

Table 13-2 Summary of environmental effects on the physical environment

| Environmental components | CV (✓) | Project-related activity | Potential effect | Common and specific mitigation measures | Degree of residual effect | Residual effect | Significance of the residual effect |
|-----------------------------|--------|---|--|---|---|--|---|
| PHYSICAL ENVIRONMENT | | | | | | | |
| Hydrology (section 6.2) | ✓ | Construction C2, C3 and C4 | Modification of the natural flow pattern of surface water. | Current measures: A2, B1 to B4, C2, C4, D6, DR1 to DR4, E1 and P1. Special measure : During the dewatering of the lakes, pumping will be carried out during dry weather, and the pumping rate will be limited to the two-year flood rate (or even lower if possible), in order to limit the increase in flows in the receiving environments. In addition, the pumped water will have to pass through a sedimentation basin (or other similar structure) in order to limit the transport of suspended matter into the receiving environments. | Loss of water environments Magnitude (intensity): High Extent: Punctual Duration/frequency: Long OP*: High | Changes in flow rates Magnitude (intensity): Medium Scope: Local Duration/frequency : Long PO*: High Loss of water environments: Strong | Change in flow rates : Medium Loss of water media: Important Change in flow rates: Not important |
| | | Operation and maintenance E1 to E3 and E5 | Modification of the natural flow pattern of surface water. | Current measures: A2, B1 to B4, C2, C4, D6, DR1 to DR4, E1 and P1. Special measures : The pumped discharge of runoff from the site will be managed to adequately replicate the natural flow variations in the watercourse. Thus, peaks will be capped to limit the increase in flood flows in the receiving watercourse; The pumping discharge points for the pit dewatering water will be chosen to minimise the effects on the watercourses around the mine site. Thus, dewatering water will be sent to lakes 3, 4 and 6 in proportion to the groundwater drawdown caused by pumping, in order to compensate for the latter. CEC undertakes to comply with the follow-ups to Directive 019 and the Remediation Attestation for final effluents to watercourses A and other receiving lakes. (QC-57) CEC undertakes to monitor the integrity of watercourses that will undergo a change in their water regime and to take protective measures, if required. (QC-88) | | | |
| | | Closing F2 and F3 | No potential sources of effect will adversely affect the hydrology during the closure phase. | Current measures: R2, R3, R7, R8 and R10. Specific measure: None. | | | |
| Hydrogeology (section 6.3) | | Construction C2 and C3 | Modification of runoff, surface water and groundwater flow patterns at the periphery of the infrastructure. | Current measures : None. Special measures : Monitoring of the drawdown and rise in the water table: a network of wells will be installed around the periphery of the mining infrastructures and water levels will be monitored to validate the predictions of the numerical model. | Flow regime Magnitude (intensity): Low Extent: Punctual Duration/frequency: Short OP*: Medium | Very low | Not important |
| | | Operation and maintenance E1 and E5 | Lowering of the groundwater table due to dewatering of the pit. Modification of runoff, surface water and groundwater flow patterns at the periphery of the infrastructure. | Current measures : None. Special measures : Monitoring of the drawdown and rise in the water table: same as for the construction phase. CEC undertakes to use the double wells to monitor the dispersion plumes of possible contamination at depth. (CEC-22) | Magnitude (intensity): Low to medium Scope: Local Duration/frequency: Long PO*: High | Low to medium | Not important |
| | | Closing F2 and F3 | Natural flooding of the pit. Modification of runoff, surface water and groundwater flow patterns at the periphery of the infrastructure. | Current measures : None. Special measures : Monitoring of the drawdown and rise in the water table: a network of wells will be installed around the periphery of the mining infrastructure and monitoring of water levels will be studied during this phase. | Magnitude (intensity): Low Extent: Punctual Duration/frequency: Medium PO*: High | Low | Not important |

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|--|--------|--|--|--|---|---|-------------------------------------|
| Surface water and sediment quality (section 6.4) | | Construction C1 and C4 | Emission of suspended solids into the water. Accidental spill risk of hydrocarbons into the environment and especially into surface waterways. | Current measures : A1, A2, B1 to B4, C2, C4, C8, D1, D3 to D6, D8, DR1 to DR4, E1, E2, E4, E6 to E8, E10, E13, H2, H7, M2 to M5, M7, M8, MD1 to MD7, MR1, MR3, MR4, MR6, N1 to N3, P1 to P3, P5, R1 to R3, R9, T3 to T6, T9 and W1. Special measures : Woody debris should be left on the ground until the ditch system is functional. In the event that mobile equipment is to be serviced on site, absorbent cloths or other types of absorbent material will be on site to prevent accidental spillage. Addition of a stone bed on the bank of Lake 3 at the outlet of the pumping pipe during dewatering works to prevent bank erosion. Installation of turbidity curtains and use of a sediment bag at Lake 3 during its dewatering. | Surface water and sediment quality Magnitude (intensity): Medium Extent: Local Duration/frequency: Long PO*: High Risk of contamination of surface water and sediment quality Magnitude (intensity): Low Extent: Punctual Duration/frequency: Long PO * : Low | Surface water and sediment quality : Medium Risk of contamination of surface water and sediment quality : Very low | Not important |
| | | Operation and maintenance E1 and E2 | Alteration of the water quality of the watercourse A. Runoff of water with suspended solids. | Current measures : C2, C4, C8, DR1 to DR4, H2, H7, M2 to M5, M7, M8, MD1 to MD7, MR1, MR3, MR4, MR6, N1 to N3, R1 to R3, R9, T3 to T6, T9 and W1. Special measures : Employees using the explosives will be made aware of the problem of nitrates in surface water caused by the improper use of ammonium nitrate. To this end, employees will be encouraged to use the quantities recommended by the manufacturer. Installation of basins or ponds to collect groundwater before discharging it into the natural environment. The system should allow for reoxygenation of the water and allow the water to return to a temperature closer to that of the receiving environment. These ponds could be developed to create new wetlands. These new wetlands would compensate for some of the anticipated loss and would also act as a natural filter for contaminants that may be present in the groundwater. CEC is committed to meeting the standards set by Directive 019 and to working towards EDOs. (QC-56 and QC2-37) CEC undertakes to carry out monitoring as suggested by the MDDELCC. (QC-87) CEC undertakes to monitor the physico-chemical quality of sediments. (QC2-77) CEC undertakes to carry out a geochemical characterisation of waste rock, tailings and ore during mining. (QC2-13) Water in contact with the service roads will be collected in ponds where it will be monitored. The water will be measured to ensure that it meets the criteria of Directive 019. (CEAA-23) CEC undertakes to confirm that employees shall use the manufacturer's recommended amounts of ammonium nitrate when manufacturing explosives. (CEAA-37) CEC undertakes to include areas upstream and downstream of the mine complex in the monitoring to compare sediment quality. (CEAA-119) CEC undertakes to provide the surface water monitoring plan for the operation, closure and post-closure phases. CEC commits to include lithium and tantalum in the surface water monitoring plan. (CEC-38) CEC undertakes to provide a sampling and analysis plan for the overburden characterisation programme. (CEC-41) <i>In the event that certain contaminants exceed MMER® allowable limits when sampling water from one of the sedimentation ponds collecting water from the pumps at the periphery of the pit, a treatment plant would be added prior to discharge to the affected receiving environment. (CEC-32)</i> | | | |
| | | Closing F2 and F3 | Alteration of water quality. Improvement of the water quality of the watercourse A | Same measures as mentioned in the construction and operation and maintenance phases. | | | |

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|--------------------------------------|--------|---|--|--|--|-----------------|-------------------------------------|
| Groundwater quality (section 6.5) | | <i>Construction</i> C5 to C7 | Risk of groundwater contamination from accidental spills of hydrocarbons, solvents or other hazardous liquids. | <p>Common measurements: D4 to D6, H1 to H7, M2 to M8, MD1 to MD7, MR1 to MR10, N1 to N3 R1 to R4, R7 to R9 and T1 to T9.</p> <p>Special measures :</p> <p>Maintenance of vehicles and other mobile equipment will be carried out at the garage. In the event that mobile equipment needs to be serviced on site, absorbent cloths or other types of absorbent material will be on site to prevent accidental spillage.</p> <p>CEC undertakes to use the Guide de caractérisation physicochimique de l'état initial des eaux souterraines avant l'implantation d'un projet industriel for the calculation of background levels when it becomes available. (QC2-41)</p> | Magnitude (intensity): Low Extent: Punctual Duration/frequency: Short PO*: Low | Very low | Not important |
| | | <i>Operation and maintenance</i> E1, E2 and E5 | Risk of groundwater contamination from accidental spills of hydrocarbons, solvents or other hazardous liquids. | <p>Same measures as mentioned in the construction phase (routine and special).</p> <p>Special measures :</p> <p>Groundwater quality monitoring: install a network of monitoring wells around the periphery of the mining infrastructure and sample the water for variations in concentrations, if any.</p> <p>Hazardous material storage areas will be delineated to circumscribe areas at risk of contamination. These areas will comply with the regulations in force.</p> <p>CEC undertakes to carry out intermediate monitoring of the quality of the water pumped by the peripheral wells (dissolved oxygen, metals, flow rates, etc.), before it is mixed with other water. (QC-37)</p> <p>CEC undertakes to monitor the quality of the groundwater in the vicinity of the industrial deck where the petroleum and chemical tanks will be located.</p> <p>CEC undertakes to install observation wells to cover areas potentially at risk. (QC-82)</p> <p>CEC undertakes to continue sampling groundwater quality, at the rate of two sampling campaigns per year, before the start of operations and to follow the requirements defined by the MELCC. (QC2-40 and QC2-42)</p> <p>The proponent undertakes to monitor the parameters of the final effluent from the sedimentation basins of lakes 3, 4, and 6 in accordance with Directive 019. (QC2-24, QC2-25, and ACEE-30)</p> | Magnitude (intensity): Low Extent: Punctual Duration/frequency: Short PO*: Medium | Very low | Not important |
| | | <i>Closing</i> F1, F3 and F5 | Risk of groundwater contamination from accidental spills of hydrocarbons, solvents or other hazardous liquids. | Same measures as mentioned in the operation and maintenance phase. | Magnitude (intensity): Low Extent: Punctual Duration/frequency: Short | Very low | Not important |

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| Soil quality (section 6.6) | | <i>Construction</i> C1, C3, C5 to C7 | Risk of soil contamination from accidental spills of hydrocarbons, solvents or other hazardous liquids. | Current measures : C1, D3 to D6, H1 to H7, M3 to M7, MD1 to MD7, MR1 to MR10, N1 to N3, R1, R4, R9, R10 and T1, T2, T7 and T9. Special measures : Maintenance of vehicles and other mobile machinery will be carried out at the garage. In the event that mobile equipment must be serviced on site, absorbent cloths or other types of absorbent material will be on site to prevent accidental spillage. Machinery refuelling sites will be kept to a minimum to reduce the number of risks. CEC undertakes to present a physicochemical characterisation of the initial state of the soils in accordance with the <i>Guide de caractérisation physicochimique de l'état initial des sols</i> . (QC2-43) CEC undertakes to test the acid generating potential of the overburden prior to the commencement of the project. (CEAA-14) | Magnitude (intensity): Low Extent: Punctual Duration/frequency: Medium PO*: Medium | Low | Not important |
| | | <i>Operation and maintenance</i> E1, E4 to E6 | Risk of soil contamination from accidental spills of hydrocarbons, solvents or other hazardous liquids. | Same measures as mentioned in the construction phase (routine and special). Hazardous material storage areas will be delineated to circumscribe areas at risk of contamination. These areas will comply with the regulations in force. | Magnitude (intensity): Low Extent: Punctual Duration/frequency: Long PO*: Medium | Low | Not important |
| | | <i>Closing</i> F1, F3 and F5 | Risk of soil contamination from accidental spills of hydrocarbons, solvents or other hazardous liquids. | Same measures as mentioned in the operation and maintenance phase. The analytical parameters used to characterise the soils in the ore storage and transshipment areas during the closure phase will be the same as those used for natural background levels. Certain inorganic parameters (e.g. C10-C50 petroleum hydrocarbons, PAHs and MAHs) may also be analysed if it is suspected that machinery may have leaked. (CCE-47) | Magnitude (intensity): Low Extent: Punctual Duration/frequency: Medium PO*: Medium | Very low | Not important |
| Sound environment (section 6.7) | | <i>Construction</i> C1 to C3, C6 and C7 | Increase in natural background noise. | Common measurements : M1, M6, M9 to M12 and T1. Special measures : All equipment residing at construction sites, excluding transient equipment or equipment used for short periods of time, shall be fitted with white noise back-up alarms. All electrical or mechanical equipment not in use must be switched off, including trucks waiting to load for more than 5 minutes. The use of engine brakes should be prohibited within the work area. | Magnitude (intensity): Low Extent: Local Duration/frequency: Long OP*: High | Low | Not important |

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| Sound environment (section 6.7) | | Operation and maintenance E1, E2, E5 to E7 | Increase in natural background noise. | <p>Same routine measures as mentioned in the construction phase.</p> <p>Special measures :</p> <p>CEC will consider the Guidelines for Sound Levels from an Industrial Construction Site to ensure that the health effects of the site are limited. (CEAA-77)</p> <p>All equipment residing at construction sites, excluding transit equipment (e.g., 10-wheeler trucks) or equipment used for short periods of time, shall be equipped with a white noise back-up alarm. (CEAA-78)</p> <p>All electrical or mechanical equipment not in use shall be switched off, including trucks waiting for a load of more than 5 minutes. (CEAA-78)</p> <p>The use of engine brakes should be prohibited within the work area. (CEAA-78)</p> <p>The Explosives Act and its regulations, the Explosives Act Regulations, will be complied with and the necessary measures will be taken to ensure that activities comply with the requirements set out therein. (CEAA-89)</p> <p>The noise limit imposed by Directive 019 for blasting will be respected. (CEAA-89)</p> <p>Machinery and truck traffic will be restricted to the right-of-way of access roads and work areas. Plastic fencing will clearly identify the boundaries of work areas. (CEC-51)</p> <p>The site supervisor will ensure that noisy equipment is properly maintained and that mufflers and catalytic converters on machinery are in good condition. (CEC-51)</p> <p>Comply with the noise standards contained in MELCC Instruction Note 98-01 on noise. (CEC-51)</p> <p>Take all necessary measures to limit noise at source. (CCE-51)</p> <p>Ensure regular maintenance of equipment and the good condition of silencers and any other equipment that may be a source of noise pollution. (CCE-51)</p> <p>Equip mobile equipment with a wideband audible alarm to signal reversing movements. (CCE-51)</p> <p>Implement an awareness program for machinery users to avoid bucket slamming, falling objects from a great height and optimizing work methods. (CCE-51)</p> <p>All equipment residing at construction sites, excluding passing equipment (e.g. ten-wheeled craft trucks) or equipment used for short periods of time will be equipped with white noise back-up alarms. (CEC-51)</p> <p>All electrical or mechanical equipment not in use must be switched off, including trucks waiting for a load of more than five minutes. (CCE-51)</p> <p>The use of engine braking should be prohibited within the work area. (CCE-51)</p> | | | |

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|------------------------------------|--------|--|--|---|---|-----------------|-------------------------------------|
| Sound environment (section 6.7) | | <i>Closing</i> F1, F3 to F5 | Increase in natural background noise. | Same routine measures as mentioned in the construction and operation and maintenance phases. | | | |
| Lighting environment (section 6.8) | ✓ | <i>Construction</i> C1 to C4, C6 and C7 | Temporary emission of artificial light at night. | Common measurements: L1 to L5. Special measures: None. | Likely residual effects during the construction phase are considered insignificant. | | |
| | | <i>Operation and maintenance</i> E1 and E2, E5 to E7 | Permanent emission of artificial light at night. | Common measurements: L1 to L5. Special measures: None. | Magnitude (intensity): Low Extent: Local Duration/frequency: Long OP*: High | Low | Not important |
| | | <i>Closing</i> F1, F3 to F5 | Temporary emission of artificial light at night. | Common measurements: L1 to L5. Special measures: None. | The likely residual effects in the closure phase are considered insignificant. | | |
| Air quality (section 6.9) | ✓ | <i>Construction</i> C1 to C3, C6 and C7 | Degradation of atmospheric quality (emission of particulate matter and/or gaseous contaminants). | Common measurements : M3, M6, T1, T2, T4 to T9. Special measures : During blasting, a blasting mat will be installed to retain particles in the work area. Dust emissions from the borehole will need to be controlled. In order to minimise dusting during the grading works, the dewatered soils will be watered as necessary to keep the surface moist. Granular material handling work will not be carried out during strong winds or when the wind is blowing towards the workers' camp. The machinery used will have to meet Environment Canada's emission standards for on-road and off-road vehicles. To limit the dispersion of dust on unpaved roads, these will be sprayed with water. To reduce fuel consumption, the elimination of idling and the use of engine heaters will be considered. Idling time (running the engine unnecessarily) of machinery will be kept to a minimum; the use of electrical terminals for block heaters and glow plugs on diesel engines will reduce idling. Air emissions from transport vehicles used in the construction phase (equipment, excavated or backfilled soil, personnel, etc.) will be reduced by limiting the number of trips. | Magnitude (intensity): Medium Extent: Punctual Duration/frequency: Short PO*: High | Medium | Not important |
| | | <i>Operation and maintenance</i> E1, E2, E6 and E7 | Degradation of atmospheric quality (emission of particulate matter and/or gaseous contaminants). | Same measures as mentioned in the construction phase (routine and special). Equipment dedicated to suppressing dust should be inspected regularly and defects should be repaired as soon as possible. | Magnitude (intensity): Medium Extent: Punctual Duration/frequency: Long PO*: High | Medium | Not important |

| Environmental components | CV (✓) | Project-related activity | Potential effect | Common and specific mitigation measures | Degree of residual effect | Residual effect | Significance of the residual effect |
|------------------------------|--------|--------------------------|--|---|---|-----------------|-------------------------------------|
| Air quality (section 6.9) | ✓ | | | <p>Dust collected by dust collectors should be handled and transported in such a way that no dust is released into the atmosphere that is visible more than 2 m from the source of emission. If not recycled, they should be stored, deposited or disposed of on the ground provided that appropriate measures are taken to prevent any release of dust into the atmosphere that is visible more than 2 m from the emission source.</p> <p>CEC undertakes to install an atmospheric measurement station on its site. (QC-86)</p> <p>CEC undertakes to include all equipment that emits contaminants into the atmosphere in its preventive maintenance programme. (QC-8bis)</p> <p>CEC undertakes to take the necessary measures to comply with this emission standard (20 mg/m³R). (QC-9bis)</p> <p>CEC undertakes to limit the blasting of waste rock as much as possible when winds blow towards the camp at kilometre 37 of the Nemiscau-Eastmain-1 road. (QC 5, MELCC 2nd series)</p> <p>CEC undertakes to update and improve the dust management plan on a regular basis. (QC2-75)</p> <p>CEC is committed to integrating all equipment generating airborne contaminant emissions into its preventive maintenance program. (QC-8, 2nd series of the MELCC)</p> <p>CEC undertakes to take the necessary measures to comply with this emission standard. (QC-9, MELCC Round 2)</p> <p>CEC commits to the temporary covering of the waste rock piles and the reduction of waste rock blasting in windy conditions towards the Cree camp. (CEAA-58)</p> <p>Employees operating machinery will be trained in economical driving and operating methods to reduce vehicle and machinery idling and fuel economy. (CEAA-75)</p> <p>CEC thus undertakes to share its monitoring data in order to allow a more accurate assessment of the air quality of the atmospheric zone hosting its project, to identify possible solutions to reduce its emissions and to apply, as far as possible, new mitigation measures to its operations. (CEC-15)</p> | | | |
| | | <i>Closing</i> F4 | Degradation of atmospheric quality (emission of particulate matter and/or gaseous contaminants). | Same measures as mentioned in the construction phase. | Magnitude (intensity): Medium Extent: Punctual Duration/frequency: Short PO*: High | Medium | Not important |

Legend: PO: Probability of occurrence

Table 13-3 Summary of environmental effects on the biological environment

| Environmental components | CV (✓) | Potential sources of impact | Potential effect | Common and specific mitigation measures | Degree of residual effect | Residual effects | Significance of the residual effect |
|---------------------------------------|--------|---|---|--|--|---|---|
| BIOLOGICAL ENVIRONMENT | | | | | | | |
| Vegetation and wetlands (section 7.1) | ✓ | Construction C1 to C7 | <p>Loss of terrestrial and wetland areas. Risk of accidental spillage of hydrocarbons into the environment. Introduction and spread of EFEE by machinery (alien and invasive plant species). Loss of aquatic grass beds.</p> | <p>Common measurements: D1 to D8, H1 to H8, M1 to M7, MD1 to MD7, MR1 and MR6, R1 to R10, T2, T6 and T7. Special measures : Clear the areas that will be used during the year for waste rock storage and pit operations. At the end of the work, reprofile disturbed areas and seed the work areas with a seed mix free of invasive alien species and containing seeds of native species appropriate to the hardiness zone, thus avoiding the establishment of invasive alien plant species and accelerating the revegetation process. Gradual revegetation will be favoured. This will be done around year 5, when the first level is available for revegetation. If machinery is to be used in a wet environment, work should be carried out on frozen ground or during periods of low water levels. If machinery is to be used in a wet environment, use vehicles and construction equipment with low ground pressure. Drive on a wooden mat or fascines, etc. Maintain drainage conditions in wetlands adjacent to work areas. Develop a compensation plan for the loss of wetlands associated with the project to be submitted to MDDELCC for approval. To prevent the introduction of invasive alien species, ensure that the construction equipment to be used is cleaned prior to arrival at the mine site to ensure that it is free of mud, animals or plant fragments. Avoid driving, if not necessary, to areas where EEZs are present in order to avoid spreading them over the territory.</p> | <p>Terrestrial vegetation Ecosystem value: Low Socio-economic value: Low Overall env. value: Low Magnitude (intensity): Low Extent: Local Duration/frequency: Long (for pit, hoppers, road, etc.) and medium (for work areas) OP*: High</p> <p>Wetlands Ecosystem value: High Socio-economic value: High Overall environmental value: High Magnitude (intensity): High (for facilities) and medium (for work areas) Scope: Local Duration/frequency: Long (for pit, hoppers, road, etc.) and medium (for work areas) OP*: High</p> | <p>Ground vegetation: Low Wetlands: Strong</p> | <p>Land vegetation : Not important Wetlands: Important</p> |
| | | Operation and maintenance E3, E4 and E6 | <p>Modification of runoff and surface water flow patterns at the periphery of the infrastructure. Risk of accidental spillage of hydrocarbons into the environment. Introduction and propagation of EFEE.</p> | <p>Common measurements: H1 to H8, M1 to M7, MD1 to MD7, MR1 and MR6, T2, T6 and T7. Special measure : Use the stored loose deposits (overburden) for the progressive rehabilitation of waste rock and tailings piles. CEC undertakes to delimit invasive alien species, to eliminate them and to carry out inspections and monitoring 2 years after the work. (QC-67) CEC undertakes to put in place a project to compensate for the loss of wetlands associated with the project. (QC2-47)</p> | <p>Wetlands vs. modification of surface water flow patterns Magnitude (intensity): High Extent: Local Duration/frequency: Long PO*: Medium</p> | <p>Fort</p> | <p>Important</p> |
| | | Closing F3 to F5 | <p>Gradual restoration of forest cover in disused sites after revegetation works have been carried out (positive effect). Risk of accidental spillage of hydrocarbons into the environment.</p> | <p>Same mitigation measures as listed for the construction and operation phases where they relate to the same sources of effect.</p> | <p>The likely residual effects in the closure phase are considered positive. The positive residual effects are related to habitat restoration.</p> | | |

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|-----------------------------|--------|--|---|--|---|---|--|
| Aquatic fauna (section 7.2) | ✓ | Construction C1 to C7 and C9 | Emission of suspended solids into the water. Modification of the hydrological regime. Destruction of fish habitat and mortality. Risk of accidental spillage of hydrocarbons into the aquatic environment. Increased fishing pressure. | Current measures : A1, A2, B1 to B4, C2, C4, C8, D1, D3 to D6, D8, DR1 to DR4, E1, E2, E4, E6 to E8, E10, E13, H2, H7, M2 to M5, M7, M8, MD1 to MD7, MR1, MR3, MR4, MR6, N1 to N3, P1 to P3, P5, R1 to R3, R9, T3 to T6, T9 and W1. Special measures : Capture a portion of the fish in Lake 1 prior to dewatering over a maximum fishing period of 10 days per body of water; In large clearing areas, woody debris will be left on the ground until the ditch system is functional to prevent runoff from the cleared area causing sediment transport to watercourses or water bodies; Maintenance of vehicles and other mobile machinery will be carried out at the garage. If mobile equipment is to be serviced on site, absorbent cloths or other absorbent material will be put in place to prevent spillage accidental; The number of refuelling sites for machinery will be kept to a minimum; Install a fish screen at the end of the pumps to prevent them from being sucked into the pipes; Installation of a stone bed on the bank of Lake 3 at the outlet of the pumping pipe during the dewatering works to prevent erosion of the bank. CEC undertakes to carry out an initial characterisation of the benthic fauna. (QC2-50) | Ecosystem value: High Socio-economic value: High Overall environmental value: High Dewatering of watercourses (lakes 1, 2, 3 (in part) and streams B and K) decrease in water inflow to lake 19; streams A, B, K and M vs. pit operation Magnitude (intensity): High (for lakes 1, 2, 3 and 19 and streams A, B and K) and medium (peripheral streams) Scope: Local Duration/frequency: Long PO*: High Risk of accidental spills Magnitude (intensity): Medium Extent: Punctual Duration/frequency: Long PO*: Low | Lakes 1, 2, 3, 19 and rivers A, B, K, M: Strong Watercourses on the periphery of mining installations : Medium Spill hazards accidental : Low | Lakes 1, 2, 3, 19 and rivers A, B, K, M: Important Watercourses around mining facilities : Not important Risk of accidental spills: Not important |
| | | Operation and maintenance E1, E3, E4, E6, E7 and E9 | Change in water quality of the watercourse A. Modification of the hydrological regime (lowering of the water table and pumping to lakes 3, 4 and 6). Risk of accidental spillage of hydrocarbons into the aquatic environment. Increased fishing pressure. | Current measures : C2, C4, C8, DR1 to DR4, H2, H7, M2 to M5, M7, M8, MD1 to MD7, MR1, MR3, MR4, MR6, N1 to N3, R1 to R3, R9, T3 to T6, T9 and W1. Special measures : Employees using the explosives will be made aware of the problem of nitrates in surface water caused by the improper use of ammonium nitrate. To this end, employees should use the quantities recommended by the manufacturer. Installation of basins or ponds to collect groundwater before discharging it into the natural environment. The system should allow the water to be reoxygenated and returned to a temperature closer to that of the receiving environment. These ponds could be developed to create new wetlands. These new wetlands would compensate for part of the anticipated loss and act as a natural filter for contaminants that may be present in the groundwater. CEC commits to a fish habitat compensation program The company must provide additional information within the prescribed timeframe, once the actual losses are compiled. (QC-74) | | | |
| | | Closing F3 to F5 | Improvement of the water quality of the watercourse A. Risk of accidental spillage of hydrocarbons into the aquatic | Same mitigation measures as listed for the construction and operation phases where they relate to the same sources of effect. | | | |

| Environmental components | CV (✓) | Potential sources of impact | Potential effect | Common and specific mitigation measures | Degree of residual effect | Residual effects | Significance of the residual effect |
|----------------------------|--------|--|--|--|---|--|--|
| Herpetofauna (section 7.3) | ✓ | Construction C1 to C7 | Habitat loss and fragmentation. Disturbance of populations. Risk of collision. Risk of accidental spillage of hydrocarbons into the environment. | Current measurements : A1, D2, D5, D6, D8, E1, E10, G1, G2, P1 to P6, R1, R2, L1 to L4, M1 to M3, M6, M9, M10, T1 to T9, H1 to H8, M3 to M5, M7, M8, MD1 to MD5 Special measures: None. | <p>Ecosystem value: Medium Socio-economic value: Low Overall environmental value: Medium</p> <p>Loss of habitat : Magnitude (intensity): Medium Extent: Punctual Duration/frequency: Long PO*: High</p> <p>Disturbance and collision risk: Ecosystem value: Low Socio-economic value: Low Overall env. value: Low Magnitude (intensity): Low Extent: Punctual Duration/frequency: Short PO*: High</p> <p>Risk of spillage : Ecosystem value: Medium Socio-economic value: Low Overall environmental value: Medium Magnitude (intensity): Low Extent: Punctual Duration/frequency: Short PO*: Low to medium</p> | <p>Loss of habitat: Medium</p> <p>Disturbance and risk of collision: Low</p> <p>Risk of spillage : Very low</p> | <p>Loss of habitat: Not important</p> <p>Disturbance and risk of collision: Not significant</p> <p>Risk of spillage : Not significant</p> |
| | | Operation and maintenance E1, E2, E4 to E7 | Disturbance of populations. Risk of collision. Risk of accidental spillage of hydrocarbons into the environment. | Same mitigation measures as listed for the construction phase when addressing the same sources of effect. | The related effects are much the same as in the construction period. | <p>Disturbance and risk of collision : Low</p> <p>Risk of spillage : Very low</p> | <p>Disturbance and risk of collision: Not significant</p> <p>Risk of spillage : Not significant</p> |
| | | Closing F1 to F5 | Disturbance of populations. Risk of collision. Restoration of habitats. | Same mitigation measures as listed for the construction and operation phases where they concern the same sources of effect in addition to R1 to R3. | The related effects are much the same as in the construction period. Positive residual effects related to habitat restoration are also expected. | <p>Disturbance and risk of collision: Very low</p> <p>Risk of spillage: Very low</p> <p>Habitat restoration</p> | <p>Disturbance and risk of collision: Not significant</p> <p>Risk of spillage : Not significant</p> |

| Environmental components | CV (✓) | Potential sources of impact | Potential effect | Common and specific mitigation measures | Degree of residual effect | Residual effects | Significance of the residual effect |
|---------------------------|--------|------------------------------------|---|---|--|---|---|
| Avian fauna (section 7.4) | ✓ | Construction C1 to C7 | <p>Habitat loss and fragmentation (changes in structure). Risk of mortality. Disturbance due to the presence of infrastructure and traffic (noise, light and dust disturbance). Risk of accidental spillage of hydrocarbons into the environment.</p> | <p>Current measurements : A1, D2, D5, D6, D8, E1, E10, G1, G2, P1 to P6, R1, R2, L1 to L4, M1 to M3, M6, M9, M10, T1 to T9, H1 to H8, M3 to M5, M7, M8, MD1 to MD5 Special measure : During periods when there is a risk of by-catch, i.e. when certain deforestation activities take place during the nesting period, particular attention will be paid to the presence of eggs and nests at the work site. (CEAA-85) CEC will implement a pond monitoring program to prevent and minimize adverse effects of the project on migratory birds that would use all ponds. (CEC-49)</p> | <p>Habitat loss (general) : Ecosystem value: Medium Socio-economic value: Low Overall environmental value: Medium Magnitude (intensity): Medium Extent: Punctual Duration/frequency: Long PO*: High</p> <p>Habitat loss (species at risk): Ecosystem value: High Socio-economic value: High Overall environmental value: High Magnitude (intensity): High Extent: Punctual Duration/frequency: Long PO*: High</p> <p>Disturbance and collision risk: Ecosystem value: Low Socio-economic value: Low Overall env. value: Low Magnitude (intensity): Low Extent: Punctual Duration/frequency: Short PO*: High</p> <p>Risk of spillage : Ecosystem value: Medium Socio-economic value: Low Overall environmental value: Medium Magnitude (intensity): Low Extent: Punctual Duration/frequency: Short PO*: Low to medium</p> | <p>Habitat loss (general): Medium Loss habitat (species at risk) : Fort Disturbance and risk of collision: Low Risk of spillage : Very low</p> | <p>Habitat loss (general): Not important Loss habitat (species at risk): Important Disturbance and risk of collision: Not significant Risk of spillage : Not significant</p> |
| | | Operation and maintenance E1 to E7 | <p>Disturbance due to the presence of infrastructure and traffic. Mortality risk. Modification of aquatic habitat. Risk of accidental spillage of hydrocarbons into the environment.</p> | <p>Same mitigation measures as listed for the construction phase when addressing the same sources of effect.</p> | <p>Same residual effects and significance as those listed for the construction phase where they relate to the same sources of effect.</p> | | |

| Environmental components | CV (✓) | Potential sources of impact | Potential effect | Common and specific mitigation measures | Degree of residual effect | Residual effects | Significance of the residual effect |
|---------------------------|--------|---|--|--|---|--|--|
| Avian fauna (section 7.4) | | <i>Closing</i> F1 to F5 | Disturbance due to the presence of infrastructure and traffic. Risk of collision. Habitat restoration. | Same mitigation measures as listed for the construction and operation and maintenance phases where they relate to the same sources of effect in addition to R1 to R3. | Same residual effects and significance as listed for the construction and operation and maintenance phases where they relate to the same sources of effect. Positive residual effects related to habitat restoration are also expected. | | |
| Mammals (section 7.5) | ✓ | <i>Construction</i> C1 to C7 | Habitat loss and fragmentation (changes in structure). Disturbance due to the presence of infrastructure and traffic (noise/dust disturbance). Risk of collision. Risk of accidental spillage of hydrocarbons into the environment. | Current measurements : A1, D2, D5, D6, D8, E1, E10, G1, G2, P1 to P6, R1, R2, L1 to L4, M1 to M3, M6, M9, M10, T1 to T9, H1 to H8, M3 to M5, M7, M8, MD1 to MD5 Special measures: None. | <p>Loss of habitat : Ecosystem value: Medium Socio-economic value: Medium Overall environmental value: Medium</p> <p>Magnitude (intensity): Medium Extent: Punctual Duration/frequency: Long PO*: High</p> <p>Disturbance and collision risk: Ecosystem value: Low Socio-economic value: Low Overall env. value: Low</p> <p>Magnitude (intensity): Low Extent: Punctual Duration/frequency: Short PO*: High</p> <p>Risk of spillage : Ecosystem value: Medium Socio-economic value: Medium Overall environmental value: Medium</p> <p>Magnitude (intensity): Low Extent: Punctual Duration/frequency: Short PO*: Low to medium</p> | <p>Loss of habitat: Medium</p> <p>Disturbance and risk of collision: Low</p> <p>Risk of spillage : Very low</p> | <p>Loss of habitat: Not important</p> <p>Disturbance and risk of collision: Not significant</p> <p>Risk of spillage : Not significant</p> |
| | | <i>Operation and maintenance</i> E1, E2, E4 to E7 | Disturbance due to the presence of infrastructure and traffic (noise/dust disturbance). Risk of collision. Risk of accidental spillage of hydrocarbons into the environment. | Same mitigation measures as listed for the construction phase when addressing the same sources of effect. | Same residual effects and significance as those listed for the construction phase where they relate to the same sources of effect. | | |
| | | <i>Closing</i> F1, F3 to F5 | Disturbance due to the presence of infrastructure and traffic (noise/dust disturbance). Risk of collision. Restoration of | Same mitigation measures as listed for the construction and operation phases where they concern the same sources of effect in addition to R1 to R3. | Same residual effects and significance as those listed for the construction phase where they relate to the same sources of effect. Positive residual effects related to habitat restoration are also expected. | | |

| Environmental components | CV (✓) | Potential sources of impact | Potential effect | Common and specific mitigation measures | Degree of residual effect | Residual effects | Significance of the residual effect |
|--|--------|-------------------------------------|--|---|---|---|--|
| Woodland and migratory caribou (section 7.6) | ✓ | Construction C1 to C3 and C6 | Habitat alteration (loss, degradation or fragmentation). Disturbance caused by noise. Risk of collision. | Current measures : None. Special measures : Establish a communication system to notify employees and contractors of any sightings or signs of caribou on the roads leading to the mine site; Develop a training module for employees and subcontractors to make them aware of the precariousness of caribou populations and develop their ability to distinguish possible signs of presence; | Ecosystem value: High Socio-economic value: High Overall environmental value: High Magnitude (intensity): Medium Extent: Local Duration/frequency: Medium to long PO*: Low | Medium | Not important |
| | | Operation and maintenance E1 and E6 | Habitat alteration (loss, degradation or fragmentation). Disturbance caused by noise and light. Risk of collision. | Develop and implement an action plan in case of caribou in the vicinity of the mine; Inform employees of the presence of caribou in the vicinity of the mine infrastructure or on access roads to increase their level of vigilance and limit the risk of disturbance or collision; Intensify the transport schedule during the day and reduce it at night due to the higher risk of collision; Temporarily suspend part of the mine's operations if it presents a high level of risk to caribou in the area. Additional mitigation measures will be put in place to minimise the impact on the noise environment (see section on noise environment). (CEC-51) <i>If caribou are reported to be present in the area, blasting will be delayed until they have moved away from the area of influence of the project (500 m around the mine footprint). (CEC-51)</i> CEC will implement a communication system to notify truck drivers of any sightings or evidence of caribou on these access roads. (CEC-51) | | | |
| | | Closing F3 and F4 | Gradual reduction of disturbances (noise, light, etc.). Gradual restoration of forest cover in disused sites after revegetation works have been carried out (positive effect). Gradual reduction of the risk of collision. | Current measures : None. Special measures : During restoration work, use resinous species to avoid the colonisation of deciduous species (leafing out). | | | |
| Chiropterans (section 7.7) | ✓ | Construction C1 to C7 | Loss and fragmentation of habitat. Disturbance of populations. Risk of collision. Loss or alteration of feeding site. Risk of accidental spillage of contaminants into aquatic and wetland environments (feeding sites). | Current measures : D1, D6, H1 to H8, L1 to L5, M1 to M12, MD1 to MD7, MR1, MR3 to MR5, MR7, MR10, R1 to R5, R8 to R10, T1, T2, T3, T6, T7, T9 and W1. Special measures : If the project schedule permits, carry out clearing outside the chiropteran breeding period, i.e. from 30 May to 15 August; At all stages of the project, if a building, for example a hunting camp, is to be partially or totally dismantled, check beforehand whether it is used by chiropterans. If signs of presence are observed : If project constraints allow, preserve the building; If the building cannot be preserved, wait until the end of the chiropteran breeding season to demolish it and install a new chiropteran shelter nearby, which is protected from mine-related disturbance. CEC undertakes to carry out the clearing work outside the breeding period of the chiropterans. However, it is not impossible that the schedule may be exceeded or that the work schedule may be modified. If clearing work is to be carried out outside the authorised period, a prior inventory will be carried out to identify the possible presence of maternity sites and, if necessary, mitigation measures will be put in place to ensure that they are not disturbed. (QC2-53) | Loss of habitat : Ecosystem value: High Socio-economic value: High Overall environmental value: High Magnitude (intensity): Medium Extent: Punctual Duration/frequency: Long OP*: High Disturbance : Ecosystem value: High Socio-economic value: High Overall environmental value: High Magnitude (intensity): Medium | Loss of habitat: Medium Disturbance: Medium Risk of spillage : Very low | Loss of habitat: Not important Disturbance : Not significant Risk of spillage : Not significant |

| Environmental components | CV (✓) | Potential sources of impact | Potential effect | Common and specific mitigation measures | Degree of residual effect | Residual effects | Significance of the residual effect |
|----------------------------|--------|---|---|--|--|------------------|-------------------------------------|
| Chiropterans (section 7.7) | | <i>Operation and maintenance</i> E1, E3 to E5 | Disturbance of populations (vibration, noise and light). Risk of collision. Risk of accidental spillage of contaminants into aquatic and wetland environments (feeding sites). Presence of potential contaminants in the accumulation basin. | Common measures : H1 to H8, M1 to M12, MD1 to MD7, MR1, MR3 to MR5, MR7, MR10, R1 to R5, R8 to R10, T1, T2, T3, T6, T7, T9 and W1. Special measures: None. | Duration/frequency: Long PO*: High Spill risk : Ecosystem value: High Socio-economic value: High Overall environmental value: High Magnitude (intensity): Low Extent: Punctual Duration/frequency: Short PO*: Low to medium | | |
| | | <i>Closing</i> F1 to F4 | Temporary shelter or maternity use. Use of the site (feeding). Decrease in disturbance of populations. | Same common mitigation measures as listed for the construction and operation when they concern the same sources of effect. Special measure : Particular attention will be paid to the possible presence of chiropterans in the buildings before they are dismantled. | | | |

Table 13-4 Summary of environmental effects on the human environment

| Environmental components | CV (✓) | Potential sources of impact | Potential effect | Common and specific mitigation measures | Degree of residual effect | Residual effects | Significance of the residual |
|---|--------|--|--|---|---------------------------|--|------------------------------|
| HUMAN ENVIRONMENT | | | | | | | |
| Socio-economic conditions (section 8.2) | ✓ | <i>Construction</i> C8 and C9 | Business opportunities for Cree companies. Job creation. Improving the employability of workers in Cree communities. | Current measures : None. Special measures : Clauses favouring the hiring of Cree workers and the Cree economy in the Eastmain Community Impact and Benefit Agreement (IBA); Measures to encourage carpooling of workers from Cree communities; Support for the organizations involved in developing training programs adapted to the needs of the mine and the members and businesses of the Eastmain community; Communication plan to disseminate to local actors a description of the human resources needed for the project (information and job preparation workshops, etc.); Adaptation of the work schedule of Cree employees to accommodate certain traditional activities. | | The likely residual effects during the construction and operation phases are considered positive. The positive residual effects are related to economic spinoffs for Cree businesses, as well as job creation. | |
| | | <i>Operation and maintenance</i> E8 and E9 | Business opportunities for companies. Job creation. Increase in Cree household income. Improving the employability of workers in Cree communities. Labour displacement. | Current measures : None. The same specific mitigation measures as listed for the construction phase will apply. | | | |
| | | <i>Closing</i> F6 and F7 | Decreased demand for goods and services. Gradual downsizing of the mine. | Current measures : None. The same specific mitigation measures as listed for the construction and operation phases will apply in addition to : Offer of separation premiums; Employee assistance program to provide support during the transition to closure (Workforce Adjustment Committee). | | | |

| Environmental components | CV (✓) | Potential sources of impact | Potential effect | Common and specific mitigation measures | Degree of residual effect | Residual effects | Significance of the residual |
|--|--------|---|--|--|--|------------------|------------------------------|
| Current use of land and resources for traditional purposes (section 8.3) | ✓ | Construction C1 to C3, C6, C7 and C9 | Loss of places to practice traditional activities. Loss of a camp. Temporary disruption of traditional activities. Competition for wildlife resources. | <p>Current measures : None. Special measures :</p> <p>Inform Cree land users of the schedule of construction, operation and maintenance and closure activities;</p> <p>Inform Cree users of the territory and members of the Cree communities of the results of the environmental monitoring;</p> <p>Raising awareness among workers and transporters of the need to respect road safety rules and, if necessary, take action with the competent authorities to ensure the safety of users of the Nemiscau-Eastmain-1 road (CCE-74);</p> <p>Measures to limit disturbance caused by mine activities during spring waterfowl hunting and fall moose hunting periods;</p> <p>Prohibition of weapons and/or other hunting equipment on the mine site and at the workers' camp; random searches will take place when employees arrive (CCE-81);</p> <p>Employees will be required to sign an agreement regarding these prohibitions (hunting, trapping and fishing) as a clause in their contract. When this directive is not followed, the employee could be subject to disciplinary measures (CEAA-133);</p> <p>For the RE1 tallyman and his family members, allow the use of services offered at the mining camp (cafeteria, showers, etc.);</p> <p>For the tallyman of RE1 and his family members, trapping on the mine site will be permitted (with the exception of large mammal traps for safety reasons) (CEAA-120);</p> <p>Implementation of multicultural integration programmes, including Cree culture and customs;</p> <p>Wherever possible, employ family members of the RE1 tallyman for environmental monitoring activities;</p> <p>In addition, environmental monitoring will be carried out in relation to traditional food collection activities (CEAA-120);</p> <p>Compensation or relocation for camps located along the Nemiscau-Eastmain-1 road (other than the camp on the RE1 property).</p> <p>In addition to (construction only) :</p> <p>Relocation of the Cree camp from the vicinity of the mine site to the RE1 site;</p> <p>Measures to facilitate the movement of activities affected by the project (moose hunting area, snowmobile trail, fishing site, etc.);</p> <p>Awarding of certain site development contracts to the RE1 tallyman (deforestation, intensive beaver trapping, etc.);</p> <p>Community-based medicinal plant harvesting programme, prior to construction.</p> <p>Cree employees will be given priority for holiday time during Goose Break and Moose Break. (QC2-54)</p> <p>CEC plans to adjust operations for one week during Goose Break and one week during Moose Break so that as many Cree workers as possible can go about their traditional activities. (QC2-55)</p> <p>CEC will set up a system for receiving and resolving noise-related complaints to confirm that the noise environment is not causing an effect on users of the territory. (CEAA-79)</p> | Socio-economic value: Medium Magnitude (intensity): Low Extent: Punctual Duration/frequency: Short PO*: High | Low | Not important |

| Environmental components | CV (✓) | Potential sources of impact | Potential effect | Common and specific mitigation measures | Degree of residual effect | Residual effects | Significance of the residual |
|--|--------|---|---|---|---|------------------|------------------------------|
| Current use of land and resources for traditional purposes (section 8.3) | | Construction C1 to C3, C6, C7 and C9 | | <p>CEC undertakes to include in the human environment study area the Nemaska R19 trapline that is accessible from the Nemiscau-Eastmain-1 road. (CEAA-122)</p> <p>CEC undertakes to include the tallyman for trapline R19 in the Traditional Land Use Monitoring Program. (CEAA-123)</p> <p>CEC undertakes to create a protocol or mechanism to address conflict resolution in the event of problems related to the reconciliation of land and resource use by mine workers, which will include the possibility of reporting theft or other problems observed by land users. (CEAA-133)</p> <p>CEC commits to adding monitoring of the effects of increased heavy traffic on the Nemiscau-Eastmain-1 road on the quality of the camp experience and on access to the territory through the exchange and consultation committee. (CEAA-134)</p> <p>CEC is committed to including information on trapping and opportunistic hunting practices to raise awareness among its employees. (CEC-75)</p> <p>CEC undertakes to initiate discussions with Nemaska tallymen affected by the project's road transport regarding signage of camps and access roads. (CEC-76)</p> <p>CEC undertakes to conduct random searches when employees arrive on site and at the workers' camp to ensure that no employee is in possession of firearms, trapping or fishing equipment. CEC will include information on the permits required for all hunting and fishing activities on Category III lands, the regulations (e.g., Cree exclusivity for certain species) on Category III lands and the outfitters that exist for these purposes in the James Bay territory during the induction of new employees and during awareness sessions. (CCE-81)</p> <p>CEC agrees to offer the Nemaska tallyman of trapline R16 to participate in the follow-up program on traditional land use. (CEC-86)</p> | | | |
| | | Operation and maintenance E1, E2, E5, E6 and E9 | <p>Adaptation of Cree users to the presence of the mine.</p> <p>Competition for wildlife resources.</p> <p>Increase in the number of visitors to the area and in the practice of traditional activities. Increased risk of accidents on the road network.</p> | The same mitigation measures as listed for the construction phase will apply. | Socio-economic value: Medium Magnitude (intensity): Low Scope: Ad hoc Duration/frequency: Long PO*: High | Low | Not important |
| | | Closing F1 to F5 | <p>Temporary disruption of traditional activities.</p> <p>Reuse and reappropriation of the mine site for traditional activities.</p> | <p>The same mitigation measures as listed for the construction phase will apply in addition to :</p> <p>Where possible, leave mine facilities in place, at the request of the tallyman of the RE1 site.</p> | No negative effects are expected on this component. The revegetation and restoration of the site will encourage the reappropriation and reuse of the area by the users. | | |

| | | | | | | | |
|--|---|---|---|--|--|-----|---------------|
| Wellness and human health (section 8.4) | ✓ | <p><i>Construction</i> C1, C2, C5, C6 and C9</p> | <p>Sense of loss and damage to Cree cultural identity. Concerns about risks to human health. Decreased sense of safety for users of the Némiscau-Eastmain-1 road and increased risk of accidents. Difficulties in integrating Cree workers into the workplace. Possible increase in social problems related to alcohol and drug use among workers and in communities. Potential for tension between the Cree population and non-Cree workers and opportunities for rapprochement. Improving the quality of life of Cree community members. Increase in Cree household debt.</p> | <p>Current measures : None. Special measures : Support for Cree community organizations and workers concerned, including the CCSSSJB, with social problems related to alcohol and drug use, debt and financial planning, and family relations; Prohibition of alcohol consumption in the mining camp; Hiring of a Cree community liaison officer; Appoint a person responsible for relations with the Cree communities within the CEC management team; Raise awareness of the need to respect road safety rules and, if necessary, take action with the competent authorities to ensure the safety of local road users; Wherever possible, spread heavy traffic over the whole day and week to avoid peak periods of heavy traffic; Cree participation in environmental monitoring; Inform Cree land users and community members about the measures and means put in place to protect the environment and about the results of environmental monitoring; Setting up a discussion and consultation committee to discuss and find solutions to the various problems associated with the mine's activities. This committee could include land users, members of the Eastmain community, mine workers, representatives of Eastmain's services or the Band Council, etc; Hiring of a Cree employment counsellor; Implementation of multi-cultural integration programmes, including Cree culture and customs; Implementation of activities to promote harmonious relations between Cree and non-Cree workers; Employee awareness programme on healthy lifestyle habits; Organisation of a visit to the site (open day); Participation of Cree representatives in the development of the mine site restoration plan. The traffic study will be shared with the Eeyou Istchee James Bay regional government and the towns and communities affected by the transportation, namely the towns of Matagami, Chibougamau and Nemaska. (QC-13) CEC undertakes to monitor the effects of the increase in heavy traffic on the Nemiscau - Eastmain-1 road from the first year of construction. (QC2-79)</p> | <p>Socio-economic value: Medium</p> <p>Magnitude (intensity): Low Extent: Regional Duration/frequency: Short (for construction and closure phase) and long (operation and maintenance phase) OP*: Medium</p> | Low | Not important |
| | | <p><i>Operation and maintenance</i> E1, E5, E6 and E9</p> | <p>The same potential effects listed for the construction phases are likely to occur during the operation and maintenance phase.</p> | <p>Company and supplier vehicles will be required to comply with the speed limit or face expulsion. Road signs will be added to remind the speed limit at an appropriate frequency. (QC2-58) Drivers will be equipped with radios and road users will be able to communicate with them. (CEAA-146) The importance of transmitting the results of the studies carried out as part of the project to the communities (Eastmain, Nemaska and Waskaganish) was also mentioned, and CEC undertakes to respect this. (EIA, CEAA-112, and CEAA-145) CEC is open to working with other proponents in the region and relevant government entities to put in place mitigation measures that address cumulative effects in the region. (CEAA-124) CEC commits to implement the recommendations proposed in section 5.2 of Annex CEAA-136 concerning mitigation measures for emissions of contaminants to the environment. (CEC-62) CEC is committed to consulting with the Cree communities on the country food monitoring and follow-up program in order to properly incorporate concerns and traditional knowledge. (CEC-65) CEC undertakes to consult with the first responders of the community of Nemaska on the emergency measures plan and to evaluate the possibility of their participation. CEC undertakes to invite the Nemaska first responders to participate in emergency simulation exercises. (CEC-87)</p> | | | |

| Environmental components | CV (✓) | Potential sources of impact | Potential effect | Common and specific mitigation measures | Degree of residual effect | Residual effects | Significance of the residual effect |
|--|--------|--|--|---|--|------------------|-------------------------------------|
| Community welfare and human health (section 8.4) | | Closing F1 to F3 and F7mine | Concerns about risks to the human health. Reuse and reappropriation of the (feeling of ownership of the territory). Possible increase in social problems related to alcohol and drug use among workers and in communities. | CEC undertakes to follow up with local and regional communities annually and to include the results in the annual report. (QC2-78) CEC takes note of MELCC's suggestions concerning the management of putrescible materials in the event of the operation of its own workers' camp. (QC2-30) CEC will set up awareness programmes that address substance abuse, financial planning, family relations, consent awareness, etc. (QC2-59) Proper management of waste materials on the site and the installation of traps for large mammals will reduce the amount of predators that will be attracted to the mine site and the workers' camp. (CEAA-124) The following mitigation measures will be implemented to ensure the safety of people in the vicinity of the mine and the workers' camp: (CEAA-130) <ul style="list-style-type: none"> • Cages will be set up to capture and relocate bears and wolves that approach the site. • A scarecrow will be installed near the waste containers. • The waste containers will be fenced off. • Waste containers will be fitted with bear-proof lids. • Feeding the animals will be strictly forbidden and reminders of this will be frequent. CEC undertakes to present the emergency measures plan to the band councils of the communities. (CEAA-148) | | | |
| Historical, cultural and archaeological heritage (section 8.5) | ✓ | Construction C1 to C3work | Discovery of archaeological remains during the . | Current measures : None. Special measures : Carry out a comprehensive archaeological inventory prior to the construction period for the area with archaeological potential directly affected by the planned developments; CEC undertakes to have these excavations carried out before the project is authorized, with the help of a team of professional archaeologists and also with the participation of the tallymen concerned or as agreed upon with the monitoring committee(s) set up with the communities. (QC-78, QC2-60, and CEAA-142) If any archaeological remains are found, immediately notify the person responsible for the work and take steps to protect the site. Suspend work in the area until MCC gives permission to continue. | Socio-economic value: High Magnitude (intensity): Medium Extent: Punctual Duration/frequency: Long PO*: Low No negative residual effects are expected on this component. | Low | Not important |
| | | Operation and maintenance No components | No potential effects are expected on this . | Current measures : None. Special measures : If any archaeological remains are found, immediately notify the person responsible for the work and take steps to protect the site. Suspend work in the area until MCC gives permission to continue. CEC undertakes to organise a recognition ceremony for Mother Nature in collaboration with the community of Eastmain if the latter so wishes. (CEC-82) | | | |
| | | Closure No components | No potential effects are foreseen on this . | The same mitigation measures as listed for the operation and maintenance phase will apply. | | | |

| Environmental components | CV (✓) | Potential sources of impact | Potential effect | Common and specific mitigation measures | Degree of residual effect | Residual effects | Significance of the residual effects |
|--|--------|--|--|---|---|--|---|
| Landscape (section 8.6) | ✓ | <i>Construction</i> C1 to C3 | Modification of the visual aspect of the landscape of the site. Modification of the | Current measures : None. Special measures : Revegetation of the portion of landfills that extends above the tree tops; Planting of coniferous trees on the west side of the Nemiscau-Eastmain-1 road, along sections closest to the pit (near the camp) to limit views to the haulouts. | Socio-economic value: Medium Visual aspect of the landscape : Magnitude (intensity): Medium Extent: Punctual Duration/frequency: Long PO*: High Field of vision of road users : Magnitude (intensity): Low Extent: Punctual Duration/frequency: Long PO*: High | Visual aspect of the landscape : Medium Field of vision of road users : Low | Visual aspect of the landscape : Not important Field of vision of road users : Not important |
| | | <i>Operation and maintenance</i> E1 and E5 | The same potential effects listed for the construction phase are likely to occur. | | | | |
| | | <i>Closing</i> F1 to F3 | The same potential effects listed for the construction phase are likely to occur. | | | | |
| Socio-economic environment (section 9.2) | ✓ | <i>Construction</i> C8 and C9 | Business opportunities for regional companies. Tax revenue. Job creation. | Current measures : None. Special measures : Favour the hiring of local and regional labour; Establish a purchasing strategy to favour local and regional companies. CEC is committed to pay equity, equal access to jobs, and a supportive environment for women. (QC2-64) The Proponent is committed to hiring as many Cree employees, both women and men, as possible. Through the Impact and Benefit Agreement, CEC is committed to hiring and contracting qualified Cree individuals and companies on a priority basis. (CEAA-140) CEC is committed to implementing support programs in communities that could contribute to work-family balance, such as training programs for social workers and daycare workers. (CEAA-140) CEC undertakes to include the community of Waskaganish in the follow-up program on socio-economic conditions and to submit the environmental follow-up studies to the Waskaganish environmental services. (CEAA-141) CEC undertakes to translate the presentation and video that are presented in the communities, a summary of the environmental effects, and the final table of the observed effects on the behaviour of the valued species. (CEC-93) CEC is committed to implementing a clause in employee contracts regarding any form of harassment, providing mandatory awareness training to workers on sexual harassment, and following up on harassment cases reported to human resources according to best practices. (CCE-95) | The likely residual effects during the construction and operation phases are considered positive. The positive residual effects are related to economic spinoffs for Cree businesses, as well as job creation. In addition, the spinoffs will promote the development of local and regional expertise and business opportunities for regional businesses. | | |
| | | <i>Operation and maintenance</i> E8 and E9 | Business opportunities for regional companies. Tax revenue. Job creation. Increased income for workers. | The same mitigation measures as listed for the construction phase will apply. | | | |
| | | <i>Closing</i> F6 and F7 | Decreased demand for goods and services. Gradual downsizing of the mine. | Current measures : None. Special measures: Offer of separation payments; Employee assistance program to provide support during the transition to closure; Hiring of local labour for the reclamation of the site. | | | |

| Environmental components | CV (✓) | Potential sources of impact | Potential effect | Common and specific mitigation measures | Degree of residual effect | Residual effects | Significance of the residual effect |
|---|--------|--|--|---|---|------------------|-------------------------------------|
| Land use and infrastructure (section 9.3) | ✓ | <i>Construction</i> C1 to C3, C6 and C7 | Disruption of sport hunting activities. Increased risk on the network | Current measures : None. Special measures : Raising awareness among construction workers of the need to respect road safety rules and, if necessary, taking action with the competent authorities to ensure the safety of local road users; Wherever possible, spread heavy traffic over the whole day and week to avoid peak periods of heavy traffic. | Socio-economic value: Medium Magnitude (intensity): Low Extent: Punctual Duration/frequency: Short (for the construction phase) and long (for the operation phase) PO*: Average | Very low | Not important |
| | | <i>Operation and maintenance</i> E1, E2, E5 and E6 | Adaptation of sport hunters to the presence of the mine. Increased risk of accidents on the road network. | | | | |
| | | <i>Closing</i> No | No potential effects on this component are foreseen. | Current measures : None. Special measures: None. | No negative effects are expected on this component. Revegetation and restoration work on the site will promote the reuse of the area by users. | | |

Table 5-6 Common mitigation measures for the Rose Mine Project

| General | |
|----------------------------|---|
| G1 | At the very beginning of the work, a site meeting must be organised with the personnel assigned to the project in order to inform them of the contractual requirements regarding the environment and safety. During the execution of the work, the contractor must comply with the requirements of the contract relating to environmental protection, in particular those under the <i>Environment Quality Act</i> (R.S.Q., c. Q-2), the <i>Act respecting the conservation and development of wildlife</i> (R.S.Q., c. C-61.1), the <i>Forest Act</i> and the related regulations. When work is carried out on forest land in the public domain, the contractor must comply with the requirements of the <i>Forest Act</i> and the <i>Regulation respecting standards of forest management in the public domain</i> and the plans and specifications. In the habitat of an animal species, the work must be carried out in accordance with the requirements of the plans and specifications and the <i>Regulation respecting wildlife habitats</i> (R.S.Q., c. C-61.1, r. 18). |
| Access arrangements | |
| A1 | Slopes adjacent to access roads should be designed to ensure maximum stability. Vegetation on slopes adjacent to paths should be retained. |
| A2 | Install sedimentation basins and/or sediment barriers in access ditches using geotextiles. For permanent accesses, these temporary facilities should be upgraded at the end of the works to ensure their sustainability with minimal maintenance. |
| Cofferdam | |
| B1 | The installation of the cofferdam should take place during the low water periods (July-August). |
| B2 | In order to limit the increase in turbidity during their construction and dismantling, the cofferdam(s) will be made of concrete blocks free of fine particles. Their watertightness will be ensured by a geotextile membrane which will be installed on the inside of the rocky shell of the cofferdams. This will prevent the release of fine materials into the watercourse. |
| B3 | Installation of a suspended solids containment curtain outside the cofferdam construction area. |
| B4 | Pumped water from the dry cofferdam enclosures will be diverted to the bank in settling ponds before being returned to the watercourse. |
| Quarry and sandpit | |
| C1 | Use existing quarries and sand pits. Respect quarry and sandpit standards and minimise the number of borrowings. |
| C2 | Granular materials used in the construction of structures must not be taken from the bed of a water body or its banks or from any source within 75m of the water body. |
| C3 | Carry out clearing and stripping of quarries or sand pits in a progressive manner to avoid unnecessary disturbance of the land. |
| C4 | During operation, reduce erosion due to runoff and prevent sediment from reaching a lake or river. |
| C5 | For new borrow areas, only one access should be provided and the width of this access should not exceed 2.5 times the width of the largest vehicle used to transport the materials. The route of the access (curved, diagonal, etc.) must be such as to conceal the presence of the operation. |
| C6 | Retain a strip of land around the perimeter of the site to accumulate stripped organic soil that will be used to cover the quarry or sandpit surface during reclamation. |
| C7 | At the end of the operation, the surface of the quarry or sandpit must be cleared of any debris, waste, unusable equipment, machinery or other items that were not on the site prior to the operation. The mined surface should then be covered by the stripped and accumulated organic soil. |
| C8 | In the case of a sand pit, in order to prevent erosion and land subsidence, the slopes of the mined surface must not exceed 30 degrees from the horizontal. |
| C9 | If a quarry is located on the side of a hill, mountain, cliff or hillside, the final vertical cut must never exceed 10 m. The operator may make several vertical cuts of at least 10 m on top of each other, provided that these are interspersed with horizontal levels of at least 4 m in width. |
| Deforestation | |
| D1 | Comply with the <i>Forest Act</i> (R.S.Q., c. F-4.1) and all regulations related to this Act, in particular the <i>Regulation respecting standards of forest management in the domain of the State</i> (R.S.Q., c. F-4.1, r. 7) and the <i>Regulation respecting the protection of forests</i> (R.S.Q., c. F-4.1, r. 11). Take the necessary measures to ensure that deforestation activities comply with the requirements mentioned therein. |
| D2 | Prior to clearing, clearly identify, using solid, weatherproof and tear-resistant material that is visible from a distance, the limits of the work areas (right-of-way, storage area, etc.) as well as the limits of the clearance to be made around these areas (interfering branches to be pruned) so as to allow for their effective verification at all times during the work. The supervisor's authorization must be obtained before beginning to cut down trees. |

| Deforestation (continued) | |
|----------------------------------|---|
| D3 | All trees and shrubs, and only these, must be removed by flush cutting on the approach embankment slopes for a distance of 10 m on either side of the abutment face wall. Their root system must be preserved. A protective strip of vegetation at least 30 m wide must be maintained along the banks. |
| D4 | The cuttings should be shredded and mulched on the areas of intervention, at least 60 m away from the river. The residues must not impede the flow of run-off water. |
| D5 | When clearing, pay special attention to the vegetation at the edge of the work area so as not to damage it. Avoid falling trees outside the boundaries of the clearing area and into watercourses. If they do, remove them in a way that does not disturb the environment. Do not uproot or remove trees with machinery near the boundaries of the work areas. Along these boundaries, maintain a 3 m wide ungrubbed transition zone and preserve the shrub layer. Care should be taken to ensure that cleared areas, left bare and exposed to the weather, are kept to a minimum. |
| D6 | In the 30 m strip bordering a watercourse, the vegetation cover must be maintained and it is forbidden to pile up organic matter from the stripping of the soil surface. It is also forbidden to pile up waste and woody debris. Runoff must be diverted to a vegetated area at least 30 m from the watercourse or intercepted by means of sediment barriers or a sedimentation basin. |
| D7 | The holder of an intervention permit must harvest all trees with a diameter equal to or greater than that stated in the permit. He must cut the trees to a height not exceeding 30 cm above the highest level of the ground. Where necessary, remove stumps to a minimum depth of 30 cm below the ground surface. In areas of steep slopes and where embankments of more than 1 m are planned, a flush cut (maximum height 15 cm) without grubbing should also be made. In the 3 m transition zone, trees should also be cut flush and stumps left in place to ensure rapid recovery of the shrub layer and to protect the root system of trees outside the work areas. Damaged roots of 10 mm or more of the trees to be retained should be cleanly cut. |
| D8 | During clearing operations, woody waste and debris can be disposed of at an authorised site or chipped or burned. If shredded, reuse the material for temporary soil stabilisation and fertilisation if necessary. If burned, take all necessary precautions to avoid a fire and obtain a permit from SOPFEU as well as the supervisor's authorization. If applicable, municipal regulations must also be respected. Piles of woody material to be burned must be arranged in piles or rows not exceeding 2.5 m in height. A minimum distance of 12 m must separate these piles from the forest. Never burn wood waste within 60 m of a watercourse. Burning must be carried out under constant supervision and the burn residues must be removed. |
| Drainage | |
| DR1 | During the works, respect the natural drainage of the environment and take all appropriate measures to allow the normal flow of water. |
| DR2 | When constructing temporary ditches, the slope of the ditch should be reduced, if necessary, by installing obstacles at regular intervals to prevent erosion (sandbags, straw bales, etc.). |
| DR3 | Where surface drainage is likely to carry sediment into watercourses, implement measures to contain or divert the sediment so that it does not reach the watercourse. |
| DR4 | Do not construct any ditches within the 20m strip on either side of a watercourse. Beyond this band, water from ditches will be diverted to a vegetated area. If required, the flow velocity of the water will be reduced by blocking the current (energy dissipation techniques) while filtering the sediment. If necessary, a sedimentation basin will be built outside this strip to capture runoff and transported sediments. This will be sized according to the flow to be received and discharged. |
| Excavation and earthworks | |
| E1 | No ditches should be constructed within the 30m strip on either side of a watercourse. Beyond this band, water from ditches must be diverted to a vegetated area outside the right-of-way. If required, water flow velocity should be reduced by blocking the flow (energy dissipation techniques) while filtering sediments. If necessary, a sedimentation basin should be built outside this strip to capture runoff and transported sediments. This should be sized according to the flow to be received and discharged. |
| E2 | When earthworks are carried out on steep slopes, erosion problems should be prevented by progressively stabilising the bottom of the ditches by covering them with well-drained granular material, and by using gravel. If necessary, a series of abutments should be installed at the base of the ditches. |
| E3 | The right-of-way beyond the ditches should be regraded and no soil or debris should be stockpiled. Topsoil from the earthwork may be temporarily stockpiled to a maximum height of 1.5 m for later reuse in the redesign of the right-of-way. The stripping of this soil must be done in such a way as to avoid contaminating it with underlying materials of different composition. |

| Excavation and earthworks (continued) | |
|--|--|
| E4 | Slopes of cut and fill should be stabilized using techniques consistent with the natural environment at any location where erosion is likely to create a sediment supply to a watercourse (slope softened to 1.5 H:1 V, plus other available techniques). Along steep slopes bordering the right-of-way, use sediment barriers (geotextile, straw, etc.) where necessary, etc.) at the foot of the slopes to reduce the volume of sediment transported. Protective structures (straw, shavings, mats) can also be used directly on the slope. It is important to avoid put cuttings on steep slopes. Fills should be adequately compacted. For fills larger than 60 cm, it is preferable to fill in several thin layers rather than in a single layer. In areas without a cross slope, the height and depth of the fill should be limited to 3 m. The fill should be placed in a single layer to ensure better compaction. In areas without a cross slope, the height and depth of embankments |
| E5 | The area and volume excavated and the location of the work must be in accordance with the plans and specifications. |
| E6 | Excavated material should be disposed of in a site located at least 30 m outside the natural high water mark. |
| E7 | Where the removal or addition of granular or other materials is carried out in water, the work should be carried out in such a way as to minimise contamination of the watercourse by resuspension of the material. |
| E8 | Uncovered soil and spoil must be stored outside the riparian zone. |
| E9 | Carry out excavation and reprofiling work sparingly and closely monitor the top of the slope to detect any possibility of slope failure and adjust work techniques if necessary. |
| E10 | Limit stripping, clearing, excavation, backfilling and grading of work areas to a strict minimum in order to respect the natural topography and prevent erosion. |
| E11 | Strip service areas and storage areas of cut and fill materials and retain the organic soil layer for reinstatement during site restoration. |
| E12 | At the end of the work, level the service and spoil storage areas according to the topography of the surrounding area. |
| E13 | Filter, decant, treat or use any other method to control the quality of runoff or water pumped from excavations. |
| Hydrocarbons | |
| H1 | Follow the requirements of the <i>Act respecting petroleum products and equipment</i> (R.S.Q., c. P-29.1) and the <i>Regulation respecting petroleum products</i> (R.S.Q., c. P-30.01, r. 1) for the management of materials and petroleum products. |
| H2 | Develop a contingency plan for the event of an accidental release of contaminants into the environment before work begins. Inform workers of the contents of the response plan and make them aware of the importance of a rapid response. |
| H3 | Take the necessary measures to ensure that containers, portable tanks and mobile tanks comply with the manufacturing standards specified in the <i>Petroleum Products Regulations</i> . Comply with location and installation standards for aboveground and underground tanks. |
| H4 | Have petroleum equipment inspected by an approved inspector when it is installed, replaced or removed. Have petroleum equipment checked in accordance with the frequency and procedures set out in the <i>Petroleum Products Regulations</i> . |
| H5 | The contractor must hold a high risk petroleum equipment licence, if he installs or uses an above ground tank of 10,000 litres or more of diesel fuel or a tank of 2,500 litres or more of petrol. In the case of an underground tank where one or more of the components are partially or completely buried in the ground, this permit is required for a tank of 500 litres or more of diesel or petrol. |
| H6 | For above-ground tanks with a total volume of 5000 litres, a watertight dike forming a containment basin around the tank(s) must be installed. If the sump protects only one tank, it must be of sufficient capacity to contain a volume at least 10% greater than the capacity of the tank. If the sump protects more than one tank, it must be of sufficient size to hold at least 10% more volume than the tank. sufficient capacity to hold a volume of liquids at least equal to the greater of the capacity of the largest tank plus 10% of the total capacity of all other tanks, or the capacity of the largest tank plus 10%. |
| H7 | Handle petroleum products in a way that prevents and controls leaks and spills. Keep oil absorbents on hand at all times where petroleum products are stored or used. In the event of a contaminant spill, immediately follow the spill response plan in effect. |
| H8 | Class 1 or 2 petroleum products or substances impregnated with such products must be stored in sealed containers. A room used for the storage of a Class 1 petroleum product must be heated by means of appliances which do not represent a source of ignition. A room containing a pump or electrical input devices must not be used for the storage of Class 1 or 2 petroleum products. |
| H9 | Design of transfer sites, equipment and tanks in accordance with the requirements of applicable regulations, standards, codes and good industrial practice. |
| H10 | Installation of the tanks on a concrete slab. |
| H11 | Double-walled tanks with a secondary containment tank of sufficient capacity to hold 110% of the stored volume. |
| H12 | Fuel tank level detection: Instrumentation that will check the level of the tanks to prevent overfilling and confirm the integrity of the double wall. |

| Hydrocarbons (continued) | |
|---------------------------------|---|
| H13 | Preventive maintenance of tanks and related equipment to prevent breakage and premature wear. |
| H14 | Training of workers involved in the transfer and handling of bulk petroleum hydrocarbons. |
| H15 | Risk and compliance assessment of petroleum product transfer and storage sites as part of internal inspections. |
| Bright atmosphere | |
| L1 | Use luminaires that do not emit more than 90 degrees in order to limit the spread of light towards the sky, that produce a sober and uniform lighting that will meet the real needs of the lighting and whose luminous flux will be directed towards the surface to be lit. |
| L2 | Limit deforestation and retain as much vegetation as possible to provide visual screens. Re-vegetate bare areas quickly. |

| Lighting environment (continued) | |
|---|---|
| L3 | Limit the time and duration of lighting use by installing timers and motion detectors and encouraging workers to turn off lights or mobile lighting equipment when not in use. |
| L4 | Install fixed lights in such a way as to avoid spillover of light from the spaces to be lit; pay particular attention to the orientation of portable lights and the lighting of moving sources. |
| L5 | Reduce the contrast levels of buildings by using finishes with low reflectance levels and colours that harmonise with the natural landscape (e.g. avoid red). Structures on the site should be dark in colour to absorb light reflection. |
| Machinery | |
| M1 | Machinery and truck traffic will be restricted to the right-of-way of access roads and work areas. Plastic fencing will clearly identify the boundaries of the work areas. |
| M2 | Parking, washing and maintenance areas for machinery and equipment storage must be located at least 60 m from a watercourse. The refuelling of machinery with hydrocarbons must be carried out under constant supervision and at a distance of at least 60 m from a watercourse. The operation of any construction equipment not used for a certain period of time must be interrupted, except during the winter period for diesel-powered machinery. |
| M3 | The machinery and trucks used will be inspected beforehand, and then regularly, to ensure that they are in good condition, clean and free of oil leaks. Their exhaust and anti-pollution systems will also be inspected and repaired, if necessary, to limit noise emissions. |
| M4 | A complete, permanent and easily accessible emergency recovery kit for petroleum products and hazardous materials must be present on site at all times. This should include a sufficient supply of absorbent materials and related equipment (shovels, gloves, leak plugs, etc.) to deal with any situation, as well as clearly marked, leak-proof containers for petroleum residues and other hazardous waste materials. Secondary emergency kits may be required at certain locations on the site. Each piece of equipment should also contain a sufficient quantity of sorbents for rapid response. The list of spill response equipment and devices must be approved by the supervisor. Soil, oil residues and other hazardous residual materials must be disposed of in accordance with applicable laws and regulations. |
| M5 | Any accidental spillage must be reported immediately to the project contingency plan, which will have been drawn up and approved prior to the work. The affected area must be immediately contained and cleaned up without delay. Contaminated soil must be removed and disposed of at an authorized site and a characterization must be carried out in accordance with the MDDELCC's <i>Politique de protection des sols et de réhabilitation des terrains contaminés</i> . In the event of a hydrocarbon or other deleterious substance spill, the Environment Canada (1-866-2832333) or MDDELCC (1-866-694-5454) alert network should be notified without delay. |
| M6 | The site supervisor will ensure that noisy equipment is properly maintained and that mufflers and catalytic converters on machinery are in good condition. |
| M7 | The promoter must ensure that all equipment is in good working order to avoid any leakage of fuel, oil or grease. No cleaning of equipment will be allowed in the aquatic environment. |
| M8 | Before entering the water, machinery should be inspected and cleaned to avoid contamination of the water with oil, grease or other materials. The cleaning area should be located more than 60 m from any water body. |
| M9 | Comply with the noise standards contained in the MDDELCC Instruction Note 98-01 on noise. Take all necessary measures to limit noise at the source. |
| M10 | Ensure regular maintenance of equipment and the good condition of silencers and any other equipment that may be a source of noise pollution. |
| M11 | Equip mobile equipment with a wideband audible alarm to signal reversing movements. |
| M12 | Implement an awareness programme for machinery users to prevent tipper slamming, falling objects from a high height and optimising working methods. |
| Hazardous materials | |
| MD1 | Hazardous materials must be managed in accordance with the <i>Regulation respecting hazardous materials</i> (R.S.Q., c. Q-2, r. 32). |
| MD2 | Have contaminant spill response equipment on site at all times. Any spillage of contaminants must be dealt with immediately to contain and recover the products. |
| MD3 | Notify the MDDELCC immediately in the event of an accidental spill of contaminants. |
| MD4 | Do not emit, deposit, release or discharge hazardous material into the environment or sewer system. |
| MD5 | All hazardous materials must be stored in a designated area. The storage area for hazardous materials must be away from vehicle traffic and a reasonable distance from drainage ditches or catch basins and any other sensitive features. |

| Hazardous materials (continued) | |
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| MD6 | Residual hazardous materials must be stored in a delimited and identified recovery area. Residual hazardous materials must be protected from the weather by a waterproof tarpaulin, pending their loading and transport. In winter, it is suggested that containers be placed on pallets or storage tables. If the retention time is greater than 30 days, the area must include a watertight shelter with at least three sides, a roof and a watertight floor forming a basin with a retention capacity of the greater of 125% of the largest container or 25% of the total volume of all full containers of liquids. |
| MD7 | When transporting dangerous goods, comply with the <i>Regulation respecting the transport of dangerous goods</i> (R.S.Q., c. C-24.2, r. 43). |
| Residual materials | |
| MR1 | Dispose of residual materials in the containers provided for this purpose. The person in charge of the site will ensure that the waste is recovered and deposited in authorised sites. Do not discharge any debris into the aquatic environment. All debris accidentally introduced into the aquatic environment must be removed as soon as possible. |
| MR2 | Contain dry or wet residues in leak-proof containers and cover the containers to prevent any release of residues into the air. |
| MR3 | As work progresses, all construction waste, residues and surplus materials must be removed from the site and disposed of in accordance with the <i>Environmental Quality Act</i> . Surplus concrete or bitumen and water used to clean concrete mixers, vehicles and equipment must be disposed of in an area designated for this purpose and in such a way as to avoid any contamination of the environment. |
| MR4 | Do not discharge waste materials or debris into waterways. |
| MR5 | Demolition debris and solid waste generated on the site must be disposed of in accordance with the <i>Regulation respecting solid waste</i> (R.S.Q., chap. Q-2, r. 13). |
| MR6 | Waste from vegetation cutting or land stripping must not be discharged into watercourses and lakes. |
| MR7 | The disposal of waste materials or volatile materials, such as mineral spirits and oil or paint thinners, into watercourses, storm drains or sanitary sewers is prohibited. |
| MR8 | Store waste temporarily in a single location. |
| MR9 | Disposal of waste from the preliminary cleaning of the work areas in containers provided for this purpose and subsequent transport to an authorised landfill site. If quantities are small, dry materials (concrete, asphalt, etc.) can be used as backfill and buried directly behind the protective structure. Wood and plant debris could be buried in the embankment immediately above the structure. |
| MR10 | Transport of surplus materials to an authorised disposal site. |
| Used snow | |
| N1 | Take the necessary measures to avoid stripping the ground when clearing snow. |
| N2 | Do not discharge snow into a watercourse or within 30 m of a watercourse. |
| N3 | The location of snow storage areas must be approved by the regional branch of the MDDELCC. These areas must be located at a minimum distance of 30 m from all watercourses and all sources of drinking water, in order to avoid any contamination of the water or the water table. |
| Culverts | |
| P1 | When constructing the road, the natural drainage of the soil must be respected and the flow of run-off water maintained by installing, if necessary, culverts of at least 30 cm in diameter. The end of the culvert should extend at least 30 cm above the base of the embankment, which should be well stabilised. |
| P2 | The installation of a culvert in a watercourse should preferably be carried out during low water conditions and as soon as possible. The culvert must not impede the flow of water or contribute to the formation of a dam. The culvert must not reduce the width of a watercourse by more than 20%. However, the minimum diameter is 45 cm. The water flow height must be 85% or less of the clear height of the culvert. The base of the culvert (invert) should be sunk below the natural bed of the watercourse to a depth of at least 15 cm or 10% of the height of the structure, measured from the inner wall (inner diameter). However, the maximum depth of burial should not exceed 30 cm, otherwise an arch culvert with an open invert should be used. The end of the culvert should extend no more than 30 cm above the base of the backfill supporting the road and the backfill should be stabilised at both ends of the culvert. The backfill material must not contain any organic material. |

| Culverts (continued) | |
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| P3 | When installing a culvert, the work area should be confined beforehand to avoid sediment transport into the water (e.g. partial or total dewatering of the area). The work techniques and materials used (e.g. diversion structures, geotextile, polythene, etc.) must not generate turbidity in the water. The natural flow of the watercourse must be maintained continuously and the return of the flow of water must be immediately downstream of the work area. The stream bed shall not be narrowed by more than two thirds during the work. If necessary, water accumulations in the work area must be pumped to a vegetated area at a distance of at least 30 m from the watercourse. |
| P4 | Any temporary works carried out in a watercourse must be stabilised upstream and downstream to maintain the integrity of the habitat for aquatic fauna and allow their free passage at all times. At the end of the work, all temporary structures must be demolished and the site of the work must be restored to its natural state, while taking into account the restriction periods to protect the recruitment of fish populations. |
| P5 | After the installation of a culvert, any other structures required for this work should be removed from the water. Care should be taken to ensure that the streambed is properly stabilised at the inlet and outlet. The streambed should then be restored to its natural profile using materials similar to those used previously, and the banks stabilised and, if necessary, revegetated. |
| P6 | If necessary, plan a work restriction period based on the life cycles of the species present in the aquatic environment according to the recommendations found in the <i>Guide d'aménagement des ponts et culverts</i> of the Ministère des Transports (MTQ) (Faubert et al., 1992). |
| Restoration of the environment | |
| R1 | At the end of the work, clear the work areas of equipment, machinery, materials, temporary installations, waste, rubbish, rubble and spoil from the work. Rearrange and Restore these working areas so that they fit into the natural landscape (regrade and loosen the soil; soften slopes). Scarify abandoned road segments or paths. Seed the slopes of the right-of-way slopes to stabilise them quickly. Seed the slopes of the right-of-way slopes to stabilise them quickly. Re-vegetate all areas that will not be useful for the operation phase. Use the soil operation phase. |
| R2 | Altered riverbanks will need to be restored, including slope stabilisation and revegetation of surfaces. |
| R3 | Restore the riparian strip deteriorated by the work as it progresses so as to reproduce the natural bank of the watercourse or lake. |
| R4 | After completion of the work, all tools, equipment, vehicles, temporary structures or parts of structures that were used to construct or install the infrastructure must be removed from the work site. |
| R5 | Spread the set aside topsoil over the entire area of the work or storage site if the volume is sufficient, otherwise in patches. |
| R6 | Cut down trees damaged during the work. These trees should be delimbed and cut into 1.2 m lengths. If the wood is of commercial value, it should be piled up at the edge of the right-of-way. If the trees have no commercial or other value, leave them on the ground in the right-of-way. |
| R7 | Remove temporary bridges, culverts and bank protection. Restore the original profile of the bed and banks of the watercourse. |
| R8 | Restore natural drainage and dig ditches where necessary to ensure good drainage of the land. |
| R9 | In order to reduce the risk of erosion on slopes, use methods such as retaining embankments, swales or diversion ditches perpendicular to the slope, or other methods. |
| R10 | The revegetation work must be completed within one year of the completion of the work. |
| Transport and traffic | |
| T1 | Vehicle traffic should be kept to a minimum in order to limit noise, vibration and dust emissions and for safety reasons. |
| T2 | Unless authorised, the movement of machinery is prohibited outside the boundaries of the work areas. At the start of the work, a fence must be installed at the edge of the protection perimeter. This fence must be maintained in place and in good condition throughout the duration of the work. |
| T3 | Within the right-of-way, no vehicle or piece of construction equipment shall be driven without cause within 20 m of a permanent watercourse or within 5 m of an intermittent watercourse. If required, water flowing in ruts must be diverted to a vegetated area located at least 30 m from a watercourse. |

| Transport and traffic (continued) | |
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| T4 | During the work, avoid handling granular materials in high winds and, if necessary, spread dust suppressants (calcium chloride or water) on surfaces where traffic may cause dust to be raised. The dust suppressant used must comply with standard NQ 2410-300 or be approved by the MTQ and the MDDELCC. |
| T5 | When using calcium chloride dust suppressants, do not dispose of the product or rinse equipment in or near a ditch, stream or vegetation. Apply excess or rinsate to previously treated areas. Note that for this project, water will be used and recommended as a dust suppressant on the site roads and not a chemical solution. During the winter, abrasive materials such as sand will be used to de-ice the roads, not ice melters. |
| T6 | Take the necessary measures to minimise machinery traffic in the riparian zone. |
| T7 | Site access roads, parking and storage areas or other temporary facilities must be located outside the riparian buffer zone, so as to avoid its deterioration or contamination. |
| T8 | Dust emissions from access and traffic routes, as well as from the handling of aggregates, must be controlled in accordance with the <i>Regulation respecting the purification of the atmosphere</i> (RLRQ, chapter Q-2, r. 4.1). |
| T9 | No fording is permitted unless the necessary authorisations have been obtained from the relevant ministries. |
| Process water and final effluent | |
| W1 | Run-off and dewatering water should be captured and conveyed to the process or to a mine wastewater treatment system. |