 10.3 and 10.4)

In the response to the concordance (Table 68-1), the proponent states that it has considered the following mitigation measure with respect to the concerns of users of the territory in relation to environmental monitoring: "[...]the implementation of an environmental monitoring program during the construction phase (Section 10.3 of the EIA), of environmental monitorings during operations (Section 10.4 of the EIA) and of post-rehabilitation monitorings (Section 10.5 of the EIA), as well as the PER 01 measure. Make sure surpervision and environment quality monitoring reports are available".

Follow-up program on traditional use of Aboriginal lands and resources (Section 10.4.6.2)

In section 10.4.6 of the EIA, the follow-up program proposed by the proponent "is intended to document and evaluate the effects that the project has on the practice of traditional activities of the RE2 trapline Tallyman and the members of his family, as well as the effectiveness of the measures implemented". However, this program does not cover the tallymen of traplines VC33 and VC35.

In addition, by way of example, the proponent could enhance this follow-up program by including the following aspects:

- Frequency of use of the camps and freedom from disturbance;
- Effectiveness of the traffic management plan;
- Access to camps during goose and moose hunting seasons;
- Number of users of traplines RE2, VC33 and VC35 enrolled in the Cree Hunters and Trappers Income Security Program over the years.

Socio-economic impact assessment program (Section 10.4.6.1)

During the Agency's consultations, the Eastmain community raised concerns about increasing the land value of land as well as the potential increase in drug trafficking related to the massive influx of non-Aboriginal workers.

The proponent could evaluate the opportunity to partner with schools in Cree communities to introduce young people to environmental science through environmental monitoring activities of the project.

THE PROPONENT MUST:

A) Specify how it intends to involve the tallymen of traplines RE2, VC33 and VC35 and/or the environmental services of the Eastmain community in monitoring and environmental activities, and whether follow-up reports will be presented to the monitoring committee.

B) Specify how it intends to make its follow-up reports available to the Cree community. Consider the posting of follow-up reports on its website and/or by presenting them directly to the environmental services of the Eastmain and Waskaganish Cree communities.
C) Specify its intent to recruiting tallymen for traplines VC33 and VC35 for monitoring the current use of land and resources for traditional purposes. If not, justify the reasoning.
D) Enhance the monitoring program on the current use of land and resources for traditional purposes, including considering camp attendance and tranquillity, the effectiveness of the traffic management plan, access to camps during goose and moose hunting seasons, the number of users enrolled in the Cree Hunters and Trappers Income Security Program. If not, justify the reasoning.
E) Indicate whether it intends to monitor the increase in land values in the territory of the Eastmain community as a result of the project and its possible effects on the population by including this factor in the monitoring of the socio-economic impact.

Access to Land – Navigable Waterways

CEAA-113	Access to Land – Navigable Waterways
TC-1	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.4 Social Environment Section 6.4.6 Use of Territory Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-31-1, A-43-1, A-54 and Appendix CEAA-31

CONTEXT AND RATIONALE:

In section 6.4.6 of the environmental impact study on land use, the proponent does not provide the necessary information to properly assess the effects of the project on use of waterways. Transport Canada is unable to determine if the project will require an order under the *Navigation Protection Act.* Additional information is required to determine the navigability and uses of the CE-2, CE-3, CE-4, CE-5 waterways and of Lake Kapisikama and Lake Asini Kasachipet.

THE PROPONENT MUST:

A) By means of appropriate plans and tools properly visualize the impacted waterways, consult all the following stakeholders: the tallymen, the band councils of the Eastmain, Waskaganish and Nemaska communities and/or the environmental services of these communities) for each of the following waterbodies and watercourses: CE2, CE3, CE4, CE-5, Lake Kapisikama and Lake Asini Kasachipet and obtain the following information in relation to each of these:
    - Local name (toponym) for this waterbody/waterway;
    - Identify waterways used as commercial or recreational transportation or navigation routes or as transportation or navigation by Aboriginal individuals for the purpose of exercising their rights recognized and confirmed by Section 35 of the *Constitution Act, 1982*;
    - Specify whether this use is either current and/or in the past;
    - Provide details as to current and or past use of this waterbody/waterway?
    - Indicate whether one or more of these waterbodies/streams could be used in the future, even if they are not currently in use. If so, indicate why and provide specific details on how they could be used;
    - Indicate whether waterbodies/waterways are used jointly to join inland waterbodies/waterways, creating a navigation network that would extend beyond the established limits of a known navigation channel.
B) To the extent that information is not available, specify the steps taken to obtain the information.

Aboriginal and Treaty Rights

CEAA-114	Access, Experience and Governance
HC-11 CEAA	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 5.4.1 Cree Stakeholders EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.4 Social Environment Section 6.4.3 Territory Planning and Development Section 7.4 Impacts on the Social Environment Section 7.4.1 Current Use of Land and Resources for Traditonal Purposes Section 7.4.3 Perception of Physical Environment

CONTEXT AND RATIONALE:

In section 7.4.1 of the Environmental Impact Assessment, the proponent states that the project could have an effect on the experience of Cree users in the area, despite compliance with noise emission regulations: "The tranquility of the areas, particularly of the Cree camps located on the periphery of the mine site, could also be affected by the construction activities of the mine. Users who customarily practise traditional activities in the area in which the infrastructure is to be built may also consider that their safety is compromised by the new use of the site. [...] In addition, from the construction phase and throughout the duration of the project, communication mechanisms will be established so that reports of disturbances will be collated and processed by Galaxy.

In section 5.4.1, the proponent states that the tallyman (VC35) "must go to km 381 of the James Bay Highway to access his trapline and he does not want blasting to affect road traffic on this road. He is also concerned about cumulative environmental impacts and about the use of his traplines by miners."

On page XVI of the environmental impact study, the proponent defines the role of the tallyman as follows: "trapper responsible for supervising other trappers and whose primary responsibility is the management of animal populations within the boundaries of the trapline for which he is responsible".

As part of its assessment of the impacts of the project on the ancestral and treaty rights of the Cree communities, the Agency should assess to what extent the project could undermine the sense of well-being, remoteness, solitude, intimacy and security of camps in the area. The Agency should also assess to what extent the project could affect the management capacity of tallymen, including their ability to manage resources and the traplines in a satisfactory manner if wildlife or users avoid the area or much of the trapline area. With the information presented in the current Environmental Impact Assessment, it is difficult for the Agency to comment on the severity of the impacts to rights in relation to these aspects.

THE PROPONENT MUST:

A) Define what "disturbances" are and whether a system for registering and resolving noise complaints will be implemented.
B) Evaluate the effects of the project on access to and the experience of the area for all users of the human environment study area, especially on the tallyman of trapline VC35 and his access to this land via the truck stop.
C) Include monitoring the effects of increased traffic on the quality of the camp experience and access to the area during annual goose and moose-hunting expeditions.
D) Assess the effects of the project on the sense of well-being of Cree users of the territory and identify mitigation measures that will be implemented. The promoter must propose measures to ensure that the sense of well-being, privacy and security at the camps of the territory of Cree users is preserved. If a relocation measure of some camps is being considered, explain how it plans to prevent feelings of remoteness and loneliness from relocation. If no action is proposed, justify the reasoning.
E) Evaluate the potential and perceived effects of the project on the management capacity of the tallymen of traplines RE2, VC33 and VC35, taking into account their views.

CEAA-115	Capacity of Users to Rely on the Area's Resources
HC-6 CEAA	EIA Reference: Volume 1—Main Report (Chapters 1 to 5) Section 5.7 Ongoing Consultation Initiative and Commitment to Stakeholders Section 5.7.2 Monitoring Committee EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 6.4 Social Environment Section 6.4.3 Territory Planning and Development Section 6.4.4.3 Income Section 6.4.6 Use of Territory Section 7.4 Impacts on the Social Environment Section 7.4.1 Current Use of Land and Resources for Traditonal Purposes Section 7.4.4 Quality of Life

CONTEXT AND RATIONALE:

In section 5.7.2 of the Environmental Impact Assessment, the proponent indicates that a follow-up committee will be established under the *Mining Act* and that it is expected that this will include a representative of the Eastmain Band Council, a member of the Eastmain community, in addition to the tallyman of trapline RE2 or a member of his family.

As mitigation measures related to land use for traditional purposes, the proponent proposes:

- "To allow them to adapt their practices to these new conditions, land users will be informed before the work begins and of its progress";
- "in order to allow Cree workers to maintain their cultural traditions, Galaxy will establish an annual schedule of the main traditional activities before the construction phase, and will schedule its production shutdowns according to their participation in these activities".

In section 6.4.4.3, the proponent states that: "In 1976, the JBNQA established the Cree Hunters and Trappers Income Security Program (ISP) to encourage the Cree, by providing income support, to continue their traditional hunting, fishing or trapping activities". According to the presented information, 73 people (59 adults and 14 children from 43 family units) from Eastmain were enrolled in the ISP in 2016–2017, providing average incomes of almost $17,000 per provider unit (family).

In section 6.4.6.1, the proponent reports that: "According to some users, a large part of their food comes from what they gather on the trapline, and when they stay there, this is their main food source […] The quantity of these foods depends on hunting success and activities per season".

As part of its assessment of the project's impacts on the Aboriginal and treaty rights of Cree communities, the Agency will assess the extent to which the project could affect the ability of users to use the territory's resources and to depend on these. With the information presented in the current Environmental Impact Assessment, it is difficult for the Agency to comment on the severity of the impacts to rights in relation to these aspects.

THE PROPONENT MUST:

A) Specify mitigation measures to limit the impact of the project on traditional food-gathering activities (e.g. hunting, fishing, picking berries/medicinal plants, etc.) and whether the monitoring committee could, as needed, adjust/adapt the mitigation measures in this regard.
B) Specify the number of users of traplines RE2, VC33 and VC35 who are registered with the Cree Hunters and Trappers Income Security Program and who rely on traditional activities for income and food. If possible, identify the camps of these users on map 6–22 of the Environmental Impact Assessment.
C) Assess the ability of users of the traplines RE2, VC33 and VC35 register to Cree Hunters and Trappers Income Security Program to continue to rely on resources during the different phases of the project and propose mitigation measures, as appropriate.

Note: the proponent must inquire about the level of confidentiality required from the various sources consulted and provide the responses confidentially to the Agency, as appropriate.

CEAA-116	Inequity of Impacts
CEAA	EIA Reference: Volume 2—Main Report (Chapters 6 to 11) Section 7.1.3 Impact Assessment Section 7.4 Impacts on the Social Environment Section 7.4.2 Infrastructure Section 7.4.4 Quality of Life Answers to the Canadian Environmental Assessment Agency's questions and comments—Concordance Stage: A-68

CONTEXT AND RATIONALE:

In Table 7-5 of the Environmental Impact Assessment (EIA), in its quality of life mitigation measures, the proponent indicates that it will prohibit alcohol consumption at the workers' camp on the site as well as any form of video lottery.

In the mitigation measures section for the local and regional economy, the proponent does not propose any measures to promote the training and employment of Cree women.

In section 7.4 of the EIA, the proponent anticipates a significant increase in vehicle traffic at the km 381 Truck Stop during the operational phase due to the presence of the workers (nearly 300 workers during construction phase), contractors and subcontractors involved in the project. In section 4.15.5 of the Environmental Impact Assessment, the proponent states that it plans to house some of its workers at the truck stop with the provision of 130 rooms during the construction phase and 40 rooms during the operational phase. The proponent adds that "The main problem with using the km 381 truck stop is that it is a public facility and alcohol is permitted whereas the worker' camp on the project site will be dry. Galaxy is looking at how to manage the different conditions for employees at the km 381 truck stop and at the site".

In the course of its discussions with the Cree communities, the Agency noted that the km 381 Truck Stop is frequently used by all the Cree communities of the James Bay region in their various movements on the territory, particularly to obtain gasoline and drinking water.

In the response to the concordance (Table 68-1), the proponent states that during its consultations with the Eastmain community, the women in the community named the following concerns:

- Galaxy shall organize a workshop on sexual harassment intended for Indigenous and non-Indigenous people.
- A grievance procedure shall be implemented to ensure support to victims of sexual harassment. After a while, a liaison officer or mediator shall contact the victims for follow-up. The agent shall be a woman to facilitate thrust.

The proponent states that these concerns have been addressed by three mitigation measures (ELR 05, UTT 01 and VIE 01). However, these mitigation measures proposed by the proponent do not address the concerns raised by Cree women regarding sexual harassment. The significant increase in the number of men using the km 381 Truck Stop, which remains a public space, may be conducive to situations of sexual harassment.

The women from the community also made suggestions on the adjustment of work schedules for women with young children, benefits for employees with dependent children, and the proponent's investment in some school programs, because of the impact its project will have on children. The proponent states that it intends to partially address its concerns in the content of the impacts and benefits agreements.

In Table G-2 of Appendix G-5, the proponent indicates that the community asked if jobs will be available for women from the community, to which the proponent responded that all jobs will be open to both men and women. There will be jobs that are more conventionally occupied by women.

The Agency suggests that the promoter consult with the Cree Women of Eeyou Istchee Association, which has expertise in gender equity.

In section 10.4.6.3, the proponent presents a quality of life and well-being monitoring program.

THE PROPONENT MUST:

A) Explain how it intends to supervise the alcohol consumption of its employees staying at the truck stop.
B) Indicate how it intends to promote the creation of a safe and sexual harassment-free environment for Cree women at the km 381 Truck Stop, which will remain a public space, and what preventive and response measures would be appropriate in this framework, considering the advice from the Cree Women of Eeyou Istchee Association.
C) Explain how it plans to monitor the issue of sexual harassment in its quality of life and well-being monitoring and what groups of women should be consulted for this purpose.
D) Specify if he plans to provide a contact person in its internal community relations department to deal with sexual harassment of mine employees that would be in a position to gain the confidence of Cree women. If so, specify how it intends to staff it. If not, justify the reasoning.
E) Assess the effects of the project on Cree women's access to employment and propose measures to promote the employment of Cree women in traditionally male areas, which are often the best paid. If not, justify the reasoning.
F) Assess the impact of the project on the families of Cree employees with children or their dependent elders and propose measures to promote work-life balance for these families. If not, justify the reasoning.
G) Evaluate the positive and negative effects of the project within the various Aboriginal population subgroups of the Eastmain and Waskaganish Cree communities (including women, youth and seniors) and propose appropriate mitigation measures, including the possibility of monitoring these subgroups as part of the quality of life and well-being monitoring program. If not, justify the reasoning.

ARCHAEOLOGY

Archaeological Potential

CEAA-117	Adjustment of the Areas of Archaeological Potential
A-11	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 6.4 Social Environment – Section 6.4.9 Heritage and Archaeology Chapter 7 – Identification and Assessment of Environmental Impacts EIA Reference: Archaeological potential study Responses to Questions and Comments by the Canadian Environmental Assessment Agency – Concordance Stage: A-14-4

CONTEXT AND RATIONALE

In section 6.4.9 of the Environmental Impact Assessment (EIA), the proponent indicates that "In total, 27 areas with prehistoric archaeological potential have been targeted within the study area. These sites are those that are most likely to contain remains attesting to a human presence from prehistoric time up to the twentieth century. These areas of archaeological potential are shown on Map 6-22." An archaeological potential study was also prepared by the proponent.

In the response to the concordance (A-14-4), the proponent confirmed that it had not consulted the Indigenous communities concerning the archaeological potential study. The knowledge of Cree elders, area users and archaeology experts of the Cree Nation Government was therefore not considered for this study. This point was raised by the Cree Nation Government during the Agency's consultation.

In Table 7-5 of the EIA, the proponent does not propose any specific mitigation measures concerning the Cree communities in connection with archaeology. The proponent could, among other things, promote the participation of Cree stakeholders (for example: tallymen, families of area users, elders, young people, school groups, Cree archaeologists) interested in being involved in the archaeological inventory work or in attending the inventories as observers, should the case arise.

THE PROPONENT MUST:

A) Document the knowledge of the Cree communities, particularly the knowledge of elders and/or area users and/or archaeology experts of the Cree Nation Government in order to validate or more accurately identify the areas of archaeological potential where inventories should be carried out before the construction work. This information could be compiled in a document presented as an appendix to the current archaeological potential study. Propose mitigation measures as a result of these consultations.
B) Indicate how it plans to inform the tallyman of trapline RE2 as well as the Culture and Language Department of the Cree Nation Government in the event that an artifact is discovered.

ACCIDENT RISK MANAGEMENT

Identification of Hazards

CEAA-118	Identification of the Hazards Associated with the Power Transmission Lines and Remote Landfill
CEAA	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 9.2 Identification of Hazards Section 9.2.2 Anthropogenic External Hazards

CONTEXT AND RATIONALE

In section 9.2.2 of the Environmental Impact Assessment, the proponent mentions the presence of infrastructure (Power Transmission Lines and Remote Landfill), but does not indicate how they pose a hazard for the proper functioning or integrity of the site.

THE PROPONENT MUST:

A) Complete sections 9.2.2.2 and 9.2.2.3 by indicating how the power transmission lines and the remote landfill pose a hazard for the site.

CEAA-119	Identification of the Hazards Related to Mechanical Maintenance Activities
CEAA	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 9.2 Identification of Hazards Section 9.2.3 Hazards Related to the Activities on Site

CONTEXT AND RATIONALE

In section 9.2.3 of the Environmental Impact Assessment, the proponent identifies “mechanical maintenance activities”. However, these activities are not precisely described in section 9.3 that follows, as the proponent did for the other activities listed.

THE PROPONENT MUST:

A) Describe the risks of accidents and malfunctions associated with “mechanical maintenance activities” in section 9.3.

CEAA-120	Storage and Use of Non-petroleum Products
ECCC-65	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 9.3 Accidents and Malfunctions Section 9.3.6 Storage and Use of Non-petroleum Products

CONTEXT AND RATIONALE

In section 9.3.6 of the Environmental Impact Assessment, the proponent documents the risks associated with sulphuric acid. However, its use is not documented in Table 9-8.

In the same table, the proponent mentions the use of flocculants and scale inhibitors, but does not describe their composition or their risk to the valued environmental components.

THE PROPONENT MUST:

A) Document the use of sulphuric acid and provide a description of the flocculants and scale inhibitors as well as their risks in order to have a complete description of the high-risk non-petroleum products.

Probability and Severity of Accidents and Malfunctions

CEAA-121	Probability of Occurrence and Severity of Activities
CEAA	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 9.3 Accidents and Malfunctions Section 9.3.2 Processing Section 9.3.5 Propane Storage and Use Section 9.3.7 Explosives Handling and Storage Section 9.3.9 Accumulation Areas

CONTEXT AND RATIONALE

In sections 9.3.2.2, 9.3.5.1, 9.3.5.2, 9.3.7.1, 9.3.7.2 and 9.3.9.2 of the Environmental Impact Assessment, the proponent indicates that the probability of occurrence is considered very low since these are highly improbable events and they occur only in exceptional circumstances. However, the proponent does not specify if these risks have previously occurred elsewhere in the world.

THE PROPONENT MUST:

A) Indicate whether these various activities, presented in sections 9.3.2.2, 9.3.5.1, 9.3.5.2, 9.3.7.1, 9.3.7.2 and 9.3.9.2 of the Environmental Impact Assessment have previously occurred elsewhere in the world in the context of the activities of a metal plant and, if so, reassess the "probability of occurrence" and "severity" where applicable.

CEAA-122	Probability of Occurrence of a Motor Vehicle Accident Involving Hazardous Materials or Ore Concentrate
CEAA	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 9.3 Accidents and Malfunctions Section 9.3.10 Road Transport

CONTEXT AND RATIONALE

In section 9.3.10 of the Environmental Impact Assessment, the proponent identifies the possible causes of accidents as being "loss of vehicle control by the driver due to poor weather, human error or health issue [and] collision with another vehicle".

The proponent assesses the probability of occurrence of these incidents as low. According to the definition provided in Table 9-1, an improbable event is one that occurs "less than once every 20 years". However, motor vehicle accidents can occur regardless of the product being transported in the trucks, and the proponent should use the probability of occurrence of a motor vehicle accident caused by "loss of vehicle control" and "collision with another vehicle" for any type of vehicle and not just trucks transporting concentrate or hazardous materials.

To prevent this type of accident, the proponent identifies in particular the following measure: "Drivers assigned to transport hazardous materials will be trained." However, the proponent does not provide any more specific details about this measure.

THE PROPONENT MUST:

A) Justify the assessment of the probability of occurrence of motor vehicle incidents. If necessary, reassess the probability of occurrence by including all types of vehicles. The proponent should consider the probability of a motor vehicle accident regardless of the product being transported since the causes are independent of the cargo (for example, loss of control of a motor vehicle).
B) Provide more details about the following measure: "Drivers assigned to transport hazardous materials will be trained."

CEAA-123	Severity of the Risk Associated with Explosive Material Theft
CEAA	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 9.3 Accidents and Malfunctions Section 9.3.7 Explosives Handling and Storage

CONTEXT AND RATIONALE

In section 9.3.7.2 of the Environmental Impact Assessment, the proponent indicates that misuse of stolen explosives could result in serious injury and/or loss of life. The proponent adds that the severity is considered "high". According to Table 9.2, the level of severity of the consequences of loss of human life is considered "very high".

THE PROPONENT MUST:

A) Adjust its assessment of the severity associated with explosive material theft in order to consider "loss of life" as an effect.

Effects of Accidents on Migratory Birds and Species at Risk

CEAA-124	Potential Impacts of a Spill on Migratory Birds and Species at Risk
ECCC-63	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Chapter 9 – Accident Risk Management

CONTEXT AND RATIONALE

In chapter 9 of the Environmental Impact Assessment, the proponent deals with the potential impacts of an accidental spill on fish and vegetation, but does not discuss the potential impacts on migratory birds or species at risk. For example, an accidental spill could have adverse impacts on the species present in the area and cause habitat losses, both aquatic and terrestrial. Migratory birds and species at risk (valued environmental components) should also be considered in the approach presented. In fact, in the event of accidental spills of hazardous materials in the receiving environment, certain habitats of migratory birds and species at risk could potentially be disturbed.

THE PROPONENT MUST:

A) Assess the effects of an accidental spill of hazardous materials on migratory birds and species at risk as well as their habitats, and discuss the potential consequences of a spill on these species and their habitats.

Prevention of Accidents and Malfunctions

CEAA-125	Leakage and Spillage Detection Systems – Petroleum Products
ECCC-11A ECCC-66	EIA Reference: Volume 1 – Main Report (Chapters 1 to 5) Section 4.4 Preparatory Work Section 4.4.2 Logistics Section 4.11 Other Infrastructure Section 4.11.6 Fuel Storage EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 9.3 Accidents and Malfunctions Section 9.3.4 Storage and Use of Petroleum Products Responses to Questions and Comments by the Canadian Environmental Assessment Agency – Concordance Stage: A-6

CONTEXT AND RATIONALE

In section 4.4.2 of the Environmental Impact Assessment (EIA), the proponent does not describe the system for the detection or prevention of leaks and spills and treatment for petroleum tanks or equipment. In the response to the concordance (A-6), the proponent makes reference to Appendix CEAA-6, which includes the drawing of an oil tank, but does not describe the leakage detection system.

In section 4.11.6 of the EIA, the proponent states that "Each fuelling station will be equipped with spill grates that will collect potential spills and direct them to a water-oil separator." However, the effectiveness of oil-water separators is not documented.

THE PROPONENT MUST:

A) Describe the leakage and spillage detection and prevention systems of petroleum tanks and equipment that will be used to protect the quality of groundwater and surface water.
B) Provide more details about the acceptable quality of water from oil-water separators (e.g., the concentration of hydrocarbons) as well as the method for disposal of contaminated water and oils treated by this separator.

CEAA-126	Risk Prevention Measures – Accumulation Areas
CEAA	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 9.3 Accidents and Malfunctions Section 9.3.9 Accumulation Areas

CONTEXT AND RATIONALE

In sections 9.3.9.1 and 9.3.9.2 of the Environmental Impact Assessment, the proponent identifies the following risk prevention measures: "Hydro geological and geotechnical studies will be carried out" and "Monitoring instrumentation." However, these statements do not indicate how these measures will prevent the potential risks associated with accumulation areas.

THE PROPONENT MUST:

A) Explain how carrying out hydro geological and geotechnical studies will make it possible to prevent the risks associated with accumulation areas.
B) Specify how "monitoring instrumentation" will prevent the risks associated with accumulation areas.

CEAA-127	Leakage and Spillage Detection Systems – Accumulation Areas
ECCC-11B	EIA Reference: Volume 1 – Main Report (Chapters 1 to 5) Section 3.1 Waste Rock, Tailings and Overburden Stockpiles Section 3.1.1 Deposition Methods Section 4.4 Preparatory Work Section 4.4.2 Logistics EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 9.3 Accidents and Malfunctions Section 9.3.9 Accumulation Areas Responses to Questions and Comments by the Canadian Environmental Assessment Agency – Concordance Stage: A-6

CONTEXT AND RATIONALE

In the Environmental Impact Assessment, the proponent states that since the preliminary results of the geochemical technical assessment show that the mine materials present an acid generation potential, it was assumed that protection would be installed to prevent leakage to the environment, in the form of a stockpile or a retention basin, with no further information. The proponent did not describe the system for the detection or prevention of spills for this infrastructure.

In the response to the concordance (A-6), the proponent did not mention the system for the detection or prevention of spills from the waste rock / tailings stockpiles or mine water and treatment basins.

THE PROPONENT MUST:

A) Describe the systems for the detection and prevention of spills from the waste rock and tailings stockpiles or mine water basins (including exfiltration of the stockpiles, basins and ditches) and treatment basins that will be used to protect the quality of groundwater and surface water.

CEAA-128	Forest fire Prevention Methods
CEAA	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 9.3 Accidents and Malfunctions Section 9.3.11 Risks Associated With External Hazards

CONTEXT AND RATIONALE

In section 9.3.11.1 of the Environmental Impact Assessment, the proponent identifies the following risk prevention measure: “An agreement will be made with SOPFEU.” However, this statement does not indicate how this measure will prevent the potential risks associated with external hazards.

THE PROPONENT MUST:

A) Explain how an agreement with SOPFEU will make it possible to prevent risks associated with external hazards related to forest fires.

CEAA-129	Emergency Plan and Communication Plan
CEAA	Volume 2 – Main Report (Chapters 6 to 11) Section 9.4 Preliminary Emergency Response Plan EIA Reference: Volume 3 – Appendix I Preliminary Emergency Measures Plan

CONTEXT AND RATIONALE

In section 9.4 of the Environmental Impact Assessment, the proponent does not mention whether it consulted the Eastmain and Waskaganish band councils concerning the preliminary emergency response plan.

In its preliminary emergency measures plan (Appendix I of the Environmental Impact Assessment), the proponent does not mention a communication plan for informing the communities in the event of an accident.

THE PROPONENT MUST:

A) Specify whether it intends to consult the Eastmain and Waskaganish band councils concerning the emergency response plan. If not, justify the reasoning.
B) Present a communication plan to be used in the event of an accident or spill, including informing the tallymen of traplines RE2, VC33 and VC35, as well as the Eastmain and Waskaganish environmental services. This communication plan must indicate the planned communication approach by type of accident, as well as the names of the contact persons.

CEAA-130	Emergency Measures Concerning Migratory Birds, Species at Risk and Wetlands
ECCC-64	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 9.4 Preliminary Emergency Response Plan EIA Reference: Volume 3 – Appendix I Preliminary Emergency Measures Plan

CONTEXT AND RATIONALE

In section 9.4 of the Environmental Impact Assessment, the proponent does not propose any emergency measures specific to the particular issues involving migratory birds, species at risk and wetlands that may be impacted in the event of accidents or malfunctions:

- Accidental spills of hazardous materials in neighbouring watercourses;
- Breakdown or malfunction of equipment causing impacts on habitats;
- Collision of service vehicles with large mammals.

Section 5 of the *Migratory Birds Convention Act, 1994* (MBCA) states that no person or vessel shall deposit a substance that is harmful to migratory birds, or permit such a substance to be deposited, in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area.

Additional emergency measures are necessary in order to address the various issues that may arise during the construction and operation phases.

THE PROPONENT MUST:

A) Add measures in the emergency response plan to minimize the potential impacts of accidents or malfunctions on migratory birds, species at risk and wetlands, for all project phases.

CEAA-131	Eastmain or Radisson Fire Department
CEAA	Volume 2 – Main Report (Chapters 6 to 11) Section 9.4 Preliminary Emergency Response Plan EIA Reference: Volume 3 – Appendix I Preliminary Emergency Measures Plan

CONTEXT AND RATIONALE

In its preliminary emergency measures plan (Appendix I of the Environmental Impact Assessment), the proponent mentions the Eastmain or Radisson fire department in the event of a fire exceeding the brigade's response capability. There are few details on this subject.

THE PROPONENT MUST:

A) Specify whether it has contacted the Eastmain and Radisson fire departments concerning possible responses to an emergency and specify whether they have confirmed their availability.
B) Indicate the time it will take each of these fire departments to respond on the mine site.

EFFECTS OF THE ENVIRONMENT ON THE PROJECT

Climate Change

CEAA-132	Effects of Climate Change on the Project
CEAA	Volume 2 – Main Report (Chapters 6 to 11) Section 9.2.1 External Hazards of Natural Origin Section 9.3.11 Risks Associated with External Hazards

CONTEXT AND RATIONALE

In section 9.2.1 of the Environmental Impact Assessment, the proponent presents the external hazards of natural origin that could occur on the project site. The proponent points out in particular that the increase in greenhouse gases in the atmosphere is expected to increase the conditions conducive to forest fires, increasing both the number and severity of fires. Although the proponent presents climate change projections to 2050 in Table 7-9, it only partially assesses the potential effects of climate change on the project (section 9.3.11).

THE PROPONENT MUST:

D) Present the future climate projections by assessing the increase in the intensity and probability of extreme conditions such as forest fires, ice storms and heavy rainfalls in order to assess the risk.
E) Describe the effects of climate change on the project, in particular on the infrastructure that will be left in place following the rehabilitation phase.
F) Demonstrate how the effects of climate change have been taken into account in the design of project infrastructure.

G) Describe how climate change could affect the project and the frequency of extreme weather events. Describe whether climate change could accelerate these trends in the future and demonstrate that the project infrastructure will be appropriate in this context.
H) Determine and describe the mitigation measures that will be put in place in order to reduce or address the efects of climate change, in particular concerning water management and accumulation areas.

MONITORING AND FOLLOW-UP PROGRAMS

Monitoring Program

CEAA-133	Monitoring Program
ECCC-71	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 10.3 Environmental Surveillance

CONTEXT AND RATIONALE

In section 10.3 of the Environmental Impact Assessment, the proponent states that "An environmental monitoring program describes the means and mechanisms implemented to ensure compliance with legal and environmental requirements. More specifically, the program targets compliance with the laws, regulations and other environmental considerations set out in the plans and specifications, as well as in the authorizations and permits issued by government authorities".

On a preliminary basis, the proponent presents the components that are to be included in the monitoring program, during both the construction and operation phases. The proponent specifies that the definitive program will be completed later, specifically once implementation of the project has been approved.

THE PROPONENT MUST:

A) Provide a more detailed monitoring program which is close to the final version.
B) On the basis of the list of components that need to be monitored, provide a preliminary outline of the measures and methods considered to ensure this monitoring.

Follow-up Program

CEAA-134	Environmental Follow-up Program
CEAA	EIA Reference: Volume 2 – Main Report (Chapters 6 to 11) Section 10.4 Environmental Monitoring During Operations

CONTEXT AND RATIONALE

Several times in this information request, the Agency asked the proponent to make changes to its environmental follow-up program or to include certain components in the proposed program. The environmental follow-up program will have to be improved in order to take into account the changes that will be made to the assessment of the effects of the project in response to this information request.

THE PROPONENT MUST:

A) Reassess the components that should be followed up in light of this information request and justify the selection of these components.
B) Provide an updated environmental follow-up program which must include the following information:

- The goals and objectives;
- The parameters or components followed up and the methodology or protocol used (time, frequency, duration, location of the sampling stations, etc.) for each of these components and phases of the project;
- The timetable of the follow-up program and how frequently the results will be passed on to the authorities;
- The corrective or adaptive management measures that will be implemented for each of the components followed up.