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UPDATE OF THE ENVIRONMENTAL IMPACT STATEMENT

SUMMARY



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ROSE LITHIUM – TANTALUM MINING PROJECT

SUMMARY OF THE UPDATED ENVIRONMENTAL IMPACT ASSESSMENT

Critical Elements Corporation

Project No.: 171-14416-00

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Report (Final)

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ABBREVIATIONS & ACRONYMS

Abbreviations and Acronyms	Definition
4R	Reduce, reuse, recycle and recover
CEAA	Canadian Environmental Assessment Agency
Ag	Silver
ANP	Ammonium Nitrate Prill
As	Arsenic
Ba	Barium
Be	Beryllium
JBNQA	James Bay and Northern Quebec Agreement
Cd	Cadmium
CEC	Critical Elements Corporation
Co	Cobalt
CO	Carbon monoxide
CO ₂	Carbon dioxide
CO ₂ eq	Carbon dioxide equivalent
COFEX-South	Federal review panel
COMEV	Evaluating committee
COMEX	Review committee
TOC	Total organic carbon
Cr	Chromium
Cs	Cesium
CTEU-9	7 days leachate test during which the sample soaks in neutral pH water
Cu	Copper
VC	Valued component
dBA	A-weighted decibel
IAPS	Invasive alien plant species
EIJB	Agreement on Governance in the Eeyou Istchee James Bay Territory
EIA	Environmental Impact Assessment
IBA	Impacts and Benefits Agreements

Abbreviations and Acronyms	Definition
Fe	Iron
Ga	Gallium
GHG	Greenhouse gas
LNG	Liquified natural gas
EIJBRG	Eeyou Istchee James Bay Regional Government
ha	Hectare
HP	Horsepower
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
kg	Kilogramme
km	Kilometre
Km ²	Square kilometre
kt	Kilotonne
kV	Kilovolt
kVA	Kilovolt-ampere
kW	Kilowatt
CEAA	Canadian Environmental Assessment Act
SARA	Species at Risk Act
Li	lithium
Li ₂ O	Lithium oxide
EQA	Environment Quality Act
m	Meter
m ³	Cubic metre
m ³ /h	Cubic metre per hour
m ³ /d	Cubic metre per day
MDDELCC	Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques
SS	Suspended solids
Mkg	Meter-kilogram
mm/h	Millimetre per hour
Mm ³	Cubic millimetre
Mn	Manganese
Mo	Molybdenum
Mt	Megatonne
MWh	Megawatt-hour

Abbreviations and Acronyms	Definition
CAAQS	Canadian Ambient Air Quality Standards
Ni	Nickel
NO ₂	Nitrogen dioxide
NPAG	Non potentially acid generating
Pb	Lead
EMP	Environmental Management Program
pH	Potential of hydrogen
PM _{2.5}	Fine particulates
PMT	Total particulates
PMU	Emergency Measures Plan
ppm	Parts per million
PPSRTC	Politique de protection des sols et de réhabilitation des terrains contaminés
CAR	Clean Air Regulation
Rb	Rubidium
Se	Selenium
SFE	Shake Flask Extraction
Sn	Tin
SO ₂	Sulfur dioxide
Ta	Tantalum
Ta ₂ O ₅	Tantalum pentoxide
TCLP	Toxicity Characteristic Leaching Procedure
Zn	Zinc

FOREWORD

The present summary establishes in a simple way the key elements of the Environmental Impact Assessment (EIA) for the Rose Lithium – Tantalum Mining Project (WSP, 2018) and complimentary information (WSP, 2019), presented to the Canadian Environmental Assessment Agency (CEAA) and to the ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, as well as the approach used and public information and consultation activities organized during the EIA.

Besides the introduction, the summary reviews the background of the environmental assessment and the regulatory framework of the project. Chapter 2 includes the project background and rationale, as well as the assessed project variants; Chapter 3 presents an overview of the project and a technical description of projected components; Chapter 4 summarizes consultation activities conducted with the First Nations, as well as local and regional communities, and concerns raised; Chapter 5 presents the environmental assessment methodology; Chapter 6 describes the environmental and social valued components and the assessment of the main impacts on these components after the implementation of the mitigation and compensation measures. The cumulative impacts, as well as the impacts of potential accidents or failures, and the impacts of the environment on the project are also presented in this chapter;

Chapter 7 presents the EIA summary in tables; and finally chapter 8 outlines the project's environmental and social management.

The reader should refer to the EIA (Volume 1) and sectoral studies (Volume 2), which are attached to the study, to access detailed information.

The French version of this summary and of the EIA report is the official version. In case of inconsistency between the English and French versions, the French version prevails.

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1 INTRODUCTION AND BACKGROUND INFORMATION – ENVIRONMENTAL ASSESSMENT

The present summary establishes in a simple way the key elements of the Environmental Impact Assessment (EIA) for the Rose Lithium – Tantalum Mining Project (WSP, 2017), presented to the Canadian Environmental Assessment Agency (CEAA), as well as the approach used and public information and consultation activities organized during the EIA.

Besides the introduction, the summary reviews the background of the environmental assessment and the regulatory framework of the project. Chapter 2 includes the project background and rationale, as well as the assessed project variants; Chapter 3 presents an overview of the project and a technical description of projected components; Chapter 4 summarizes consultation activities conducted with the First Nations, as well as local and regional communities, and concerns raised; Chapter 5 presents the environmental assessment methodology;

Chapter 6 describes the environmental and social valued components and the assessment of the main impacts on these components after the implementation of the mitigation and compensation measures. The cumulative impacts, as well as the impacts of potential accidents or failures, and the impacts of the environment on the project are also presented in this chapter; Chapter 7 presents the EIA summary in tables; and finally chapter 8 outlines the project's environmental and social management.

The reader should refer to the EIA (Volume 1) and sectoral studies (Volume 2), which are attached to the study, as well as the complementary information, to access detailed information.

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1.1 REGULATORY FRAMEWORK

1.1.1 JAMES BAY AND NORTHERN QUEBEC AGREEMENT

The Rose mining project is located on the territory covered by the James Bay and Northern Quebec Agreement (JBNQA) signed in 1975 between the Governments of Canada and Quebec, the Grand Council of the Crees and the *Association des Inuits du Nouveau-Québec*. At the 55th parallel, the JBNQA delimits the territory into two areas: the James Bay and the Nunavik. Provisions associated with the James Bay Territory must be applied depending on the location of the project. Chapter 22 of the JBNQA establishes the environmental and social protection regime of the Cree people, their communities, and their economy with respect to developmental activity affecting the territory. Appendix 1 of Chapter 22 provides a list of projects subjected to environmental assessment. The land regime introduced by JBNQA is a key element of land use. It divides the territory into Category I, II and III lands. The Rose mining project is located on Category III lands where mining rights are owned by the provincial government.

Chapter 22 of the JBNQA also defines the procedure surrounding the procurement of a permit through three committees (either evaluating or review committee). The Evaluating Committee (COMEV), composed of Quebec, Canada and Cree Regional Authority members, studies notices of projects and prepares guidelines by consulting with communities.

The Review Panel (COMEX) is composed of Quebec and Cree Regional Authority members who study the EIA and give or not the OK for the project authorization. A Federal Review Panel (COFEX-South) is composed of members of the Federal Government and Cree Regional Authority. Subparagraph 22.6.7 of Chapter 22 mentions that the JBNQA contracting parties can combine both review panels.

1.1.2 EIA TRIGGERS

James Bay and Northern Quebec Agreement

The Environment Quality Act (EQA) and Appendix 1 of Chapter 22 (JBNQA) list projects subjected to assessment, such as mining operation projects.

Canadian Environmental Assessment Act

The project is also subjected to a federal environmental assessment, as provided for in Article 13 of the Canadian Environmental Assessment Act (2012) (S.C. 2012, c.19, s.52) since the ore production capacity shall exceed 3,000 t/day in accordance with Article 16(a) of the Regulations Designating Physical Activities (SOR/2012-147).

The nature, range and extent of the environmental assessment are defined in the guidelines developed by the CEAA.

Environment Quality Act

The lithium and tantalum mine opening project is subjected to the assessment and review procedure of environmental impacts as provided for in Article 153, Chapter II of the Environment Quality Act. This chapter covers provisions applicable to the James Bay and Northern Quebec Region. Appendix A of the EQA lists projects automatically subjected to the assessment and review procedure. Therefore, the Rose mining project is subjected to the procedure since it is specified "all mining developments, including the additions to, alterations or modifications of existing mining developments".

The nature, range and extent of the environmental impact assessment are defined in the Project Guideline developed by the MDDELCC.

2 PROJECT HISTORY, BACKGROUND INFORMATION AND COMPARATIVE ASSESSMENT OF VARIANTS

2.1 PROJECT DEVELOPMENT HISTORY

As early as 1936, the Rose-Tantalum mining project sector was the subject of technical work such as geological, geochemical and geophysical assessments. Exploration activities on the Rose property started with single drilling carried out by Dios Exploration in 2008. CEC began drilling on the property at the end of 2009. 255 drill holes, totaling more than 29,000 m, have been conducted so far. Work consisted of visual recognition of mineral associations, sampling and mapping of outcrops at the Rose site.

Exploration and drilling, which began in 2009, enabled a better geological interpretation of the Rose site and confirmed the potential of the entire area for new discoveries. Drilling demonstrated significant mineralized values in lithium (Li), tantalum (Ta), rubidium (Rb), cesium (Cs), gallium (Ga) or beryllium, and in most cases, for more than one of these elements.

According to the latest estimate from the feasibility study executed by WSP (2017), s, the Rose deposit contains 26,8 Mt of mineral resources at 0.85% Li_2O and 133 ppm Ta_2O_5 and 2,8 Mt inferred resources at 0.82% Li_2O and 145 ppm Ta_2O_5 . The estimate complies with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) standards and guidelines for the disclosure of mineral resources and reserves.

CEC conducted several metallurgical tests between 2012 and 2015 to determine the grade of the ore and to better understand the recovery rate and contents that can be produced for the lithium and tantalum concentrate. In addition, tests for the transformation of lithium concentrate into lithium carbonate were conducted in order to find out its quality and recovery rates.

In September 2015, CEC signed a partnership agreement with Helm AG (a company involved in the production and distribution of chemicals, headquartered in Germany) for the purchase of 100% of what will be produced at the Rose mining project site throughout the life of mine (LOM).

2.2 PROJECT BACKGROUND AND RATIONALE

Currently, lithium and tantalum are world renowned in manufacturing and automotive industrial sectors. Lithium is also in increasing demand, especially among battery manufacturers, for, among others, the market of hybrid and electric cars, an increasingly flourishing sector, but also for other types of applications, including the storage of renewable energy. After significant growth, the electronics market segment appears to have reached its saturation point. On the other hand, the electric vehicle sector is burgeoning (40 % growth for the use of a lithium carbonate equivalent in lithium battery applications). The annual growth in the use of a lithium carbonate equivalent, in the electric vehicle industry, could even reach 45-50 % at the turn of 2020. An annual growth of approximately 25 % would even be expected for this application, in the field of energy storage. Therefore, this component is likely to become a highly sought-after product in the near future.

Tantalum is a highly corrosion-resistant ore and is a good substitute for platinum. It is mainly used in the manufacturing of capacitors for electronic devices, such as mobile phones, DVD players, video game consoles and, of course, computers. In addition, it is subject to sustained use in the fields of construction (i.e. steel structures / significant structures, tools), medical (i.e. pacemakers), automotive (i.e. brake systems) and military (i.e. GPS, night vision goggles). In addition, tantalum buyers are looking for reliable sources, since conflicts experienced in some producing countries. Since 1995, the average annual growth in demand increases by 8 to 12%. A rise in prices is expected for the next five years. At this point in time, the price of tantalum is approximately \$125 / kg and the forecast suggests a possible price of \$175 / kg over a medium / long term horizon (5 - 10 years).

The global demand for tantalum could increase by 37% by 2026, which suggests that new players in the market will have to meet the needs. Furthermore, the production of tantalum is often in complementary or supplementary production to a main production, such as the production of lithium. By 2026, this co-production could represent 20% of the tantalum market.

Finally, the resource potential for the Rose deposit is one of the world's most valuable potential resources since it is one of the most significant solely owned potential resources. Also, the Rose property is accessible by the main road that connects Nemaska to Eastmain which is usable all year round. The project is also located along the axis of an electric power transmission line and can be connected to it.

2.3 COMPARATIVE ASSESSMENT OF PROJECT VARIANTS

Variants of the main project components are presented in the following sections and include the no-project variant, the lithium treatment process, the deposit mining method, the location of the tailings, waste rock and overburden stockpiles, the location of the accommodation camp and the choice of waste disposal method (slurry or filtered tailings).

2.3.1 « NO-PROJECT » VARIANT

By not proceeding with the Rose mining project, it is business opportunities for the local and regional communities, economic benefits, including direct and indirect jobs, as well as the region's vitality that will be deprived of a significant contribution in terms of investment. With respect to sustainable development, Quebec, as part of its 2011-2020 action plan regarding electric vehicles, has established as a priority the electrification of transports which includes the manufacturing of batteries and of battery components, such as lithium. It is therefore extremely advantageous if the lithium comes from Quebec. Also, Quebec occupies an important place in the development of lithium projects, on a global scale.

The project is beneficial to Quebec's prosperity. Its cancellation would have an impact on government revenues (loss of tax revenues [taxes, duties, royalties, etc.]). The project can be developed in compliance with the environment. CEC also obtained the consent of local communities to go forth with the Rose mining project.

2.3.2 DEPOSIT MINING METHOD

The mineralized zone of the Rose deposit, which is not a vein-type deposit, extends on the surface down to a depth of about 285 m. The chosen mining method is an open pit since the section with the highest mineralization is located in the upper part of the deposit. For economic reasons, it is not planned to exploit the last meters of the deposit, nor is it planned to carry out underground mining because it would not allow for a profitable economic valorization of the Rose deposit.

The location of the pit is set in accordance with the location of the deposit. The pit boundaries were established as to minimize the mining of waste rocks, their quantities having an impact on the final size of the pit. Therefore, the open pit mining is best suited to the deposit morphology.

The consideration which holds the most weight in choosing the method of operation, lies in the shape of the deposit itself. CEC first opted for open pit mining because of this, and then for safety and operating costs. It will, however, have the effect of impacting two lakes, lakes 1 and 2, which are within the boundaries of the pit and will be drained. Lake 3 will be partially dewatered as a dyke will be constructed on it. Other bodies of water may be impacted, but the effects will be minimized through the rerouting of the pumped water for pit operations in the different catchment areas.

2.3.3 MINE COMPLEX

The industrial area of the mining complex (296,175 m²) is large enough to accommodate, if necessary, an expansion of the spodumene concentrate plant and / or the establishment of a lithium carbonate production plant. A major effort was made in the design to maximize establishment density and minimize encroachment on the natural environment. In addition, the complex is adjacent to the pit, limiting impacts on the natural environment (less spreading and fragmentation of the environment). The unoccupied area, reserved for possible expansion, is approximately 12,000 m², a small portion (less than 5%) of the total area of the industrial platform.

Once considered, the establishment of a carbonate plant is no longer part of the present project since the market is characterized by a higher consumption of lithium transformed in Asia. All chemical-grade spodumene concentrate conversion plants are located there, their conversion processes have long been tried and tested. Furthermore, they only work at 55-60% of their capacity. It therefore seems preferable to feed the concentrate produced by the Rose project, to the international market, rather than treating it for secondary processing near the mine.

Given the proximity of the Hydro-Québec transmission system to the mine site, hydroelectricity will be used as the primary source of energy to power the complex and the entire site. The electricity demand was estimated at 13.5 MW (15.6 MVA) and a reserve of up to 20 MVA was accepted by Hydro-Québec, which implies a relocation of the 315-kV line currently crossing the site, the installation of a 315 kV to 25 kV transformer substation, the installation of three lines from this substation and the construction of an electrical substation near the pit.

However, energy consumption planning has been established and reflected upon, on a long-term perspective. So, even if it is not part of the project, the carbonate plant has been taken into account. Therefore, hydropower would not be viable for operating a furnace involving a large energy consumption. Two options could replace this energy source: liquefied natural gas (LNG) or propane gas. As natural gas is more economically viable, an LNG system is planned for the mining complex, taking into account the eventual presence of this plant.

However, everything required for feeding such a plant is not part of the project since it has not yet been decided if it will see the light of day. As a result, only one LNG tank (double-walled with a capacity of 330 m³) is considered as part of this environmental assessment; it will only be used for very specific consumption needs to supplement the source of hydroelectricity, and the natural gas consumption for the project is therefore estimated at 8,996,000 m³ / year.

2.3.4 TAILINGS AND WASTER ROCK MANAGEMENT

Historically, the area selected for waste has always been the western end of the pit, due to various factors (size of the area required, topography of the area, available space, required accommodations, etc.).

The initial location of the waste rock pile was revised to avoid any impact on fish habitat and to allow for entirely onshore storage, further north of its original position. In addition, a protection perimeter was created for each watercourse present on the site. Regarding tailings, a conventional pulp disposal method was ruled out in favor of a disposal mode based on dry tailings. A recent study shows that neither waste rock nor tailings are potential acid generators (NPAG or non-potentially acid generating), it is a co-disposal of the waste rock and dry tailings, in one dump, that is now considered, since the filtration mode selection is the most appropriate, both on the short-term and the long-term.

2.3.5 OVERBURDEN MANAGEMENT

Options associated with the overburden pile have also evolved to bring it closer to the pit, limiting trucking caused by overburden disposal and reducing the project's environmental footprint. The pit's final design reduced the required overburden capacity, so it was possible to move the pit from the west end of the mine site to the southern part of the pit.

2.3.6 ADDITIONAL ELEMENTS TO CONSIDER

Given the location of all of the mine's facilities, the final effluent will flow into stream A, which will compensate for the loss of flow incurred by this watercourse due to mining operations, including the loss of Lake 1.

In view of the location of the infrastructures and of the location of the mining complex at its center, it is the shortest and most direct route, between the Némiscau - Eastmain 1 road and the site, that is planned as an access road onto the site and there are no plans to consider other variants. No other sensitive environment can be found, with the exception of the F stream that will be crossed by the future road. Other access solutions would have required watercourse crossings, in addition to providing less direct and longer access to the mining facilities.

3 PROJECT OVERVIEW

The Rose mining project consists in the operation of an open pit in order to extract lithium and tantalum found in the Rose deposit. The targeted production rate is 4,600 tons / day ("t/d"), however, the ore concentration plant's nominal production quantity is 4,900 t/d. The extracted ore will be transported to the industrial complex located at the site, a few meters from the Nemiscau-Eastmain 1 roadway. The projected production shall be 236,532 tons of spodumene concentrate (186,327 tons per year (t/y) of chemical quality and 50,205 t/y of technical quality), and 429 tons of tantalum concentrate per year. The spodumene concentrate will be transported in bulk from a storage silo and a loading system, while the tantalum concentrate will be put into 1 ton bags for transportation.

The main components of the Rose mining project are:

- An open pit where a maximum of 12 to 16 Mt of material (ore and tailings) will be extracted per year, during the first 14 years of production, and will be reduced to between 1,5 and 6,5 Mt during the last three. The pit will be approximately 1,620 m in length, 900 m in width, and 200 m in depth, for an area around 93 ha;
- An 3 ha industrial complex, developed south-west of the pit, comprising: 3 levels of ore crushing, a conveyor and a storage dome, a grinding circuit, an ore concentration plant to recover tantalum and spodumene (flotation process) and a thickener to generate dry tailings. The whole thing will also include a truck loading unit for these same dry tailings, as well as various installations (heavy equipment maintenance, storage, laboratory, first aid and administrative offices);
- A 10 ha ore stockpile (maximum capacity of approx. 3,9 Mt) will supply the plant for a period of two years after the mining of the pit is over;
- A 204 ha dump for co-disposal of waste rock and dry tailings with a capacity of 206 Mt, representing 182 Mt of waste rock and 24 Mt of dry tailings which, in both cases, are non-potentially acid generating ("NPAG");
- A 37 ha inorganic overburden stockpile which can contain approximately 11,3 Mt of material;
- Mine water management facilities shall collect and treat all contact water, which will be characterized by a system of collection ditches, retention ponds, an accumulation pond and a treatment unit with a final effluent;

The workers' camp is not part of this project. It will take place about 25 kilometers to the north of the site (on the site of a former Hydro-Québec camp). It will be developed by the Cree community of Eastmain and could accommodate workers from other projects in the area. Bus transportation will connect the camp with the mine site.

Map 3-1 presents the location of project infrastructure.

The project was designed by taking into consideration the 4R method in order to reduce the use of resources. The project includes the recycling of industrial water within the same process, the maximum use of mining waste rock as construction material, and a supply in hydroelectricity, which is a clean energy.

The planned duration of the project, from the construction to the close-out phase, is of about 23 years and includes the following phases:

- Construction and Site Preparation Phase: 19 months;
- Operation Phase: 19 years;
- Site Close-out Phase: Approximately 2 years.

3.1 PROJECT SITE

The Rose property is located in northern Quebec's administrative region, on the territory of Eeyou Istchee James Bay, on Category III lands, some 40 kilometres north of the Cree village of Nemaska.

The latter is located about 300 km north-west of Chibougamau. The Rose property is accessible by the Route du Nord, usable all year round from Chibougamau. The mine site can also be reached by Matagami, via Route 109 and Route du Nord. Map 3-2 shows the regional location of the project.

3.2 MINERAL RESOURCES

The mineralization identified, to date, on the Rose property includes LCT-type pegmatites and molybdenum indices. These pegmatites can reach a width of 20 m. They are cross cut by quartz veining. Locally, spodumene and lepidolite can form centimetric lentils which compose 40% of pegmatites.

An estimate of the mineral resources on the Rose property was conducted August 4th 2017 by InnovExplo. Analyses conducted showed significant mineralized values in Li, Ta, Rb, Cs, Ga or Be, and in most cases, for more than one of these elements.

Indicated mineral resources of the Rose deposit are currently estimated at 26.8.9 Mt at 0.85% Li₂O and 133 ppm Ta₂O₅, while the inferred resources are evaluated at 2.8 Mt inferred resources at 0.82% Li₂O and 145 ppm Ta₂O₅.

3.3 SITE PREPARATION

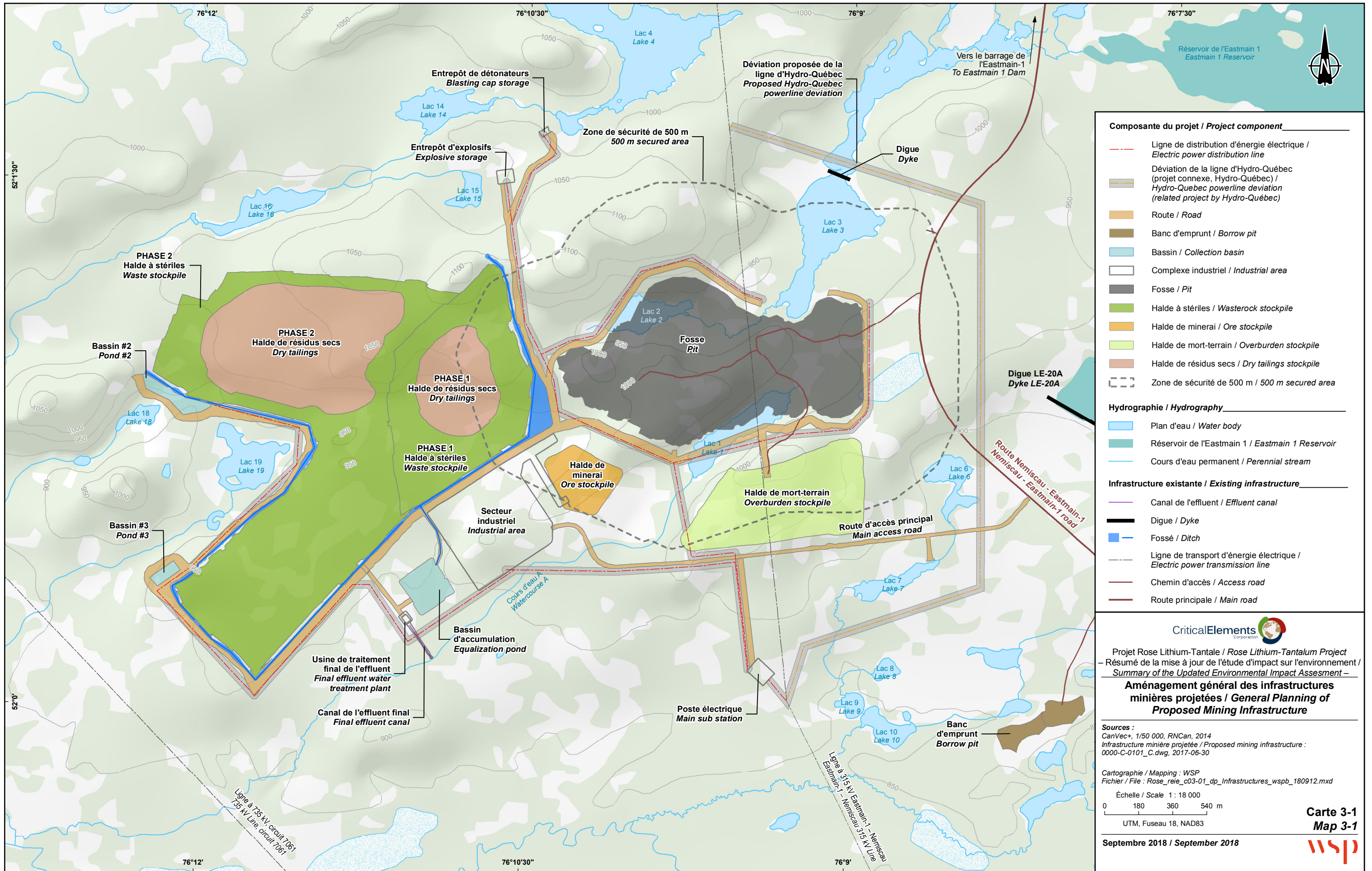
Several types of equipment which are typical for projects will be used to prepare the site. The deforestation of an estimated area of approx. 412 ha shall be required. Conifers and mixed populations, as well as a very small proportion of deciduous wood, will be the main plant populations affected by work.

Blasting required for road subgrade, ditch excavation and pad levelling shall be minimized as backfill material is available in sufficient quantity. Blasted material shall be used as backfill or crushed in situ.

Access roads will all be permanent. Watercourse crossings shall be built in accordance with standards in force. Waste rock extracted from the pit during the pre-production phase will be used as construction material for roads and pads.

Part of the excavated materials from the stripping of the pit shall be reused during overall site earthwork.

The footprint of the pit infringes on lake 1 and 2; their complete is required. A dyke with a width of approx. 60 m will be built in the narrowest section of Lake 3, leading to partial dewatering of the lake. The purpose of the dyke is to create sufficient distance between the lake and the pit. No watercourse diversion shall be needed. However, certain watercourses with a hydraulic connection to the three affected lakes will disappear after drainage work.



Composante du projet / Project component

- Ligne de distribution d'énergie électrique / Electric power distribution line
- Déviation de la ligne d'Hydro-Québec (projet connexe, Hydro-Québec) / Hydro-Quebec powerline deviation (related project by Hydro-Québec)
- Route / Road
- Banc d'emprunt / Borrow pit
- Bassin / Collection basin
- Complexe industriel / Industrial area
- Fosse / Pit
- Halde à stériles / Wasterock stockpile
- Halde de minéral / Ore stockpile
- Halde de mort-terrain / Overburden stockpile
- Halde de résidus secs / Dry tailings stockpile
- Zone de sécurité de 500 m / 500 m secured area

Hydrographie / Hydrography

- Plan d'eau / Water body
- Réservoir de l'Eastmain 1 / Eastmain 1 Reservoir
- Cours d'eau permanent / Perennial stream

Infrastructure existante / Existing infrastructure

- Canal de l'effluent / Effluent canal
- Digue / Dyke
- Fossé / Ditch
- Ligne de transport d'énergie électrique / Electric power transmission line
- Chemin d'accès / Access road
- Route principale / Main road



Projet Rose Lithium-Tantale / Rose Lithium-Tantalum Project
 - Résumé de la mise à jour de l'étude d'impact sur l'environnement /
 Summary of the Updated Environmental Impact Assessment -

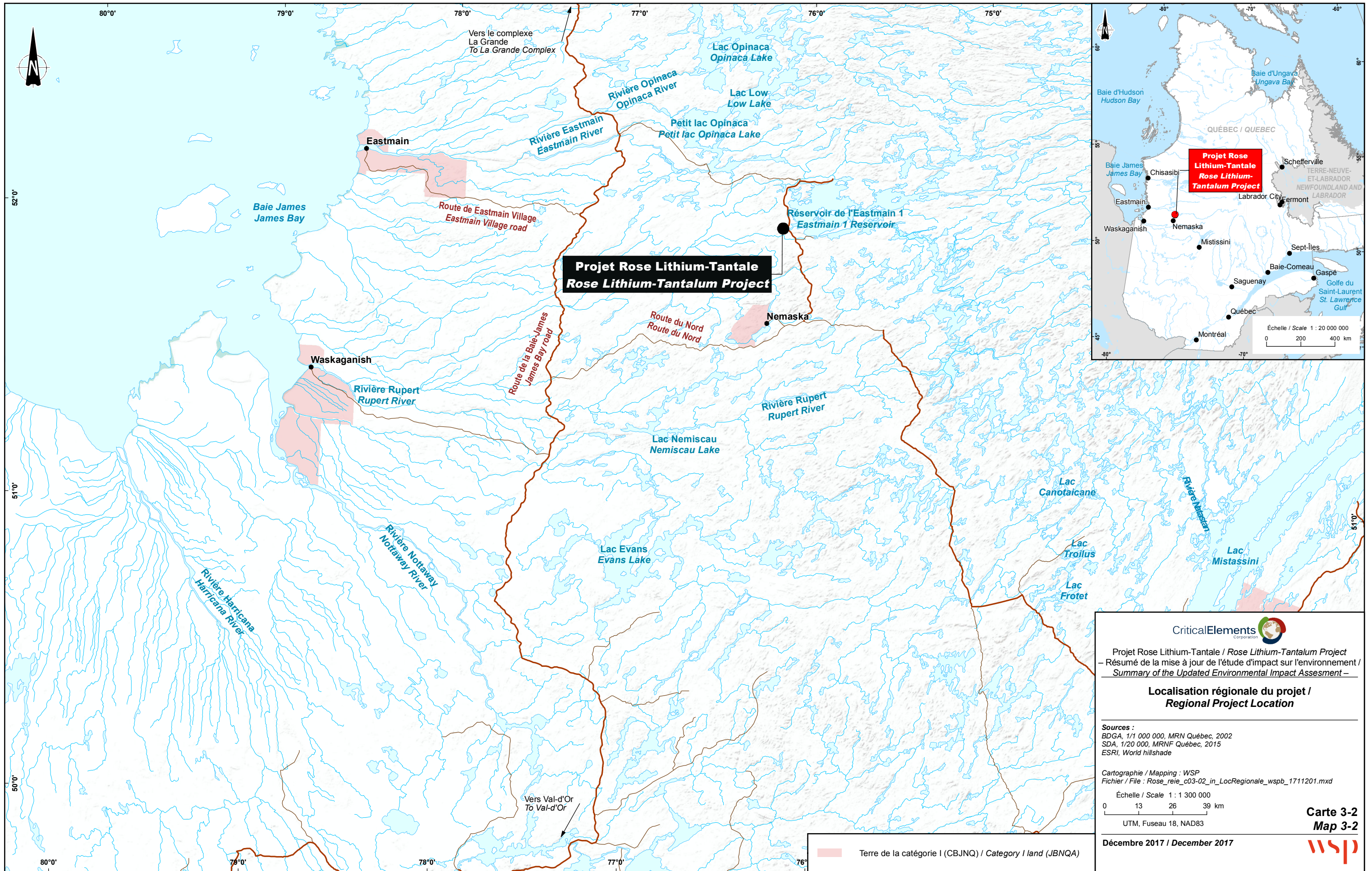
Aménagement général des infrastructures minières projetées / General Planning of Proposed Mining Infrastructure

Sources :
 CanVec+, 1/50 000, RNCAN, 2014
 Infrastructure minière projetée / Proposed mining infrastructure :
 0000-C-0101_C.dwg, 2017-06-30

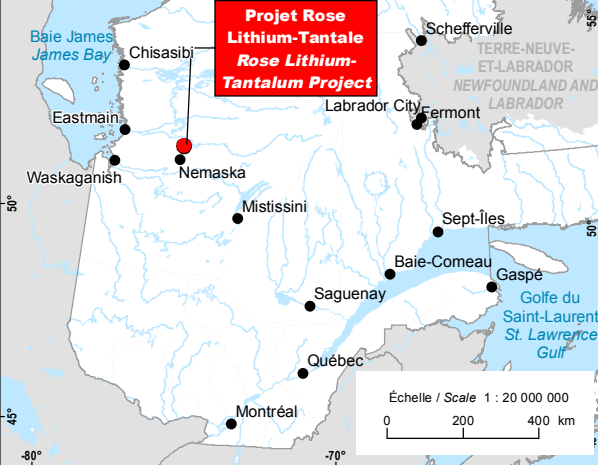
Cartographie / Mapping : WSP
 Fichier / File : Rose_reie_c03-01_dp_Infrastructures_wspb_180912.mxd


Échelle / Scale 1 : 18 000
 0 180 360 540 m
 UTM, Fuseau 18, NAD83

**Carte 3-1
 Map 3-1**



Projet Rose Lithium-Tantale
Rose Lithium-Tantalum Project



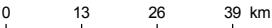

 CriticalElements Corporation

Projet Rose Lithium-Tantale / Rose Lithium-Tantalum Project
 – Résumé de la mise à jour de l'étude d'impact sur l'environnement /
 Summary of the Updated Environmental Impact Assessment –

Localisation régionale du projet /
Regional Project Location

Sources :
 BDGA, 1/1 000 000, MRN Québec, 2002
 SDA, 1/20 000, MRNF Québec, 2015
 ESRI, World hillshade


Cartographie / Mapping : WSP
 Fichier / File : Rose_reie_c03-02_in_LocRegionale_wsp_1711201.mxd


Échelle / Scale 1 : 1 300 000


UTM, Fuseau 18, NAD83

Carte 3-2
Map 3-2

Décembre 2017 / December 2017



 Terre de la catégorie I (CBJNQ) / Category I land (JBNQA)

3.4 MINING OF DEPOSIT

3.4.1 PIT CHARACTERISTICS

The Rose mining project consists of a pit of 1,620 m in length, 900 m in width (widest point), 200 m in depth with a surface area of 93 ha. The ramps inside the pit will present a slope of 10% and an average width of 30.9 m for the double-lane ramp and a width of about 20.4 m for the simple lanes.

3.4.2 MINING ACTIVITIES SEQUENCE

The construction period will be of 19 months, the production period of 19 years, and the closure and rehabilitation period of 2 years. The schedule is based on an annual extraction ratio of about 15 Mt. In total, 11 Mt of overburden, 182.4 Mt of waste rock and 26.8 Mt of ore could be extracted from the pit. Table 3-1 summarizes the annual mining schedule. The mine shall be in operation 24 hours a day, 365 days a year.

Table 3-1 Mining sequence

Year	Ore	Waste Rock	Overburden
	Tons extracted (kt)		
-2	56	905	372
-1	112	1 810	743
1	1 419	11 811	757
2	1 749	13 685	999
3	1 770	13 820	1 701
4	1 750	12 822	702
5	1 740	13 344	702
6	1 730	12 433	702
7	1 619	12 760	1 094
8	1 625	12 492	1 094
9	1 590	12 292	1 094
10	1 847	11 093	0
11	1 791	11 050	0
12	1 564	11 032	0
13	1 053	12 054	0
14	1 647	10 294	0
15	1 589	4 887	0

Year	Ore	Waste Rock	Overburden
	Tons extracted (kt)		
16	1 471	2 892	0
17	703	898	0
Total	26 824	182 373	10 956

3.4.3 BLASTING AND TRANSPORTATION OF EXPLOSIVES

Blasting will be conducted with an emulsion explosive composed of ammonium nitrate, fuel oil and surface active agent. The manufacture of explosives on the mine site is not planned. Only equipment storage and maintenance work shall be conducted and comply with the regulatory safety perimeters. The average explosive consumption will be of 10,000 kg/day, i.e. approx. 3.6 Mkg/year.

Explosives shall be transported to the pit in trucks driven by qualified personnel. A certified blaster shall load explosives in the drill holes. At the end of each work shift, all unused explosives shall be left in the delivery truck and parked in the maintenance shop at the bulk emulsion stockpile site.

3.4.4 MINING EQUIPMENT

Key mobile equipment required for production is: drilling machines, loaders, and haulage trucks. Drilling work will be performed using two blasthole drilling rigs and one hydraulic downhole drill. Three loaders (different models) shall be used to transfer excavated material. The haulage fleet shall be composed of off-road articulated trucks used to transport waste rock and filtered tailings to the co-deposition waste pile, the ore to the ore stockpile or directly to the crushing plant, as needed.

Various pieces of equipment are also required for operation work. Crawler and wheel dozers shall be used for the maintenance of stockpiles and the cleaning of loading areas, a hydraulic excavator for the shaping of pit walls and another for secondary mining activities.

The maintenance of roads shall be ensured by two graders that will also be used for the removal of snow. Overburden covering the pit will be excavated using wheeled or tracked dozers, bulldozers, hydraulic excavators, 10-wheel trucks or articulated trucks. Two dump trucks equipped with a water tank/sand distributor shall be used to water the roads during summer in order to control dust and sprinkle sand (abrasive) during winter. A jaw crusher will be required for the manufacture of granular material used as road surface.

Bulk emulsion will be delivered to the mine by tanker trucks with a capacity of 20,000 kg. The packaged explosives and detonators will be delivered to the mine by closed trailer trucks with a capacity of 20,000 kg of explosives or 800 boxes of detonators. For the handling of the emulsion on the site, two semi-trailer trucks (10 wheels) of type UMF are planned, one truck will be used for daily operations and the second in reserve to ensure availability of the service in all time. The 12-wheel bulk emulsion will be able to transport and pump bulk emulsion into the drill holes and will handle daily demand.

Pit dewatering will be handle with diesel pumps.

Lighting towers are provided to light the various work areas (pit and stockpiles) given that the mine will be in operation 24 hours a day.

For mechanical maintenance, two fuel and lubricant trucks, one truck tool, two boom trucks equipped with a platform and three tractor trucks with a trailer shall be provided for the supply of the equipment in the pit. Two air compressors and two welding machines shall be necessary for repairs conducted directly in the pit.

Finally, the transportation of personnel on site shall be ensured by a fleet of commercial vehicles.

3.5 INDUSTRIAL AREA

The industrial area will mainly consist in a concentrator where ore will be transformed into spodumene (lithium concentrate) and tantalum concentrate. The area will also include the following: parking lot, electrical substation, administrative building, nursing station, garage with a warehouse, gatehouse, area for the storage and distribution of natural gas, fuel and diesel storage area and distribution stations, reservoir, wastewater treatment system, and storage dome for crushed ore.

3.5.1 GARAGE

The garage will consist of four maintenance areas for machinery and one washing area. Oily water will be managed by the following facilities and equipment: gravity discharge drain, submersible pump, sand traps and oil separator able to ensure it remains below the discharge standard. Used oil collected from the separator will be transferred manually by an operator into the used oil storage tank at the mine site.

3.5.2 STORAGE OF PETROLEUM PRODUCTS

Chemical products, oils and lubricants will be stored in a concrete containment structure which equals to at least 110 % of the volume of the largest reservoir. Fuel and diesel will be stored in double wall reservoirs on the industrial pad near the garage. The liquefied natural gas (LNG) structures (double wall) will be equipped with a containment ditch which will retain all potential tank leaks. The containment ditch will be located 50 m from other equipment and 80 m from buildings where employees are present, as specified in standard CSA Z276-15 applicable for the production, storage and handling of LNG.

3.5.3 ORE CONCENTRATION PLANT (CONCENTRATOR)

The concentrator will have a design capacity of approx. 4,900 tons of treated ore per day to produce approx. 186,327 tons of lithium concentrate, 50,205 tons of spodumene concentrate and approximately 429 tons of tantalum concentrate per year. The plant will produce about 31.4 t./h of lithium concentrate (spodumene), 1,9 t./h of tantalum concentrate and 179.7 t./h of tailings. The recovery factor of lithium will be 87 % and 90 % for the technical and chemical quality, and of 40 % for tantalum. The lithium concentrate of technical grade will have a 6 % Li_2O content, while the chemical grade of lithium concentrate will have 5 % Li_2O content and the tantalum concentrate will have a content of 20 % Ta_2O_5 . A crushing and shredding process followed by differential flotation and gravity and magnetic separation is planned.

The spodumene concentrate will be transported bulk from a storage silo and a loading system, while the tantalum concentrate is put into 1 ton bags for transportation. The buyers themselves will pick up the finished products at the mining complex.

3.6 FRESH AND POTABLE WATER

Fresh water required to supply fire protection water, process water requirements at the treatment plant and potable water requirements (after treatment) for buildings in the industrial area will be taken even groundwater pumped for pit sinks. A tank for fresh water will be set up in the mill. A flow rate of 44 m³ / h is required for the industrial zone.

The drinking water supply will come from the fresh water that will be treated. A domestic water treatment system will consist of anionic exchanger, activated carbon filters and UV disinfection. The treatment system should be optimized according to the quality of the groundwater. Bottles of water will also be available in the buildings to ensure a continuous supply of safe drinking water for workers.

3.6.1 WATER BALANCE OF THE CONCENTRATOR PROCESS

A flow of 703 m³/d coming from the raw water reservoir will be required, primarily as makeup water for the process water reservoir (538 m³/d) and secondly (165 m³/d) for the process (pump sealing water and preparation of reagents). Mine water (258 m³/d) will also be introduced in the crushed zone directly in the ore.

3.6.2 SURFACE WATER MANAGEMENT

Surface water that comes into contact with the mining infrastructure but has no potential for contamination, such as the overburden and service road ditches, will not be captured, but passive means of control of the material Suspended solids will be implemented during construction and operation to meet discharge standards for suspended solids.

3.7 MANAGEMENT OF ORE, WASTE ROCK AND TAILINGS

3.7.1 GEOCHEMICAL CHARACTERIZATION OF WASTE ROCK

Geochemical characterization tests were carried out on waste rock samples taken from the projected pit footprint of the lithium - tantalum Rose mining project. CEC has mandated Lamont Inc. to compile and analyze the results of geochemical characterization tests performed on sterile rock samples taken.

The lithium and tantalum deposit of the Rose Mining Project is located in the Superior Geological Province. Mineralization is contained in spodumene pegmatite dykes that are hosted in gneiss, amphibolite, porphyry and metasediment units. These four lithologies represent all future waste rock that will be extracted from the open pit planned to be exploited at the Rose project. The lithologies of gneiss and porphyry represent about 85% of the future sterile.

Geochemical characterization tests were used to determine the potential of the samples to generate acidity. According to the criteria of the Directive 019 applicable in Quebec, two out of 21 samples are considered potentially acid generators with S_{total} concentrations of 0.314 % and 0.353 %. These values are very close to the 0.3 % S_{total} criterion. Most samples have a S_{total} concentration of less than 0.05%. According to currently available information, that the majority of the samples are not potentially acid generating (NPGA), that the sulfur concentrations are low and that the presence of sulphides is marginal in the lithological units, it can be considered that the entire waste rock will be a non-potentially acid generator.

The tests were also used to determine the potential for metal leaching. There are no samples with metal concentrations that exceed criterion C of the Soil Protection and Contaminated Sites Rehabilitation Policy

(PPSRTC). Waste rock is not considered to be high-risk tailings. Again according to the criteria of the Directive 019 based on the metal analysis and the TCLP leaching test for "Toxicity Characteristic Leaching Procedure", six samples out of 21 are considered potentially leachable for copper. Copper exceedances are mainly observed in amphibolite samples. According to CEC, this lithology could represent only 10.6 % of the total quantity of waste to be extracted.

In several cases of exceedances, the copper concentration (metal analysis) is very close to the value of criterion A of the PPSRTC. The TCLP test is carried out in an acidic medium, and since it has been demonstrated that all the waste rock would be non-potentially acid generating and that the waste rock would not be subjected to acidic conditions, water leaching tests were made, namely SFE and CTEU-9. Samples with a copper concentration above criterion A did not exceed the criteria for resurgence of surface water in these leaching tests. Since the results of the leaching tests are not unanimous on copper leaching potential and the copper concentrations are relatively low, the risk of copper leaching is unlikely.

Ore and overburden will also be subject to geochemical characterization and results will be reported later. Kinetic tests are currently under way.

3.7.2 GEOCHEMICAL CHARACTERIZATION OF TAILINGS

Geochemical characterization tests were carried out on a sample of tailings taken during pilot plant metallurgical tests. CEC has mandated Lamont Inc. to compile and analyze the results of geochemical characterization tests conducted on this tailings sample.

The tailings produced from the concentration of lithium and tantalum have a composition similar to ore, with the exception of spodumene and tantalite, and are composed mainly of quartz, feldspars and micas.

These tailings have a relatively homogeneous composition and the sample taken is representative of the future residues that will be sent to the waste rock pile and filtered tailings. The tailings are mainly composed of SiO_2 and Al_2O_3 . The results obtained with the total rock analysis clearly demonstrate the overall composition of the residues are silicates.

Geochemical characterization tests were used to determine the potential of the samples to generate acidity. According to the criteria of the Directive 019 applicable in Quebec, the sample of mining residues is considered not potentially generating acid with a S_{total} concentration lower than the limit of detection of 0.005%. According to currently available information, that the tailings sample is NPGA, that the sulfur concentration is very low, it can be considered that all mine tailings will be non-potentially acid generating.

The tests were also used to determine the potential for metal leaching. There are no samples with metal concentrations that exceed criterion A of the PSRTC. Based on the information currently available, it can be assumed that all mine tailings will be non-leachable and will therefore be low-risk residues.

3.7.3 ORE MANAGEMENT

Ore will be transported from the pit to the ore stockpile located south-west of the pit (adjacent to the industrial pad). The stockpile was designed to contain ore reserves. The ore stockpile area will have a surface area of approx. 10 hectares, a maximum height of 40 m and a total capacity of about 3.9 Mt (1.6 Mm^3).

The ore stockpile design will be produced in accordance with Directive 019 pertaining to the mining industry. It is understood that materials used for the ore stockpile are considered as "low risk tailings" (a characterization will be performed to verify this consideration).

No waterproofing measure is expected for the protection of underground water. However, like the industrial pad, the ore stockpile will be surrounded by a runoff ditch.

3.7.4 WASTE ROCK AND DRY TAILINGS MANAGEMENT

A portion of the waste rock will be used as construction material, particularly for the construction of roads and pads, as well as for the filling of boreholes. The exceeding waste rock will be directed to a dump site where the waste rock will be co-deposited with the dry tailings. This will reduce significantly the footprint of the dump. This waste dump will have a maximum capacity of 182 Mt of waste rock and 24 Mt of dry tailings, a volume of approximately 107 Mm³, an area of 204 ha and a final height of 100 m (maximum elevation of 375 m). Phase 1 will contain the years of construction, as well as the first four years of production. It will be located directly to the west of the pit. Runoff from the early years will naturally flow to the pit or industrial area and will be captured by ditches. The second phase of the pile will continue in two branches, one to the west and the other to the southwest. It will meet the need for storage of waste rock and dry tailings until the end of the mine life. The design of the waste rock pile is in accordance with the criteria of Directive 019 on the mining industry. The materials composing the waste rock pile are considered "low risk tailings". No waterproofing measures for the protection of groundwater are therefore planned. In addition, the accumulation area is at least 20 m from nearby streams.

3.7.5 OVERBURDEN STOCKPILE

An overburden stockpile with an approximate capacity of 11.31 Mt (6 Mm³) and a maximum height of about 30 m is expected to contain materials coming from the stripping of the pit and other infrastructures. Surveys showed that the overburden stockpile would be composed of coarse-grained soil (sand with gravel, stones and erratic blocks). Since it is not possible to segregate the vegetation layer and the overburden layer underneath, topsoil and overburden will be stored together in the overburden pile and used for progressive restoration of the waste rock pile and filtered waste. The overburden stockpile design will be produced in accordance with Directive 019 pertaining to the mining industry. It is expected that the materials used for the overburden stockpile will be considered as "low risk tailings". No specific measures to protect underground water, such as a membrane, is expected. In addition, the overburden stockpile is located at least 60 m from nearby watercourses.

3.7.6 DYKES AND RESERVOIRS

A dyke with a width of approx. 60 m will be built in the narrowest section of Lake 3 (Map 3-1). It will be located more than 100 m from the pit boundaries. An upstream cofferdam and a downstream cofferdam will be required in order to build the structure in dewatered conditions. Given that data on the permeability of deposit at the bottom of the lake, the selected design includes a cut-off wall between the watertight core and the bedrock. The design will be further defined once bathymetric and geotechnical surveys conducted. A freeboard of 1 m with respect to the 10,000-year flood was considered. Dyke resurgence will be collected thanks to dewatering wells located in secure locations between the dyke and the pit. The wells will be in operation all year long as to maintain underground water at a lower level than the pit bottom so that the pit stays dry for purposes related to safety and ease of production.

3.8 MINE WATER MANAGEMENT

3.8.1 GENERAL

The water management plan aims to minimize the amount of water that comes into contact with the mining infrastructure and to minimize the mixing of contact water with the infrastructure with potential for contamination (pit, industrial zone, storage areas, sterile rocks and ore) with those who have no contact with these same infrastructures.

During the construction phase, runoff will be collected by ditches and small ponds until the accumulation pond is completed. Once completed, the ditch network will be connected so that drainage water from the industrial area is directed to this basin.

The pit will, in part, be kept dry by means of groundwater catchment wells installed on its outer perimeter and partly by pumps installed at the bottom of the pit. This water from the bottom of the pit will be transported to the accumulation pond and will be treated, if necessary, before being released to the environment. The groundwater pumped around the perimeter of the pit will be discharged to the environment by respecting the capacities of the receiving environments or will serve as a fresh water supply to the concentrator. A perimeter ditch will also be built to prevent runoff from entering the pit.

Surface water that comes into contact with the mining infrastructure but has no potential for contamination, such as the overburden and service road ditches, will not be captured, but passive means of control of the material Suspended will be implemented during construction and operation to meet discharge standards for suspended solids.

3.8.2 PIT DEWATERING WATER

A hydrogeological study has been carried out and has shown that the 1 m predicted drawdown cone will reach many lakes on the periphery of the mine site and extend over a radius of about 4 km around the pit. The amount of water pumped to the bottom of the pit is 12,350 m³/d, to which must be added the 10,800 m³/d of water pumped by the wells on the periphery. The total volume of water pumped is therefore 23,150 m³/d. The volume of water from pit runoff is approximately 1,850 m³/d from the 12,350 m³/d pumped at the bottom of the pit, representing approximately 15% of the total volume of water pumped into the pit. It is important to remember that the amount of water associated with precipitation is an annual average value and not the volume of water associated with snowmelt or daily precipitation. As an indication, a rain of 30 mm will generate a volume of precipitation water of about 30 000 m³/d additional to manage.

The dewatering of the pit will be carried out by nine peripheral wells installed around the pit, each having a maximum pumping rate to the complete excavation of the pit estimated at 1,200 m³/day (ie 14 L/s), assumed constant in time. These pumps will be installed as the development of the pit and the collected water will be discharged into the receiving lakes provided, while respecting their reception capacity.

Throughout the operation of the mine, it will be necessary to pump the accumulated water to the bottom of the pit. It is estimated that pumping could reach a maximum flow of 515 m³/h. These dewatering waters will be charged with suspended solids, metals and nitrates. They will be directed to an accumulation pond before being conveyed to the treatment unit and then to the final effluent.

3.8.3 RUNOFF FROM STOCKPILES AND PADS

Peripheral ditches will lead runoff to two basins around the overburden stockpiles and dry tailing. The water is then pumped or grabbed to the equalization pond for treatment before discharge to the effluent.

To protect ditches against erosion, broken stones of 0-400 mm in size are expected on the walls and the bottom of the ditch. Runoff and surface drainage water from the industrial area will be directed towards the equalization pond using gravity. Three ponds are also expected around the waste rock stockpile in order to hold a 24-hour duration, 100-year flood (3.45 mm/h) in addition to snow melting over a period of 30 days (0.4 mm/h).

The equalization pond will have a depth of 2 m and a capacity of 70,000 m³. The volume is estimated using a proven method, then by adding a buffer value of 30,000 m³ in order to reduce the instantaneous capacity of the final effluent water treatment plant.

3.8.4 WATER TREATMENT PLANT

The treatment plant will operate 24 hours a day for 365 days a year. It can operate as well in temperature conditions ranging from -45°C to 30°C . The plant will be located near the equalization pond located some 100 meters from the industrial pad. The water treatment plant is required to treat runoff from overburden stockpiles, dry tailing and for the pit dewatering.

The treatment plant for effluent water will consist of two modules with a treatment capacity of $500\text{ m}^3/\text{h}$ each and may be able to go up to a capacity of $920\text{ m}^3/\text{h}$ taking into account the same characteristics of water. The design criteria are based on the maximum values that can be discharged to the effluent, in accordance with Directive 019 on the mining industry.

The treatment plant will be equipped with instrumentation for the measurement of pH, turbidity, flow, etc. to collect at all times water quality data before it is discharged in the final effluent.

3.8.5 FINAL EFFLUENT

The final effluent whose flow was assessed between $470\text{ m}^3/\text{h}$ and $857\text{ m}^3/\text{h}$ (depending on the runoff conditions) will be directed to Creek A via a channel. This channel will display a width of 3 m at the base, a height of 2 m and a slope of 1.5H: 1V. To protect the channel from erosion and for the purpose of stabilizing it, a stonework of 0-400 mm stones is provided on the walls and the bottom of the ditch.

3.9 INFRASTRUCTURES AND AUXILIARY FACILITIES

3.9.1 ACCOMMODATION CAMP

The accommodation camp will be located more than 25 kilometers north of the site, on the site of a former Hydro-Québec camp (former Eastmain camp) and will be developed by the Cree community of Eastmain. This camp is not part of this project since it is a private camp. It could also accommodate workers from other projects in the region. Bus transportation will connect the camp with the mine site.

3.9.2 DOMESTIC WASTEWATER

Domestic wastewater will be produced at the industrial area. A domestic water treatment system will be constructed in accordance with the regulations in force.

The preferred treatment system at the present time is a conventional technology, namely a modified scrubber type scrubbing field for the industrial deck.

3.9.3 POWER SUPPLY

A 315/25 kV electrical transformer substation with a planned capacity of 13,486 kW will be constructed and operated by the developer. The substation will be connected to the existing 315-kV transmission line (circuit L3176) through a short 315-kV branch line to be constructed by Hydro-Québec. The 315-kV transmission line will also have to be relocated for approximately 500 m since it is currently on the footprint of the future pit. Given that Hydro-Québec will obtain the required authorizations for this line, this intervention is not covered by the impact study. All relevant data collected, analyzed and evaluated as part of this impact study will be made available to Hydro-Québec.

The electrical distribution of the mine site will be done with a three-phase overhead line with a voltage of 25 kV, which will be developed and operated by the developer. It will have three main branches, one

servicing the industrial area and the other two for the rest of the site. An electrical substation will be installed near the pit to service the electrical mining equipment and pumping stations around the pit.

3.9.4 BORROW PIT

An existing borrow pit located south-east of the pit, near the Nemiscau-Eastmain-1 road, will be used for the construction of the main access road and construction camp pad until waste rock from the preparation of the pit is available for construction. The borrow pit was used once for the construction of the road and of Hydro-Québec's adjacent infrastructures. Its remaining volume of 148,000 m³ was validated by photo-interpretation.

3.9.5 HAULAGE AND SERVICES ROADS

The main access to the Rose mining project will be from the Nemiscau - Eastmain-1 road. The access roads will all be permanent and the watercourse crossings will be built according to the standards in force. The route of the route was chosen to minimize stream crossings.

Besides the main ramp that will provide access to the pit extraction areas, a network of haul roads and service roads will be required to reach the various surface infrastructures.

The roads will have a rolling width of 21 m with an overall width of approximately 40 m. This conservative configuration, based on typical 110 ton trucks, will accommodate two trucks side by side.

Service roads with a rolling width of 8.6 m and an average overall width of 25 m and a maximum width of 30 m will be used to access other infrastructure including the storage pond, storage facilities explosives and the main electrical station.

3.9.6 LIGHTING

The design criteria used for outdoor lighting on the site have been prepared taking into account the standards in force, paying particular attention to the following: sober and uniform lighting that will meet the real needs of lighting, including the luminous flux will be oriented towards the surface to be lit, luminaires which do not have, as much as possible, a luminous flux above the horizon, fixed luminaires avoiding overflows out of the spaces to be lit and a limitation of the duration of use of the lights .

Light-emitting diode ("LED") lighting has therefore been selected, rather than traditional sodium bulbs, to provide better energy savings, longer life and better control. Minimal lighting levels were targeted according to locations.

3.9.7 GUARDHOUSE AND ADMINISTRATIVE BUILDINGS

The access road to the mine will include a guard post controlling entry to the site. 48 parking spaces are provided for visitors and employees, although the majority of employees will travel by bus from the camp.

An area including administrative buildings will be located near the guardhouse. They will consist of 26 construction trailers connected together to house staff offices, an infirmary, a room for the mine rescue team, a dining room, two conference rooms, a dryer, showers and sanitary facilities. but will not host a cafeteria service at the site and workers will be required to bring their lunch.

3.10 RESIDUAL MATERIAL MANAGEMENT

The Rose mining project will produce residual materials originating from the mining activities performed on site. The residual materials are various in nature, but are mainly:

- Domestic solid waste;
- Dry residual materials (construction materials, wood, metal, packaging, etc.);
- Hazardous waste (waste oil and lubricant, adhesive, paint, empty reagent containers, etc.);
- Domestic wastewater.

3.11 ENERGY CONSUMPTION

Liquefied natural gas ("LNG") will also be used to supply certain equipment in the treatment plant and the heating of buildings. The need for LNG has been estimated at 8,996,800 m³/year.

In case of emergency, the essential energy supply will be provided by a generator with a 500 kW energy capacity installed at the mill.

3.12 TRANSPORTATION OF FINISHED PRODUCTS AND TRAFFIC

The transportation of finished products from the mine site will be conducted by the buyers themselves. They shall come to the site at a frequency of approximately 90 travels/week.

During operation, traffic will be generated by the mining operations, notably employees (290 workers), supply to the mine (delivery of emulsion, detonator, others) and shipment of transformed products. The main access road will be Nemiscau-Eastmain-1 road. Up to about 575 vehicles (trucks, buses, cars) may access the mine site each week.

3.13 PROJECT PHASES AND SCHEDULE

3.13.1 CONSTRUCTION PHASE

The construction phase will extend over a period of 19 months. The number of workers during this period could reach up to 575 workers.

Regarding the waste rock and overburden stockpiles, only surfaces required for the storage of materials from Years -2 to 0 will need to be deforested, making sure the vegetation cover stays in place. Work shall mainly take place on frozen soil during winter. If needed, a temporary ditch will be dug around the perimeter for the management of water during this period. The foundation of the following elements shall be constructed during this step: various facilities and mining infrastructures, main and secondary access roads bedding, water treatment facilities, etc.

3.13.2 OPERATION AND MAINTENANCE PHASE

The projected duration of the operation and maintenance phase is 19 years (17 years for the mine operation and 19 for the concentrator). During this time, about 290 people will work on the mine site. The vast majority of employees will follow a 14/14 work schedule (rotation between day shifts and night shifts).

This phase will include: drilling, blasting, ore and waste rock mining and transportation to designated areas, dewatering of pit, transformation of ore into lithium and tantalum concentrate, daily monitoring and supervision of mining activities.

3.13.3 CLOSE-OUT PHASE

The close-out phase shall last 2 years. It will start once ore reserves are depleted or when residual ore mining is no longer cost effective. The overall restoration and refurbishment strategy for the mine site is to perform work gradually.

Restoration work will be conducted in accordance with applicable regulations of the *Guide et modalités de préparation du plan et exigences en matière de restauration des sites miniers au Québec*, of Directive 019 pertaining to the mining industry, as well as any other applicable provision, such as the *Politique de protection des sols et de réhabilitation des terrains contaminés* and the Land Protection and Rehabilitation Regulation (c. Q-2, r. 37).

The objective of the protection, refurbishment and restoration measures is to restore mine site to satisfactory conditions, that is:

- Eliminate unacceptable risks to the health and ensure safety of people;
- Limit production and spreading of substances likely to cause damage to the receiving environment, and on the long-term, seek to eliminate any form of maintenance and monitoring;
- Restore site to conditions visually acceptable to the community;
- Restore infrastructure site to conditions suitable for future use.

Post-close-out monitoring will be spread over 5 years. It is important to note that the site will be secured during restoration work. Traffic signs will be installed around the pit and at other places on site depending on the potential hazards during restoration. The periphery of the pit will be surrounded by blasted rocks put together to form a berm.

3.14 SCHEDULE

Table 3-2 summarizes the steps of the Rose Lithium – Tantalum Mining Project.

Table 3-2 Project Implementation Schedule

Activity	Year
Resources assessment (NI-43-101)	2016-2017
Feasibility study	2016-2017
Environmental impact assessment	2016-2017
Request for permits	2017-2018
Construction (site preparation)	2018-2019
Pre-production and mining of pit	2018-2037
Ore processing	2020-2037
Site close-out and remediation	2037-2039
Site monitoring	2040-2045

3.15 PROJECT COST

The Rose mining project is an investment of more than \$300 million. It is estimated that approximately 575 employees will be allocated for the construction of the mine while about 290 will be needed for the operation phase.

The investment costs include an initial investment to enable a rate of ore processing during the 17-year life of the mine. This initial investment is estimated at approximately \$ 341.2 million and the sustaining capital at \$ 126.8 million.

The global restoration cost of the Rose mine site is estimated at almost \$17.5 million in direct cost and \$5.4 million in indirect cost.

4 COMMUNITY INVOLVEMENT AND CONCERNS

4.1 COMMUNICATION PLAN

The Rose mining project is part of a sustainable development process whose objective is to, among others, take into account the social and economic setting of the receiving environment. In that respect, the acceptance of the project by the community is an essential condition to its development.

CEC implemented a communication plan focused on the involvement of populations affected by the project. The plan is mainly intended for the Cree and Jamesian communities.

The main objectives of the communication plan are:

- to inform communities affected by the project and gather their concerns;
- to communicate results of field studies.

The approach, which integrates the communities' traditional knowledge, also wishes to facilitate the harmonious integration of the project within the receiving environment.

Several measures were implemented to meet the objectives of the communication plan. Since 2011 and up to now, the main communication activities have been conducted in parts by the proponent, and by its Environmental Consultant. The communication activities include:

- Meetings with the political authorities of the aboriginal communities: Cree, Eastmain, Nemaska and Waskaganish Regional Administration Representatives;
- Meetings with socio-economic stakeholders from the Eastmain, Nemaska and Waskaganish communities;
- Meetings with Jamesian municipal and socio-economic representatives;
- Public informational presentation of the project;
- Focus groups with members of the Eastmain community;
- Interviews with Cree users of the project's site.

Several meetings with the tallyman of the land where the project site (RE1) is located were held as to inform him of the progress of the project on a regular basis.

4.2 ABORIGINAL COMMUNITIES

Meetings with Political Authorities

At the start of the project, CEC's CEO met with Eastmain and Nemaska's Cree political authorities to present the company, as well as the Rose Lithium – Tantalum Mining Project. A first meeting was held on July 4, 2011, in Val-d'Or with the Eastmain Nation Chief, and a second meeting on July 8, 2011, with the Nemaska Nation Chief.

On July 14, 2011, the CEO visited the Eastmain community to present the project to the Nation Council. For the Nemaska community, two meetings were organized between the CEO and the Nation's economic development representative to discuss the economic and social aspects of the project.

Several other meetings were held between CEC and the political authorities of the aboriginal community, including for discussions on the Impacts and Benefits Agreement (IBA) in connection with the Rose Lithium – Tantalum Mining Project.

On March 10, 2017, CEC met with the aboriginal political authorities. CEC met with the Cree Nation representatives from Eastmain in Chibougamau. They talked about measures for aboriginal employees, the creation of a liaison/implementation committee and the upcoming communication activities. Meetings were also held in February 2018 with the tallymen of the communities of Nemaska and Waskaganish to hear their concerns and expectations regarding the project. Those consultations were organized with the help of the CNG.

Public Informational Meeting Regarding the Project

On September 6, 2011, CEC presented the project to the Eastmain community during the Annual General Meeting. The objective was to present the project to all members of the community. On September 12, 2018, CEC presented the project in Eastmain at the community's annual general assembly. This was an update to follow -up on the development of the Project.

Interviews with Socio-economic Stakeholders

In 2012, anthropologists conducted interviews with stakeholders working in the economic, cultural, social, health and environmental sectors within the territory of the community of Eastmain. In Nemaska, several interviews were conducted with stakeholders in the environmental, health, economic, public safety, educational, hunting, fishing and trapping sectors.

In November and December 2018, stakeholders were met in Nemaska and Waskaganish

It is important to mention that, in addition to meetings conducted in 2012, by anthropologists, with stakeholders from the aboriginal community, CEC continued and maintained, to this today, regular discussions with stakeholders from various organizations, to align the project with aboriginal communities' expectations and concerns.

Focus Groups

Focus groups were organized in the Eastmain community with women, men and youth in order to document their expectations and concerns regarding the development of the mining project on the community's territory. Anthropologists conducted interviews with users of the project receiving territory. The tallymen of the four traplines part of the study area, as well as 10 other users of the site on which the projected Rose mining infrastructures are located, were interviewed.

4.2.1 CONCERNS AND EXPECTATIONS OF THE ABORIGINAL STAKEHOLDERS

The majority of interviewed stakeholders seemed favorable to the project, mainly due to the employment opportunities for youth, but subject to the protection and respect of the environment. All expressed reservations, concerns and expectations regarding the genuine involvement of members of the community in the project, the maximization of the project benefits for the community, as well as the importance of the efficient management of environmental impacts. Three stakeholders expressed reservations regarding the overall land development as they believe that the project only provides short-term benefits and alters the land and the Cree identity.

Table 4-1 presents the concerns and expectations of the Cree stakeholders.

Information requested and concerns expressed include:

- Presentation of the close-out plan;
- Visual aspect of the open mine site within the landscape;
- Mine tailings management;
- Water treatment;
- Contamination of waters and territory;
- Toxic spill;
- Disturbance by air traffic (if the Opinaca airport is in operation);
- Impacts of heavy machinery traffic on the Nemiscau-Eastmain-1 road (safety and air quality).

4.3 JAMESIAN COMMUNITY

4.3.1 CONSULTATION PROCESS

In the Jamesian community, interviews were conducted in Matagami in May 2012, with stakeholders from certain sections of the municipal administration, from economic development, from land management and planning, and from natural resources management. These interviews identified the concerns and expectations of the Jamesians, regarding the project and overall mining development on the territory.

4.3.2 CONCERNS AND EXPECTATIONS OF JAMESIAN STAKEHOLDERS

Jamesian stakeholders expressed support for the mining development in their region, but all stressed the importance of developing conditions to ensure and maximize the positive socio-economic benefits for the region. Concerns and expectations of Jamesian stakeholders are presented in Table 4-2.

4.4 CONSIDER THE CONCERNS AND EXPECTATIONS OF STAKEHOLDERS

Thanks to the consultation of stakeholders, the concerns and expectations of the communities regarding the project could be identified. Taking into account the consultations conducted to date, the recurring themes are the project's environmental impacts and land use, the communication of project information, the project's impacts and mitigation measures, training and creation of jobs, as well as local and regional economic benefits.

To answer concerns expressed by stakeholders regarding the project, the CEC will provide specific monitoring programs, including the ones listed below.

Aboriginal communities:

- Monitoring of socio-economic conditions. The objective is to qualify and quantify the economic benefits and assess the efficiency of selected improvement measures and determine if the expectations of Cree communities were met;
- Monitoring of common use of land and resources for traditional purposes. The objective is to document and assess the impacts of the project on the traditional activities of the RE1 tallyman, as well as the members of his family, and to assess the efficiency of the improvement and mitigation measures implemented. This monitoring program is based on meetings with the RE1 tallyman and his family;

- Monitoring regarding well-being and human health. One of the aspect of the monitoring program targets the Cree workers and shall concern their integration within the work environment, social issues and indebtedness. The other aspect targets the Eastmain and Nemaska communities and concerns the various aspects specific to their well-being and health, including the impacts of heavy machinery traffic increase on the Nemiscau-Eastmain-1 road.

Non-aboriginal communities:

- Monitoring of socio-economic conditions. The objective is to qualify and quantify the economic benefits and assess the efficiency of selected improvement measures and to determine if the expectations of the regional communities were met.

Monitoring reports are presented to the Exchange and Consultation Committee for discussion and to adjust and improve the proposed measures.

4.5 CONTINUED CONSULTATION AND ENGAGEMENT OF STAKEHOLDERS

The consultation of stakeholders is a continuous process that shall continue beyond the completion of the environmental impact assessment. CEC plans on extending its relationship with the project stakeholders during all phases of development in order to comply with the objectives of the consultation. Since 2012, CEC has maintained a continuous dialogue with stakeholders.

4.5.1 MONITORING COMMITTEE

In accordance with An Act to amend the Mining Act, CEC has planned the creation of a monitoring committee in order to promote the involvement of the local community in the project. The committee will be established at the very beginning of construction up to the completion of work specified in the refurbishment and restoration plan.

As required by the Act, the monitoring committee shall be composed of at least one representative from the municipal community and one from the economic community, one citizen, and one representative from an aboriginal community consulted by the government regarding the project.

Table 4-1 Concerns and Expectations of Stakeholders and Aboriginal Focus Groups Interviewed in 2012

	Impacts on the Environment and Land Use	Cumulative Impacts of Various Projects	Terms, Conditions and Criteria for Training and Employment	Job Creation	Communication of Project Information, Impacts and Mitigation Measures	Social Issues (alcohol, drugs)	Relationship Between Cree Workers and Non-Native Workers	Social Issues Related to Mining Work	Work Conditions and Environment of Cree Workers and the Mine	Transportation of Qualified Workers in the Community for the Benefit of the Mining Company	Economic Benefits and Involvement of Crees	Fair Distribution of Benefits within the Community	Social Involvement of the Mining Company in the Community
Interview with representatives from organizations													
Development Corporation Wabannutao Eeyou (CDWE), Eastmain	•		•	•	•	•	•	•	•	•	•		
Eastmain Economic Development Services	•		•		•			•			•	•	
Eastmain Nation Youth Council			•	•								•	
Eastmain Cree Human Resources Development	•		•	•	•	•		•	•				
Eastmain Housing Services	•	•	•	•	•	•		•	•	•		•	
Eastmain Elders Council			•	•	•	•		•					
Eastmain Special Project Services	•	•	•		•	•		•	•	•	•		•
Eastmain Public Health Services	•	•	•	•				•	•	•	•		•
Eastmain Police Services				•	•	•		•					
Cree Board of Health and Social Services of James Bay (CBHSSJB) – National Native Alcohol and Drug Abuse Program (NNADAP)	•	•	•	•	•	•	•	•	•				•
Eastmain Environmental Health Department	•	•	•	•	•			•	•			•	
Nemaska Wellness Center	•	•	•	•	•	•		•	•		•		•
Cree Trappers Association, Nemaska	•		•	•	•	•	•	•	•		•		
Operations Department, Nemaska,	•			•	•	•					•		
Nemaska Economic Development Department	•	•	•	•		•		•			•		
Nemaska Territory and Environment Department	•		•	•	•	•		•	•		•		
Luke Mettaweskum School, Nemaska	•				•	•		•	•				
Nemaska Police Services	•				•	•		•	•				
Focus groups													
Women	•	•	•		•			•					
Men	•		•	•		•		•	•	•			
Youth	•			•									

Table 4-2 Concerns and Expectations of Jamesian Organizations

Jamesian Organizations Interviewed	Workforce Training	Shortage of Regional Workforce	Job Creation	Communication of Project Information, Impacts and Mitigation Measures	Jamesian Consultation and Involvement	Development Pattern and Consequences on the Development of Regions (Social Responsibility of Mining Companies)	Impacts on the Environment	Coordination and Consolidation of Operations Between Mining Companies	Regional and Local Social and Economic Benefits	Creation of a Support and Optimization Committee
Municipality of Baie-James	•		•	•	•	•	•		•	•
<i>Société de développement de la Baie-James</i>	•	•	•	•	•	•	•	•	•	
Regional Conference of the James Bay Elected Officials James Bay Local Development Centre Regional Commission in the Field of Natural Resources and the James Bay Territory	•	•	•	•	•	•	•	•	•	•
COMAX Nord (Maximizing Economic Impacts in Northern Quebec)	•	•	•	•	•	•		•	•	•

5 METHODOLOGY AND SCOPE OF THE ENVIRONMENTAL ASSESSMENT

5.1 METHODOLOGY

The overall approach for the assessment of the project's environmental impacts complies with the Federal and Provincial requirements for the realization of environmental assessments. The methodology used takes into consideration the federal reference document on the identification of significant environmental impacts of a project, Guidelines for the preparation of the project-specific EIA, as well as the MDDELCC sector guideline.

The assessment of the project's environmental impacts is divided in two parts: i) knowledge of the environment and project; ii) assessment of environmental impacts. The following activities were completed prior to the assessment of environmental impacts caused by the project:

- Technical knowledge of the project. The objective of this step is to properly understand the technical characteristics of the permanent and temporary infrastructures to be constructed in terrestrial and aquatic environments, define the construction methods, operation activities, as well as methods for the dismantling of the infrastructures;
- Knowledge of concerns, interests and environmental issues associated with the project. The concerns, interests and environmental issues specific to the project could be identified thanks to communication and connections with communities. Taking into account these elements allowed for the identification of components whose impacts were further assessed;
- Knowledge of environment. Relevant data regarding the environment was gathered from existing information and specific inventories of the physical, biological and human environments. This way the environment affected by the project could be characterized and its most sensitive components identified.

Here are the main aspects covered by the assessment of project impacts on the natural (physical and biological) and human (Cree and Jamesian communities) components:

- Select study components and valued components;
- Determine the scope of the environmental impact assessment;
- Characterize the biophysical and human environments prior to disruption;
- Assess environmental impacts;
- Supervision and monitoring programs (if needed);
- Compensatory programs (if needed).

By understanding the technical aspects of the project, its impacts on the environmental components (especially the valued components), as well as the significance of these impacts and the suitable mitigation measures, can be determined. The significance of the impacts (negative or positive) is assessed by taking into account the mitigation measures, either common measures (usually technically and economically feasible and achievable for similar projects) or specific/improvement measures required for the present project which are often specific to certain components. Residual impacts are impacts that

remain after the implementation of all measures. If needed, compensation programs and supervision and monitoring programs will be presented.

The procedure presented in Table 5-1 summarizes the methodology used for the assessment of impacts of the project on the environmental components.

Table 5-1 Summary of the Environmental Impact Assessment Methodology

1	Establish the Scope of the Assessment
	Select Valued Components
	It is essential to justify the selection of the components, whether or not there are selected as valued components. The regulatory framework and concerns expressed by the Cree and Jamesian communities are used to identify the components, including the valued components.
	Spatial and Temporal Boundaries
	Space and time boundaries used for the environmental assessment vary according to each valued component.
2	Present the Existing Conditions
	Key highlights of the environmental characterization are presented in the EIA report and, as needed, refer to a sectoral report presented in the EIA volume 2. Sources of information are detailed for each component characterized.
3	Assess Environmental Impacts
	Specify Likely Environmental Impacts
	These projections concern the natural and human environments (Cree and Jamesian communities). For each component, a description of the likely environmental impacts is provided.
	Mitigate Impact
	Presentation of the common or special mitigation measures for each component employed to minimize the impacts. If needed, a compensatory program to limit the losses or an improvement program to maximize earnings.
	Determine if Residual Impacts are Significant
	Assessment of residual impacts following the implementation of mitigation measures and identification of impacts (significant or insignificant).
	Cumulative Impacts
	Cumulative impacts on valued components (separate section as requested by the federal Guidelines).
4	Supervision and Monitoring Programs
	Presentation of the work supervision program for the construction and close-out phases, and of the monitoring program for the operation and maintenance phase, if required.

5.2 SCOPE OF ASSESSMENT

Once government authorities determined that an environmental assessment was required, the EIA focused on the projected activities and infrastructures of the construction, operation and maintenance, and close-out phases.

5.2.1 VALUED COMPONENTS

“Valued components” refer to “attributes associated with the project that have been identified to be of concern by the proponent, government agencies, Aboriginal peoples and/or the public. The value of a component not only relates to its role in the ecosystem, but also to the value placed on it by humans.”

The EIA takes into consideration the valued components listed in subsection 5 of CEAA (2012), in section 7.1 of the Rose Lithium – Tantalum Mining Project Guidelines, as well as components specified in section 79 of the Species at Risk Act.

Table 5-2 summarizes the selected valued components as part of the current environmental impact assessment.

Table 5-2 Valued Components

Physical Environment	
Soil Quality	Physicochemical and stratigraphic characteristics of surface deposits. Vulnerability of soil to erosion, its contamination and stability.
Hydrology	Surface water movement and turnover, watercourse hydrology and hydraulics.
Surface Water and Sediment Quality	Physicochemical characteristics of water surface and sediment. Vulnerability of sediment to contamination.
Hydrogeology	Characteristics associated with underground runoff, soil permeability and aquifer classification.
Underground Water Quality	Natural (water table) or induced (drainage and pumping) gravity flow of underground water. Vulnerability of underground water to contamination and availability for human consumption.
Sound Environment	Characteristics of the ambient sound level in light of the regulation in force.
Luminous Environment	Characteristics of the luminous environment resulting from the presence of artificial light sources during the night.
Air Quality	Physicochemical characteristics of the air (including dust content) in light of the standards from the Regulation respecting the Quality of the Atmosphere.
Biological Environment	
Vegetation and Wetlands	Vegetal communities, including species at risk, and wetlands of the study area.
Aquatic fauna	Fish populations and their habitat, including species at risk.
Herpetofauna	Amphibians, reptiles and micromammals (including species targeted by hunting and trapping) and their habitats, including species at risk.
Avifauna	Bird species and their habitats, including species at risk.
Mammals	Terrestrial wildlife (including species targeted by hunting and trapping) and their habitats, including species at risk.
Woodland and Migratory Caribou	Woodland and tundra ecotypes present in the study area.

Chiroptera	Chiroptera (bats) and their habitats, including species at risk.
Aboriginal Communities	
Socio-economic Conditions	Local institutions and organizations, population, schooling, language skills, vocational and specific training, income and labor market.
Common Use of Lands for Traditional Purposes	Land use and traditional activities performed by the aboriginal people, such as hunting, fishing, trapping and picking.
Community Well-being and Human Health	Sense of belonging, social cohesion, relationship between Cree and non-aboriginal communities, health and social aspects.
Historical, Cultural and Archeological Heritage	Areas of archeological potential.
Landscape	Landscape units and integrity of visual fields.
Regional Communities	
Socio-economic Environment	Local and regional economic development, jobs, income, municipal taxation.
Land and Infrastructure Use	Sport hunting and fishing, traffic, road infrastructure, electricity transmission structures.

5.2.2 SPATIAL AND TEMPORAL BOUNDARIES

The spatial boundaries (study areas) are defined in accordance with the various geographical scopes suited to each environmental component in order to properly characterize the different components of the project's receiving environment and the possible impacts on the environment.

Three areas were established:

- A limited study area which covers the footprint of the infrastructures to be constructed and the immediate surroundings;
- A local study area with a number of variants in order to properly cover elements of the human environment, luminous environment and landscape;
- An expanded study area which includes the municipalities and villages closest to the project.

The temporal boundaries used in the Environmental Assessment (EA) depends on the selected components. The temporal scope of the EA will cover all phases of the project; it is based on the project implementation schedule:

- Construction phase: 1.5 to 2 years;
- Operation and maintenance phase: 21 years;
- Closeout phase: about 2 years.

5.2.3 SOURCES OF POTENTIAL IMPACTS ON COMPONENTS

The sources of potential impacts on environmental components are work and activities required for the construction, operation, maintenance and dismantling of projected infrastructures. The presence and operation of the infrastructures is also taken into account. The objective of the impact source assessment

is to identify all project elements that could have an impact on the environment. Table 5-3 presents the potential sources of impact.

Table 5-3 Sources of Potential Impacts on Components during Construction, Operation and Maintenance, and Close-out Phases

Construction Phase	
Installation and presence of worksite	Installation of construction trailers and other temporary facilities or infrastructure (buildings, storage areas, road access, borrow pit, etc.).
Site preparation	Stripping of natural soil, deforestation, excavation and grading work for the construction of temporary and permanent work infrastructure.
Installation of temporary and permanent infrastructure	Drilling and blasting work, installation of mining infrastructure foundations, construction of buildings, dyke and road accesses.
Work in aquatic environment	Work in aquatic environment for the construction of the dyke at Lake 3 and dewatering of lakes and watercourses within the pit footprint.
Management of hazardous and residual materials	Handling, management and transportation of hazardous and residual materials to be disposed of, recycled or reused.
Transport and traffic	Road transport of materials at the mine site and traffic of workforce and equipment on work site and local/regional road network. Relocation of a section of electrical transmission line.
Use and maintenance of equipment	Use and maintenance of equipment (bulldozers, drilling machines, power shovels, etc.) required on worksite.
Purchase of goods, services and materials	Purchase of goods, services and materials, awarding of contracts for various services.
Workforce	Hiring of workforce and presence of workers.
Operation Phase	
Presence and operation of pit	Drilling, blasting and mining of ore and waste rock, including dewatering of pit and crushing of ore.
Management of ore, unconsolidated deposits, tailings and waste rock	Transportation and storage of ore, unconsolidated deposits, waste rock and tailings in equalization areas provided for that purpose. Continuous restoration when possible.
Management and treatment of water	Management of mine site water and final effluent water (towards the natural environment).
Management of residual and hazardous materials	Handling, management and transport of hazardous and residual materials to be disposed of, recycled or reused.
Presence of mining infrastructure	Presence of pit, stockpiles and other equalization areas, water management structures, roads and buildings.
Transport and traffic	Road transportation of materials and reagents required on mine site, exportation of concentrate products, traffic of workforce and equipment on the local and regional road network.

Use and maintenance of equipment	Use and maintenance of equipment (bulldozers, drilling machines, power shovels, etc.) and traffic on mine site.
Purchase of goods, services and materials	Purchase of goods, services and materials for the operation of the mine.
Workforce	Hiring of workforce at the mine and presence of workers.
Close-out Phase	
Dismantlement of equipment	Work related to the dismantlement of associated buildings and facilities.
Rehabilitation of pit	Natural flooding of pit.
Final site restoration	Catchment of water and treatment, if required, site restoration, etc.
Transport and traffic	Transportation of employees and materials, traffic on the mine site and local and regional road network.
Use and maintenance of equipment	Use and maintenance of equipment (except equipment used for traffic).
Purchase of goods, services and materials	Purchases required for work. Decline in demand for goods and services.
Workforce	Hiring of workforce for the close-out of the site and for the post-restoration environmental monitoring. Presence of workers. Gradual elimination of positions at the mine.

6 DESCRIPTION OF IMPACTS ON COMPONENTS

Sections 6.1 to 6.4 characterize and assess the impacts on the components of the natural and human environments. The impact assessment took into consideration the standard and special mitigation measures, as well as possible compensatory programs. Section 6.5 reports the cumulative impacts, while Section 6.6 reveals the potential accidents or malfunctions. Finally, Section 6.7 presents the environmental impacts on the project.

6.1 PHYSICAL ENVIRONMENT

6.1.1 HYDROLOGY

The study area is located at the boundary of two significant watersheds: the Eastmain River (located north-east) and the Pontax River (located south-west). Lakes 2 and 3 drain into the Eastmain Reservoir, while other lakes of the study area are located at the head of the watershed which expands to the south-west of the study area. The hydrographic network flows towards the Wachiskw River which empties into the Pontax River.

The study area is dotted with wetlands which operate a significant laminage on the watercourses. The surface area of the studied subwatersheds varies between 0.29 and 201.3 km² and usually is proportional to the length of the watercourses.

A field campaign was carried out to characterize certain watercourses located within the study area. Various comparison points were selected around the projected site in watercourses potentially affected by the project.

The project will cause a loss of hydrous environments (approximately 12.3 ha of lakes and 560 m of watercourses). Moreover, modifications to the natural drainage pattern are expected. Thus, the surface area of certain watersheds will decrease because of the encroachment of the mining infrastructures. These changes will translate into a modification of the watercourses' characteristic flows. The discharge of dewatering water could create a significant flow increase in the receiving waters, though this increase should be balanced by the dewatering of the pit.

During construction, the preparation of the surfaces for the construction of the various mining facilities and infrastructures is likely to cause occasional changes to the natural surface water flow. However, given that the surface area affected is not significant, the impact on the hydrology and hydrography is considered negligible.

During operation and maintenance, the presence of dykes, waste rock stockpiles, tailings stockpiles and mining facilities will modify the current drainage pattern. Thus, several parameters, such as surface area, slopes and soil sealing (natural or waste rock and access roads) of subwatersheds located in the limited study area will be subjected to these modifications. In addition to water management (drainage ditches, effluent pumping, pit dewatering), these changes will lead to a modification of typical watercourse flows downstream of the mining project.

During close-out, no source of impact will negatively impact the hydrology. The positive impact is expected given the creation of a hydrous environment.

In summary, the residual impact of the loss of hydrous environments is considered high and significant, while the residual impact of the modification of flows is considered moderate and insignificant.

6.1.2 HYDROGEOLOGY

The conditions related to the hydrogeology could have impacts on the natural environment, such as on the surface water flow regime (watercourse flows and lake water levels) and groundwater at the periphery of infrastructures.

Thanks to the analysis of available hydrogeological data, two main hydrostratigraphic units were identified, which are unconsolidated deposits (till, fluvioglacial drift and basal till), and bedrock (granite and granodiorite, tholeiitic basalt and diabase Dyke). Thickness of unconsolidated deposits ranges from 0 to 38.4 m. Two main shortcomings were identified on the study area and cross the pit.

According to the site's hydrogeological properties, the groundwater vulnerability indexes assessed correspond to a moderate vulnerability index (DRASTIC index).

The deposits consist mainly of variable percentages of sand and silt. The perviousness of deposits ranges from average to low and its aquifer potential is moderate. Rock is a fractured aquifer with a low potential. The vulnerability of the rock aquifer is at a maximum where there are rock outcrops or the granular deposits are thin. The rock corresponds to a Class II fractured aquifer, i.e. an aquifer which is a potential source of water. By their very nature, the unconsolidated deposit horizon, particularly the fluvioglacial drift, possesses a good aquifer potential. It is therefore considered as a Class II aquifer.

During construction, the excavation of soils for the construction of the infrastructure will modify the surface water infiltration regime. It could be limited or increased depending on the type of infrastructure. Water will need to be pumped if the excavation reaches groundwater which means that the groundwater flow will be locally modified. In summary, the residual impact of the construction phase is considered to be very low and insignificant.

During the exploitation phase, there could be a groundwater lowering due to dewatering of the pit. Under complete excavation conditions, the regional piezometric surface will not change significantly except in the area near the pit. The lowering will increase significantly near the pit due to dewatering, since groundwater elevation is lowest at the bottom of the pit. Groundwater elevations will gradually increase as they move away from the pit and reach static conditions as the effects of excavation and dewatering decrease. It is estimated that lowering will be virtually non-existent at about 4 km from the pit.

The operation phase will also change the pattern of runoff water, surface water and groundwater flows at the periphery of infrastructures. Dewatering the pit will therefore have an impact on nearby lakes and streams. Despite the significance of the predicted impacts, the water pumped into the surrounding wells and discharged into Lakes 3, 4 and 6 will reduce, or even eliminate, impacts on base flows in streams downstream of these lakes. The same applies to Lake 1, dewatering will cause a decrease in the base flow of the stream but the discharge of the effluent into the same stream will allow a flow rate equal to, or greater than, before the creation of the pit. As a result, only lakes 18 and 19 will actually be impacted by dewatering the pit since they will still be fed by the aquifer. The creation of the co-disposal facility will also have an impact on these lakes as it will result in a reduction of their respective catchment area and, consequently, in a reduction of flows at the outlets and a decrease in their mean level.

Increasing the volume of materials (tailings, waste rock, unconsolidated deposits) in the dedicated sites, as well as volumes of water in the various basins, will modify the flow conditions in these areas by locally increasing the hydraulic head.

Finally, for the closure phase, the residual effect is considered low and not significant.

6.1.3 SURFACE WATER AND SEDIMENT QUALITY

Various lakes and watercourses were sampled in order to determine the current characteristics of the surface water and sediment.

All in all, the surface water quality is very good in light of the aquatic life criteria. Water is clear and low in mineral, has a low productivity, and presents a poor buffering capacity. In general, results show that the various bodies of water sampled were not affected by the contaminant intake.

Results show that copper, cadmium and zinc are found in sediments of the assessed lakes. Several metals were not detected. However, detection limits are low enough to confirm that there was no contamination.

During construction, work likely to cause impacts on the surface water and sediment quality are mainly associated with construction work, the presence of facilities, and work in aquatic environments. During operation and maintenance, impacts are associated with the groundwater pumping to lakes 3, 4 and 6, as well as the water management and treatment and handling of ore, unconsolidated deposits, tailings and waste rock. During close-out, positive impacts on the water quality are expected thanks to the final rehabilitation of the site.

In summary, the residual impact on the surface water and sediment quality for the construction, operation and maintenance and close-out phases is considered to be very low and insignificant. The residual impact for the risk of contamination of very low and insignificant.

6.1.4 GROUNDWATER QUALITY

Various hydrogeological characterization works were conducted. Analyzed parameters were determined in accordance with the risks associated with the use of the site and on parameters required by MDDELCC's Directive 019. From the samples taken in the pumping wells, exceedances were observed in silver (nine), in copper (in all but three samples), in manganese (one), in nickel (one), in lead (one) and in zinc (three).

The biggest potential risk during construction is associated with the contamination of groundwater caused by accidental spill as part of hazardous materials management, maintenance and use of equipment, or traffic on site. However, thanks to mitigation measures that will be implemented, the expected impacts are very low. During operation, impacts are associated with the presence and operation of equipment which is likely to cause risks of contamination through the infiltration of contaminants under the structures, in the pit or in the water table. Expected impacts are, however, low given the low potential of groundwater use in the area. Likewise, risks of contamination during the close-out phase are possible, but low.

In summary, the residual impact on the groundwater quality for the construction, operation and maintenance and close-out phases is considered very low and insignificant.

6.1.5 SOIL QUALITY

The soil quality was assessed based on samples collected from more than 35 sites across the mine site. Soil samples were analyzed against one or several of the following parameters: metals (Ag, As, Ba, Cd, Cr, Co, Cu, Sn, Fe, Mn, Mo, Ni, Pb, Se, Zn), pH, TOC (total organic carbon).

For metals, exceedances in the generic soil criteria (under criterion A) were observed for three parameters, namely silver, cadmium and nickel, concentrations above the generic “B” criterion were observed for tin; and all other results for metals are below the generic “A” criteria. For total organic carbon, most samples were below the detection limit. Regarding the pH, the values obtained vary between 5.0 and 7.8, for an average value of 6.4. According to these results, there is no particular problem related to soil quality for the sector under study.

Overall, for the construction, operation and closure phases, residual effects on the environment were rated low to very low and not significant for all phases.

6.1.6 SOUND ENVIRONMENT

The territory is rarely visited, except for casual hunters and users of the Nemiscau-Eastmain-1 road. The road is located approximately 2 km from the center of the Rose Lithium – Tantalum Mine Site, while the pit is located a little over 250 m from the road. Only one settlement is located near the pit (at km 42 of the Nemiscau-Eastmain-1 road) but the use of this camp will cease in the event of the realization of the project, and this, at the construction stage. A second Cree camp is located at km 37. This is the main camp of the tallyman and other members of his family. This camp is busy all year round, for different activities. Furthermore, few fishing activities are practiced in the study area. Thus, the current ambient noise mainly comes from users of the Nemiscau-Eastmain-1 road, wind, and nature in general (avifauna and terrestrial wildlife).

The impact assessment took into account the federal and provincial laws. Impacts of the construction and operation and maintenance phases shall be insignificant given that all sound criteria are complied with and that the territory is very sparsely populated and visited.

In general, the residual noise of the area is below 40 dBA, which corresponds to levels usually measured in the natural environment.

In summary, the residual impact of the noise environment for the construction, operation and maintenance and close-out phases is considered to be low and insignificant.

6.1.7 LUMINOUS ENVIRONMENT

Results from surveys regarding the luminous environment show that the luminosity has little influence on the project site which is located in an area where the clarity of the sky is almost optimal. There is also no intrusive light sources and no artificial light affecting nocturnal landscapes.

The addition of new nocturnal light sources associated with structures required for the project will locally modify the conditions of clarity of the sky. Results show that the new structures will emit a low intensity nocturnal artificial light towards the sky which will generally be below two lux and localized above the developed sites. These modifications in the clarity of the sky will not be significant, but significant enough to modify the environmental area above the structures which is currently representative of an area that light slightly influences.

The addition of new nocturnal light sources associated with the structures required for the project will not cause the emission of intrusive light. Thus, no impact from intrusive light source is expected on the quality of life, the land use (traditional or not), and the use of recreational facilities surrounding the projected mining site.

The new facilities will produce a luminous halo which will be visible by users of the area such as the Cree settlements located in the southern area. These settlements are not permanent residences and are occasionally used throughout the year for traditional activities.

In summary, the residual impact of the luminous environment for the construction, operation and maintenance, and close-out phases is considered low and insignificant.

6.1.8 AIR QUALITY

In order to assess the impacts of air emissions from the mining work, modelling of the air dispersion covers the construction and operation and maintenance phases of the mine. Canadian Ambient Air Quality Standards (CAAQS) and the Clean Air Regulation (CAR) was considered.

Suspended solids, i.e. the total particulates (PMT) and fine particulates (PM_{2.5}), were taken into account during modelling. The main gas compounds emitted, such as carbon monoxide (CO), nitrogen dioxide (NO₂) and sulfur dioxide (SO₂), were also modelled, in addition of 19 metals and metalloids.

Expected impacts are the same for all three project phases, namely the deterioration of air quality associated with emission of contaminants in the air. These contaminants include particulate matters (dust) and gas compounds (exhaust gas). The air quality deterioration may cause impacts on fauna and flora health through deposition and on human health through inhalation. The extent of the impacts depends on the quantity of contaminants emitted in the air and the duration of exposure to contaminants.

For the construction scenario, exceedances for the CAR standards regarding total and fine particulates and carbon monoxide were modelled near the operations.

However, these exceedances are contained on the outskirts of the site and do not reach the first users of the territory, i.e. the accommodation camp where low concentrations were modelled. For other compounds and CAAQS standards, no exceedance was modelled, either on the outskirts of the site or biological environment

6.1.9 GREENHOUSE GASES

Greenhouse gas ("GHG") emissions associated with mine operations were assessed based on three phases of the project: initial construction, operation and maintenance, and closure and restoration.

During the construction period, the sources considered are primarily the combustion of diesel by machinery and generators and off-road vehicles used in the layout of the site and the construction of the operating facilities. During operation and maintenance, the sources considered are mainly the combustion of diesel by machinery and off-road vehicles used on the site to carry out the exploitation activities, the combustion of natural gas in fixed sources of the type combustion devices of production facilities and the use of explosives in mining activities. During the closure and restoration period, the sources considered are mainly diesel combustion by machinery and off-road vehicles used in the dismantling of the operating facilities and the restoration of the premises.

Activities related to the operation of the mine will produce an average of 84 kT CO_{2eq} /year. This average includes the contribution of GHG emissions related to the construction and closure of the mine.

In 2013, total GHG emissions in Quebec amounted to 81.2 Mt of CO_{2eq}, or 10.0 t per capita, representing 11.2 % of Canadian emissions, which amounted to 726 Mt CO_{2eq}. During mine operations, emissions account for 0.3% of emissions from Industry and 0.5 % of total emissions at the provincial level. The contribution of indirect emissions is therefore low.

According to the 1990-2015 National GHG Emissions Report, total GHG emissions in 2015 were 722 Mt CO_{2eq} for Canada. Mining activities, classified as "Heavy Industries", issued in 2015 the equivalent of 75 Mt of CO_{2eq}. The estimated contribution of the project by its indirect emissions would be 0.05 % of emissions related to this sector of activity. Annual emissions from project activities represent 0.005 % of total federal emissions. The contribution of indirect emissions related to the operation of the project is therefore low.

6.2 BIOLOGICAL ENVIRONMENT

6.2.1 VEGETATION AND WETLANDS

Terrestrial environment, excluding vegetation in wetlands, represents 64.0 % of the natural environment. In general, the area is largely dominated by coniferous stands which represent more than half of natural environments (51.3%). No plant at risk was observed during the various survey campaigns.

It should be noted that 32 of the plants observed in the study area are used by Crees (6 tree species, 20 shrub species, five herbaceous species and one muscinal species).

The main impact of the project is the loss of habitat. The installation of worksite, preparation of site and development of infrastructures will cause the loss of approximately 427.38 ha of terrestrial vegetation and 173.55 ha of wetlands. Other possible environmental impacts are associated with the risk of hydrocarbons spill in the environment and the loss of aquatic vegetation.

The tree stratum is mostly composed of gray pine, black spruce and white spruce. The shrub stratum is mainly composed of green alder, sheep-laurel, Labrador tea, lowbush blueberry and few willows. The herbaceous stratum is sparse and little diversified.

Eight wetland classes were identified in the study area, totaling a surface area of approximately 3,098.88 ha. No plant at risk was observed during the various field campaigns.

Other than the loss of vegetation and wetlands, hydrocarbon spill remains a possibility during the construction phase, as well as the introduction of invasive alien plant species (IAPS). However, the likelihood of these impacts will be greatly reduced by the numerous standard mitigation measures.

During operation, the runoff of surface water will be modified in the periphery of the infrastructure. The same potential impacts that for the construction phase are expected (accidental spill and IAPS).

During close-out, the same potential impacts are expected (accidental spill and IAPS). However, positive impacts are expected thanks to the gradual regeneration of the forest cover in restored sites and to the final site rehabilitation.

In summary, the residual impact of the construction phase is considered to be low and insignificant for the terrestrial vegetation and high and significant for the wetlands. The residual impact is considered to be high and significant for the operation and maintenance phase, and positive for the close-out phase.

6.2.2 AQUATIC FAUNA

The study area is contained within the boundaries of Fishing Area 22 in which 30 fish species were detected. Field surveys have confirmed the presence of 12 fish species within the study area. No species at risk were captured during surveys. Species caught are: white sucker, northern pike, yellow perch, lake whitefish, yellow walleye, brook trout, burbot, lake chub, pearl dace, longnose dace, mottled sculpin, and

slimy sculpin. According to the Act respecting Hunting and Fishing Rights in the James Bay and New Québec Territories, lake sturgeon, white sucker, burbot, and lake whitefish are strictly reserved to the use of First Nations.

The main project impacts on the aquatic fauna during construction are associated with the temporary and permanent loss of habitat (about 75 ha) and to the modification of the water regimen (flow increase or decrease). Other potential impacts could be caused by the emission of suspended solids in water, the risk of accidental spill and the increase of fishing pressure. Compensatory development is planned as to counterbalance the anticipated loss of habitat.

Potential impacts for the operation phase are the alteration of the water quality caused by contact water, dewatering water, effluents and accidental spill. These impacts shall be minimized thanks to the establishment of treatment procedures and suitable facilities and by the implementation of emergency measures.

During close-out, work could have impacts on the water quality. The final site rehabilitation will, however, have a positive impact on the water quality.

In summary, the residual impact, for the construction, operation and maintenance, and close-out phases associated with the dewatering of watercourses (1 and 2, and watercourses B and K), the lowering of the groundwater, the pumping in to lakes 3, 4 and 6, and with the decrease of the water flow to Lakes 18 and 19 and watercourses A, B, K, M and N, is considered to be high and significant. For watercourses in the periphery, the residual impact is moderate and insignificant. The residual impact associated with risks of accidental spill is considered low and insignificant.

6.2.3 HERPETOFAUNA

Several herpetofauna species were observed in the natural environment of the study area; 11 species could potentially be present in the area. During field surveys, 7 species were identified (5 anuran, 1 urodela and 1 gecko): american toad, northern spring peeper, mink frog, green frog, wood frog, northern two-lined salamander and common garter snake. No species at risk were observed.

The main impact of the project is the loss (and fragmentation) of the habitat. Environments affected are the terrestrial environments (approx. 427.38 ha, including 0.50 ha of existing roads), wetlands (approx. 173.55 ha), and lakes (approx. 13.09 ha).

Besides the loss of habitat, indirect impacts caused by increased disturbance such as noise, light, dust emissions or spill are to be expected during the construction phase. Risk of collision associated with the presence of infrastructure and traffic on the worksite are also possible. In summary, the residual impact is considered to be moderate and insignificant for the loss of habitat, low and insignificant for the disturbance and risk of collision, and very low and insignificant for the risk of accidental spill.

During operation and maintenance, the management of water on the mine site or towards the natural environment (final effluent) could have an impact on the herpetofauna living in aquatic environment by modifying to some extent the habitat of certain species. However, water that will be discharged into the natural environment will be treated beforehand in accordance with regulations in force. Impacts such as disturbance, risk of collision and of accidental spill are possible. In summary, the residual impact is considered to be low and insignificant for disturbances to populations and risk of collision, and very low and insignificant for the risk of accidental spill.

During close-out, the disturbance (noise and light) and mortality risk (collision) are foreseen, although the rehabilitation of the pit and final site restoration will help restore the habitats (positive impact). In

summary, the residual impact is considered to be very low and insignificant for the risk of accidental spill and collision and the disturbance of populations, and positive for the restoration of habitats.

6.2.4 AVIFAUNA

Reviewed data report 97 potential species in the natural environment of the study area. The various field surveys confirmed the presence of 87 species belonging to 30 families. Nine species were confirmed to have the breeding status, 21 species the probable breeding status and 38 the possible status. Five bird species at risk were observed in the study area (11 potential species). Two of which were in the period of migration (peregrine falcon and rusty blackbird) and three in breeding period (bald eagle [immature], short-eared owl and common nighthawk). The study area presents no potential breeding area for the bald eagle and the peregrine falcon. The study area is also a potential breeding area for the Canada warbler and olive-sided flycatcher.

The loss of habitat is the main impact of the project. A total of 27 forest birds species is potentially affected by the loss of habitat which represents approximately 301.90 ha (854 breeding pairs) in conifer lichens stands, approx. 90.77 ha (261 breeding pairs) in conifer moss stands, approx. 88.08 ha (229 breeding pairs) in mixed-wood stands and approximately 21.71 ha (74 breeding pairs) in hardwood stands. Regarding species at risk, the common nighthawk (at least 2 breeding pairs, 275.36 ha) and the short-eared owl (1 breeding pair, 4.57 ha) are affected by the loss of habitat. The potential habitat of the rusty blackbird (approx. 152.44 ha) and Canada warbler (110.03 ha) will also be affected by the infrastructure. Approximately 7 breeding pairs of waterfowl and other aquatic bird species would be affected. Three breeding pairs of birds of prey will be affected. Finally, two pairs of common raven will be impacted.

Other potential impacts are associated with the presence of infrastructure (noise, light, risk of collision) as well as risks of spill. The project was optimized in order to minimize the impacts on the avifauna. Thus, deforestation work will be conducted outside the breeding season.

Potential residual impacts on the avifauna during the construction phase are associated with activities leading to the loss of habitat (birds in general and species at risk), disturbance (noise and light), risk of collision (mortality) and risk of spill. In summary, the residual impact is considered moderate and insignificant for the loss of habitat, high and significant for the loss of habitat for species at risk, low and insignificant for the disturbance and risk of collision, and very low and insignificant for the risk of accidental spill.

Expected residual impacts during the operation phase are caused by the disturbance, the risk of mortality and of spill. The management and treatment of water could also potentially lead to the modification of the avifauna habitat. Residual impacts are the same as the ones listed for the construction phase.

Impacts for the close-out phase could be caused by disturbance associated with the presence of infrastructure and traffic. Risk of mortality is expected. However, the rehabilitation of the pit and the final site restoration will allow for the restoration of habitats suitable for birds (positive impact). In summary, the residual impacts listed for the construction phase are the same for the close-out phase, although positive residual impacts associated with the restoration of habitats should also be expected.

6.2.5 MAMMALS

Three species of large mammals are likely to frequent the study area. These include moose, black bear and caribou (see Section 6.2.6.). Also several species of small terrestrial fauna are likely to frequent the study area of the natural environment according to their range. During work conducted on site, the beaver, American red squirrel, river otter, grey wolf, muskrat and red fox were observed on site.

According to the reviewed literature, 14 species of micromammals are potentially present in the study area (six species have been confirmed during inventory). No species at risk have been recorded.

The loss of habitat is the main impact of the project (approximately 614.02 ha). Environments affected are: terrestrial environment (approximately 427.30 ha, including 0.50 ha of existing roads), wetlands (approximately 173.55 ha, (90.77 ha of treed wetlands, 0.24 ha of shrub swamp, 0.08 ha of ponds and 82.46 ha of open bogs) and, lakes 1 and 2 (approximately 13.09 ha). The other possible impacts are associated with the presence of the infrastructures (noise, light and risk of collision) as well as the risk of spill.

The deforestation, grubbing, stripping and excavation during the construction phase will lead to the loss of habitat and cause modifications to the structure of the habitat, as well as its fragmentation. However, several areas of interest are located in the periphery of the facilities and may be used by mammals. Indirect impacts caused by increased disturbance (noise and dust), accidental spill and risk of collision should also be anticipated. The residual impact is considered moderate and insignificant for the loss of habitat, low and insignificant for the disturbance to populations and risk of collision, and very low and insignificant for accidental spill.

Expected impacts during the operation phase are associated with disturbance (noise and dust), accidental spill, risk of collisions (mortality) and modification of the habitats (water discharge). Residual impacts are the same as those listed for the construction phase.

Possible impacts during the close-out phase are associated with disturbance (noise and dust), accidental spill and risks of collision (mortality). However, the rehabilitation of the pit and final site restoration will have a positive impact thanks to the restoration of potential habitats. In summary, the residual impacts are the same as the construction phase, but positive residual impacts associated with the restoration of habitats are also anticipated.

6.2.6 WOODLAND AND MIGRATORY CARIBOU

The study area for the Rose lithium-tantalum mining project is located in the area of distribution of woodland caribou and migratory caribou (Leaf Rivert Herd). Thus, individuals from these two ecotypes are likely to frequent the study area of the lithium-tantalum mining project. The migratory caribou is likely to only be in the study area during winter time, while the woodland caribou could be in the area at all time.

Current knowledge indicates that woodland caribou of the Nottaway herd have scarcely used the study area over the past decade within a radius of approximately 25 km from the projected mine.

It does not exclude the possibility that woodland caribou could be in the south section of the study area from time to time. The presence of migratory caribou in the area is considered to be marginal.

The projected location of the mine is one of the sections of the study area most disturbed by anthropogenic aspects. On an indicative basis, between 83 and 92 % of the surface is disturbed within a radius of 5 km from the center of the mine. Fires caused disturbance on approx. 83 % of the sector, while man-made features did the same on approximately 46 %. Within a radius of 5 to 10 kilometers from the center of the mine, 74 % of the surface is disturbed. Fire covers about 70 % of the area while man-made features cause disturbances over almost 43 %. The project will cause direct disturbances to the environment in development areas (mine, stockpiles, infrastructures). The disturbance will continue after the end of operations for about 40 years. This 40-year period is necessary so that the forest environment regenerates and becomes suitable for woodland caribou.

During construction, the encroachment on the footprint of the mine infrastructure, which can cause direct loss of habitat, covers a surface area of 528 ha. In this area, the current level of disturbance of the

woodland caribou is 100 %. Therefore, as it turns out, no potential habitat (parturition, rearing of young, mating and winter) is in the infrastructure zone. However, including a 500 m buffer zone around the infrastructure, there are 39.4 ha of potential habitat for the parturition period, 41.43 ha for the rearing period, 39.4 ha for the mating period and 41.43 ha in the winter period. As these areas overlap, they represent a total area of 41.43 ha.

Thus, the Rose Lithium – Tantalum Mining Project will not have a significant impact in terms of direct or functional loss of habitat for the woodland caribou likely to be present in the area. The area is already disturbed by forest fire in very high proportions. All facilities are gathered within a footprint area of about 9.3 km², which on the landscape scale, could be easily avoided by the woodland caribou. The current presence of numerous linear structures (electrical transmission lines, roads) coming together in the area of influence of the mine already significantly divide the species habitat. It is therefore most likely that the woodland caribou already avoid the area of the projected infrastructures, in addition to a sector of 5 km in radius surrounding the linear structures. The increase in noise and the presence of humans on the mine site will be felt as soon as the construction phase and will cause disturbances to the wildlife present in the area. It is, however, hard to isolate noise as a factor for the avoidance of the area by the woodland caribou. The transport of employees is the main factor generating an increase in traffic on roads leading to the mine site. This could increase the risk of collision with large wildlife, such as the woodland or migratory caribou present in areas close to the roads.

There will be a gradual decrease in the risk of collision and the intensity of disturbances caused by noise during the close-out phase. After the final site restoration, a positive impact is expected thanks to the progressive restoration of the forest cover in remediated sites following revegetation work.

In summary, the residual impact on woodland and migratory caribou for the construction, operation and maintenance, and close-out phases is considered moderate and insignificant.

6.2.7 CHIROPTERA

The little and big brown bat, the Northern long-eared bat, hoary bat and red bat are chiroptera species likely to be present in the area of influence of the project. No chiroptera hibernaculum or maternity is known in the area of influence, such as the hunting camps, accommodation camp or Cree community residences.

The most significant impact for chiroptera during the construction, operation and close out phases is mainly associated with the loss of habitat or fragmentation. Activities regarding the implementation of the infrastructures involve deforestation, loss of wetlands and modifications to the structure of habitats. There is however sufficient replacement habitats in the region. Deforestation will be carried out outside the breeding period.

The main impact during the construction phase is the loss and fragmentation of habitats. Work on site will cause disturbances (noise, light or vibration) which could potentially hinder chiroptera activities. The construction worksite may also lead to risks of accidental spills in environments suitable for chiroptera and risks of collision (mortality).

Potential impacts during the operation phase are the disturbance of populations (vibrations, noise and light), risk of collision (mortality) and risk of accidental spill in feeding sites.

The dismantling of equipment and buildings during the close-out phase could remove potential chiroptera shelters. The chiroptera population will suffer less and less disturbance caused by the transport and traffic as the phase continues. A positive impact is expected following the rehabilitation of the pit and the final site restoration.

In summary, the residual impact on the chiroptera for the construction, operation and maintenance, and close-out phases is considered to be moderate and insignificant for the loss of habitat and disturbance of populations, and low and insignificant for accidental spill.

6.3 COMPONENTS IMPACTING ABORIGINAL COMMUNITIES

The study area is located in northern Quebec's administrative region, on the territory of Eeyou Istchee James Bay (EIJBRG).

The legislative and legal context of Northern Québec is notably governed by the James Bay and Northern Québec Agreement ("JBNQA"), the Northeastern Québec Agreement and the Agreement Concerning a New Relationship between the Government of Québec and the Cree of Québec also called the "Peace of the braves". The agreement ensures the involvement of Cree people in the forestry, mining, and hydroelectric development carried out on the territory and led to the Agreement on Governance in the Eeyou Istchee James Bay Territory (EIJB).

The study area includes Category II and III lands. Category II lands are Quebec public lands where Cree people have exclusive hunting, fishing and trapping rights. Since the implementation of the EIJBRG, the Cree Nation Government has jurisdiction over Category II lands. Category III lands are lands excluded from the areas calculated for Category I and II lands. On Category II lands, the Cree enjoy the exclusive right to trap fur animals and certain benefits in the field of outfitting, without having exclusive rights.

In accordance with the Paix des braves Agreement, the Government of Quebec has committed to facilitating and fostering the signature of agreements between mining proponents and Cree people. These agreements regard mitigating measures, employment and contracts associated with any mining activity on the James Bay territory.

6.3.1 SOCIO-ECONOMIC CONDITIONS

The James Bay Cree band councils manage several services related to the development, public health and safety, culture, public works, housing and social development, among others. In 2015, the nine Cree communities were comprised of 17,468 people. Cree communities affected by the project, i.e. Eastmain and Nemaska, were composed of 825 and 774 people, respectively. The Cree community is very young; 30 % of its population is aged 15 and under. By 2036, the Cree communities shall grow by 41.4 % and reach 23,320 people.

The Cree economic structure is mainly associated with the tertiary sector, in particular public, educational and health institutions. However, since the signature of the JBNQA in 1975, several Cree businesses have been created in the fields of transportation and construction. Traditional Cree activities (hunting, fishing and trapping) are still practiced and are significant to the EIJB communities.

For the construction phase, the construction of the mine could have significant economic benefits for Cree businesses. Requirements of this phase lead to joint venture opportunities between Cree and non-aboriginal companies. Several improvement measures are proposed to promote the adjudication of contracts to Cree companies and to support individuals willing to set up a business in connection with the mine construction work.

For the operation phase, the project will help generate economic benefits for Cree communities. The operation phase of the mine should create 275 new jobs (400 to 500 jobs during construction phase) for a period of 19 years, which could be partly given to members of the Cree communities.

Mining activities will greatly decrease during the close-out phase compared to the operation and maintenance phase. Thus, the closing of the mine will have impacts on businesses which offer services, goods and materials to the mine. However, certain companies could get contracts associated with close-out activities, including dismantling of the infrastructures and site restoration and rehabilitation. Positions at the mine will be gradually eliminated. Several measures will be proposed to help dismissed workers during the transition period.

In summary, the residual impacts of socio-economic conditions for the construction, operation and maintenance phases are considered to be positive. Thanks to the improvement measures implemented for the close-out phase, an adequate transition period for the Cree companies will be achieved in addition to the creation of jobs.

6.3.2 COMMON USE OF LANDS AND RESOURCES FOR TRADITIONAL PURPOSES

The Cree land use is characterized by an ensemble of practices, knowledge and rules. The contemporary use of the land is both the product of recent history and the continuation of a land use which was developed way before the first arrival of Europeans. Since the creation of beaver reserves in the 1930s, the Cree territory has been divided into traplines. Each of these traplines is managed by a tallyman who is responsible for dividing the resources to be exploited and areas to preserve in order to ensure the renewal of species. The study area overlaps four traplines: R16 and R19 (Nemaska community), R10 (Waskaganish community) and RE1 (Eastmain community). All project infrastructures and facilities are located within the RE1 land. The use of this territory and its surroundings is currently dominated by the hunting of moose and goose, the fishing and gathering of medicinal plant by the tallyman and his family. Two settlements are located within the RE1 land.

The land use is more than a traditional mean of subsistence for the Cree people. It is part of their identity and reflects their strong sense of belonging. Their territory is where collective and individual memories, significant events, births, deaths, legends and beliefs are recorded. Several locations visited by Crees are valued for these reasons.

The proposed measures will allow the land users to continue activities such as hunting, fishing and trapping. The two settlements located within the mine site shall be relocated at a location the users deem appropriate. Regarding additional traffic on the Nemiscau-Eastmain-1 road generated by the project, the CEC will alert workers and carriers on the necessity of complying with safety regulations, and if needed, will implement measures together with the authorities having jurisdiction to ensure the safety of Nemiscau-Eastmain-1 road users.

During construction, site preparation and construction of various facilities will cause the loss of approximately 20 km² of the RE1 trapline, which has a total area of 4,884 km² (i.e. a loss of 0.4 %). The project will cause the loss of berry and medicinal plant harvesting spots, moose hunting sector and fishing area. Mine construction work will lead to the relocation of a RE1 trapline settlement composed of two settlements located close to the Nemiscau-Eastmain-1 road. Cree land users activities on the territory comprised by the study area could be temporarily affected by the mine construction work and the traffic of workers and machinery, as well as traffic associated with the supply of the worksite along the Nemiscau-Eastmain-1 road. The fact that moose and waterfowl could temporarily avoid and keep away from the area could have an impact on the wildfowling and moose hunting.

During operation and maintenance, the presence of the mine and the mining activities will not prevent Cree users from pursuing hunting, fishing and trapping activities. However, they will have to adapt their practices to the presence of the mine. Traffic on the road network, noise, vibration and mining activities could affect certain wildlife species present in the vicinity of the mine site and road infrastructure. Hunters

and trappers may have to modify their practice and move as well. However, the harvesting potential will not be affected since game will move in the periphery of the current hunting and trapping areas, therefore the resource availability will remain the same. The tranquility of the premises, in particular at the Cree settlements located in the periphery of the mine site, could be affected by the mine operations. Traffic associated with the supply of the mine and with the transportation of products could cause disturbance for users of the Nemiscau-Eastmain-1 road. The increase in heavy traffic could also lead to an increase in the risk of road accidents.

During close-out, activities will have similar impacts than the construction, operation and maintenance phases, but over a shorter period. Cree users' activities on the territory comprised within the study area could be temporarily affected by close-out work and traffic on the Nemiscau-Eastmain-1 road. Furthermore, the tranquility of the premises, in particular at the Cree settlements located in the periphery of the mine site, could be affected by the mine close-out work. Thanks to the site rehabilitation, part of the territory affected by the mine will be used again for traditional purposes. Upon request by the RE1 trapline tallyman, certain facilities (building, parking area, etc.) may be left in place when feasible.

In summary, the residual impact for the common use of lands and resources for traditional purposes during the construction, operation and maintenance, and close-out phases is considered to be low and insignificant.

6.3.3 COMMUNITY WELL-BEING AND HUMAN HEALTH

The EIJB Cree communities have a strong sense of belonging to their community as well as a greater social cohesion mainly associated with the traditional activities and to the use of the Cree language. This sense of belonging is as strong among youth as it is among elders.

According to a health study conducted among Cree people in 2003, the five key long-term health issues reported are high blood pressure, allergies (other than food allergies), diabetes, back pain and migraines. More than three quarters of the Cree population said they were concerned by situations they regard as serious, mainly alcohol abuse, youth-related theft and vandalism, use of illegal drugs, child neglect and domestic violence.

Several impacts of the project could affect the well-being and human health of the Cree people, including the integration of Cree workers in the mine work environment, the increase of social issues associated with drug and alcohol consumption, the sense of loss and undermining of cultural identity, and concerns regarding risks to the health associated with the possible environmental contamination.

The proposed mitigation and improvement measures and the firm commitment of CEC for their implementation will allow to limit the possible impacts on the Cree population.

Regarding the construction and operation phase, the experience gained throughout the realization of other projects on the EIJB territory made it possible to highlight the challenges associated with the integration of Cree workers in the work environment. The Cree community faces various challenges regarding language, management, work schedule and cultural practices. During public consultations conducted as part of the present environmental assessment, the issue of drug and alcohol consumption often arose. The project will foster relationships between members of the Eastmain and Nemaska communities and the non-aboriginal workers. It will also provide jobs to people of various socio-economic groups among the Cree population, such as specialized or non-specialized workers, adults and youth. Income from the employment and awarding of contracts to Cree businesses will contribute to the improvement of the quality of life of Cree workers, but also of a large portion of the Cree community. The numerous changes made to the territory during the last few years could impact certain members of the Cree community and contribute to the gradual sense of loss of their traditional lifestyle and cultural

identity. The increase in heavy machinery traffic could lead to a reduced sense of safety for the Nemiscau-Eastmain-1 road users and an increase in the risk of accidents. Lastly, people are concerned about the possible contamination of lakes and watercourses surrounding the mine and the impact of such contamination on the human health and on resources (fish, wildlife species, plants or other natural resources) used for traditional purposes.

The number of staff members will be reduced during the close-out phase which could be characterized for some workers by a decrease in income, and for others, in a loss of employment or change in position. Just like during the operation and maintenance phase, the negative view associated with the environmental risks of the closing of the mine is high among several members of the Eastmain and Nemaska communities. The rehabilitation and final site restoration will have a positive impact by reducing the negative impact associated with the sense of loss related to the presence of the mine and changes made to the territory. The positive impact could be increased by involving Cree representatives in the development of the mine site restoration plan.

In summary, the residual impact on the community well-being and human health for the construction, operation and maintenance, and close-out phases is considered to be low and insignificant.

6.3.4 HISTORICAL, CULTURAL AND ARCHEOLOGICAL HERITAGE

A dozen archeological sites are currently known within the study area, some of which are now submerged by the Eastmain 1 reservoir. An archeological potential assessment was conducted to determine the areas of interest associated with remains of human presence. Thanks to the assessment, a dozen areas of archeological potential was identified within the project site. These locations correspond to areas most likely to present remains showcasing human presence, from prehistory to the 20th century. Before starting work, an archeological field inventory will be conducted in areas likely to be directly impacted by the project.

During the construction phase, various construction work, including soil stripping and site preparation, is likely to reveal archeological or historical remains. Thus far, archeological sites corresponding to prehistorical, modern and contemporary Amerindian presence are known to be in the study area. Moreover, a dozen potential archeological areas were identified within the projected mine site. There is therefore a likelihood of finding archeological or historical remains. However, possible artifacts will be identified thanks to field inventories. In summary, the residual impact associated with the historical, cultural and archeological heritage for the construction phase is considered to be low and insignificant.

No environmental impact on historical, cultural and archeological heritage is expected during the operation and maintenance, and close-out phases.

6.3.5 LANDSCAPE

Analysis of visible features of the landscape in the study area allowed to identify six kinds of landscape. Delimitation of landscape types mainly results from land use, visual quality of the landscape and the visual field of the observer. Landscape identification and analysis allowed to determine visual challenges of the study area. After the description of landscape types, the identification and analysis of landscape units allowed to determine the visual challenges on a human scale. A landscape unit is a separate and homogenous section of territory characterized by the cluster of similar visual features including visible components, their organization and the observers. For certain units, the relief and vegetation dictate the unit's boundaries. For other units, the land use is the determining factor. Ten landscape units distributed across the six types of landscape were identified within the study area. Significant modifications caused by humans will compromise the integrity of the site landscape regarding the features of the landscape based on natural components.

During construction, deforestation and site preparation work for the implementation of the mining facilities and infrastructure involves deforestation, excavation and earthwork. This will modify the visual feature of the landscape in the section of the land targeted by work given the removal of the forest cover, the stripping of soil, the blasting which will expose rock faces, and the reshaping of the relief during the preparation of bedding required to accommodate the various mining structures, dyke and access and transport roads. The construction of mining infrastructures involves the addition of new industrial structures contrasting with the natural appearance of the site landscape and of the environment of the study area.

During operation, the physical presence of the pit and mining infrastructures will modify the natural appearance of the landscape in this section of the territory. The visual feature of landscape will gradually become more industrial. The pit and mining infrastructures may be visible to road users and people conducting traditional activities in the surrounding areas. The waste rock stockpile is the structure that may modify the visual field of observers from the Nemiscau-Eastmain-1 road the most since it will be visible above the treetops.

During close-out, the removal of industrial facilities, natural flooding of the pit and reclamation, including revegetation and reforestation of the dismantlement sites at the end of work, will reduce the industrial appearance of the site landscape. Close-out work may promote the visual rehabilitation of the site landscape back to the natural landscape of the environment. The top of the waste rock stockpile, which will be above the treetops, will, however, be a reminder in the visual field of the Nemiscau-Eastmain-1 road observers of the industrial past of the site.

In summary, the residual impact associated with the visible features of the landscape for the construction, operation and maintenance, and close-out phases is considered to be moderate and insignificant. The residual impact regarding the visual field of road users is considered to be low and insignificant.

6.4 COMPONENTS IMPACTING THE REGIONAL COMMUNITY

The territory of EIJB includes nine Cree communities of Northern Quebec, four Jamesian municipalities (Chibougamau, Chapais, Lebel-sur-Quévillon and Matagami) and three Jamesian towns (Valcanton, Radisson and Villebois). These geographic features are located more than 220 km from the Rose Lithium – Tantalum Mining Project. The study area considered for the project is almost entirely located on Category III lands. Land and resources management of the study area, comprised within Category III lands, is divided between two main authorized agents: *Ministère de l'Énergie et des Ressources naturelles* and EIJBRG.

6.4.1 SOCIO-ECONOMIC ENVIRONMENT

In 2015, the size of the Jamesian population was 14,097, down 15% from 2001. Chibougamau (7,589 people) and Lebel-sur-Quévillon (2,254 people) are respectively the first and second most populous agglomerations. The Jamesian population should continue its decline over the coming years and reach 13,412 people in 2036.

The Jamesian economy mainly depends on the power, mining and forestry sectors. In 2014, the northern Quebec region consisted of 4,630 jobs in the mining sector. We should see a significant increase in the number of jobs in this sector over the next decade.

A study conducted by the *Centre régional de santé et de services sociaux de la Baie-James* on the health and well-being of Jamesian people indicates that the environment of the Jamesian communities is favorable to their well-being but is weakened by the current socio-economic environment. Regarding the

sense of belonging, a study indicates that the majority of interviewees say they have a strong or very strong sense of belonging towards their municipality or the James Bay region.

Significant economic benefits are expected for regional firms during the construction phase. Several work activities required at each phase of construction could be subcontracted or given to local or regional firms. Requirements of the construction phase provide joint venture opportunities between Cree and non-Cree firms. Business opportunities associated with the construction of the mine will have a positive impact on maintaining and developing regional firms, as well as on the regional economy. The residual impact of the construction phase is therefore positive.

The project will help generate economic benefits for regional communities during the operation phase. The mine activities could promote business development of existing firms, but also the creation of new firms set up to meet the demand of the mining company in terms of goods and services (e.g.: professional services, equipment, maintenance services, etc.). The operation of the mine should lead to the creation of hundreds of new jobs which could be filled in part by members of regional communities. Numerous improvement measures are proposed to promote the hiring of regional workers. The involvement of these regional workers will have a positive impact on the labor market of regional communities. The residual impact for the operation phase is therefore positive.

There will be a significant decline in mining activities during the close-out phase compared to the operation and maintenance phase. The closing of the mine will therefore have an impact on the firms providing services, goods and materials to the mine. However, certain firms could secure contracts related to the closing work activities, including infrastructure dismantling, site restoration and rehabilitation work. As part of the close-out work, CEC will foster the adjudication of contracts to regional firms. The closing of the mine will have an impact on employment; jobs at the mine will be gradually eliminated. Several measures shall be proposed to help workers who will lose their jobs during the transition period.

6.4.2 LAND USE AND INFRASTRUCTURE

Wildlife harvesting activities are one of the main attractions of the northern Quebec region, especially sport fishing and hunting. Other than the wildlife harvesting activities, there is no tourist, resort, forestry and mining activities conducted in the study area. It overlaps the two special hunting and fishing sectors of the WSI zone: Weh-Sees Indohoun sector and Eastmain sector. The project site is located within the Eastmain sector. These two sectors are subjected to special rules.

The study area is traversed by two electrical transmission lines (one at 315 kV and another at 735 kV). The Nemiscau-Eastmain-1 road is the only significant road within the study area.

The study area overlaps no territory subject to forest development under the Sustainable Forest Development Act. No commercial forest activity is therefore conducted in the study area. It contains in whole or in part 285 claims owned by CEC.

Activities of the construction phase will cause impacts on big game hunting areas. These activities will be a source of temporary disturbance and will reduce the quality of experience for hunters present in the surroundings of the construction site. Construction activities will cause game to move to more peaceful locations. Hunters will therefore need to modify their practice and move as well. However, the harvesting potential will not be affected since game will move in the periphery of the current hunting areas, therefore the resource availability will remain the same. Traffic associated with the construction of the mine could cause certain disadvantages for users of the Nemiscau-Eastmain-1 road. The increase in heavy traffic could also lead to an increase in the risk of road accidents.

For the operation and maintenance phase, the presence of the mine and the mining activities will have an impact on the big game sport hunting since the territory currently frequented by hunters will be affected. However, the harvesting potential will not be affected since game will move in the periphery of the current hunting areas. The resource availability will therefore remain the same. Traffic associated with the supply of the mine and the transportation of products could cause certain disadvantages for users of the Nemiscau-Eastmain-1 road. The increase in heavy traffic could also lead to an increase in the risk of road accidents.

In summary, the residual impact is considered to be very low and insignificant for the construction and operation and maintenance phases. No impact is expected regarding the use of land and infrastructure during the close-out phase.

6.5 CUMULATIVE IMPACT OF PROJECT

As part of the present project, the following Valued Components (VC) were selected to assess the cumulative impacts given that they are associated with the project's issues and/or will be subjected to a significant impact during the project. Moreover, other concrete activities, past or future, may have caused/cause/will cause adverse impact on these VC. They were selected in accordance with the opinion of experts and with concerns expressed by members of the Eastmain and Nemaska communities during consultations or information sessions.

- Woodland caribou;
- Migratory birds;
 - Priority species;
 - Stewardship species.
- Endangered bird species
 - Common nighthawk;
 - Short-eared owl;
 - Olive-sided flycatcher;
 - Rusty blackbird;
 - Canada warbler.
- Chiroptera
 - *Myotis* bats;
 - Little brown myotis;
 - Northern myotis;
 - Hoary bat;
 - Eastern red bat.
- Fish and its habitat
 - All fish species;

→ Eastmain, Nemaska and Waskaganish Cree Communities

- Common use of land and resources;
- Well-being and human health.

Only VC of the biological and human environments were considered for the assessment of cumulative impacts. The components of the physical environment, such as water and air quality, noise and luminous environment, which may have raised concerns among the Cree communities, were globally considered in the analysis of the cumulative impacts of the *Eastmain, Nemaska and Waskaganish Cree Communities* component. The *fish and its habitat* VC also directly considers the quality of the water. It is good to point out that not all concerns of the population were selected as VC; only those potentially subjected to a significant impact and in interaction with other actions, projects or events (past, present or future) were selected.

Certain VC of the project will not be affected by cumulative impacts since they are not in interaction with other activities or projects (in space and time) or because the residual impact of the project on these components is low or very low. Such is the case for the use of lands and resources by non-Aboriginal people for recreational activities (hunting, fishing, navigation). This component was not selected as a VC for the analysis of cumulative impacts since the negative residual impact would be very low. Interviews conducted with non-Aboriginal population mainly highlighted the positive impacts of economic benefits associated with mining projects. The socio-economic context of the region was therefore not selected as a VC for the analysis of the cumulative impact. It is, however, addressed in section 10.5.2.1, which deals with the *Eastmain and Nemaska Cree Communities* VC. The *Presence of the Community in the Sector for Cultural Purposes* and *Impact of the Presence of Workers* VCs were also considered within the *Eastmain and Nemaska Cree Communities* VC.

The cumulative impacts on six VCs was assessed. The conclusion is that the project will only cause insignificant cumulative impacts on the Eastmain and Nemaska Cree Communities, woodland caribou, migratory bird species, bird species at risk, and chiroptera in the study area (spatial scope) over the selected time periods (temporal scope).

6.6 IMPACTS OF POTENTIAL ACCIDENTS OR FAILURES

There are risks of potentially dangerous events, which could cause impacts on components of the environment, during the construction, operation and maintenance, and close-out (dismantlement of infrastructure) phases. An accident or failure is an unforeseen event which happens regardless of the activity of normal conditions of realization of a project.

The first line of defense against these accidents and failures is the implementation of the best existing practices in terms of environmental protection and health-safety. Thus, the potential accidents and failures are associated to risks that will remain after the following measures will have been implemented:

- Application of best management practices;
- Use of state-of-the-art technologies;
- Strict control of authorized discharges in the environment and of residual environmental impacts;
- Implementation of training programs and tools to ensure a safe operation of facilities and prevent or avoid accidents, failures or unforeseen events.

Despite prevention, if such events happen, it is essential to be able to minimize the environmental impacts through the planning and design of efficient mitigation measures, as well as the implementation of a consistent Emergency Measures Plan (PMU). The Rose mining project is located a considerable distance from any permanent housing and represents little risk to the population in case of accident. An accident could, however, impact people on site, goods or the environment. The site is also far from resources that could be deployed. It is therefore important to identify the risks so that resources are available to intervene promptly and efficiently in case of major accidents.

The Rose mining project is designed in accordance with the measures provided in design, planning and execution phases which will be spread over the entire life of the project. The objective of implementing such measures is to reduce the probability of occurrence of the risks of unforeseen accidents and failures. This approach is part of a responsible management approach whose objective is to reduce the risk at the source and mitigate the impacts on the environment.

The objective of the major technological hazards potential assessment (worst case scenario) associated with the project is to identify likely accidents and assess the possible consequences for the workers and the environment. The assessment is also used to develop protection measures to prevent plausible worst-case accidents or failures or to reduce their frequency and consequences.

The first step is to determine the sensitive components of the environment and the external dangers associated with work, infrastructures or equipment present on site and to keep a record of accidents that have occurred on site or on similar sites. Accident scenarios associated with the risks can then be developed.

During subsequent steps, potential consequences of scenarios are identified and the probability of occurrence is estimated. The safety measures to be implemented are also determined as to eliminate or reduce the risks of accident. A risk management program, including a PMU, will also be implemented as to manage residual risks that cannot be eliminated.

Table 6-1 presents a summary of technological risks.

Table 6-1 Summary of Risk Analysis Results

Activité	Scenario	Probability	Level of Severity	Level of Risk
Open pit	Pit flood – infiltration	Low	High	Medium
	Pit flood – breach of the dike at Lake 3	Very low	Very high	Medium
	Rocks falling	Low	High	Medium
Ore treatment	Fire	Low	High	Medium
	Exposure to ionizing radiation	Very low	Medium	Low
	Dust emission	Medium	Low	Medium
	Nip point	Low	High	Medium
Storage and use of petroleum products	Petroleum products spillage	Medium	Low	Medium
	Fire/explosion of petroleum products	Very low	High	Medium
	Oil and lubricant spillage	Low	Low	Low
Use of natural gas	Natural gas leak	Very low	High	Medium
Storage and use of chemical products	Chemical products spillage	Low	Low	Low
Storage and handling of explosives	Surface explosion	Very low	Very high	Medium
	Theft of explosives	Very low	High	Medium
Use of electrical transformers	Dielectric oil spillage	Low	Low	Low
	Fire/explosion	Low	Low	Low
Mining water treatment	Discharge non-compliant with final effluent	Low	High	Medium
Mine tailings and waste rock equalization area	Instability of stockpiles	Very low	High	Medium
Road transport	Hazardous material spillage	Low	High	Medium
	Ore concentrate spillage	Low	Low	Low
Others	Failure of dyke LE-20A	Very low	Very high	Medium
	Forest fire	Medium	Medium	Medium
	Meteorological extremes	Very low	High	Medium

In the event that an accident, failure or unforeseen event occurs despite the preventive practices, measures of the PMU will be implemented to make sure environmental impacts are avoided and minimized.

Here are the objectives of the PMU:

- List resources and equipment required to face an emergency;
- Develop response strategies and tactics to handle an emergency and protect the lives, environment and assets of the firm.

Considering their relative isolation, the Rose mining project facilities must possess the required resources to intervene in case of emergency. Mutual aid agreements should also be developed between other firms of the sector, as well as the Nemaska Cree community.

An individual witnessing an emergency must intervene to the best of his/her capacity whilst taking care of his/her own safety.

The warning process must be triggered during uncontrolled major leakage of flammable or toxic products or during an explosion or fire or in any other situation that threatens the safety and health of persons and the conditions of the environment.

Site evacuation could be required in case of fire, risk of explosion or any other event which could threaten people present on site. Only the Director of Operations (or his/her substitute) can order site evacuation.

Once the emergency has ended, measures must be implemented before the Director of Operations can authorize the return of employees back on site and buildings. The Director of Operations shall verify with the intervention brigade that it is safe to go back on the premises and to authorize the return to work.

It is necessary for the proper implementation of the P that all people involved in emergencies know the emergency procedures as well as their respective roles. An appropriate, targeted and effective training program is therefore essential.

All employees shall be aware of the key training elements of the emergency measures plan, such as: emergency phone numbers, tone of the fire alarm, location of the emergency exits and gathering point in case of emergency evacuation.

The emergency procedures are displayed in each sector together with the evacuation plan. All employees shall be submitted to a training session upon their hiring and to a follow-up training session every year.

6.7 IMPACTS OF THE ENVIRONMENT ON THE PROJECT

The extreme and exceptional weather conditions, the modification of local normal conditions, forest fire, ground motions, including seismic activities, are situations posing certain risks to the project. Among the risks of natural disasters, earthquakes must be differentiated from events associated with climatic conditions.

The impacts that such events would cause to the environment, if they were to happen, are discussed in the following section. Naturally, the technical project design was developed while taking into account all risks identified. The project designers therefore made sure to integrate safety factors, including the types of equipment, selection of material and best practices.

The Rose Lithium – Tantalum Mining Project study horizon should last until the closing of the mine and the rehabilitation of the site, i.e. about 23 years. Therefore, the risk assessment mainly covers the operation and maintenance phase and close-out phase of the project. The study area is part of the

“centre” reference area defined in the *Rapport de synthèse des connaissances sur les changements climatiques au Québec*. Climatic trends are taken from projections developed by OURANOS.

6.7.1 TEMPERATURE

The study area experienced an average increase in temperatures of 1 to 3°C from 1950 to 2011. This trend is marked during winters and springs, maximum and minimum temperatures following the same trend with a small increase in minimum temperatures compared to the maximum temperatures. Climate projections prepared by OURANOS indicate that an increase in temperatures is expected over the Center region when compared to temperatures observed between 1971 and 2000. Yearly average temperatures will continue to increase gradually (2.3°C in 2020 to 5.2°C in 2080, best-case scenario, and 2.4°C to 8°C, worst-case scenario). Winter is the season where the biggest mean temperature differences occur. Projections also show that maximum extreme temperatures during summer will increase more than the average temperatures during summer. In winter, minimum extreme temperatures will increase more than the average winter temperatures.

These expected changes in temperatures will have an impact on the length of the frost season, which will decrease, contrary to the season without frost whose length will increase. However, the number of frost/thaw cycles will not change, except that the frequency of the cycles will increase during winter, and decrease during spring and fall. Thus, there should be no impact of this climatic variable on the project.

6.7.2 RAINFALL

Meteorological observations between 1950 and 2011 show that there is no significant trend regarding the year-to-year changes in rainfall in the study area. Climate simulations show that an increase of 3 to 17% for 2020 and 2050 in yearly rainfall is expected. Future climate simulations from various Centers for Research agree on a more modest increase in yearly rainfall for summer and fall. Also, maximum rainfall return periods will be significantly shortened and the frequency of extreme rainfall events will increase.

There is no significant change in the future projection regarding the change in the maximum snow cover in the study area. However, the duration of snow cover will change from 160-180 days (1950-2010) to 115-135 days due to the impact of the temperature increase for horizon 2050.

The PMU, the project design itself and the compliance with construction standards will take into account events resulting from climate change (flood, high wind and snowstorm). Thus, the extreme rainfall could have a negative short-term impact on certain components of the project, but it is unlikely that it will have a significant negative impact on its operation.

6.7.3 RIVER FLOW

Watercourse flows are affected by several climate variables, but mainly by the quantity and regime of precipitation, the snow cover and the temperature. Hydroclimate modelling shows that the study area can expect an increase in average flow from 20 to 40% in the horizon 2050 compared to flows of 1971-2000. The general opinion about this increase is that flows will be higher during winter.

The study area is dotted with wetlands which operate a significant laminage on the watercourses. The mine site is located at the head of two significant watersheds and is thus subjected to less rapid flow variations than if it would have been located further downstream. This, combined with the technical design of the project which will take into account the climate change and extreme rainfall, make it unlikely that this environmental variable will have a negative impact on the project operation.

6.7.4 FOREST FIRE

The control of forest fires in the project area is partial (nordic protection area). The closest SOPFEU stations are located in Roberval and Val-d'Or. Fire fighting in this area is only carried out in accordance with agreements or in support of civilian safety. Control interventions are therefore mainly conducted near infrastructures such as townships, power production and transformation facilities, etc.

Previsions show that by 2100, climate change should amplify conditions favorable to forest fires, thus an increase in the number of fires and their gravity. Therefore, the risk of forest fires in the study area is significant. The PMU will include means of intervention in case of fire threatening facilities. Although forest fires may affect the project over its duration, it is unlikely that fires will have a significant negative impact on the project.

6.7.5 SEISMIC ACTIVITIES

Eastern Canada is located in a stable mainland area of the North American plate which means a relatively low seismic activity. The Superior Province, within which the study area is located, has experienced an overall tectonic stability since 2.6 Ga. According to the National Earthquake Data Base, only one earthquake (magnitude of 2.4) has happened since 1985 (on January 11, 2012). The epicenter of the earthquake was located approximately 80 km north-east of the projected Rose Lithium – Tantalum mining infrastructures.

Seismic hazard is the probability of experiencing damaging ground motions in a region. The study area is located in a very low seismic hazard area. There should be no impact of this environmental variable on the project given the insignificant seismic activity in the project area and the construction of facilities in accordance with earthquake design standards.

6.7.6 SUMMARY

Table 6-1 presents a summary of the potential effects of the environment on the project.

Table 6-2 Summary of Potential Effects of the Environment on the Project

Event or Situation	Long-term Risk (>24 years)	Mitigation Measure	Effect
Rainstorms, snowstorms, tropical hurricane	Low, foreseeable event	Compliance with the Building Code	Insignificant
Forest fire	Medium, increase on the long-term, foreseeable event	<p>Environmental management program, monitoring of fire danger conditions and communication with SOPFEU and other partners such as Hydro-Québec, Nemiscau L, etc.</p> <p>Tanks on site shall be double-walled and located near firefighting equipment.</p> <p>Presence on site of a fire brigade whose members are trained to prevent and fight fires.</p> <p>Response equipment shall be available and easily identified on site (water reserve, vehicles, fire extinguishers, first aid kits, etc.)</p> <p>CEC personnel shall have received training on the prevention of forest fires.</p> <p>Managers shall be appointed to monitor any incident or to achieve on site prevention.</p> <p>The PMU will be presented to the personnel. Training programs shall be implemented to prepare the members of the brigade for possible intervention in case of forest fire threatening installations.</p>	Insignificant
Seismic activity	Low, unforeseeable event	Construction of installations in accordance with regional earthquake design standards.	Insignificant

7 SUMMARY OF THE ENVIRONMENTAL IMPACT ASSESSMENT

The Rose Lithium-Tantalum Mining Project is subjected to an EIA in order to determine the possible impacts of physical and biological environments, First Nations, as well as local and regional communities, for the various phases of the project (construction, operation and maintenance, and close-out).

Tables 7-1 to 7-3 summarize for each component assessed, project activities, potential effects, mitigation measures (current and specific), and significance of residual effects, for each of the components assessed in accordance with the project phase.

Table 7-1 Summary of the Environmental Effects on the Physical Environment

Environmental Components	CV (✓)	Project Activity	Potential Effect	Current and specific mitigation measures	Significance of the Residual Effect
Physical Environment					
Hydrology	✓	<p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Site preparation ▪ Installation of temporary and permanent infrastructure ▪ Work in aquatic environment 	Change to the natural surface water flow pattern.	<p>Common measures:</p> <ul style="list-style-type: none"> - Install sedimentation ponds and / or sediment barriers in ditches, using geotextiles. For permanent access, these temporary installations will have to be improved at the end of the works in order to ensure their durability with minimal maintenance; - The installation of the cofferdam should take place as far as possible of the periods of low water (July August); - In order to limit the turbidity increase during their development and dismantling, the cofferdam (s) shall consist of concrete blocks free from fine particles. Their waterproofness will be ensured by a geotextile membrane, which will be installed on the inside face of the rocky carapace of the cofferdams. It will avoid the release into the stream of fine materials; - Installation of a curtain for the containment of suspended matter outside the cofferdam development zone; - The pumping water from dry cofferdam enclosures will be diverted to the bank in settling ponds before being returned to the watercourse; - The granular materials used for the construction of structures must not come from the bed of a body of water or its banks or from any source located within 75 m of the aquatic environment; - During operation, reduce erosion due to runoff and prevent sediment from reaching a lake or stream; - In the 30 m strip bordering a watercourse, the vegetation cover must be maintained and it is forbidden to pile organic matter from the soil surface stripping. It is also forbidden to pile up waste and woody debris. Runoff must be diverted to a vegetation zone at least 30 m from the watercourse or intercepted by means of sediment barriers or a sedimentation pond; - During the works, respect the natural drainage of the environment and take all the appropriate measures to allow the normal flow of water; - When constructing temporary ditches, the slope of the ditch must be reduced, if necessary, by installing at regular intervals obstacles to prevent erosion (sandbags, straw bales, etc.) ; - Where surface drainage is likely to result in sediment in watercourses, apply measures to contain or divert sediment so that it does not reach watercourses; - Do not create ditches in the 20 m band on either side of a watercourse. Beyond this band, ditch water will be diverted to a vegetation zone. If required, the flow velocity of the water will be reduced by blocking the flow (energy dissipation techniques) while filtering the sediment. If necessary, a sedimentation pond will be constructed outside this band to capture runoff and sediment transport. This will be sized according to the flow to be received and evacuated; - No ditches should be built in the 30 m band on either side of a watercourse. Beyond this band, ditch water must be diverted to an area of vegetation outside the right-of-way. If required, the flow velocity of the water should be reduced by blocking the flow (energy dissipation techniques) while filtering the sediment. If necessary, develop a sedimentation pond outside this band to capture runoff and sediment transport. This must be sized according to the flow to be received and evacuated; and - During the construction of the road, the natural drainage of the soil must be respected and the flow of run-off must be maintained by installing culverts at least 30 cm in diameter, if necessary. The end of the culvert must extend at least 30 cm beyond the base of the embankment, which must itself be well stabilized. 	<p>Modification of flows: Medium</p> <p>Loss of hydrous environments: Significant</p> <p>Modification of flows: Not Insignificant</p>

Environmental Components	CV (✓)	Project Activity	Potential Effect	Current and specific mitigation measures	Significance of the Residual Effect
				<p>Special measure:</p> <p>During dewatering of the lakes, pumping will be carried out during periods of dry weather, and the pumping rate will be limited to the recurrence of two years (or even lower if possible), in order to limit the increase in flows. In the receiving environments. In addition, the pumped water must pass through a sedimentation basin (or similar structure) to limit the transport of suspended solids in the receiving environment.</p>	
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> ▪ Presence and operation of pit ▪ Management of ore, unconsolidated deposits, tailings and waste rock ▪ Water management and treatment ▪ Presence of mining infrastructure 	Change to the natural surface water flow pattern.	<p>Common measures:</p> <ul style="list-style-type: none"> - Install sedimentation ponds and / or sediment barriers in access ditches, using geotextiles. For permanent access, these temporary installations will have to be improved at the end of the works in order to ensure their durability with minimal maintenance; - The installation of the cofferdam should take place as far as possible during periods of low water (July August); - In order to limit the turbidity increase during their development and dismantling, the cofferdam (s) shall consist of concrete blocks free from fine particles. Their watertightness will be ensured by a geotextile membrane which will be installed on the inside face of the rocky carapace of the cofferdams. It will avoid the release into the stream of fine materials; - Installation of a curtain for the containment of suspended matter outside the cofferdam development zone; - The pumping water from dry cofferdam enclosures will be diverted to the bank in settling ponds before being returned to the watercourse; - The granular materials used for the construction of structures must not come from the bed of a body of water or its banks or from any source located within 75 m of the aquatic environment; - During operation, reduce erosion due to runoff and prevent sediment from reaching a lake or stream; - In the 30 m strip bordering a watercourse, the vegetation cover must be maintained and it is forbidden to pile organic matter from the soil surface stripping. It is also forbidden to pile up waste and woody debris. Runoff must be diverted to a vegetation zone at least 30 m from the watercourse or intercepted by means of sediment barriers or a sedimentation pond; - When working, respect the natural drainage of the environment and take all appropriate measures to allow the normal flow of water; - When constructing temporary ditches, the slope of the ditch must be reduced, if necessary, by installing at regular intervals obstacles to prevent erosion (sandbags, straw bales, etc.) ; - Where surface drainage is likely to result in sediment in watercourses, apply measures to contain or divert sediment so that it does not reach watercourses; - Do not create ditches in the 20 m band on either side of a watercourse. Beyond this band, ditch water will be diverted to a vegetation zone. If required, the flow velocity of the water will be reduced by blocking the flow (energy dissipation techniques) while filtering the sediment. If necessary, a sedimentation pond will be constructed outside this band to capture runoff and sediment transport. This will be sized according to the flow to be received and evacuated; - No ditch should be set up in the 30 m band on either side of a watercourse. Beyond this band, ditch water must be diverted to an area of vegetation outside the right-of-way. If required, the flow velocity of the water should be reduced by blocking the flow (energy dissipation techniques) while filtering the sediment. If necessary, develop a sedimentation pond outside this band to capture runoff and sediment transport. This must be sized according to the flow to be received and evacuated; and - During the construction of the road, the natural drainage of the soil must be respected and the flow of run-off must be maintained by installing culverts at least 30 cm in diameter, if necessary. The end 	

Environmental Components	CV (✓)	Project Activity	Potential Effect	Current and specific mitigation measures	Significance of the Residual Effect
				<p>of the culvert must extend at least 30 cm beyond the base of the embankment, which must itself be well stabilized.</p> <p>Special measures:</p> <ul style="list-style-type: none"> - Pumped effluent discharge of runoff water collected at the site will be managed to reproduce as much as possible the natural flow variations in the watercourse. Thus, the peaks will be clipped in order to limit the increase of flood flows in the receiving watercourse; - The discharge points by pumping the dewatering water from the pit will be chosen so as to minimize the effects on the watercourses around the mine site. Thus, the dewatering water will be sent to the lakes 3, 4 and 6, proportionally to the drawdown of the water table driven by the pumping, to compensate as much as possible the latter. 	
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Rehabilitation of pit ▪ Final site rehabilitation 	No potential impact source will negatively affect the hydrology during the close-out phase.	<p>Common measures:</p> <ul style="list-style-type: none"> - Altered shorelines should be restored including slope stabilization and revegetation of surfaces; - Restore the riparian strip deteriorated by the works as and when they progress in order to reproduce the natural bank of the watercourse or lake; - Remove temporary bridges, culverts and shoreline protection. Restore the original profile of the bed and stream banks; - Restore natural drainage and dig ditches as needed to ensure proper drainage of the land; - Restoration work by revegetation must be completed within one year after the completion of the work. <p>Special measure: None.</p>	Positive
Hydrogeology		<p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Site preparation ▪ Installation of temporary and permanent infrastructure 	Change to the natural runoff, surface and underground water flow patterns (water around the infrastructure).	<p>Common measures: None.</p> <p>Special measures:</p> <p>Follow-up of the drawdown and the rise of the water table: a network of wells will be set up on the periphery of the mining infrastructures and a monitoring of the water levels will be carried out to validate the forecasts of the numerical model.</p>	Insignificant
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> ▪ Presence and operation of pit ▪ Presence of mining infrastructure 	<p>Lowering of the groundwater caused by the dewatering of the pit.</p> <p>Change to the runoff, surface and underground water flow patterns at the periphery of infrastructure.</p>	<p>Common measures: None.</p> <p>Special measures:</p> <p>Follow-up of the drawdown and the rise of the water table: same as that presented during the construction phase.</p>	Insignificant
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Rehabilitation of pit ▪ Final site rehabilitation 	<p>Natural drowning of pit.</p> <p>Change to the runoff, surface and underground water flow patterns at the periphery of infrastructure.</p>	<p>Common measures: None.</p> <p>Special measures:</p> <p>Monitoring of the drawdown and the rise of the water table: a network of wells will be set up on the periphery of the mining infrastructures and a monitoring of the water levels will be studied during this phase.</p>	Insignificant
Surface water and sediment quality		<p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Installation and presence of worksite ▪ Work in aquatic environment 	<p>Emission of suspended solids in water.</p> <p>Risk of hydrocarbons spill in the environment, including surface watercourses.</p>	<p>Common measures:</p> <ul style="list-style-type: none"> - The granular materials used for the construction of structures must not come from the bed of a body of water or its banks or from any source located within 75 m of the aquatic environment; - During operation, reduce erosion due to runoff and prevent sediment from reaching a lake or stream; - In the case of a sand pit, in order to prevent erosion and land subsidence, the slopes of the harvested area must be at most 30 degrees from the horizontal; - During the works, respect the natural drainage of the environment and take all the appropriate measures to allow the normal flow of water; - During the construction of temporary ditches, the slope of the ditch must be reduced, if necessary, by installing obstacles at regular intervals to prevent erosion (sandbags, straw bales, etc.); 	Insignificant

Environmental Components	CV (✓)	Project Activity	Potential Effect	Current and specific mitigation measures	Significance of the Residual Effect
				<ul style="list-style-type: none"> - Where surface drainage is likely to result in sediment in watercourses, apply measures to contain or divert sediment so that it does not reach watercourses; - Do not create ditches in the 20 m band on either side of a watercourse. Beyond this band, ditch water will be diverted to a vegetation zone. If required, the flow velocity of the water will be reduced by blocking the flow (energy dissipation techniques) while filtering the sediment. If necessary, a sedimentation pond will be constructed outside this band to capture runoff and sediment transport. This will be sized according to the flow to be received and evacuated; - Develop, before the start of the work, a contingency plan for the accidental release of contaminants into the environment. Inform workers of the contents of the response plan and make them aware of the importance of a rapid response; - Handle petroleum products to prevent and control leaks and spills. Keep hydrocarbon absorbent products at all times when storing or using petroleum products. During a spill of contaminants, immediately apply the spill response plan in effect; - Parking, washing and maintenance areas for machinery and storage of equipment must be located at least 60 m from a watercourse. The refueling of the hydrocarbon machinery must be carried out under constant surveillance and at a distance of at least 60 m from a watercourse. The operation of any construction machinery that has not been used for a certain period of time must be interrupted, except in winter for diesel-powered machinery; - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - A complete emergency kit for the recovery of petroleum products and hazardous materials, permanent and easily accessible at all times, must be present on site. This must include a sufficient supply of absorbent materials and related equipment (shovels, gloves, leaks, etc.) to alleviate any situation as well as well-sealed receptacles intended to receive petroleum residues and other hazardous residual materials. . Secondary emergency kits may be required at certain locations on the site. Each construction machine must also contain a sufficient quantity of absorbents in order to be able to intervene quickly. The list of spill response equipment and devices must be approved by the supervisor. Soiled soil, oil residues and other hazardous residual materials must be disposed of in accordance with applicable laws and regulations; - All spills must be reported immediately to the Project Emergency Plan Authority, who will have been developed and approved prior to the work. The affected area must be immediately circumscribed and cleaned up immediately. Contaminated soil must be removed and disposed of in an authorized place and a characterization must be carried out according to the terms of the MDDELCC <i>Soil Protection and Contaminated Sites Rehabilitation Policy</i>. In the event of a spill of oil or other noxious substances, the Environment Canada (1-866-283-2333) or MDDELCC (1-866-694-5454) alert system should be notified immediately; - The promoter must ensure that all equipment is in good working order to avoid any leakage of fuel, oil or grease. No equipment cleaning will be allowed in the aquatic environment; - Before entering the water, the machinery should be inspected and cleaned to prevent contamination of the water with oils, grease or other materials. The cleaning area must be more than 60 m from any body of water; - Hazardous materials must be managed in accordance with the <i>Regulation respecting hazardous materials</i> (L.R.Q., C.Q-2, r.32); - Have on-site and at all times response equipment in the event of a spill of contaminants. Contaminant spills must be subject to immediate action to contain and recover the products; - Promptly notify the MDDELCC in the event of a spill of contaminants; 	

Environmental Components	CV (✓)	Project Activity	Potential Effect	Current and specific mitigation measures	Significance of the Residual Effect
				<ul style="list-style-type: none"> - Do not emit, deposit, release or discharge a hazardous material into the environment or into a sewer system; - All hazardous materials must be stored in a designated place. The hazardous materials storage location must be kept away from vehicular traffic and within a reasonable distance of drainage ditches or sumps and other sensitive elements; - Residual hazardous materials must be stored in an identified and identified recovery area. Residual hazardous materials must be protected from the weather by a waterproof tarpaulin, waiting for their loading and transportation. In winter, it is suggested that containers be placed on pallets or storage tables. If the retention time is greater than 30 days, the developed area must include a watertight shelter with at least three sides, a roof and a watertight floor forming a basin with a retention capacity of at least the following volumes: 125% the largest container or 25% of the total volume of all containers full of liquids; - When transporting dangerous goods, comply with the <i>Regulation respecting the transport of dangerous goods</i> (L.R.Q., C. C-24.2, r 43); - Dispose of the residual materials in containers provided for this purpose. The site manager will ensure that the residues are recovered and deposited in authorized sites. Do not release debris into the aquatic environment. All debris accidentally introduced into the aquatic environment should be removed as soon as possible; - As work progresses, all construction waste, residues and surplus materials must be removed from the site and disposed of in accordance with the <i>Environment Quality Act</i>. Surplus concrete or bitumen and water used to clean concrete mixers, vehicles and equipment must be disposed of in an area provided for this purpose and in such a way as to avoid any contamination of the environment; - Do not discharge waste materials or debris into waterways; - Vegetation cutting or stripping waste should not be released into streams and lakes; - Take the necessary measures so as not to strip the ground during snow removal; - Do not discharge snow into a watercourse or the 30 m strip of a watercourse; - The location of the snow storage areas must be approved by the MDDELCC Regional Office. These areas must be located at a minimum distance of 30 m from all watercourses and from any source of drinking water supply, so as to avoid any contamination of the water or groundwater; - At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and excavated material from the work. Redevelop and restore these work areas so that it fits as well as possible into the natural landscape (feast and loosen the soil, soften the slopes). Scarify road segments or abandoned roads. Use stored topsoil for area recovery. Seed the slope slopes of the right-of-way to stabilize them quickly. Re-vegetate all areas that will not be useful for the exploitation phase; - Altered shorelines should be restored including slope stabilization and revegetation of surfaces; - Restore the riparian strip deteriorated by the works as and when they progress in order to reproduce the natural bank of the watercourse or lake; - To reduce the risk of erosion on sloping terrain, use methods such as retaining slopes, ditches or diversion ditches perpendicular to the slope, or other methods; - In the right-of-way, no vehicle or construction machine shall circulate without reason within 20 m of a permanent watercourse or within 5 m of an intermittent watercourse. If required, water flowing in the ruts should be diverted to a vegetated area at least 30 m from a watercourse; - When working, avoid handling granular materials in high winds and apply dust suppressants (calcium chloride or water) on surfaces where traffic can cause dust to rise. The dust suppressant used must comply with the NQ 2410-300 standard or be approved by the MTQ and the MDDELCC; - When calcium chloride-based dust suppressants are used, the product should not be disposed of 	

Environmental Components	CV (✓)	Project Activity	Potential Effect	Current and specific mitigation measures	Significance of the Residual Effect
				<p>or rinsed in or near a ditch, watercourse or vegetation. Spread surplus or rinse water on an already treated surface. Note that as part of the project, water will be used and recommended as a dust suppressant on the roads of the site and not a chemical solution. During the winter, abrasive materials such as sand will be used to deglaze roads and not flux;</p> <p>Take the necessary measures to minimize the circulation of machinery in the riparian zone:</p> <ul style="list-style-type: none"> - Fords crossing is prohibited unless the required authorizations have been obtained from the concerned ministries; - Runoff and dewatering water must be captured and conveyed to the process or a mining wastewater treatment system. <p>Special measures:</p> <ul style="list-style-type: none"> - Employees using explosives will be made aware of the problem of nitrates in surface water caused by misuse of ammonium nitrate. For this purpose, employees will be encouraged to use the quantities recommended by the manufacturer. - Establishment of basin or ponds to collect groundwater before dumping into the natural environment. The system must allow reoxygenation of the water and allow the water to return to a temperature closer to that of the receiving environment. These ponds could be developed to create new wetlands. These new wetlands would offset some of the anticipated losses and would also act as a natural filter for contaminants that may be present in groundwater. 	
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> ▪ Presence and operation of pit ▪ Management of ore, unconsolidated deposits, tailings and waste rock 	<p>Deterioration of Watercourse A water quality.</p> <p>Runoff water laden with suspended solids.</p>	<p>Common measures:</p> <ul style="list-style-type: none"> - The granular materials used for the construction of structures must not come from the bed of a body of water or its banks or from any source located within 75 m of the aquatic environment; - During operation, reduce erosion due to runoff and prevent sediment from reaching a lake or stream; - In the case of a sand pit, in order to prevent erosion and land subsidence, the slopes of the harvested area must be at most 30 degrees from the horizontal; - During the works, respect the natural drainage of the environment and take all the appropriate measures to allow the normal flow of water; - When constructing temporary ditches, the slope of the ditch must be reduced, if necessary, by installing at regular intervals obstacles to prevent erosion (sandbags, straw bales, etc.) ; - Where surface drainage is likely to result in sediment in watercourses, apply measures to contain or divert sediment so that it does not reach watercourses; - Do not create ditches in the 20 m band on either side of a watercourse. Beyond this band, ditch water will be diverted to a vegetation zone. If required, the flow velocity of the water will be reduced by blocking the flow (energy dissipation techniques) while filtering the sediment. If necessary, a sedimentation pond will be constructed outside this band to capture runoff and sediment transport. This will be sized according to the flow to be received and evacuated; - Develop, before the start of the work, a contingency plan for the accidental release of contaminants into the environment. Inform workers of the contents of the response plan and make them aware of the importance of a rapid response; - Handle petroleum products to prevent and control leaks and spills. Keep hydrocarbon absorbent products at all times when storing or using petroleum products. During a spill of contaminants, immediately apply the spill response plan in effect; - Parking, washing and maintenance areas for machinery and storage of equipment must be located at least 60 m from a watercourse. The refueling of the hydrocarbon machinery must be carried out under constant surveillance and at a distance of at least 60 m from a watercourse. The operation of any construction machinery that has not been used for a certain period of time must be interrupted, except in winter for diesel-powered machinery; 	

Environmental Components	CV (✓)	Project Activity	Potential Effect	Current and specific mitigation measures	Significance of the Residual Effect
				<ul style="list-style-type: none"> - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - A complete emergency kit for the recovery of petroleum products and hazardous materials, permanent and easily accessible at all times, must be present on site. This must include a sufficient supply of absorbent materials and related equipment (shovels, gloves, leaks, etc.) to alleviate any situation as well as well-sealed receptacles intended to receive petroleum residues and other hazardous residual materials. . Secondary emergency kits may be required at certain locations on the site. Each construction machine must also contain a sufficient quantity of absorbents in order to be able to intervene quickly. The list of spill response equipment and devices must be approved by the supervisor. Soiled soil, oil residues and other hazardous residual materials must be disposed of in accordance with applicable laws and regulations; - All spills must be reported immediately to the Project Emergency Plan Authority, who will have been developed and approved prior to the work. The affected area must be immediately circumscribed and cleaned up immediately. Contaminated soil must be removed and disposed of in an authorized place and a characterization must be carried out according to the terms of the MDDELCC <i>Soil Protection and Contaminated Sites Rehabilitation Policy</i>. In the event of a spill of oil or other noxious substances, the Environment Canada (1-866-283-2333) or MDDELCC (1-866-694-5454) alert system should be notified immediately; - The promoter must ensure that all equipment is in good working order to avoid any leakage of fuel, oil or grease. No equipment cleaning will be allowed in the aquatic environment; - Before entering the water, the machinery should be inspected and cleaned to prevent contamination of the water with oils, grease or other materials. The cleaning area must be more than 60 m from any body of water; - Hazardous materials must be managed in accordance with the <i>Regulation respecting hazardous materials</i> (L.R.Q., C.Q-2, r.32); - Have on-site equipment at all times in case of a spill of contaminants. Contaminant spills must be subject to immediate action to contain and recover the products; - Promptly notify the MDDELCC in the event of a spill of contaminants; - Do not emit, deposit, release or discharge a hazardous material into the environment or into a sewer system; - All hazardous materials must be stored in a designated place. The hazardous materials storage location must be kept away from vehicular traffic and within a reasonable distance of drainage ditches or sumps and other sensitive elements; - Residual hazardous materials must be stored in an identified and identified recovery area. Residual hazardous materials must be protected from the weather by a waterproof tarpaulin, waiting for their loading and transportation. In winter, it is suggested that containers be placed on pallets or storage tables. If the retention time is greater than 30 days, the developed area must include a watertight shelter with at least three sides, a roof and a watertight floor forming a basin with a retention capacity of at least the following volumes: 125% the largest container or 25% of the total volume of all containers full of liquids; - When transporting dangerous goods, comply with the <i>Regulation respecting the transport of dangerous goods</i> (L.R.Q., C. C-24.2, r 43); - Dispose of the residual materials in containers provided for this purpose. The site manager will ensure that the residues are recovered and deposited in authorized sites. Do not release debris into the aquatic environment. All debris accidentally introduced into the aquatic environment should be removed as soon as possible; 	

Environmental Components	CV (✓)	Project Activity	Potential Effect	Current and specific mitigation measures	Significance of the Residual Effect
				<ul style="list-style-type: none"> - As work progresses, all construction waste, residues and surplus materials must be removed from the site and disposed of in accordance with the <i>Environment Quality Act</i>. Surplus concrete or bitumen and water used to clean concrete mixers, vehicles and equipment must be disposed of in an area provided for this purpose and in such a way as to avoid any contamination of the environment; - Do not discharge waste materials or debris into waterways; - Vegetation cutting or stripping waste should not be released into streams and lakes; - Take the necessary measures so as not to strip the ground during snow removal; - Do not discharge snow into a watercourse or the 30 m strip of a watercourse; - The location of the snow storage areas must be approved by the MDDELCC Regional Office. These areas must be located at a minimum distance of 30 m from all watercourses and from any source of drinking water supply, so as to avoid any contamination of the water or groundwater; - At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and excavated material from the work. Redevelop and restore these work areas so that it fits as well as possible into the natural landscape (feast and loosen the soil, soften the slopes). Scarify road segments or abandoned roads. Use stored topsoil for area recovery. Seed the slope slopes of the right-of-way to stabilize them quickly. Re-vegetate all areas that will not be useful for the exploitation phase; - Altered shorelines should be restored including slope stabilization and revegetation of surfaces; - Restore the riparian strip deteriorated by the works as and when they progress in order to reproduce the natural bank of the watercourse or lake; - In order to reduce the risk of erosion on sloping land, use methods such as the establishment of retaining slopes, ditches or diversion ditches perpendicular to the slope, or other methods; - In the right-of-way, no vehicle or construction machine shall circulate without reason within 20 m of a permanent watercourse or within 5 m of an intermittent watercourse. If required, water flowing in the ruts should be diverted to a vegetated area at least 30 m from a watercourse; - When working, avoid handling granular materials in high winds and apply dust suppressants (calcium chloride or water) on surfaces where traffic can cause dust to rise. The dust suppressant used must comply with the NQ 2410-300 standard or be approved by the MTQ and the MDDELCC; - When calcium chloride-based dust suppressants are used, the product should not be disposed of or rinsed in or near a ditch, watercourse or vegetation. Spread surplus or rinse water on an already treated surface. Note that as part of the project, water will be used and recommended as a dust suppressant on the roads of the site and not a chemical solution. During the winter, abrasive materials such as sand will be used to deglaze roads and not flux; - Take the necessary measures to minimize the circulation of machinery in the riparian zone; - Fords crossing is prohibited unless the required authorizations have been obtained from the concerned ministries; - Runoff and dewatering water must be captured and conveyed to the process or a mining wastewater treatment system. <p>Special measures:</p> <ul style="list-style-type: none"> - Employees using explosives will be made aware of the problem of nitrates in surface water caused by misuse of ammonium nitrate. For this purpose, employees will be encouraged to use the quantities recommended by the manufacturer. - Establishment of basin or ponds to collect groundwater before dumping into the natural environment. The system must allow reoxygenation of the water and allow the water to return to a temperature closer to that of the receiving environment. These ponds could be developed to create 	

Environmental Components	CV (✓)	Project Activity	Potential Effect	Current and specific mitigation measures	Significance of the Residual Effect
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Rehabilitation of pit ▪ Final site rehabilitation 	<p>Deterioration of water quality. Improvement of Watercourse A water quality.</p>	<p>new wetlands. These new wetlands would offset some of the anticipated losses and would also act as a natural filter for contaminants that may be present in groundwater.</p> <p>Same measures as those mentioned in the construction and operation and maintenance phases.</p>	
Groundwater quality		<p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Management of hazardous and residual material ▪ Transport and traffic ▪ Use and maintenance of equipment 	<p>Risk of contamination of underground water caused by spillage of hydrocarbons, solvent or other hazardous liquids.</p>	<p>Common measures:</p> <ul style="list-style-type: none"> - Cutting products must be shredded and spread over the intervention areas at least 60 m from the river. The tailings must not impede the flow of runoff water; - During deforestation, pay special attention to the vegetation at the edge of the work areas so as not to damage it. Avoid falling trees outside the boundaries of deforestation and in streams. If this is the case, remove them taking care not to disturb the environment. Near the boundaries of work areas, do not tear or uproot trees with construction equipment. Along these boundaries, maintain an unshrouded deforested transition zone 3 m wide and preserve the shrub layer. It must be ensured that deforested areas, left bare and exposed to atmospheric agents, are kept to a minimum; - In the 30 m strip bordering a watercourse, the vegetation cover must be maintained and it is forbidden to pile organic matter from the soil surface stripping. It is also forbidden to pile up waste and woody debris. Runoff must be diverted to a vegetation zone at least 30 m from the watercourse or intercepted by means of sediment barriers or a sedimentation pond; - Follow the requirements of the <i>Petroleum Products and Petroleum Products Act</i> (RSQ, P-29.1) and the <i>Petroleum Products Regulations</i> (RSQ, P-30.01, r.1) for the management of equipment and petroleum products; - Develop, before the start of the work, a contingency plan for the accidental release of contaminants into the environment. Inform workers of the contents of the response plan and make them aware of the importance of a rapid response; - Take the necessary measures to ensure that containers, portable tanks and mobile tanks meet the manufacturing standards specified in the <i>Petroleum Products Regulations</i>. Comply with localization and installation standards for aboveground and underground tanks; - Have an approved verifier check the petroleum equipment during installation, replacement or removal. Have the petroleum equipment checked in accordance with the frequency and conditions indicated in the <i>Petroleum Products Regulations</i>; - The Contractor must be licensed to use high risk petroleum equipment if installing or using an above ground tank of 10,000 liters or more of diesel fuel or a 2,500 liter tank or more gas. In the case of an underground tank where one or more of the components are partially or completely buried in the ground, this permit is required for a tank of 500 liters or more of diesel fuel or gasoline; - For aboveground tanks with a total volume of 5,000 liters, a watertight dike forming a retention basin around the tank (s) must be installed. If the drip pan protects only one tank, it must be of sufficient capacity to contain a volume of at least 10% greater than the capacity of the tank. If the retention basin protects multiple tanks, it shall be of sufficient capacity to contain a volume of liquids not less than the greater of: the capacity of the largest tank plus 10% of the total capacity of all other tanks, or the capacity of the largest tank increased by 10%; - Handle petroleum products to prevent and control leaks and spills. Keep hydrocarbon absorbent products at all times when storing or using petroleum products. During a spill of contaminants, immediately apply the spill response plan in effect; - The parking, washing and maintenance areas of the machinery as well as the storage of equipment must be at least 60 m from a watercourse. The refueling of the hydrocarbon machinery must be carried out under constant surveillance and at a distance of at least 60 m from a watercourse. The operation of any construction machinery that has not been used for a certain 	Insignificant

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				<p>period of time must be interrupted, except in winter for diesel-powered machinery;</p> <ul style="list-style-type: none"> - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - A complete emergency kit for the recovery of petroleum products and hazardous materials, permanent and easily accessible at all times, must be present on site. This must include a sufficient supply of absorbent materials and related equipment (shovels, gloves, leaks, etc.) to alleviate any situation as well as well-sealed receptacles intended to receive petroleum residues and other hazardous residual materials. Secondary emergency kits may be required at certain locations on the site. Each construction machine must also contain a sufficient quantity of absorbents in order to be able to intervene quickly. The list of spill response equipment and devices must be approved by the supervisor. Soiled soil, oil residues and other hazardous residual materials must be disposed of in accordance with applicable laws and regulations; - All spills must be reported immediately to the Project Emergency Plan Authority, who will have been developed and approved prior to the work. The affected area must be immediately circumscribed and cleaned up immediately. Contaminated soil must be removed and disposed of in an authorized place and a characterization must be carried out according to the terms of the MDDELCC <i>Soil Protection and Contaminated Sites Rehabilitation Policy</i>. In the event of a spill of oil or other noxious substances, the Environment Canada (1-866-283-2333) or MDDELCC (1-866-694-5454) alert system should be notified immediately; - The site supervisor will ensure the proper maintenance of noisy equipment and will see the condition of the silencers and catalysts of the machinery; - The promoter must ensure that all equipment is in good working order to avoid any leakage of fuel, oil or grease. No equipment cleaning will be allowed in the aquatic environment; - Before entering the water, the machinery should be inspected and cleaned to prevent contamination of the water with oils, grease or other materials. The cleaning area must be more than 60 m from any body of water; - Hazardous materials must be managed in accordance with the <i>Regulation respecting hazardous materials</i> (L.R.Q., C.Q-2, r.32); - Have on-site equipment at all times in case of a spill of contaminants. Contaminant spills must be subject to immediate action to contain and recover the products; - Promptly notify the MDDELCC in the event of a spill of contaminants; - Do not emit, deposit, release or discharge a hazardous material into the environment or into a sewer system; - All hazardous materials must be stored in a designated place. The hazardous materials storage location must be kept away from vehicular traffic and within a reasonable distance of drainage ditches or sumps and other sensitive elements; -Residual hazardous materials must be stored in an identified and identified recovery area. Residual hazardous materials must be protected from the weather by a waterproof tarpaulin, waiting for their loading and transportation. In winter, it is suggested that containers be placed on pallets or storage tables. If the retention time is greater than 30 days, the developed area must include a watertight shelter with at least three sides, a roof and a watertight floor forming a basin with a retention capacity of at least the following volumes: 125% the largest container or 25% of the total volume of all containers full of liquids; - When transporting dangerous goods, comply with the Regulation respecting the transport of dangerous goods (L.R.Q., C. C-24.2, r 43); - Dispose of the residual materials in containers provided for this purpose. The site manager will ensure that the residues are recovered and deposited in authorized sites. Do not release debris into 	

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				<p>the aquatic environment. All debris accidentally introduced into the aquatic environment should be removed as soon as possible;</p> <ul style="list-style-type: none"> - Contain dry or wet residues in sealed containers and cover containers to prevent release of residues into the air; - As work progresses, all construction waste, residues and surplus materials must be removed from the site and disposed of in accordance with the <i>Environment Quality Act</i>. Surplus concrete or bitumen and water used to clean concrete mixers, vehicles and equipment must be disposed of in an area provided for this purpose and in such a way as to avoid any contamination of the environment; - Do not discharge waste materials or debris into waterways; - Demolition debris and solid waste generated on the site must be disposed of in accordance with the Regulation respecting solid waste (RSQ, chapter Q 2, r 13); - Vegetation cutting or stripping waste should not be released into streams and lakes; - It is forbidden to dispose of waste materials or volatile materials, such as mineral spirits and oil or paint thinners, by discharging them into waterways, storm sewers or sanitary sewers; - Store the waste temporarily in a single place; - Disposal of waste from the pre-cleaning of work areas in dedicated containers and subsequent transportation of these to an authorized landfill. If quantities are reduced, dry materials (concrete, asphalt, etc.) can be used as backfill and thus buried directly behind the protective structure. Wood and plant debris could be in the embankment immediately above the structure; - Transport of excess materials to an authorized place of disposition; - Take the necessary measures so as not to strip the ground during snow removal; - Do not discharge snow into a watercourse or the 30 m strip of a watercourse; - The location of the snow storage areas must be approved by the MDDELCC Regional Office. These areas must be located at a minimum distance of 30 m from all watercourses and from any source of drinking water supply, so as to avoid any contamination of the water or groundwater; - At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and excavated material from the work. Redevelop and restore these work areas so that it fits as well as possible into the natural landscape (feast and loosen the soil, soften the slopes). Scarify road segments or abandoned roads. Use stored topsoil for area recovery. Seed the slope slopes of the right-of-way to stabilize them quickly. Re-vegetate all areas that will not be useful for the exploitation phase; - Altered shorelines should be restored including slope stabilization and revegetation of surfaces; - Restore the riparian strip deteriorated by the works as and when they progress in order to reproduce the natural bank of the watercourse or lake; - After the completion of the works, all the tools, equipment, vehicles, temporary works or parts of works that were used to build or install the infrastructure must be removed from the site. - Remove temporary bridges, culverts and shoreline protection. Restore the original profile of the bed and stream banks; - Restore natural drainage and dig ditches as needed to ensure proper drainage of the land; - In order to reduce the risk of erosion on sloping land, use methods such as the establishment of retaining slopes, ditches or diversion ditches perpendicular to the slope, or other methods; - Vehicle traffic will have to travel at a reduced speed in order to limit noise, vibration and dust emissions as well as for safety reasons; - Unless authorized, the movement of machinery is prohibited outside the boundaries of work areas. At the beginning of the works, a fence must be installed at the edge of the perimeter of protection. This must be kept in place and in good condition for the duration of the work; 	

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				<ul style="list-style-type: none"> - In the right-of-way, no vehicle or construction machine shall circulate without cause within 20 m of a permanent watercourse or within 5 m of an intermittent watercourse. If required, water flowing in the ruts should be diverted to a vegetated area at least 30 m from a watercourse; - When working, avoid handling granular materials in high winds and apply dust suppressants (calcium chloride or water) on surfaces where traffic can cause dust to rise. The dust suppressant used must comply with the NQ 2410-300 standard or be approved by the MTQ and the MDDELCC; - When calcium chloride-based dust suppressants are used, the product should not be disposed of or rinsed in or near a ditch, watercourse or vegetation. Spread surplus or rinse water on an already treated surface. Note that as part of the project, water will be used and recommended as a dust suppressant on the roads of the site and not a chemical solution. During the winter, abrasive materials such as sand will be used to deglaze roads and not flux; - Take the necessary measures to minimize the circulation of machinery in the riparian zone; - Site access roads, parking and storage areas or other temporary facilities must be located outside the riparian strip, so as to avoid deterioration or contamination; - Dust emissions from access and traffic routes, as well as handling of aggregates, must be controlled in accordance with the <i>Regulation respecting the quality of the atmosphere</i> (RSQ, chapter Q-2, r.38) ; - Fords crossings are prohibited unless they have obtained the required authorizations from the concerned ministries. <p>Special measure:</p> <ul style="list-style-type: none"> - Maintenance of vehicles and other mobile equipment will be performed at the garage. Where mobile equipment is to be serviced on site, absorbent liners or other types of absorbent material will be on site to prevent accidental spillage. 	
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> ▪ Presence and operation of pit ▪ Management of ore, unconsolidated deposits, tailings and waste rock ▪ Presence of mining infrastructure 	Risk of contamination of underground water caused by spillage of hydrocarbons, solvent or other hazardous liquids.	<p>Same measures as those mentioned in the construction phase (current and special).</p> <p>Special measures:</p> <ul style="list-style-type: none"> - Groundwater quality monitoring: install a network of monitoring wells on the periphery of the mining infrastructure and conduct a water sampling to check for changes in concentrations, if any. - Hazardous material storage areas will be delineated to identify areas at risk of contamination. These will comply with the regulations in force. 	Insignificant
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Dismantlement of equipment ▪ Final site rehabilitation ▪ Use and maintenance of equipment 	Risk of contamination of underground water caused by spillage of hydrocarbons, solvent or other hazardous liquids.	Same measures as those mentioned in the operation and maintenance phase.	Insignificant
Soil quality		<p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Installation and presence of worksite ▪ Installation of temporary and permanent infrastructure ▪ Management of hazardous and residual materials ▪ Transport and traffic ▪ Use and maintenance of equipment 	Risk of contamination of underground water caused by spillage of hydrocarbons, solvent or other hazardous liquids.	<p>Common measures:</p> <ul style="list-style-type: none"> - Use existing quarries and sandpits. Respect quarry and sand pit operating standards and minimize the number of loans; - All trees and shrubs, and only these, must be cut to the ground on the embankments of approach embankments, 10 m across the front wall abutments. Their root system must be preserved. A vegetal protection strip of at least 30 m wide must be preserved along the banks; - Cutting products must be shredded and spread over the intervention areas at least 60 m from the river. The tailings must not impede the flow of runoff water; - During deforestation, pay special attention to the vegetation at the edge of the work areas so as not to damage it. Avoid falling trees outside the boundaries of deforestation and in streams. If this is the case, remove them taking care not to disturb the environment. Near the boundaries of work areas, do not tear or uproot trees with construction equipment. Along these boundaries, maintain an 	Insignificant

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				<p>unshrouded deforested transition zone 3 m wide and preserve the shrub layer. It must be ensured that deforested areas, left bare and exposed to atmospheric agents, are kept to a minimum;</p> <ul style="list-style-type: none"> - In the 30 m strip bordering a watercourse, the vegetation cover must be maintained and it is forbidden to pile organic matter from the soil surface stripping. It is also forbidden to pile up waste and woody debris. Runoff must be diverted to a vegetation zone at least 30 m from the watercourse or intercepted by means of sediment barriers or a sedimentation pond; - Follow the requirements of the <i>Petroleum Products and Petroleum Products Act</i> (RSQ, P-29.1) and the <i>Petroleum Products Regulations</i> (RSQ, P-30.01, r.1) for the management of equipment and petroleum products; - Develop, before the start of the work, a contingency plan for the accidental release of contaminants into the environment. Inform workers of the contents of the response plan and make them aware of the importance of a rapid response; - Take the necessary measures to ensure that containers, portable tanks and mobile tanks comply with the manufacturing standards specified in the <i>Petroleum Products Regulations</i>. Comply with localization and installation standards for aboveground and underground tanks; - Have an approved verifier check the petroleum equipment during installation, replacement or removal. Have the petroleum equipment checked in accordance with the frequency and conditions indicated in the <i>Petroleum Products Regulations</i>; - The Contractor must be licensed to use high risk petroleum equipment if installing or using an above ground tank of 10,000 liters or more of diesel fuel or a 2,500 liter tank or more gas. In the case of an underground tank where one or more of the components are partially or completely buried in the ground, this permit is required for a tank of 500 liters or more of diesel fuel or gasoline; - For aboveground tanks with a total volume of 5,000 liters, a watertight dike forming a retention basin around the tank (s) must be installed. If the drip pan protects only one tank, it must be of sufficient capacity to contain a volume of at least 10% greater than the capacity of the tank. If the retention basin protects multiple tanks, it shall be of sufficient capacity to contain a volume of liquids not less than the greater of: the capacity of the largest tank plus 10% of the total capacity of all other tanks, or the capacity of the largest tank increased by 10 %; - Handle petroleum products to prevent and control leaks and spills. Keep hydrocarbon absorbent products at all times when storing or using petroleum products. During a spill of contaminants, immediately apply the spill response plan in effect; - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - A complete emergency kit for the recovery of petroleum products and hazardous materials, permanent and easily accessible at all times, must be present on site. This must include a sufficient supply of absorbent materials and related equipment (shovels, gloves, leaks, etc.) to alleviate any situation as well as well-sealed receptacles intended to receive petroleum residues and other hazardous residual materials. Secondary emergency kits may be required at certain locations on the site. Each construction machine must also contain a sufficient quantity of absorbents in order to be able to intervene quickly. The list of spill response equipment and devices must be approved by the supervisor. Soiled soil, oil residues and other hazardous residual materials must be disposed of in accordance with applicable laws and regulations; - All spills must be reported immediately to the Project Emergency Plan Authority, who will have been developed and approved prior to the work. The affected area must be immediately circumscribed and cleaned up immediately. Contaminated soil must be removed and disposed of in an authorized place and a characterization must be carried out according to the terms of the MDDELCC <i>Soil Protection and Contaminated Sites Rehabilitation Policy</i>. In the event of a spill of oil 	

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				<p>or other noxious substances, the Environment Canada (1-866-283-2333) or MDDELCC (1-866-694-5454) alert system should be notified immediately;</p> <ul style="list-style-type: none"> - The site supervisor will ensure the proper maintenance of noisy equipment and will see the condition of the silencers and catalysts of the machinery; - The promoter must ensure that all equipment is in good working order to avoid any leakage of fuel, oil or grease. No equipment cleaning will be allowed in the aquatic environment; - Hazardous materials must be managed in accordance with the <i>Regulation respecting hazardous materials</i> (L.R.Q., C.Q-2, r.32); - Have on-site equipment at all times in case of a spill of contaminants. Contaminant spills must be subject to immediate action to contain and recover the products; - Promptly notify the MDDELCC in the event of a spill of contaminants; - Do not emit, deposit, release or discharge a hazardous material into the environment or into a sewer system; -All hazardous materials must be stored in a designated place. The hazardous materials storage location must be kept away from vehicular traffic and within a reasonable distance of drainage ditches or sumps and other sensitive elements; - Residual hazardous materials must be stored in an identified and identified recovery area. Residual hazardous materials must be protected from the weather by a waterproof tarpaulin, waiting for their loading and transportation. In winter, it is suggested that containers be placed on pallets or storage tables. If the retention time is greater than 30 days, the developed area must include a watertight shelter with at least three sides, a roof and a watertight floor forming a basin with a retention capacity of at least the following volumes: 125% the largest container or 25% of the total volume of all containers full of liquids; - When transporting dangerous goods, comply with <i>the Regulation respecting the transport of dangerous goods</i> (L.R.Q., C. C-24.2, r 43); - Dispose of the residual materials in containers provided for this purpose. The site manager will ensure that the residues are recovered and deposited in authorized sites. Do not release debris into the aquatic environment. All debris accidentally introduced into the aquatic environment should be removed as soon as possible; - Contain dry or wet residues in sealed containers and cover containers to prevent release of residues into the air; - As work progresses, all construction waste, residues and surplus materials must be removed from the site and disposed of in accordance with the Environment Quality Act. Surplus concrete or bitumen and water used to clean concrete mixers, vehicles and equipment must be disposed of in an area provided for this purpose and in such a way as to avoid any contamination of the environment; - Do not discharge waste materials or debris into waterways; - Demolition debris and solid waste generated on the site must be disposed of in accordance with the <i>Regulation respecting solid waste</i> (RSQ, chapter Q 2, r 13); - Vegetation cutting or stripping waste should not be released into streams and lakes; - It is forbidden to dispose of waste materials or volatile materials, such as mineral spirits and oil or paint thinners, by discharging them into waterways, storm sewers or sanitary sewers; - Store the waste temporarily in a single place; - Disposal of waste from the pre-cleaning of work areas in dedicated containers and subsequent transportation of these to an authorized landfill. If quantities are reduced, dry materials (concrete, asphalt, etc.) can be used as backfill and thus buried directly behind the protective structure. Wood and plant debris could be in the embankment immediately above the structure; 	

Environmental Components	CV (✓)	Project Activity	Potential Effect	Current and specific mitigation measures	Significance of the Residual Effect
				<ul style="list-style-type: none"> - Transport of surplus materials to an authorized place of disposition; - Take the necessary measures so as not to strip the ground during snow removal; - Do not discharge snow into a watercourse or the 30 m strip of a watercourse; - The location of the snow storage areas must be approved by the MDDELCC Regional Office. These areas must be located at a minimum distance of 30 m from all watercourses and from any source of drinking water supply, so as to avoid any contamination of the water or groundwater; - At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and excavated material from the work. Redevelop and restore these work areas so that it fits as well as possible into the natural landscape (feast and loosen the soil, soften the slopes). Scarify road segments or abandoned roads. Use stored topsoil for area recovery. Seed the slope slopes of the right-of-way to stabilize them quickly. Re-vegetate all areas that will not be useful for the exploitation phase; - After the completion of the works, all the tools, equipment, vehicles, temporary works or parts of works that have been used to build or put in place the infrastructure must be removed from the site; - In order to reduce the risk of erosion on sloping land, use methods such as the establishment of retaining slopes, ditches or diversion ditches perpendicular to the slope, or other methods; - Restoration work by revegetation must be completed within one year after completion of the work; - Vehicle traffic will have to travel at a reduced speed in order to limit noise, vibration and dust emissions as well as for safety reasons; - Unless authorized, the movement of machinery is prohibited outside the boundaries of work areas. At the beginning of the works, a fence must be installed at the edge of the perimeter of protection. This must be kept in place and in good condition for the duration of the work; - Site access roads, parking and storage areas or other temporary facilities must be located outside the riparian strip, so as to avoid deterioration or contamination; - Fords crossings are prohibited unless they have obtained the required authorizations from the concerned ministries. <p>Special measures:</p> <ul style="list-style-type: none"> - Maintenance of vehicles and other mobile machinery will be done at the garage. Where mobile equipment is to be serviced on site, absorbent liners or other types of absorbent material will be on site to prevent accidental spillage. - Refueling facilities will be kept to a minimum to reduce the number of risks. 	
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> ▪ Presence and operation of pit ▪ Management of hazardous and residual materials ▪ Presence of mining infrastructure ▪ Transport and traffic 	Risk of contamination of underground water caused by spillage of hydrocarbons, solvent or other hazardous liquids.	Same measures as those mentioned in the construction phase (current and special). Hazardous material storage areas will be delineated to identify areas at risk of contamination. These will comply with the regulations in force.	Insignificant
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Dismantlement of equipment ▪ Final site rehabilitation ▪ Use and maintenance of equipment 	Risk of contamination of underground water caused by spillage of hydrocarbons, solvent or other hazardous liquids.	Same measures as those mentioned in the operation and maintenance phase.	Insignificant
Sound Environment		<p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Installation and presence of worksite ▪ Site preparation 	Increase in natural ambient noise.	<p>Common measures:</p> <ul style="list-style-type: none"> - The circulation of machinery and trucks will be limited to the right of way of access roads and work areas. Plastic fences will clearly identify the boundaries of the work areas; - The site supervisor will ensure the proper maintenance of noisy equipment and will see the 	Insignificant

Environmental Components	CV (✓)	Project Activity	Potential Effect	Current and specific mitigation measures	Significance of the Residual Effect
		<ul style="list-style-type: none"> ▪ Installation of temporary and permanent infrastructure ▪ Transport and traffic ▪ Use and maintenance of equipment 		condition of the silencers and catalysts of the machinery; - Observe the noise standards contained in MDDELCC Noise Instruction Note 98-01. Take all necessary measures to limit noise at source; - Set up a program to raise the awareness of the users of machinery in order to avoid the clattering of skips, the falling of objects of a high height and the optimization of the methods of work; - The vehicles will have to travel at a reduced speed in order to limit noise, vibration and dust emissions as well as for safety reasons. Special measures: - All equipment residing on construction sites, excluding transit equipment or equipment used for short periods, will be equipped with a white noise recoil alarm. - All unused electrical or mechanical equipment must be extinguished, including trucks waiting for a load exceeding 5 minutes. - The use of engine braking must be prohibited inside the construction area.	
		<i>Operation and Maintenance</i> <ul style="list-style-type: none"> ▪ Presence and operation of pit ▪ Management of ore, unconsolidated deposits, tailings and waste rock ▪ Presence of mining infrastructure ▪ Transport and traffic ▪ Use and maintenance of equipment 	Increase in natural ambient noise.	Same standard measures as those mentioned in the construction phase.	
		<i>Close-out</i> <ul style="list-style-type: none"> ▪ Dismantlement of equipment ▪ Final site rehabilitation ▪ Transport and traffic ▪ Use and maintenance of equipment 	Increase in natural ambient noise.	Same standard measures as those mentioned in the construction and operation and maintenance phases.	
Luminous environment	✓	<i>Construction</i> <ul style="list-style-type: none"> ▪ Installation and presence of worksite ▪ Site preparation ▪ Installation of temporary and permanent infrastructure ▪ Work in aquatic environment ▪ Transport and traffic ▪ Use and maintenance of equipment 	Temporary emission of artificial light during the night.	Common measures: - Use luminaires that have no emission greater than 90 degrees to limit the light propagation to the sky, which produce a sober and uniform lighting that will meet the real needs of lighting and whose luminous flux will be directed towards the surface to be illuminated; - Limit deforestation and conserve as much vegetation as possible to provide visual screens. Revegetate denuded areas quickly; - Limit as much as possible the period and duration of use of lighting by installing timers and motion detectors and by encouraging workers to turn off lights or turn off mobile back-up lighting when not in use; - Install the fixed lights so as to avoid the overflowing of light out of the spaces to be lit; pay particular attention to the orientation of portable lights and mobile source lighting; - Reduce the contrast levels of buildings by using finishes with low levels of reflectance and colors that harmonize with natural landscapes (eg avoid red). Where possible, the structures on the site will be dark in color to absorb the reflection of light. Special measures: None.	Insignificant
		<i>Operation and Maintenance</i> <ul style="list-style-type: none"> ▪ Presence and operation of pit 	Temporary emission of artificial light during the night.	Same standard measures as those mentioned in the construction phase.	

Environmental Components	CV (✓)	Project Activity	Potential Effect	Current and specific mitigation measures	Significance of the Residual Effect
		<ul style="list-style-type: none"> ▪ Management of ore, unconsolidated deposits, tailings and waste rock ▪ Presence of mining infrastructure ▪ Transport and traffic ▪ Use and maintenance of equipment 		Special measures: None.	
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Dismantlement of equipment ▪ Rehabilitation ▪ Transport and traffic ▪ Use and maintenance of equipment 	Temporary emission of artificial light during the night.	<p>Same standard measures as those mentioned in the construction and operation and maintenance phases.</p> <p>Special measures: None.</p>	
Air Quality	✓	<p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Installation and presence of worksite ▪ Site preparation ▪ Installation of temporary and permanent infrastructure ▪ Transport and traffic ▪ Use and maintenance of equipment 	Deterioration of the quality of the atmosphere (emission of particulate matters and/or gaseous contaminants).	<p>Common measures:</p> <ul style="list-style-type: none"> - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - The site supervisor will ensure the proper maintenance of noisy equipment and will see the condition of the silencers and catalysts of the machinery; - Vehicle traffic will have to travel at a reduced speed in order to limit noise, vibration and dust emissions as well as for safety reasons; - Unless authorized, the movement of machinery is prohibited outside the boundaries of work areas. At the beginning of the works, a fence must be installed at the edge of the perimeter of protection. This must be kept in place and in good condition for the duration of the work; - When working, avoid handling granular materials in high winds and apply dust suppressants (calcium chloride or water) on surfaces where traffic can cause dust to rise. The dust suppressant used must comply with the NQ 2410-300 standard or be approved by the MTQ and the MDDELCC; - When calcium chloride-based dust suppressants are used, the product should not be disposed of or rinsed in or near a ditch, watercourse or vegetation. Spread surplus or rinse water on an already treated surface. Note that as part of the project, water will be used and recommended as a dust suppressant on the roads of the site and not a chemical solution. During the winter, abrasive materials such as sand will be used to deglaze roads and not flux; - Take the necessary measures to minimize the circulation of machinery in the riparian zone; - Site access roads, parking and storage areas or other temporary facilities must be located outside the riparian strip, so as to avoid deterioration or contamination; - Dust emissions from access and traffic routes, as well as handling of aggregates, must be controlled in accordance with the Regulation respecting the quality of the atmosphere (RSQ, chapter Q-2, r.38) ; - Fords crossings are prohibited unless they have obtained the required authorizations from the concerned ministries. <p>Special measures:</p> <ul style="list-style-type: none"> - During blasting, a blast mat will be installed to trap particles in the work area. - Dust emissions from drilling will need to be controlled. - To minimize dust lift during leveling operations, dry soil will be watered as needed to keep the surface moist. - Handling of granular materials will not be done during high winds or when the wind is blowing towards the workers' camp. - The machinery used will be required to meet Environment Canada's emission standards for on-road and off-road vehicles. 	Insignificant

Environmental Components	CV (✓)	Project Activity	Potential Effect	Current and specific mitigation measures	Significance of the Residual Effect
				<ul style="list-style-type: none"> - To limit the dispersion of dust on unpaved roads, these will be watered with water. - To reduce fuel consumption, the elimination of idling and the use of engine heaters will be considered. The idling time (engine operation unnecessarily) of the machinery will be limited to a minimum; the use of electrical terminals for engine heaters and diesel engine glow plugs will reduce the use of idling. - Atmospheric emissions from transport vehicles used in the construction phase (equipment, excavated or backfilled land, personnel, etc.) will be reduced by limiting the number of trips to the extent possible. - Site equipment and generators will be subject to regular maintenance and will be inspected by the contractor. 	
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> ▪ Presence and operation of pit ▪ Management of ore, unconsolidated deposits, tailings and waste rock ▪ Presence of mining infrastructure ▪ Transport and traffic ▪ Mining equipment operation and maintenance 	Deterioration of the quality of the atmosphere (emission of particulate matters and/or gaseous contaminants).	<p>Same measures as those mentioned in the construction phase (current and special). Equipment dedicated to dust suppression should be inspected regularly and defects should be repaired as soon as possible.</p> <p>Dust collected by dust collectors must be handled and transported so that there is no loss of dust in the atmosphere that is visible more than 2 m from the source of emission. In the event that they are not recycled, they must be stored, deposited or disposed of on the ground provided that the required measures are taken to prevent any release of dust into the atmosphere that is visible more than 2 m from the source of emission.</p>	Insignificant
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Transport and traffic 	Deterioration of the quality of the atmosphere (emission of particulate matters and/or gaseous contaminants).	Same measures as those mentioned in the construction phase.	Insignificant

Table 7-2 Summary of Environmental Effects on the Biological Environment

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
Biological Environment					
Vegetation and wetlands	✓	<p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Installation and presence of worksite ▪ Site preparation ▪ Installation of temporary and permanent infrastructure ▪ Work in aquatic environment ▪ Management of ore, unconsolidated deposits, tailings and waste rock ▪ Transport and traffic ▪ Use and maintenance of equipment 	<p>Loss of terrestrial environment and wetlands.</p> <p>Risk of hydrocarbons spill in the environment.</p> <p>Introduction and propagation of IAPS caused by the machinery.</p> <p>Loss of aquatic vegetation.</p>	<p>Common measures:</p> <ul style="list-style-type: none"> - Comply with the <i>Forest Act</i> (RSQ, chapter F-4.1) and all the by-laws pertaining to this Act, particularly the <i>Regulation respecting standards for intervention in State-owned forests</i> (RSQ, c. F-4.1, r.7) and the <i>Forest Protection Regulation</i> (RSQ, chapter F-4.1, r 11). Take the necessary measures to ensure that deforestation activities comply with the requirements specified therein; - Prior to deforestation, clearly identify, using solid material, resistant to weather and tear, and visible at a distance, the limits of work areas (right-of-way, deposit, etc.) as well as those of the clearance to be made around these areas (interfering limbs to be pruned) so that they can be checked effectively at any time during the work. Authorization of the supervisor must be obtained prior to the felling of trees; - All trees and shrubs, and only these, must be cut to the ground on the embankments of approach embankments, 10 m across the front wall abutments. Their root system must be preserved. A vegetal protection strip of at least 30 m wide must be preserved along the banks; - Cutting products must be shredded and spread over the intervention areas at least 60 m from the river. The tailings must not impede the flow of runoff water; - During deforestation, pay special attention to the vegetation at the edge of the work areas so as not to damage it. Avoid falling trees outside the boundaries of deforestation and in streams. If this is the case, remove them taking care not to disturb the environment. Near the boundaries of work areas, do not tear or uproot trees with construction equipment. Along these boundaries, maintain an unshrouded deforested transition zone 3 m wide and preserve the shrub layer. It must be ensured that deforested areas, left bare and exposed to atmospheric agents, are kept to a minimum - In the 30 m strip bordering a watercourse, the vegetation cover must be maintained and it is forbidden to pile up organic matter from the soil surface stripping. It is also forbidden to pile up waste and woody debris. Runoff must be diverted to a vegetation zone at least 30 m from the watercourse or intercepted by means of sediment barriers or a sedimentation pond; - The holder of an intervention permit must harvest all trees whose diameter is equal to or greater than that mentioned in his permit. He must cut the trees to a height not exceeding 30 cm above the highest level of the soil. Where necessary, remove stumps to a minimum depth of 30 cm below the soil surface. In areas with steep slopes and at sites with backfill greater than 1 m, a cut at ground level (maximum height of 15 cm) without grubbing should also be carried out. In the 3 m transition zone, the trees must also be cut to the ground, and the stumps left in place, to ensure a rapid recovery of the shrub layer and protect the root system of trees located outside the areas working. Damaged roots of 10 mm or more of trees to be preserved should be cut cleanly; - During deforestation operations, waste and woody debris may be disposed of in an authorized place or shredded or burned. If shredded, reuse as needed materials for temporary stabilization and soil fattening. If they are burned, first take all necessary precautions to avoid a fire and obtain a permit from SOPFEU and the authorization of the supervisor. If applicable, municipal regulations must also be respected. Heaps of woody material to be burned must be arranged in stacks or in rows not exceeding 2.5 m in height. A minimum distance of 12 m must separate these piles from the forest. Never burn wood waste within 60 m of a watercourse. Burning must be done under constant supervision and burn residues must be removed; - Follow the requirements of the <i>Petroleum Products and Petroleum Products Act</i> (RSQ, P-29.1) and the <i>Petroleum Products Regulations</i> (RSQ, P-30.01, r.1) for the management of equipment and petroleum products; 	<p>Vegetation: Insignificant</p> <p>Wetlands: Significant</p>

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
				<ul style="list-style-type: none"> - Develop, before the start of the work, a contingency plan for accidental release of contaminants into the environment. Inform workers of the contents of the response plan and make them aware of the importance of a rapid response; - Take the necessary measures to ensure that containers, portable tanks and mobile tanks comply with the manufacturing standards specified in the <i>Petroleum Products Regulations</i>. Comply with localization and installation standards for aboveground and underground tanks; - Have an approved verifier check the petroleum equipment during installation, replacement or removal. Have the petroleum equipment checked in accordance with the frequency and conditions indicated in the <i>Petroleum Products Regulations</i>; - The Contractor must be licensed to use high risk petroleum equipment if installing or using an above ground tank of 10,000 liters or more of diesel fuel or a 2,500 liter tank or more gas. In the case of an underground tank where one or more of the components are partially or completely buried in the ground, this permit is required for a tank of 500 liters or more of diesel fuel or gasoline; - For aboveground tanks with a total volume of 5,000 liters, a watertight dike forming a retention basin around the tank (s) must be installed. If the drip pan protects only one tank, it must be of sufficient capacity to contain a volume of at least 10% greater than the capacity of the tank. If the retention basin protects multiple tanks, it shall be of sufficient capacity to contain a volume of liquids not less than the greater of: the capacity of the largest tank plus 10% of the total capacity of all other tanks, or the capacity of the largest tank increased by 10%; - Handle petroleum products to prevent and control leaks and spills. Keep hydrocarbon absorbent products at all times when storing or using petroleum products. During a spill of contaminants, immediately apply the spill response plan in effect; - Class 1 or 2 petroleum products or substances impregnated with these products must be stored in airtight containers. A room used to store a Class 1 petroleum product must be heated by means of appliances that do not represent an ignition source. A room housing a pump or electrical entry devices shall not be used for the storage of Class 1 or Class 2 petroleum products; - The circulation of machinery and trucks will be limited to the right of way of access roads and work areas. Plastic fences will clearly identify the boundaries of the work areas; - Parking, washing and maintenance areas for machinery and storage of equipment must be located at least 60 m from a watercourse. The refueling of the hydrocarbon machinery must be carried out under constant surveillance and at a distance of at least 60 m from a watercourse. The operation of any construction machinery that has not been used for a certain period of time must be interrupted, except in winter for diesel-powered machinery; - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - A complete emergency kit for the recovery of petroleum products and hazardous materials, permanent and easily accessible at all times, must be present on site. This must include a sufficient supply of absorbent materials and related equipment (shovels, gloves, leaks, etc.) to alleviate any situation as well as well-sealed receptacles intended to receive petroleum residues and other hazardous residual materials. . Secondary emergency kits may be required at certain locations on the site. Each construction machine must also contain a sufficient quantity of absorbents in order to be able to intervene quickly. The list of spill response equipment and devices must be approved by the supervisor. Soiled soil, oil residues and other hazardous residual materials must be disposed of in accordance with applicable laws and regulations; - All spills must be reported immediately to the Project Emergency Plan Authority, who will have been developed and approved prior to the work. The affected area must be immediately circumscribed and cleaned up immediately. Contaminated soil must be removed and disposed of in 	

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
				<p>an authorized place and a characterization must be carried out according to the terms of the <i>MDDELCC Soil Protection and Contaminated Sites Rehabilitation Policy</i>. In the event of a spill of oil or other noxious substances, the Environment Canada (1-866-283-2333) or MDDELCC (1-866-694-5454) alert system should be notified immediately;</p> <ul style="list-style-type: none"> - The site supervisor will ensure the proper maintenance of noisy equipment and will see the condition of the silencers and catalysts of the machinery; - The promoter must ensure that all equipment is in good working order to avoid any leakage of fuel, oil or grease. No equipment cleaning will be allowed in the aquatic environment; - Hazardous materials must be managed in accordance with <i>the Regulation respecting hazardous materials</i> (L.R.Q., C.Q-2, r.32); - Have on-site equipment at all times in case of a spill of contaminants. Contaminant spills must be subject to immediate action to contain and recover the products; - Notify the MDDELCC immediately in the event of a spill of contaminants; - Do not emit, deposit, release or discharge a hazardous material into the environment or into a sewer system; - All hazardous materials must be stored in a designated place. The hazardous materials storage location must be kept away from vehicular traffic and within a reasonable distance of drainage ditches or sumps and other sensitive elements; - Residual hazardous materials must be stored in an identified and identified recovery area. Residual hazardous materials must be protected from the weather by a waterproof tarpaulin, waiting for their loading and transportation. In winter, it is suggested that containers be placed on pallets or storage tables. If the retention time is greater than 30 days, the developed area must include a watertight shelter with at least three sides, a roof and a watertight floor forming a basin with a retention capacity of at least the following volumes: 125% the largest container or 25% of the total volume of all containers full of liquids; - When transporting dangerous goods, comply with the <i>Regulation respecting the transport of dangerous goods</i> (L.R.Q., C. C-24.2, r 43); - Dispose of the residual materials in containers provided for this purpose. The site manager will ensure that the residues are recovered and deposited in authorized sites. Do not release debris into the aquatic environment. All debris accidentally introduced into the aquatic environment should be removed as soon as possible; - Vegetation cutting or stripping waste should not be released into streams and lakes; - At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and excavated material from the work. Redevelop and restore these work areas so that it fits as well as possible into the natural landscape (feast and loosen the soil, soften the slopes). Scarify road segments or abandoned roads. Use stored topsoil for area recovery. Seed the slope slopes of the right-of-way to stabilize them quickly. Re-vegetate all areas that will not be useful for the exploitation phase; - Altered shorelines should be restored including slope stabilization and revegetation of surfaces; - Restore the riparian strip deteriorated by the works as and when they progress in order to reproduce the natural bank of the watercourse or lake; - After the completion of the works, all the tools, equipment, vehicles, temporary works or parts of works that have been used to build or put in place the infrastructure must be removed from the site; - Spread the topsoil laid aside on the entire surface of the work or storage site if the volume is sufficient, otherwise in the form of islands; - Cut down damaged trees during the work. These trees must be delimbed and cut in length of 1.2 m. If the wood is of commercial value, stack it at the edge of the right-of-way. If the trees have no commercial value or other value, leave them on the ground in the right-of-way; 	

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
				<p>- Remove temporary bridges, culverts and shoreline protection. Restore the original profile of the bed and stream banks;</p> <p>- Restore natural drainage and dig ditches as needed to ensure proper drainage of the land;</p> <p>- In order to reduce the risk of erosion on sloping land, use methods such as the establishment of retaining slopes, ditches or diversion ditches perpendicular to the slope, or other methods;</p> <p>- Restoration work by revegetation must be completed within one year after completion of the work;</p> <p>- Unless authorized, the movement of machinery is prohibited outside the boundaries of work areas. At the beginning of the works, a fence must be installed at the edge of the perimeter of protection. This must be kept in place and in good condition for the duration of the work;</p> <p>- Take the necessary measures to minimize the circulation of machinery in the riparian zone;</p> <p>- Road access roads, parking and storage areas or other temporary facilities must be located outside the riparian strip, so as to avoid deterioration or contamination.</p> <p>Special measures:</p> <p>- Gradually clear the required areas (as required), if possible, for waste rock storage and pit operation.</p> <p>- At the end of the work, reprofile disturbed areas and seed the work areas with a seed mixture free from invasive alien species and containing seeds of native species appropriate to the hardiness zone, thus avoiding the establishment of species. Invasive exotic floristics and accelerating the process of revegetation.</p> <p>If the machinery is to circulate in a wet environment, carry out, if possible, work on frozen ground or during periods of low water.</p> <p>- If the machinery is to circulate in a wet environment, use vehicles and construction equipment with low ground pressure. Circulate on a wooden mattress or on fascines, etc.</p> <p>- Maintain drainage conditions in wetlands adjacent to work areas.</p> <p>- Develop a compensation project for wetland loss related to the project that will be submitted to the MDDELCC for approval.</p> <p>- To prevent the introduction of invasive alien species, make sure to clean the construction machinery that will be used before arriving at the mine site so that it is free of mud, animals or plant fragments.</p> <p>- Avoid circulating, if it is not necessary, in places where there are EFEE in order to avoid dispersing them on the territory.</p>	
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> ▪ Water management and treatment ▪ Management of hazardous and residual materials ▪ Transport and traffic 	<p>Change to the runoff and surface water flow pattern at the periphery of infrastructure.</p> <p>Risk of hydrocarbons spill in the environment.</p> <p>Introduction and propagation of IAPS.</p>	<p>Common measures:</p> <p>- Follow the requirements of the <i>Petroleum Products and Petroleum Products Act</i> (RSQ, P-29.1) and the <i>Petroleum Products Regulations</i> (RSQ, P-30.01, r.1) for the management of equipment and petroleum products;</p> <p>- Develop, before the start of the work, a contingency plan for the accidental release of contaminants into the environment. Inform workers of the contents of the response plan and make them aware of the importance of a rapid response;</p> <p>- Take the necessary measures to ensure that containers, portable tanks and mobile tanks comply with the manufacturing standards specified in the <i>Petroleum Products Regulations</i>. Comply with localization and installation standards for aboveground and underground tanks;</p> <p>- Have an approved verifier check the petroleum equipment during installation, replacement or removal. Have the petroleum equipment checked in accordance with the frequency and conditions indicated in the <i>Petroleum Products Regulations</i>;</p> <p>- The Contractor must be licensed to use high risk petroleum equipment if installing or using an above ground tank of 10,000 liters or more of diesel fuel or a 2,500 liter tank or more gas. In the case of an underground tank where one or more of the components are partially or completely</p>	Significant

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
				<p>buried in the ground, this permit is required for a tank of 500 liters or more of diesel fuel or gasoline;</p> <ul style="list-style-type: none"> - For aboveground tanks with a total volume of 5,000 liters, a watertight dike forming a retention basin around the tank (s) must be installed. If the drip pan protects only one tank, it must be of sufficient capacity to contain a volume of at least 10% greater than the capacity of the tank. If the retention basin protects multiple tanks, it shall be of sufficient capacity to contain a volume of liquids not less than the greater of: the capacity of the largest tank plus 10% of the total capacity of all other tanks, or the capacity of the largest tank increased by 10%; - Handle petroleum products to prevent and control leaks and spills. Keep hydrocarbon absorbent products at all times when storing or using petroleum products. During a spill of contaminants, immediately apply the spill response plan in effect; - Class 1 or 2 petroleum products or substances impregnated with these products must be stored in airtight containers. A room used to store a Class 1 petroleum product must be heated by means of appliances that do not represent an ignition source. A room housing a pump or electrical entry devices shall not be used for the storage of Class 1 or Class 2 petroleum products; - The circulation of machinery and trucks will be limited to the right of way of access roads and work areas. Plastic fences will clearly identify the boundaries of the work areas; - Parking, washing and maintenance areas for machinery and storage of equipment must be located at least 60 m from a watercourse. The refueling of the hydrocarbon machinery must be carried out under constant surveillance and at a distance of at least 60 m from a watercourse. The operation of any construction machinery that has not been used for a certain period of time must be interrupted, except in winter for diesel-powered machinery; - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - A complete emergency kit for the recovery of petroleum products and hazardous materials, permanent and easily accessible at all times, must be present on site. This must include a sufficient supply of absorbent materials and related equipment (shovels, gloves, leaks, etc.) to alleviate any situation as well as well-sealed receptacles intended to receive petroleum residues and other hazardous residual materials. . Secondary emergency kits may be required at certain locations on the site. Each construction machine must also contain a sufficient quantity of absorbents in order to be able to intervene quickly. The list of spill response equipment and devices must be approved by the supervisor. Soiled soil, oil residues and other hazardous residual materials must be disposed of in accordance with applicable laws and regulations; - All spills must be reported immediately to the Project Emergency Plan Authority, who will have been developed and approved prior to the work. The affected area must be immediately circumscribed and cleaned up immediately. Contaminated soil must be removed and disposed of in an authorized place and a characterization must be carried out according to the terms of the MDDELCC <i>Soil Protection and Contaminated Sites Rehabilitation Policy</i>. In the event of a spill of oil or other noxious substances, the Environment Canada (1-866-283-2333) or MDDELCC (1-866-694-5454) alert system should be notified immediately; - The site supervisor will ensure the proper maintenance of noisy equipment and will see the condition of the silencers and catalysts of the machinery; - The promoter must ensure that all equipment is in good working order to avoid any leakage of fuel, oil or grease. No equipment cleaning will be allowed in the aquatic environment; - Hazardous materials must be managed in accordance with the <i>Regulation respecting hazardous materials</i> (L.R.Q., C.Q-2, r.32); - Have on-site equipment at all times in case of a spill of contaminants. Contaminant spills must be subject to immediate action to contain and recover the products; 	

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
				<ul style="list-style-type: none"> - Promptly notify the MDDELCC in the event of a spill of contaminants; - Do not emit, deposit, release or discharge a hazardous material into the environment or into a sewer system; - All hazardous materials must be stored in a designated place. The hazardous materials storage location must be kept away from vehicular traffic and within a reasonable distance of drainage ditches or sumps and other sensitive elements; - Residual hazardous materials must be stored in an identified and identified recovery area. Residual hazardous materials must be protected from the weather by a waterproof tarpaulin, waiting for their loading and transportation. In winter, it is suggested that containers be placed on pallets or storage tables. If the retention time is greater than 30 days, the developed area must include a watertight shelter with at least three sides, a roof and a watertight floor forming a basin with a retention capacity of at least the following volumes: 125% the largest container or 25% of the total volume of all containers full of liquids; - When transporting dangerous goods, comply with the Regulation respecting the transport of dangerous goods (L.R.Q., C. C-24.2, r 43); - Dispose of the residual materials in containers provided for this purpose. The site manager will ensure that the residues are recovered and deposited in authorized sites. Do not release debris into the aquatic environment. All debris accidentally introduced into the aquatic environment should be removed as soon as possible; - Vegetation cutting or stripping waste should not be released into streams and lakes; - Unless authorized, the movement of machinery is prohibited outside the boundaries of work areas. At the beginning of the works, a fence must be installed at the edge of the perimeter of protection. This must be kept in place and in good condition for the duration of the work; - Take the necessary measures to minimize the circulation of machinery in the riparian zone; - Road access roads, parking and storage areas or other temporary facilities must be located outside the riparian strip, so as to avoid deterioration or contamination. <p>Special measure: Use stored loose deposits (overburden pile) for the gradual rehabilitation of waste rock and tailings dumps.</p>	
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Final site rehabilitation ▪ Transport and traffic ▪ Use and maintenance of equipment 	<p>Progressive reconstitution of the forest cover on remediated sites after revegetation work (positive impact).</p> <p>Risk of hydrocarbons spill in the environment.</p> <p>Introduction and propagation of IAPS.</p>	<p>Same mitigation measures as those listed for the construction and operation phases when they involve the same sources of effect.</p>	Positive
Aquatic fauna	✓	<p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Installation and presence of worksite ▪ Site preparation ▪ Installation of temporary and permanent infrastructure ▪ Work in aquatic environment ▪ Management of hazardous and residual materials ▪ Transport and traffic ▪ Use and maintenance of equipment ▪ Workforce 	<p>Emission of suspended solids in water.</p> <p>Change to the water regime.</p> <p>Destruction of the fish habitat and mortality.</p> <p>Risk of hydrocarbons spill in aquatic environment.</p> <p>Increase in fishing intensity.</p>	<p>Common measures:</p> <ul style="list-style-type: none"> - Arrange slopes adjacent to access roads to ensure maximum stability. As far as possible, the vegetation of the slopes along the roads should be conserved; - Install sedimentation ponds and / or sediment barriers in access ditches, using geotextiles. For permanent access, these temporary installations will have to be improved at the end of the works in order to ensure their durability with minimal maintenance; - The installation of the cofferdam should take place as far as possible during periods of low water (July August); - In order to limit the turbidity increase during their development and dismantling, the cofferdam (s) shall consist of concrete blocks free from fine particles. Their watertightness will be ensured by a geotextile membrane which will be installed on the inside face of the rocky carapace of the cofferdams. It will avoid the release into the stream of fine materials; - Installation of a curtain for the containment of suspended matter outside the cofferdam 	<p>Lakes 1, 2, 3, 19 and Watercourses A, B, K, M: Significant</p> <p>Watercourses around the mining installations: Insignificant</p> <p>Risks of spillage: Insignificant</p>

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
				<p>development zone;</p> <ul style="list-style-type: none"> - The pumping water from dry cofferdam enclosures will be diverted to the bank in settling ponds before being returned to the watercourse; - The granular materials used for the construction of structures must not come from the bed of a body of water or its banks or from any source located within 75 m of the aquatic environment; - During operation, reduce erosion due to runoff and prevent sediment from reaching a lake or stream; - In the case of a sand pit, in order to prevent erosion and land subsidence, the slopes of the harvested area must be at most 30 degrees from the horizontal; - Comply with the <i>Forest Act</i> (RSQ, chapter F-4.1) and all the by-laws pertaining to this Act, notably the <i>Regulation respecting standards for intervention in State-owned forests</i> (RSQ, c F -4.1, r.7) and the <i>Forest Protection Regulation</i> (RSQ, chapter F-4.1, r 11). Take the necessary measures to ensure that deforestation activities comply with the requirements specified therein; - All trees and shrubs, and only these, must be cut to the ground on the embankments of the approach embankments 10 m apart on either side of the abutments. Their root system must be preserved. A vegetal protection strip of at least 30 m wide must be preserved along the banks; - Cutting products must be shredded and spread over the intervention areas at least 60 m from the river. The tailings must not impede the flow of runoff water; - During deforestation, pay special attention to the vegetation at the edge of the work areas so as not to damage it. Avoid falling trees outside the boundaries of deforestation and in streams. If this is the case, remove them taking care not to disturb the environment. Near the boundaries of work areas, do not tear or uproot trees with construction equipment. Along these boundaries, maintain an unshrouded deforested transition zone 3 m wide and preserve the shrub layer. It must be ensured that deforested areas, left bare and exposed to atmospheric agents, are kept to a minimum; - In the 30 m strip bordering a watercourse, the vegetation cover must be maintained and it is forbidden to pile organic matter from the soil surface stripping. It is also forbidden to pile up waste and woody debris. Runoff must be diverted to a vegetation zone at least 30 m from the watercourse or intercepted by means of sediment barriers or a sedimentation pond; - During deforestation operations, waste and woody debris may be disposed of in an authorized place or shredded or burned. If shredded, reuse as needed materials for temporary stabilization and soil fattening. If they are burned, first take all necessary precautions to avoid a fire and obtain a permit from SOPFEU and the authorization of the supervisor. If applicable, municipal regulations must also be respected. Heaps of woody material to be burned must be arranged in stacks or in rows not exceeding 2.5 m in height. A minimum distance of 12 m must separate these piles from the forest. Never burn wood waste within 60 m of a watercourse. Burning must be done under constant supervision and burn residues must be removed; - When working, respect the natural drainage of the environment and take all appropriate measures to allow the normal flow of water; - When constructing temporary ditches, the slope of the ditch must be reduced, if necessary, by installing at regular intervals obstacles to prevent erosion (sandbags, straw bales, etc.) ; - Where surface drainage is likely to result in sediment in watercourses, apply measures to contain or divert sediment so that it does not reach watercourses; - Do not create ditches in the 20 m band on either side of a watercourse. Beyond this band, ditch water will be diverted to a vegetation zone. If required, the flow velocity of the water will be reduced by blocking the flow (energy dissipation techniques) while filtering the sediment. If necessary, a sedimentation pond will be constructed outside this band to capture runoff and sediment transport. This will be sized according to the flow to be received and evacuated; - No ditch should be set up in the 30 m band on either side of a watercourse. Beyond this band, 	

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
				<p>ditch water must be diverted to an area of vegetation outside the right-of-way. If required, the flow velocity of the water should be reduced by blocking the flow (energy dissipation techniques) while filtering the sediment. If necessary, develop a sedimentation pond outside this band to capture runoff and sediment transport. This must be sized according to the flow to be received and evacuated;</p> <ul style="list-style-type: none"> - During earthworks in steep slopes, erosion problems must be prevented by gradually stabilizing the bottom of ditches by overlapping with well-drained granular materials and proceeding with rocking. If necessary, arrange a series of stops at the base of the ditches; - The slopes of cuttings and embankments must be stabilized by means of techniques that are as harmonious as possible with the natural setting of the environment, and at any place where erosion is likely to create a sediment input into a waterway (softened slope at 1.5 H: 1 V, plus other available techniques). Along the steep slopes along the right-of-way, use sediment barriers (geotextile, straw, etc.) at the foot of the embankment to reduce the volume of sediment transported. Protective installations (straws, chips, mattresses) can also be used directly on the slope. Do not put debris on steep slopes. Embankments must be compacted appropriately. For embankments greater than 60 cm, it is preferable to backfill in several thin layers rather than in a single layer to ensure better compaction. In areas without a transverse slope, the height and depth of embankments should be limited to 3 m; - Excavation material must be placed in a site at least 30 m outside the natural high water line; - When the removal or addition of granular or other materials is done in water, the work must be done in such a way as to minimize contamination of the watercourse by resuspension of the material; - Soils discovered and cuttings must be stored outside the riparian strip; - Minimize stripping, excavation, excavation, backfilling and leveling of work areas to maintain natural topography and prevent erosion; - Filter, decant, treat or use any other method to control the quality of runoff or pumped water from excavations; - Develop, before the start of the work, a contingency plan for accidental release of contaminants into the environment. Inform workers of the contents of the response plan and make them aware of the importance of a rapid response; - Handle petroleum products to prevent and control leaks and spills. Keep hydrocarbon absorbent products at all times when storing or using petroleum products. During a spill of contaminants, immediately apply the spill response plan in effect; - Parking, washing and maintenance areas for machinery and storage of equipment must be located at least 60 m from a watercourse. The refueling of the hydrocarbon machinery must be carried out under constant surveillance and at a distance of at least 60 m from a watercourse. The operation of any construction machinery that has not been used for a certain period of time must be interrupted, except in winter for diesel-powered machinery; - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - A complete emergency kit for the recovery of petroleum products and hazardous materials, permanent and easily accessible at all times, must be present on site. This must include a sufficient supply of absorbent materials and related equipment (shovels, gloves, leaks, etc.) to alleviate any situation as well as well-sealed receptacles intended to receive petroleum residues and other hazardous residual materials. . Secondary emergency kits may be required at certain locations on the site. Each construction machine must also contain a sufficient quantity of absorbents in order to 	

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				<p>be able to intervene quickly. The list of spill response equipment and devices must be approved by the supervisor. Soiled soil, oil residues and other hazardous residual materials must be disposed of in accordance with applicable laws and regulations;</p> <ul style="list-style-type: none"> - All spills must be reported immediately to the Project Emergency Plan Authority, who will have been developed and approved prior to the work. The affected area must be immediately circumscribed and cleaned up immediately. Contaminated soil must be removed and disposed of in an authorized place and a characterization must be carried out according to the terms of the <i>MDDELCC Soil Protection and Contaminated Sites Rehabilitation Policy</i>. In the event of a spill of oil or other noxious substances, the Environment Canada (1-866-283-2333) or MDDELCC (1-866-694-5454) alert system should be notified immediately; - The promoter must ensure that all equipment is in good working order to avoid any leakage of fuel, oil or grease. No equipment cleaning will be allowed in the aquatic environment; - Before entering the water, the machinery should be inspected and cleaned to prevent contamination of the water with oils, grease or other materials. The cleaning area must be more than 60 m from any body of water; - Hazardous materials must be managed in accordance with the <i>Regulation respecting hazardous materials</i> (L.R.Q., C.Q-2, r.32); - Have on-site equipment at all times in case of a spill of contaminants. Contaminant spills must be subject to immediate action to contain and recover the products; - Promptly notify the MDDELCC in the event of a spill of contaminants; - Do not emit, deposit, release or discharge a hazardous material into the environment or into a sewer system; - All hazardous materials must be stored in a designated place. The hazardous materials storage location must be kept away from vehicular traffic and within a reasonable distance of drainage ditches or sumps and other sensitive elements; - Residual hazardous materials must be stored in an identified and identified recovery area. Residual hazardous materials must be protected from the weather by a waterproof tarpaulin, waiting for their loading and transportation. In winter, it is suggested that containers be placed on pallets or storage tables. If the retention time is greater than 30 days, the developed area must include a watertight shelter with at least three sides, a roof and a watertight floor forming a basin with a retention capacity of at least the following volumes: 125% the largest container or 25% of the total volume of all containers full of liquids; - When transporting dangerous goods, comply with the <i>Regulation respecting the transport of dangerous goods</i> (L.R.Q., C. C-24.2, r 43); - Dispose of the residual materials in containers provided for this purpose. The site manager will ensure that the residues are recovered and deposited in authorized sites. Do not release debris into the aquatic environment. All debris accidentally introduced into the aquatic environment should be removed as soon as possible; - As work progresses, all construction waste, residues and surplus materials must be removed from the site and disposed of in accordance with the <i>Environment Quality Act</i>. Surplus concrete or bitumen and water used to clean concrete mixers, vehicles and equipment must be disposed of in an area provided for this purpose and in such a way as to avoid any contamination of the environment; - Do not discharge waste materials or debris into waterways; - Vegetation cutting or stripping waste should not be released into streams and lakes; - Take the necessary measures so as not to strip the ground during snow removal; - Do not discharge snow into a watercourse or the 30 m strip of a watercourse; - The location of the snow storage areas must be approved by the MDDELCC Regional Office. 	

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				<p>These areas must be located at a minimum distance of 30 m from all watercourses and from any source of drinking water supply, so as to avoid any contamination of the water or groundwater;</p> <ul style="list-style-type: none"> - During the construction of the road, the natural drainage of the soil must be respected and the flow of run-off must be maintained by installing culverts at least 30 cm in diameter, if necessary. The end of the culvert must extend at least 30 cm beyond the base of the embankment, which must itself be well stabilized; - The installation of a culvert in a watercourse must preferably be carried out during low-water periods and as soon as possible. It must not impede the flow of water or contribute to the formation of ponds upstream during floods. The culvert must not reduce the width of a watercourse by more than 20%. Its minimum diameter is however 45 cm. The water flow height must be 85% or less of the free height of the culvert. The base of the culvert (raft) shall be buried under the natural bed of the watercourse at a depth of at least 15 cm or 10% of the height of the structure measured from the inside wall (inside diameter). Its maximum depth of burial must not exceed 30 cm, otherwise use an arch culvert with open slab. The end of the culvert must extend beyond the base of the embankment that supports the road by no more than 30 cm and the embankment must be stabilized at both ends of the culvert. The material of this backfill must not contain organic matter; - When installing a culvert, the work area must first be contained in order to avoid sediment transport in the water (eg drying the area partially or totally). The working techniques and the materials used (eg diverting structures, geotextile, polythene, etc.) must not generate turbidity in the water. The natural flow of the watercourse must be maintained continuously and the return of water must be immediately downstream of the work area. Wherever possible, the stream bed should not be narrowed by more than two-thirds during construction. If necessary, accumulations of water in the work area must be pumped to a vegetation zone at a distance of at least 30 m from the watercourse; - After installing a culvert, any other structure required for this work must be removed from the water. It must be ensured that the stream bed is well stabilized at the entrance and exit. The stream bed must then be refitted according to its natural profile and with materials similar to the previous ones, the banks must be stabilized and, if necessary, revegetated; - At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and excavated material from the work. Redevelop and restore these work areas so that it fits as well as possible into the natural landscape (feast and loosen the soil, soften the slopes). Scarify road segments or abandoned roads. Use stored topsoil for area recovery. Seed the slope slopes of the right-of-way to stabilize them quickly. Re-vegetate all areas that will not be useful for the exploitation phase; - Altered shorelines should be restored including slope stabilization and revegetation of surfaces; - Restore the riparian strip deteriorated by the works as and when they progress in order to reproduce the natural bank of the watercourse or lake; - In order to reduce the risk of erosion on sloping land, use methods such as the establishment of retaining slopes, ditches or diversion ditches perpendicular to the slope, or other methods; - In the right-of-way, no vehicle or construction machine shall circulate without reason within 20 m of a permanent watercourse or within 5 m of an intermittent watercourse. If required, water flowing in the ruts should be diverted to a vegetated area at least 30 m from a watercourse; - When working, avoid handling granular materials in high winds and apply dust suppressants (calcium chloride or water) on surfaces where traffic can cause dust to rise. The dust suppressant used must comply with the NQ 2410-300 standard or be approved by the MTQ and the MDDELCC; - When calcium chloride-based dust suppressants are used, the product should not be disposed of or rinsed in or near a ditch, watercourse or vegetation. Spread surplus or rinse water on an already treated surface. Note that as part of the project, water will be used and recommended as a dust 	

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				<p>suppressant on the roads of the site and not a chemical solution. During the winter, abrasive materials such as sand will be used to deglaze roads and not flux;</p> <ul style="list-style-type: none"> - Take the necessary measures to minimize the circulation of machinery in the riparian zone; - Fords crossing is prohibited unless the required authorizations have been obtained from the concerned ministries; - Runoff and dewatering water must be captured and conveyed to the process or a mining wastewater treatment system. <p>Special measures:</p> <ul style="list-style-type: none"> - Capture of a portion of the fish from Lakes 1 and 3 prior to dewatering over a fishing period of up to 10 days per body of water; - In large deforestation areas, woody debris will be left on the ground until the ditch system is functional to prevent runoff on the deforested surface from causing sediment transport to the waterways or lakes; - Maintenance of vehicles and other mobile machinery will be done at the garage. If mobile equipment is to be serviced on site, absorbent liners or other types of absorbent material will be put in place to prevent accidental spills; - The number of refueling sites for the machinery will be limited to the minimum; <p>Install a fish rack at the end of the pumps to avoid sucking them into the lines;</p> <ul style="list-style-type: none"> - Establishment of a stone bed on the shore of Lake 3 at the outlet of the pumping line during dewatering work to prevent erosion of the bank; - Installation of turbidity curtains and use of a sediment bag at Lake 3 during its drying. 	
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> ▪ Presence and operation of pit ▪ Water management and treatment ▪ Management of hazardous and residual materials ▪ Transport and traffic ▪ Use and maintenance of equipment 	<p>Modification of Watercourse A water quality.</p> <p>Change in the water regime.</p> <p>Risk of hydrocarbons spill in the aquatic environment.</p> <p>Increase in fishing intensity.</p>	<p>Common measures:</p> <ul style="list-style-type: none"> - The granular materials used for the construction of structures must not come from the bed of a body of water or its banks or from any source located within 75 m of the aquatic environment; - During operation, reduce erosion due to runoff and prevent sediment from reaching a lake or stream; - In the case of a sand pit, in order to prevent erosion and land subsidence, the slopes of the harvested area must be at most 30 degrees from the horizontal; - During the works, respect the natural drainage of the environment and take all the appropriate measures to allow the normal flow of water; - When constructing temporary ditches, the slope of the ditch must be reduced, if necessary, by installing at regular intervals obstacles to prevent erosion (sandbags, straw bales, etc.); - Where surface drainage is likely to result in sediment in watercourses, apply measures to contain or divert sediment so that it does not reach watercourses; - Do not create ditches in the 20 m band on either side of a watercourse. Beyond this band, ditch water will be diverted to a vegetation zone. If required, the flow velocity of the water will be reduced by blocking the flow (energy dissipation techniques) while filtering the sediment. If necessary, a sedimentation pond will be constructed outside this band to capture runoff and sediment transport. This will be sized according to the flow to be received and evacuated; - Develop, before the start of the work, a contingency plan for the accidental release of contaminants into the environment. Inform workers of the contents of the response plan and make them aware of the importance of a rapid response; - Handle petroleum products to prevent and control leaks and spills. Keep hydrocarbon absorbent products at all times when storing or using petroleum products. During a spill of contaminants, immediately implement the spill response plan in effect; - Parking, washing and maintenance areas for machinery and storage of equipment must be located at least 60 m from a watercourse. The refueling of the hydrocarbon machinery must be carried out under constant surveillance and at a distance of at least 60 m from a watercourse. The operation of 	

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				<p>any construction machinery that has not been used for a certain period of time must be interrupted, except in winter for diesel-powered machinery;</p> <ul style="list-style-type: none"> - Preliminary and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - A complete emergency kit for the recovery of petroleum products and hazardous materials, permanent and easily accessible at all times, must be present on site. This must include a sufficient supply of absorbent materials and related equipment (shovels, gloves, leaks, etc.) to alleviate any situation as well as well-sealed receptacles intended to receive petroleum residues and other hazardous residual materials. . Secondary emergency kits may be required at certain locations on the site. Each construction machine must also contain a sufficient quantity of absorbents in order to be able to intervene quickly. The list of spill response equipment and devices must be approved by the supervisor. Soiled soil, oil residues and other hazardous residual materials must be disposed of in accordance with applicable laws and regulations; - Accidental spills must be reported immediately to the Project Emergency Plan Authority, who will have been prepared and approved prior to the work. The affected area must be immediately circumscribed and cleaned up immediately. Contaminated soil must be removed and disposed of in an authorized place and a characterization must be carried out according to the terms of the MDDELCC <i>Soil Protection and Contaminated Sites Rehabilitation Policy</i>. In the event of a spill of oil or other noxious substances, the Environment Canada (1-866-283-2333) or MDDELCC (1-866-694-5454) alert system should be notified immediately; - The promoter must ensure that all equipment is in good working order to avoid any leakage of fuel, oil or grease. No equipment cleaning will be allowed in the aquatic environment; - Before entering the water, the machinery should be inspected and cleaned to prevent contamination of the water with oils, grease or other materials. The cleaning area must be more than 60 m from any body of water; - Hazardous materials must be managed in accordance with the <i>Regulation respecting hazardous materials</i> (L.R.Q., C.Q-2, r.32); - Have on-site equipment at all times in case of a spill of contaminants. Contaminant spills must be subject to immediate action to contain and recover the products; - Promptly notify the MDDELCC in the event of a spill of contaminants; - Do not emit, deposit, release or discharge a hazardous material into the environment or into a sewer system; - All hazardous materials must be stored in a designated place. The hazardous materials storage location must be kept away from vehicular traffic and within a reasonable distance of drainage ditches or sumps and other sensitive elements; - Residual hazardous materials must be stored in an identified and identified recovery area. Residual hazardous materials must be protected from the weather by a waterproof tarpaulin, waiting for their loading and transportation. In winter, it is suggested that containers be placed on pallets or storage tables. If the retention time is greater than 30 days, the developed area must include a watertight shelter with at least three sides, a roof and a watertight floor forming a basin with a retention capacity of at least the following volumes: 125% the largest container or 25% of the total volume of all containers full of liquids; - When transporting dangerous goods, comply with the <i>Regulation respecting the transport of dangerous goods</i> (L.R.Q., C. C-24.2, r 43); - Dispose of the residual materials in containers provided for this purpose. The site manager will ensure that the residues are recovered and deposited in authorized sites. Do not release debris into the aquatic environment. All debris accidentally introduced into the aquatic environment should be 	

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				<p>removed as soon as possible;</p> <ul style="list-style-type: none"> - As work progresses, all construction waste, residues and surplus materials must be removed from the site and disposed of in accordance with the <i>Environment Quality Act</i>. Surplus concrete or bitumen and water used to clean concrete mixers, vehicles and equipment must be disposed of in an area provided for this purpose and in such a way as to avoid any contamination of the environment; - Do not discharge waste materials or debris into waterways; - Vegetation cutting or stripping waste should not be released into streams and lakes; Take the necessary measures so as not to strip the ground during snow removal; - Do not discharge snow into a watercourse or the 30 m strip of a watercourse; - The location of the snow storage areas must be approved by the MDDELCC Regional Office. These areas must be located at a minimum distance of 30 m from all watercourses and from any source of drinking water supply, so as to avoid any contamination of the water or groundwater; - At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and excavated material from the work. Redevelop and restore these work areas so that it fits as well as possible into the natural landscape (feast and loosen the soil, soften the slopes). Scarify road segments or abandoned roads. Use stored topsoil for area recovery. Seed the slope slopes of the right-of-way to stabilize them quickly. Re-vegetate all areas that will not be useful for the exploitation phase; - Altered shorelines should be restored including slope stabilization and revegetation of surfaces; - Restore the riparian strip deteriorated by the works as and when they progress in order to reproduce the natural bank of the watercourse or lake; - In order to reduce the risk of erosion on sloping land, use methods such as the establishment of retaining slopes, ditches or diversion ditches perpendicular to the slope, or other methods; - In the right-of-way, no vehicle or construction machine shall circulate without reason within 20 m of a permanent watercourse or within 5 m of an intermittent watercourse. If required, water flowing in the ruts should be diverted to a vegetated area at least 30 m from a watercourse; - When working, avoid handling granular material in high winds and apply dust suppressants (calcium chloride or water) on surfaces where traffic may cause dusting. The dust suppressant used must comply with the NQ 2410-300 standard or be approved by the MTQ and the MDDELCC; - When calcium chloride-based dust suppressants are used, the product should not be disposed of or rinsed in or near a ditch, watercourse or vegetation. Spread surplus or rinse water on an already treated surface. Note that as part of the project, water will be used and recommended as a dust suppressant on the roads of the site and not a chemical solution. During the winter, abrasive materials such as sand will be used to deglaze roads and not flux; - Take the necessary measures to minimize the circulation of machinery in the riparian zone; - Fords crossing is prohibited unless the required authorizations have been obtained from the concerned ministries; - Runoff and dewatering water must be captured and conveyed to the process or a mining wastewater treatment system. <p>Special measure: Employees using explosives will be made aware of the problem of nitrates in surface water caused by misuse of ammonium nitrate. For this purpose, employees will be encouraged to use the quantities recommended by the manufacturer.</p>	
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Final site rehabilitation 	<p>Improvement of Watercourse A water quality. Risk of hydrocarbons spill in the aquatic environment.</p>	<p>Same mitigation measures as those listed for the construction and operation phases when they involve the same sources of effect.</p>	

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		<ul style="list-style-type: none"> ▪ Transport and traffic ▪ Use and maintenance of equipment 			
Herpetofauna	✓	<p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Installation and presence of worksite ▪ Site preparation ▪ Installation of temporary and permanent infrastructure ▪ Work in aquatic environment ▪ Management of hazardous and residual materials ▪ Transport and traffic ▪ Use and maintenance of equipment 	<p>Habitat loss and fragmentation.</p> <p>Disturbance of populations.</p> <p>Risk of collision.</p> <p>Risk of hydrocarbons spill in the environment.</p>	<p>Common measures:</p> <ul style="list-style-type: none"> - Arrange slopes adjacent to access roads to ensure maximum stability. As far as possible, the vegetation of the slopes along the roads should be conserved; - Prior to deforestation, clearly identify, using solid material, resistant to weather and tear, and visible at a distance, the limits of work areas (right-of-way, deposit, etc.) as well as those of the clearance to be made around these areas (interfering limbs to be pruned) so that they can be checked effectively at any time during the work. Authorization of the supervisor must be obtained prior to the felling of trees; - During deforestation, pay special attention to the vegetation at the edge of the work areas so as not to damage it. Avoid falling trees outside the boundaries of deforestation and in streams. If this is the case, remove them taking care not to disturb the environment. Near the boundaries of work areas, do not tear or uproot trees with construction equipment. Along these boundaries, maintain an unshrouded deforested transition zone 3 m wide and preserve the shrub layer. It must be ensured that deforested areas, left bare and exposed to atmospheric agents, are kept to a minimum; - In the 30 m strip bordering a watercourse, the vegetation cover must be maintained and it is forbidden to pile organic matter from the soil surface stripping. It is also forbidden to pile up waste and woody debris. Runoff must be diverted to a vegetation zone at least 30 m from the watercourse or intercepted by means of sediment barriers or a sedimentation pond; - During deforestation operations, waste and woody debris may be disposed of in an authorized place or shredded or burned. If shredded, reuse as needed materials for temporary stabilization and soil fattening. If they are burned, first take all necessary precautions to avoid a fire and obtain a permit from SOPFEU and the authorization of the supervisor. If applicable, municipal regulations must also be respected. Heaps of woody material to be burned must be arranged in stacks or in rows not exceeding 2.5 m in height. A minimum distance of 12 m must separate these piles from the forest. Never burn wood waste within 60 m of a watercourse. Burning must be done under constant supervision and burn residues must be removed; - No ditch should be set up in the 30 m band on either side of a watercourse. Beyond this band, ditch water must be diverted to an area of vegetation outside the right-of-way. If required, the flow velocity of the water should be reduced by blocking the flow (energy dissipation techniques) while filtering the sediment. If necessary, develop a sedimentation pond outside this band to capture runoff and sediment transport. This must be sized according to the flow to be received and evacuated; - Minimize stripping, excavation, excavation, backfilling and leveling of work areas to maintain natural topography and prevent erosion; - At the very beginning of the works, a site meeting will have to be organized with the project staff to inform them of the contractual environmental and safety requirements. During the performance of the work, the contractor must comply with the requirements of the contract relating to the protection of the environment, in particular those under the <i>Environment Quality Act</i> (RSQ, c. the <i>Act respecting the conservation and development of wildlife</i> (RSQ, chapter C-61.1), the <i>Forest Act</i> and the regulations thereunder. Where work is carried out on forest lands in the public domain, the contractor must comply with the requirements of the <i>Forest Act</i> and those of the <i>Public Forestry Intervention Standards</i> Regulation and plans and specifications. In the habitat of an animal species, the work must be carried out in accordance with the plans and specifications as well as the <i>Regulation respecting wildlife habitats</i> (L.R.Q., C.C-61.1, r.18); - During the construction of the road, the natural drainage of the soil must be respected and the flow 	<p>Loss of habitat: Insignificant</p> <p>Disturbance and risk of collision: Insignificant</p> <p>Risk of spillage: Insignificant</p>

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				<p>of run-off must be maintained by installing culverts at least 30 cm in diameter, if necessary. The end of the culvert must extend at least 30 cm beyond the base of the embankment, which must itself be well stabilized;</p> <ul style="list-style-type: none"> - The installation of a culvert in a watercourse must preferably be carried out during low-water periods and as soon as possible. It must not impede the flow of water or contribute to the formation of ponds upstream during floods. The culvert must not reduce the width of a watercourse by more than 20%. Its minimum diameter is however 45 cm. The water flow height must be 85% or less of the free height of the culvert. The base of the culvert (raft) shall be buried under the natural bed of the watercourse at a depth of at least 15 cm or 10% of the height of the structure measured from the inside wall (inside diameter). Its maximum depth of burial must not exceed 30 cm, otherwise use an arch culvert with open slab. The end of the culvert must extend beyond the base of the embankment that supports the road by no more than 30 cm and the embankment must be stabilized at both ends of the culvert. The material of this backfill must not contain organic matter; - When installing a culvert, the work area must first be contained in order to avoid sediment transport in the water (eg drying the area partially or totally). The working techniques and the materials used (eg diverting structures, geotextile, polythene, etc.) must not generate turbidity in the water. The natural flow of the watercourse must be maintained continuously and the return of water must be immediately downstream of the work area. Wherever possible, the stream bed should not be narrowed by more than two-thirds during construction. If necessary, accumulations of water in the work area must be pumped to a vegetation zone at a distance of at least 30 m from the watercourse; - Any temporary work carried out in a watercourse must be stabilized upstream and downstream in order to maintain the integrity of the aquatic fauna habitat and allow its free passage at all times. At the end of the work, all temporary works must be demolished and the work site must be returned to its natural state, taking into account periods of restriction to protect the recruitment of fish populations; - After installing a culvert, any other structure required for this work must be removed from the water. It must be ensured that the stream bed is well stabilized at the entrance and exit. The stream bed must then be refitted according to its natural profile and with materials similar to the previous ones, the banks must be stabilized and, if necessary, revegetated; - If applicable, provide for a work restriction period based on the life cycles of the species present in the aquatic environment according to the recommendations found in the Ministry of Transportation's (MTQ) <i>Guide for the Development of Bridges and Culverts</i> (Faubert et al. 1992); - At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and excavated material from the work. Redevelop and restore these work areas so that it fits as well as possible into the natural landscape (feast and loosen the soil, soften the slopes). Scarify road segments or abandoned roads. Use stored topsoil for area recovery. Seed the slope slopes of the right-of-way to stabilize them quickly. Re-vegetate all areas that will not be useful for the exploitation phase; - Altered shorelines should be restored including slope stabilization and revegetation of surfaces; - Use luminaires that have no emission greater than 90 degrees to limit the light propagation to the sky, which produce a sober and uniform lighting that will meet the real needs of the lighting and whose luminous flux will be directed towards the surface to illuminate; - Limit deforestation and conserve as much vegetation as possible to provide visual screens. Revegetate denuded areas quickly; - Limit as much as possible the period and duration of use of lighting by installing timers and motion detectors and by encouraging workers to turn off lights or turn off mobile back-up lighting when not in use; - Install the fixed lights so as to avoid the overflowing of light out of the spaces to be lit; pay 	

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				<p>particular attention to the orientation of portable lights and mobile source lighting;</p> <ul style="list-style-type: none"> - The circulation of machinery and trucks will be limited to the right of way of access roads and work areas. Plastic fences will clearly identify the boundaries of the work areas; - Parking, washing and maintenance areas for machinery and storage of equipment must be located at least 60 m from a watercourse. The refueling of the hydrocarbon machinery must be carried out under constant surveillance and at a distance of at least 60 m from a watercourse. The operation of any construction machinery that has not been used for a certain period of time must be interrupted, except in winter for diesel-powered machinery; - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - The site supervisor will ensure the proper maintenance of noisy equipment and will see the condition of the silencers and catalysts of the machinery; - Observe the noise standards contained in MDDELCC Noise Instruction Note 98-01. Take all necessary measures to limit noise at source; - Ensure the regular maintenance of the equipment and the good condition of the silencers and any other material that may constitute sources of noise pollution; - Vehicle traffic will have to travel at a reduced speed in order to limit noise, vibration and dust emissions as well as for safety reasons; - Unless authorized, the movement of machinery is prohibited outside the boundaries of work areas. At the beginning of the works, a fence must be installed at the edge of the perimeter of protection. This must be kept in place and in good condition for the duration of the work; - In the right-of-way, no vehicle or construction machine shall circulate without reason within 20 m of a permanent watercourse or within 5 m of an intermittent watercourse. If required, water flowing in the ruts should be diverted to a vegetated area at least 30 m from a watercourse; - When working, avoid handling granular materials in high winds and apply dust suppressants (calcium chloride or water) on surfaces where traffic can cause dust to rise. The dust suppressant used must comply with the NQ 2410-300 standard or be approved by the MTQ and the MDDELCC; - When calcium chloride-based dust suppressants are used, the product should not be disposed of or rinsed in or near a ditch, watercourse or vegetation. Spread surplus or rinse water on an already treated surface. Note that as part of the project, water will be used and recommended as a dust suppressant on the roads of the site and not a chemical solution. During the winter, abrasive materials such as sand will be used to deglaze roads and not flux; - Take the necessary measures to minimize the circulation of machinery in the riparian zone; - Site access roads, parking and storage areas or other temporary facilities must be located outside the riparian strip, so as to avoid deterioration or contamination; - Dust emissions from access and traffic routes, as well as handling of aggregates, must be controlled in accordance with the <i>Regulation respecting the quality of the atmosphere</i> (RSQ, chapter Q-2, r.38) ; - Fords crossing is prohibited unless the required authorizations have been obtained from the concerned ministries; - Follow the requirements of the <i>Petroleum Products and Petroleum Products Act</i> (RSQ, P-29.1) and the <i>Petroleum Products Regulations</i> (RSQ, P-30.01, r.1) for the management of equipment and petroleum products; - Develop, before the start of the work, a contingency plan for the accidental release of contaminants into the environment. Inform workers of the contents of the response plan and make them aware of the importance of a rapid response; - Take the necessary measures to ensure that containers, portable tanks and mobile tanks comply 	

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				<p>with the manufacturing standards specified in the Petroleum Products Regulations. Comply with localization and installation standards for aboveground and underground tanks;</p> <p>Have an approved verifier check the petroleum equipment during installation, replacement or removal. Have the petroleum equipment checked in accordance with the frequency and conditions indicated in the <i>Petroleum Products Regulations</i>;</p> <ul style="list-style-type: none"> - The Contractor must be licensed to use high risk petroleum equipment if installing or using an above ground tank of 10,000 liters or more of diesel fuel or a 2,500 liter tank or more gas. In the case of an underground tank where one or more of the components are partially or completely buried in the ground, this permit is required for a tank of 500 liters or more of diesel fuel or gasoline; - For aboveground tanks with a total volume of 5,000 liters, a watertight dike forming a retention basin around the tank (s) must be installed. If the drip pan protects only one tank, it must be of sufficient capacity to contain a volume of at least 10% greater than the capacity of the tank. If the retention basin protects multiple tanks, it shall be of sufficient capacity to contain a volume of liquids not less than the greater of: the capacity of the largest tank plus 10% of the total capacity of all other tanks, or the capacity of the largest tank increased by 10%; - Handle petroleum products to prevent and control leaks and spills. Keep hydrocarbon absorbent products at all times when storing or using petroleum products. During a spill of contaminants, immediately implement the spill response plan in effect; - Class 1 or 2 petroleum products or substances impregnated with these products must be stored in airtight containers. A room used to store a Class 1 petroleum product must be heated by means of appliances that do not represent an ignition source. A room housing a pump or electrical entry devices shall not be used for the storage of Class 1 or Class 2 petroleum products; - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - A complete emergency kit for the recovery of petroleum products and hazardous materials, permanent and easily accessible at all times, must be present on site. This must include a sufficient supply of absorbent materials and related equipment (shovels, gloves, leaks, etc.) to alleviate any situation as well as well-sealed receptacles intended to receive petroleum residues and other hazardous residual materials. . Secondary emergency kits may be required at certain locations on the site. Each construction machine must also contain a sufficient quantity of absorbents in order to be able to intervene quickly. The list of spill response equipment and devices must be approved by the supervisor. Soiled soil, oil residues and other hazardous residual materials must be disposed of in accordance with applicable laws and regulations; - All spills must be reported immediately to the Project Emergency Plan Authority, who will have been prepared and approved prior to the work. The affected area must be immediately circumscribed and cleaned up immediately. Contaminated soil must be removed and disposed of in an authorized place and a characterization must be carried out according to the terms of the MDDELCC <i>Soil Protection and Contaminated Sites Rehabilitation Policy</i>. In the event of a spill of oil or other noxious substances, the Environment Canada (1-866-283-2333) or MDDELCC (1-866-694-5454) alert system should be notified immediately; - The promoter must ensure that all equipment is in good working order to avoid any leakage of fuel, oil or grease. No equipment cleaning will be allowed in the aquatic environment; - Before entering the water, the machinery should be inspected and cleaned to prevent contamination of the water with oils, grease or other materials. The cleaning area must be more than 60 m from any body of water; - Hazardous materials must be managed in accordance with the <i>Regulation respecting hazardous materials</i> (L.R.Q., C.Q-2, r.32); 	

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				<ul style="list-style-type: none"> - Have on-site equipment at all times in case of a spill of contaminants. Contaminant spills must be subject to immediate action to contain and recover the products; - Promptly notify the MDDELCC in the event of a spill of contaminants; - Do not emit, deposit, release or discharge a hazardous material into the environment or into a sewer system; - All hazardous materials must be stored in a designated place. The storage area for hazardous materials must be kept away from vehicular traffic and within a reasonable distance of drainage ditches or catch basins and other sensitive areas. <p>Special measures: None.</p>	
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> ▪ Presence and operation of pit ▪ Management of ore, unconsolidated deposits, tailings and waste rock ▪ Management of hazardous and residual materials ▪ Presence of mining infrastructure ▪ Transport and traffic ▪ Use and maintenance of equipment 	<p>Disturbance of populations.</p> <p>Risk of collision.</p> <p>Risk of hydrocarbons spill in the environment.</p>	<p>Same mitigation measures as those listed for the construction phase when they involve the same sources of effect.</p>	<p>Disturbance and risk of collision: Insignificant</p> <p>Risk of spillage: Insignificant</p>
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Dismantlement of equipment ▪ Rehabilitation of pit ▪ Final site rehabilitation ▪ Transport and traffic ▪ Use and maintenance of equipment 	<p>Disturbance of populations.</p> <p>Risk of collision.</p> <p>Restoration of habitats.</p>	<p>Same mitigation measures as those listed for the construction and operation phases when they involve the same sources of effect in addition to the following:</p> <ul style="list-style-type: none"> - At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and excavated material from the work. Redevelop and restore these work areas so that it fits as well as possible into the natural landscape (feast and loosen the soil, soften the slopes). Scarify road segments or abandoned roads. Use stored topsoil for area recovery. Seed the slope slopes of the right-of-way to stabilize them quickly. Re-vegetate all areas that will not be useful for the exploitation phase; - Altered shorelines should be restored including slope stabilization and revegetation of surfaces; - Restore the riparian strip deteriorated by the work as and when the progress of these to reproduce the natural bank of the watercourse or lake. 	<p>Disturbance and risk of collision: Insignificant</p> <p>Risk of spillage: Insignificant</p>
Avifauna	✓	<p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Installation and presence of worksite ▪ Site preparation ▪ Installation of temporary and permanent infrastructure ▪ Work in aquatic environment. ▪ Management of hazardous and residual materials ▪ Transport and traffic ▪ Use and maintenance of equipment 	<p>Loss and fragmentation of habitat (change in the structure).</p> <p>Risk of mortality.</p> <p>Disturbance associated with the presence of infrastructure and traffic (disturbance caused by noise, light and dust).</p> <p>Risk of hydrocarbons spill in the environment.</p>	<p>Common measures:</p> <ul style="list-style-type: none"> - Arrange slopes adjacent to access roads to ensure maximum stability. As far as possible, the vegetation of the slopes along the roads should be conserved; - Prior to deforestation, clearly identify, using solid material, resistant to weather and tear, and visible at a distance, the limits of work areas (right-of-way, deposit, etc.) as well as those of the clearance to be made around these areas (interfering limbs to be pruned) so that they can be checked effectively at any time during the work. Authorization of the supervisor must be obtained prior to the felling of trees; - During deforestation, pay special attention to the vegetation at the edge of the work areas so as not to damage it. Avoid falling trees outside the boundaries of deforestation and in streams. If this is the case, remove them taking care not to disturb the environment. Near the boundaries of work areas, do not tear or uproot trees with construction equipment. Along these boundaries, maintain an unshrouded deforested transition zone 3 m wide and preserve the shrub layer. It must be ensured that deforested areas, left bare and exposed to atmospheric agents, are kept to a minimum; 	<p>Loss of habitat (general) : Insignificant</p> <p>Loss of habitat (endangered species): Significant</p> <p>Disturbance and risk of collision: Insignificant</p> <p>Risk of spillage: Insignificant</p>

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				<ul style="list-style-type: none"> - In the 30 m strip bordering a watercourse, the vegetation cover must be maintained and it is forbidden to pile organic matter from the soil surface stripping. It is also forbidden to pile up waste and woody debris. Runoff must be diverted to a vegetation zone at least 30 m from the watercourse or intercepted by means of sediment barriers or a sedimentation pond; - During deforestation operations, waste and woody debris may be disposed of in an authorized location or shredded or burned. If shredded, reuse as needed materials for temporary stabilization and soil fattening. If they are burned, first take all necessary precautions to avoid a fire and obtain a permit from SOPFEU and the authorization of the supervisor. If applicable, municipal regulations must also be respected. Heaps of woody material to be burned must be arranged in stacks or in rows not exceeding 2.5 m in height. A minimum distance of 12 m must separate these piles from the forest. Never burn wood waste within 60 m of a watercourse. Burning must be done under constant supervision and burn residues must be removed; - No ditch should be set up in the 30 m band on either side of a watercourse. Beyond this band, ditch water must be diverted to an area of vegetation outside the right-of-way. If required, the flow velocity of the water should be reduced by blocking the flow (energy dissipation techniques) while filtering the sediment. If necessary, develop a sedimentation pond outside this band to capture runoff and sediment transport. This must be sized according to the flow to be received and evacuated; - Minimize stripping, excavation, excavation, backfilling and leveling of work areas to maintain natural topography and prevent erosion; - At the beginning of the works, a site meeting will have to be organized with the project staff to inform them of the environmental and safety contractual requirements. During the performance of the work, the contractor must comply with the requirements of the contract relating to the protection of the environment, in particular those under the <i>Environment Quality Act</i> (RSQ, c. the <i>Act respecting the conservation and development of wildlife</i> (RSQ, chapter C-61.1), the <i>Forest Act</i> and the regulations thereunder. Where work is carried out on forest lands in the public domain, the contractor must comply with the requirements of the <i>Forest Act</i> and those of the <i>Public Forestry Intervention Standards Regulation and plans and specifications</i>. In the habitat of an animal species, the work must be carried out in accordance with the plans and specifications as well as the <i>Regulation respecting wildlife habitats</i> (L.R.Q., C.C-61.1, r.18); - During the construction of the road, the natural drainage of the soil must be respected and the flow of run-off must be maintained by installing culverts at least 30 cm in diameter, if necessary. The end of the culvert must extend at least 30 cm beyond the base of the embankment, which must itself be well stabilized; - The installation of a culvert in a watercourse should preferably be carried out during low-water periods and as soon as possible. It must not impede the flow of water or contribute to the formation of ponds upstream during floods. The culvert must not reduce the width of a watercourse by more than 20%. Its minimum diameter is however 45 cm. The water flow height must be 85% or less of the free height of the culvert. The base of the culvert (raft) shall be buried under the natural bed of the watercourse at a depth of at least 15 cm or 10% of the height of the structure measured from the inside wall (inside diameter). Its maximum depth of burial must not exceed 30 cm, otherwise use an arch culvert with open slab. The end of the culvert must extend beyond the base of the embankment that supports the road by no more than 30 cm and the embankment must be stabilized at both ends of the culvert. The material of this backfill must not contain organic matter; - When installing a culvert, the work area must first be contained in order to avoid sediment transport in the water (eg drying the area partially or totally). The working techniques and the materials used (eg diverting structures, geotextile, polythene, etc.) must not generate turbidity in the water. The natural flow of the watercourse must be maintained continuously and the return of water must be 	

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				<p>immediately downstream of the work area. Wherever possible, the stream bed should not be narrowed by more than two-thirds during construction. If necessary, accumulations of water in the work area must be pumped to a vegetation zone at a distance of at least 30 m from the watercourse;</p> <ul style="list-style-type: none"> - Any temporary work carried out in a watercourse must be stabilized upstream and downstream in order to maintain the integrity of the aquatic fauna habitat and allow its free passage at all times. At the end of the work, all temporary works must be demolished and the work site must be returned to its natural state, taking into account periods of restriction to protect the recruitment of fish populations; - After installing a culvert, any other structure required for this work must be removed from the water. It must be ensured that the stream bed is well stabilized at the entrance and exit. The stream bed must then be refitted according to its natural profile and with materials similar to the previous ones, the banks must be stabilized and, if necessary, revegetated; - If applicable, provide for a work restriction period based on the life cycles of the species present in the aquatic environment according to the recommendations found in the Ministry of Transportation's (MTQ) Guide for the Development of Bridges and Culverts (Faubert et al. 1992); - At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and excavated material from the work. Redevelop and restore these work areas so that it fits as well as possible into the natural landscape (feast and loosen the soil, soften the slopes). Scarify road segments or abandoned roads. Use stored topsoil for area recovery. Seed the slope slopes of the right-of-way to stabilize them quickly. Re-vegetate all areas that will not be useful for the exploitation phase; - Altered shorelines should be restored including slope stabilization and revegetation of surfaces; - Use luminaires that have no emission greater than 90 degrees to limit the light propagation to the sky, which produce a sober and uniform lighting that will meet the real needs of lighting and whose luminous flux will be directed towards the surface to be illuminated; - Limit deforestation and conserve as much vegetation as possible to provide visual screens. Revegetate denuded areas quickly; - Limit as much as possible the period and duration of use of lighting by installing timers and motion detectors and by encouraging workers to turn off lights or turn off mobile back-up lighting when not in use; - Install the fixed lights so as to avoid the overflowing of light out of the spaces to be lit; pay particular attention to the orientation of portable lights and mobile source lighting; - The circulation of machinery and trucks will be limited to the right of way of access roads and work areas. Plastic fences will clearly identify the boundaries of the work areas; - Parking, washing and machine maintenance areas and equipment storage areas must be located at least 60 m from a watercourse. The refueling of the hydrocarbon machinery must be carried out under constant surveillance and at a distance of at least 60 m from a watercourse. The operation of any construction machinery that has not been used for a certain period of time must be interrupted, except in winter for diesel-powered machinery; - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - The site supervisor will ensure the proper maintenance of noisy equipment and will see the condition of the silencers and catalysts of the machinery; - Observe the noise standards contained in MDDELCC Noise Instruction Note 98-01. Take all necessary measures to limit noise at source; - Ensure the regular maintenance of the equipment and the good condition of the silencers and any other material that may constitute sources of noise pollution; 	

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				<ul style="list-style-type: none"> - Vehicle traffic will have to travel at a reduced speed in order to limit noise, vibration and dust emissions as well as for safety reasons; - Unless authorized, the movement of machinery is prohibited outside the boundaries of work areas. At the beginning of the works, a fence must be installed at the edge of the perimeter of protection. This must be kept in place and in good condition for the duration of the work; - In the right-of-way, no vehicle or construction machine shall circulate without reason within 20 m of a permanent watercourse or within 5 m of an intermittent watercourse. If required, water flowing in the ruts should be diverted to a vegetated area at least 30 m from a watercourse; - When working, avoid handling granular materials in high winds and apply dust suppressants (calcium chloride or water) on surfaces where traffic can cause dust to rise. The dust suppressant used must comply with the NQ 2410-300 standard or be approved by the MTQ and the MDDELCC; - When calcium chloride-based dust suppressants are used, the product should not be disposed of or rinsed in or near a ditch, watercourse or vegetation. Spread surplus or rinse water on an already treated surface. Note that as part of the project, water will be used and recommended as a dust suppressant on the roads of the site and not a chemical solution. During the winter, abrasive materials such as sand will be used to deglaze roads and not flux; - Take the necessary measures to minimize the circulation of machinery in the riparian zone; - Site access roads, parking and storage areas or other temporary facilities must be located outside the riparian strip, so as to avoid deterioration or contamination; - Dust emissions from access and traffic routes, as well as handling of aggregates, must be controlled in accordance with the <i>Regulation respecting the quality of the atmosphere</i> (RSQ, chapter Q-2, r.38) ; - Fords crossing is prohibited unless the required authorizations have been obtained from the concerned ministries; - Follow the requirements of the <i>Petroleum Products and Petroleum Products Act</i> (RSQ, P-29.1) and the <i>Petroleum Products Regulations</i> (RSQ, P-30.01, r.1) for the management of equipment and petroleum products; - Develop, before the start of the work, a contingency plan for the accidental release of contaminants into the environment. Inform workers of the contents of the response plan and make them aware of the importance of a rapid response; - Take the necessary measures to ensure that containers, portable tanks and mobile tanks comply with the manufacturing standards specified in the <i>Petroleum Products Regulations</i>. Comply with localization and installation standards for aboveground and underground tanks; - Have an approved verifier check the petroleum equipment during installation, replacement or removal. Have the petroleum equipment checked in accordance with the frequency and conditions indicated in the <i>Petroleum Products Regulations</i>; - The Contractor must be licensed to use high risk petroleum equipment if installing or using an above ground tank of 10,000 liters or more of diesel fuel or a 2,500 liter tank or more gas. In the case of an underground tank where one or more of the components are partially or completely buried in the ground, this permit is required for a tank of 500 liters or more of diesel fuel or gasoline; - For aboveground tanks with a total volume of 5,000 liters, a watertight dike forming a retention basin around the tank (s) must be installed. If the drip pan protects only one tank, it must be of sufficient capacity to contain a volume of at least 10% greater than the capacity of the tank. If the retention basin protects multiple tanks, it shall be of sufficient capacity to contain a volume of liquids not less than the greater of: the capacity of the largest tank plus 10% of the total capacity of all other tanks, or the capacity of the largest tank increased by 10%; - Handle petroleum products to prevent and control leaks and spills. Keep hydrocarbon absorbent products at all times when storing or using petroleum products. During a spill of contaminants, 	

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				<p>immediately implement the spill response plan in effect;</p> <ul style="list-style-type: none"> - Class 1 or 2 petroleum products or substances impregnated with these products must be stored in airtight containers. A room used to store a Class 1 petroleum product must be heated by means of appliances that do not represent an ignition source. A room housing a pump or electrical entry devices shall not be used for the storage of Class 1 or Class 2 petroleum products; - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - An emergency kit for the recovery of petroleum products and hazardous materials that is complete, permanent and easily accessible at all times must be present on site. This must include a sufficient supply of absorbent materials and related equipment (shovels, gloves, leaks, etc.) to alleviate any situation as well as well-sealed receptacles intended to receive petroleum residues and other hazardous residual materials. . Secondary emergency kits may be required at certain locations on the site. Each construction machine must also contain a sufficient quantity of absorbents in order to be able to intervene quickly. The list of spill response equipment and devices must be approved by the supervisor. Soiled soil, oil residues and other hazardous residual materials must be disposed of in accordance with applicable laws and regulations; - All spills must be reported immediately to the Project Emergency Plan Authority, who will have been prepared and approved prior to the work. The affected area must be immediately circumscribed and cleaned up immediately. Contaminated soil must be removed and disposed of in an authorized place and a characterization must be carried out according to the terms of the MDDELCC <i>Soil Protection and Contaminated Sites Rehabilitation Policy</i>. In the event of a spill of oil or other noxious substances, the Environment Canada (1-866-283-2333) or MDDELCC (1-866-694-5454) alert system should be notified immediately; - The proponent should ensure that all equipment is in good working order to avoid fuel, oil or grease leakage. No equipment cleaning will be allowed in the aquatic environment; - Before entering the water, the machinery should be inspected and cleaned to prevent contamination of the water with oils, grease or other materials. The cleaning area must be more than 60 m from any body of water; - Hazardous materials must be managed in accordance with the <i>Regulation respecting hazardous materials</i> (L.R.Q., C.Q-2, r.32); - Have on-site equipment at all times in case of a spill of contaminants. Contaminant spills must be subject to immediate action to contain and recover the products; - Promptly notify the MDDELCC in the event of a spill of contaminants; - Do not emit, deposit, release or discharge a hazardous material into the environment or into a sewer system; - All hazardous materials must be stored in a designated place. The storage area for hazardous materials must be kept away from vehicular traffic and within a reasonable distance of drainage ditches or catch basins and other sensitive areas. <p>Special measure: The areas will be deforested as much as possible outside the nesting period of the main species present at this latitude, between May 30 and August 15. This measure aims to prevent the destruction of nests.</p>	
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> ▪ Presence and operation of pit 	<p>Disturbance associated with the presence of infrastructure and traffic. Risk of mortality. Change in the aquatic environment.</p>	<p>Same mitigation measures as those listed for the construction phase when they involve the same sources of effect.</p>	

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
		<ul style="list-style-type: none"> ▪ Management of ore, unconsolidated deposits, tailings and waste rock ▪ Water management and treatment ▪ Management of hazardous and residual materials ▪ Presence of mining infrastructure ▪ Transport and traffic ▪ Use and maintenance of equipment 	<p>Risk of hydrocarbons spill in the environment.</p>		
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Dismantlement of equipment ▪ Rehabilitation of pit ▪ Final site rehabilitation ▪ Transport and traffic ▪ Use and maintenance of equipment 	<p>Disturbance associated with the presence of infrastructure and traffic. Risk of collision. Restoration of habitats.</p>	<p>Same mitigation measures as those listed for the construction and operation and maintenance phases when they involve the same sources of effect in addition to the following:</p> <ul style="list-style-type: none"> - At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and excavated material from the work. Redevelop and restore these work areas so that it fits as well as possible into the natural landscape (feast and loosen the soil, soften the slopes). Scarify road segments or abandoned roads. Use stored topsoil for area recovery. Seed the slope slopes of the right-of-way to stabilize them quickly. Re-vegetate all areas that will not be useful for the exploitation phase; - Altered shorelines should be restored including slope stabilization and revegetation of surfaces; - Restore the riparian strip deteriorated by the work as and when the progress of these to reproduce the natural bank of the watercourse or lake. 	<p>Positive</p>
<p>Mammals</p>	<p>✓</p>	<p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Installation and presence of worksite ▪ Site preparation ▪ Installation of temporary and permanent infrastructure ▪ Work in aquatic environment ▪ Management of hazardous and residual materials ▪ Transport and traffic ▪ Use and maintenance of equipment 	<p>Loss and fragmentation of habitat (change in structure). Disturbance associated with the presence of infrastructure and traffic (disturbance caused by noise, light and dust). Risk of collision. Risk of hydrocarbons spill in the environment.</p>	<p>Common measures:</p> <ul style="list-style-type: none"> - Arrange slopes adjacent to access roads to ensure maximum stability. As far as possible, the vegetation of the slopes along the roads should be conserved; - Prior to deforestation, clearly identify, using solid material, resistant to weather and tear, and visible at a distance, the limits of work areas (right-of-way, deposit, etc.) as well as those of the clearance to be made around these areas (interfering limbs to be pruned) so that they can be checked effectively at any time during the work. Authorization of the supervisor must be obtained prior to the felling of trees; - During deforestation, pay special attention to the vegetation at the edge of the work areas so as not to damage it. Avoid falling trees outside the boundaries of deforestation and in streams. If this is the case, remove them taking care not to disturb the environment. Near the boundaries of work areas, do not tear or uproot trees with construction equipment. Along these boundaries, maintain an unshrouded deforested transition zone 3 m wide and preserve the shrub layer. It must be ensured that deforested areas, left bare and exposed to atmospheric agents, are kept to a minimum; - In the 30 m strip bordering a watercourse, the vegetation cover must be maintained and it is forbidden to pile organic matter from the soil surface stripping. It is also forbidden to pile up waste and woody debris. Runoff must be diverted to a vegetation zone at least 30 m from the watercourse or intercepted by means of sediment barriers or a sedimentation pond; - During deforestation operations, waste and woody debris may be disposed of in an authorized location or shredded or burned. If shredded, reuse as needed materials for temporary stabilization and soil fattening. If they are burned, first take all necessary precautions to avoid a fire and obtain a permit from SOPFEU and the authorization of the supervisor. If applicable, municipal regulations must also be respected. Heaps of woody material to be burned must be arranged in stacks or in rows not exceeding 2.5 m in height. A minimum distance of 12 m must separate these piles from the forest. Never burn wood waste within 60 m of a watercourse. Burning must be done under constant supervision and burn residues must be removed; - No ditch should be set up in the 30 m band on either side of a watercourse. Beyond this band, 	<p>Loss of habitat: Insignificant Disturbance and risk of collision: Insignificant Risk of spillage: Insignificant</p>

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				<p>ditch water must be diverted to an area of vegetation outside the right-of-way. If required, the flow velocity of the water should be reduced by blocking the flow (energy dissipation techniques) while filtering the sediment. If necessary, develop a sedimentation pond outside this band to capture runoff and sediment transport. This must be sized according to the flow to be received and evacuated;</p> <ul style="list-style-type: none"> - Minimize stripping, excavation, excavation, backfilling and leveling of work areas to maintain natural topography and prevent erosion; - At the beginning of the works, a site meeting will have to be organized with the project staff to inform them of the environmental and safety contractual requirements. During the performance of the work, the contractor must comply with the requirements of the contract relating to the protection of the environment, in particular those under the <i>Environment Quality Act</i> (RSQ, c. the <i>Act respecting the conservation and development of wildlife</i> (RSQ, chapter C-61.1), the <i>Forest Act</i> and the regulations thereunder. Where work is carried out on forest lands in the public domain, the contractor must comply with the requirements of the <i>Forest Act</i> and those of the Public Forestry Intervention Standards Regulation and plans and specifications. In the habitat of an animal species, the work must be carried out in accordance with the plans and specifications as well as the <i>Regulation respecting wildlife habitats</i> (L.R.Q., C.C-61.1, r.18); - During the construction of the road, the natural drainage of the soil must be respected and the flow of run-off must be maintained by installing culverts at least 30 cm in diameter, if necessary. The end of the culvert must extend at least 30 cm beyond the base of the embankment, which must itself be well stabilized; - The installation of a culvert in a watercourse must preferably be carried out during low-water periods and as soon as possible. It must not impede the flow of water or contribute to the formation of ponds upstream during floods. The culvert must not reduce the width of a watercourse by more than 20%. Its minimum diameter is however 45 cm. The water flow height must be 85% or less of the free height of the culvert. The base of the culvert (raft) shall be buried under the natural bed of the watercourse at a depth of at least 15 cm or 10% of the height of the structure measured from the inside wall (inside diameter). Its maximum depth of burial must not exceed 30 cm, otherwise use an arch culvert with open slab. The end of the culvert must extend beyond the base of the embankment that supports the road by no more than 30 cm and the embankment must be stabilized at both ends of the culvert. The material of this backfill must not contain organic matter; - When installing a culvert, the work area must first be contained in order to avoid sediment transport in the water (eg drying the area partially or totally). The working techniques and the materials used (eg diverting structures, geotextile, polythene, etc.) must not generate turbidity in the water. The natural flow of the watercourse must be maintained continuously and the return of water must be immediately downstream of the work area. Wherever possible, the stream bed should not be narrowed by more than two-thirds during construction. If necessary, accumulations of water in the work area must be pumped to a vegetation zone at a distance of at least 30 m from the watercourse; - Any temporary work carried out in a watercourse must be stabilized upstream and downstream in order to maintain the integrity of the aquatic fauna habitat and allow its free passage at all times. At the end of the work, all temporary works must be demolished and the work site must be returned to its natural state, taking into account periods of restriction to protect the recruitment of fish populations; - After installing a culvert, any other structure required for this work must be removed from the water. It must be ensured that the stream bed is well stabilized at the entrance and exit. The stream bed must then be refitted according to its natural profile and with materials similar to the previous ones, the banks must be stabilized and, if necessary, revegetated; - If applicable, provide for a work restriction period based on the life cycles of the species present in 	

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				<p>the aquatic environment according to the recommendations found in the Ministry of Transportation's (MTQ) <i>Guide for the Development of Bridges and Culverts</i> (Faubert et al. 1992);</p> <ul style="list-style-type: none"> - At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and excavated material from the work. Redevelop and restore these work areas so that it fits as well as possible into the natural landscape (feast and loosen the soil, soften the slopes). Scarify road segments or abandoned roads. Use stored topsoil for area recovery. Seed the slope slopes of the right-of-way to stabilize them quickly. Re-vegetate all areas that will not be useful for the exploitation phase; - Altered shorelines should be restored including slope stabilization and revegetation of surfaces; - Use luminaires that have no emission greater than 90 degrees to limit the light propagation to the sky, which produce a sober and uniform lighting that will meet the real needs of lighting and whose luminous flux will be directed towards the surface to be illuminated; - Limit deforestation and conserve as much vegetation as possible to provide visual screens. Revegetate denuded areas quickly; - Limit as much as possible the period and duration of use of lighting by installing timers and motion detectors and by encouraging workers to turn off lights or turn off mobile back-up lighting when not in use; - Install the fixed lights so as to avoid the overflowing of light out of the spaces to be lit; pay particular attention to the orientation of portable lights and mobile source lighting; - The circulation of machinery and trucks will be limited to the right of way of access roads and work areas. Plastic fences will clearly identify the boundaries of the work areas; - Parking, washing and maintenance areas for machinery and storage of equipment must be located at least 60 m from a watercourse. The refueling of the hydrocarbon machinery must be carried out under constant surveillance and at a distance of at least 60 m from a watercourse. The operation of any construction machinery that has not been used for a certain period of time must be interrupted, except in winter for diesel-powered machinery; - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - The site supervisor will ensure the proper maintenance of noisy equipment and will see the condition of the silencers and catalysts of the machinery; - Observe the noise standards contained in MDDELCC Noise Instruction Note 98-01. Take all necessary measures to limit noise at source; - Ensure the regular maintenance of the equipment and the good condition of the silencers and any other material that may constitute sources of noise pollution; - Vehicle traffic will have to travel at a reduced speed in order to limit noise, vibration and dust emissions as well as for safety reasons; - Unless authorized, the movement of machinery is prohibited outside the boundaries of work areas. At the beginning of the works, a fence must be installed at the edge of the perimeter of protection. This must be kept in place and in good condition for the duration of the work; - In the right-of-way, no vehicle or construction machine shall circulate without reason within 20 m of a permanent watercourse or within 5 m of an intermittent watercourse. If required, water flowing in the ruts should be diverted to a vegetated area at least 30 m from a watercourse; - When working, avoid handling granular materials in high winds and apply dust suppressants (calcium chloride or water) on surfaces where traffic can cause dust to rise. The dust suppressant used must comply with the NQ 2410-300 standard or be approved by the MTQ and the MDDELCC; - When calcium chloride-based dust suppressants are used, the product should not be disposed of or rinsed in or near a ditch, watercourse or vegetation. Spread surplus or rinse water on an already 	

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				<p>treated surface. Note that as part of the project, water will be used and recommended as a dust suppressant on the roads of the site and not a chemical solution. During the winter, abrasive materials such as sand will be used to deglaze roads and not flux;</p> <ul style="list-style-type: none"> - Take the necessary measures to minimize the circulation of machinery in the riparian zone; - Site access roads, parking and storage areas or other temporary facilities must be located outside the riparian strip, so as to avoid deterioration or contamination; - Dust emissions from access and traffic routes, as well as handling of aggregates, must be controlled in accordance with the <i>Regulation respecting the quality of the atmosphere</i> (RSQ, chapter Q-2, r.38) ; - Fords crossing is prohibited unless the required authorizations have been obtained from the concerned ministries; - Follow the requirements of the <i>Petroleum Products and Petroleum Products Act</i> (RSQ, P-29.1) and the <i>Petroleum Products Regulations</i> (RSQ, P-30.01, r.1) for the management of equipment and petroleum products; - Develop, before the start of the work, a contingency plan for accidental release of contaminants into the environment. Inform workers of the contents of the response plan and make them aware of the importance of a rapid response; - Take the necessary measures to ensure that containers, portable tanks and mobile tanks comply with the manufacturing standards specified in the Petroleum Products Regulations. Comply with localization and installation standards for aboveground and underground tanks; - Have an approved verifier check the petroleum equipment during installation, replacement or removal. Have the petroleum equipment checked in accordance with the frequency and conditions indicated in the <i>Petroleum Products Regulations</i>; - The Contractor must be licensed to use high risk petroleum equipment if installing or using an above ground tank of 10,000 liters or more of diesel fuel or a 2,500 liter tank or more gas. In the case of an underground tank where one or more of the components are partially or completely buried in the ground, this permit is required for a tank of 500 liters or more of diesel fuel or gasoline; - For aboveground tanks with a total volume of 5,000 liters, a watertight dike forming a retention basin around the tank (s) must be installed. If the drip pan protects only one tank, it must be of sufficient capacity to contain a volume of at least 10% greater than the capacity of the tank. If the retention basin protects multiple tanks, it shall be of sufficient capacity to contain a volume of liquids not less than the greater of: the capacity of the largest tank plus 10% of the total capacity of all other tanks, or the capacity of the largest tank increased by 10%; - Handle petroleum products to prevent and control leaks and spills. Keep hydrocarbon absorbent products at all times when storing or using petroleum products. During a spill of contaminants, immediately apply the spill response plan in effect; - Class 1 or 2 petroleum products or substances impregnated with these products must be stored in airtight containers. A room used to store a Class 1 petroleum product must be heated by means of appliances that do not represent an ignition source. A room housing a pump or electrical entry devices shall not be used for the storage of Class 1 or Class 2 petroleum products; - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - A complete emergency kit for the recovery of petroleum products and hazardous materials, permanent and easily accessible at all times, must be present on site. This must include a sufficient supply of absorbent materials and related equipment (shovels, gloves, leaks, etc.) to alleviate any situation as well as well-sealed receptacles intended to receive petroleum residues and other 	

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				<p>hazardous residual materials. . Secondary emergency kits may be required at certain locations on the site. Each construction machine must also contain a sufficient quantity of absorbents in order to be able to intervene quickly. The list of spill response equipment and devices must be approved by the supervisor. Soiled soil, oil residues and other hazardous residual materials must be disposed of in accordance with applicable laws and regulations;</p> <ul style="list-style-type: none"> - All spills must be reported immediately to the Project Emergency Plan Authority, who will have been developed and approved prior to the work. The affected area must be immediately circumscribed and cleaned up immediately. Contaminated soil must be removed and disposed of in an authorized place and a characterization must be carried out according to the terms of the MDDELCC <i>Soil Protection and Contaminated Sites Rehabilitation Policy</i>. In the event of a spill of oil or other noxious substances, the Environment Canada (1-866-283-2333) or MDDELCC (1-866-694-5454) alert system should be notified immediately; - The promoter must ensure that all equipment is in good working order to avoid any leakage of fuel, oil or grease. No equipment cleaning will be allowed in the aquatic environment; - Before entering the water, the machinery should be inspected and cleaned to prevent contamination of the water with oils, grease or other materials. The cleaning area must be more than 60 m from any body of water; - Hazardous materials must be managed in accordance with the <i>Regulation respecting hazardous materials</i> (L.R.Q., C.Q-2, r.32); - Have on-site equipment at all times in case of a spill of contaminants. Contaminant spills must be subject to immediate action to contain and recover the products; - Promptly notify the MDDELCC in the event of a spill of contaminants; - Do not emit, deposit, release or discharge a hazardous material into the environment or into a sewer system; - All hazardous materials must be stored in a designated place. The storage area for hazardous materials must be kept away from vehicular traffic and within a reasonable distance of drainage ditches or catch basins and other sensitive areas. <p>Special measures: None.</p>	
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> ▪ Presence and operation of pit ▪ Management of ore, unconsolidated deposits, tailings and waste rock ▪ Management of hazardous and residual materials ▪ Presence of mining infrastructure ▪ Transport and traffic ▪ Use and maintenance of equipment 	<p>Disturbance associated with the presence of infrastructure and traffic (disturbance caused by noise, light and dust).</p> <p>Risk of collision.</p> <p>Risk of hydrocarbons spill in the environment.</p>	<p>Same mitigation measures as those listed for the construction phase when they involve the same sources of effect.</p>	
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Dismantlement of equipment ▪ Final site rehabilitation ▪ Transport and traffic ▪ Use and maintenance of equipment 	<p>Disturbance associated with the presence of infrastructure and traffic (disturbance caused by noise, light and dust).</p> <p>Risk of collision.</p> <p>Restoration of habitats.</p>	<p>Same mitigation measures as those listed for the construction and operation phases when they involve the same sources of effect in addition to the following:</p> <ul style="list-style-type: none"> - At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and excavated material from the work. Redevelop and restore these work areas so that it fits as well as possible into the natural landscape (feast and loosen the soil, soften the slopes). Scarify road segments or abandoned roads. Use stored topsoil for area recovery. Seed the slope slopes of the right-of-way to stabilize them quickly. Re-vegetate all areas that will not be useful for the exploitation phase; 	Positive

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				- Altered shorelines should be restored including slope stabilization and revegetation of surfaces; - Restore the riparian strip deteriorated by the work as and when the progress of these to reproduce the natural bank of the watercourse or lake.	
Woodland and migratory caribou	✓	<p><i>Construction</i></p> <ul style="list-style-type: none"> Installation and presence of worksite Site preparation Installation of temporary and permanent infrastructure Transport and traffic 	<p>Deterioration of habitat (loss, degradation or fragmentation).</p> <p>Disturbances caused by noise.</p> <p>Risk of collision.</p>	<p>Common measures: None.</p> <p>Special measures:</p> <p>Establish a communication system to report to employees and subcontractors any observations or evidence of caribou presence on roads leading to the mine site; Develop a training module for employees and subcontractors to make them aware of the precariousness of caribou populations and to develop their ability to distinguish possible signs of presence;</p> <p>Develop and implement an action plan for the presence of caribou near the mine;</p> <ul style="list-style-type: none"> Inform employees of the presence of caribou near the mine's infrastructures or access roads, to increase their level of vigilance and limit the risk of disturbance or collision; Intensify the transport schedule in the daily period and reduce it during the night period due to the higher risk of collision; Temporarily suspend some of the activities of the mine if it presents a high level of risk for caribou in the area. 	Insignificant
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> Presence and operation of pit Transport and traffic 	<p>Deterioration of habitat (loss, degradation or fragmentation).</p> <p>Disturbances caused by noise and light.</p> <p>Risk of collision.</p>		
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> Final site rehabilitation Transport and traffic 	<p>Gradual decrease in disturbances (noise, light, etc.)</p> <p>Gradual restoration of forest cover in remediated sites (revegetation work) (positive impact).</p> <p>Gradual decrease in risk of collision.</p>		
Chiroptera	✓	<p><i>Construction</i></p> <ul style="list-style-type: none"> Installation and presence of worksite Site preparation Installation of temporary and permanent infrastructure Work in aquatic environment Management of hazardous and residual materials Transport and traffic Use and maintenance of equipment 	<p>Habitat loss and fragmentation.</p> <p>Disturbance to populations.</p> <p>Risk of collision.</p> <p>Loss or alteration of feeding site.</p> <p>Risk of contaminants spill in the aquatic environment and wetland (feeding sites).</p>	<p>Common measures:</p> <ul style="list-style-type: none"> Comply with the <i>Forest Act</i> (RSQ, chapter F-4.1) and all the by-laws pertaining to this Act, particularly the <i>Regulation respecting standards for intervention in State-owned forests</i> (RSQ, c. F-4.1, r.7) and the <i>Forest Protection Regulation</i> (RSQ, chapter F-4.1, r 11). Take the necessary measures to ensure that deforestation activities comply with the requirements specified therein; In the 30 m strip bordering a watercourse, the vegetation cover must be maintained and it is forbidden to pile organic matter from the soil surface stripping. It is also forbidden to pile up waste and woody debris. Runoff must be diverted to a vegetation zone at least 30 m from the watercourse or intercepted by means of sediment barriers or a sedimentation pond; Follow the requirements of the <i>Petroleum Products and Petroleum Products Act</i> (RSQ, P-29.1) and the <i>Petroleum Products Regulations</i> (RSQ, P-30.01, r.1) for the management of equipment and petroleum products; Develop, before the start of the work, a contingency plan for the accidental release of contaminants into the environment. Inform workers of the contents of the response plan and make them aware of the importance of a rapid response; Take the necessary measures to ensure that containers, portable tanks and mobile tanks comply with the manufacturing standards specified in the <i>Petroleum Products Regulations</i>. Comply with localization and installation standards for aboveground and underground tanks; Have an approved verifier check the petroleum equipment during installation, replacement or removal. Have the petroleum equipment checked in accordance with the frequency and conditions indicated in the <i>Petroleum Products Regulations</i>; The Contractor must be licensed to use high risk petroleum equipment if installing or using an above ground tank of 10,000 liters or more of diesel fuel or a 2,500 liter tank or more gas. In the case of an underground tank where one or more of the components are partially or completely 	<p>Loss of habitat: Insignificant</p> <p>Disturbance: Insignificant</p> <p>Risk of spillage: Insignificant</p>

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
				<p>buried in the ground, this permit is required for a tank of 500 liters or more of diesel fuel or gasoline;</p> <ul style="list-style-type: none"> - For aboveground tanks with a total volume of 5,000 liters, a watertight dike forming a retention basin around the tank (s) must be installed. If the drip pan protects only one tank, it must be of sufficient capacity to contain a volume of at least 10% greater than the capacity of the tank. If the retention basin protects multiple tanks, it shall be of sufficient capacity to contain a volume of liquids not less than the greater of: the capacity of the largest tank plus 10% of the total capacity of all other tanks, or the capacity of the largest tank increased by 10%; - Handle petroleum products to prevent and control leaks and spills. Keep hydrocarbon absorbent products at all times when storing or using petroleum products. During a spill of contaminants, immediately apply the spill response plan in effect; - Class 1 or 2 petroleum products or substances impregnated with these products must be stored in airtight containers. A room used to store a Class 1 petroleum product must be heated by means of appliances that do not represent an ignition source. A room housing a pump or electrical entry devices shall not be used for the storage of Class 1 or Class 2 petroleum products; - Use luminaires that have no emission greater than 90 degrees to limit the light propagation to the sky, which produce a sober and uniform lighting that will meet the real needs of lighting and whose luminous flux will be directed towards the surface to be illuminated; - Limit deforestation and conserve as much vegetation as possible to provide visual screens. Revegetate denuded areas quickly; - Limit as much as possible the period and duration of use of lighting by installing timers and motion detectors and by encouraging workers to turn off lights or turn off mobile back-up lighting when not in use; - Install the fixed lights so as to avoid the overflowing of light out of the spaces to be lit; pay particular attention to the orientation of portable lights and mobile source lighting; - Reduce the contrast levels of buildings by using finishes with low levels of reflectance and colors that harmonize with natural landscapes (eg avoid red). Where possible, the structures on the site will be dark in color to absorb the reflection of light; - The circulation of machinery and trucks will be limited to the right of way of access roads and work areas. Plastic fences will clearly identify the boundaries of the work areas; - Parking, washing and maintenance areas for machinery and storage of equipment must be located at least 60 m from a watercourse. The refueling of the hydrocarbon machinery must be carried out under constant surveillance and at a distance of at least 60 m from a watercourse. The operation of any construction machinery that has not been used for a certain period of time must be interrupted, except in winter for diesel-powered machinery; - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - An emergency kit for the recovery of petroleum products and hazardous materials that is complete, permanent and easily accessible at all times must be present on site. This must include a sufficient supply of absorbent materials and related equipment (shovels, gloves, leaks, etc.) to alleviate any situation as well as well-sealed receptacles intended to receive petroleum residues and other hazardous residual materials. . Secondary emergency kits may be required at certain locations on the site. Each construction machine must also contain a sufficient quantity of absorbents in order to be able to intervene quickly. The list of spill response equipment and devices must be approved by the supervisor. Soiled soil, oil residues and other hazardous residual materials must be disposed of in accordance with applicable laws and regulations; - All spills must be reported immediately to the Project Emergency Plan Authority, who will have been developed and approved prior to the work. The affected area must be immediately 	

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
				<p>circumscribed and cleaned up immediately. Contaminated soil must be removed and disposed of in an authorized place and a characterization must be carried out according to the terms of the MDDELCC <i>Soil Protection and Contaminated Sites Rehabilitation Policy</i>. In the event of a spill of oil or other noxious substances, the Environment Canada (1-866-283-2333) or MDDELCC (1-866-694-5454) alert system should be notified immediately;</p> <ul style="list-style-type: none"> - The site supervisor will ensure the proper maintenance of noisy equipment and will see the condition of the silencers and catalysts of the machinery; - The promoter must ensure that all equipment is in good working order to avoid any leakage of fuel, oil or grease. No equipment cleaning will be allowed in the aquatic environment; - Before entering the water, the machinery should be inspected and cleaned to prevent contamination of the water with oils, grease or other materials. The cleaning area must be more than 60 m from any body of water; - Comply with noise standards contained in MDDELCC Noise Instruction Note 98-01. Take all necessary measures to limit noise at source; - Ensure the regular maintenance of the equipment and the good condition of the silencers and any other material that may constitute sources of noise pollution; - Provide mobile equipment with a broadband audible alarm to signal reversing movements; - Set up a program to raise the awareness of the users of machinery in order to avoid the clattering of skips, the falling of objects of a high height and the optimization of the methods of work; - Hazardous materials must be managed in accordance with the <i>Regulation respecting hazardous materials</i> (L.R.Q., C.Q-2, r.32); - Have on-site equipment at all times in case of a spill of contaminants. Contaminant spills must be subject to immediate action to contain and recover the products; - Promptly notify the MDDELCC in the event of a spill of contaminants; - Do not emit, deposit, release or discharge a hazardous material into the environment or into a sewer system; - All hazardous materials must be stored in a designated place. The hazardous materials storage location must be kept away from vehicular traffic and within a reasonable distance of drainage ditches or sumps and other sensitive elements; - Residual hazardous materials must be stored in an identified and identified recovery area. Residual hazardous materials must be protected from the weather by a waterproof tarpaulin, waiting for their loading and transportation. In winter, it is suggested that containers be placed on pallets or storage tables. If the retention time is greater than 30 days, the developed area must include a watertight shelter with at least three sides, a roof and a watertight floor forming a basin with a retention capacity of at least the following volumes: 125% the largest container or 25% of the total volume of all containers full of liquids; - When transporting dangerous goods, comply with the <i>Regulation respecting the transport of dangerous goods</i> (L.R.Q., C. C-24.2, r 43); - Dispose of the residual materials in containers provided for this purpose. The site manager will ensure that the residues are recovered and deposited in authorized sites. Do not release debris into the aquatic environment. All debris accidentally introduced into the aquatic environment should be removed as soon as possible; - As work progresses, all construction waste, residues and surplus materials must be removed from the site and disposed of in accordance with the <i>Environment Quality Act</i>. Surplus concrete or bitumen and water used to clean concrete mixers, vehicles and equipment must be disposed of in an area provided for this purpose and in such a way as to avoid any contamination of the environment; 	

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
				<ul style="list-style-type: none"> - Do not discharge waste materials or debris into waterways; - Demolition debris and solid waste generated on the site must be disposed of in accordance with the <i>Regulation respecting solid waste</i> (RSQ, chapter Q 2, r 13); - It is forbidden to dispose of waste materials or volatile materials, such as mineral spirits and oil or paint thinners, by discharging them into waterways, storm sewers or sanitary sewers; - Transport of excess materials to an authorized place of disposition; - At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and excavated material from the work. Redevelop and restore these work areas so that it fits as well as possible into the natural landscape (feast and loosen the soil, soften the slopes). Scarify road segments or abandoned roads. Use stored topsoil for area recovery. Seed the slope slopes of the right-of-way to stabilize them quickly. Re-vegetate all areas that will not be useful for the exploitation phase; - Altered shorelines should be restored including slope stabilization and revegetation of surfaces; - Restore the riparian strip deteriorated by the works as and when they progress in order to reproduce the natural bank of the watercourse or lake; - After the completion of the works, all the tools, equipment, vehicles, temporary works or parts of works that have been used to build or put in place the infrastructure must be removed from the site; - Spread the topsoil laid aside on the entire surface of the work or storage site if the volume is sufficient, otherwise in the form of islands; - Restore natural drainage and dig ditches as needed to ensure proper drainage of the land; - In order to reduce the risk of erosion on sloping land, use methods such as the establishment of retaining slopes, ditches or diversion ditches perpendicular to the slope, or other methods; - Restoration work by revegetation must be completed within one year after completion of the work; - Vehicle traffic will have to travel at a reduced speed in order to limit noise, vibration and dust emissions as well as for safety reasons; - Unless authorized, the movement of machinery is prohibited outside the boundaries of work areas. At the beginning of the works, a fence must be installed at the edge of the perimeter of protection. This must be kept in place and in good condition for the duration of the work; - In the right-of-way, no vehicle or construction machine shall circulate without reason within 20 m of a permanent watercourse or within 5 m of an intermittent watercourse. If required, water flowing in the ruts should be diverted to a vegetated area at least 30 m from a watercourse; - Take the necessary measures to minimize the circulation of machinery in the riparian zone; - Site access roads, parking and storage areas or other temporary facilities must be located outside the riparian strip, so as to avoid deterioration or contamination; - Fords crossing is prohibited unless the required authorizations have been obtained from the concerned ministries; - Runoff and dewatering must be captured and channeled to the process or mine wastewater treatment system. <p>Special measures:</p> <p>If the project schedule allows, carry out deforestation outside the breeding season of the bats from May 30 to August 15:</p> <ul style="list-style-type: none"> - At all stages of the project, if a building, for example a hunting camp, is to be dismantled partially or totally, first check if it is used by bats. If presence indices are observed: <ul style="list-style-type: none"> - If the constraints of the project allow it, preserve the building; - If the building can not be preserved, wait until the end of the breeding season for the bats to destroy it and install a new bunker shelter nearby, which is protected from disturbances related to the mine. 	

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> ▪ Presence and operation of pit ▪ Water management and treatment ▪ Management of hazardous and residual materials ▪ Presence of mining infrastructure 	<p>Disturbance to populations (vibration, noise and light).</p> <p>Risk of collision.</p> <p>Risk of contaminants spill in the aquatic environment and wetland (feeding sites).</p> <p>Presence of potential contaminants in the equalization pond.</p>	<p>Common measures:</p> <ul style="list-style-type: none"> - Follow the requirements of the <i>Petroleum Products and Petroleum Products Act</i> (RSQ, P-29.1) and the <i>Petroleum Products Regulations</i> (RSQ, P-30.01, r.1) for the management of equipment and petroleum products; - Develop, before the start of the work, a contingency plan for the accidental release of contaminants into the environment. Inform workers of the contents of the response plan and make them aware of the importance of a rapid response; - Take the necessary measures to ensure that containers, portable tanks and mobile tanks comply with the manufacturing standards specified in the <i>Petroleum Products Regulations</i>. Comply with localization and installation standards for aboveground and underground tanks; - Have an approved verifier check the petroleum equipment during installation, replacement or removal. Have the petroleum equipment checked in accordance with the frequency and conditions indicated in the <i>Petroleum Products Regulations</i>; <p>The Contractor must be licensed to use high risk petroleum equipment if installing or using an above ground tank of 10,000 liters or more of diesel fuel or a 2,500 liter tank or more gas. In the case of an underground tank where one or more of the components are partially or completely buried in the ground, this permit is required for a tank of 500 liters or more of diesel fuel or gasoline;</p> <ul style="list-style-type: none"> - For aboveground tanks with a total volume of 5,000 liters, a watertight dike forming a retention basin around the tank (s) must be installed. If the drip pan protects only one tank, it must be of sufficient capacity to contain a volume of at least 10% greater than the capacity of the tank. If the retention basin protects multiple tanks, it shall be of sufficient capacity to contain a volume of liquids not less than the greater of: the capacity of the largest tank plus 10% of the total capacity of all other tanks, or the capacity of the largest tank increased by 10%; - Handle petroleum products to prevent and control leaks and spills. Keep hydrocarbon absorbent products at all times when storing or using petroleum products. During a spill of contaminants, immediately apply the spill response plan in effect; - Class 1 or 2 petroleum products or substances impregnated with these products must be stored in airtight containers. A room used to store a Class 1 petroleum product must be heated by means of appliances that do not represent an ignition source. A room housing a pump or electrical entry devices shall not be used for the storage of Class 1 or Class 2 petroleum products; - The circulation of machinery and trucks will be limited to the right of way of access roads and work areas. Plastic fences will clearly identify the boundaries of the work areas; - Parking, washing and maintenance areas for machinery and storage of equipment must be located at least 60 m from a watercourse. The refueling of the hydrocarbon machinery must be carried out under constant surveillance and at a distance of at least 60 m from a watercourse. The operation of any construction machinery that has not been used for a certain period of time must be interrupted, except in winter for diesel-powered machinery; - Prior and then regular inspection of the machinery and trucks used to ensure that they are in good condition, clean and free of oil spills. Their exhaust and pollution control systems will also be inspected and repaired as needed to minimize noise emissions; - A complete emergency kit for the recovery of petroleum products and hazardous materials, permanent and easily accessible at all times, must be present on site. This must include a sufficient supply of absorbent materials and related equipment (shovels, gloves, leaks, etc.) to alleviate any situation as well as well-sealed receptacles intended to receive petroleum residues and other hazardous residual materials. . Secondary emergency kits may be required at certain locations on the site. Each construction machine must also contain a sufficient quantity of absorbents in order to be able to intervene quickly. The list of spill response equipment and devices must be approved by 	

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
				<p>the supervisor. Soiled soil, oil residues and other hazardous residual materials must be disposed of in accordance with applicable laws and regulations;</p> <ul style="list-style-type: none"> - All spills must be reported immediately to the Project Emergency Plan Authority, who will have been developed and approved prior to the work. The affected area must be immediately circumscribed and cleaned up immediately. Contaminated soil must be removed and disposed of in an authorized place and a characterization must be carried out according to the terms of the <i>MDDELCC Soil Protection and Contaminated Sites Rehabilitation Policy</i>. In the event of a spill of oil or other noxious substances, the Environment Canada (1-866-283-2333) or MDDELCC (1-866-694-5454) alert system should be notified immediately; - The site supervisor will ensure the proper maintenance of noisy equipment and will see the condition of the silencers and catalysts of the machinery; - The promoter must ensure that all equipment is in good working order to avoid any leakage of fuel, oil or grease. No equipment cleaning will be allowed in the aquatic environment; - Before entering the water, the machinery should be inspected and cleaned to prevent contamination of the water with oils, grease or other materials. The cleaning area must be more than 60 m from any body of water; - Observe the noise standards contained in MDDELCC Noise Instruction Note 98-01. Take all necessary measures to limit noise at source; - Ensure the regular maintenance of the equipment and the good condition of the silencers and any other material that may constitute sources of noise pollution; - Provide mobile equipment with a broadband audible alarm to signal reversing movements; - Implement an awareness program for machinery users to avoid skips, falling objects and working methods; - Hazardous materials must be managed in accordance with the <i>Regulation respecting hazardous materials</i> (L.R.Q., C.Q-2, r.32); - Have on-site equipment at all times in case of a spill of contaminants. Contaminant spills must be subject to immediate action to contain and recover the products; - Promptly notify the MDDELCC in the event of a spill of contaminants; - Do not emit, deposit, release or discharge a hazardous material into the environment or into a sewer system; - All hazardous materials must be stored in a designated place. The hazardous materials storage location must be kept away from vehicular traffic and within a reasonable distance of drainage ditches or sumps and other sensitive elements; - Residual hazardous materials must be stored in an identified and identified recovery area. Residual hazardous materials must be protected from the weather by a waterproof tarpaulin, waiting for their loading and transportation. In winter, it is suggested that containers be placed on pallets or storage tables. If the retention time is greater than 30 days, the developed area must include a watertight shelter with at least three sides, a roof and a watertight floor forming a basin with a retention capacity of at least the following volumes: 125% the largest container or 25% of the total volume of all containers full of liquids; - When transporting dangerous goods, comply with the <i>Regulation respecting the transport of dangerous goods</i> (L.R.Q., C. C-24.2, r 43); - Dispose of the residual materials in containers provided for this purpose. The site manager will ensure that the residues are recovered and deposited in authorized sites. Do not release debris into the aquatic environment. All debris accidentally introduced into the aquatic environment should be removed as soon as possible; - As work progresses, all construction waste, residues and surplus materials must be removed from the site and disposed of in accordance with the Environment Quality Act. Surplus concrete or 	

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
				<p>bitumen and water used to clean concrete mixers, vehicles and equipment must be disposed of in an area provided for this purpose and in such a way as to avoid any contamination of the environment;</p> <ul style="list-style-type: none"> - Do not discharge waste materials or debris into waterways; - Demolition debris and solid waste generated on the site must be disposed of in accordance with the Regulation respecting solid waste (RSQ, chapter Q 2, r 13); - It is forbidden to dispose of waste materials or volatile materials, such as mineral spirits and oil or paint thinners, by discharging them into waterways, storm sewers or sanitary sewers; - Transport of excess materials to an authorized place of disposition; - At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and excavated material from the work. Redevelop and restore these work areas so that it fits as well as possible into the natural landscape (feast and loosen the soil, soften the slopes). Scarify road segments or abandoned roads. Use stored topsoil for area recovery. Seed the slope slopes of the right-of-way to stabilize them quickly. Re-vegetate all areas that will not be useful for the exploitation phase; - Altered shorelines should be restored including slope stabilization and revegetation of surfaces; - Restore the riparian strip deteriorated by the works as and when they progress in order to reproduce the natural bank of the watercourse or lake; - After the completion of the work, any work, equipment, vehicles, temporary works or parts of works that have been used to construct or install the infrastructure must be removed from the site; - Spread the topsoil laid aside on the entire surface of the work or storage site if the volume is sufficient, otherwise in the form of islands; - Restore natural drainage and dig ditches as needed to ensure proper drainage of the land; - In order to reduce the risk of erosion on sloping land, use methods such as the establishment of retaining slopes, ditches or diversion ditches perpendicular to the slope, or other methods; - Restoration work by revegetation must be completed within one year after completion of the work; - Vehicle traffic will have to travel at a reduced speed in order to limit noise, vibration and dust emissions as well as for safety reasons; - Unless authorized, the movement of machinery is prohibited outside the boundaries of work areas. At the beginning of the works, a fence must be installed at the edge of the perimeter of protection. This must be kept in place and in good condition for the duration of the work; - In the right-of-way, no vehicle or construction machine shall circulate without reason within 20 m of a permanent watercourse or within 5 m of an intermittent watercourse. If required, water flowing in the ruts should be diverted to a vegetated area at least 30 m from a watercourse; - Take the necessary measures to minimize the circulation of machinery in the riparian zone; - Site access roads, parking and storage areas or other temporary facilities must be located outside the riparian strip, so as to avoid deterioration or contamination; - Fords crossing is prohibited unless the required authorizations have been obtained from the concerned ministries; - Runoff and dewatering water must be captured and conveyed to the process or a mining wastewater treatment system. <p>Special measures: None.</p>	
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Dismantlement of equipment ▪ Rehabilitation of pit 	<p>Temporary shelters or use as farrowing area. Use of site (feeding).</p>	<p>Same common mitigation measures as those listed for the construction and operation phases when they involve the same sources of effect.</p>	

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
		<ul style="list-style-type: none"> ▪ Final site rehabilitation ▪ Transport and traffic 	Decrease in disturbance to populations.	Special measure: Particular attention will be given to the possible presence of bats in buildings before dismantling.	

Table 7-3 Summary of Environmental Effects on the Human Environment

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
HUMAN ENVIRONMENT					
Socio-economic conditions	✓	<p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Purchase of goods, services and materials ▪ Workforce 	<p>Business opportunities for Cree companies.</p> <p>Job creation.</p> <p>Improving Cree workers' employability.</p>	<p>Common measures: None.</p> <p>Special measures:</p> <ul style="list-style-type: none"> - Clauses for the Employment of Cree Workers and the Cree Economy in the Eastmain Community Impact and Benefit Agreement (ERA); - Measures favoring carpooling of workers from Cree communities; - Support to organizations involved in developing training programs tailored to the needs of the mine and members and businesses of the Eastmain community; - Communication plan to disseminate to local actors a description of the human resources needed for the project (information and preparation for employment workshops, etc.); - Adapted the work schedule of Cree employees to take into account some traditional activities. 	Positive
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> ▪ Purchase of goods, services and materials ▪ Workforce 	<p>Business opportunities for Cree companies.</p> <p>Job creation.</p> <p>Increase in Cree household income.</p> <p>Improving Cree workers' employability.</p> <p>Workforce displacement.</p>	<p>Common measures: None.</p> <p>The same specific mitigation measures as those listed for the construction phase will apply.</p>	
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Purchase of goods, services and materials ▪ Workforce 	<p>Decrease in demand for goods and services.</p> <p>Gradual reduction of mine workforce.</p>	<p>Common measures: None.</p> <p>The same specific mitigation measures as those listed for the construction and operation phases will apply in addition to:</p> <ul style="list-style-type: none"> - Separation bonus offer; - Employee Assistance Program to provide support during the transition to closure (Workforce Reclassification Committee). 	
Common use of lands and resources for traditional purposes	✓	<p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Installation and presence of worksite ▪ Site preparation ▪ Installation of temporary and permanent infrastructure ▪ Transport and traffic ▪ Use and maintenance of equipment ▪ Workforce 	<p>Loss of territory to perform traditional activities.</p> <p>Loss of camp.</p> <p>Temporary disruption to traditional activities.</p> <p>Competition for wildlife harvesting.</p>	<p>Common measures: None.</p> <p>Special measures:</p> <ul style="list-style-type: none"> - Inform Cree users of the territory of the calendar of the activities of construction, operation and maintenance and closure of the mine; - Inform Cree users of the territory and members of Cree communities of the results of environmental monitoring; - Raising the awareness of workers and transporters to the need to respect road safety rules and, if necessary, taking measures with the competent authorities to ensure the safety of users of the Nemiscau-Eastmain-1 road; - Measures to limit disturbance caused by mine activities during spring waterfowl hunting and fall moose hunting; - Prohibition of hunting weapons at the mine site and at the workers' camp; - For the trapline owner of the RE1 site and his family members, allow the use of the services offered at the mining camp (cafeteria, showers, etc.); - Implementation of multi-cultural integration programs, including Cree culture and uses; - Whenever possible, employ members of the RE1 Land Tackle family for environmental monitoring activities; - Compensation or relocation for the camps located along the Nemiscau-Eastmain-1 road (other camps than the RE1 site). <p>In addition to (construction only):</p> <ul style="list-style-type: none"> - Relocation of the Cree camp near the mine site on RE1; 	Insignificant

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
				<ul style="list-style-type: none"> - Measures to facilitate the movement of activities affected by the project (moose hunting grounds, snowmobile trails, fishing grounds, etc.); - Assignment of certain site development contracts to the trapline master of RE1 (deforestation, intensive beaver trapping, etc.); - Program for harvesting medicinal plants for community purposes, prior to construction. 	
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> ▪ Presence and operation of pit ▪ Management of ore, unconsolidated deposits, tailings and waste rock ▪ Presence of mining infrastructure ▪ Transport and traffic ▪ Workforce 	<p>Need for Cree users to get used to the presence of the mine.</p> <p>Competition for wildlife harvesting.</p> <p>Increase in land use and pursuing traditional activities.</p> <p>Increase in risk of road accidents.</p>	The same mitigation measures as those listed for the construction phase will apply.	Insignificant
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Dismantlement of equipment ▪ Rehabilitation of pit ▪ Final site rehabilitation ▪ Transport and traffic ▪ Use and maintenance of equipment 	<p>Temporary disruption to traditional activities.</p> <p>Reuse and reappropriation of mine site for traditional activities.</p>	The same mitigation measures as those listed for the construction phase will apply in addition to: Whenever possible, leave mine facilities on site at the request of the RE1 Land Trappers.	Positive
Community well-being and human health	✓	<p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Installation and presence of worksite ▪ Site preparation ▪ Management of hazardous and residual materials ▪ Transport and traffic ▪ Workforce 	<p>Sense of loss and undermining of the Cree cultural identity.</p> <p>Concerns regarding risks to human health.</p> <p>Decrease in the sense of security for Nemiscau-Eastmain-1 road users and increase in road accidents.</p> <p>Issues with the integration of Cree workers in the workplace.</p> <p>Potential increase of social issues related to the alcohol and drug use among workers and communities.</p> <p>Risk of tension between Cree community and non-Cree workers. Opportunity for rapprochement.</p> <p>Improvement to the quality of life of Cree community members.</p> <p>Increase in debts (Cree households).</p>	<p>Common measures: None.</p> <p>Special measures:</p> <ul style="list-style-type: none"> - Support to organizations and stakeholders in Cree communities, including the CCYSJB, social issues related to alcohol and drug use, debt and financial planning and family relationships; - Prohibition to consume alcohol at the mining camp; - Hiring a Cree community liaison officer; - Appoint a person responsible for relations with the Cree communities on CEC's management team; - Raising the awareness of workers about the need to respect road safety rules and if necessary, take measures with the competent authorities to ensure the safety of users of local roads; - If possible, distribute heavy traffic over the whole day and week to avoid intensive periods of this type of traffic; - Cree participation in environmental monitoring; - Inform the Cree users of the territory and community members about the measures and means put in place to protect the environment and the results of environmental monitoring; - Establishment of an exchange and consultation committee to discuss and establish solutions to the different issues related to the mine's activities. This committee could include users of the territory, members of the Eastmain community, mine workers, Eastmain service representatives or the Band Council, etc. ; - Hiring a Cree employment counselor; - Implementation of multi-cultural integration programs, including Cree culture and uses; - Establishment of activities to promote harmonious relations between Cree and non-Cree workers; - Employee awareness program to practice healthy lifestyle habits; - Organization of a site visit (open day); - Participation of Cree representatives in the development of the restoration plan for the mine site. 	Insignificant
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> ▪ Presence and operation of pit ▪ Presence of mining infrastructure ▪ Transport and traffic ▪ Workforce 	Same potential impacts as listed in the construction phase.		
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> ▪ Dismantlement of equipment ▪ Rehabilitation of pit ▪ Final site rehabilitation 	<p>Concerns regarding risks to human health.</p> <p>Reuse and reappropriation of mine site (sense of land reappropriation).</p>		

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
		<ul style="list-style-type: none"> Workforce 	Potential increase of social issues related to the alcohol and drug use among workers and communities.		
Historic, cultural and archeological heritage	✓	<p><i>Construction</i></p> <ul style="list-style-type: none"> Installation and presence of worksite Site preparation Installation of temporary and permanent infrastructure 	Update of archeological features during work.	<p>Common measures: None.</p> <p>Special measures:</p> <ul style="list-style-type: none"> Completion of a comprehensive archaeological inventory prior to the construction period for the area with archaeological potential directly affected by the proposed development; If any remains of archaeological interest are discovered, immediately notify the person in charge of the work and take measures to protect the site. Suspend the work in the area until the MCC gives permission to continue. 	Insignificant
		<p><i>Operation and Maintenance</i></p> <p>None</p>	No potential impact is expected.	<p>Common measures: None.</p> <p>Special measures:</p> <p>If any remains of archaeological interest are discovered, immediately notify the person in charge of the work and take measures to protect the site. Suspend the work in the area until the MCC gives permission to continue.</p>	No residual impact
		<p><i>Close-out</i></p> <p>None</p>	No potential impact is expected.	The same mitigation measures as those listed for the operation and maintenance phase will apply.	
Landscape	✓	<p><i>Construction</i></p> <ul style="list-style-type: none"> Installation and presence of worksite Site preparation Installation of temporary and permanent infrastructure 	<p>Modification of the visual aspect of the site landscape.</p> <p>Modification of observers' visual field.</p>	<p>Common measures: None.</p> <p>Special measures:</p> <ul style="list-style-type: none"> Vegetation of the portion of the dumps that exceeds the treetops; Coniferous tree planting on the west side of the Némiscau-Eastmain-1 road, along sections closest to the pit (near the camp) to limit the views towards the dumps. 	<p>Visual aspect of landscape: Insignificant</p> <p>Visual field of road users: Insignificant</p>
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> Presence and operation of pit Presence of mining infrastructure 	Same potential impacts as the Construction phase.		
		<p><i>Close-out</i></p> <ul style="list-style-type: none"> Dismantlement of equipment Rehabilitation of pit Final site rehabilitation 	Same potential impacts as the Construction phase.		
Socio-economic environment	✓	<p><i>Construction</i></p> <ul style="list-style-type: none"> Purchase of goods, services and materials Workforce 	<p>Business opportunities for regional companies.</p> <p>Tax revenue.</p> <p>Job creation.</p>	<p>Common measures: None.</p> <p>Special measures:</p> <ul style="list-style-type: none"> Favor the hiring of a local and regional workforce; Establish a purchasing strategy to favor local and regional businesses. 	Positive
		<p><i>Operation and Maintenance</i></p> <ul style="list-style-type: none"> Purchase of goods, services and materials Workforce 	<p>Business opportunities for regional companies.</p> <p>Tax revenue.</p> <p>Job creation.</p> <p>Increase in workers' income.</p>		

Environmental Components	CV (✓)	Potential Effect Sources	Potential Impact	Current and specific mitigation measures	Significance of the Residual Effect
		<i>Close-out</i> <ul style="list-style-type: none"> ▪ Purchase of goods, services and materials ▪ Workforce 	Decrease in demand for goods and services. Gradual reduction of mine workforce.	Common measures: None. Special measures: - Separation bonus offer; - Employee Assistance Program to provide support during the transition to closure; - Hiring local labor for the requalification of the site.	
Land and infrastructure use	✓	<i>Construction</i> <ul style="list-style-type: none"> ▪ Installation and presence of worksite ▪ Site preparation ▪ Installation of temporary and permanent infrastructure ▪ Transport and traffic ▪ Use and maintenance of equipment 	Disruption of sport hunting. Increase in the risk of road accidents.	Common measures: None. Special measures: - Raising the awareness of workers to the need to respect road safety rules and if necessary, take measures with the competent authorities to ensure the safety of users of local roads; - If possible, spread the heavy traffic over the whole day and week to avoid the intensive periods of this type of traffic.	Insignificant
		<i>Operation and Maintenance</i> <ul style="list-style-type: none"> ▪ Presence and operation of pit ▪ Management of ore, unconsolidated deposits, tailings and waste rock ▪ Presence of mining infrastructure ▪ Transport and traffic 	Adjustment for sport hunters to the presence of the mine. Increase in the risk of road accidents.		
		<i>Close-out</i> None	No potential impact is expected.	Common measures: None. Special measures: None.	No residual impact

8 MONITORING PROGRAM AND ENVIRONMENTAL MANAGEMENT PLAN

As a mining company, CEC is compelled to comply with federal laws pertaining to the environment and relevant provincial, regional and municipal laws, regulations, rules or guidelines.

According to the Company's Environmental Policy, the mining company is aware of its responsibilities regarding environmental protection, prevention of pollution, and sustainable development. The company shall adopt responsible and sustainable business practices in order to preserve natural resources and minimize the environmental impacts of work.

CEC commits to observing the following principles:

- **Environmental Compliance:** Make sure the operations, facilities and work, as well as work by occupants comply with applicable federal, provincial or municipal legislation and regulations;
- **Environmental Protection:** Make sure operations are conducted as to prevent pollution, minimize negative impacts and environmental risks, and to protect the quality of the environment;
- **Sustainable Development:** Implement processes, and thus set objectives and programs meant to favour the continuous improvement of its environmental performance in a spirit of sustainable development;
- **Environmental Management:** Design and implement an environmental management system and ensure that the system is maintained thanks to means and procedures to measure the environmental performance;
- **Communication:** Communicate the policy to the employees, occupants and community as to demonstrate the Company's environmental commitment.

The environmental management system of the EMP allows for the protection of the environment. The objective of the EMP, established by CEC, is to make sure the Rose Lithium – Tantalum Mining Project does not cause long-term impacts to the environment. The EMP helps to:

- Maintain compliance with Canadian Environmental Acts;
- Minimize environmental sanitation fees;
- Maintain sustainable operations and reduce costs and fees for users;
- Promote due diligence.

8.1.1 SPECIFIC ENVIRONMENTAL MANAGEMENT PROGRAMS

Specific EMPs were developed for each of the project's significant environmental issue, which are:

- Social monitoring;
- Physical integrity and stability of structures;
- Air quality and dust control;
- Final effluent and surface water quality;
- Groundwater quality and level;

- Vegetation protection;
- Avifauna, terrestrial and aquatic fauna protection;
- Runoff management;
- Potable water management;
- Waste snow management;
- Hazardous and residual material;
- Supervision and maintenance of machinery and equipment;
- Accidental spill.

8.1.2 ENVIRONMENTAL MONITORING PROGRAM

An environmental monitoring will be conducted before, during, and after the implementation of the CEC project. The objective of the monitoring will be to ensure the fulfilment of environmental commitments and obligations. It shall be conducted by the Environmental Manager and include:

- Monitor and supervise all tasks regarding preventive, mitigation or corrective measures in relation to the environment;
- Implement an environmental management system (the EMP);
- Make sure work complies with authorizations obtained;
- Keep follow-up records of the storage and disposal conditions of residual hazardous materials required for the project;
- Monitor refuelling procedures of oil equipment used during the construction phase. Supervise and monitor processes in case of accidental spill, including monitoring of contaminated soil temporary storage conditions, if necessary.

8.1.2.1 CONSTRUCTION PHASE

The specific environmental monitoring programs for the construction phase will include: social monitoring, hydrology, hydrogeology, water and sediment quality, air quality and dust control, residual and hazardous materials, vegetation protection, fish and habitat, terrestrial fauna and avifauna.

8.1.2.2 OPERATION PHASE

The specific environmental monitoring programs for the operation phase will include: social monitoring, runoff, potable water, final effluent and surface water quality, groundwater quality and level, luminous environment, air quality and dust control, physical integrity and stability of structures, waste snow management, residual and hazardous materials.

8.1.2.3 CLOSE-OUT PHASE

The close-out phase, which will include the dismantlement of facilities and infrastructures, must be subjected to an environmental management. The specific environmental management programs will include social monitoring and groundwater.



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