



**Environmental and Social Impact
Assessment for the Troilus Mine Project**

LAND AND RESOURCES USE

Environmental and Social Impact Assessment for the Troilus Mine Project

LAND AND RESOURCES USE

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Abbreviations and acronyms

AMW	Albanel-Mistissini-Waconichi
ATR	Regional Tourism Association
ATV	All-terrain vehicles
BNE	Bail non-exclusif (Non-exclusive leases)
CNWA	Canadian Navigable Waters Act
EIJBRG	Eeyou Istchee James Bay Regional Government
ESIA	Environmental and Social Impact Assessment
FA	Fisheries Act
GBA+	Gender-based analysis plus
JBNQA	James Bay and Northern Quebec Agreement
IAA	Impact Assessment Act
LADTF	Loi sur l'aménagement durable du territoire forestier (Sustainable Forest Development Act)
LAU	Land Use Planning and Development Act
LCMVF	Loi sur la conservation et la mise en valeur de la faune (Act respecting the conservation and development of wildlife)
LEMV	Loi sur les espèces menacées ou vulnérables (Act respecting threatened or vulnerable species)
LSA	Local Study Area
LQE	Loi sur la qualité de l'environnement (Environment Quality Act)
MBCA	Migratory Birds Convention Act
MBJ	Municipality of Baie-James
MDDELCC	Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques (Ministry of Sustainable Development, the Environment and the Fight against Climate Change)
MELCCFP	Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs (Ministry of Environment, the Fight Against Climate Change, Wildlife and Parks)
MTMD	Ministère des Transports et de la Mobilité durable
MRNF	Ministry of Natural Resources and Forests
NPP	Navigation Protection Program
PDA	Project Development Area
PWC	Personal watercraft
RAMHHS	Règlement sur les activités dans des milieux humides, hydriques et sensibles (Regulation respecting activities in wetlands, bodies of water and sensitive areas)
RFA	Régime forestier adapté (Adapted Forestry Regime)
RLRUP	Regional Land and Resource Use Plan
RMC	Regional County Municipalities
RPEP	Règlement sur le prélèvement des eaux et leur protection (Water Withdrawal and Protection Regulation)
RSA	Regional Study Area
SÉPAQ	Société des établissements de plein air du Québec

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TNO	Unorganized territory
TSF	Tailing storage facility
UA	Unités d'aménagement (Management Units)
UGAF	Unité de gestion des animaux à fourrure (Furbearer Management Units)
VC	Valued Component

19. Land and Resources Use

Land and resource use includes activities and infrastructure related to land use, including waterways, for recreational, commercial and navigational purposes.

Assessment of the environmental impacts of the Valued Component (VC) Land Use is linked to several other components, including:

- Atmospheric Environment (Chapter 8) and Acoustic Environment (Chapter 9), given that project activities may result in land use disturbance due to dust emissions, light disturbance, vibration or noise.
- Hydrology (Chapter 11) and Surface Water Quality (Chapter 12) as well as Hydrogeology (Chapter 13) and Groundwater Quality (Chapter 14), since changes in water quality and quantity can influence navigation and aquatic activities, the use of surface and groundwater resources, and the harvesting and consumption of wildlife (aquatic, terrestrial and avian)
- Vegetation, Riparian and Wetland Environments (Chapter 16), since changes in vegetation, such as the disappearance and/or alteration of plant communities, can affect activities related to the use of this vegetation, such as harvesting, forestry, etc.
- Terrestrial and Avian Fauna (Chapter 17), since this component is linked to hunting and trapping activities in a subsistence or recreational context.
- Fish and Fish Habitat (Chapter 18), since changes affecting fish and fish habitat can disrupt subsistence or recreational fishing activities.
- Health (Chapter 22), since changes in the quality of plants, fish and animals harvested and used for food may affect the health of those who consume them.
- Landscape (Chapter 23), since changes to the landscape can disrupt the way people locate and move around, as well as the recreational uses associated with the land.
- Rights and Interests of the Cree (Chapter 24), since the project is located on a territory where the Cree Nation has recognized hunting, fishing and trapping rights, among others.

19.1 Scope of Assessment

This section defines and describes the scope of the assessment of potential impacts on Land and Resources use.

19.1.1 Regulatory and Policy Setting

The analysis of environmental impacts on the VC land use has been prepared in compliance with the federal environmental assessment procedure. Section 22 (1) of the Impact Assessment Act (2019) stipulates the elements that must be addressed in an impact assessment. Among these elements, this section considers changes to the environment, health, social or economic conditions, the interaction of sex and gender with other identity factors (GBA+), and indigenous populations. This impact assessment

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has also been conducted in accordance, at the provincial level, with the specific environmental assessment provisions applicable to James Bay and Northern Quebec (chapter Q-2, r. 25) under the James Bay and Northern Quebec Agreement (JBNQA). Section 22 of the JBNQA establishes the principles and guidelines for environmental and social protection applicable to the region south of the 55th parallel and ensures the privileged participation of Indigenous peoples in the environmental assessment process. In summary, the assessment of environmental impacts on the Land and Resources Use VC is therefore based on the federal government's Tailored Impact Statement Guidelines for the Troilus mining project and the Ministry of Environment, the Fight Against Climate Change, Wildlife and Parks (MELCCFP) Directive (Appendix A.1).

In addition to defining the applicable environmental protection regime, the JBNQA establishes the territorial regime (Chapter 5) and defines the various categories of land, and the uses authorized on them. These lands are also designated and delimited under the Act respecting the land regime in the James Bay and New Québec territories. Cree hunting, fishing and trapping rights are also set out in the JBNQA (chapter 24).

Other federal and provincial laws are also relevant to the assessment of this VC, as they govern fishing and hunting activities, as well as the protection of biological components such as wetlands, waterways and species of interest, and are related to the permits and authorizations required to carry out project activities. These laws include the Fisheries Act (FA), the Migratory Birds Convention Act (MBCA), the Species at Risk Act (SARA) and the Canadian Navigable Waters Act (CNWA), applicable at the federal level, and the Mining Act, the Environmental Quality Act (LQE), the Mining Industry Directive 019, the Act respecting Threatened or Vulnerable Species (LEMV), the Act respecting the conservation and development of wildlife (LCMVF), the Regulation respecting activities in wetlands, bodies of water and sensitive areas (RAMHHS) and the Sustainable Forest Development Act (LADTF) at the provincial level.

At the level of the Eeyou-Istchee James Bay government, "Zoning By-law No. 213.1" is applicable on government territory, excluding Category I and II lands and former municipalities constituted prior to the coming into force of the James Bay Region Development Act (R.S.Q., c. D-8). As the project is located on this territory, it must comply with the regulations in force, and applications for permits and authorizations for the construction and operation of the project will also be required under this Act. Finally, the Cree Nation Mining Policy established by the Cree Nation Government must be considered in the project and impact assessment.

The CNWA protects the public's right to navigation and regulates activities that may interfere with this right. Navigable waters are defined in Section 2 of the Act as:

"body of water, including a canal or any other body of water created or altered as a result of the construction of any work, that is used or where there is a reasonable likelihood that it will be used by vessels, in full or in part, for any part of the year as a means of transport or travel for commercial or recreational purposes, or as a means of transport or travel for Indigenous peoples of Canada exercising rights recognized and affirmed by section 35 of the Constitution Act, 1982, and

- **a)** there is public access, by land or by water.
- **b)** there is no such public access but there are two or more riparian owners; or

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- **c)** Her Majesty in right of Canada or a province is the only riparian owner. (*eaux navigables*)".

Irrigation canals and artificial drainage trenches are excluded from the definition of navigable waters. A list of navigable waters is presented in Appendix I of the CNWA.

The directives laid down in the CNWA are implemented and enforced via the Navigation Protection Program (NPP). Depending on the type of structure, an application for approval or an exemption may be submitted to the NPP.

The Minor Works Order lists the minor works that may be exempted from approval by the NPP if they comply with the requirements predetermined in the Order. The Minor Works Order also lists minor works that are exempt from the requirement to apply for approval, but subject to a requirement to submit information to the NPP and to provide public notice. Under the Major Works Order, it is mandatory to apply to the NPP for approval of such works, whether they are planned on navigable waters classified in Schedule I of the CNWA. Articles 21, 22 and 23 of the CNWA list the works and activities that are prohibited on classified and unclassified navigable waters:

- The throwing or depositing of materials, such as mine tailings, into navigable waters or waters flowing into navigable waters.
- Activities that lower the water level of a navigable waterway so that navigation is impossible.

Exemptions to these prohibited works may be requested under section 24 of the CNWA. (Transport Canada, 2025a).

19.1.2 Influence of Consultation and Engagement

From the outset of the project, Troilus Gold Corp (Troilus) has engaged in an extensive consultation and communication process with various project stakeholders, as presented in section 4 of the Environmental and Social Impact Assessment (ESIA) report.

Table 19.1 below presents the main comments received from land users, stakeholders and members of the Cree Nation regarding land and resource use, and how these comments have been addressed in this section.

Table 19.1 Summary of Key Information, Indigenous Knowledge, and Concerns for the Project related to Land and Resources Use

Topic	Key Information, Indigenous Knowledge, and Concerns	Influence on the Assessment	Where Information is Addressed in the ESIA
Loss of harvesting sites	Tallymen reported that during the first phase of the mine, traditional activities were avoided within a radius of 12 km due to dust, and that sandstorm-like events (wind transport of fine particles from the tailing storage facility (TSF)) were observed even 5 to 10 years after closure. Moose had left the area during the first phase of the mine but have returned since closure. Accumulation	Dust emission problems associated with the old project are well known, and measures to reduce or eliminate these problems during the new operation have been developed.	Section 17.1.2 Section 18.1.2 Section 4.2.7 Atmospheric modelling report in Appendix H1 of the ESIA

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Topic	Key Information, Indigenous Knowledge, and Concerns	Influence on the Assessment	Where Information is Addressed in the ESIA
	areas are perceived as barriers. Tallymen recommend gentler slopes and the planting of local vegetation (e.g. willows).		
Reduced harvesting success	Excessively steep slopes for developments such as existing lay-bys, which can impede wildlife movement. Users raise a few concerns about the quality and availability of aquatic wildlife, particularly walleye.	Several landings will be installed on infrastructures such as waste rock piles and the TSF. Slope geometry will be at least 2.5:1V. Passages for large wildlife may be created during closure to allow them to move freely around the site. An aquatic wildlife monitoring program will be implemented as part of the environmental impacts monitoring programs planned for operating mines.	Section 19.4.1.2 Chapter 18
Nuisances	Land users have expressed concern about noise and vibration nuisance for hunting and nearby camps (former mine operations). Sources identified include heavy vehicle noise (back-up alarms, unloading, etc.). During blasting activities, vibrations could be felt at their camps.	The camps located at Lake A will be moved out of the area where impacts could be felt as soon as the mine is built.	Section 9.1.2 Section 19.4.1.2
Air quality	Land users have expressed concerns about the impact of dust on wildlife and human health, including the presence of silica and cyanide.	Troilus indicates that cyanide is not intended for use in the process.	Section 19.4.1.2 Section 8.4.2
Water quantity / quality	Land users have expressed concern about the need to locate drinking water sources and monitor water quality and quantity.	A drinking water well will be installed in the area where land users are to be relocated. A drinking water quality monitoring program may be implemented by Troilus. An environmental monitoring program has been presented to the MELCCFP and land users and is currently being implemented. Troilus has added additional monitoring at the request of land users. Monitoring results are sent to the MELCCFP and the Cree community of Mistissini. A presentation of the results was also made at the Advisory Committee meeting of March 12, 2025.	Section 12.1.4 Section 14.1.2

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Topic	Key Information, Indigenous Knowledge, and Concerns	Influence on the Assessment	Where Information is Addressed in the ESIA
Coexistence of uses	The Nibiischii Corporation emphasized the need for the Troilus project to have no impact on tourism activities offered and practiced within the reserve. Lake A camps will be located within the study area.	Troilus is committed to working with the Nibiischii Corporation to implement specific mitigation measures to reduce the project's impact on recreational activities offered by the Nibiischii Corporation and wildlife reserve visitors. Among these measures, Troilus will be able to adapt travel schedules to summer periods, establish a procedure for communicating activities and ensure tourist safety by implementing a traffic procedure on the North Road. Mitigation measures with other VCs such as air quality and the acoustic environment will also help reduce the project's impact on the quality of recreational activities offered in wildlife reserves. Troilus is committed to relocating camps located in the Lake A sector.	Section 19.4.1.2 Section 20.4.3.2
Atmospheric quality (luminosity)	The Nibiischii Corporation raises concerns about light pollution from the mine site that could disrupt future activities in the Assinica reserve, which is expected to become a Dark Sky Reserve.	Troilus is committed to implementing recommended lighting best practices to reduce the project's impact on ambient light levels.	Section 8.4.3 Section 19.4.1.2
Restoration	The tallymen indicate that it will be important to consider the needs and desires of future generations when planning for mine closure. Land users have expressed concerns about vegetation that has not returned to normal after reclamation of the former mine, and about the follow-up approach to vegetation recovery. They recommend providing passageways for large wildlife during closure and restoring the site with native vegetation attractive to moose and large wildlife.	The closure plan will be drawn up in partnership with land users, to respect their future use of the site. Troilus will be obliged to restore the site at the end of operations. Inspections will be carried out and documented in an annual report.	Section 17.1.2 Appendix D

19.1.3 Potential Impacts, Pathways and Measurable Parameters

Based on the expertise of specialists in the environmental assessment of projects, including some in the mining sector, at both the provincial and federal levels, a list of the project's potential impacts on land and resource use has been drawn up. This list also reflects the concerns and comments received during the

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consultation and engagement process with the various stakeholders concerned by the project. Table 19.2 presents the project's potential impacts on land and resource use, their respective pathways and the measurable parameters, where possible, of the changes caused by the project.

As not all impact pathways are quantifiable (e.g. nuisance), some have been described qualitatively, based on existing literature, experience with similar projects and professional judgment.

Table 19.2 Potential Impacts, Impacts Pathways and Measurable Parameters for Land and Resource Use

Potential Impact	Impact Pathways	Measurable Parameters and Units of Measurement
Change in current Cree land and resource use	Project construction and operation could result in: Loss of harvesting sites (hunting, fishing, trapping and gathering) Reduced resource harvesting success Nuisances and disturbances in neighbouring areas (noise, vibrations, dust, lighting, traffic).	Number of sites/areas affected. Areas where various uses overlap. Areas where changes, restrictions or disturbances affect resource use. Sensory disturbances affecting harvesting.
Changes in recreational land and resource use	Project construction and operation could: Reduce the quality of designated conservation areas (Lac Albanel, Mistassini and Waconichi wildlife reserves). Reduce the quality of areas/sites used for recreational activities (outfitters). Cause nuisance and disturbance in neighbouring areas (noise, vibrations, dust, lighting, traffic). The project could encroach on and/or disturb park and reserve areas, as well as recreational areas offering various leisure activities. The project's impacts on fish and fish habitat, as well as on wildlife, may disrupt the availability of these resources, and thus fishing and hunting activities. The project may affect the use of parks, reserves and recreational areas through sensory disturbance and nuisances such as noise, landscape disturbance, etc.	Number of parks, reserves and recreational areas in the vicinity of the affected PDA. Change in area of parks/reserves and recreational use areas (hectare). Areas currently used for recreation that could be restricted (hectare). Number of nearby recreational sites/areas. Intensity of use of the area (e.g. number of visitors per year, percentage of non-Indigenous fishing in reserves, etc.). Change in qualitative perception of recreational areas.
Change in navigation	The project could encroach on rivers and lakes used for navigation.	Change in qualitative use of navigable waters. Length of waterways disturbed (metres).

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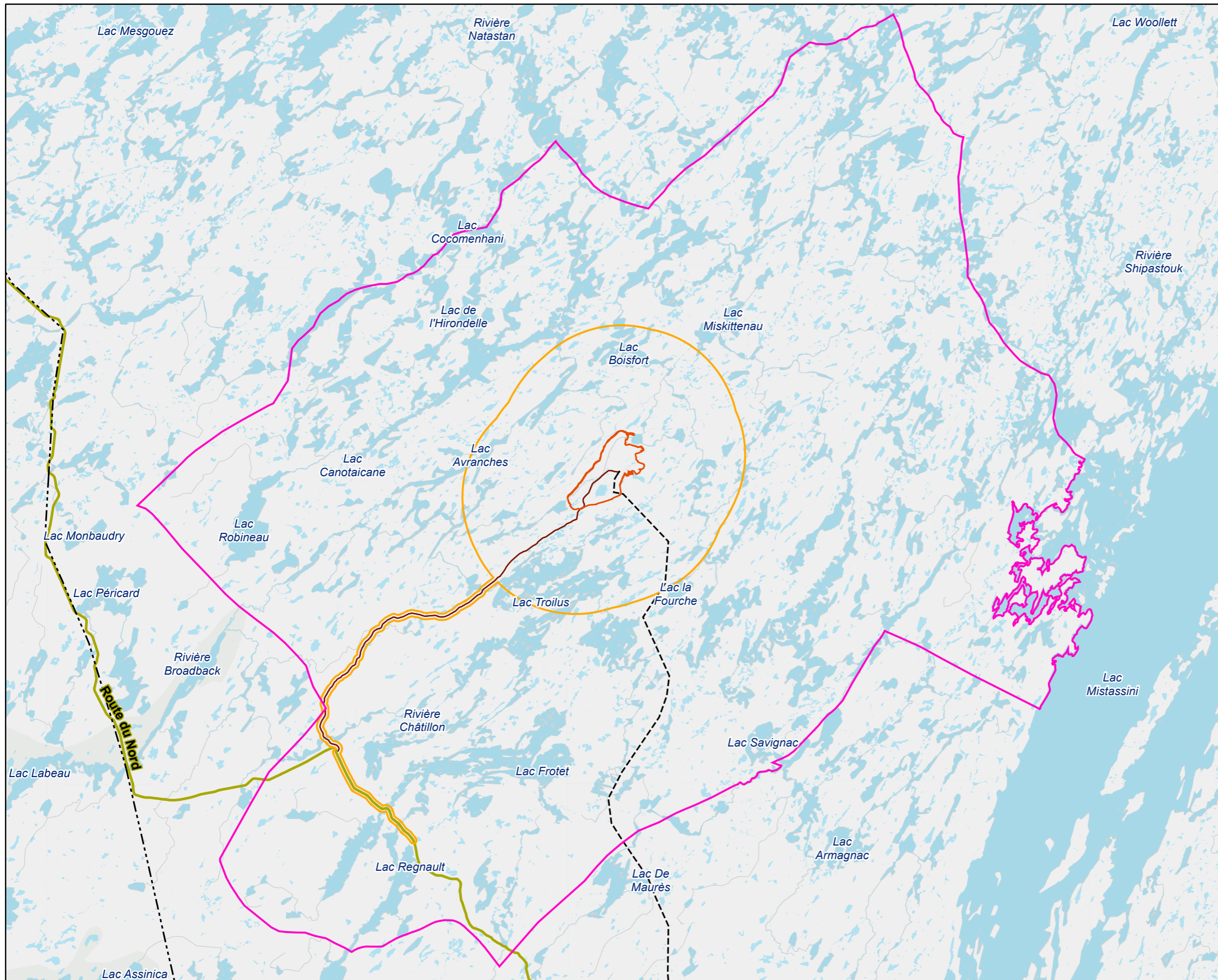
19.1.4 Boundaries

19.1.4.1 Spatial Boundaries

The Project Development Area (PDA) encompasses the Project footprint and is the anticipated area of physical disturbance associated with the construction, operation and decommissioning/closure of the Project. The PDA includes pits, overburden piles, haul roads, ore stockpiles, buildings, plant and other infrastructure required for mining activities.

For the land and resource use VC, the LSA covers the area where impacts on land and resource use (e.g. noise, loss/disturbance of habitats used for hunting, trapping and fishing, etc.) are most likely to occur. These spatial boundaries therefore consider the study areas selected for other VCs affecting land and resource use. The LSA for land and resources use thus encompasses the LSAs for Acoustic Environment, Atmospheric Environment, Hydrology and Fish and Fish Habitat, as well as those for Vegetation, Riparian and Wetland Environments, since Cree land and resources use is largely influenced by the distribution of animal species in these areas.

The RSA corresponds to the boundaries of traplines M34, M39A, M40 and M35A, as illustrated on Map 19.1.



LÉGENDE / LEGEND

Composante de projet / Project component

- Zone de développement du projet / Project Development Area
- Zone d'étude locale / Local Study Area
- Zone d'étude régionale / Regional Study Area

Infrastructure

- Ligne de transport d'énergie privée - Actuelle / Private Power Transmission Line
- Ligne de transport d'énergie d'Hydro-Québec / Power Transmission Line Hydro-Québec
- Réseau routier / Road Network
- Route du Nord

Hydrologie / Hydrology

- Étendue d'eau / Waterbody

0				
REV.	DESCRIPTION	DD/MM/YY	BY	VERIF.

RÉFÉRENCES / REFERENCES

- Système de coordonnées / Coordinate system : NAD 1983 CSRS UTM Zone 18N.
- Composante du projet / Project component : BluMetric (2024) & Stantec (2024).
- Ligne électrique / Power line : Ressources naturelles Canada, 2024.
- Réseau routier / Road network : Adresses Québec, 2024.
- Hydrographie / Hydrography : GRHQ - Ministère des Ressources naturelles et Forêts, 2024; Wachih, 2023.
- Imagerie / Imagery : Esri World Imagery, 2023.

NOTES

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PROJET / PROJECT

Étude d'impact sur l'environnement et le milieu social pour le projet de mine Troilus / Environmental and Social Impact Assessment for the Troilus Mine Project

TITRE / TITLE

Zones d'étude de l'utilisation du territoire et des ressources / Land and Resource Use Study Areas



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DESSINÉ G. Anderson	FIGURE NO. 19.1	ED./RÉV. 0

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19.1.4.2 Temporal Boundaries

The temporal boundary of the assessment includes all Project phases, from the start of construction through the end of closure. Based on the current Project schedule, the Project phases include:

- Construction (Year -3 to Year -1)
- Operations
 - Operations phase 1 (Year 1 to Year 21): milling with ore extraction
 - Operations phase 2 (Year 22): milling with no ore extraction
- Decommissioning and closure
 - Active closure (Year 22 to Year 24)
 - Passive closure (Year 24+)

Refer to Chapter 3 of the ESIA (Project Description) for a detailed description of activities anticipated to occur during each phase.

19.1.5 Residual Impacts Characterization

The characterizations used to assess residual impacts on Land and Resource are Use are provided in Table 19.3.

Table 19.3 Characterization of Residual Impacts on Land and Resource Use

Characterization	Description	Quantitative Measure or Definition of Qualitative Categories
Direction	The long-term trend of the residual impact.	<p>Positive - a residual impact that moves measurable parameters in a direction beneficial to land and resource use, relative to the baseline.</p> <p>Adverse - a residual impact that moves measurable parameters in a direction detrimental to land and resource use relative to baseline.</p> <p>Neutral - no net change in measurable land and resource use parameters relative to the reference state.</p>
Magnitude	The amount of change in measurable parameters or land and resources use relative to existing conditions.	<p>No measurable change - no change in the impact on land and resources use can be noted.</p> <p>Low – a measurable change in land and resources use, but residual effects cannot be distinguished from existing conditions within normal range of variability</p> <p>Moderate – a measurable change but not likely to pose a serious risk or benefit to land and resource use.</p> <p>High – a measurable change that is likely to pose a serious risk or benefit land and resources use.</p>

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Characterization	Description	Quantitative Measure or Definition of Qualitative Categories
Geographic extent	The geographical area in which a residual impact occurs.	PDA - residual impacts are restricted to the PDA. LSA - residual impacts extend to the LSA. RSA - residual impacts extend to the RSA.
Timing	Considers when the residual impact is expected to occur, where relevant to the VC.	No sensitivity - Seasonality and timing don't affect land and resources use. Moderate sensitivity - Seasonality and timing may affect land and resources use, but the effects are manageable with proper planning and mitigation measures. High sensitivity - Seasonality and timing have an influence on land and resource use.
Duration	The time required until the measurable parameter or the VC returns to its existing condition, or the residual impact can no longer be measured or otherwise perceived	Short term - the residual impact is restricted to construction (<3 years). Medium-term - the residual impact extends through the operation phase (3 to 24 years). Long term - the residual impact extends beyond the life of the Project (>25 years)
Frequency	Identifies how often the residual impact occurs and how often during the project or in a specific phase	Single event Multiple irregular event - occurs at no set schedule. Multiple regular event - occurs at regular intervals. Continuous - occurs continuously.
Reversibility	Pertains to whether a measurable parameter or the VC can return to its existing condition after the project activity ceases	Reversible - the residual impact is likely to be reversed after activity completion and reclamation. Irreversible - the residual impact is unlikely to be reversed.

19.1.6 Significance Definition

The threshold for determining the significance of impacts on land use and resources considers some of the elements for characterizing residual impacts presented in Table 19.3. The direction of residual impacts is important, since the project's adverse impacts on land and resources use threaten the long-term viability of recreational activities, including boating. The magnitude of the change is also considered in terms of whether the residual impact is likely to threaten the long-term viability of land and resources use. Geographic extent is factored into significance thresholds by assessing residual project impacts beyond the PDA. Duration and reversibility are considered when long-term irreversible impacts threaten the long-term viability of land and resources use. The other elements of characterization (timing and frequency), while important for a better understanding of when and where project impacts manifest themselves, do not provide information on the viability or otherwise of land and resources use.

Thus, an adverse residual impact on the use of land and resources, excluding navigation, is considered high when the residual impacts threaten the long-term viability of the land and its resources (high magnitude) and the land beyond the PDA and associated resources are unlikely to offer similar opportunities for uses to those prevailing before the project was carried out (irreversible). As far as navigation is concerned, a residual impact is considered high if it creates a change or disruption to

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navigation on navigable waters listed in the Annex to the CNW at a point where navigation activities cannot continue at or near their current level.

The adverse impact on non-navigational land and resources use, on the other hand, is assessed as moderate, as the residual impacts do not affect the long-term viability of the area in the sense that land use beyond the PDA and its resources is reduced (high magnitude), but that the area and associated resources offer opportunities for uses approaching pre-project capacities and thresholds and that, as a result, the impacts may be reversible to those prevailing prior to project implementation (reversible). Regarding navigation, a residual impact is considered moderate if it creates a change or disruption to navigation on navigable waters not listed in the appendix to the CNWA at a point where navigation activities cannot continue at or like the current level.

Finally, the residual adverse impact is low or negligible when the use of the territory and its resources beyond the PDA under existing and project conditions is similar, and the modifications are therefore reversible. As far as navigation is concerned, a residual impact is considered low or negligible if it does not interfere with navigation at a point where navigation activities cannot continue at or near the current level.

19.2 Description of Valued Component

19.2.1 Methods

19.2.1.1 Literature Review

The development of a baseline for land and resources use requires the description of the basic conditions of land and resources use activities, including land ownership and development controls (development plans, zoning by-laws), designated lands and protected areas, recreation/tourism and resources use (e.g. mining/aggregate claims, commercial forestry, recreation and tourism, hunting, trapping and fishing, as well as navigation uses).

Data collection was carried out to provide a detailed description of current land and resources use conditions, in support of the environmental assessment. The basic analysis of land and resources use includes secondary research, which involved examining existing public information (maps, reports, studies, public databases, government data), online sources and geospatial data warehouses, as well as other documents and environmental assessments.

Topics addressed to establish the baseline state of land and resources use included agreements with Indigenous nations, development plans, parks and protected areas, recreation and tourism, forestry, mining/aggregate claims, hunting, outfitting and trapping, fishing and navigational uses. The information gathered and data collected were analyzed and mapped, where appropriate.

19.2.1.2 Interviews with Land Users

At the beginning of this impact assessment, a Cree stakeholder consultation plan specific to the impact study was developed by the Stantec team. Stakeholders potentially affected by the project were identified in collaboration with Troilus, which had already established communication and initiated information and

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consultation processes with most of them. Thus, tallymen and users of the three traplines affected by the project footprint, and those of a trapline located near the project, were invited to participate in consultation activities focusing specifically on Cree land and resources use. The objectives of these meetings were to:

- Consider their concerns and recommendations regarding the Troilus mining project.
- Gather indigenous and indigenous knowledge about the project's host environment.
- Document current land and resources use.
- Identify potential impacts of the project and appropriate measures to mitigate impacts or maximize benefits.

In preparation for the meetings, a semi-structured interview grid was developed based on the guidelines for this impact study, the results of the review of existing information and the experience of similar projects. In addition, large-format maps illustrating existing information were produced for each trapline.

Troilus made the initial requests for interviews with land users, and the Stantec team then took over communications in connection with these consultation activities. A first series of interviews took place from November 4 to 8, 2024, followed by a second series from February 17 to 20, 2025. The families were met separately, in Mistissini or at the mine site at their convenience, by two Stantec specialists.

Prior to each interview, the Stantec team explained the context and objectives of the meeting and ensured that informed consent was obtained from the participants before proceeding. In addition, the team checked that participants had the information they needed about the project, and if they had any questions. The themes addressed during the interviews can be grouped into the following broad categories:

- Description of activities and land-use elements.
- Harvesting activities (hunting, fishing, trapping, gathering).
- Housing (camps, cottages, campsites, etc.).
- Trails and roads.
- Social or cultural sites (community site, gathering place, historical site, ceremonial and/or sacred site, etc.).
 - Environmental information relating to the study area.
- Terrestrial and aquatic wildlife.
- Vegetation and wetlands.
- Water resources.
- Changes observed since the closure of the first Troilus mine.
- Potential impacts and recommendations.
- Construction phase.
- Operating phase.

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- Post-closure.
- Other concerns and recommendations.

Large-format paper maps were used to support the discussion and to collect, locate and validate the information shared by the participants. Once the interview notes had been written up, the information that had been collected on the paper maps was integrated into a GIS database created specifically for this impact study. This facilitated, among other things, the performance of various analyses and the sharing of data with colleagues from other disciplines also working on the impact study.

Validation interviews were organized with study participants, so that they could review the data collected, check its accuracy and make clarifications where necessary. Preliminary interview notes were shared with participants and read with them to validate accuracy and clarify information where necessary. The validation process also allowed land users to share additional data or express other concerns and recommendations.

19.2.1.3 Assessment of Navigation Probability

To assess the probability of navigation of the waters in the PDA and the potential impacts of the project on these waters, the Navigation Protection Program (NPP) Project Review Tool (Transport Canada, 2025b) and the guidance diagram and its guidance document Navigable Waters Assessment (Transport Canada, 2025c) were used.

The following questions were taken from the guidance diagram to determine the navigability of waters in the PDA, namely:

Part 1:

- Is there evidence that the waterway is currently used by the public for transportation or travel for commercial or recreational purposes, or that it is used by the Indigenous community?

Part 2:

- Is the waterway likely to be used by the Indigenous public or community?
- Is there any evidence or demonstration that the navigable waters have been used in the past by the Indigenous public or community?

Part 3:

- Is there access to the waterway by land or water?
- Are there two or more riparian owners?
- Is the State the only riparian owner?

To answer these questions, we consulted several data sources, including a review of the literature on navigation in the study area, past studies and those carried out as part of this ESIA, and the results of public consultations with land users. Troilus' knowledge of the site and its past use also contributed to the assessment of navigation in the study area.

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To assess the navigability of rivers and bodies of water, priority was given to knowledge of the past or current use of these water environments for navigation. In the absence of information on past and present use, the physical characteristics of the water body were assessed using information gathered on-site during field inventories for the baseline condition of the hydrology and fish habitat components. The Strahler Number¹ was also used as an indicator to classify the probability of navigation. Thus, the permanent watercourses and water bodies in the study area likely to be affected by the project were classified according to their potential use for navigation. For this classification, navigability criteria were adapted from the User's Guide - Secondary Waters developed by Transport Canada in 2010 for use in works that have a minor impact on navigation under the CNWA. The criteria used to assess the navigation potential of watercourses and water bodies are presented in Table 19.4. The results of this assessment are presented in section 19.4.3.

Table 19.4 Criteria for Assessing the Navigability of Watercourses and Bodies of Water

Criteria	Description
Unlikely	<ul style="list-style-type: none"> The watercourse or body of water does not have the physical characteristics required for launching a canoe or kayak. The watercourse or body of water has the physical characteristics for launching a canoe or kayak, but it has been shown that the watercourse/body of water has no current or past use, or that there is no planned use of the watercourse/body of water despite the presence of access routes. The watercourse or body of water has the physical characteristics for launching a canoe or kayak, but the characteristics of the watercourse/body of water and the presence of obstacles (e.g. level crossings, beaver dams, dense vegetation, debris or shallow rapids < 0.3 m) and/or other land access routes reduce the probability of navigation. Strahler number of order 1.
Unlikely	<ul style="list-style-type: none"> The watercourse or body of water has the physical characteristics for launching a canoe or kayak, and no data on current, historical or future use of the environment is available. Land access routes provide access to the watercourse/water body. Strahler number of order 2 or 3.
Probable	<ul style="list-style-type: none"> The watercourse/water body has a known past or present use. The watercourse/waterbody has the physical characteristics for launching a canoe/kayak and there are indications of current, historic or future use. Strahler number of order 4 or higher.

In addition to the project's direct encroachments on the water environment and the associated loss of waterways, the project is likely to influence annual stream volumes and thus the water available in the study area's hydrological system. A sectoral hydrological modelling study (Appendix H.4) was carried out as part of the assessment of the project's impact on the hydrological regime (Section 12 of the ESIA). According to the conclusions of this study, the impact on the hydrology of the environment downstream of the PDA is not significant. For these reasons, the assessment of the navigability potential of watercourses

¹ The Strahler number is a method of classifying watercourses based on the complexity of their drainage network. Here's how it's defined:

First-order watercourse: A watercourse with no tributaries is classified as a first-order watercourse.

Order 2 streams: When two first-order streams join, they form a second-order stream.

Order 3 watercourses: When two second-order watercourses join, they form a third-order watercourse, and so on.

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and bodies of water focused only on the area of the PDA where encroachments and direct losses of water environments are anticipated.

19.2.2 Pre-mining Conditions

At the time of the former operations, which began in the 1990s, the regional context, the organization of the territory and the use of resources were, in many respects, like current conditions. The study area is governed by the land regime established under the provisions of the JBNQA, which is structured around land categories I, II and III (see 19.2.3.2).

Within the Cree Nation, Mistissini is the largest community in the region. Oujé-Bougoumou has recently been recognized as a distinct community and has been allocated Category I and II lands.

On the non-Indigenous side, the Chibougamau-Chapais region is mainly structured around the primary sector. The mining industry, primarily focused on copper and gold extraction, employs a significant portion of the workforce. It is followed by the manufacturing sector, mainly oriented towards wood processing. Chibougamau also plays a role as a regional service hub, hosting several ministerial representations.

Major air transport services are provided by the Chibougamau-Chapais airport, located halfway between the two towns. The road network is served by Route 167, linking Mistissini, Chibougamau and Lac-Saint-Jean, and Route 113, connecting Chibougamau to the Abitibi region. The Chibougamau-Nemiscau route (Route du Nord) connects the Saguenay-Lac-Saint-Jean and James Bay regions, in continuity with the existing Route 167. A rail line linking Lac-Saint-Jean to Abitibi, serving Chibougamau, is mainly used to transport ore and lumber. A 161 kV power line runs along Route 113 from Obalski substation to Chibougamau substation.

The main users of the territory's wildlife resources are the Cree, who hunt, fish and trap. They are the only users of terrestrial and avian wildlife in most of the study area. A few waterways are used by the Cree for travel, both motorized and non-motorized.

Various recreational services, such as a visitor center, boat launch, cabins, campgrounds and an outfitting operation, are available to non-Indigenous in the wildlife reserves. For the latter, sport hunting is authorized only in the vicinity of Chibougamau.

19.2.3 Existing Conditions

19.2.3.1 Cree Land and Resources Use

The PDA is located at the confluence of three traplines, M34, M39A and M40, which are used year-round by tallymen and many members of their extended families. The RSA corresponds to the three traplines directly affected by the Project footprint, M34, M39A and M40, and includes trapline M35A, located east of the PDA.

Cree VCs are presented under separate cover, as they contain information of a confidential nature (Appendix 19.1).

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Camps

Two Cree camps are located at the northern boundary of the PDA, near Lake A, about 1.5 km from the mine. They are used year-round by the tallymen of trapline M34 and their families.

Several other Cree camps have been reported in the RSA, on each of the traplines, including four located near the mine site access road. These include main camps, secondary camps, seasonal camps and campsites (see Figure 19.2).

Two outfitting camps belonging to Nibiischii are located on trapline M39A: one on the shores of Lac Canotaicane, more than ten kilometers northwest of the PDA, and the other on the shores of Lac Robineau, near the western boundary of the RSA. Two other outfitting camps, owned by Square-Tail Lodge, are located on trapline M40: one north of Lac Troilus, not far from the access road to the mine site, and the other on the shores of Lac Frotet.

Future camp sites have also been identified on traplines M34, M39A and M40. In anticipation of the mine's reopening, the tallymen of trapline M34 indicated that they would like to relocate their two camps currently in the PDA to the Boisfort Lake area. An access road of about 8 km should be built to allow access by vehicle. The tallyman of trapline M39A plans to build a new camp near Lac Avranches, some 15 km from the PDA. Finally, the tallyman of lot M40 plans to build a new camp at the southern end of Lac Châtillon, where his father had a camp for many years.

Transportation routes

Tallymen and land users access their traplines via the Route du Nord and portions of the mine access road.

Logging roads are present in the PDA and in the southern part of the RSA. They provide land users with vehicular access to certain areas where forest resources have been exploited.

Several unmarked snowmobile trails have been identified on trapline M34. The two main ones start from the camps near Lake A and provide access to the northern part of the trapline, which is not accessible by vehicle.

In addition, land users travel by motorboat or canoe in the RSA. Portages have been built in some places to allow passage from one watercourse to another.

Hunting and trapping

The mine site was built in an area once used for moose hunting. The animal fled the area during the mine's operational phase, reappearing sporadically during the rutting season, then returning to the PDA only about ten years ago. In addition, several moose-hunting areas have been reported in the RSA: in the northern portion of trapline M34; directly west and south of the PDA; near Robineau, Avranches and Canotaicane lakes; in a former logging area south of trapline M39A; south and east of Frotet Lake; in the northeastern portion of trapline M40; and over most of trapline M35A. According to one of the tallymen, there are moose on all the ridges in the RSA; "they stay in the mountains during the winter to feed and come down around April".

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Before the construction of the mine, the RSA was frequented by woodland caribou, but it's been a long time since they've been seen there. Tallymen have reported the presence of woodland caribou around Canotaicane and Avranches lakes; in the northwestern part of trapline M39A; south of the PDA, mainly along the access road; northeast of Troilus Lake; and in the eastern part of the RSA (traplines M40 and M35A).

Many bears have been observed in and around the PDA, particularly since the mine site was revegetated: there are more now than before the first phase of the mine. Elsewhere in the RSA, bear-frequented areas can be found in the western part of trapline M39A; north and east of Lac Troilus; in the southern part of trapline M40; and on trapline M35A. Although bears are numerous in the region, land users hunt only one or two per family for subsistence. They follow the Cree rule of "eat what you kill".

Two beaver lodges are present in the PDA. This species is found throughout the RSA. The tallymen we met claim to trap beaver practically everywhere on their respective traplines. This is also the case for users of trapline M39A, although they trap more specifically in the northern part of their trapline. This species is harvested abundantly for subsistence, not to sell its fur, which is nevertheless preserved and used.

The tallymen of trapline M34 have attempted to hunt waterfowl in the PDA on a few occasions, but although they have tried various techniques, they have not had much success. They prefer to hunt this species in natural ponds elsewhere in the RSA. When the mine was in operation, dust affected spring waterfowl hunting, as it dispersed over a 10-15 km radius, and snow and ice melted more quickly in this area. Users of trapline M39A mainly hunt waterfowl on Lac Robineau when the ice melts early enough and they can use their boat; otherwise, they go hunting on trapline M39, whose tallyman is the uncle of M39A's tallyman.

Land users also hunt ptarmigan and other birds along the mine access road and elsewhere in the RSA.

Hare is trapped or hunted by M39A land users. Wolverine was trapped on trapline M35A over 40 years ago.

Fishing

Users of trapline M34 fish in Lake A and the two other bodies of water just north of the PDA. Walleye, sucker, whitefish, pike and brook trout are among the species fished. Walleye and sucker spawning grounds are found in the rapids and water bodies north of Lac A. Lac Boisfort is an important fishing zone for this family, which harvests the same species mentioned above. However, "the closer you get to Lac Boisfort, the more speckled trout there are".

Lac Canotaicane is a popular fishing spot for families on lots M34 and M39A, as it is home to large sturgeon, speckled trout, walleye and pike.

Users of lot M39A also fish in Lac Robineau. They harvest walleye, pike and whitefish.

Users of trapline M40, including members of the tallyman's extended family, fish throughout Lac Troilus. They harvest excellent walleye, pike, whitefish, lake trout, speckled trout, sucker and longnose sucker.

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Harvesting

Land users pick blueberries all over their traplines, especially near forest roads. They also gather medicinal plants such as Labrador tea, tree bark and larch in the RSA, but not near the PDA. Users of trapline M39A pick cranberries in the area southwest of Robineau Lake.

Subsistence and Indigenous food consumption

One of the tallymen we met estimates that 70% of the food he consumes is wild, and about 30% comes from the grocery store. He supplies "*bush food*" to his extended family of around sixty people. For example, the tallyman harvests four moose in the course of a year: two in spring and two in autumn. He keeps half for his own consumption and gives the other half to family members. In addition, friends and relatives sometimes come to his trapline to spend time with him and his wife and join in the hunting and trapping. So, in total, they can harvest 12 moose in a 3,000 km² territory, "which is very good and not such a big quantity considering it's spread over more than a dozen families."

For his part, another of the tallymen reported harvesting two moose during the winter, "just to be okay until summer", and sharing them with family and friends. Then, in the fall, he hunts them again. They eat every part of the animal and use its fur and bones. This tallyman and his son eat traditional food about twice a week, mainly ptarmigan, hare, beaver and lots of moose meat. They also eat fish, waterfowl and bear: "When you shoot a bear, you have to harvest it right away. This meat doesn't keep long in hot weather. Bear meat and moose meat are different and must be treated differently."

The tallymen of trapline M34 consider that, since the mine site is located at the southern end of their trapline and the rest of their land is still "wild and remote" (no roads provide access), the Project "doesn't affect too much" their livelihood. However, they do remember that there were plenty of moose in the PDA before the Troilus mine arrived, and that it was their main moose harvesting area. "When the mine was in operation, there were no moose at all in this area; they had left. Now they're starting to come back. It took at least five years after things calmed down for them to come back. They had moved a good 10 km away from the mine because of the noise caused by blasting, trucks backing up and heavy machinery. So, yes, the mining project has affected the wildlife".

Cultural sites and other valued features

A hill called *Maskwawuti* (Bear's Neck Mountain), which served as a landmark for users of property M34 prior to the first phase of the Troilus mine, is located within the PDA. However, due to the height of the waste rock piles, *Maskwawuti* is no longer visible from anywhere in the vicinity, only from certain angles.

Two birthplaces have been reported: one on trapline M34, the other on trapline M39, slightly outside the RSA. Both are far from the PDA.

Two burial sites were reported on trapline M34.

A legend site, where sasquatch footprints have reportedly been seen, is located on trapline M39A.

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Other development projects

Since mine closure, two development projects have taken place on trapline M39A: logging and the establishment of a fishing camp by the Nibiischii Corporation. Nibiischii's customers go fishing at Robineau Lake, catching large pike and walleye. The tallyman of trapline M39A, however, is not concerned about overfishing.

According to the tallyman, the Nibiischii Corporation is planning to organize fishing expeditions for students, similar to canoe brigades, that would leave from Robineau Lake, go as far north as Canotaicane Lake and then travel down the Broadback River to the Billy-Diamond Highway. The corporation has reportedly already begun repairing certain portages. It has informed the tallyman of its project, who said he was pleased with the initiative and suggested that it be a "mixed" event that would bring together Indigenous and non-Indigenous peoples.

Sayona has established a mining exploration site on the M40 trapline, and other mining companies are also active there, but these projects are less advanced than Troilus'.

19.2.3.2 Land use by Jamesian Communities

In Quebec, land use planning is governed by the Act respecting land use planning and development (LAU). This law lays the foundations for the planning and development of living environments, by defining the necessary planning instruments such as land use and development plans, which must be drawn up and developed by regional county municipalities (RCMs).

The project site is in the Nord-du-Québec administrative region, on the territory of the Eeyou Istchee James Bay Regional Government (EIJBRG). Created in 2014, EIJBRG is a municipal organization that notably replaces the Municipality of Baie James (MBJ). It exercises the same jurisdiction, functions and powers on public lands that are part of the State domain as those formerly assigned to the MBJ. EIJBRG is also responsible for managing natural resources and acting as a regional development authority. Its territory covers just over 275,000 km². The EIJBRG Board is made up of equal numbers of members of the Cree Nation Government and representatives of the municipalities located within its territory (Chapais, Chibougamau, Lebel-sur-Quévillon, Matagami), as well as residents of this territory.

The RSA covers an area of nearly 4,577 km² northwest of the community of Mistassini, on the other side of Lake Mistassini, on lands reserved for the Cree of this community. It is in an unorganized territory (TNO), on Category II and III lands (see map 19.5). This administrative division of the territory of Northern Quebec into categories I, II and III is one of the measures introduced by the James Bay and Northern Quebec Agreement (JBNQA), signed in 1975 to respond to Cree and Inuit land claims. These lands are designated and delimited under the James Bay and Northern Quebec Land Regime Act.

Category II lands cover an area of 1,160 km² in the southwestern portion of the Land and Resources Use RSA. On these lands, development and land management decisions are guided by a Regional Land and Resource Use Plan (RLURP). This is set up by the Eeyou Planning Commission, created in 2017 to help the Cree exercise some of the new land use planning powers they have been given. The Commission works with regional planning partners to align land and resource use with Cree vision, interests and aspirations. These provincial Category II lands are therefore jointly managed by Indigenous peoples and regional authorities. Together, they develop tourism and forestry, and manage hunting, fishing and

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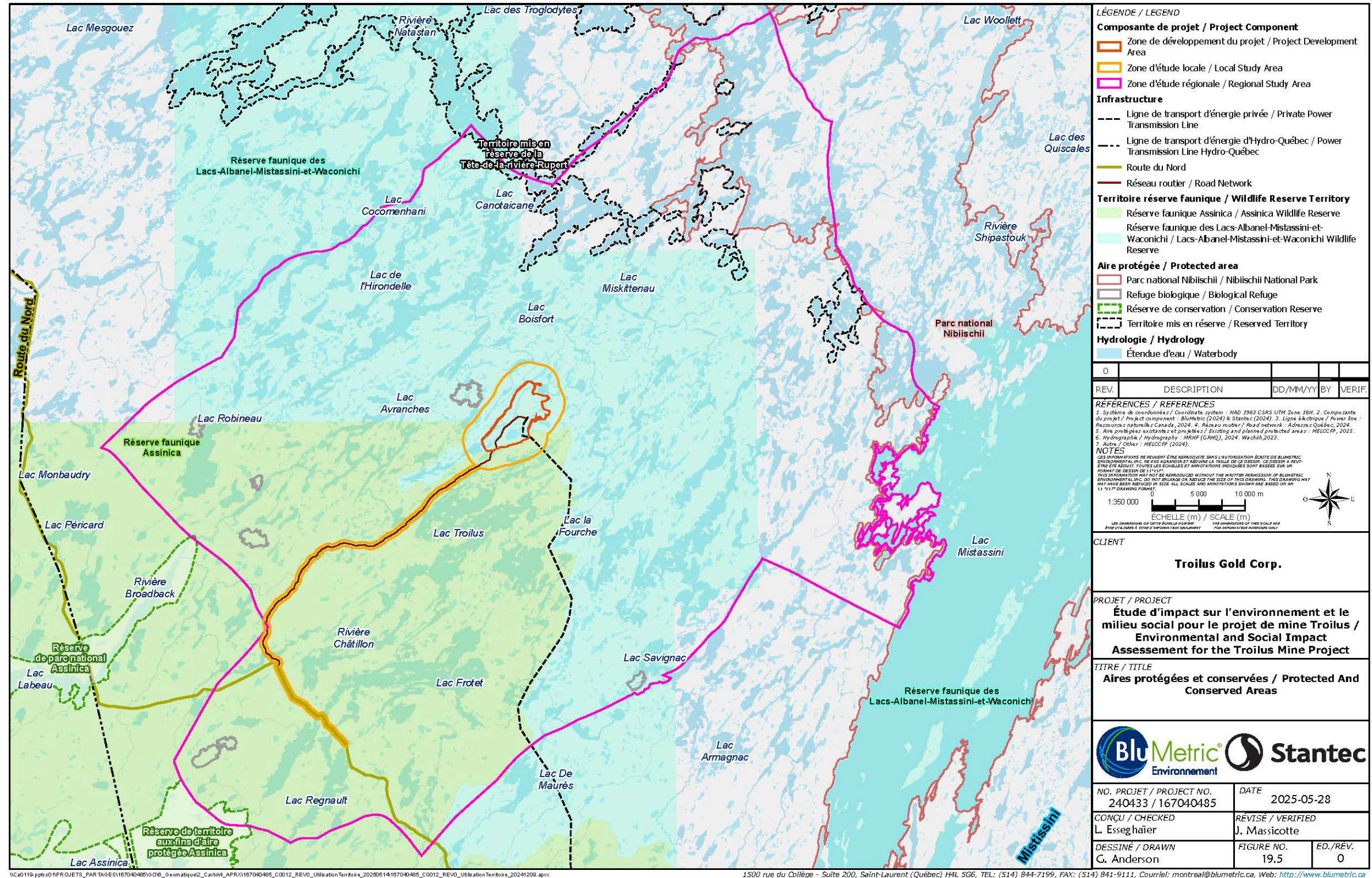
trapping, for which the Indigenous peoples have exclusive rights on these lands. If the Quebec government wishes to develop a Category II territory, the inhabitants of this sector receive an extension to their territory equivalent in value to that lost, as well as monetary compensation.

Category III lands cover most of the RSA, representing an area of 3,416 km² in its northeastern portion. They correspond to Category II lands that have been expropriated and classified as Category III lands, in accordance with Section 47 of the Act respecting the Land Regime in the James Bay and New Québec Territories.

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Map 19.5 Protected and Conserved Areas



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The Eeyou Planning Commission, in collaboration with EIJBRG, is harmonizing the RLRUP project with the integrated development plan for Category III lands and resources. Indigenous peoples therefore participate in the administration and use of these lands and resources by providing information and Cree content to guide this planning. They also have the exclusive right to harvest certain aquatic species and furbearers.

Provincial parks and conservation reserves

The RSA is located on two wildlife reserves: Lacs Albanel-Mistissini-Waconichi (AMW) and Assinica (see map 19.5). In Quebec, wildlife reserves are public territories dedicated to the conservation, development and use of wildlife. They are set aside for hunting and fishing. Recreational and outdoor activities may also be practiced. In general, the Société des établissements de plein air du Québec (SÉPAQ) manages commercial services in wildlife reserves. The exception is the AMW and Assinica lakes wildlife reserves, which are managed by the Nibiischii Corporation. Indeed, the signing of the Paix des Braves agreement in 2002 paved the way for a new nation-to-nation partnership between the Cree and Quebec in the responsible development of Eeyou Istchee. Under sections 17 and 18 of Schedule G of this Agreement, the management and operations of the two wildlife reserves and their facilities are ensured by a joint corporation between the Cree Nation and SÉPAQ. In 2017, this management was entrusted to the Cree Nation of Mistissini via the Nibiischii Corporation. The latter assumes full management of Réserve faunique des lacs Albanel-Mistassini-et-Waconichi and temporarily assumes management of Réserve faunique Assinica on behalf of the Oujé-Bougoumou Cree Nation. Finally, two reserves, the Assinica National Park Reserve and the Assinica Protected Area Territory Reserve, are located at the southwestern end of the LSA. Resources exploration and development activities are similarly prohibited within the Assinica Protected Area Reserve (MELCCFP, 2025).

The Nibiischii Corporation is responsible for protecting the rights of Indigenous communities and conserving wildlife on the territory of these two wildlife reserves. Hunting is reserved for Indigenous peoples. In the case of Réserve faunique Assinica, this exclusive right is reinforced by the fact that it lies within a vast beaver reserve (Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques [MDDELCC], 2018). Under section 11 of the Act respecting hunting and fishing rights in the James Bay and New Québec territories, the Crees are the only ones entitled to exercise their rights to hunt, fish or trap there. As we will see in section 19.2.4 [Hunting, trapping and fishing], sport fishing by non-Indigenous peoples is also subject to restrictions and conditional on obtaining a valid fishing right of access.

In addition to these two wildlife reserves, the RSA also includes several other protected and conserved areas (Map 19.5). There are seven designated biological refuges. The biological refuge (02661R036) closest to the PDA is about 5 km from the Troilus mine. No forestry or mining activities are permitted in these protected forest areas, thus ensuring that biodiversity is preserved in these demarcated areas. A new park, Nibiischii National Park, is also located in the RSA, to the northeast of the mine. The creation of the park was formalized by the Quebec government in December, and operations were awarded to the Cree Nation of Mistissini (Government of Quebec, 2024a). Adjacent to the new park is the Tête-de-la-rivière-Rupert reserve on which new authorizations and permits cannot be granted for various activities

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such as wildlife harvesting, forestry and energy exploitation, mineral resources exploration and development, etc. (Gouvernement du Québec, 2024b).

Recreation and tourism

On the James Bay territory, the regional tourism association (ATR) Tourisme Baie-James is recognized by the Québec government as the regional interlocutor for tourism. Its mission is to support the development and promote the James Bay tourism industry. The ATR collaborates with Tourisme Eeyou Istchee, the Cree Outfitting and Tourism Association, the James Bay Regional Authority, the Société de développement de la Baie-James and the Eeyou Istchee James Bay Regional Government.

Outdoor recreation

In the RSA, outdoor recreation consists mainly of hunting, fishing and other resource-based outdoor activities.

Activities also include all-terrain vehicles (ATVs) and snowmobiling. ATV trails are present in the Chapais and Chibougamau areas, and the Trans-Québec 93 snowmobile trail and a local trail link Chapais, Oujé-Bougoumou, Chibougamau and Mistissini (Golder, 2020). However, no Fédération des clubs de motoneigistes du Québec snowmobile trail crosses the Land and Resources Use RSA. The Assinica and AMW Lakes wildlife reserves prohibit ATV traffic on their territory.

Réserve faunique des lacs AMW, Quebec's largest wildlife reserve, and Réserve faunique Assinica are also major tourist attractions for the region. The welcome station for these two reserves is located at km 252 of Route 167 North, south of and outside the RSA. Réserve faunique des lacs AMW offers accommodation in the form of cottages, camps and campgrounds at various sites, including Lac Albanel, Lac Waconichi, Lac Robineau and Baie Pénicouane. Fishing and canoe-camping are the main activities but kayaking and paddleboarding are also available. Saunas are also available for visitors to the Albanel and Waconchi lakes and Baie Pénicouane. Hiking trails, marina services and boat and motor rentals are available at some sites (Corporation Nibiischii, 2024a). A canoe-camping circuit is available from Lac Robineau (Corporation Nibiischii, 2024b). In Réserve faunique Assinica, rustic camping on the shores of various lakes and rivers is the only type of accommodation available. The main activities are fishing, canoe-camping and nature observation. Fish species that can be caught in both reserves include walleye, lake trout, brook trout and northern pike (Corporation Nibiischii, 2024c). On the other hand, the use of ATVs and personal watercraft (PWCs) on reserve waters is strictly prohibited (Corporation Nibiischii, 2023). Only Lac Robineau facilities are listed in the RSA.

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A few outfitters operate in the region. Le Pavillon Square-Tail Lodge, the only outfitter located in the RSA, offers chalet accommodations and boat rentals, and provides fishing packages for native brook trout, walleye and northern pike (Destination Nord, 2024). Le Pavillon Square-Tail Lodge has two lodging camps, one on Lac Troilus and the other on Lac Frotet (see map 19.6). The camps on Lac Troilus are built on a point at the junction of the lake outlet and the headwaters of the North Branch of the Broadback River. The camp is accessible by the same access road from the North Road leading to the Troilus mine, then by boat from the shore along this road. The second camp, located in the center of Frotet Lake, is also accessible by boat from a parking area connected by a trail (Pavillon Square-Tail Lodge, n.d.). Broadback Outfitters is located in the Assinica wildlife reserve, overlooking the lake of the same name. It is accessible by seaplane from Oujé-Bougoumou. It offers camp accommodations and guided lake and river fishing, mainly for pike and walleye. This Indigenous-owned outfitter also organizes interpretation activities on Indigenous culture. It should be noted that, under section 40 of the Act respecting hunting and fishing rights in the James Bay and New Québec territories, Indigenous peoples have the exclusive right to establish and develop outfitting operations on Category II lands, but non-Indigenous communities may establish and develop outfitting operations provided they have the explicit consent of the Cree village concerned.

Tourism

Tourism contributes to the Nord-du-Québec economy, but the Québec government and regional organizations would like to develop this industry further (Simard, 2017). In recent years, efforts have been made to promote Northern Quebec as a "world-class sustainable tourism destination" (Gouvernement du Québec, 2011). In Eeyou-Istchee-Jamésie, the 2017-2020 Plan d'action de développement de l'offre touristique de la Baie-James was adopted in 2018. This plan is the result of collaboration between Tourisme Baie James and the Administration régionale Baie-James and mobilizes numerous Cree and Jamesian partners, including the Cree Outfitting and Tourism Association and EIJBRG (Tourisme Baie James and Administration régionale Baie-James, 2018). In 2023, Tourisme Baie-James also launched the VâHumania pilot project. This project aims to create a network of facilitators made up of local residents, with the goal of encouraging visitors, newcomers and residents to explore and learn about various topics within the seven Jamesian communities (Tourisme Baie-James, 2023).

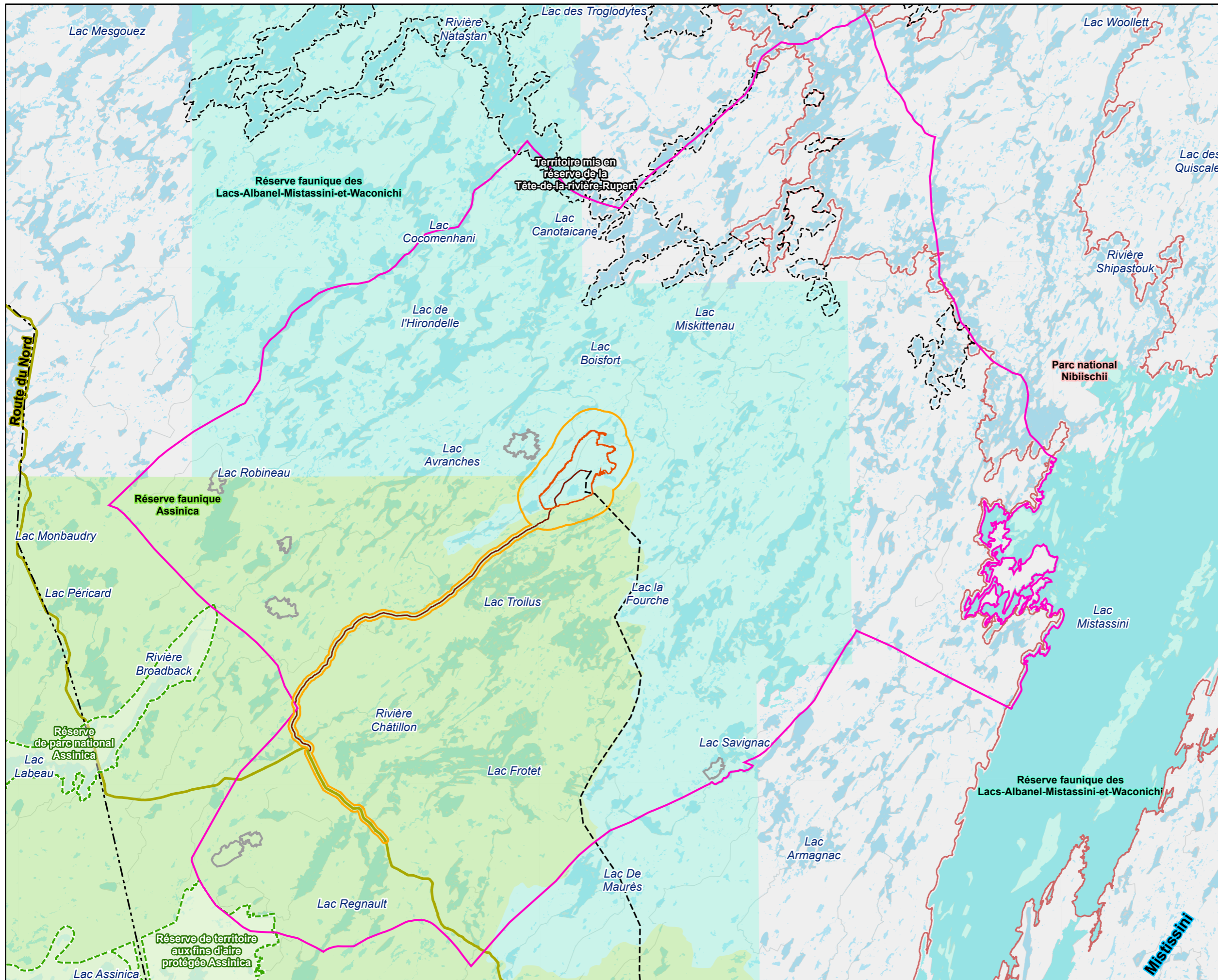
Navigation

In the RSA, there are no water bodies or waterways listed in the Navigable Waters Schedule, Parts 1 and 2 of the CNWA. The CNWA also provides for the protection of non-listed waters (e.g., the right to use navigable waters) where navigation is possible (see section 19.1.1).

The hydrographic network in the RSA is mainly made up of lakes and streams, greatly limiting the types of navigation possible. In this study area, pleasure boats can navigate on most lakes, but the depth and width of some streams limit the type of craft and mode of propulsion that can be used.

Environmental and Social Impact Assessment for the Troilus Mine Project

LAND AND RESOURCES USE



- LÉGENDE / LEGEND**
- Composante de projet / Project Component**
- Zone de développement du projet / Project Development Area
 - Zone d'étude locale / Local Study Area
 - Zone d'étude régionale / Regional Study Area
- Infrastructure**
- Ligne de transport d'énergie privée / Private Power Transmission Line
 - Ligne de transport d'énergie d'Hydro-Québec / Power Transmission Line Hydro-Québec
 - Route du Nord
 - Réseau routier / Road Network
- Territoire réserve faunique / Wildlife Reserve Territory**
- Réserve faunique Assinica / Assinica Wildlife Reserve
 - Réserve faunique des Lacs-Albanel-Mistassini-et-Waconichi / Lacs-Albanel-Mistassini-et-Waconichi Wildlife Reserve
- Aire protégée / Protected area**
- Parc national Nibiischii / Nibiischii National Park
 - Refuge biologique / Biological Refuge
 - Réserve de conservation / Conservation Reserve
 - Territoire mis en réserve / Reserved Territory
- Hydrologie / Hydrology**
- Étendue d'eau / Waterbody

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REV.	DESCRIPTION	DD/MM/YY	BY	VERIF.

RÉFÉRENCES / REFERENCES

1. Système de coordonnées / Coordinate system : NAD 1983 CSRS UTM Zone 18N. 2. Composante du projet / Project component : BluMetric (2024) & Stantec (2024). 3. Ligne électrique / Power line : Ressources naturelles Canada, 2024. 4. Réseau routier / Road network : Adresses Québec, 2024. 5. Aires protégées existantes et projetées / Existing and planned protected areas : MELCCFP, 2025. 6. Hydrographie / Hydrography : MRNF (GRHQ), 2024. Wachih, 2023. 7. Autre / Other : MELCCFP (2024).

NOTES

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1:350 000

0 5 000 10 000 m

ÉCHELLE (m) / SCALE (m)

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CLIENT

Troilus Gold Corp.

PROJET / PROJECT

Étude d'impact sur l'environnement et le milieu social pour le projet de mine Troilus / Environmental and Social Impact Assessment for the Troilus Mine Project

TITRE / TITLE

Aires protégées et conservées / Protected And Conserved Areas



NO. PROJET / PROJECT NO. 240433 / 167040485	DATE 2025-05-28	
CONÇU / CHECKED L. Essegiaier	RÉVISÉ / VERIFIED J. Massicotte	
DESSINÉ / DRAWN G. Anderson	FIGURE NO. 19.5	ED./REV. 0

Environmental and Social Impact Assessment for the Troilus Mine Project

LAND AND RESOURCES USE

Several boat launches have been identified in the RSA (see map 19.6), many of which are located along the Route du Nord and provide access to large bodies of water such as the Broadback River, Lac Frotet and Baie Moléon, as well as Lac Regenault. Based on the activities offered by Broadback Outfitters, permanent waterways where recreational boating (e.g. canoeing/kayaking) could be possible in the RSA include the Broadback River. The river is also accessible from Camp Troilus at Square-Tail Lodge (Square-Tail Lodge, n.d.) via Lac Troilus. Lac Frotet is also navigable and is used by visitors to the Square-Tail Lodge camp. In addition, as previously mentioned, the Nibiischii Corporation offers several activities, including canoe-camping on several bodies of water where accommodation services are available. Only the Lac Robineau camp is listed in the RSA. The waterways between Lac Robineau and Lac Canotaicane are navigable, and the Corporation offers a canoe-camping circuit. A preliminary review of Google Earth™ imagery suggests that the Châtillon River may also be a permanent waterway.

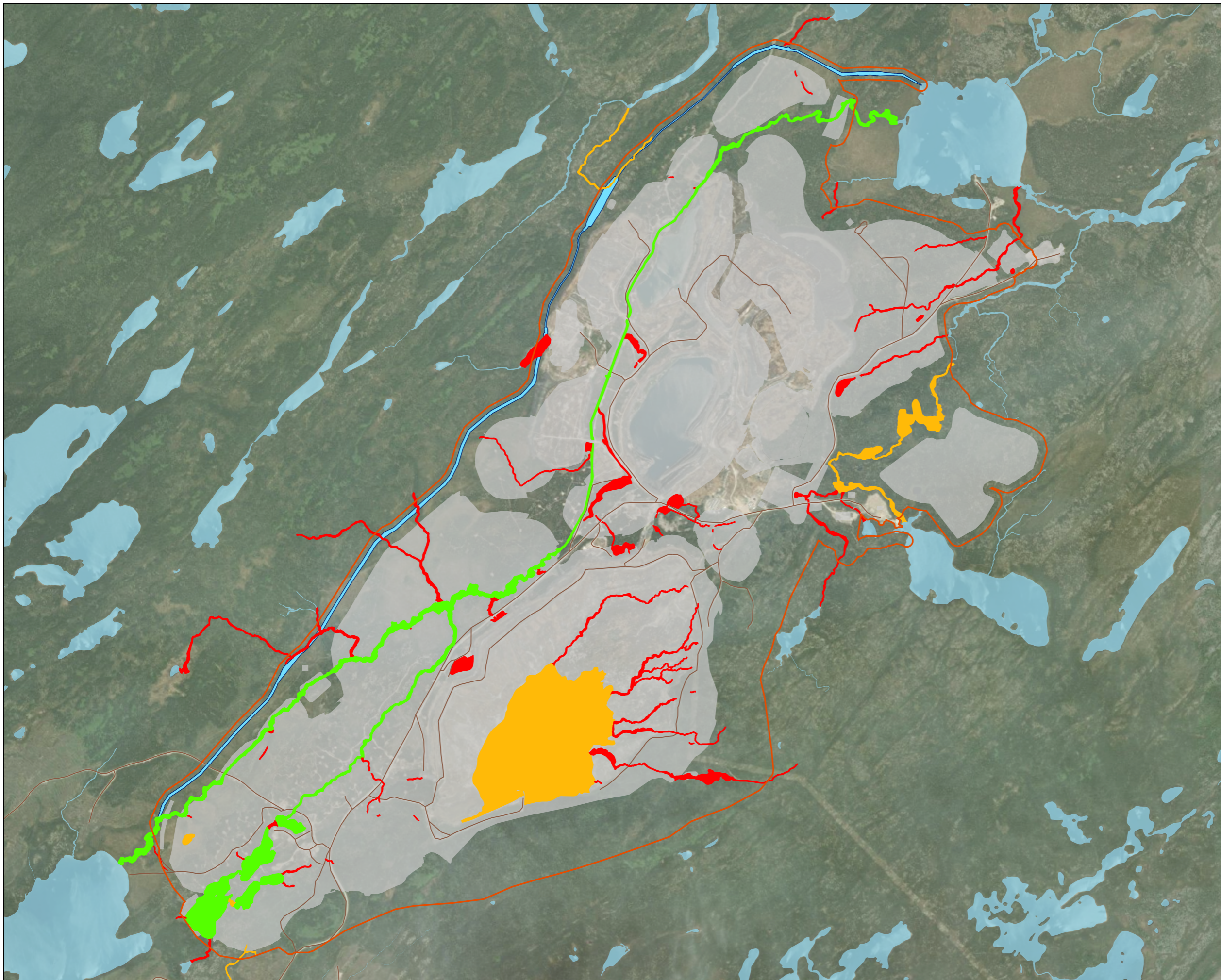
As mentioned in Section 19.2.3.1, the RSA is primarily used for navigation by land users who travel by motorboat or canoe within the RSA and portage in some places to connect two watercourses (Section 19.2.3.1). Several waterways and navigable bodies of water identified by land users during the various consultations are in trapline M34. The waterways identified in this trapline are located outside the PDA, but within the boundaries of the RSA. An earlier consultation with Indigenous communities (WSP, 2019) also indicated that the southeastern part of the PDA is part of a fishing corridor, so this area may be navigable. Within the PDA, a total of 50 watercourses and 24 water bodies were counted. The linear distance of the watercourses and water bodies in the PDA according to their probability of navigation is shown in Table 19.5. Most of water bodies and watercourses in and around the PDA are not accessible. Lakes PE2 and PE29, outside the PDA, and Lake PE13 are the only ones with an access trail leading directly to the water bodies. Lakes PE8 and PE9 could potentially be accessed via existing access trails (map 19.7). According to consultations with tallymen and their families, the waters of the PDA are not currently used for navigation.

The probability of navigation within the PDA is illustrated on Map 19.7. It should be noted that intermittent watercourses were systematically considered as unnavigable and counted in this category. The following assumptions have been made to assess permanent watercourses as non-navigable:

- Either no past or present use is known, and these areas have little to no interest in use as navigation routes,
- Or field work (Wachiih, 2024) has shown that streams are generally too narrow to accommodate a boat (canoe or kayak) or too shallow for a boat to navigate successfully,
- Or, as in the case of rivers CE17 and CE28, there are several obstacles to navigation.

Environmental and Social Impact Assessment for the Troilus Mine Project

LAND AND RESOURCES USE



LÉGENDE / LEGEND

Composante de projet / Project Component

- Zone de développement du projet / Project Development Area
- Infrastructure minière proposée / Proposed Mine Infrastructure

Probabilité de navigation / Navigation Likelihood

- Probable / Likely
- Peu probable / Uncertain
- Improbable / Unlikely

Hydrologie / Hydrology

- Étendue d'eau / Waterbody
- Déviation du ruisseau Bibou / Bibou Creek Diversion

Autre / Other

- Réseau routier / Road Network

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REV.	DESCRIPTION	DD/MM/YY	BY	VERIF.

RÉFÉRENCES / REFERENCES

1. Système de coordonnées / Coordinate system : NAD 1983 CSRS UTM Zone 18N. 2. Composante de projet / Project component : BluMetric (2024) & Stantec (2024). 3. Probabilité de navigation / Navigation Likelihood : Stantec, 2025. 4. Réseau routier / Road network : Adresses Québec, 2024. 5. Hydrographie / Hydrography : GRHQ - Ministère des Ressources naturelles et Forêts, 2024. Wachih, 2023. 6. Imagerie / Imagery : Esri World Imagery, 2023.

NOTES

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ÉCHELLE (m) / SCALE (m)

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CLIENT

Troilus Gold Corp.

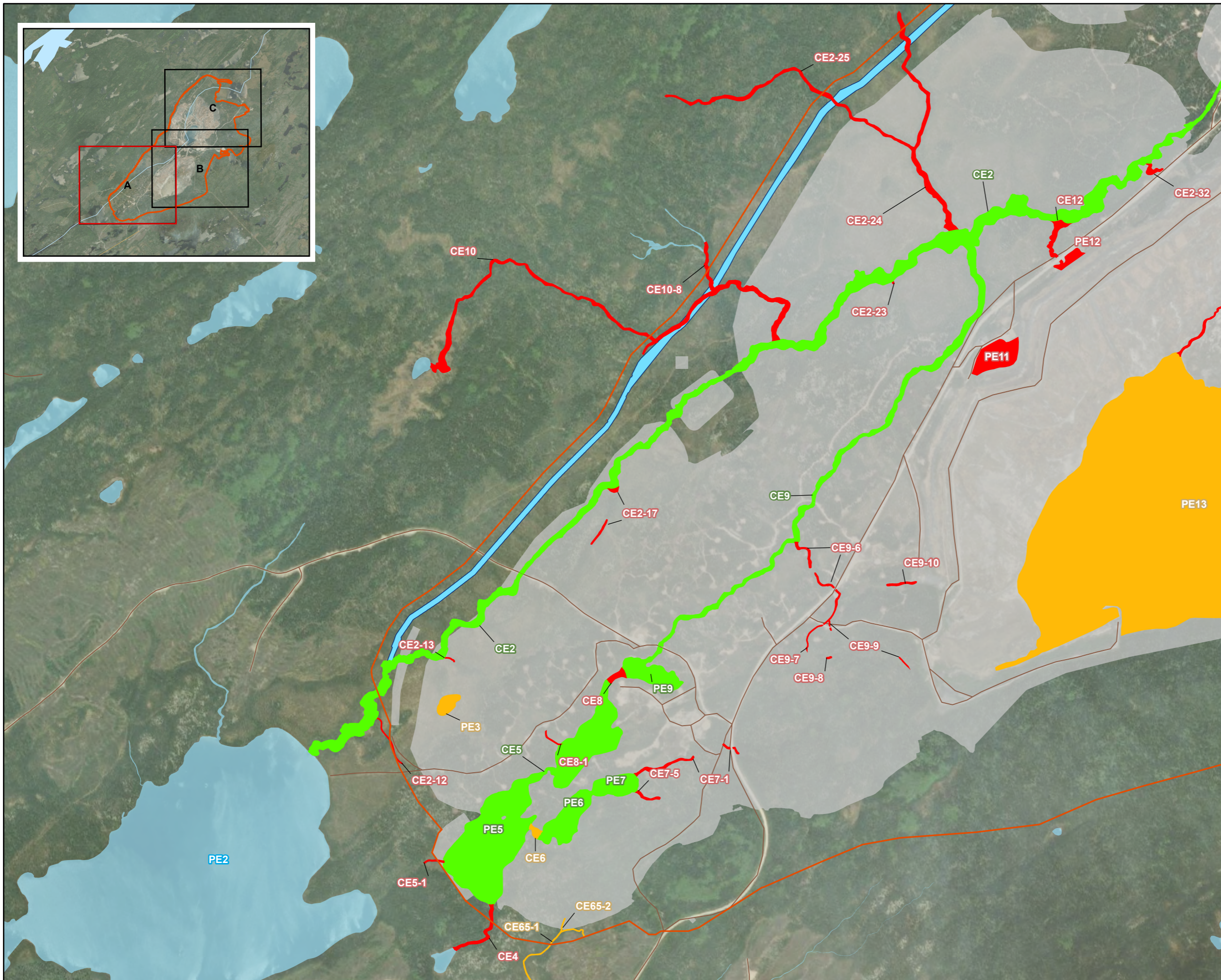
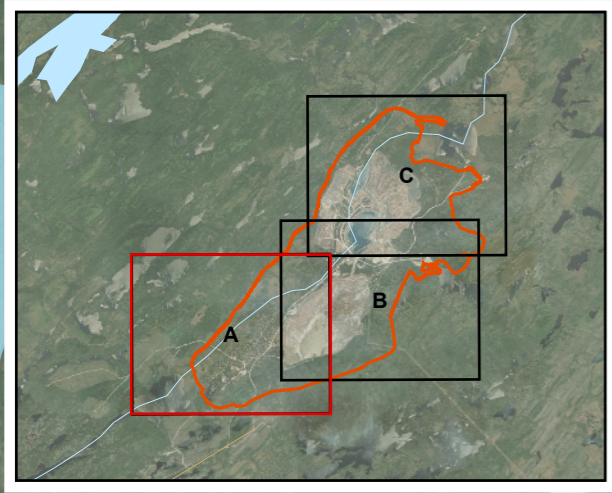
PROJET / PROJECT

Étude d'impact sur l'environnement et le milieu social pour le projet de mine Troilus / Environmental and Social Impact Assessment for the Troilus Mine Project

TITRE / TITLE

Probabilité de navigation dans la zone de développement de projet / Navigability Likelihood within the Project Development Area

NO. PROJET / PROJECT NO. 240433 / 167040485	DATE 2025-06-17
CONÇU L. Esseghaier	RÉVISÉ / VERIFIED J. Massicotte
DESSINÉ G. Anderson	FIGURE NO. 19.7
	ED./REV. 0



LÉGENDE / LEGEND

Composante de projet / Project Component

- Zone de développement du projet / Project Development Area
- Infrastructure minière proposée / Proposed Mine Infrastructure

Probabilité de navigation / Navigation Likelihood

- Probable / Likely
- Peu probable / Uncertain
- Improbable / Unlikely

Hydrologie / Hydrology

- Étendue d'eau / Waterbody
- Déviations du ruisseau Bibou / Bibou Creek Diversion

Autre / Other

- Réseau routier / Road Network
- Étendue d'eau / Waterbody

REV.	DESCRIPTION	DD/MM/YY	BY	VERIF.
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NOTES

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ÉCHELLE (m) / SCALE (m)

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CLIENT

Troilus Gold Corp.

PROJET / PROJECT

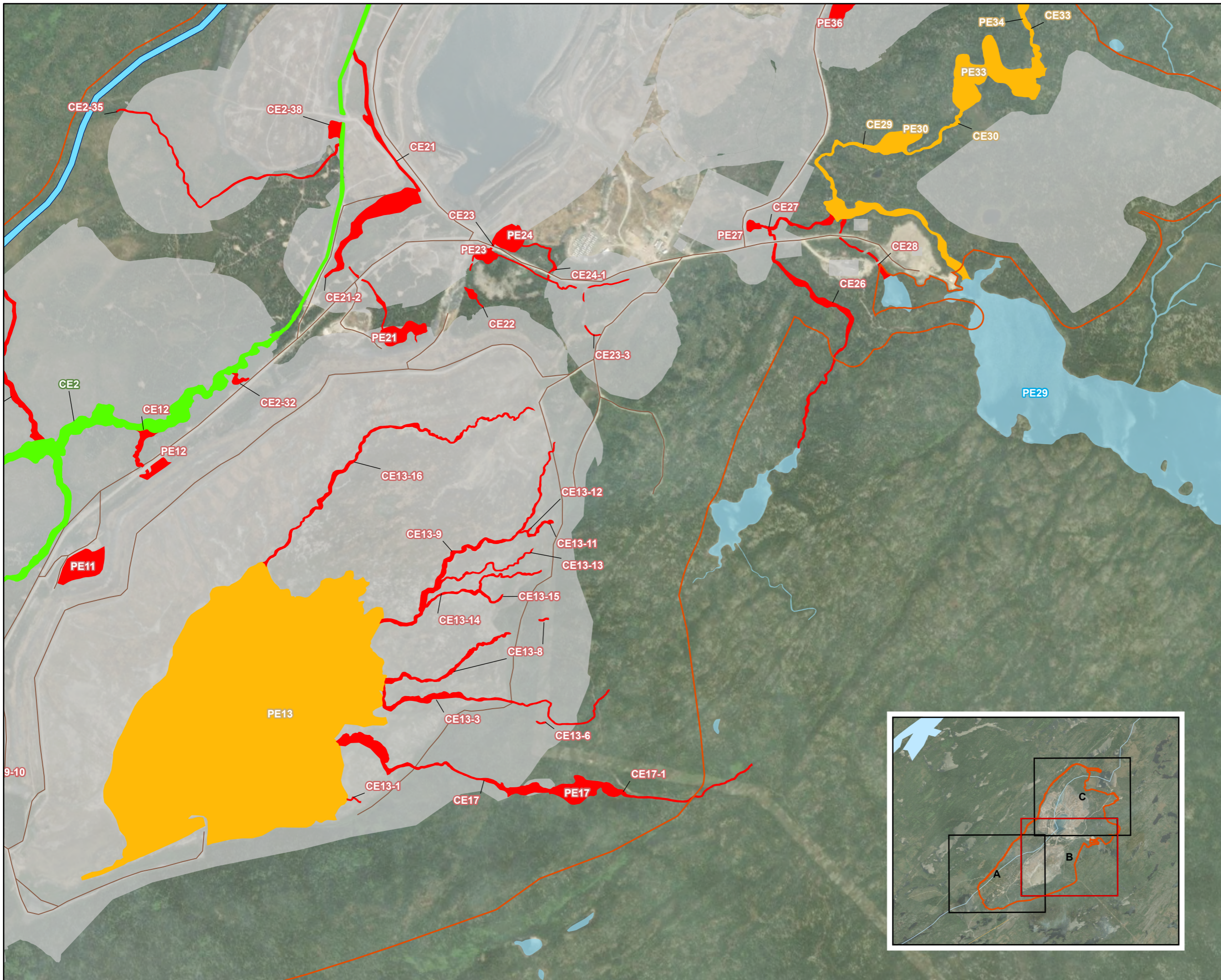
Étude d'impact sur l'environnement et le milieu social pour le projet de mine Troilus / Environmental and Social Impact Assessment for the Troilus Mine Project

TITRE / TITLE

Probabilité de navigation dans la zone de développement de projet / Navigability Likelihood within the Project Development Area



NO. PROJET / PROJECT NO. 240433 / 167040485	DATE 2025-06-17
CONÇU L. Esseghaier	RÉVISÉ / VERIFIED J. Massicotte
DESSINÉ G. Anderson	FIGURE NO. 19.7 - A
	ED./RÉV. 0



LÉGENDE / LEGEND

Composante de projet / Project Component

- Zone de développement du projet / Project Development Area
- Infrastructure minière proposée / Proposed Mine Infrastructure

Probabilité de navigation / Navigation Likelihood

- Probable / Likely
- Peu probable / Uncertain
- Improbable / Unlikely

Hydrologie / Hydrology

- Étendue d'eau / Waterbody
- Déviations du ruisseau Bibou / Bibou Creek Diversion

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- Réseau routier / Road Network
- Étendue d'eau / Waterbody

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ÉCHELLE (m) / SCALE (m)

CLIENT

Troilus Gold Corp.

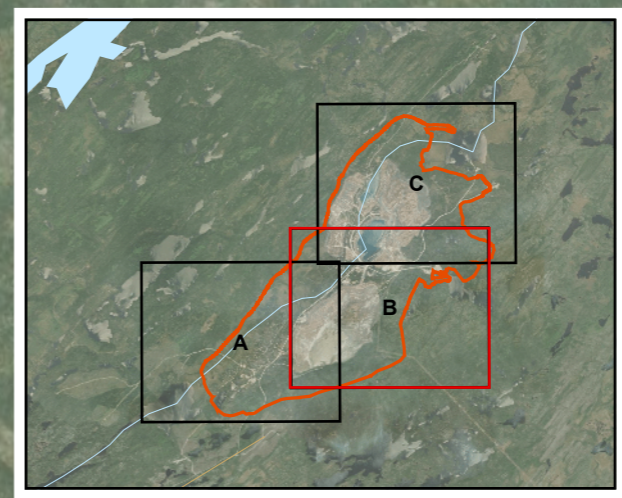
PROJET / PROJECT

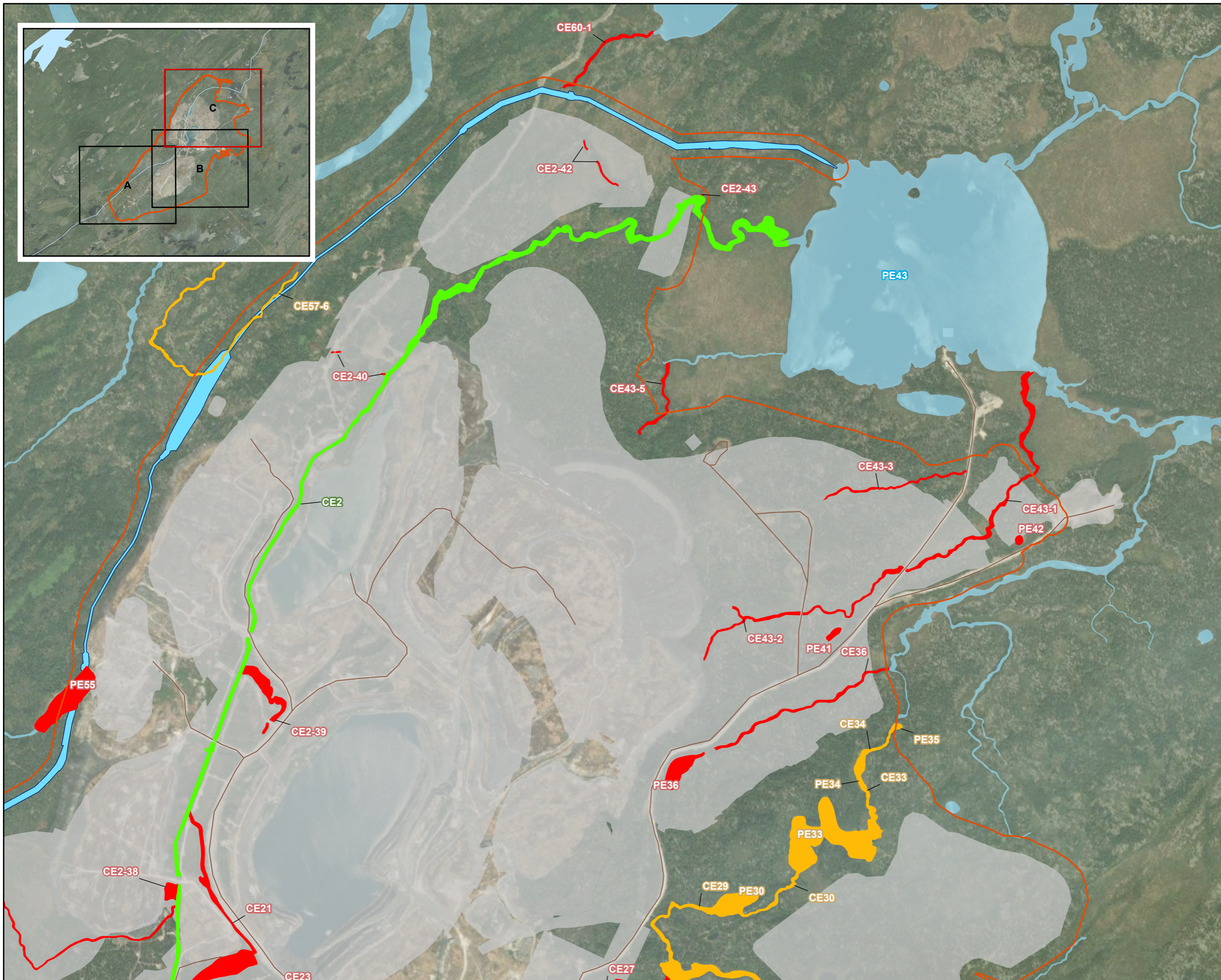
Étude d'impact sur l'environnement et le milieu social pour le projet de mine Troilus / Environmental and Social Impact Assessment for the Troilus Mine Project

TITRE / TITLE

Probabilité de navigation dans la zone de développement de projet / Navigability Likelihood within the Project Development Area

NO. PROJET / PROJECT NO. 240433 / 167040485	DATE 2025-06-17
CONÇU L. Esseghaier	RÉVISÉ / VERIFIED J. Massicotte
DESSINÉ G. Anderson	FIGURE NO. 19.7 - B
	ED./RÉV. 0





LÉGENDE / LEGEND

Composante de projet / Project Component

- Zone de développement du projet / Project Development Area
- Infrastructure minière proposée / Proposed Mine Infrastructure

Probabilité de navigation / Navigation Likelihood

- Probable / Likely
- Peu probable / Uncertain
- Improbable / Unlikely

Hydrologie / Hydrology

- Étendue d'eau / Waterbody
- Déiviation du ruisseau Bibou / Bibou Creek Diversion

Autre / Other

- Réseau routier / Road Network
- Étendue d'eau / Waterbody

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CLIENT

Troilus Gold Corp.

PROJET / PROJECT

Étude d'impact sur l'environnement et le milieu social pour le projet de mine Troilus / Environmental and Social Impact Assessment for the Troilus Mine Project

TITRE / TITLE

Probabilité de navigation dans la zone de développement de projet / Navigability Likelihood within the Project Development Area

NO. PROJET / PROJECT NO. 240433 / 167040485	DATE 2025-06-17
CONÇU L. Esseghaier	RÉVISÉ / VERIFIED J. Massicotte
DESSINÉ G. Anderson	FIGURE NO. 19.7 - C
	ED./RÉV. 0

Environmental and Social Impact Assessment for the Troilus Mine Project

LAND AND RESOURCES USE

Watercourses with known, confirmed or potential past/current use or interest as navigable waterways have been classified as navigable, irrespective of the physical characteristics of the environment. The PE5, PE6, PE7, PE8 and PE9 water bodies located to the south-west of the PDA and the CE5 and CE9 watercourses (potentially used in the past) were thus assessed as likely to be navigable. CE7, for which no information on its physical characteristics is available at this stage of the study, is assessed as navigable as it lies between two bodies of water assessed as navigable. PE13, on the site of the TSF basin, is assessed as unlikely to be navigable. Although it was once used for goose hunting, its navigability is now rated low due to former mining activities on the site. Bibou Creek (CE2) was first diverted during the previous mining operation and presents several obstacles to navigation (culverts and access roads). However, certain sections have characteristics favorable to navigation (flow and depth), and land users place great importance on preserving this watercourse, as expressed during the various consultation phases. For these reasons, the stream has been assessed as a navigable waterway.

Finally, watercourses which either have no previous/current use but are of little interest, or which have or could have the physical characteristics of a navigable watercourse, were deemed unlikely to be navigable. Watercourse CE6 and lake PE3 were also assessed as unlikely to be navigable, as they are located not far from an area that is considered navigable. As for the complex of water bodies to the east of the PDA, comprising lakes PE30, PE33, PE34 and PE35 (considered unlikely for navigation) and streams CE28, CE29, CE30, CE33 and CE34, the project will have no impact on these waters, since no encroachment or bypassing of these waters is planned. The navigation potential of these waters has, however, been deemed unlikely, given their potentially exploitable depth.

It should be noted that some watercourses whose navigability classification is unlikely are likely to meet the physical criteria for navigation, since no field data at this stage of the study makes it possible to categorize them. Similarly, some watercourses deemed unlikely or probable for navigation may not have the physical characteristics required for navigation. These watercourses will therefore require further field validation and will be discussed with Transport Canada.

Table 19.5 Linear Distance of Watercourses and Waterbodies within the PDA by Navigation Probability Category

Probability of Navigation	Distance (km)
Unlikely	41,67
Unlikely	10,60
Probable	20,42

* Note: *For bodies of water, the "centerline" tool uses a polygon (works best with a polygon representing hydrography) to create a centerline based on the polygon's geometry.

Resources use

Surface and groundwater resources

In Quebec, the Water Withdrawal and Protection Regulation (RPEP) governs water withdrawals, taking into account rights of use (by other persons or municipalities), the availability of water resources, foreseeable changes in the environment (schéma d'aménagement et de développement du territoire) and

Environmental and Social Impact Assessment for the Troilus Mine Project

LAND AND RESOURCES USE

the economic development of a region or municipality. The RSA is located on Category II and III public lands. As mentioned in section 19.2.3.2 [Administrative framework], under the JBNQA, this administrative division confers on the Cree communities powers over the administration and use of the resources present on these lands. The guarantees provided mainly concern trapping, hunting and fishing activities, with no specific provisions relating to the quality, quantity and sustainability of water supplies. However, the Act Respecting the Land Regime in the James Bay and New Québec Territories stipulates that the various activities carried out on these lands must be carried out in such a way as to avoid any unreasonable conflict with indigenous hunting, trapping and fishing rights, thus indicating a possible guideline for the use of surface and groundwater resources in the RSA.

No wells are recorded within the RSA according to Hydrogeological Information System (SIH) of the MELCCFP. However, the Troilus mine has three active water supply wells: two of which are located within the PDA, and one near the camps used by land users, close to Lake A (PE43):

- Well PU-4, currently used to supply drinking water to the temporary camp.
- Well PU-2, used solely for the industrial sector in a non-potable manner.
- Well PO-DET 4, used to supply drinking water to the Awashish family camp, and as a voluntary monitoring point for LEET.

The old well at the historic camp is no longer in use.

Mining claims and aggregates

The Mining Act (RLRQ, c M-13.1)² governs and regulates prospecting, research, exploration and mining of mineral substances, as well as the redevelopment and restoration of mining sites in Quebec. Under the Act, mining rights, i.e. rights in rem in immovable property, are conferred by means of various titles. A mining claim is an exclusive right to explore for minerals on a parcel of land and is the first step in acquiring mining rights. A mining lease confers on its holder exclusive rights to mine mineral substances. It offers more secure and stable rights than a mining claim, since it is often renewable for extended periods. A mining concession is a more permanent mining right, conferring more extensive rights than a mining lease. A surface mineral lease allows the extraction of minerals located on the surface of the ground (e.g. soil, gravel, stone) and does not cover minerals located at depth.

Table 19.6 shows the number of mining claims held by companies within the RSA.

Table 19.6 Active Mining Claims in the RSA

Company	Number of Active Mining Claims
9474-9454 Québec inc (102341) (100%)	907
Sumitomo Metal Mining Canada Ltd. (100112) (100%)	724
Troilus Gold Corp (97457) (100%)	679
Schuss Luke (90368) (100%)	507

² The Act to amend the Mining Act (Loi modifiant la Loi sur les mines et d'autres dispositions) was adopted on November 28, 2024.

Environmental and Social Impact Assessment for the Troilus Mine Project

LAND AND RESOURCES USE

Company	Number of Active Mining Claims
Comète Lithium Corporation (104747) (100%)	182
Prodigy Gold inc (94474) (50%), Troilus Gold Corp (97457) (50%)	134
SOQUEM inc (2427) (100%)	111
Moore Jean-David (84206) (100%)	84
Austroid Resources Canada inc (102486) (100%)	84
Morissette Guy (9132) (100%)	79
Ko Timothy (100154) (100%)	71
Giglio Anna Rosa (96501) (100%)	70
Landore Resources Canada inc (82712) (100%)	57
NQC Lithium Corp (105515) (100%)	52
1404100 B.C. Ltd (103183) (100%)	49
Globex Mining Enterprises Inc. (702) (100%)	28
9219-8845 Québec inc (Canadian Mining House) (85234) (100%)	27
Investissement Québec (19383) (40%), Sayona Nord Inc. (101628) (60%)	20
Kiesman Marcy (89235) (100%)	18
Fancamp Exploration Ltd (19174) (100%)	16
Lachance Jenny (98266) (100%)	13
Perron Tony (83007) (100%)	9
Brassard Bertrand (308) (100%)	7
Ribaric Anamary (101781) (100%)	6
Minéraux CBay Inc. (99058) (50%), SOQUEM Inc. (2427) (50%)	3
Audet Jean (67) (40%), Robert Jean (3790) (30%), Explorations Carat Inc. (Les) (12443) (30%)	1
Azimet Exploration Inc. 2003 (100%)	1
Kalt Ryan (94362) (100%)	1

The RSA includes 3,940 active mining claims, 813 of which are owned, in whole or in part by Troilus Corp, along with one mining lease, also held by Troilus. These claims are distributed among 29 companies. They are located within the territory of the Eeyou Istchee James Bay Regional Government, on Category III public lands under the James Bay and Northern Quebec Agreement. The mining claims and titles held by Troilus are shown on Map 3.1.

Another potential future mining project is located within the RSA. This is the Moblan Lithium mine project, currently undergoing environmental assessment by the MELCCFP. Mining exploration projects are also being carried out in the RSA. Kenorland Minerals and Sumitomo Metal Mining Canada Ltd. have been conducting exploration activities at Lac Frotet since 2017 (Kenorland Minerals, 2025).

As already indicated in section 3.10.8, several non-exclusive leases (BNE) for the mining of surface mineral substances may be granted in the vicinity of the Troilus mine (refer to figure 3.11 in chapter 3 [Project description]). As of November 2024, 9 BNE leases were active in the RSA, including 7 active BNEs owned by Troilus for which renewal applications may still be submitted by Troilus (GESTIM, 2024). In addition, several gravel pits formerly in operation are also listed in the RSA (Gouvernement du Québec, 2024c).

Environmental and Social Impact Assessment for the Troilus Mine Project

LAND AND RESOURCES USE

Commercial forestry

For the purposes of forest management in Quebec, and in accordance with article 13 of the LADTF, Quebec's public forest is divided into 57 management units (UA). This unit serves as the basis for calculating allowable cut (or the maximum volume of wood that can be harvested periodically without altering the productive capacity of the forest environment) and for planning forest interventions.

Adaptations have been made to the Quebec forestry regime for Category II and III lands, known as the Régime forestier adapté (RFA). Under the LADTF and the Entente sur la gouvernance dans le territoire d'Eeyou Istchee Baie-James between the Crees of Eeyou Istchee and the Government of Québec, the terms of the RFA were developed in favor of the Crees, notably to ensure their participation and collaboration in the management of the forest territory (Cree-Québec Forestry Board, 2018). The RFA's territory of application comprises 15 UAs. These are made up of groupings of Cree traplines and were determined jointly by the Crees and the Quebec government. The RFA gives the Crees access to the forest resource by granting them an annual volume of wood, as well as promoting employment, contract and partnership opportunities in the forestry sector. Section 90 of the Act respecting the land regime in the James Bay and New Québec territories also stipulates that on Category II lands, integrated forest management plans drawn up under the LADTF must take hunting, fishing and trapping activities into account.

The RSA is within UA 026-61. The main forest species that make up this UA are spruce (particularly black spruce) and jack pine (Chief Forester, 2021). The logging roads that cross the study area bear witness to past forestry activity and indicate areas that are more or less accessible to resource exploitation (see Map 19.6). Significant harvesting with regeneration protection has been carried out in the study area in the past, but the trend in recent years has been towards reduced harvesting in the RSA. These harvests have been followed by several planting activities, with black spruce being the main species replanted. Analysis of harvesting and other silvicultural activities in the PDA between 2022 and 2015 shows several harvesting activities, including major controlled cuts with regeneration protection in 2017 south of the PDA and along the access road to the mine. These areas were subsequently replanted. Several regeneration activities have also been observed in the RSA along the access road to the mine, existing logging roads and certain areas along the Route du Nord (Gouvernement du Québec, 2024c). The Chatillon logging camp, located on the shores of Lac Chatillon and accessible via the Route du Nord, is located south of the RSA (Hawkins and Charbonneau, 2020). For the 2023-2028 period, logging opportunities are reduced compared to the previous period (2018-2023). This reduction is mainly due to the risks associated with fire. Furthermore, allowable cuts also consider the presence of woodland caribou and the various measures in place for their protection and recovery. Indeed, according to the allowable cut 2023-2028 of UA 026-61, the RSA includes protected massifs where forest harvesting is prohibited for a period of 65 years (Chief Forester, 2021). It is also important to note that the PDA, and part of the RSA, includes an area covered by interim measures for woodland caribou. As part of the development of the Stratégie pour les caribous forestiers et montagnards de la Gaspésie (Strategy for the Conservation of Gaspésie Woodland and Mountain Caribou), currently being drafted by the Québec government, these interim measures exclude forest harvesting and forest road improvement in the areas covered by the Strategy, until the Strategy is adopted (MRNF, 2023) (see Map 12). Within management unit UA 026-61, which falls within the boundaries of the RSA, the size of the former harvesting and silvicultural zones, combined with

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that of the Caribou interim measures zone and biological refuges, means that the area available for logging within the RSA is limited.

Several logging operations are located within the LSA. Les Chantiers de Chibougamau Itée has two lumber production plants in Chibougamau, and Barrette-Chapais Itée also has a plant in the municipality of Chapais. Two cogeneration and energy products industries are also located in the municipality of Chapais (Ministère des Ressources naturelles et des Forêts [MRNF], 2025). The lumber mill Produits forestiers Résolu (Comtois), Barrette-Chapais Itée, Eacom Timber Corporation (Matagami), Les Chantiers de Chibougamau Itée, Entreprises Alain Maltais inc. and Produits forestiers Nabakatuk are located in Nord-du-Québec (Golder, 2020).

Hunting, trapping and fishing

Throughout Québec, hunting, trapping and fishing activities are governed by the Act respecting the conservation and development of wildlife (LCMVF). Although the provisions of this Act and the regulations adopted under it also apply on the James Bay territories, the Act respecting hunting and fishing rights in the James Bay and New Québec territories, as part of the JBNQA, takes precedence. Under Section 27 of this Act, Indigenous peoples collectively have exclusive rights to hunt, fish and trap all kinds of wild fish, mammals and birds. As will be explained in the following sections, non-Indigenous peoples may, to a certain extent, engage in these activities, but only under certain conditions and subject to certain limits and prohibitions.

One of these prohibitions concerns the species that can be hunted, trapped and fished. Under sections 33 and 34 of the Act respecting hunting and fishing rights in the James Bay and New Québec territories, certain species of mammals and fish are reserved for the exclusive use of Indigenous peoples. These species are listed in Table 19.7.

Table 19.7 Species Reserved for the Exclusive use of Indigenous People

Mammals			Fish
Weasel	Lynx	Fisher	Catostoma
Beaver	Groundhog	Freshwater seal	Whitefish (non-anadromous)
Wolverine	Marten	Porcupine	Sturgeon
Ermine	Skunk	Muskrat	Silver shark
Wolf	Black bear	Fox	Golden-eyed Laker
Otter	Polar bear	Mink	Lotte

Act respecting hunting and fishing rights in the James Bay and New Québec territories, sections 33 and 34.

Other restrictions and permissions related to hunting, trapping and fishing activities for Indigenous peoples and non-Indigenous communities are detailed in the following sections.

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Hunting and trapping

In Quebec, hunting and trapping activities are governed by the LCMVF. Under sections 38 and 39 of this law, a permit is required for hunting and trapping activities. Québec is divided into 28 hunting zones and 96 furbearer management units (UGAFs). The RSA is within hunting zone 22, UGAF 91 and also includes, at its southern limit, a small fraction of UGAF 87. These zones are all located on James Bay territory (Gouvernement du Québec, 2024d and 2024e). As previously stated, the Act respecting hunting and fishing rights in the James Bay and New Québec territories takes precedence in this zone. Under section 20 of this Act, Indigenous peoples may exercise their harvesting rights at any time of the year. Moreover, the provisions of this law concerning wildlife harvesting limits apply only to non-Indigenous peoples. As for trapping activities, under section 18(e) of this Act, the trapping of all fur-bearing animals is reserved exclusively for Indigenous peoples, including for commercial purposes. This measure therefore concerns the two UGAF management units located in the RSA.

However, considering that the PDA and almost the entire RSA are also located on the right-of-way of Réserve faunique des Lacs-Albanel-Mistassini-et-Waconichi and Réserve faunique Assinica, hunting and trapping activities are prohibited for non-Indigenous peoples (Corporation Nibiischii, 2021).

Recreational fishing

In Quebec, non-Indigenous fishing is governed by the LCMVF. Under section 41 of this law, a permit is required to fish with angling or rod and line in an area determined by regulation. Quebec territory is divided into 29 fishing zones defined according to species distribution and habitat characteristics. Fishing periods vary according to the group of species fished and the zone. The ZER is located in fishing zone 22 south (Gouvernement du Québec, 2024e). As in the case of hunting and trapping, and within the framework of the JBNQA, the Act respecting hunting and fishing rights in the James Bay and New Québec territories takes precedence in this zone.

Under Section 34 of this Act, and as mentioned in the Hunting, Trapping and Fishing section (see Table 19.5 [Species reserved for the exclusive use of Indigenous peoples]), several species of fish are reserved for the exclusive use of Indigenous peoples. As the RSA is located on the rights-of-way of the AMW and Assinica Lakes wildlife reserves, a fishing right-of-entry must have been issued by the Nibiischii Corporation before non-Indigenous communities can fish there. Some areas of these reserves also have fishing restrictions, such as catch-and-release requirements or prohibitions on fishing for particular species. The periods, limits and exceptions indicated in table 19.11 for the southern zone therefore concern fishing by non-Indigenous communities, including in wildlife reserves.

Table 19.8 Periods, Limits and Exceptions for Non-Indigenous Fishing in Zone 22 South

Fish species	Limit of catch	Length limits	
June 1, 2024, to September 2, 2024 - Angling only			
Pike	8 in all		No length limit in Albanel-Mistassini-et-Waconichi and Assinica lakes wildlife reserves
Walleye		37 to 53 cm inclusively, including one over 53 cm	
Walleye		No length limit	

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Brook trout	15 or 2.5 kg + 1 char, whichever limit is reached first		
Yellow perch	5		
Lake trout	3 in all	Less than 60 cm	Not applicable in the Albanel-Mistassini-et-Waconichi and Assinica lakes wildlife reserves and in certain bodies of water located on the territory of certain outfitters with exclusive rights.
Splake trout			
Lacmou			
April 1, 2024, to March 31, 2025 - other species			
Fishing prohibited			
December 1 to April 30 - Number of lines authorized in winter			
5 lines on an ice-covered or non-ice-covered body of water			

Government of Quebec, 2024 f and 2024g

At the time of writing, there was no statistical data available on the exploitation of fishery resources in this zone. However, the Nibiischii Corporation has compiled fishing statistics for the year 2023 for the water bodies of the Assinica wildlife reserves and AMW lakes under its management. Table 19.9 shows the data for water bodies located in the RSA.

Table 19.9 Non-Indigenous Fishing Statistics for the Assinica and AMW Lakes Wildlife Reserves (2023)

Water body	Fish species	Catch	People	Days	Effort	Success
Lake 29647	Walleye	16	2	1	2	8
Lake Avranches (WACO)	Walleye	14	4	1	4	3,5
	Pike	0	4	1	4	0
Lake Avranches	Walleye	301	40	21	56	5,38
	Pike	3	38	19	52	0,06
Lake Chatillon	Walleye	0	6	4	9	0
	Pike	8	6	4	9	0,89
Lac Dompierre (WACO)	Walleye	38	13	3	13	2,92
	Pike	6	13	3	13	0,46
Lac de l'Épervanche	Walleye	10	2	1	2	5
	Pike	0	2	1	2	0
Lake Frotet (print)	Walleye	42	7	2	7	6
	Pike	0	7	2	7	0
Lake Frotet (WACO)	Walleye	292	71	22	71	4,11
	Pike	29	63	20	63	0,46
Lake Lezai	Walleye	59	8	2	8	7,38
	Pike	0	8	2	8	0
Lac De Maurès (WACO)	Walleye	107	30	8	30	3,57
	Pike	9	30	8	30	0,3
	Brook trout	1	4	1	4	0,25

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Water body	Fish species	Catch	People	Days	Effort	Success
Lake Regnault (WACO)	Walleye	364	84	27	84	4,33
	Lake Trout	1	4	1	4	0,25
	Pike	28	75	24	75	0,37
Robineau Lake	Walleye	17	29	18	47	0,36
	Pike	0	29	18	47	0
Lake Troilus (Square-Tail Lodge)	Walleye	5	2	4	8	0,63
	Pike	1	2	4	8	0,13
Total	Walleye	1265				
	Pike	84				
	Brook trout	1				
	Lake trout	1				

(Corporation Nibiischii, 2024 c)

These data show that walleye is, by far, the most caught species in the LSA, accounting for nearly 94% of catches in 2023. Most of catches occurred in lakes Regnault, Avranches and Frotet, all three located in the Assinica wildlife reserve. Lac Regnault and Lac Frotet hosted the largest number of anglers. Lac Lezai was the most successful, with an average of 7 catches per angler, followed by Lac Avranches, with an average of 5 catches per angler.

19.3 Project Interactions with Land and Resources Use

Table 19.10 identifies, for each potential impact, the activities likely to interact with Land and Resources Use and result in the identified impact. These interactions are indicated by a check mark or dash and are discussed in detail in section 19.4, in the context of pathways, standard and project-specific mitigation/improvement measures, and residual impacts.

Table 19.10 Project Interaction with Land and Resource Use

Physical Activities	Impacts: Changes in land and resources use		
	By Cree	For recreational purposes	For navigation
Construction			
Labour, equipment and materials transport to the site.	√	√	-
Vehicles and equipment operation and maintenance within the PDA.	√	√	-
Tree cutting, vegetation clearing, soil stripping and earthworks.	√	√	√
Handling and use of explosives, including blasting.	√	√	-
Construction of permanent and temporary buildings, including domestic wastewater treatment systems and drinking water collection and distribution systems.	√	√	√
Construction of mining infrastructure such as stockpiles, pits and raising the TSF.	√	√	√
Road construction and surface preparation, including crushing of construction materials. Relocation of section of the access road and power line.	√	√	√

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Physical Activities	Impacts: Changes in land and resources use		
	By Cree	For recreational purposes	For navigation
Construction of on-site water management systems including drainage ditches, sedimentation basins and industrial water treatment plant.	√	√	√
Dewatering of water bodies and pits, lowering of water levels in the TSF and management of contact water.	√	√	√
Diversion of Bibou Creek (CE2).	√	√	√
Management of waste materials, including hazardous waste.	√	√	-
Purchase of goods and services.	√	-	-
Employment and expenditure	√	√	-
Operation			
Labour, equipment and materials transport to the site.	√	√	-
Vehicles and equipment operation and maintenance within the PDA.	√	√	-
Handling and use of explosives, including blasting.	√	√	-
Ore extraction from pits, including drilling and hauling of waste rock.	√	√	-
Ore, waste rock and tailings storage.	√	√	-
Ore processing including conveyor, crushing, handling and hauling on site.	√	√	-
Transportation of concentrate to smelter or a wharf.	√	√	-
Management and treatment of water on the mine site and in the environment, including drainage and contact water.	√	√	√
Progressive reclamation of disturbed areas.	√	√	√
Management of waste materials, including hazardous residual materials	√	√	-
Purchase of goods and services.	√	-	-
Employment and expenditures.	√	√	-
Decommissioning and closure			
Labor, equipment and materials transport to the site.	√	√	-
Circulation and maintenance of vehicles and heavy machinery on site.	√	√	-
Decommissioning, dismantling and disposal of buildings and equipment.	√	√	√
Pit flooding, surface and groundwater management.	√	√	√
Reclamation of disturbed areas, including earthworks, overburden spreading and revegetation.	√	√	√
Management of waste materials, including hazardous waste.	√	√	-
Purchase of goods and services.	√	-	-
Employment and expenditures	√	√	-

Notes:

√ = Possible interaction

- = No interaction

The project's main potential interactions with Land and Resources Use during the construction phase relate to activities with a footprint on the land and those likely to degrade the land, cause nuisance (noise, dust, vibrations, lighting) or restrict access to the areas used.

19.4 Assessment of Residual Impacts on Land and Resources Use

19.4.1 Change in Cree Land and Resources Use

19.4.1.1 Project Pathways

Tree cutting, earthworks, relocation of access roads and power lines, and construction of mining buildings and infrastructure could result in the loss of harvesting sites and disrupt Cree land use. During operation, blasting and ore processing could cause additional nuisances, affecting resources and recreational activities. In addition, temporary access restrictions could arise during all phases of the project, limiting or disrupting travel on the land. Water and waste management could also result in the loss of harvesting sites. Finally, navigation could be affected by changes to water bodies and their hydrology.

19.4.1.2 Mitigation and Enhancement Measures

The following mitigation measures have been incorporated into the project design phase and/or are proposed to reduce the project's impacts on Cree land and resources use:

- Limit the project footprint to what is strictly necessary.
- Limit the opening of new roads and accesses to what is strictly necessary.
- Involve affected tallymen/land users in the management of nuisance animals and animals in general in the PDA, including along the mine access road.
- Offer land users the opportunity to harvest nuisance animals and allow them sufficient time to do so.
- Relocate camps located in the Lake A sector (PE43).
- Spread dust suppressant on the access road (at-risk sections) to the mine site and on roads within the PDA.
- Provide mandatory cultural awareness training for all new employees, with the aim of maintaining good neighborly relations and fostering respect.
- Regularly inform land users of upcoming activities at the mine site, particularly those that could disrupt land use, e.g. blasting schedules.
- Explain the emergency measures plan to land users and provide them with updates.
- The preliminary design of the Troilus site closure plan involved consultation with land users. The final closure and reclamation plan and the question of future uses of the reclaimed land will be developed later, in collaboration with government agencies, Indigenous communities and land users.
- Progressive restoration and reclamation of the site for various developments such as the TSF, certain waste rock piles and open pits. The various developments will be restored and revegetated at the end of their operations to facilitate final reclamation of the site.
- Ensure gentler slopes for the waste rock piles compared to the historical project and revegetate these slopes during the closure phase.

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- Troilus will continue its communication and collaboration with the Nibiischii Corporation, the Cree community of Mistissini and land users to ensure cohabitation between mine, reserve and land user uses.
- Use native plants favored by local wildlife during site restoration revegetation.
- The mine site will be closed to the public, and signs and warnings will be installed to inform people of the mine's presence.
- Employees will not be allowed to use their vehicles to get to the mine site and will have to take the transportation service provided by Troilus from one of the home points located in the nearby communities of Mistissini, Oujé-Bougoumou, Chibougamau and Chapais.
- The proposed layout for the restoration of the diverted Bibou Creek has been the subject of consultation and has been designed to provide fish habitat and maintain fish passage between Lac PE2 (Lac Amont) and PE43 (Lac A). The creek detour will be designed to meet the requirements of the MELCCFP and Fisheries and Oceans Canada, and to consider requests from land users.
- Hunting and fishing are prohibited for mine employees, thus avoiding conflicts of use with reserve visitors and land users.
- A mechanism for managing concerns and complaints will be put in place and will be available on the Troilus website.

In addition, specific mitigation measures for the following VCs will help mitigate impacts on Cree land use: Atmospheric Environment, including dust (Chapter 8), Acoustic Environment (Chapter 9), Surface Water Quality (Chapter 12), Vegetation, Riparian and Wetland Environments (Chapter 16), Terrestrial and Avian Fauna (Chapter 17), Fish and Fish Habitat (Chapter 18) and Landscape (Chapter 23).

19.4.1.3 Project Residual Impacts

Deforestation, earthworks, relocation of part of the access road and power line, and construction of buildings, roads, mining infrastructure and water management systems could result in the loss of harvesting sites in the PDA and reduced harvesting success in the LSA. In addition, the nuisance caused by these activities, as well as the transportation of equipment and workers, as well as the presence of the workforce, could disrupt the use of the land and resources by the Crees or for recreational purposes.

Furthermore, during the operational phase, blasting, ore extraction, processing and transportation, as well as the transportation of equipment, could cause nuisances that could disrupt Cree use of the land and resources or recreational activities, and reduce harvesting success in the LSA. That said, as indicated in Chapter 9.4.2.3, vibrations will occur only occasionally during the construction and operation phases. Moreover, given the distance between the mining facilities and the nearest receptors, residual noise and vibration impacts are expected to be low, short-lived and reversible once project activities are completed.

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In addition, as mentioned in chapter 20.4.3.3, impacts on road infrastructure will vary for LSA/RSA communities, with Mistissini being the most affected. Transportation of the mining concentrate will be the main activity, with two routes envisaged: one impacting Oujé-Bougoumou and Chapais the most, and the other avoiding the town centers by passing through Saguenay. However, the risk of road accidents remains high throughout the life of the project. This increase in transportation could have the impact of disrupting Cree land and resource use.

Although employees will not be allowed to use their vehicles to get to the mine site; they will have to use the transportation service provided by Troilus from home points in the neighbouring communities of Mistissini, Oujé-Bougoumou, Chibougamau and Chapais, the movement of labour and the presence of the workforce could also cause nuisances within the LSA for land users. The presence of labour could increase pressure on resources. Indeed, while only the activity related to the purchase of goods and services would not interact with this component, since it involves no footprint on the site and no risk of disturbing the resource harvesting activities practised on the project site, the on-site delivery or transportation of all these goods and services will increase the volume of traffic on the Route du Nord and the mine access road, implying a potential for disturbance.

The management and treatment of water on the mine site and in the environment, as well as the management of residual materials, could result in the loss of harvesting sites.

Restrictions on access to areas used by the Crees or for recreational purposes could occur sporadically during the construction, operation and closure phases, but are expected to be temporary in nature.

During the reclamation and closure phase, although the intensity of nuisances is expected to diminish, the transportation of equipment and labour, the presence of the workforce and the reclamation work itself will still have the potential to disrupt Cree or recreational use of the land and resources.

Finally, the project's potential interactions with commercial land and resource use were examined, but this potential impact was not included in the assessment of residual impacts, given its unmeasurable scale. In fact, no forestry activity has been reported in the RSA for many years, as most of the study area lies within an interim caribou protection zone and is temporarily off limits to forestry until the Strategy for the Conservation of Gaspésie Woodland and Mountain Caribou is implemented. Only an area of about 300 m² to the southwest of the PDA could be exploited for its forest resources. With regard to the mining industry, a search of mining leases and information provided by land users revealed that companies other than Troilus are conducting exploration activities in the southern part of the RSA.

With the implementation of mitigation measures, the residual impact on land use and recreational resources will be adverse, moderate in magnitude and limited to the LSA, moderate to high in sensitivity, long-term, ongoing and reversible.

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19.4.2 Change in Land Use and Recreational Resources of Jamesian Communities

19.4.2.1 Project Pathways

New mine developments are likely to result in loss of surface area of the Assinica Reserve and AMW lakes. Recreational activities offered by the reserves and the outfitting operation could also be affected by the presence of the Troilus mine and its activities.

Construction, operation and transportation work along the access road to the Route du Nord could also disrupt the peace and quiet of the site, and create nuisances (noise, dust) that could disturb non-Indigenous visitors' recreational activities such as camping and water sports. Fishing activities will also be disrupted, especially as site development and mine wastewater management have impacts on fish habitats in the PDA and RSA.

Considering the need for manpower and the settlement of new arrivals in the towns and communities surrounding the Troilus site, an increase in the number of visitors to the reserves is possible, but this will put additional pressure on the natural resources offered by these reserves, and more specifically on fishery resources, since hunting and trapping activities are prohibited for non-Indigenous communities on wildlife reserve lands.

19.4.2.2 Mitigation and Enhancement Measures

The following mitigation measures have been incorporated into the project design phase and/or are proposed to reduce the project's impacts on land use and recreational resources:

- Wherever possible, mining infrastructure has been reused, thereby reducing newly developed and impacted areas.
- Restoration and progressive rehabilitation of the site for various facilities such as the TSF, certain waste rock piles and open pits. The various facilities will be restored and revegetated at the end of their operations to facilitate the final restoration of the site.
- The preliminary design of the closure plan for the Troilus site was the subject of consultations with land users. The final closure and reclamation plan and the question of future uses of the reclaimed land will be developed later, in collaboration with government agencies, Indigenous communities and land users.
- The proposed layout for the restoration of the diverted Bibou Creek has been the subject of consultation and has been designed to provide fish habitat and maintain fish passage between Lake PE2 (Lac Amont) and Lake PE43 (Lac A). Restoration of the diverted Bibou Creek will be addressed in a way that respects the MRNF's site restoration requirements and the demands of land users.
- Implementation of proposed mitigation measures for air quality (Chapter 8), the acoustic environment (Chapter 9) and aquatic wildlife (Chapter 18).
- Hunting and fishing are prohibited for mine employees, thus avoiding conflicts of use with reserve visitors and land users.

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- Access to the mine site will be forbidden, and signs and signals will be posted to inform people of the mine's presence.
- The access road to the mine site from the Route du Nord will be maintained by Troilus.
- Compliance with transport standards (load and dimensions) for the various existing roads crossed by the project, implementation of standard road safety measures (speed regulations, particularly when passing through communities, radio communications, escort, modification of ore transport schedules during the summer, etc.) and coordination with the various stakeholders such as the Ministère des Transports et de la Mobilité durable (MTMD), the Nibiischii Corporation, and the towns and communities in the RSA;
- Troilus will continue its communication and collaboration with Corporation Nibiischii, the Cree community of Mistissini and land users to ensure cohabitation between the uses of the mine, the reserve and land users.
- A concern management mechanism will be put in place and will be available on the Troilus website.

19.4.2.3 Project Residual Impacts

In the current state, no water bodies open to fishing and/or camping activities are identified in the PDA and to the northeast of the current mine site boundaries. The new mining infrastructures planned for areas not impacted by the historic project will not affect areas of wildlife reserves that could be used for recreational activities. Thus, areas currently proposed by Nibiischii Corporation for recreational use are not expected to be lost or restricted. The Bibou Creek diversion will have no impact on fishing, or the species of fish caught. The diverted creek has been designed as a fish habitat, providing a link between streams upstream and downstream of the mine site. The project will therefore have no impact on fishing, boating or camping in the RSA. As a reminder, hunting and trapping activities are reserved for Indigenous peoples, and the reserve prohibits non-Indigenous visitors from using ATVs and PWC on its territory. Consequently, within the boundaries of the wildlife reserves, no impact on hunting and trapping activities is expected. Hunting zone 22, located northeast of the PDA, is far from the mine site and not very busy compared to other areas of the territory. It will not be affected by the project.

In their current state, all trails and the bodies of water to which they give access that lie beyond the current mine site gatehouse are off-limits to non-Indigenous visitors. Extending the boundaries of the mine site will condemn certain trails and restrict access to bodies of water. More specifically, one of the potential access points to the PE2 water body will no longer be accessible, but visitors will still be able to use the other trails and logging roads leading to it. The Pavillon Square-Tail Lodge outfitter and its camp on Lac Troilus will also remain accessible via the access road. Some obstruction of truck traffic is expected along this access road. The implementation of road safety measures and the low proportion of trucks using this road on a daily basis will reduce the risk of conflicts between outfitter visitors and mine employees. To ensure that Troilus and visitors to the wildlife reserve, including visitors to the Pavillon Square Tail-Lodge outfitter, are able to co-exist, Troilus will continue its communication and collaboration with the Nibiischii Corporation. In addition to implementing standard road safety measures, Troilus may, in collaboration with the Nibiischii Corporation, adapt its road safety measures and travel to the summer periods, with the aim of ensuring visitor safety.

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Furthermore, noise assessments during construction and operation of the mine have shown that projected noise levels, both daytime and nighttime, are below provincial and federal noise limits. No exceedance of MELCCFP criteria for road noise is anticipated. At the Pavillon Square-Tail Lodge outfitter, which is the closest receptor point to the mine site, no noise exceedances related to mine construction and operation, or to truck traffic, are projected. No disturbance and no impact on the quality of their recreational activities is therefore expected. In terms of air quality, projected particulate emissions following implementation of mitigation measures will also comply with regulations. The implementation of recommended best practices for lighting (Chapter 8) will reduce the project's impact on ambient light levels. Visitors to the Assinica Wildlife Reserve and AMW Lakes, and to the outfitter, will not be inconvenienced by dust or lighting at the Troilus site. Similarly, modification of the natural landscape by the presence of the mine and its infrastructures should not be an issue. The mine site should have no discernible impact on visitors to the nearest lodging site, Troilus Camp at Le Square-Tail-Lodge outfitter.

As described in Chapter 21, the project will encourage new families to settle in the towns surrounding the project, i.e. Chapais and Chibougamau. Considering that recreational activities in the region are essentially based on outdoor activities, an increase in the number of non-Indigenous visitors to the Assinica wildlife reserve and AMW lakes is therefore expected. This new clientele could therefore increase pressure on already busy fishing territories. Although this new clientele is positive for the viability of the Nibiischii Corporation and the Pavillon Square-Tail Lodge outfitter, the collaboration between Troilus and Nibiischii will enable better management of sport fishing in the study area.

With the implementation of mitigation measures, the residual impact on land use and recreational resources will be adverse, of low magnitude and limited to the LSA, of moderate to high sensitivity, extending over the medium term and occurring on an ongoing basis, and will be reversible.

19.4.3 Change in Navigation

19.4.3.1 Project Pathways

Construction and operation activities are likely to modify existing transport routes in and around the PDA. This modification may result in the loss or modification of access to or through navigable waters mainly frequented by Cree users. On the other hand, following mine closure and the lifting of access restrictions, it will be possible for land users and visitors to the AMW and Assinica wildlife parks to circulate freely throughout the territory and to access or cross navigable waters.

The development of mining and related infrastructures (mining camps, sedimentation ponds) within the PDA will directly encroach on aquatic environments, resulting in a definitive loss of this environment and its use as a navigable waterway. In addition, this new land use and the Bibou Creek diversion are likely to disrupt the natural drainage system and water balance of the PDA and downstream area. The potential for navigation at the PDA could then be disrupted.

19.4.3.2 Mitigation and Enhancement Measure

The project's design aims to reduce the impact of the Bibou Creek diversion by attempting, as far as possible, to reproduce the natural flow of Bibou Creek and thus maintain its various uses, including navigation. Similarly, the reuse of certain mining infrastructures has made it possible to reduce the

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footprint of new developments and thus the associated impact on water environments. The following mitigation measures are also proposed to avoid or attenuate the project's impact on navigation in rivers and lakes:

- Measures will be put in place during construction to prevent debris from flowing into navigable water bodies.
- Land users will be allowed to use the mine access road to access the land north of the PDA for their traditional activities, including navigation.
- Signs will be posted around the perimeter of the PDA to alert visitors to the AMW and Assinica reserves to the presence of the project and its facilities.
- Access to the mine site will be forbidden, and signs and signage will be put up to inform people of the mine's presence.
- Troilus will continue its communication and collaboration with the Nibiischii Corporation, the Cree community of Mistissini and land users to ensure cohabitation between the uses of the mine, the reserve and land users.
- A mechanism for managing concerns and complaints will be set up and will be available on the Troilus website.

These measures are complementary to those proposed for the Hydrology VC (Chapter 11) to reduce the project's impact on modifying the hydrological regime in the project area.

19.4.3.3 Project Residual Impacts

The Troilus Mine project will encroach mainly on permanent watercourses assessed as non-navigable, as shown on Map 19.7. In fact, from the design stage onwards, and as described in section 2.1, several variants for mining infrastructure locations were studied to reduce the new footprints impacted and limit the impact on a single watershed, the Rupert River. Certain developments, including the ore pits, were proposed to reduce encroachment on water environments, thereby preserving the various uses, including the potentially associated navigation. However, mining activities, particularly the development of the South-West pit, will result in new encroachments and the loss of watercourses and water bodies, as well as a network of existing trails. As a result, access to water bodies located in the PDA will be eliminated due to construction work and the encroachment of mine developments on aquatic environments. No watercourses or water bodies affected by the project are listed in the Navigable Waters Schedule of the CNWA. The Bibou Creek diversion (CE2) should not affect the navigability of the watercourse thanks to an adapted design but will be maintained through a different route between Lake PE2 and PE43. On the other hand, access to CE2 will be restricted to local users for safety reasons. Transport Canada will be notified of the watercourses that will be affected by the new developments, and where navigation will be lost. The necessary authorization and exemption requests will also be submitted to Transport Canada. Troilus is committed to complying with the measures provided by Transport Canada as part of the authorization process.

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Despite the loss of hydrological environments within the PDA, soil sealing and anticipated variations in local hydrological regimes, it has been assessed that there will be no significant change in mean annual water volumes leaving the PDA (see section 11.4.1 and sector study H.4 in the appendix of the ESIA report) once the VC Hydrology mitigation measures are implemented (chapter 11 of the ESIA report). In fact, according to the conclusions of the impact assessment on VC Hydrology, it appears that PE43 (Lake A) mitigates the project's influence on the hydrological regime. A loss of water level in streams and water bodies downstream of the PDA that could disrupt navigation is therefore not expected.

In the vicinity of the PDA, access to hydrological environments will also be disrupted. The access road leading to Lake PE2 will be buried by the mine workings, but the water body will still be accessible via other roads that can be extended to the lake. Similarly, lakes PE60, PE61 and PE43 will be inaccessible, since the access road beyond the mine gatehouse will not be accessible to the public, except for users from the Cree territory. Despite this restriction on access to water bodies and watercourses in the area around the mine's HMA boundaries, no impact on boating is anticipated, since this area is already inaccessible to anyone other than Cree families. No impact is therefore expected on the recreational boating activities of Jamesian communities and visitors to wildlife reserves. In fact, as explained in section 19.2.3.2, most of the lakes that are accessible and used for recreational activities (fishing and outdoor recreation, including canoe-camping) by visitors to the AMW and Assinica wildlife reserves, as well as visitors to the outfitting operation, are Frotet, Troilus, Regnault, Avranches and Robineau lakes. There appears to be no stream use in the vicinity of the mine (Lake PE2) or beyond the mine (Lakes PE43 and PE60). However, access to the mine site will be forbidden, and signs and signals will be posted to inform people of the mine's presence. Troilus will also maintain communication with the Nibiischii Corporation to ensure cohabitation between the uses of the mine and those of the reserve. Users of the Cree territory will retain the right of passage through the mine, and thus access to and use of downstream water bodies and watercourses for navigation. They will also be regularly informed of any mine activities that could disrupt their activities, including navigation.

These measures will be maintained during the active mine closure phase, as impacts will continue during this stage of the project. No residual impact on navigation is expected beyond this phase.

The residual impact on navigation is considered to be adverse, with a low magnitude and a scope limited to the PDA. This impact is perceived with moderate sensitivity and will manifest itself in the medium term. It will occur on an ongoing basis and will be irreversible due to the lasting modification of the water regime.

19.4.4 Summary of Project Residual Impacts

Table 19.11 summarizes the residual impacts on Land and Resources Use.

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Table 19.11 Project residual impacts of Land and Resources Use

Residual Impact	Residual Impacts Characterization							
	Project phase	Direction	Magnitude	Geographic extent	Timing	Duration	Frequency	Reversibility
Change in Cree land and resources use	C/E/D	A	M	LSA	MS-HS	LT	C	R
Change in land and recreational resources use for Jamesian communities	C/E/D	A	L	LSA	MS-HS	MT	C	R
Change in navigation	C/E/D	A	L	PDA	MS	MT	C	I

Project phase:

C: Construction
E: Operation
D: Decommissioning and closure

Direction:

P: Positive
A: Adverse

Magnitude:

NMC: No Measurable Change
L: Low
M: Moderate
H: High

Geographic extent:

PDA: Project Development Area
LSA: Local Study Area
RSA: Regional Study Area

Timing:

NS: No sensitivity
MS: Moderate sensitivity
HS: High sensitivity

Duration:

ST: Short-term
MT: Medium-term
LT: Long-term
N/A: Not applicable

Frequency:

S: Single event
IR: Irregular event
R: Regular event
C: Continuous

Reversibility:

R: Reversible
I: Irreversible

19.4.4.1 Summary of Adverse Impacts

Changes in Cree land and resource use

The project will result in the loss of harvesting sites in the PDA and a decrease in harvesting success in the LSA, due to deforestation, construction, transportation and the presence of workers. During the operating phase, nuisances associated with blasting, ore processing and increased traffic could disrupt traditional and recreational uses of the area. Although vibrations and noise are occasional and reversible, the risk of road accidents remains high, particularly for the communities of Mistissini, Oujé-Bougoumou and Chapais. Water and waste management could also affect certain harvesting sites. Temporary access restrictions are planned, and although navigation will not be directly affected, certain hydrological modifications could restrict access to certain bodies of water. As expressed by the Cree population, the Bibou Creek diversion has been designed to preserve fish habitat.

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Changes in land use and recreational resources in Jamesian communities

The mining project will not affect areas currently open to fishing, camping and other recreational activities in the PDA and RSA. However, the expansion of the mine site will restrict access to certain trails, notably to the PE2 water body, although other accesses will remain available. Increased truck traffic may cause impediments, but road safety measures will be put in place, in collaboration with the Nibiischii Corporation, to ensure cohabitation with visitors to the Pavillon Square-Tail Lodge outfitting operation. Projected noise, dust and light levels will remain below regulatory thresholds, and no perceptible impact is expected on recreational activities. However, an increase in non-indigenous visitation is anticipated, which could increase pressure on recreational resources.

Impacts on commercial activities are considered negligible, given the absence of recent forestry activities and the limited presence of other mining companies in the area.

Changes in navigation

The Troilus mining project will result in the loss of some non-navigable watercourses and water bodies in the PDA, as well as the elimination of access trails, particularly to Lake PE2, due to the encroachment of new infrastructure. However, these environments are not listed as navigable under the CNWA, and developments such as the Bibou Creek diversion have been designed to preserve water connectivity. Access to some water bodies will be restricted, but this should not affect recreational use, as these areas are already lightly used or reserved for Cree users, who will retain their right of way. Lakes popular for recreational boating (Frotet, Troilus, Regnault, Avranches, Robineau) will not be affected. As for land users, their fishing and portage zones, being located outside the PDA, will also be preserved.

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APPENDIX 19.1 Confidential maps

Map 19.2 Cree land use - Campsites, transportation routes and other valued features

Map 19.3 Cree land use - Environmental information

Map 19.4 Cree land use - Harvesting areas