Rose Lithium-Tantalum Project

Annual report 2023

Presented to :

Canadian Environmental Assessment Agency

and

Cree Nation Government

By :

Critical Elements Lithium Corporation

March 2024

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Summary

Since the federal declaration of decision on August 21, 2021, Critical Elements Lithium Corporation ("Critical Elements") has continued its efforts at the provincial level, and on October 31, 2022, the certificate of authorization was issued by the ministère de l'Environnement du Québec.

Critical Elements then formed a multidisciplinary team and is working on the detailed engineering of the Rose Lithium-Tantalum project (the "Project"). Consultants have been retained to develop the required pre-construction monitoring programs and action plans, in accordance with the conditions of the Declaration of Decision and Certificate of Authorization.

Consultations were held with the communities of Eastmain and Nemaska as part of the development of these programs. In 2023, additional field work was carried out on surface water, sediment, groundwater and fish habitat.

Based on an analysis of alternatives and an impact assessment, a new location for the workers' camp was identified. This proposal has been the subject of consultation and is currently being analyzed by the authorities. In 2023, Critical Elements made progress in submitting documents in response to the conditions set out in the Declaration and Certificate of Authorization.

Critical Elements has obtained an exemption under the Canadian Navigable Waters Act from Transport Canada and a Mining Lease from the MRNF for the operation of the deposit. Other permit applications are under analysis. In 2024, Critical Elements will continue the process of obtaining the necessary authorizations to begin construction of the mine site.

1. Introduction

Critical Elements is proposing the construction, operation and decommissioning of an open-pit lithium and tantalum mine on the territory of the Regional Government of Eeyou Istchee, on the traditional lands of the Eastmain Cree Nation, approximately 38 kilometers north of Nemaska (Figure 1).

As proposed, the Project includes open pit mining, waste rock and tailings accumulation areas, and an industrial ore processing facility. Infrastructure includes access road, camp, explosives and detonator storage, maintenance garage, diesel and gasoline storage, main electrical substation, fresh and potable water supply, wastewater treatment system, surface water management infrastructure with final effluent treatment plant, communications system, guardhouse and administration building.

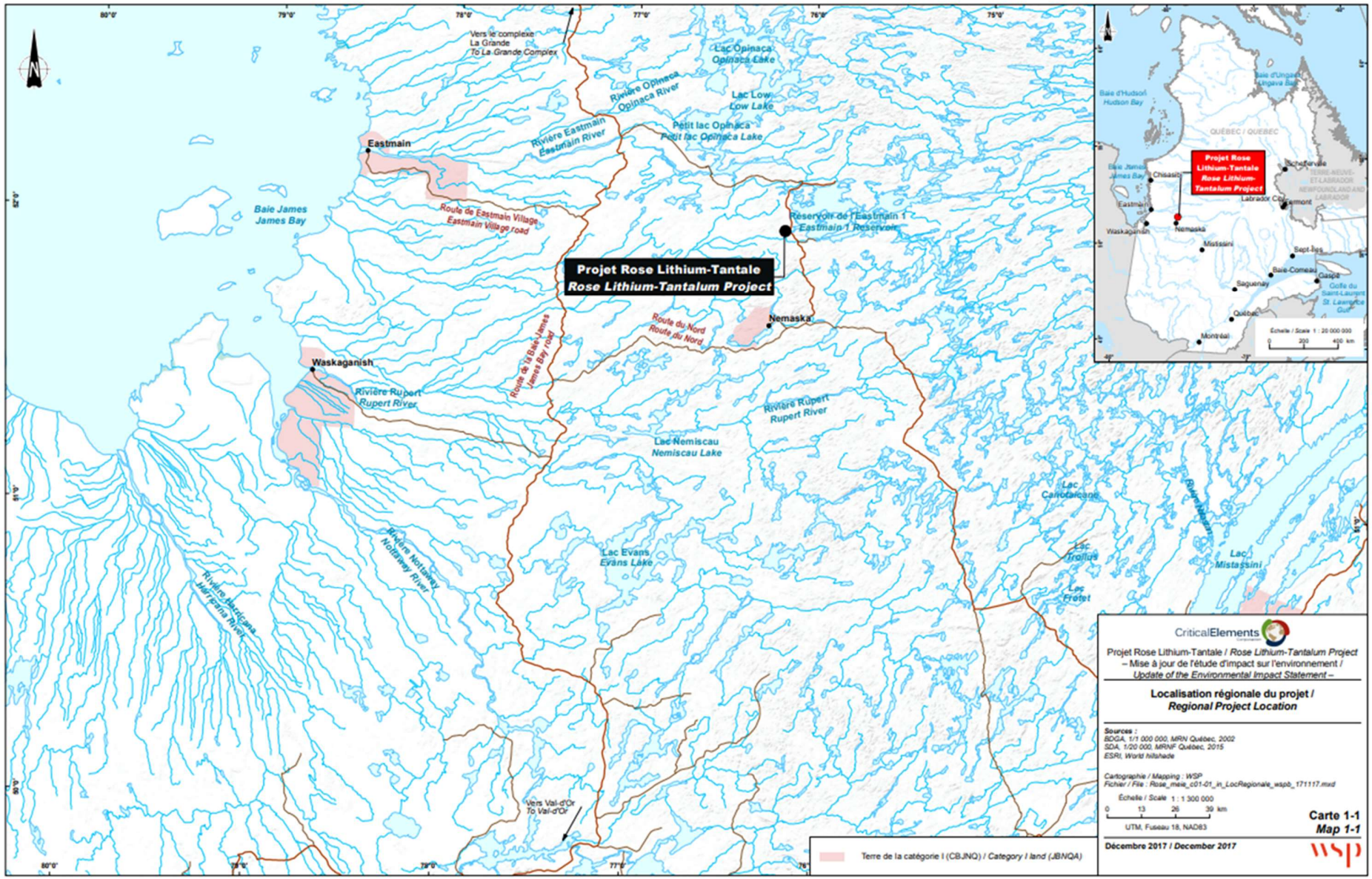
The mine will produce approximately 4,500 tonnes of ore per day over a mine life of more than 17 years. The Project will have a total life of 26 years, including the construction and reclamation phases.

The decision statement issued under section 54 of the Canadian Environmental Assessment Act, 2012 to Critical Elements for the Rose Lithium-Tantalum Project was signed on August 21, 2021 by Canada's Minister of the Environment and Climate Change.

At the provincial level, certificate of authorization 3214-14-053 was issued on October 31, 2022 by the MELCCFP. The ministerial authorization includes 27 conditions to be met, many of which must be implemented prior to the first authorization allowing construction.

In accordance with sections 2.11 to 2.13 of the Declaration, Critical Elements submits to the Canadian Environmental Assessment Agency and the Cree Nation Government an annual report summarizing the work carried out, the results obtained and the implementation of the project. This second annual report is available in both official languages and will be submitted no later than March 31, 2024.

Figure 1 Property location



2. Project Implementation

The Rose lithium-tantalum project is in its pre-construction phase. In parallel with the search for funding, detailed engineering is ongoing. Several programs and action plans have been drawn up and are discussed in Chapter 4. Some studies have been updated, and additional characterization work has been carried out, and is presented in Chapter 5.

Pihkuutaau Agreement

As part of the Pihkuutaau impact and benefits agreement signed in 2019, an Implementation Committee and an Environmental Committee have been formed. This gives Critical Elements the opportunity to discuss various aspects of the mining project with community representatives, and to address any questions or concerns raised.

Over the course of 2023, several meetings and discussions were held with tallymen, notably concerning fish and wetland compensation plans. Details of the consultation process are presented in Chapter 3 of this report.

Authorizations

During 2023, several authorizations were issued. Table 1 lists these authorizations.

Table 1 List of authorizations issued

Date	Issued by	Description
2023-01-09	MELCCFP	Hydro Québec - Connection of the Rose Lithium-Tantale mine and relocation of a 315-kV line section
2023-09-15	MRNF	Mining lease allowing exploitation of the deposit.
2023-10-25	Transport Canada	Decree – exemption from navigable water regulations for 9 lakes and 19 bodies of water
2023-11-06	MRNF	Mining Act, approval Art. 241 of the location of the codisposition pad
2023-11-27	MRNF	Mining Act, approval Art. 240 of concentrator location

Caption:
MELCCFP: Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs
MRNF: Ministère des Ressources naturelles et des forêts (Ministry of Natural Resources and Forests)

Further permit applications have been submitted to MRNF in 2023 to obtain leases for infrastructure development and borrow pits for construction. These permits will be issued in 2024.

Camp

As mentioned in the 2021-2022 annual report, Critical Elements learned at the end of 2022 that the Hydro-Quebec camp located 25 kilometers north of the mine site would not be available for use, and that an alternative location had to be considered. In accordance with condition 6 of the certificate of authorization, Critical Elements commissioned WSP to conduct a search for potential sites and to assess the environmental and social impacts.

The chosen site is located around 3 km from the pit, along the Nemiscau-Eastmain1 road. Figure 2 shows the location of the camp. In addition to being close to the mining facilities, which will limit long daily commutes for workers, it will reduce GHG emissions and minimize the negative effects of road traffic, as well as increasing the safety of road users. Discussions have been held with tallymen and the Environment Committee on this subject.

This study was forwarded to the MELCCFP in October 2023 in order to obtain an amendment to the certificate of authorization. This request is currently under review. This is a critical step in the project's progress, as this condition must be accepted prior to the first authorization allowing construction.

Critical Elements is in discussions with the Cree (Wabannutao Eeyou Development Corporation), who are interested in taking over the supervision and operation of the camp.

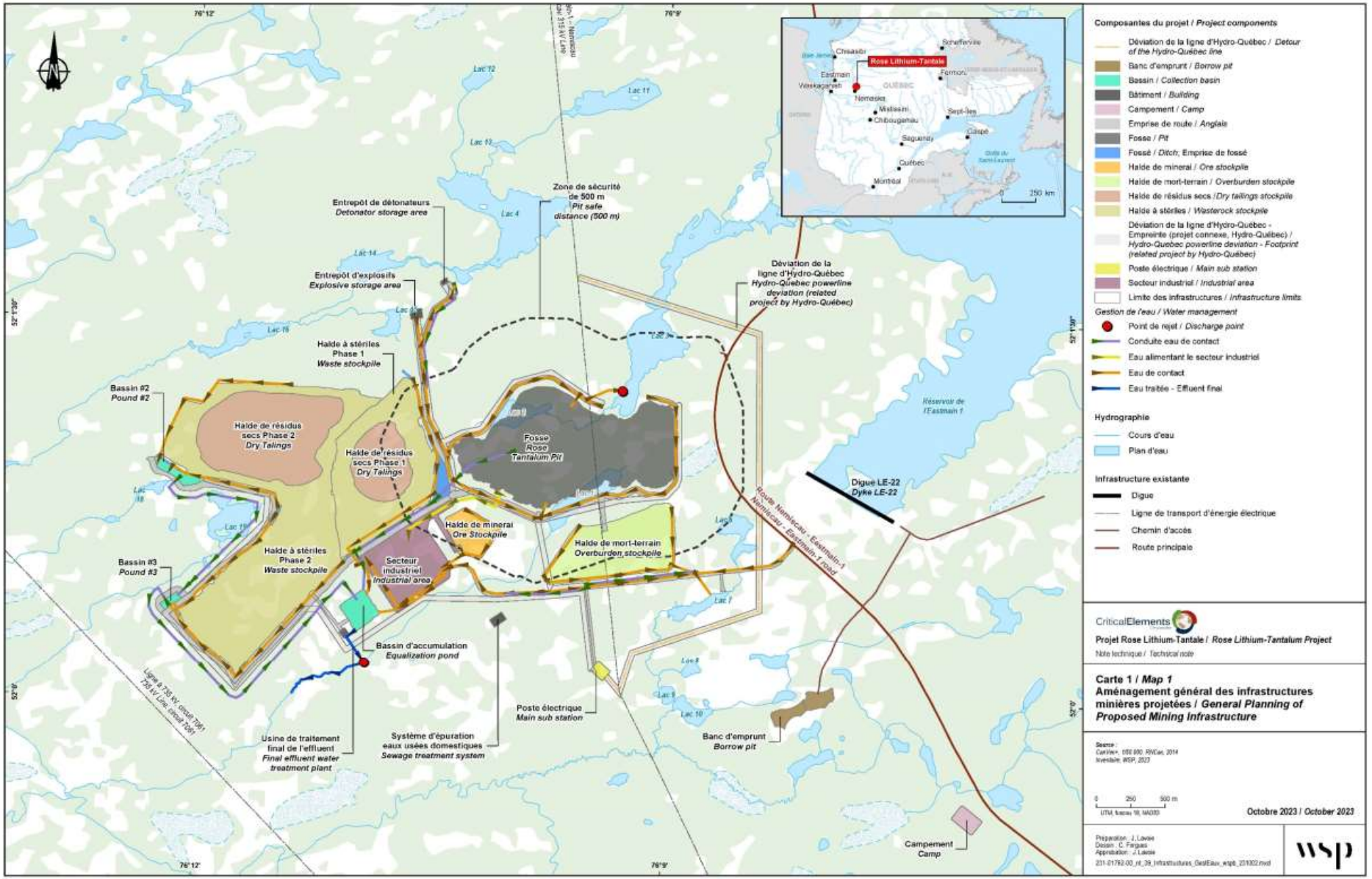
In addition, a 3-year contract was signed in December 2023 with the City of Chibougamau, along with a carrier for the disposal of waste generated during the construction period to the Chibougamau landfill site.

Field Work

During 2023, Critical Elements carried out geotechnical investigations to characterize potential sources of granular materials for road construction and industrial site earthworks. Two borrow pits were identified, and lease applications will be submitted to the MRNF.

Due to the forest fires, some planned work had to be postponed, notably the updating of bird surveys. Groundwater sampling and additional characterization of surface water, sediments and fish habitats were also carried out. The results are presented in Chapter 5.

Figure 2 General layout of the mine site and proposed camp



Updated studies

Following pumping tests, Critical Elements commissioned Richelieu Hydrogéologie to review the groundwater modeling. The tests enabled us to gain a better understanding of water behaviour according to the horizons encountered at depth.

In the May 2023 report, Richelieu Hydrogéologie concludes that the nine pumping wells located at the pit's periphery that were previously considered are no longer required, and that only a sump at the bottom of the pit will allow the pit to be dewatered. Proposed monitoring during the first years of operation will validate the model.

Figure 3 shows the water table drawdown zone after 17 years of operation. The zone of drawdown greater than 1 meter would reach lakes #3, #4, #6, #7 and #15.

Moreover, according to this revised hydrogeological model, the pit refill rate at the end of operations would be in the order of 39 to 45 years, depending on surface water runoff.

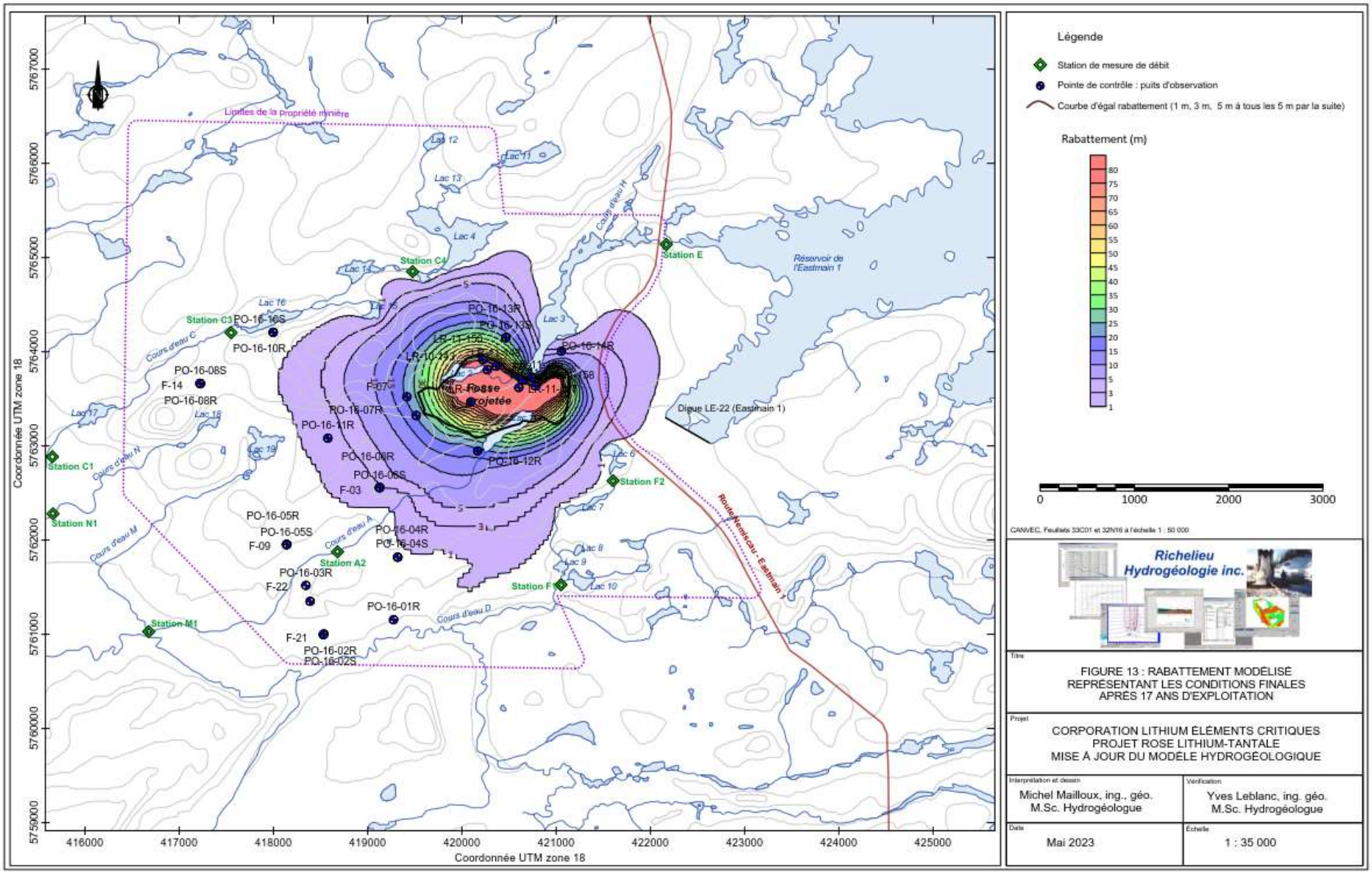
WSP was subsequently commissioned by Critical Elements to update the impacts of the mining project on hydrology and hydraulics, and to provide an assessment of fish habitat losses. In the report submitted in November 2023, the analyses carried out showed that it is possible to limit the impact on Lake 3 (in terms of average monthly flows) by maintaining a minimum release of water to this lake based on monthly flows. Critical Elements is currently revising its water management plan to minimize impacts. This plan will be presented in 2024.

With less loss of fish habitat, Critical Elements has updated the fish compensation plan, the details of which are discussed in Chapter 4.

Electric vehicles

In the spirit of condition 7.8 of the Declaration and condition 22 of the Certificate of Authorization, a report was prepared in December 2023 by Critical Elements, Extek and BBA presenting advances in the development of electrification of mobile equipment used on a mine site, with technico-economic assessments of the equipment and a plan for conversions of mining equipment from a thermal propulsion mode to an electric mode.

Figure 3 Water table drawdown at the end of 17 years of operation



Despite these challenges, the electrification of mining equipment is set to play a crucial role in transforming the mining industry towards a more environmentally-friendly approach. Increasing pressure to reduce carbon emissions and growing concerns about sustainability should further stimulate the adoption of these technologies and encourage innovation in the mining sector. In general, the electrification of mining equipment has followed and continues to follow two trends. The first trend, which has been in place for several decades, is the electrification of equipment using a cable-based power supply, via a direct connection to the power grid, for equipment with more limited travel (such as shovels and drills), or via a trolley system, for trucks. To date, this trend has only been applied to larger equipment. The second, more recent trend is the development of rechargeable battery technologies. Until now, the development of this technology has only applied to small-scale equipment, which is generally better suited to construction rather than mining.

In conclusion, the electrification of mining equipment presents a number of challenges. The design and implementation of robust electrical systems adapted to the rigorous conditions found in mines requires significant investment in research and development. In addition, the availability of the energy needed to power this equipment, particularly in remote areas, remains a major concern. Advances in energy storage technologies and the deployment of renewable energy solutions can help mitigate these challenges.

Next steps

While working to complete the financing of the project, in 2024, Critical Elements will continue its work and consultations to meet the requirements of the Declaration and Certificate of Authorization. Exchanges with various ministries are to be expected. Once these conditions have been met, site preparation work can begin.

3. Consultations

Condition 2.4 of the decision statement specifies the formalities surrounding the community consultation process. This process involves informing and gathering input from the Cree Nation of Eastmain, the Crees of the Waskaganish First Nation, the Cree Nation of Nemaska and/or the Cree First Nation of Waswanipi. As mentioned in condition 2.5, Critical Elements has held discussions with representatives of the First Nations to agree on how to meet the requirements.

Table 2 lists the various meetings with dates, locations and activities that took place in 2023. The consultation process is still underway for various programs and action plans. Further consultations are planned for 2024.

Table 2 List of meetings and consultations

Date	Location	Participants	Topics	Concern / comments
February 14, 2023	Conference call	Norman Cheezo (Eastmain) Alvin Cheezo (Eastmain) Lucas Del Vecchio (CNG) Georges Wapachee (Nemaska) Yves Perron (Critical)	Implementation Committee - Meeting #2	
March 13 2023	Conference call	Georges Wapachee (R019) Yves Perron (Critical) Andrea Daezli (Ausenco) Lloyd Mayappo (Critical)	Wetland compensation plan	Mr. Wapachee confirms that the proposed locations and concepts are appropriate and can be presented to the communities.
April 4 2023	Conference call	Aurora Maria Hernandez CNG) Yves Perron (Critical)	Environment Committee - Meeting #2 - Fish and wetland compensation plans	
May 24 2023	Conference call	Eva-Maria Hanchar (CNG) Graeme Morin (CNG) Alvin Cheezo (Eastmain) Kenneth Tanoush (Nemaska) Aurora Maria Hernandez (CNG) Yves Perron (Critical) Andy Fortin (Critical) Martin Boucher (Critical)	Environment Committee - Meeting #3 - Project and camp update and responses to COMEX conditions	
June 8 2023	Montréal	Norman Cheezo (Eastmain) Lucas Del Vecchio (CNG) Georges Wapachee (Nemaska) Yves Perron (Critical) Andy Fortin (Critical) Martin Boucher (Critical)	Implementation Committee - Meeting #3	
July 11, 2023	Montréal	Chief Raymond Shanoush (Eastmain) Jean-Sébastien Lavallée (Critical)	Project update	

Date	Location	Participants	Topics	Concern / comments
July 19, 2023	Conference call	Eva-Maria Hanchar (CNG) Graeme Morin (CNG) Kenneth Tanoush (Nemaska) Aurora Maria Hernandez (CNG) Yves Perron (Critical) Nancy Duquet-Harvey (Critical) Martin Boucher (Critical)	Presentation of revised hydrogeology study and fish habitat compensation plan	It is preferable to carry out compensation projects on the Cree territory.
July 24, 2023	Conference call	Alvin Cheezo (Eastmain) Yves Perron (Critical) Nancy Duquet-Harvey (Critical) Martin Boucher (Critical)	Presentation of revised hydrogeology study and fish habitat compensation plan	It is preferable to carry out compensation projects on the Cree territory.
July 31, 2023	Val D'Or	Ernie Moses - Trap Master RE01 Yves Perron (Critical) Jean-Sébastien Lavallée (Critical)	Camp site, Fish habitat and wetland compensation plans and updated hydrogeological study	Would like to see more compensation on his territory. Suggests 2 additional borrow pits for wetland investigation and compensation.
September 26, 2023	Eastmain	Ernie Moses - Trap Master RE01 Yves Perron (Critical Elements) Nancy Duquet-Harvey (Critical) Lloyd Mayappo (Critical)	Meeting #2 for - Camp, wetland compensation with additions, beaver survery, glossary and visit to tallyman's territory and future camp site	Confirms wetland depth criteria for Canada goose
September 27, 2023	Conference call	Alvin Cheezo (Eastmain) Lucas Del Vecchio (CNG) Andy Baribeau (GCC(EI)/CRA) Isaac Iserhoff (CNG observer) Yves Perron (Critical) Nancy Duquet-Harvey (Critical)	Implementation Committee - Meeting #4	Parking for community members during operation. Business opportunities. SSQ and WEDC card
September 28, 2023	Conference call	Yves Perron (Critical) Nancy Duquet-Harvey (Critical) Sébastien Perreault (Critical) Lloyd Mayappo (Critical)	Environment Committee - Meeting #4	

Date	Location	Participants	Topics	Concern / comments
October 18, 2023	Conference call	Graeme Morin (CNG) Tanya Lamoureux (Nemaska) Aurora Maria Hernandez (CNG) Nancy Duquet-Harvey (Critical) Sébastien Perreault (Critical)	Environment Committee Annual report and monitoring program - Part 1	
November 9, 2023	Conference call	Alvin Cheezo (Eastmain) Eva-Maria Hanchar (CNG) Graeme Morin (CNG) Tanya Lamoureux (Nemaska) Aurora Maria Hernandez (CNG) Nancy Duquet-Harvey (Critical) Sébastien Perreault (Critical)	Environment Committee - Follow-up program - Part 2	
December 4, 2023	Conference call	Alvin Cheezo (Eastmain) Kenneth Tanoush (Nemaska) Tanya Lamoureux (Nemaska) Jean-Philippe Roux-Groleau (Nemaska) Nancy Duquet-Harvey (Critical)	Environment Committee - Follow-up program - Part 3	

4. Programs and Management Plans

Critical Elements has developed several programs over the course of 2023 to address the requirements of the Declaration and Certificate of Authorization. The main ones are presented below.

4.1 Environmental and Social Monitoring Program

Critical Elements commissioned WSP to develop an environmental and social follow-up program that would ensure compliance with all measures taken during the environmental assessment, reduce any significant residual effects identified and comply with regulations.

This program includes several action plans to meet the conditions set out in the COMEX environmental and social impact analysis report, and in Environment and Climate Change Canada's decision statement.

The required monitoring is adapted for all phases of the project (construction, operation, closure), including post-closure monitoring. The monitoring program is divided into two sections, the first for natural environment monitoring and the second for social environment monitoring. A timetable tracks the frequency of monitoring throughout the life of the project.

The components of the environmental and social monitoring program are as follows:

Section I - Environmental monitoring program

- Fish and their habitat
  - Protecting fish and fish habitat
  - Surface water and sediment quality
  - Groundwater quality
  - Water flows and levels
  - Acid mine drainage
  - Compensatory plan and its monitoring
- Measures to stabilize disturbed soil
- Avifauna
- Caribou (Action plan and follow-up)
- Chiroptera
- Black bear and gray wolf
- Wetlands and invasive alien plant species
- Wetland compensation and monitoring

Section II: Social monitoring program

- Cree health
  - Dust management plan and air quality monitoring
  - Water quality
  - Soil quality
  - Human health
- Current use of land and resources for traditional purposes
  - Beaver management plan
  - Transport activity management plan
  - Current use of land for traditional purposes
  - Progressive restoration Natural and cultural heritage
- Natural and cultural heritage
  - Protection plan of archaeological and cultural resources

It should be noted that several of the action plans specified in the Declaration are integrated into the environmental and social monitoring program, such as the monitoring of the wetlands compensation plan, the caribou and beaver management plan, and the dust and transportation management plan.

In order to meet the objectives of conditions 3.19 and 3.22.3 of the Mine Drainage Declaration, a geological material monitoring program has been developed by Lamont and is attached to the monitoring program.

This monitoring program was forwarded to the MELCCFP in November, and consultations have been held with more to come in 2024. Once this process has been completed, the program will be forwarded to the ACEE.

The fish habitat compensation plan was submitted to Fisheries and Oceans Canada in November 2023. The emergency response and communications plan was finalized in the fall. Critical Elements has prepared a draft communications plan that will be finalized in 2024. The mine site reclamation plan had already been accepted by provincial authorities, so none was required.

4.2 Fish Compensation Plan

In November 2023, Critical Elements submitted an updated fish compensation plan developed as part of the environmental assessment. Following the revision of the hydrogeological study, the impact of the lowering of the water table is reduced, and consequently so are the affected water bodies. Habitat losses are now estimated at just under 27 ha.

To compensate for the loss of habitat, Critical Elements proposes the following projects:

- Development of a lake sturgeon spawning ground on the Eastmain River with financial participation in a research project on lake sturgeon in the Eastmain River.

- Development of brook trout spawning grounds on streams in the vicinity of the proposed mine site.

Lake sturgeon spawning ground on the Eastmain River

The project to create a lake sturgeon spawning ground on the Eastmain River was the result of a study commissioned by Hydro-Québec (Environnement illimité, 2012) to identify various measures that would help maintain the lake sturgeon population in the Eastmain and Opinaca rivers.

This study recommended the development of a spawning ground at KP 113 of the Eastmain River (Figure 4), a site used to a very limited extent by lake sturgeon, likely due to the presence of poor conditions for this species' reproduction (substrate too coarse, inadequate flow). Subsequently, in 2014, the Cree community of Eastmain commissioned the firms Kaweshekami and WSP to develop an initial concept for spawning ground management (WSP and Kaweshekami, 2016). Later, in 2017, WSP conducted additional surveys, which led to final plans for this compensatory development, which were submitted to DFO and provincial authorities in fall 2018 (WSP, 2018).

A research project on fish and fish habitat in Eeyou Istchee James Bay is part of the compensation plan. This project involves conducting a study on lake sturgeon, in collaboration with an academic institution. In budgetary terms, it could represent around 10% of the monetary value of the Eastmain River lake sturgeon spawning ground construction project.

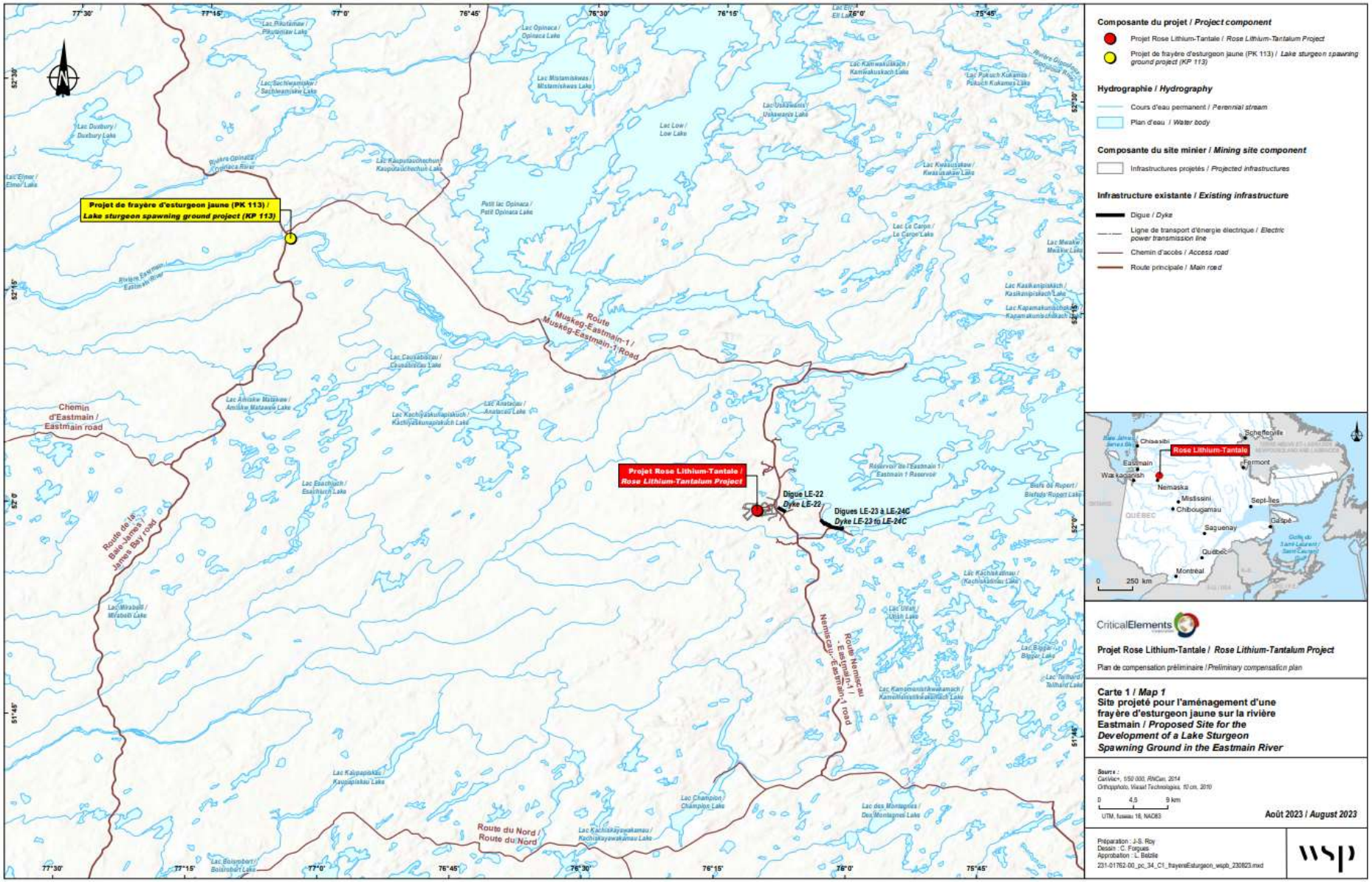
At present, the main avenue of research envisaged would be a multi-year study to describe the recovery of the lake sturgeon population and the evolution of some of its biological characteristics, in the 38 km lentic section downstream of the spawning ground to be built at KP 113. This study would first assess the size of the population over a certain period of time (to be determined) in order to describe interannual variations in its abundance and verify whether the population is recovering or, at the very least, maintaining itself following construction of the spawning ground.

The first year(s) of the study would establish a baseline for the sturgeon population. Subsequent years would be used to determine how the population is evolving. During this study, the use of non-lethal fishing gear would be preferred to avoid sturgeon mortality.

The study would also provide an opportunity to monitor changes in certain biological characteristics of sturgeon, such as length, mass and condition coefficient. Inter-annual comparisons of these characteristics would allow us to verify whether the condition of the specimens is improving over time. Comparisons with other sturgeon populations could also be made.

This research project will be carried out in close collaboration with members of the Eastmain Cree community. During consultations, this compensation project was presented and met the community's expectations.

Figure 4 Proposed site for a sturgeon spawning ground



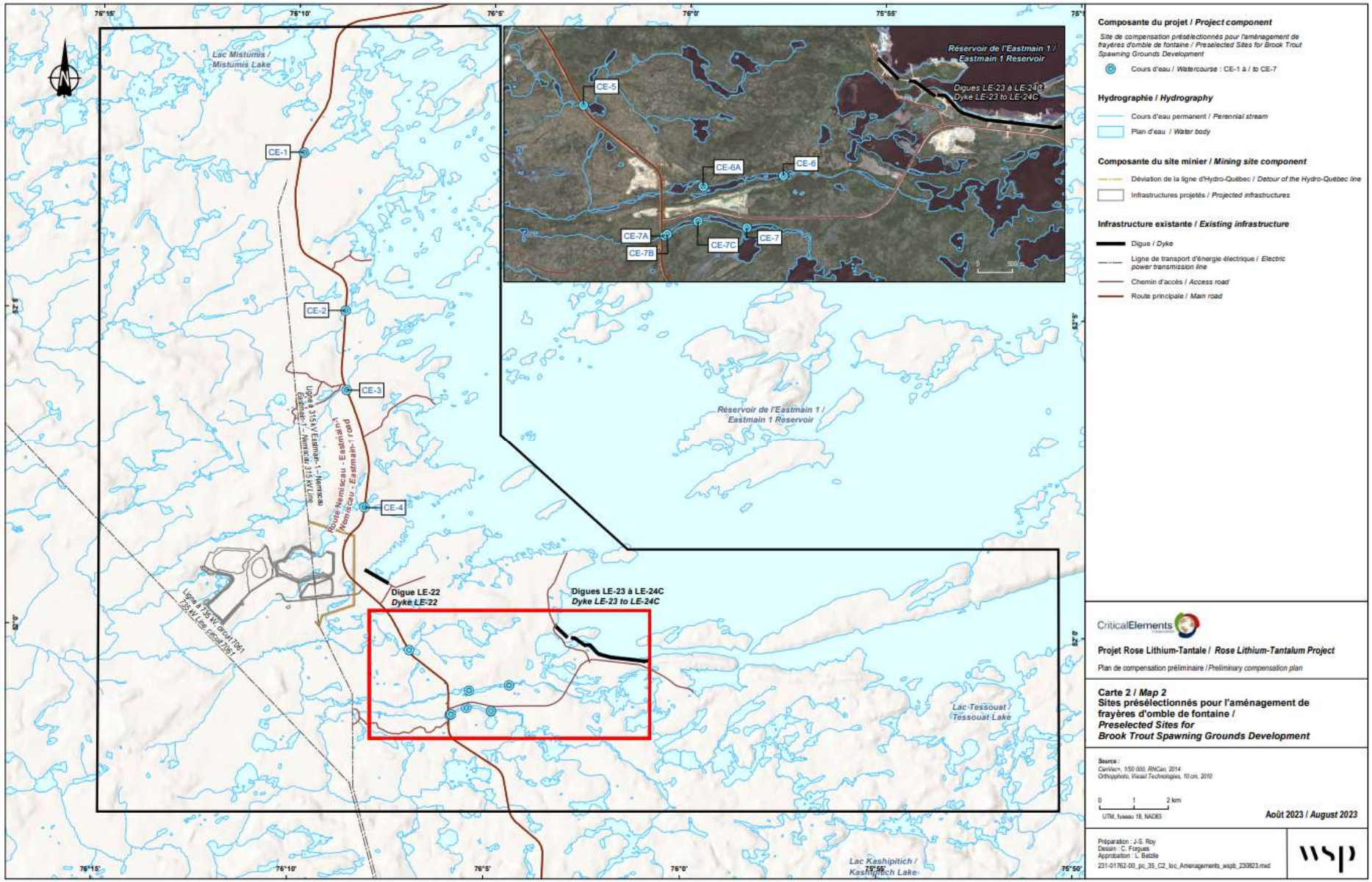
Brook trout spawning grounds

Critical Elements is proposing the development of brook trout spawning grounds. Several sites have been identified and field visits are required to validate their characteristics. These are shown in Figure 5:

- Five creeks less than 5 m wide (CE-1 to CE-5) crossing the Eastmain-1 road (linking Nemiscau substation to Eastmain-1 camp). They are located between 2 and 12 km from the project area. These streams flow from west to east into the Eastmain-1 reservoir, except for CE-5, which flows west into the Pontax River.
- Two larger, unnamed streams (over 5 m wide) located approximately 5 and 6 km southeast of the Rose mine site. Both are parallel and flow east-west towards the Pontax River. They are approximately 500 m apart and have been designated CE-6 and CE-7.

The compensation plan was forwarded to DFO in November 2023, and Critical Elements is awaiting their comments.

Figure 5 Proposed sites for brook trout spawning grounds



4.3 Wetland Compensation Plan

According to the environmental impact study (WSP 2017), the Rose project as a whole would result in the destruction of 173.55 hectares of wetlands, including areas of high ecological value. The recommended approach is to first avoid, minimize and compensate.

Table 3 Summary of wetland losses directly affected by the project

Wetland Type	Disturbed Area (ha)	Destroyed Area (ha)	Total (ha)
Open bog	23.52	58.94	82.46
Wooded bog	6.9	72.15	79.05
Shrubbery swamp	0	0.24	0.24
Arborescent swamp	3.61	8.11	11.72
Pond	0.08	0	0.08
Total	**34.11**	**139.44**	**173.55**

As presented in the environmental monitoring program, several measures have been implemented to mitigate and minimize impacts on wetlands, and follow-up will be carried out to ensure the effectiveness of these measures.

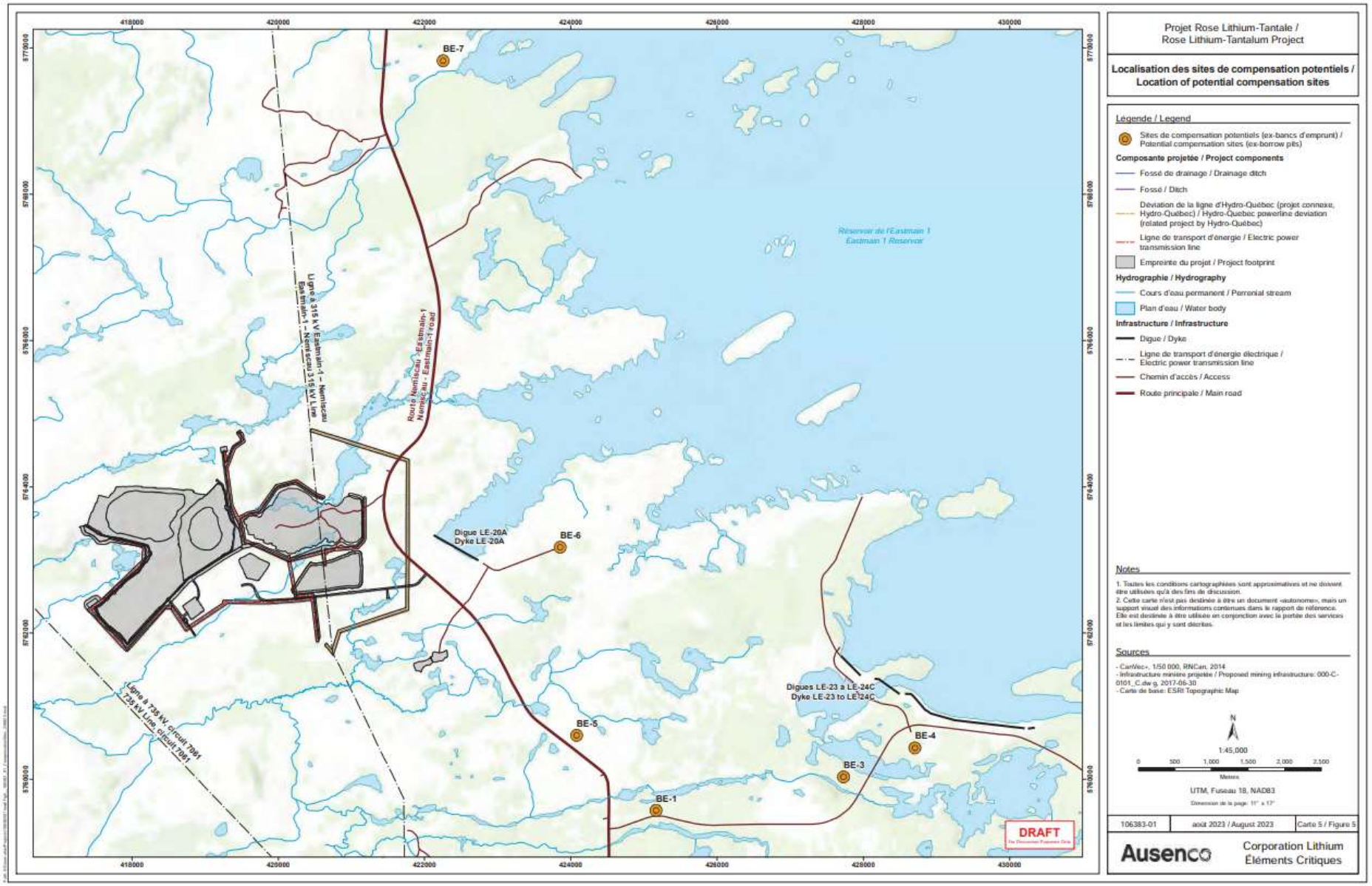
This plan was developed by Ausenco in collaboration with the Cree communities, and adapted according to suggestions made by the tallymen. It was the subject of consultations in 2023.

A total of 6 potential compensation sites are proposed, consisting of former borrow pits to be restored in the form of shallow marshes and ponds (Figure 6).

Sites BE-1, BE-3 and BE-4 are located on the territory of tallyman R19. The tallyman has been met and accepts the proposed concepts. Site BE-5 is located on the territory of tallyman RE01. During meetings with the tallyman, he also proposed 2 other potential sites, BE-6 and BE-7. Site BE-6 offers the creation of a 20-hectare marsh. BE-7 is a potential site for which investigations are required.

Based on community consultations, the wetlands compensation plan is deemed satisfactory.

Figure 6 Location of wetland compensation sites



4.4 Emergency Response Plan

Critical Elements has developed an emergency response plan that addresses both the construction and operating phases, ensuring a rapid and effective response when an emergency situation arises. It was developed by identifying risks on site and in the immediate environment.

The main objectives are :

- Gather all the information needed to prevent dangerous situations and to intervene appropriately when such situations arise;
- Reduce the risk of accidents that could have harmful consequences on the health and safety of personnel and the surrounding population;
- Propose effective means of intervention to minimize damage in the event of such an accident occurring despite the mitigation measures in place.

Emergency situations identified and addressed, including these for the construction sector:

- Spillage of petroleum products
- Fire and/or explosion of petroleum products
- Uncontrolled explosion
- Theft of explosives.
- Road accident involving hazardous materials.
- Traffic accident
- Missing person
- Camp (Flammable gas leak, Building fire, Water contamination, Epidemic)
- Criminal act / vandalism
- Eastmain 1 reservoir le-20a dam failure
- Forest fires
- Exceptional weather conditions.

Roles and responsibilities are defined, as well as a process for triggering the emergency response plan. The scale of the response (correlated with the severity of a situation) varies according to several factors, such as :

- type of incident (spill, fire, complaint, etc.) ;
- the nature of the product involved, if applicable ;
- incident location and context;
- impact on workers, on the population, on the environment ;
- media coverage of the incident;
- the risk of lawsuits and claims.

Table 4 shows the three levels of intervention that have been defined in order to respond adequately to an emergency situation. These levels enable a process of progressive mobilization of resources to ensure a response adapted to the severity of the problem.

Table 4 Definition of the three levels of emergency response

Level 1 – Situation controlled on site	Emergencies can be resolved by immediate and safe intervention of the first witness, after informing the sector supervisor, with the help of other nearby workers. No evacuation is necessary. The situation has no major impact on operations or the environment.
	Examples: *Injury not requiring hospitalization, controlled spill of a product known to workers, for which personal protective equipment is not necessary, such as a small spill of a petroleum product, or a fire quickly controlled with an extinguisher.*
Level 2 – Internal resource intervention	Emergencies that cannot be safely resolved by the first witness. He/she must contact the sector supervisor who will contact the emergency response coordinator who will assess the situation and, if necessary, request additional assistance from internal resources (e.g. mechanics, electricians, etc.) and/or external resources (e.g. ambulance, contractor, etc.). Local evacuation may be necessary
	Examples: *Incident involving an injured person requiring transport to hospital, spill requiring soil remediation, fire, etc.*
Level 3- External resource intervention	Emergencies that cannot be safely resolved by the first witness. The situation requires the intervention of specialized internal resources as well as external resources (fire safety service, Sureté du Quebec, ambulance, environmental emergency service, etc.). Local or site evacuation may be required. The situation may have an impact outside the site.
	Examples: *Death, fire, risk of spreading outside the site, spill reaching watercourse, explosion, etc.*

Response procedures have been drawn up in line with the main accident scenarios likely to occur.

The communication chain and a resource directory are also specified. The plan will be updated regularly. It will be used for training purposes, and simulations are also planned.

5. Characterization and Results

Given that the mining project is in the pre-construction phase, there are no specific environmental monitoring requirements. The 2023 surveys were carried out to update certain information, pertaining mainly to surface water and sediments, groundwater and fish habitats. Bird surveys were planned, but due to forest fires, these were postponed until spring 2024.

5.1 Surface Water and Sediments

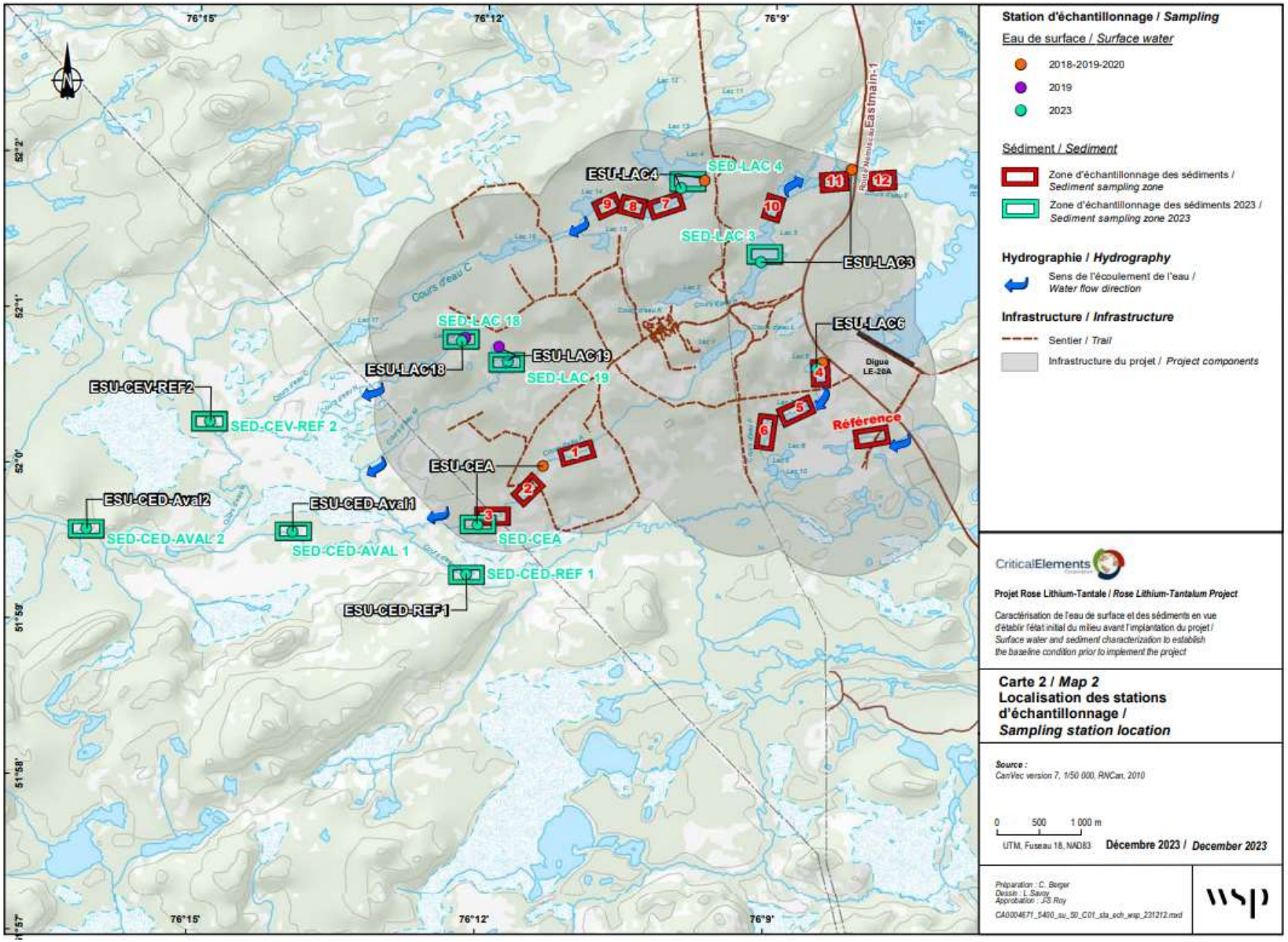
A complementary characterization of surface water and sediments in 2023, aimed at gathering additional data to establish the initial state of the environment prior to the development of the Rose project (WSP 2024). The main objective of the study was to meet Conditions 9 and 12 of the September 2022 COMEX Analysis Report, and Condition 3.20.1 of the Declaration.

Sampling was carried out from May to October 2023 (surface water) and in September and October 2023 (sediment) during four separate campaigns: stream A, as well as lakes 3, 4 and 6. Lakes 18 and 19, which had been sampled during the 2019-2020 campaign, were also included. Finally, four new stations located either downstream or upstream of the future mine effluent were sampled.

With regard to sediments, a total of seven stations were sampled. This includes two stations for which sediment had already been sampled in 2018-2020, on Stream A and Lake 3. One new sediment sampling station, for which surface water only had been characterized in 2019-2020, was also sampled, on Lake 18. Four new stations were sampled for sediment: two downstream stations on Stream D, one upstream station on Stream D and one upstream station on Stream V.

Figure 7 shows the location of sampling points. Analytical parameters selected for surface water included metals and metalloids (including lithium and tantalum), anions and cations, nutrients and fecal coliforms, while for sediments, C10-C50 petroleum hydrocarbons, inorganic compounds (including total mercury and total sulfur), total organic carbon, percentage of moisture and particle size were also measured.

Figure 7 Location of sampling stations (surface water and sediment)



Source: WSP 2024 Characterization of surface water and sediments to establish the initial state of the environment prior to project implementation.

With regard to surface water results, overall, surface water in the study area showed an acid pH, with values frequently below 6.5, the criterion established by the MELCCFP for the protection of aquatic life.

Dissolved oxygen concentrations were generally adequate for ichthyological fauna. Specific conductivity was generally low. Surface water in the study area had low suspended solids concentrations, low turbidity and total dissolved solids concentrations ranging from 13 to 110 mg/L.

Water hardness was also very low. Ammoniacal nitrogen was generally not detected. Nitrite-nitrate was occasionally detected in very low concentrations. Total phosphorus concentrations were well below the 30 µg/L criterion for the protection of aquatic life. As for metals, exceedances of the CVAC (chronic effects) for aluminum were noted in a large proportion of the 2023 surface water samples.

Overall, the water in the study area is representative of the quality expected for a natural environment in the James Bay region, i.e. good quality, low in mineralization and nutrients.

For sediment, exceedances of the various parameters are summarized in Table 5. For comparison, results obtained during previous campaigns are also shown.

Table 5 Summary of exceedances of sediment criteria (2018-2023)

Parameter	Criteria	Location
Arsenic	CER	Watercourse A (2018) Lake #3 (2023) Lake 4 (2018 and 2023) Lake 6 (2018)
	CSE	Watercourse A (2018) Lake 4 (2018, 2023) Lake 6 (2018)
	CEO	Watercourse A (2018) Lake 4 (2023)
	CEP	Lake 4 (2018)
Cadmium	CER	Watercourse A (2018) Lake 3 (2018, 2023) Lake 4 (2023) Lake 6 (2018)
	CSE	Lake 3 (2018, 2023) Lake 4 (2018, 2023) Lake 6 (2018)
Chrome	CER	Watercourse A (2018) Lake 3 (2023) Lake 4 (2023) Lake 6 (2018)
	CSE	Lake A (2018) Lake 3 (2018)
	CEO	Lake D (2023)
Copper	CER	Watercourse A (2018) Lake 3 (2018, 2023) Lake 4 (2023) Lake 6 (2018) Lake 18 (2023)
	ESC	Watercourse A (2018) Lake 6 (2018)
	CEO	Lake 3 (2018)
Mercure	CER	Lake 3 (2018, 2023) Lake 4 (2018) Lake 6 (2018, 2023) Lake 19 (2023)
	CSE	Lake 3 (2023) Lake 4 (2023)

Caption:
CER Concentration of rare effects
CSE Concentration producing an effect.
CEP Concentration producing a probable effect
CEO Concentration of occasional effects

Finally, for tantalum and lithium, when detected, these metals were at low concentrations well below the established thresholds.

5.2 Groundwater

During 2023, two groundwater sampling campaigns were carried out in 20 observation wells to acquire more data on the current state of this component prior to the establishment of the mining project. The same parameters as in previous years were analyzed, and compared with the Resurgence in Surface Water (RES) criteria in the “Guide d'intervention - Protection des sols et réhabilitation des terrains contaminés” of the Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs, since the potential receptors are streams and lakes. In addition, an alert threshold has been defined equal to 50% of the RES criteria value.

The pH values measured on groundwater samples taken in May ranged from 3.22 to 9.67, and from 4.80 to 9.61 during the September sampling.

Several observation wells exceeded RES criteria for silver and copper. Only one well exceeded the alert threshold for barium. During the May campaign only, one well showed a lead concentration exceeding the alert threshold. In total, three wells exceeded the alert threshold for zinc or RES criterion (2 in May, 1 in September) and one exceeded the alert threshold for manganese in September.

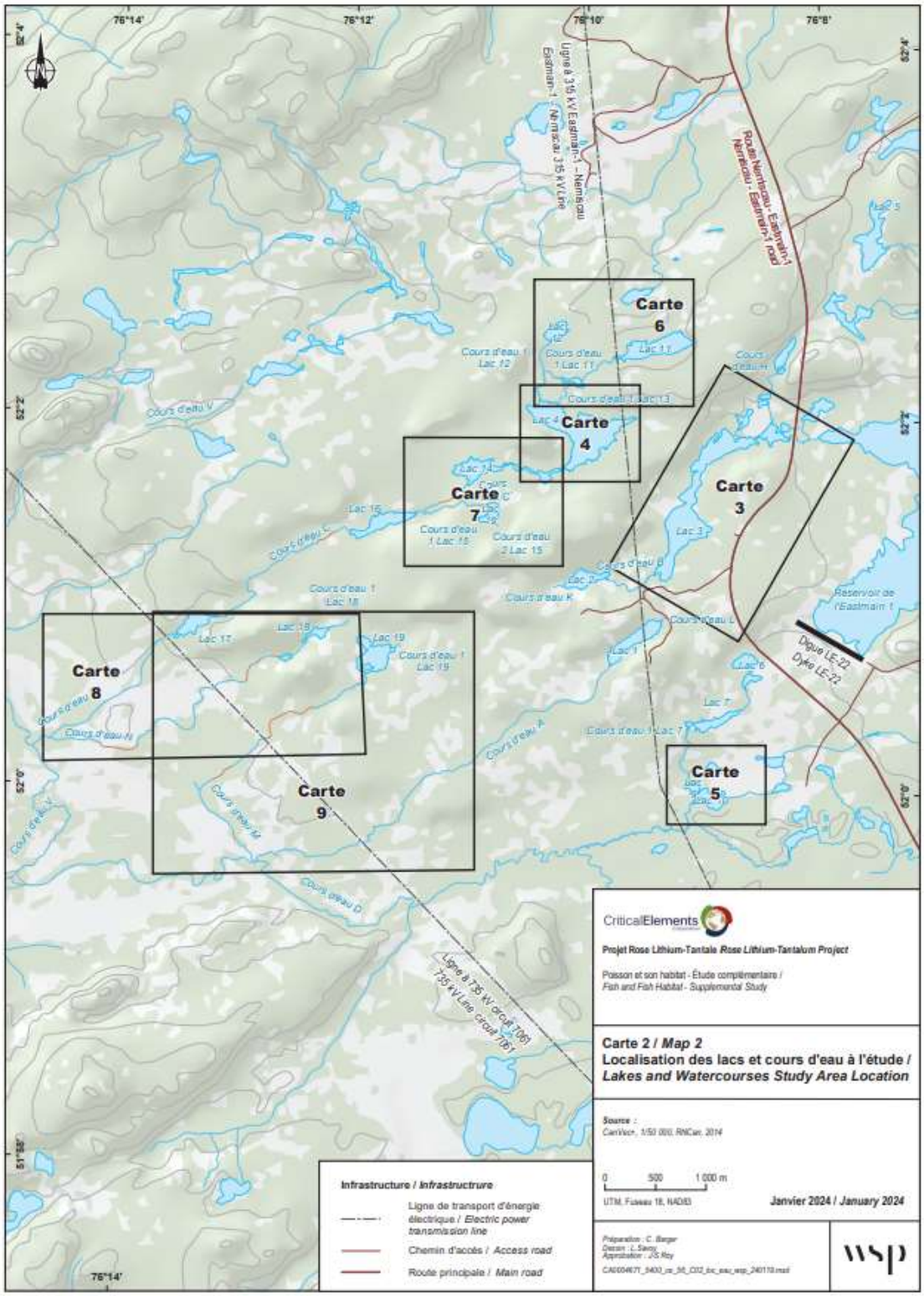
These results are used to establish a baseline for groundwater quality prior to mine construction and operation.

5.3 Fish and Fish Habitat

Additional fish habitat characterization was carried out in 2023. The sampling program originally established called for a total of six campaigns to be carried out between May and October. The purpose of these campaigns was to simultaneously carry out fish habitat inventory activities aimed at finalizing the baseline condition of the receiving environment. However, massive forest fires in the James Bay region prevented the June and July campaigns from taking place. Work then resumed on a condensed schedule in August, September and October. Figure 8 shows the lakes investigated.

Bathymetric surveys were carried out on all study lakes to determine their main morphometric characteristics, i.e. surface area, volume, perimeter, maximum depth and average depth. Physicochemical surveys were carried out at the lakes' maximum depths. Temperature, dissolved oxygen, conductivity and pH data were collected at 0.5 m depth. Thereafter, temperature and dissolved oxygen were measured at every meter until the maximum lake depth was reached.

Figure 8 Location of lakes and rivers



In addition, environmental DNA sampling was carried out in 2023 on three streams located on the periphery of the mine site to determine the fish species potentially present. Sites offering spawning potential for brook trout (Salvelinus fontinalis), northern pike (Esox lucius), yellow perch (Perca flavescens), walleye (Sander vitreus) and lake whitefish (Coregonus clupeaformis) were located using GPS and characterized by noting, for each: dimensions, water depth, substrate characteristics (grain size, slope, presence of organic matter or periphyton) or vegetation (species, density).

The following tables summarize lake and river characteristics and key observations for 2018 and 2023.

Table 6 Summary of lake characteristics in 2018 and 2023

Location	Survey Year(s)	Surface Area (ha)	Average Depth (m)	Maximum Depth (m)	pH (values in situ, min and max)	Dissolved Oxygen (values, min and max, mg/L)	Dominant species	Other confirmed species	Limiting factors for the ichthyological fauna
Lake 3	2016 and 2023	33.38	3.6	12	5.86-6.0-	8.98	COCL CACO ESLU	LOLO COPL COBA PEFL	- Dissolved oxygen and pH can be limiting - Diversified habitat - tributary with numerous obstacles to fish migration
Lake 4	2018 and 2023	26.4	3.5	9.3	6.47-7.29	7.5-13.0	ESLU	…..	- dissolved oxygen may be limiting in the summer period - Waterways with numerous obstacles to fish migration
Lake 6	2018 and 2023	4.0	1.0	2.7	5.05-6.96	5.4-10.3	ESLU	…..	- Dissolved oxygen may be limiting in the summer period
Lake 7	2018	3.1	1.0	3.5	6.52	6.9	ESLU	…..	- Dissolved oxygen can be limiting
Lake 8	2023	1.1	3.24	6.4	6.13	9.0	ESLU	…..	- Dissolved oxygen and pH can be limiting - Underground waterway
Lake 11	2023	10.4	0.49	1.1	6.1	9.0	COPL PEFL	CACO MAMA	- Dissolved oxygen and pH can be limiting
Lake 12	2023	2.8	0.55	1.2	6.2	9.95	CUIN	…..	- Dissolved oxygen and pH can be limiting - Waterways present obstacles to fish migration
Lake 13	2023	1.0	0.49	1.1	5.73	7.57	CHEO	PEFL CACP CUIN	- Dissolved oxygen and pH can be limiting - Waterways present obstacles to fish migration
Lake 14	2018	6.2	1.8	5.2	7.06	7.0	ESLU	PEFL	- Dissolved oxygen can be limiting - Waterways present numerous obstacles for fish migration
Lake 15	2018	2.1	0.6	1.5	7.20	7.5	SAFO	MAMA SECO	- Dissolved oxygen can be limiting during the summer and winter periods - Waterways present numerous obstacles to fish migration
Lake 16	2018	6.2	0.5	1.5	7.05	6.9	COPL CACO MAMA	SAFO CUIN	- Dissolved oxygen can be limiting - Waterways present numerous obstacles for fish migration
Lake 18	2018 and 2023	1.2	n.d.	0.9	7.32	7.8	CUIN	SAFO	- Shallow water depth - Weak water supply - Dissolved oxygen can be limiting during the summer and winter periods - Waterways present numerous obstacles to fish migration
Lake 19	2018 and 2023	7.9	1.6	3.5	7.64	8.4	CACO MAMA	SAFO	- Dissolved oxygen can be limiting during the summer and winter periods - Waterways present numerous obstacles to fish migration

n.d. not determined

Legend

CACO White sucker
COBA Mottled sculpin
COPL Lake chub
CUCIN Brook stickleback
ESLU Northern Pike
MAMA Northern Pearl Dace
PEFL Yellow perch
SAFO Brook trout
SECO Fallfish

Table 7 Summary of river characteristics in 2018 and 2023

Location	Survey Year(s)	Total Length (m)	Characterized length(m)	Obstacle au libre passage du poisson	Dominant Species	Other confirmed specifies	Total density (n/100 m2)	Habitat of interest - Remarks
Watercourse C	2016 and 2018	5 248	3 250	Yes, beaver dams, underground waterflow, and waterfalls	SAFO COBA	COPL CUIN	11 to 76	Several potential spawning grounds for northern pike and one potential spawning ground for brook trout
Watercourse G	2016 and 2023	121	121	Yes. Beaver dams	PEFL	COPL CACO	n.d.	Aquatic vegetation for pike and yellow perch spawning
Watercourse H	2016 and 2023	194	194	Yes, waterfalls	No capture		S.O.	Aquatic vegetation for pike and yellow perch spawning
Watercourse I	2016 and 2023	38	38	Blocks, shallow depth, underground	No fishing due to shallow depth		S.O.	Does not represent a fish habitat
Watercourse J	2016 and 2023	102	102	No	CUIN	-	n.d.	Riverside vegetation for pike and yellow perch spawning
Watercourse K	2016 and 2023	102	102	Yes, underground waterflow	The watercourse K does not represent a fish habitat			
Watercourse M	2018	3 332	3 332	Yes, underground waterflow, beaver dams, natural threshold, and waterfalls	CUIN	MAMA	130	Riverside vegetation for pike and yellow perch spawning
Watercourse N	2018	3 440	3 440	Yes, beaver dams, underground waterflow, and waterfalls	SAFO	---	34	Two potential spawning grounds for brook trout
Lake8-CE1	2023	188	188	Yes, underground waterflow	The watercourse Lake8-CE1 does not represent a fish habitat			
Lake11 CE1	2023	499	499	No	CACO	MAMA	n.d.	eDNA sample
Lake12-CE1	2023	579	579	Yes, beaver dams, underground waterflow, and waterfalls	MAMA	CACO LOLO	n.d.	Outlet of Lake 13. eDNA sample
Lake12-CE2	2023	353	353	Yes, beaver dams, underground waterflow, and waterfalls	Outlet of lake 12 obstructed by a beaver dam. Very reliable and diffuse flow at the time of the surveys. Could potentially provide habitat without the presence of the dam.			
Lake13-CE1	2023	No watercourse present						
Lake15-CE1	2023	No watercourse present						
Lake15-CE2	2023	56	56	Yes, underground waterflow	-	-	n.d.	Downstream, the watercourse is more like a bay of the lake. Coarse substrate to provide shelter. eDNA sample
Lake18-CE1	2023	233	233	Yes, underground waterflow	SAFO	CUIN	n.d.	Stone shelter
Lake19-CE1	2023	79	79	Yes, underground waterflow	SAFO	CUIN	n.d.	Stone shelter

Legend

CACO White sucker
COBA Mottled sculpin
COPL Lake chub
CUCIN Brook stickleback
ESLU Northern Pike
MAMA Northern Pearl Dace
PEFL Yellow perch
SAFO Brook trout
SECO Fallfish

Based on the updated hydrogeological study, WSP has updated the assessment of fish habitat losses. Habitat losses were reduced from 42.3 ha to just under 27 ha.

6. Mitigation Measures

Project mitigation measures were developed as part of the environmental assessment. At this stage of the Project, no changes to these mitigation measures or additional measures have been considered.

7. Anticipated Change to the Project

Other than the relocation of the workers' camp, there are no anticipated changes to the project. As previously mentioned, updated hydrogeological modelling shows that the groundwater drawdown wells are not required. These would have gone into service after several years of operation. Groundwater monitoring during the construction phase will enable us to validate the hydrogeological model.

8. Conclusion

Critical Elements is currently in the pre-construction phase of the Project. In order to meet the requirements set out in the Declaration of Decision and Authorization of the provincial ministerial, Critical Elements has formed a multidisciplinary team and retained the services of qualified and recognized firms to assist in the development of the Project, applying industry best practices. Through communications, exchanges and community consultations, the team is carefully and prudently involved in the development of the Project.

During the course of 2023, certain permits were issued, and a number of conditions were met. In 2024, the team will continue the search for financing, detailed engineering and the process of obtaining authorizations to begin construction.

The 2024 annual report will be submitted by March 31, 2025.

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