



## 14.0 CONCLUSIONS

Based on the results of the environmental assessment presented in this EIS for the Project (including all mitigation strategies and all supporting technical studies), Treasury concludes that:

- the Project will provide an economic net benefit to the local, Aboriginal, regional, and provincial economies and will not result in adverse impacts to Aboriginal and Treaty Rights or related interests (Table 14.0.1 and Table 14.0.3) or other public concerns (Table 14.0.2);
- the Project is not expected to result in any significant adverse residual effects on the environment or heritage/cultural resources (Tables 14.0.4 to 14.0.9);
- any accidents or malfunctions that might occur as a result of the Project are not expected to result in significant adverse residual environmental or socioeconomic effects (Table 14.0.10); and
- the Project is not expected to result in any significant adverse cumulative effects on the environment or heritage/cultural resources (Tables 14.0.11 and 14.0.12).



**Table 14.0. 1 Summary Table of Potential Adverse or Potential Impacts, Issues or Concerns to Aboriginal and Treaty Rights and Related Interests**

Issue / Concern	Aboriginal Community	Discussion	Action	EIS reference
Gathering plant and berries	Wabigoon Lake Ojibway Nation  Métis Nation of Ontario	<p>Potential impacts of the Project on the ability of First Nations and other Aboriginal Groups to gather plants and berries has been identified as a concern.</p> <p>Specific plants or berries which may be negatively affected by the Project have not been identified. Nor have any locations within the Project area from which plants and berries are being gathered been identified.</p> <p>Treasury recognizes that the gathering of plants and berries by Aboriginal people is part of a traditional life style which continues to this day. However, it must also be recognized that while the gathering of plants and berries is a part of a traditional lifestyle, the presence of the plants and berries to be gathered is dependent on a wide variety of factors including:</p> <ul style="list-style-type: none"> <li>• forest ecotype</li> <li>• soil type</li> <li>• moisture regime</li> <li>• stage of forest development and succession</li> <li>• occurrence of late spring or early fall frosts</li> <li>• annual precipitation - particularly drought conditions or excessively high rainfall or hail</li> <li>• occurrence of forest fires</li> <li>• effects of forest insects</li> </ul> <p>Consequently, although the gathering of plants and berries may be ongoing from year to year, the specific area where gathering may take place can change within a very short time.</p> <p>For Example:</p> <p>Blueberries are one type of berry that is commonly picked in northwestern Ontario. Blueberries are common to the boreal forest but not on all sites. Blueberries prefer the sandy or rocky soils normally associated with jack pine forests but may occasionally also be found on clays soils. Blueberries are an early succession species and thrive for a few years following disturbance such as fire or logging, but decline rapidly as the newly regenerating forest reaches crown closure. On clay sites which tend to support more deciduous growth, the presence of blueberries are even shorter lived. Generally the period in which blueberry crops proliferate on a site is approximately 4 to 6 years. Blueberries are also very dependent on an absence of late spring frost and rely on adequate sunshine and moisture during the June / July period to allow berries to mature. Consequently, even on ideal sites, and at the right stage of forest development, there is no guarantee that blueberries will be available over a long period of time.</p> <p>It is not realistic to expect blueberry crops to be available for picking on the same specific location over an extended period of time. However, disturbance and change within the boreal forest is common and blueberry crops can usually be found at similar sites which are at an earlier stage of forest development. Such sites can frequently be found in close proximity to sites where blueberries have previously been picked.</p> <p>The potential blueberry habitat in the area (used as a proxy for all harvested plants) is 6341.2 ha (as described in Appendix EE).</p> <p>No specific areas associated with the Project have been identified as areas from which blueberries have been gathered. In consideration of the amount of private land associated with the project as well as the type and stage of forest development it is unlikely that many blueberries would have been picked on the proposed mine site. However, if there is a desire to pick blueberries, excellent picking opportunities exist very close to the project in areas recently logged on the Dryden Forest. It is expected that blueberries will continue to be available on these harvested areas for the next few years. Future logging in this area will result in ongoing picking opportunity.</p> <p>Other plant species may require different conditions to thrive than do blueberries, but virtually all plant species have particular conditions (eco-site and stage of forest development) under which their abundance is optimal and other conditions where they may be absent from the site.</p>	<p>The development of the Project is not expected to adversely impact the gathering of plants or berries within the general area. As a result, no specific measures are currently proposed to address this concern. Should concerns specific to the project area be brought forward during the EA review process, these will be dealt with at the time.</p>	<p>Appendix W, Appendix EE, Section 3, Section 6, Section 7, Section 8</p>



**Table 14.0. 1 Summary Table of Potential Adverse or Potential Impacts, Issues or Concerns to Aboriginal and Treaty Rights and Related Interests**

Issue / Concern	Aboriginal Community	Discussion	Action	EIS reference
		<p>An Ecological Screening Level Risk Assessment (SLRA) for the Goliath Mine Site has been conducted by Tetra Tech EBA.</p> <p>This assessment evaluated potential impacts on country foods (such as berries) and identified mercury and lead as potential contaminants of concern. However, following further analysis, the study concluded that "the results of the human health component of this SLRA indicated that the risk estimates did not exceed the acceptable threshold for both mercury and lead during the Operational or Post-Closure Phases of the mine".</p>		
Spring water quality	Wabigoon Lake Ojibway Nation (WLON)	<p>Although WLON has not identified specific springs which may be important to members of their community, Treasury is aware of a spring located on Hwy 72 just to the north of Dinorwic that is a popular source of drinking water. This spring is located approximately 12 km from WLON and it is likely a source of drinking water for members of this community.</p> <p>This spring is located approximately 10 km from the Project site. It is extremely unlikely that any activity on the Project site would impact this water source.</p> <p>Considering that the location of this spring is in the ditch associated with Hwy 72, the effects of road salt and other effects from passing traffic can be expected to have a far greater impact on this water source than any development associated with the Project.</p> <p>Another spring location that has been used in the past is located on the south side of Highway 17 just to the east of Blackwater Creek. It is Treasury's understanding that this spring has not been utilized as drinking water source for many years.</p> <p>A groundwater monitoring plan has been developed for the Project by AMEC. This monitoring plan will identify any potential issues relating to groundwater as development of the mine progresses.</p>	<p>As the development of the Project is not anticipated to adversely impact known spring water sources that are used for drinking water, no specific measures are required or proposed to address this concern.</p> <p>Treasury welcomes any additional information relating to the location of other springs that may be of interest or concern. Any specific concerns raised through the EA process will be dealt with at the time.</p> <p>The groundwater monitoring plan for the Project as developed by AMEC will be followed for the life of the mine and through the closure plan process.</p>	Appendix M, Appendix N, Appendix O, Section 5, Section 3
Potential impacts on hunting	Wabigoon Lake Ojibway Nation Métis Nation of Ontario	<p>Treaty 3 provides that First Nations retain the right to hunt fish and gather within the area of Treaty 3.</p> <p>Treasury acknowledges the right of First Nations and other Aboriginal groups to hunt fish and gather within the area of Treaty 3. However, no issues relating to hunting, fishing or gathering have been identified that are specific to the Project area.</p> <p>The proposed Project falls within Wildlife Management Unit 8 which has a total area of 539,400 hectares and is adjacent to Wildlife Management Unit 5 which has a total area of 1,076,300 ha.</p> <p>The Project will occupy a total area of approximately 188 ha. Of the total area associated with the Project less approximately 55 ha is anticipated to fall on Crown land. There is a very small likelihood that the small area involved with the project will impact the overall ability to hunt within the area.</p> <p>No specifics of which animals are of interest for hunting by Aboriginal people have been provided.</p> <p>The Project site is situated within an area that has seen significant development. Developments in close proximity to the Project site include:</p> <ul style="list-style-type: none"> <li>• the village of Wabigoon</li> <li>• the TransCanada Highway (Highway 17)</li> <li>• the Canadian Pacific Railway - trans- continental tracks</li> <li>• the Trans-Canada pipeline right-of-way</li> <li>• a major electrical transmission line</li> <li>• several kilometres of gravel roads</li> <li>• private properties and homes etc.</li> </ul>	<p>The development of the Project is not anticipated to adversely impact the rights of Aboriginal People to hunt within the general area.</p> <p>Treasury has made a concerted effort to place mine infrastructure including the processing plant, other mine buildings, and the tailings storage facility on private properties and thereby reduce potential impacts to Crown Lands.</p> <p>Additionally, under Treasury's ownership, much of the former tree nursery is reverting to a natural forest condition and can be expected to contribute to the habitat of a variety of wildlife species. This will to a significant degree offset some of the habitat impacted by the development of the mine site.</p> <p>The SLRA for the project as conducted by Tetra Tech does not indicate that</p>	Appendix W, Appendix EE, Section 6, Section 7



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		<p>To the north of the Project site lie areas of mature forest mixed with areas of recent logging (within the past 5 to 10 years) and gravel roads associated with logging operations.</p> <p>Virtually the entire area in the vicinity of the Project site has a history of development and utilization dating back for decades.</p> <p>While there is wildlife present in the area, it cannot be considered to be ideal habitat although the mix of open area and mature forest does provide for both cover and browse area for certain species especially to the north of the proposed mine site.</p> <p>Additionally, as the proposed mine site lies within an area that has a long history of private ownership, the abundance of private land ownership in the vicinity has limited the areas where hunting has occurred. Any past hunting in the immediate area of the Project would only have been possible with the permission of the landowner.</p> <p>Wildlife populations and hunting opportunities in the vicinity of the Project can be expected to remain much as they have in the past. If anything, the development of new logging roads on the Dryden Forest in the area to the north of the proposed mine site and south of the Lola Lake Nature reserve has increased hunting opportunity in recent years.</p> <p>In addition to the access provided by logging, the logging may also have improved habitat and enhanced populations of certain wildlife species through improvement to the mix of browse areas and cover presence.</p> <p>No specific values relative to hunting in the vicinity of the Project have been identified. There are no known campsites in the immediate vicinity of the mine site and no specifically identified hunt zones / kill areas.</p> <p>An ecological SLRA for the Goliath Mine Site has been conducted by Tetra Tech EBA.</p> <p>Four key receptors were assessed in the wildlife assessment including snowshoe hare, white-tailed deer, moose and ruffed grouse. Hazard Quotients (HQs) were calculated for selected wildlife receptors based on the ratio of estimated exposure to the toxicity reference value to evaluate potential risk from exposure to mine related contaminants of concern.</p> <p>Based on the calculated HQs, estimated risks for wildlife were below risk thresholds for hare, deer and moose exposed to contaminants of concern during both the operational and post closure phase of the project. The HQ for lead was slightly above the risk threshold for grouse exposed to lead from the possible ingestion of tailings and food from the tailings during the operational phase assuming grouse obtain at least half of their food from the tailings area. However, this risk level falls below the risk threshold when the assumption is made that grouse obtain one third rather than one half of their food from plants and soil invertebrates living on the tailings. This is a more probable assumption.</p>	<p>wildlife will be adversely affected by the project.</p>	
<p>Potential impacts on fishing</p>	<p>Wabigoon Lake Ojibway Nation  Métis Nation of Ontario  Naotkamegwaning First Nation</p>	<p>The proposed Project site does not include any lakes, rivers or significant streams that are suitable for fishing.</p> <p>There are small intermittent streams present which do support some baitfish but species fished for food or sport are not present on the proposed mine site or in the immediate area.</p> <p>Fishing opportunities close to the Project site include Wabigoon and Thunder Lakes.</p> <p>The fishery in Wabigoon and Thunder Lakes is significant to First Nations, Métis, and the general public.</p> <p>Wabigoon Lake supports edible fish species including:</p> <ul style="list-style-type: none"> <li>• walleye</li> <li>• northern pike</li> <li>• sauger</li> <li>• yellow perch</li> <li>• lake whitefish</li> <li>• bass</li> <li>• crappie.</li> </ul>	<p>As there is no existing opportunity to fish on the Project site, the development of the project will not result in any on site impacts to fishing.</p> <p>No development will occur on the shorelines or close to the shorelines of Thunder or Wabigoon Lakes.</p> <p>Water will be discharged from the mine site into Blackwater Creek. Prior to discharge water will undergo a multi-stage treatment process to ensure that provincial water quality standards are met. Consequently, fish habitat and</p>	<p>Appendix W, Appendix EE, Section 3, Section 5, Section 6, Section 7</p>



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		<p>Similarly, Thunder Lake supports populations of:</p> <ul style="list-style-type: none"> <li>• lake trout</li> <li>• walleye</li> <li>• northern pike</li> <li>• smallmouth bass.</li> </ul> <p>Fishing on Wabigoon and Thunder Lakes is of particular significance to Nautkamegwanning First Nation as Nautkamegwanning holds commercial fishing licenses on both lakes.</p> <p>No Project related development will occur on the shoreline or near the shoreline of either Thunder or Wabigoon Lake.</p> <p>Waste water from the Project will be discharged into Blackwater Creek which flows into Wabigoon Lake.</p> <p>As no waste water will be discharged into Thunder Lake, no impacts on the fishery in Thunder Lake are anticipated. Similarly no other aspects of the mine operation are anticipated to impact Thunder Lake.</p> <p>With appropriate measures in place to ensure water quality is not impaired no adverse impacts to fishing in Wabigoon Lake are anticipated.</p> <p>Similarly, the development of the Project site will not impact on lake levels on Wabigoon or Thunder Lakes. The water level in Wabigoon Lake is controlled by a dam located at the Domtar mill in Dryden and the level of Thunder Lake is controlled by a dam on Thunder Creek within the boundaries of Aaron Provincial Park. As lake levels will not be impacted by the Project, no lake level impacts on fish habitat or populations will result.</p> <p>It is anticipated that after completion of mining at the Project site, a portion of the open pit will fill with water to create a small but very deep lake. Such a lake has the potential to support populations of trout following closure of the Goliath Mine.</p> <p>An ecological SLRA for the Goliath Mine Site has been conducted by Tetra Tech EBA.</p> <p>This study concluded that "...modelled dated from the Operational and Post-Closure Phases of the mine indicate that effluent will not exceed background or standards for any metal and any incremental hazard associated with fish is minimal and below levels of concern.." The study does add a caution that "...closure plans should pay particular interest to the release of certain metals."</p>	<p>populations will not be adversely impacted.</p> <p>Treatment processes will include:</p> <ul style="list-style-type: none"> <li>• cyanide destruction</li> <li>• advanced oxidation</li> <li>• multimedia filtration</li> <li>• reverse osmosis membrane filtration</li> </ul> <p>Water levels in Wabigoon and Thunder Lakes will not be altered as a result of the Project. Consequently no water level impacts on fish habitat or populations will result.</p> <p>The SLRA has concluded that the risk to fish associated with the Project is minimal and below levels of concern.</p>	
Potential impacts on trapping	Wabigoon Lake Ojibway Nation Métis Nation of Ontario	<p>In Ontario, the opportunity to trap is controlled by the Ontario Ministry of Natural Resources through a system of registered trap lines. Every trapper on Crown land is assigned a specific trap line and given the exclusive rights for that area. Each trapper can then manage the furbearer resources on a long-term, sustainable basis.</p> <p>Trapping on private land requires the permission of the landowner. Treasury is not aware of permission being granted to trap on any of the private properties it has acquired in the vicinity of the Project site.</p>	Trapping on Crown lands in the vicinity of the Project site will not be altered as a result of the development of the Goliath Gold Mine. No additional actions related to trapping are anticipated.	Section 6, Appendix W, Appendix EE
Flooding and weather related disasters	Wabigoon Lake Ojibway Nation	<p>A concern has been raised relating to the potential contribution of the Project to "Once in a century flooding or weather-related disasters becoming more common because of human industrial activity.</p> <p>Treasury does not have the expertise to comment on the causes of climate change and weather patterns. However, the effects of climate change tend to be global in nature. Individual industrial projects do not generally have large impacts.</p> <p>Owing to the small size of the Project and the relatively short period over which the Project is expected to be in operation, It is extremely unlikely that the Project in and of itself will have any significant impact on flooding or other weather related disasters.</p> <p>An analysis of the potential for a TSF failure has been conducted and is included in the Risk Assessment section of the EIS.</p>	<p>The major potential for a significant flooding incident associated with the Project would be through a failure of the TSF. With that in mind, the TSF will be designed and built in anticipation of a once in a thousand year rainfall event.</p> <p>The potential for a failure of the TSF is evaluated in the Risk Assessment section of this EIS.</p>	Appendix D, Appendix GG, Section 3, Section 4



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		<p>With appropriate design and operation of the TSF, failure of the TSF is considered to be highly unlikely.</p>	<p>Additionally, Treasury will incorporate technologies into the Goliath processing plant to ensure that air emissions from the plant meet Provincial and Federal regulatory requirements.</p>	
<p>Cumulative loss of section 35 harvesting rights</p>	<p>Wabigoon Lake Ojibway Nation</p>	<p>This concern relates to the provision outlined in section 35 of the Constitution Act (1982), which provides for the protection of Aboriginal rights.</p> <p>An Aboriginal right relates to practice that was integral to a distinctive culture and exercised at the time of first contact with Europeans.</p> <p>In addition to this provision of the Constitution Act, the Project lies within the area encompassed by Treaty 3 which dates from 1873 and provides that the First Nations signatories to the treaty may hunt and fish throughout the treaty area.</p> <p>The proposed Project occupies a very small area within Treaty 3.</p> <p>The entire mine and associated infrastructure will occupy a total area of approximately 188 ha. Of the total area associated with the Project, 55 ha is anticipated to be located on Crown lands. This represents a very small portion of the 142,450 square kilometres associated with Treaty 3.</p>	<p>The opportunity to practice section 35 harvesting rights in the general area of the Project will continue.</p> <p>In consideration to the very small amount of land impacted and the potential to practice section 35 harvesting rights in the vicinity of the project, no measures are proposed.</p>	
<p>Access restrictions / gated roads</p>	<p>Wabigoon Lake Ojibway Nation</p>	<p>Concerns identified relate to the amount of land acquired by Treasury and the possibility of existing roads being gated, resulting in loss of access to areas currently not restricted.</p> <p>The majority of roads in Ontario are open to the public. Exceptions to this are generally associated with private property or in some cases for safety or security reasons. For safety and security reasons, it is anticipated that access to the Project site will be restricted and gated as required. As the Project is located near the end of existing roads that do not access any locations beyond the immediate Project site, the impact on access to Treaty 3 lands will be small.</p> <p>The majority of the land associated with the Project has been acquired by Treasury by means of purchases from private individuals. These properties which have been purchased by Treasury at significant cost, and have long been under private ownership</p> <p>Tree Nursery Road was constructed for the specific purpose of accessing the Dryden Tree Nursery and the road has been gated at the entrance to the Tree Nursery property throughout the period that the nursery was in operation. For security purposes, the road continues to be gated by Treasury.</p> <p>During the period of mine construction and operations Treasury anticipates that access to the Project Site will be limited in the vicinity of Norman Road.</p> <p>To the north of Norman Road there is very little Crown land that is accessed by Tree Nursery Road. There are no known campsites or other sites of significance in this area.</p>	<p>Treasury does not anticipate implementing any measures to facilitate public access beyond the Project site. However, if there are specific requirements for access beyond the site, such requirements will be considered on a case by case basis.</p>	<p>Section 3</p>



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Issue / Concern	Aboriginal Community	Discussion	Action	EIS reference
Loss of access to snowmobile routes	Wabigoon Lake Ojibway Nation	<p>A concern has been raised relating to the potential loss of access to recreational skidoo routes to Thunder Lake (and on to Ghost Lake and Mavis Lake) that have been used by Wabigoon Lake Ojibway Nation for harvesting, fishing and recreation.</p> <p>The specific location of skidoos routes to Thunder Lake have not been identified.</p> <p>During the period that Treasury has been familiar with the Project site (since 2008); there has been no evidence of snowmobile travel across the proposed Project site. Treasury assumes that the most likely snowmobile route would be along the hydro line but land under the hydro line in this vicinity is privately owned. Treasury is not aware of any route between Wabigoon and Thunder Lake that does not involve the crossing of private property.</p> <p>Additionally, Treasury is not aware of a route onward from Thunder Lake to Mavis / Ghost Lake except via public roads or power lines.</p>	<p>Treasury has requested clarification of the location of skidoo routes between Wabigoon and Thunder Lake.</p> <p>Treasury does not wish to unduly impair access to such routes and will cooperate with snowmobilers to find alternative routes to the extent possible.</p> <p>The development of the Project will not impact any snowmobile routes between Thunder and Mavis or Ghost Lakes.</p>	Appendix DD
Tailings pond	Wabigoon Lake Ojibway Nation	<p>Tailing ponds, also known as tailings storage facilities (TSF) are areas of mining tailings where the waterborne tailings material is pumped into a pond to allow the sedimentation separation of solid particles from the water. TSFs are generally impounded with a dam.</p> <p>The final design of the TSF will be consistent with industry standards and regulatory requirements.</p> <p>The preferred location for the TSF is a private property purchased by Treasury. By locating the TSF on a property that has been privately owned for many years, the use of Crown lands is avoided.</p> <p>Treasury anticipates that off-site impacts resulting from the Project will be low. Water used in the extraction process will pass through a tailings pond and a polishing pond and undergo a number of treatments, including treatment by reverse osmosis before discharging from the site. Discharge water will meet Provincial requirements for water quality and will not impair the water quality of area lakes or streams. Similarly, groundwater quality is not anticipated to be negatively affected by the Project.</p> <p>A groundwater monitoring plan has been prepared by AMEC and will be implemented during mine development and operation.</p>	<p>The final design of the TSF will be consistent with industry standards and regulatory requirements.</p> <p>The major potential for a significant adverse impact related to the TSF at the Project site would be as a result of a very heavy rainfall event that might lead to a breaching of the TSF. With that in mind, the Tailings Storage Facility will be designed and built in anticipation of a once in a thousand year rainfall.</p> <p>The potential for a failure of the TSF has been analyzed and evaluated. This analysis can be found in the Risk Assessment section of the EIS.</p>	Appendix D, Appendix GG, Section 2, Section 3
Noise pollution	Wabigoon Lake Ojibway Nation	<p>Concerns raised relate to the proximity of the Project to populated areas (Village of Wabigoon) and Aaron Park and the potential impacts of noise resulting from blasting and milling operations on local residents, park visitors and wildlife.</p> <p>While Treasury is mindful of the potential impacts resulting from noise associated with the mine project, the proximity of the project to Highway 17 and the CPR mainline must also be considered.</p> <p>Both the CPR and Highway 17 pass through the village of Wabigoon.</p> <p>The majority of Aaron Park lies within 1/1/2 kilometre of both Highway 17 and the CPR. Existing noise levels in the park resulting from truck and rail traffic are anticipated to be substantially greater than noise resulting from the Project which is approximately 2.5 km. from the Park and separated from the project by a buffer of treed forest land.</p> <p>A baseline study to determine pre-development sound levels in the vicinity of the proposed Project has been completed. Results of this study will be made available to interested First Nation communities.</p> <p>Additionally, in response to a specific concern raised by a member of WLON and relating to noise associated with drilling on the Project site, Treasury initiated a noise level study within the Village of Wabigoon. Sound levels were monitored using long-term measurements taken continuously over a 24 hour period from April 22 to April 23, 2014. The measurements were taken at 3 separate locations, specifically within the Village of Wabigoon, 1/2 way between</p>	<p>Measures to address noise levels resulting from the Project will include:</p> <ul style="list-style-type: none"> <li>• retention of treed buffers between the mine site and residential areas</li> <li>• full enclosure of mine processing buildings</li> <li>• selection of mobile equipment with suitable sound suppression options</li> <li>• scheduling of blasting to specific times so as to be as unobtrusive as possible</li> </ul> <p>Adverse impacts to wildlife in the vicinity of the project are not anticipated. The measures noted above to reduce noise for area</p>	Appendix J, Section 3



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		<p>site and Wabigoon, and at property line of the site. Additionally, short-term measurements were collected from the diamond drill and heavy equipment at the site.</p> <p>The consultant, RWDI, has concluded that "The predicted sound levels show the operation of the diamond drill and the dozer will at no time be audible over the sound levels in the community of Wabigoon". A copy of the report prepared by RWDI has been provided to the individual involved and to Wabigoon Lake Ojibway Nation.</p>	<p>residents will also serve to reduce noise levels experienced by wildlife.</p>	
Dust / air pollution	Wabigoon Lake Ojibway Nation	<p>Concerns identified relate to the possibility of airborne debris, smoke, dust, odour and toxins creating health hazards and potential damage to gardens, vehicles and dwellings for the residents of Wabigoon which lies down wind of the Project site.</p>	<p>Treasury will implement measures to control dust and air emissions originating from the Project site. Some measures to be implemented include:</p> <ul style="list-style-type: none"> <li>• dust collector units provided with drills</li> <li>• emission controls provided on drills, trucks and other mobile mine equipment</li> <li>• exhaust systems on drills, trucks and other mobile mine equipment</li> <li>• scheduled maintenance on mine equipment</li> <li>• road dust reduction controls including use of water trucks and commercially available dust suppressants.</li> </ul>	3.15.3 Air Quality and Noise Mitigation
Water quality	<p>Wabigoon Lake Ojibway Nation</p> <p>Wabauskang First Nation</p> <p>Lac Seul First Nation</p> <p>Grassy Narrows First Nation</p> <p>Naotkamegwaning First Nation</p>	<p>Concerns raised include:</p> <ul style="list-style-type: none"> <li>• Potential impacts on wells including reduced water tables and impacts resulting from the leaching of mine waste.</li> </ul> <p>The major potential impact to groundwater sources arising from the Project would be as a result of fuel or hydraulic oil spills during mining activities, chemical spills or from incomplete detonation of explosives.</p> <p>A groundwater monitoring plan for the Project has been developed by AMEC and will be followed throughout the operating life of the mine.</p> <p>Waste rock associated with the Project has been determined to be potentially acid generating (PAG) if exposed to the environment over an extended period of time (decades).</p> <ul style="list-style-type: none"> <li>• Impacts to water quality / drinking water on Wabigoon / Thunder Lakes</li> </ul> <p>Waste water from the Goliath Mine will be discharged into Blackwater Creek. As water discharged from the site will not flow into Thunder Lake, no impacts to water quality in Thunder Lake will result.</p> <p>Water will be treated prior to being discharged so as to meet Provincial water quality standards for discharged water. No adverse impacts to water quality in Wabigoon Lake are anticipated.</p> <ul style="list-style-type: none"> <li>• Impacts on wild rice areas on Nugget Creek / Wabigoon Lake</li> </ul> <p>Water from the Goliath Mine will not be discharged into the Hughes Creek / Nugget Creek Watershed.</p> <ul style="list-style-type: none"> <li>• Impacts to water quality on Hartman Lake / English River system.</li> </ul> <p>The concern relating to Hartman Lake / English River system comes from Lac Seul First Nation and relates to an option considered early in the planning stage for the Project that waste water could be discharged into Hartman Lake on the English River System. This option has since been eliminated. No water will be discharged via Hartman Lake. Consequently Hartman Lake will not be impacted.</p>	<p>Impacts to groundwater sources will be avoided by implementation of the following measures:</p> <ul style="list-style-type: none"> <li>• use of appropriate fuel and chemical storage and handling equipment, including use of appropriate containers, labelling, transportation and disposal</li> <li>• spill cleanup procedures with appropriate trailing and materials on hand</li> <li>• spill emergency response plans in place</li> <li>• used oil cleanup and recycling</li> <li>• Use of appropriate lubricants and maintenance procedures avoiding overuse of and spill cleanup.</li> <li>• designing blasts to fully consume the explosives loaded into the blast holes</li> <li>• use of standard operating procedures and training for workers</li> <li>• inspections and internal audits</li> </ul>	<p>Appendix B, Appendix C, Appendix D, Appendix F, Appendix M, Appendix W, Appendix HH</p> <p>Section 3, Section 4, Section 6, Section 7</p>





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Issue / Concern	Aboriginal Community	Discussion	Action	EIS reference
		<ul style="list-style-type: none"> <li>Potential breach of the tailing storage facility</li> </ul> <p>The major potential for a significant adverse impact related to the TSF at the Project site would be as a result of a very heavy rainfall event that might lead to a breaching of the TSF. With that in mind, the Tailings Storage Facility will be designed and built in anticipation of a once in a thousand year rainfall.</p> <ul style="list-style-type: none"> <li>Impacts to lake levels</li> </ul> <p>The level of Wabigoon Lake is controlled by a dam at the Domtar mill in Dryden. The development of the Project will not result in any impacts to the level of Wabigoon Lake.</p> <p>Similarly, the level of Thunder Lake is controlled by a dam located within Aaron Park. The development of the Project will not result in any changes to the level of Thunder Lake.</p> <ul style="list-style-type: none"> <li>Impacts on fishing / including baitfish and spawning areas on Wabigoon / Thunder lakes, Blackwater, Thunder, Hughes / Nugget creeks</li> </ul> <p>Waste water from the Project will be discharged into Blackwater Creek. Prior to discharge waste water will be treated so as to meet Provincial water quality standards for discharged water.</p> <p>With appropriate measures in place to ensure water quality is no impaired no adverse impacts to fishing are anticipated</p> <p>Water will not be discharged into Thunder Lake, Hughes Creek or Nugget Creek. No impact on these water bodies is anticipated.</p> <ul style="list-style-type: none"> <li>Potential for mercury contamination of the waterway and associated health risks.</li> <li>The concern relating to mercury contamination comes primarily from Grassy Narrows First Nation. This concern arises from prior contamination of the Wabigoon River system from industrial sources dating back to the 1960s which had adverse impacts on Grassy Narrows. No mercury will be used in the Project's mine or processing facility.</li> </ul>	<p>To ensure that acid generation does not occur, waste rock will be either returned to the pit and covered with water or will be capped with overburden material set aside during the mine development stage and re-vegetated.</p> <p>A groundwater monitoring plan for the Project has been developed by AMEC and will be followed throughout the operating life of the mine.</p> <p>Water will be discharged from the Project site into Blackwater Creek. Prior to discharge water will undergo a multi-stage treatment process to ensure that provincial water quality standards are met. Consequently, fish habitat and populations will not be adversely impacted.</p> <p>Treatment processes will include:</p> <ul style="list-style-type: none"> <li>cyanide destruction</li> <li>advanced oxidation</li> <li>multimedia filtration</li> <li>reverse osmosis membrane filtration</li> </ul> <p>Water quality and fish habitat in the Hughes Creek / Nugget Creek watershed will not be negatively impacted. No protective or remedial measures are required.</p> <p>No water will be discharged via Hartman Lake. Consequently Hartman Lake will not be impacted and no protective or remedial measures are required.</p> <p>The TSF will be designed and built to industry standards and in anticipation of a once in a thousand year rainfall.</p> <p>The potential for a failure of the TSF is evaluated in the Risk Analysis section of this EIS.</p> <p>The levels of Wabigoon and Thunder Lakes will not be affected by the development of the Project. No</p>	



**Table 14.0. 1 Summary Table of Potential Adverse or Potential Impacts, Issues or Concerns to Aboriginal and Treaty Rights and Related Interests**

Issue / Concern	Aboriginal Community	Discussion	Action	EIS reference
			measures relating to lake level controls are required.  Water discharged into Blackwater Creek will receive treatment to ensure discharged water meets Provincial requirements  Water will not be discharged into Thunder Lake, Hughes Creek or Nugget Creek. No measures relating to water quality in these water bodies is required.  Mercury will not be used in the Project's processing. No measures to address mercury contamination to waterways are required.	
Property values	Wabigoon Lake Ojibway Nation	<p>Concerns have been raised that the value of properties in Wabigoon and close to the project area may drop due to proximity of the mine and associated noise/air/water quality issues.</p> <p>Treasury will implement measures to control dust and noise originating from the site. A number of options for controlling dust are being considered and will be implemented. Similarly the processing plant will be designed with sound suppression in mind. Equipment to be used on site will be selected with sound reduction being a major consideration. The sound associated with mine operation that will most likely be detectable will be as a result of blasting activities. In order to be as unobtrusive as possible, blasting will occur on a regular schedule at a time of day that will be as undistruptive as possible.</p> <p>A groundwater monitoring plan has been developed by AMEC for the Project. Groundwater on the site will be monitored throughout the life of the Project.</p>	<p>Measures to control noise / air and water quality associated with the Project include:</p> <ul style="list-style-type: none"> <li>• maintaining treed buffers around the mine and processing site</li> <li>• full enclosure / insulation of the processing plant</li> <li>• selection of mobile equipment with suitable noise reduction</li> <li>• appropriate air emission controls and monitoring at the processing plant</li> <li>• blasting on an predictable schedule</li> <li>• treatment of waste water as required to meet Provincial requirements</li> </ul> <p>A groundwater monitoring plan has been developed by AMEC for the Project. Groundwater on the site will be monitored throughout the life of the Project.</p>	Appendix M, Section 3, Section 12, Section 13
Landfill	Wabigoon Lake Ojibway Nation	A concern has been raised that the Wabigoon Landfill site is nearing its end of use stage and that use of this landfill by Treasury will speed up this timeline, forcing residents to travel to Dryden to deposit household garbage?	Treasury does not intend to use the Wabigoon Landfill as a waste disposal site. It is anticipated that waste that must be removed from the Project will be trucked to the City of Dryden Landfill on Highway 502.	Section 3



**Table 14.0. 1 Summary Table of Potential Adverse or Potential Impacts, Issues or Concerns to Aboriginal and Treaty Rights and Related Interests**

Issue / Concern	Aboriginal Community	Discussion	Action	EIS reference
Traditional land use areas	Wabigoon Lake Ojibway Nation	<p>A number of locations have been identified that have been used traditionally by Wabigoon Lake Ojibway Nation and are of importance to WLON for spiritual and historical reasons or for providing sustenance to community members.</p> <p>These locations include:</p> <ul style="list-style-type: none"> <li>• Wabigoon Chain of Lakes</li> <li>• Thunder Lake and Thunder Creek</li> <li>• Aaron Park</li> <li>• Mavis Lake</li> <li>• Ghost Lake</li> <li>• Rice Lake</li> <li>• Rock Lake</li> <li>• Tree Nursery and North of Wabigoon dump</li> </ul> <p>Wabigoon Chain of Lakes :</p> <p>Treasury recognizes the significance and importance of the Wabigoon chain of lakes to Wabigoon Lake Ojibway Nation and others.</p> <p>Water discharged from the Project will be treated prior to discharge to ensure all provincial requirements relating to discharged water are met. It is anticipated that water from the site will be released into Blackwater Creek. Blackwater Creek flows into Wabigoon Lake at a point some distance downstream from the Wabigoon Lake Ojibway Nation location on Dinorwic Lake.</p> <p>Since water released from the Project site will be treated to meet Provincial guidelines, it is not anticipated that there will be any adverse effects to water quality flowing into Wabigoon Lake. The quality of drinking water will not be impacted. Nor are any adverse impacts to fish habitat or species, or to wild rice locations anticipated.</p> <p>Similarly, water levels in the Wabigoon Chain of lakes will not be affected by the development of the Project, as water levels will continue to be controlled by the dam located at the Domtar mill site in Dryden.</p> <p>Thunder Lake and Thunder Creek:</p> <p>Treasury is aware of the proximity of the Project to Thunder Lake.</p> <p>The concerns raised by WLON are not unlike concerns raised by others, especially those with homes and cottages on Thunder Lake and in particular along East Thunder Lake Road.</p> <p>At its closest point the Project lies slightly less than three kilometres from the shore of Thunder Lake.</p> <p>More than half of the shoreline of Thunder Lake is privately owned and has been developed for homes or cottages. A stretch of approximately 4 kilometres along the north eastern shore is the most contiguous part of the shoreline that is essentially free of development.</p> <p>The usefulness of Thunder Creek as a canoe route has been diminished with the damming of Thunder Creek close to the outlet from Thunder Lake resulting in reduced water levels in Thunder creek. Additionally, major crossings of Thunder Creek have been constructed for both the Mainline of the Canadian Pacific Railway and the TransCanada Highway.</p> <p>There are no navigable streams flowing into Thunder Lake. Any historical use of Thunder Creek / Thunder Lake a canoe route would have required long portages above Thunder Lake.</p> <p>Aaron Park:</p> <p>The Aaron Park brochure (City of Dryden website) states "Ancient Aboriginal Peoples used Thunder Lake as a historic food collection area and Thunder Creek as a canoe route. The types of food collected are not specified but it is</p>	<p>Water will be discharged from the mine site into Blackwater Creek. Prior to discharge water will undergo a multi-stage treatment process to ensure that provincial water quality standards are met. Consequently, fish habitat and populations will not be adversely impacted.</p> <p>Treatment processes will include:</p> <ul style="list-style-type: none"> <li>• cyanide destruction</li> <li>• advanced oxidation</li> <li>• multimedia filtration</li> <li>• reverse osmosis membrane filtration</li> </ul> <p>Treasury will implement a number of measures to reduce potential impacts to Thunder Lake including:</p> <ul style="list-style-type: none"> <li>• leaving treed buffers between the Project and Thunder Lake</li> <li>• ensuring mobile equipment has suitable sound suppression (mufflers)</li> <li>• ensuring the processing plant is enclosed and insulated for sound suppression</li> <li>• timing blasting to specific times</li> <li>• implementing measures to control dust and air emissions</li> </ul> <p>Treasury is aware of the proximity of Aaron Park to Thunder Lake. The measures noted above will also mitigate any potential impacts resulting from the Project.</p> <p>The development of the Project will not impact Mavis Lake. Consequently no special measures to mitigate impacts to Mavis Lake are required.</p> <p>The development of the Project will not impact Ghost Lake. No special measures to mitigate impacts on Ghost Lake are required.</p> <p>The development of the Project will not impact Rice Lake. No special measures to mitigate impacts on Rice Lake are required.</p>	Appendix F, Appendix EE, Appendix W, Section 3



**Table 14.0. 1 Summary Table of Potential Adverse or Potential Impacts, Issues or Concerns to Aboriginal and Treaty Rights and Related Interests**

Issue / Concern	Aboriginal Community	Discussion	Action	EIS reference
		<p>reasonable to expect that fishing occurred in Thunder Lake and possibly hunting along the shores. Berries may also have picked in the area.</p> <p>Mavis Lake:</p> <p>Mavis Lake lies a few kilometres north of Thunder Lake and is approximately 7 km from the Project site. There is no development on Mavis Lake. A gravel road was built in the 1950s to access cottage properties on Ghost Lake. This road passes within 20 metres of the south shore of Mavis and provide access to the lake.</p> <p>There is no water connection between Mavis and Thunder Lakes or Mavis Lake and the Project site.</p> <p>There is no significant sport fishery in Mavis Lake with only small northern pike and perch present in the lake.</p> <p>Mavis Lake has been used as a baitfish lake since the 1950s by a non-aboriginal bait-fisherman.</p> <p>Although not specified by WLON, it may be assumed that in times past, a route may have existed between Wabigoon Lake, Thunder Lake, Mavis Lake, Ghost Lake, and the wild rice gathering areas on Rice Lake. As there is no water connection between Mavis and Thunder Lakes, travel would have required lengthy overland portages between Thunder and Mavis Lake and Ghost and Rice Lake, with a shorter portage between Mavis and Ghost.</p> <p>Ghost Lake:</p> <p>Ghost Lake lies to the north of Thunder - approximately 8.5 km. from the Project site. There is no water connection between Ghost Lake and Thunder or Ghost Lake and the Project site. Close to 50 cottage lots were developed by the Ontario Department of Lands and Forest on the shores of Ghost Lake and sold during the 1950s. A gravel road was built to access the cottage lots on the south shore. A few years later the lots on the north shore were accessed by road as well. Many of the cottages have now been converted to permanent year-round homes.</p> <p>Historically, Ghost Lake has been known as a lake trout lake with a lesser fishery of northern pike and yellow perch. More recently (past 10 -15 yeas) a significant bass population has appeared along with some walleye</p> <p>Rice Lake:</p> <p>Rice Lake lies to the northwest of Thunder Lake and the Project site and is approximately one kilometre to the north east of the Dryden Airport. Distance from the  Project site is approximately 12 km. There is no water connection between Rice Lake and Thunder Lake / Wabigoon Lake or Rice Lake and the Project site.</p> <p>Rice Lake does have a significant wild rice resource that has historically been harvested by aboriginal people. A possible historical connection to Wabigoon Lake may have been via Thunder Creek across Thunder lake, a portage from Thunder to Mavis, a portage from Mavis to Ghost and a portage from Ghost into Rice Lake</p> <p>Rock Lake:</p> <p>Rock Lake is situated off the south end of Dinorwic Lake, upstream from Wabigoon Lake Ojibway Nation and approximately 21 km. south of the Project site. Rock lake was for several decades (ending in the 1970s) the site of a major log dump used by the Dryden Paper Company. Logs were hauled by truck onto ice landings on Rock Lake during the winter months and then tugboats pulled log booms during the ice free period from Rock Lake through Dinorwic and Wabigoon Lakes to the pulp mill in Dryden.</p> <p>As Rock Lake is some distance upstream from any potential discharge of water into Wabigoon Lake by the Project, there will be no impact to water quality in Rock Lake. It is possible that fish may migrate between Wabigoon Lake and Rock Lake. Any potential impacts to fish in Wabigoon Lake could also impact the fishery in Rock Lake. However, as water discharged from the Project will meet Provincial requirements, no adverse impacts to fish populations are anticipated.</p>	<p>It is not anticipated that there will be any impacts to Rock Lake resulting from the Project. No special measures to mitigate impacts are required.</p> <p>Treasury will continue to utilize the offices and warehouse facilities of the former Dryden Tree Nursery throughout the life of the Project. This will reduce the need for construction of new offices and warehousing on the project site.</p> <p>The fields used for seedling production are no longer in use and are gradually reverting to forest cover. This area will provide new habitat for a variety of wildlife species. This transition back to nature will in part offset some of the area that must be disturbed during the Implementation of the Project.</p> <p>The area to the north of the Wabigoon Dump will not be developed as part of the Project. With the exception of some possible exploration work, no activities are anticipated by Treasury in this area.</p> <p>An undisturbed buffer (approximately 2 km. wide) will remain between the Project and the Wabigoon Dump.</p>	



**Table 14.0. 1 Summary Table of Potential Adverse or Potential Impacts, Issues or Concerns to Aboriginal and Treaty Rights and Related Interests**

Issue / Concern	Aboriginal Community	Discussion	Action	EIS reference
		<p>Tree Nursery:</p> <p>The significance of the Tree Nursery to WLON is not clear.</p> <p>The Dryden Tree Nursery was established by the Ontario Department of Lands and Forests (now Ministry of Natural Resources) around 1960 and operated until the late 1990s. The Nursery was then sold to a consortium of private tree growers who operated the nursery for a very short period. The facility then sat idle and empty for a number of years until purchased by Treasury for office and warehousing in 2010.</p> <p>Establishment of the Dryden Tree Nursery involved the clearing, leveling and installation of irrigation and drainage facilities on approximately 142 ha. Offices, warehouse facilities, and green houses were also constructed.</p> <p>Development of the Tree Nursery also involved the damming of two creeks flowing into Thunder Lake to provide a supply of water for irrigation purposes. Ponds created by the damming of streams have resulted in habitat for baitfish. Local residents have been permitted by Treasury to trap minnows in these ponds.</p> <p>Much of the work at the Dryden Tree Nursery was seasonal in nature. It is likely that members of WLON have been employed at the Tree Nursery.</p> <p>At approximately the same time the Dryden Tree Nursery closed - Wabigoon Lake Ojibway Nation constructed and opened a tree seedling nursery at WLON which continues to operate. Nursery equipment that was on site at the former OMNRF Tree Nursery at the time the facility was purchased by Treasury was offered to Wabigoon Lake Ojibway Nation at little or no cost. WLON did originally express an interest in this equipment but later declined the offer and this equipment was subsequently sold to another party.</p> <p>North of the Present Dump:</p> <p>The Wabigoon dump is accessed by Anderson road and lies approximately 2 kilometres to the east of the Project site.</p> <p>The area to the north of the Wabigoon Dump is a part of the Dryden Forest, managed by the Dryden Forest Management Company.</p> <p>Recent developments (within last 5 years) north of the Dump include both road construction and logging activities. The recent logging in this area has resulted in excellent blueberry picking opportunities. Barring late frosts or other related weather related impacts, blueberry crops in this area can be expected for the next few years until trees regenerating in the harvest blocks reach the stage of crown closure.</p> <p>Recent logging activity may also have improved habitat for some wildlife species by providing a mix of mature forest for cover and regenerating forest for browse. This may in turn have improved hunting opportunities. The presence of the Wabigoon Dump may also be contributing to the presence of certain wild life species including black bear, bald eagle, skunks etc.</p>		
<p>How the land will be remediated in the final closure</p>	<p>Wabigoon Lake Ojibway Nation</p>	<p>The manner in which the land will be remediated will be addressed in the mine closure plan.</p>	<p>The following measures are anticipated to occur as part of the closure of the Project :</p> <ul style="list-style-type: none"> <li>• Removal of buildings and infrastructure</li> <li>• infilling of the western and central portions of the open pit</li> <li>• a small lake is anticipated in the eastern portion of the open pit</li> </ul>	<p>Section 3, Section 11</p>



**Table 14.0. 1 Summary Table of Potential Adverse or Potential Impacts, Issues or Concerns to Aboriginal and Treaty Rights and Related Interests**

Issue / Concern	Aboriginal Community	Discussion	Action	EIS reference
			<ul style="list-style-type: none"> <li>• Overburden stockpiled at the start of mine development will be replaced over waste rock piles / tailings facility</li> <li>• The mine site will be re-vegetated using locally appropriate plants and trees.</li> </ul>	



**Table 14.0. 2 Summary of Responses to Public Concerns Regarding the Project**

Issue/Concern	Measure to Address Public Concern	EIS Reference
<p>Potential impacts to water quality including:</p> <ul style="list-style-type: none"> <li>- Water quality in Thunder and Wabigoon Lake;</li> <li>- Water quality in streams flowing from the site into Thunder and Wabigoon Lake;</li> <li>- Impacts on wells in the vicinity of the project; and</li> <li>- Including potential impacts on water volume and quality.</li> </ul>	<p>Treasury will be incorporating numerous measures into the design and operation of the Goliath Gold Project to ensure that water quality is maintained. Water is associated with a number of facets of the Project.</p> <p>Surface water and ground water flowing into the mine itself will be collected and utilized in the ore processing plant. Water discharged from the processing plant will go to a Tailings Storage Facility. Some of the water from the Tailings Storage Facility will be recycled for re-use in the processing plant. Water released from the Tailing Storage Facility will be treated to ensure water quality meets Provincial Water Quality Standards prior to discharge. It is anticipated that water discharged from the site will enter Blackwater Creek. Water quality in Thunder Lake, Wabigoon Lake or streams flowing into Thunder or Wabigoon Lake is not anticipated to be adversely impacted by the Project.</p> <p>Treasury Metals has committed to installation of a monitoring plan for groundwater resources in proximal distance to groundwater users in the local area. Treasury Metals will provide monitoring of groundwater quality and quantity throughout the life of the Project and continued until the TSF and WRSA are capped. Termination of the program will be expected following full review of data collection by regulatory authorities.</p>	<p>Section 3, Section 6, Appendix D, Appendix F, Appendix W</p>
<p>Potential impacts to fish habitat fishing including:</p> <ul style="list-style-type: none"> <li>- Potential impacts to fish habitat and fishing in Thunder and Wabigoon Lakes;</li> <li>- Potential impacts to fish habitat in streams flowing into Thunder or Wabigoon Lakes;</li> <li>- Blackwater Creek;</li> <li>- Hughes/Nugget Creek; and</li> <li>- Thunder Creek.</li> </ul>	<p>Prior to being released from the Project, water will be treated to ensure that all provincial water quality standards are met. Consequently, no adverse impacts to fish habitat or fishing opportunities are anticipated.</p>	<p>Section 3, Appendix F</p>



**Table 14.0. 2 Summary of Responses to Public Concerns Regarding the Project**

Issue/Concern	Measure to Address Public Concern	EIS Reference
<p>Potential impacts to human health arising from potentially reduced water quality that could be attributed to the Goliath Gold Project</p>	<p>Prior to being released from the Project, water will be treated to ensure that all provincial water quality standards are met. Consequently, no adverse impacts to human health are anticipated.</p>	<p>Section 3, Section 6, Appendix F, Appendix W</p>
<p>Potential impacts from dust/air emissions from the Project</p>	<p>Treasury will implement measures to control dust and air emissions associated with the Project.</p> <p>The majority of dust associated with the project will arise from vehicular traffic on the site or travelling to and from the site. Dust from these sources can be controlled through the application of water or calcium chloride. Dust may also arise from winds blowing over overburden and waste rock storage piles and any exposed beaches associated with the Tailing Storage Facilities. There are a number of commercially available binding agents available that can be utilized to reduce dust from such sources.</p> <p>Air emissions from the processing plant will meet provincial air quality standards. Similarly mobile equipment to be used on the mine site will meet provincial standards.</p>	<p>Section 3, Appendix J</p>
<p>Potential impacts from noise associated with the Project</p>	<p>Potential impacts from noise associated with the Project are described in a study undertaken by RWDI.</p> <p>Treasury will utilize mobile equipment (e.g., trucks, loaders) that are equipped with appropriate sound suppression devices. Treasury has been working with equipment manufacturers who have experience in the operation of such equipment at other mines operating in close proximity to residential areas.</p> <p>The processing plant will be enclosed and insulated to ensure that noise levels associated with the operation of the plant are kept to minimum.</p>	<p>Section 3, Appendix H</p>





**Table 14.0. 2 Summary of Responses to Public Concerns Regarding the Project**

Issue/Concern	Measure to Address Public Concern	EIS Reference
<p>Concerns with blasting including:</p> <ul style="list-style-type: none"> <li>- Proximity to private property and impacts; and</li> <li>- Concerns with impacts to rock face at shoreline.</li> </ul>	<p>Blasting undertaken at the mine site will be conducted in a manner that will not result in impacts to private properties, or the rock faces on the shorelines of lakes. Although blasting will likely be audible from some of the private properties close to the mine site, blasting will be conducted on a regular schedule, most likely every second day and at a time that will not be disruptive.</p>	<p>Section 3, Appendix H</p>
<p>Increased traffic on road</p>	<p>Treasury engaged Keewatin-Aski Consulting to undertake a Traffic study to determine existing use of roads leading from Highway 17 to the Project. The study also incorporated estimates of the amount and type of traffic that can be anticipated during both construction and operation of the Goliath Mine. The study concluded that additional traffic will result but the amount of additional traffic using Anderson / Tree Nursery Road will not require modifications to the entrance to Highway 17. Increased traffic will be most noticeable during the construction phase. Once in operation, the majority of traffic to and from the mine will be small vehicle traffic associated with shift changes.</p>	<p>Section 3, Appendix E</p>
<p>Potential impacts to property values in the vicinity of the Project</p>	<p>For the most part, noticeable impacts to properties in the vicinity of the Project and associated impacts to property values are anticipated to be minimal. If anything, the increased employment in the area associated with the Project may result in greater demand for housing and potentially higher real estate values in the Wabigoon / Dryden Area.</p> <p>There are a few homes in the immediate vicinity of the proposed mine primarily along Tree Nursery road which may be more affected by the project than others. Treasury is committed to working directly with these specific homeowners to ensure that their concerns are addressed.</p>	<p>Appendix T</p>



**Table 14.0. 3 Summary of Feedback from Aboriginal Communities as provided by the CEA Agency to Treasury**

Aboriginal Group	Preliminary Feedback from Aboriginal Communities / Identified Concern	Response /Discussion / Proposed Mitigation	EIS Reference
Eagle Lake First Nation	<p>Water Quality</p> <ul style="list-style-type: none"> <li>Figures showing delineation of potentially affected watersheds, including flow directions and the locations of discharge and recharge areas are needed</li> <li>Additional information on flow path of contaminants through watersheds, water quality within tailings storage facility (TSF) and open pit (post closure) is needed. This relates to wildlife access to the TSF and open pit</li> <li>Unclear how much water will be used daily and where it is sourced</li> </ul>	<p>The primary sources of water required for the Project will be water removed from the mine itself and water recycled from the TSF. Until the mine and TSF are developed to the stage that water may be sourced from these areas, water will be sourced from the ponds associated with the former OMNRF Tree Nursery. These ponds were created by the damming of streams flowing through the OMNRF Tree Nursery and used for irrigation purposes. These dams have remained in place and are operational.</p> <p>Additional information regarding water flow paths, volumes, contaminant handling, and water quality during various stages of the project can be found in several areas of the EIS per the references noted in the right hand column.</p>	<p>EIS Section 5.7 - Existing Conditions</p> <p>EIS Section 3.0 - Project Description</p> <p>Appendix F – Water Management Plan</p> <p>Appendix N – Surface Hydrology</p> <p>Appendix O – Hydraulic Modelling</p>
Eagle Lake First Nation	<p>Potential impacts to country foods, current use of lands and resources for traditional purposes, and cultural heritage in relation to present and future generations (cumulative effects)</p>	<p>A country foods assessment has been completed as part of the Risk Analysis for the Project. This assessment indicates that there is little chance of adverse impacts to country foods.</p> <p>Treasury is not aware of any current uses of the lands associated with the Project for traditional purposes. Any knowledge that Eagle Lake First Nation or any other party has relating to traditional uses of these lands would be welcomed by Treasury.</p> <p>An Archaeological Assessment of the Project area has been completed and has concluded that there are no sites of archaeological interest or significance associated with the site.</p>	<p>Appendix W – Screening Level Risk Assessment</p> <p>Appendix EE – Public and Aboriginal Land Use and Country Foods Assessment</p>



**Table 14.0. 3 Summary of Feedback from Aboriginal Communities as provided by the CEA Agency to Treasury**

Aboriginal Group	Preliminary Feedback from Aboriginal Communities / Identified Concern	Response /Discussion / Proposed Mitigation	EIS Reference
Eagle Lake First Nation	Potential impacts to Lola Lake Nature Reserve, just to the north of proposed TSF	Lola Lake Nature Reserve is located 2 km. to the northeast of the project site and upstream from the project site. The area between the project site and Lola Lake Nature Reserve will not be developed as part of the Project. As such, the project is expected to have no impact on the Lola Lake reserve area.	Appendix J – Air Quality Assessment
Eagle Lake First Nation	Impacts to fish and fish habitat <ul style="list-style-type: none"> <li>• Spawning areas for white suckers, walleye and other fish within the affected watersheds</li> </ul>	Certain fish species are known to be present and potentially spawn in Blackwater Creek. It is anticipated that sections of the upper portion of Blackwater Creek will be impacted by the development of the Project.  It is not anticipated that fish or fish habitat in any other location will be negatively affected by the Project, upstream or downstream of the Project.	Appendix W – Screening Level Risk Assessment
Eagle Lake First Nation	Current use of lands and resources for traditional purposes <ul style="list-style-type: none"> <li>• Blueberry picking within area of (proposed TSF)</li> </ul>	The proposed location of the TSF is primarily on private property which has been purchased by Treasury. This area is primarily lowland with black spruce forest cover. Very little of the current proposed TSF site is suited to blueberries. There are numerous other sites in close proximity to the project area where better blueberry picking opportunities are available. It is expected that these areas will be available to the general public and aboriginal communities for the life of the mine.	Appendix W – Screening Level Risk Assessment



**Table 14.0. 3 Summary of Feedback from Aboriginal Communities as provided by the CEA Agency to Treasury**

Aboriginal Group	Preliminary Feedback from Aboriginal Communities / Identified Concern	Response /Discussion / Proposed Mitigation	EIS Reference
Eagle Lake First Nation	Possible subsection 5(2) effects <ul style="list-style-type: none"> <li>• Fox dens within the TSF area</li> <li>• Robins feed on blueberries within the TSF area</li> <li>• TSF area is good nesting habitat for birds, with its easy access to blueberries</li> </ul>	<p>Much of the proposed TSF is comprised of lowland black spruce and is not conducive to fox dens.</p> <p>Areas better suited to fox dens can be found to the north and east of the proposed TSF. Similarly, areas sustaining blueberries on the proposed TSF area are limited with much better areas to the north and east.</p>	Appendix W – Screening Level Risk Assessment
Eagle Lake First Nation	Project components <ul style="list-style-type: none"> <li>• Requested additional information regarding TSF design, cyanide treatment and transportation, cyanide breakdown</li> <li>• Several questions about water management plan and system</li> </ul>	<p>A preliminary TSF design has been completed by WSP who have expertise and experience in the design of TSFs. The TSF is being designed to modern industry standards and specifically for the Project site and conditions. Additional design work will be required prior to construction. It is expected that there may be a third party review of the final design of the TSF, prior to approval and construction to provide another layer of safety and oversight.</p> <p>Additional discussion related to the TSF can be found in the Risk Analysis section of the EIS</p> <p>The processing plant at the Project site will include a cyanide destruction process that will ensure that prior to process water being released to the TSF, cyanide levels will be reduced to 1 part per million (ppm) or less. Exposure to sunlight in the TSF will result in additional destruction of cyanide.</p> <p>Prior to being released from the TSF, water will undergo further treatment processes including reverse osmosis prior to being released into Blackwater Creek.</p>	EIS Section 3.7 – Project Description Appendix D – TSF Alternatives Assessment Appendix F – Water Management Plan, Sections 3.0 and 4.0 Appendix W – Screening Level Risk Assessment Appendix GG – TSF Failure Modelling



**Table 14.0. 3 Summary of Feedback from Aboriginal Communities as provided by the CEA Agency to Treasury**

Aboriginal Group	Preliminary Feedback from Aboriginal Communities / Identified Concern	Response /Discussion / Proposed Mitigation	EIS Reference
Eagle Lake First Nation	<p>Accidents and malfunctions, including tailings dam failure, transportation of hazardous materials, risks to air quality</p> <ul style="list-style-type: none"> <li>• need to have accountability for claims, need checks and transparency</li> </ul>	<p>The potential for a failure of the TSF is discussed in the Risk Assessment section of the EIS.</p> <p>Any hazardous materials that will be delivered to the site will be by truck and will be subject to Provincial hazardous goods transportation regulations.</p> <p>Measures will be implemented to control dust associated with the Project.</p> <p>Emissions from the processing plant will meet all provincial regulatory requirements.</p>	EIS Section 4.0 – Accidents and Malfunctions Appendix GG – TSF Failure Modelling
Eagle Lake First Nation	<p>Mine closure and reclamation plans</p> <ul style="list-style-type: none"> <li>• extent historical conditions will be restored at post closure</li> </ul>	<p>A conceptual closure plan has been developed for the Project. As part of mine permitting and approvals process, the company will be required to file a full closure plan with MNDM that will include financial assurance for any required closure activities.</p> <p>Following mine closure all buildings and infrastructure associated with the project will be removed from the site. The exception to this will be the buildings associated with the former Dryden Tree Nursery which will be retained.</p> <p>The western and central portions of the open pit will be filled with waste rock and the pit will be allowed to flood. This will create a small lake that is relatively shallow on the west end and progressively deeper to the east.</p> <p>The waste rock pile and the TSF will be capped with soil (overburden retained during construction) and these sites will be re-vegetated using local species. Similarly, other disturbed areas will be re-vegetated.</p>	EIS Section 11.0 – Conceptual Closure Plan



**Table 14.0. 3 Summary of Feedback from Aboriginal Communities as provided by the CEA Agency to Treasury**

Aboriginal Group	Preliminary Feedback from Aboriginal Communities / Identified Concern	Response /Discussion / Proposed Mitigation	EIS Reference
Eagle Lake First Nation	Follow up monitoring, including involvement of Aboriginal monitors	Specific aspects of follow up monitoring have not yet been finalized with the government. These details will be subject to provincial input and be required prior to provincial permits being issued Treasury welcomes the input and involvement of Aboriginal people in determining and implementing environmental monitoring requirements.	EIS Section 13.0 – Environmental Monitoring Plans
Wabauskang First Nation	Water quality is a key concern	<p>One concern relating to water quality generally, is related to treated process effluent being released from the site.</p> <p>Water from the Project site is planned to be discharged into Blackwater Creek which flows into Wabigoon Lake. However, prior to discharge from the Project site, water will be passing through a multi stage treatment process, including reverse osmosis. This treatment will ensure that water quality meets all provincial water quality standards to ensure human health and fish will not be adversely affected. For all intents and purposes, water discharged from the Project site will exceed the water quality occurring naturally in Blackwater Creek.</p>	<p>EIS Section 5.7 – Existing Conditions</p> <p>EIS Section 3.0 – Project Description</p> <p>Appendix N – Surface Hydrology</p> <p>Appendix O – Hydraulic Modelling</p>
Wabauskang First Nation	Additional detail on watersheds and pathways through the watersheds	Detail on watersheds and pathways is found in several sections of the EIS document. Note the references on the right hand column. Treasury would be pleased to discuss and review these in more detail with Wabauskang at the convenience of the first Nation	<p>EIS Section 5.0 – Existing Conditions Section 5.0</p> <p>Appendix N – Surface Hydrology</p> <p>Appendix O – Hydrological Modelling</p> <p>Appendix W – Screening Level Risk Assessment</p>



**Table 14.0. 3 Summary of Feedback from Aboriginal Communities as provided by the CEA Agency to Treasury**

Aboriginal Group	Preliminary Feedback from Aboriginal Communities / Identified Concern	Response /Discussion / Proposed Mitigation	EIS Reference
Wabauskang First Nation	Concern about dam design an safety	A preliminary TSF design has been completed by WSP who have expertise and experience in the design of TSFs. The TSF is being designed to industry standards and specifically for the Project site and conditions. Additional design work will be required prior to construction. Additional information relating to the TSF can be found in the Risk Analysis section of the EIS.	EIS Section 4.0 – Accidents and Malfunctions Appendix D – TSF Alternatives Assessment Appendix GG – TSF Failure Modelling Appendix W – Screening Level Risk Assessment
Wabauskang First Nation	<p>Current use of lands and resources for traditional purposes, Aboriginal health and socio-economic effects, fish and fish habitat, migratory birds</p> <ul style="list-style-type: none"> <li>• Identified potential impacts and mitigation measures identified are not adequate</li> <li>• A traditional knowledge / traditional land use study will complete understanding of community traditional land use, which is currently a gap</li> </ul>	<p>Treasury is not aware of any current use of the lands associated with the Project for traditional purposes. Any knowledge that Wabauskang or any other party may have relating to such uses would be welcomed by Treasury.</p> <p>A risk analysis has been completed that indicates risks to human health will not be impacted.</p> <p>Treasury does not foresee any adverse socio-economic effects arising from the Project. Positive socio-economic impacts will be realized through the creation of jobs and business opportunities.</p> <p>Some fish habitat will be disturbed in the upper reaches of Blackwater Creek. Only baitfish species are present in this location. Request for review has been submitted to DFO to determine the value of the fishery.</p> <p>Treasury has extended the offer to the Aboriginal communities closest to the Project to undertake a Traditional Knowledge / Traditional Land Use Study.</p>	Appendix W - Screening Level Risk Assessment



**Table 14.0. 3 Summary of Feedback from Aboriginal Communities as provided by the CEA Agency to Treasury**

Aboriginal Group	Preliminary Feedback from Aboriginal Communities / Identified Concern	Response /Discussion / Proposed Mitigation	EIS Reference
Wabauskang First Nation	Highlighted the importance of having a good understanding of baseline conditions including impacts to wildlife linked to hunting and fishing and plants for harvesting	Environmental Baseline Studies relating to the Project have been ongoing since 2010. These studies have been developed by reputable and qualified consultants and have been implemented by these consultants and / or Treasury staff. Environmental monitoring will continue throughout the life of mine and post closure. Treasury would be pleased to address and answer any specific questions regarding the baseline study work done to date with Wabauskang first Nation.	EIS Section 5.0 – Existing Conditions Appendix G – Environmental Baseline Appendix Q-S – Environmental Baseline
Wabauskang First Nation	Require additional information on monitoring of fish and fish habitat	As the project progresses through consultation and engagement with local stakeholders, federal and provincial authorities a detailed fish monitoring plan will be developed and implemented before production begins.	EIS Section 9.0 – Commitment Registry EIS Section 13.0 – Environmental Monitoring
Naotkamegwanning First Nation	Accidents, particularly due to potential tailings dam failure	A preliminary TSF design has been completed by WSP who have expertise and experience in the design of TSFs. The TSF is being designed to industry standards and specifically for the Project site and conditions. Additional design work will be required prior to construction.  Additional information relating to the TSF can be found in the Risk Analysis section of the EIS.	EIS Accidents and Malfunctions Section 4.0 Appendix D – TSF Alternatives Assessment Appendix GG – TSF Failure Modelling Appendix W – Screening Level Risk Assessment
Naotkamegwanning First Nation	Socio-economic effects <ul style="list-style-type: none"> <li>Community holds commercial fishing license in areas such as Thunder Lake, Wabigoon Lake, and Blackwater Creek</li> </ul>	The Project will not draw water from Thunder Lake or discharge water into Thunder Lake. A significant treed buffer will be maintained between Thunder Lake and the Project site. Consequently no impacts to Thunder Lake and the Thunder Lake Fishery are expected.  Water from the Project site is planned to be discharged into Blackwater Creek which flows into Wabigoon Lake.	EIS Section 6.0 – Effects Assessment Appendix W - Screening Level Risk Assessment





**Table 14.0. 3 Summary of Feedback from Aboriginal Communities as provided by the CEA Agency to Treasury**

Aboriginal Group	Preliminary Feedback from Aboriginal Communities / Identified Concern	Response /Discussion / Proposed Mitigation	EIS Reference
	<ul style="list-style-type: none"> <li>Concern about potential impacts to water bodies (Thunder Lake, Butler Lake, Wabigoon Lake, and others) and impacts to selling fish due to public perception</li> </ul>	<p>However, prior to discharge from the Project site, water will be passing through a multi stage treatment process, including reverse osmosis. This treatment will ensure that water quality meets all provincial water quality standards and human health and fish will not be adversely affected. For all intents and purposes, water discharged from the Project site will exceed the water quality occurring naturally in Blackwater Creek.</p> <p>Butler Lake is located south of Wabigoon Lake and flows into Wabigoon. Water quality and the fishery of Butler Lake will not be affected by the Project.</p>	
Naotkamegwaning First Nation	<p>Current use of lands and resources for traditional purposes</p> <ul style="list-style-type: none"> <li>Concern about potential impacts as area surrounding Dryden is part of their traditional hunting and fishing area</li> <li>Species of interest include, but are not limited to, deer and moose</li> <li>Traplins in the area</li> </ul>	<p>The Project is limited to a specific area to the east of Thunder Lake. The project area is currently accessed and is approximately 300 ha in size of which approximately 2/3 of the area lies on private property. The majority of the property on which the mine will be constructed is privately held land which is not currently available for hunting. The project is not expected to have a significant negative effect on hunting in the area.</p>	Appendix EE - Public and Aboriginal Land Use and Country Foods Assessment



**Table 14.0. 3 Summary of Feedback from Aboriginal Communities as provided by the CEA Agency to Treasury**

Aboriginal Group	Preliminary Feedback from Aboriginal Communities / Identified Concern	Response /Discussion / Proposed Mitigation	EIS Reference
Naothamegwanning First Nation	<p>Cultural heritage</p> <ul style="list-style-type: none"> <li>Identified sacred sites exist south of Wabigoon</li> <li>Potential negative impact on sacred animals (e.g., turtles and frogs)</li> <li>Rocks and boulders identified as culturally sacred</li> </ul>	<p>The Project does not involve any activity or development south of Wabigoon. Sacred sites in this vicinity will not be disturbed.</p> <p>An Archaeological Assessment of the project area has been completed and has concluded that there are no sites of archaeological interest or significance associated with the site.</p>	EIS Section 3.0 – Project Description
Naothamegwanning First Nation	<p>Potential impacts to migratory birds and other wildlife</p> <ul style="list-style-type: none"> <li>Project area is a fly through area for migratory birds</li> <li>Access to tailings by wildlife</li> </ul>	<p>The TSF will be fenced to discourage wildlife from entering the TSF area. It is possible that some waterfowl may land on the TSF but are unlikely to remain as there will be no food source in the waters of the TSF.</p> <p>The company will adhere to all regulations specifically in regards to the Migratory Birds Act</p>	EIS Section 5.0 – Existing Conditions EIS Section 6.0 – Effects Assessment
Naothamegwanning First Nation	<p>Aboriginal consultation</p> <ul style="list-style-type: none"> <li>Input from elders is needed for adequate consultation on scope of potential effects</li> </ul>	Treasury has met with representatives of Naothamegwanning on a number of occasions both at Naothamegwanning and at the Treasury site. Treasury would welcome input from elders and is prepared to discuss how this can be arranged.	Appendix DD - Aboriginal Consultation Report
Naothamegwanning First Nation	Community holds traditional ecological knowledge for the area but elder support is required to share this information	Treasury would welcome input from elders and is prepared to discuss how this can be arranged	Appendix DD - Aboriginal Consultation Report



**Table 14.0. 3 Summary of Feedback from Aboriginal Communities as provided by the CEA Agency to Treasury**

Aboriginal Group	Preliminary Feedback from Aboriginal Communities / Identified Concern	Response /Discussion / Proposed Mitigation	EIS Reference
Wabigoon Lake Ojibway Nation	Aboriginal Consultation <ul style="list-style-type: none"> <li>• Concerns regarding consultation completed to date</li> <li>• Resources needed to understand traditional land use and potential impacts</li> <li>• Concerns identified during meetings with Treasury Metals Inc. were not documented correctly.</li> </ul>	<p>Treasury shares the concern relating to consultation to date. Treasury last met with Wabigoon Lake Chief and Council on January 20, 2014. Since then, numerous requests made by Treasury to meet with Chief and Council have been not resulted in the parties coming together. Treasury has also extended the offer in writing (June 11, 2014) to discuss the implementation of a Traditional Knowledge Study with Wabigoon Lake as well as initiate discussions leading to an IBA type agreement.</p> <p>Treasury has responded to all correspondence received from Wabigoon Lake.</p> <p>Treasury has extended to Wabigoon Lake Ojibway Nation its desire to undertake a Traditional Land Use Study in association with Wabigoon Lake Ojibway Nation (June 11, 2014).</p> <p>Treasury is unclear about what meeting notes were not correctly documented. Treasury's meeting notes from meetings with Wabigoon Lake have been provided to Wabigoon Lake for their review and comment. When comments relating to the notes have been received the notes have been revised per WLON's input.</p>	Appendix DD - Aboriginal Consultation Report



**Table 14.0. 3 Summary of Feedback from Aboriginal Communities as provided by the CEA Agency to Treasury**

Aboriginal Group	Preliminary Feedback from Aboriginal Communities / Identified Concern	Response /Discussion / Proposed Mitigation	EIS Reference
Wabigoon Lake Ojibway Nation	<p>Current use of lands and resources for traditional purposes, health and socio-economic effects</p> <ul style="list-style-type: none"> <li>• Access to traditional lands</li> <li>• Access and availability of food (e.g. moose, deer, rabbit) and areas of cultural importance</li> <li>• Potential contamination of fish and meat</li> </ul>	<p>The overall size of the Project is approximately 300 ha. Of this approximately 100 ha is Crown land with the remainder of the project area being located on privately owned properties.</p> <p>Treasury anticipates the closure of Tree Nursery Road to the north of Normans Road during the operation of the Goliath Gold Mine. A small area of Crown land near the end of Tree Nursery Road that is currently accessible will no longer be accessible for the life of the mine. Access to all other areas will remain unchanged.</p> <p>A Risk Assessment relating to "Country Foods" in the vicinity of the Project indicates that country foods will not be adversely affected. The sole exception to this could be if grouse were to feed exclusively on the tailings piles for an extended period of time. As there is very low likelihood of this occurring, this is not considered a significant risk.</p>	<p>EIS Section 3.0 – Project Description</p> <p>EIS Section 5.0 - Existing Conditions</p> <p>Appendix W – Screening Level Risk Assessment</p>
Wabigoon Lake Ojibway Nation	<p>Cultural resources</p> <ul style="list-style-type: none"> <li>• View from Thunder Lake is of cultural importance, and may be affected by the project</li> </ul>	<p>A treed buffer approximately 1 km. in width will be maintained between the Thunder Lake and the Project site. This will effectively screen the mine site and associated infrastructure from Thunder Lake. The height of the waste rock pile will be limited to 25 m to 30 m. It is anticipated that if the waste rock pile is visible from Thunder Lake it will only be from the north shore at a distance of approximately 6 km from the mine site. Any visual effect is likely to be less than that associated with forestry activities occurring adjacent to the lake.</p>	<p>EIS Section 3.0 – Project Description</p> <p>EIS Section 5.0 - Existing Conditions</p> <p>Appendix W – Screening Level Risk Assessment</p>



**Table 14.0. 3 Summary of Feedback from Aboriginal Communities as provided by the CEA Agency to Treasury**

Aboriginal Group	Preliminary Feedback from Aboriginal Communities / Identified Concern	Response /Discussion / Proposed Mitigation	EIS Reference
Wabigoon Lake Ojibway Nation	Surface water quality <ul style="list-style-type: none"> <li>• Thunder Lake flows into the traditional territory and the tailings pond and effluent will contaminate food</li> <li>• Contaminant levels in the water</li> </ul>	Water from the tailings pond will not flow into Thunder Lake. All water discharged from the Project site will be via Blackwater Creek which flows into Wabigoon Lake. Prior to discharge from the Project site, water will be passing through a multi stage treatment process, including reverse osmosis. This treatment will ensure that water quality meets all provincial water quality standards. For all intents and purposes, water discharged from the Project site will exceed the water quality occurring naturally in Blackwater Creek.	EIS Existing Conditions Section – 5.7 EIS Project Description – Section 3.0 Appendix F – Water Management Plan Appendix N – Surface Hydrology Appendix O – Hydraulic Modelling
Wabigoon Lake Ojibway Nation	Groundwater quality <ul style="list-style-type: none"> <li>• Identified natural springs and artesian wells are located throughout the study area and possibly on the project site that are not included in the Ministry of the Environment and Climate Change database for the EIS</li> <li>• Concern about contaminated effluent being discharged into Blackwater Creek and seeping into groundwater</li> </ul>	Prior to discharge from the Project site, water will be passing through a multi stage treatment process, including reverse osmosis. This treatment will ensure that water quality meets all provincial water quality standards. For all intents and purposes, water discharged from the Project site will exceed the water quality occurring naturally in Blackwater Creek.  Treasury has also extended the offer in writing (June 11, 2014) to discuss the implementation of a Traditional Knowledge (TK) study with Wabigoon Lake. If new or additional knowledge concerning artesian wells were to come out of a TK study, those learnings would be applied to the project.	Appendix M – Hydrological Monitoring
Wabigoon Lake Ojibway Nation	Concerns with the quality of baseline information provided in the EIS	Environmental Baseline Studies relating to the Project have been ongoing since 2010. These studies have been developed by reputable and qualified consultants and have been implemented by these consultants and / or Treasury staff. These studies will also be reviewed by both provincial and federal scientists, who will also be	EIS Section 5.0 – Existing Conditions Appendix G – Environmental Baseline



**Table 14.0. 3 Summary of Feedback from Aboriginal Communities as provided by the CEA Agency to Treasury**

Aboriginal Group	Preliminary Feedback from Aboriginal Communities / Identified Concern	Response /Discussion / Proposed Mitigation	EIS Reference
		scrutinizing the reports for quality of information. Provincially regulated environmental monitoring will continue throughout the life of mine and post closure.	Appendix Q-S – Environmental Baseline
Wabigoon Lake Ojibway Nation	<p>Cumulative effects</p> <ul style="list-style-type: none"> <li>• Habitat fragmentation impacts on moose</li> <li>• Restrictions on eating fish in Wabigoon Lake due to elevated metal levels</li> </ul>	<p>Areas of the Dryden Forest immediately to the north of the Project and to the northwest of the project area on the Wabigoon Forest are being managed to create moose habitat. Additionally, the fields of the former OMNRF Tree Nursery (now owned by Treasury Metals) are now regenerating to forest cover that will create moose habitat. The overall impact of the Project on moose habitat in the area is anticipated to be low.</p> <p>The Guide to Eating Ontario Sport fish currently makes recommendations relating to the consumption of fish from Wabigoon Lake.</p> <p>The Project will not result in any additional restrictions on eating fish in Wabigoon Lake due to elevated metal levels.</p> <p>Prior to discharge from the Project site, water will be passing through a multi stage treatment process, including reverse osmosis. This treatment will ensure that water quality meets all provincial water quality standards. For all intents and purposes, water discharged from the Project site will exceed the water quality occurring naturally in Blackwater Creek.</p>	<p>EIS Section 6.0 – Effects Assessment</p> <p>Appendix W – Screening Level Risk Assessment</p>



**Table 14.0. 4 Environmental Effects Assessment for the Construction Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Terrain and Soils	Natural viewscales from nearby residences and lakes interrupted by WRSA, TSF, overburden storage area and low-grade stockpile.	Contouring of WRSA and TSF during construction and closure to blend with surrounding terrain; progressive reclamation to cap and vegetate WRSA during operations. Overburden storage area to be used as cover material during reclamation.	Level I - There is no measurable residual effect.	Level III - Residual effect extends into the RSA	Level II - Residual effect will extend beyond construction period.	Level III - Residual effect occurs frequently or continuously	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur	Periodic monitoring of vegetation cover.
	Overburden stripping over the ore body and cut and fill in the vicinity of facilities requiring a leveled surface may result in susceptibility to wind and water erosion.	Regrade disturbed areas and construct surface drainage system (e.g. ditches, culverts) to minimize loss of soil through erosion	Level I - There is no measurable residual effect.	Level I - No anticipated adverse environment effects beyond Project footprint	Level I - Residual effect is not expected to be measurable beyond the construction period.	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	Periodic monitoring of erosion at site and downgradient areas.
Noise	Increase in traffic noise due to movements of construction vehicles.	Use new, low-noise mobile equipment; time construction activities to minimize effects.	Level I - Noise levels anticipated within applicable federal and provincial regulations and guidelines	Level II - Residual effect extends into LSA	Level I - Residual effect is not expected to be measurable beyond the construction period.	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	Periodic monitoring of noise levels at site and receptor areas.
	Disturbance effects on local wildlife.	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure. Utilize proper waste management strategies to minimize wildlife attraction	Level I - There is no measurable residual effect to population abundance and distribution.	Level II - Residual effect extends into LSA	Level I - Residual effect is not expected to be measurable beyond the construction period.	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible following closure.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System



**Table 14.0. 4 Environmental Effects Assessment for the Construction Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Light	Light trespass to nearby occupied properties.	Limit Project lighting to areas required for safe operations; orient Project lighting towards the interior of the Project area; where possible, use down-shaded lighting on Project buildings and infrastructure.	Level I - Light levels anticipated within applicable federal and provincial regulations and guidelines	Level II - Residual effect extends into LSA	Level II - Residual effect will extend beyond construction period.	Level III - Residual effect occurs frequently or continuously	Level I - Effect is readily reversible following closure.	Not significant	Level III - Will occur.	Follow-up monitoring at key receptor locations.
	Wildlife attraction to novel light sources.	Limit Project lighting to areas required for safe operations; orient Project lighting towards the interior of the Project area; where possible, use down-shaded lighting on Project buildings and infrastructure.	Level 1 - There is no measurable residual effect to population abundance and distribution.	Level II - Residual effect extends into LSA	Level II - Residual effect will extend beyond construction period.	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible following closure.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System
Air Quality	Potential increase in the ambient concentrations of airborne contaminants (i.e., TSP, PM10, PM2.5, NOx, SOx, CO)	Implement industry best practices to minimize emissions (e.g. Blasting to be conducted in a phased manner that optimizes the amount of explosives, and that minimizes the area being blasted; Material will be loaded into haul trucks in a manner that minimizes the drop height; Ensure that all engines are properly maintained and all emission control systems are in good working order; Water and chemical suppressants will be used for dust control).	Level I - Emissions above background but within applicable federal and provincial regulations and guidelines; or if guidelines exceeded, effects limited to the project footprint	Level I - Emissions above background but within applicable federal and provincial regulations and guidelines; or if guidelines exceeded, effects limited to the project footprint.	Level I - Residual effect is not expected to be measurable beyond the construction period.	Level I - Residual effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level I - Unlikely to occur	None required
Climate	Climate change effects resulting from Project GHG emissions.	Project power provided by existing capacity within the power grid rather than onsite generation.	Level 1 - There is no measurable residual effect	Level III - Residual effect extends into the RSA	Level II - Residual effect will extend beyond construction period.	Level III - Residual effect occurs frequently or continuously	Level I - Effect is readily reversible following closure.	Not significant	Level III - Will occur.	None required.





**Table 14.0. 4 Environmental Effects Assessment for the Construction Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Surface Water Quality	Physical alteration of the surrounding landscape could result in increased sediment loading to receiving waters associated with the Project which could result in increased total suspended solids (TSS) in surface waters. Alteration of water quality could occur from accidental release of deleterious substances (e.g., chemical/fuel spills).	Implement an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization.	Level II - Activity has the potential to effect water quality in receiving waters that could exceed applicable federal and provincial regulations and guidelines	Level II - Potential to adversely affect drinking water uses, aquatic life, and/or wildlife in the LSA	Level I - Residual effect is not measurable beyond construction period.	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur; however, mitigation measures outlined in an EMP are designed to reduce likelihood of occurrence.	Apply science-based performance measurements to conduct EEM studies during construction
Groundwater Quality	Groundwater quality impacted by accidental point source releases of environmental contaminants of concern.	Temporary containment of all potential contaminants of concern and implementation of spill response procedures and equipment.	Level III - Introduction of non-native contaminant	Level I - Residual effect is expected to be limited to release area.	Level I - Residual effect is not measurable beyond construction period assuming site remediation measures are implemented.	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period when remediation measures are implemented.	Not significant	Level II - Could reasonably be expected to occur; however, spill prevention measures and response plan will minimize likelihood.	Contaminated site assessment and monitoring program, or remediation action plan implementation.
Groundwater Quantity	Groundwater quantity impacted by disturbance of recharge and/or discharge areas.	Minimize project footprint.	Level I - No measurable residual effect due to limited scale of development within groundwater basin.	Level I - Residual effects limited to the project footprint.	Level III - Change in groundwater recharge within project footprint will be permanent.	Level III - Residual effect within project footprint is permanent.	Level III - Residual effect is not reversible.	Not significant	Level III - Will occur.	None required.
Wildlife Species at Risk	Potential change in bat population abundance and distribution due to habitat removal. Construction will result in 242 ha of habitat removal.	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure	Level II - Activity has the potential to affect population abundance and distribution	Level II - Residual effect extends into LSA	Level I - Residual effect is not measurable beyond construction period.	Level III - Residual effect occurs frequently or continuously	Level II - Residual effect is partially reversible	Not significant	Level I - Unlikely to occur	None required



**Table 14.0. 4 Environmental Effects Assessment for the Construction Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
	Direct mortality to roosting bats or nesting birds during habitat clearing activities	No tree clearing activities conducted during bat migration or breeding periods.	Level 1 - There is no measurable residual effect to population abundance and distribution	Level II - Residual effect extends into LSA	Level 1 - Residual effect is not measurable beyond construction period.	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	None required
	Direct mortality from vehicular collision or other human activity	Minimize construction of new roads. Enforce speed limits on Project roads. No hunting/trapping by Project personnel. Awareness training.	Level 1 - There is no measurable residual effect to population abundance and distribution	Level II - Residual effect extends into LSA	Level I - Residual effect is not measurable beyond construction period.	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System
Ungulates	Potential change in ungulate population abundance and distribution due to habitat removal. Construction will result in 242 ha of habitat removal.	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure. Utilize proper waste management strategies to minimize wildlife attraction	Level II - Activity has the potential to affect population abundance and distribution	Level III - Residual effect extends into the RSA	Level I - Residual effect is not measurable beyond construction period.	Level III - Residual effect occurs frequently or continuously	Level II - Residual effect is partially reversible	Not significant	Level I - Unlikely to occur	None required
	Direct mortality from vehicular collision or other human activity	Minimize construction of new roads. Enforce speed limits on Project roads. No hunting/trapping by Project personnel. Awareness training.	Level I - There is no measurable residual effect to population abundance and distribution.	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond construction period.	Level II - Residual effect expected to occur intermittently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System
Furbearers	Potential change in furbearer population abundance and distribution due to habitat removal. Construction will result in 242 ha of habitat removal.	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure. Utilize proper waste management strategies to minimize wildlife attraction	Level II - Activity has the potential to affect population abundance and distribution	Level III - Residual effect extends into the RSA	Level I - Residual effect is not measurable beyond construction period.	Level III - Residual effect occurs frequently or continuously	Level II - Residual effect is partially reversible	Not significant	Level I - Unlikely to occur	None required
	Direct mortality from vehicular collision or other human activity	Minimize construction of new roads. Enforce speed limits on Project roads. No hunting/trapping by Project personnel. Awareness training	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond construction period.	Level II - Residual effect expected to occur intermittently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System



**Table 14.0. 4 Environmental Effects Assessment for the Construction Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Upland Birds	Potential change in upland bird population abundance and distribution due to habitat removal. Construction will result in 202.5 ha of habitat removal.	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure	Level II - Activity has the potential to affect population abundance and distribution	Level II - Residual effect extends into LSA	Level I - Residual effect is not measurable beyond construction period.	Level III - Residual effect occurs frequently or continuously	Level II - Residual effect is partially reversible	Not significant	Level I - Unlikely to occur	None required
	Direct mortality from vehicular collision or other human activity	Minimize construction of new roads. Enforce speed limits on Project roads. No hunting/trapping by Project personnel. Awareness training	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond construction period.	Level II - Residual effect expected to occur intermittently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System
	Direct effects on active nests	All habitat clearing activities conducted during the non-breeding season. If detected, active nests avoided with species-appropriate disturbance buffers.	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond construction period.	Level II - Residual effect expected to occur intermittently	Level III - Residual effect is not reversible.	Not significant	Level I - Unlikely to occur	Conduct pre-clearance nest surveys prior to any habitat modification activities conducted during the migratory bird breeding season.
Wetland Birds	Potential change in wetland bird population abundance and distribution due to habitat removal. Construction will result in 39.5 ha of habitat removal.	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure	Level II - Activity has the potential to affect population abundance and distribution	Level II - Residual effect extends into LSA	Level I - Residual effect is not measurable beyond construction period.	Level III - Residual effect occurs frequently or continuously	Level II - Residual effect is partially reversible	Not significant	Level I - Unlikely to occur	None required
	Direct mortality from vehicular collision or other human activity	Minimize construction of new roads. Enforce speed limits on Project roads. No hunting/trapping by Project personnel. Awareness training	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level 1 - Residual effect is not measurable beyond construction period.	Level II - Residual effect expected to occur intermittently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System



**Table 14.0. 4 Environmental Effects Assessment for the Construction Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
	Direct effects on active nests	All habitat clearing activities conducted during the non-breeding season. If detected, active nests avoided with species-appropriate disturbance buffers.	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond construction period.	Level II - Residual effect expected to occur intermittently	Level III - Residual effect is not reversible.	Not significant	Level I - Unlikely to occur	Conduct pre-clearance nest surveys prior to any habitat modification activities conducted during the migratory bird breeding season.
Fish	Mortality of individuals due to changes in water quality from increased sediment loads from runoff and/or release of deleterious substances (e.g., chemical/fuel spills)	Implement an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization.	Level II - Activity has the potential to measurably affect productive capacity of local fishery.	Level II - Residual effect extends into LSA	Level I - Residual effect is not measurable beyond construction period (3 years).	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur; however, mitigation measures outlined in an EMP are designed to reduce likelihood of occurrence.	Develop and implement a Water Quality Monitoring program to comply with <i>Fisheries Act</i> and MMR.
	Mortality of individuals because of physical activities that occur within or adjacent to a watercourse (e.g., access roads, tailing area dam construction, pit excavation).	Minimize work within watercourses. Schedule works to occur during reduced risk periods (i.e., outside of spawning, hatching). Conduct fish salvage where possible.	Level II - Activity has the potential to measurably affect productive capacity of local fishery.	Level II - Residual effect extends into LSA	Level I - Residual effect is not measurable beyond construction period (3 years).	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	None required
	Potential changes to population abundance and distribution of fish species due to changes in habitat quality and/or availability.	Minimize site prep activities in vicinity of watercourses. Implement EMP measures to minimize potential for habitat disturbance.	Level II - Activity has the potential to measurably affect productive capacity of local fishery.	Level II - Residual effect extends into LSA	Level I - Residual effect is not measurable beyond construction period (3 years).	Level III - Residual effect occurs frequently or continuously	Level II - Residual effect is partially reversible	Not significant	Level I - Unlikely to occur	Conduct monitoring during the closure period. Conduct follow up fish surveys to assess fish distribution and species composition.



**Table 14.0. 4 Environmental Effects Assessment for the Construction Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
	Noise and vibration disturbances to fish from heavy equipment operation.	EMP should include measures to reduce potential impacts of noise and vibration (e.g., utilizing well-maintained equipment operated at optimum loads).	Level I - There is no measurable residual effect to fishery as fish will typically exhibit avoidance behaviour.	Level 1 - Residual effect is restricted to Project footprint	Level 1 - Residual effect is not measurable beyond construction period (3 years).	Level II - Residual effect expected to occur intermittently	Level I - Residual effect is reversible.	Not significant	Level III - Will occur.	None required
Fish Habitat	Decreased habitat quality due to changes in water quality from increased sediment loads (increased turbidity/suspended solids) and/or release of deleterious substances (chemical/fuel spills).	Project should include an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization. Habitat compensation, as per the <i>Fisheries Act</i> , will be provided.	Level II - Activity has the potential to measurably affect productive capacity of local fish habitat.	Level II - Residual effect extends into LSA	Level II - Residual effect may extend up to 10 years after project initiation.	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur	Develop and implement a Water Quality Monitoring program to comply with <i>Fisheries Act</i> and MMR.



**Table 14.0. 4 Environmental Effects Assessment for the Construction Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
	Physical disturbance to or loss of aquatic habitat by equipment working in or adjacent to a waterbody. Construction of mine infrastructure (e.g., ponds, pits, WSRA, roads) will result in a direct impact to 5.991 ha of aquatic habitat, primarily within Blackwater Creek and several tributaries.	Minimize work within watercourses. Schedule works to occur during reduced risk periods (i.e., outside of spawning, hatching). Conduct fish salvage where possible. Habitat compensation, as per the Fisheries Act will be provided. Appropriately size and embed culverts or construct bridges where appropriate.	Level II - Activity has the potential to measurably affect productive capacity of local fish habitat.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level III - Residual effect occurs frequently or continuously	Level II - Residual effect is partially reversible	Not significant	Level III - Will occur.	Implement Fish Habitat Compensation as per Fisheries Act requirements.
	Potential decrease in habitat quality due to changes in water quality (i.e., increased turbidity/suspended solids, release of deleterious substances).	Project should include an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization.	Level II - Activity has the potential to measurably affect productive capacity of local fish habitat.	Level II - Residual effect extends into LSA	Level II - Residual effect may extend up to 10 years after project initiation.	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur	Develop and implement a Water Quality Monitoring program to comply with Fisheries Act and MMER.
Wetlands	Reduced water quality benefits associated with filtering effects of wetland vegetation; impact streams by reducing floodwater attenuation and long-term storage by wetland plants and soils; and diminish groundwater infiltration.	Avoid wetland habitats to the extent possible. Identify locations for restoration of wetland functions and values.	Level I - Wetlands are common in this area and localized loss of some functions and values is less than significant.	Level I - The extent of impacts to wetlands is confined to the project area.	Level III - Short of active mitigation, effect is permanent.	Level I - Effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level III - Will occur.	Monitor wetland soils and vegetation for presence of heavy metals and organic compounds.



**Table 14.0. 4 Environmental Effects Assessment for the Construction Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Vegetation Species at Risk. Species of Special Concern and Provincially Rare Species	Potential change in abundance and distribution of floating marsh marigold	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure; Maintain outflow water quality standards to maintain wetland health.	Level I - There is no measurable residual effect to population abundance and distribution	Level II - Residual effect extends into LSA	Level II - Residual effect may extend up to 10 years post-construction	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur	None required
Country Foods	Potential change in abundance and health of wild rice downstream of Project	Minimize project footprint to avoid known areas of wild rice; Maintain outflow water quality standards to maintain wetland health	Level I - There is no measurable residual effect to population abundance and distribution	Level II - Residual effect extends into LSA	Level II - Residual effect may extend up to 10 years post-construction	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur	Monitor health of wild rice populations periodically during first years of operation



**Table 14.0. 5 Environmental Effects Assessment for the Operational Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Terrain and Soils	Natural viewscales from nearby residences and lakes interrupted by WRSA, TSF, overburden storage area and low-grade stockpile.	Contouring of WRSA and TSF during construction and closure to blend with surrounding terrain; progressive reclamation to cap and vegetate WRSA during operations. Overburden storage area to be used as cover material during reclamation.	Level I - There is no measurable residual effect.	Level III - Residual effect extends into the RSA	Level II - Residual effect will extend beyond operation period.	Level III - Residual effect occurs frequently or continuously	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur	Periodic monitoring of vegetation cover.
	Soil chemistry changes resulting from WRSA runoff and TSF seepage.	Surface runoff and seepage collected and returned to TSF for secondary treatment.	Level I - There is no measurable residual effect.	Level II - Residual effect extends into LSA	Level I - Residual effect is not measurable beyond operation period (12 years).	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	Periodic monitoring of collection systems.
	Areas free of vegetation may be susceptible to wind and water erosion.	Installation of surface drainage system (e.g. ditches, culverts) to minimize loss of soil through erosion	Level I - There is no measurable residual effect.	Level I - No anticipated adverse environment effects beyond Project footprint	Level I - Residual effect is not measurable beyond operation period (12 years).	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	Periodic monitoring of erosion at site and downgradient areas.
Noise	Noise from operations including ventilation fans, blasting, crusher, and mobile equipment.	Use new, low-noise mobile equipment and crusher, conduct day time blasts.	Level I - Noise levels anticipated within applicable federal and provincial regulations and guidelines	Level II - Residual effect extends into LSA	Level I - Residual effect is not measurable beyond operation period (12 years).	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	Periodic monitoring of noise levels at site and receptor areas.
	Disturbance effects on local wildlife.	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure. Utilize proper waste management strategies to minimize wildlife attraction	Level I - There is no measurable residual effect to population abundance and distribution.	Level II - Residual effect extends into LSA	Level I - Residual effect is not measurable beyond operation period (12 years).	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible following closure.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System





**Table 14.0. 5 Environmental Effects Assessment for the Operational Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Light	Light trespass to nearby occupied properties.	Limit Project lighting to areas required for safe operations; orient Project lighting towards the interior of the Project area; where possible, use down-shaded lighting on Project buildings and infrastructure.	Level I - Light levels anticipated within applicable federal and provincial regulations and guidelines	Level II - Residual effect extends into LSA	Level 1 - Residual effect is not measurable beyond operation period (12 years).	Level III - Residual effect occurs frequently or continuously	Level I - Effect is readily reversible following closure.	Not significant	Level III - Will occur.	Follow-up monitoring at key receptor locations.
	Wildlife attraction to novel light sources.	Limit Project lighting to areas required for safe operations; orient Project lighting towards the interior of the Project area; where possible, use down-shaded lighting on Project buildings and infrastructure.	Level 1 - There is no measurable residual effect to population abundance and distribution.	Level II - Residual effect extends into LSA	Level 1 - Residual effect is not measurable beyond operation period (12 years).	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible following closure.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System
Air Quality	Potential increase in the ambient concentrations of airborne contaminants (i.e. TSP, PM10, PM2.5, NOx, SOx, CO)	Implement industry best practices to minimize emissions (e.g. Surface drilling to be performed by rigs equipped with dust suppression equipment; Blasting to be conducted in a phased manner that optimizes the amount of explosives, and that minimizes the area being blasted; Material will be loaded into haul trucks in a manner that minimizes the drop height; Ensure that all engines are properly maintained and all emission control systems are in good working order; Water and chemical suppressants will be used for dust control, the crusher will be located indoors and be equipped with control equipment).	Level II - Emissions have the potential to exceed federal or provincial guidelines for areas beyond project footprint, resulting in potential for meaningful adverse environmental effects to resources (land, water, biota) or residents outside the project footprint.	Level II - Emissions have the potential to exceed federal or provincial guidelines for areas beyond project footprint, resulting in potential for meaningful adverse environmental effects to resources (land, water, biota) or residents outside the project footprint.	Level I - Residual effect is not expected to be measurable beyond the operations period.	Level III - Residual effect occurs frequently or continuously	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	None required



**Table 14.0. 5 Environmental Effects Assessment for the Operational Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Climate	Climate change effects resulting from Project GHG emissions.	Project power provided by existing capacity within the power grid rather than onsite generation.	Level 1 - There is no measurable residual effect	Level III - Residual effect extends into the RSA	Level II - Residual effect will extend beyond operation period.	Level III - Residual effect occurs frequently or continuously	Level I - Effect is readily reversible following closure.	Not significant	Level III - Will occur.	None required.
Surface Water Quality	Release of tailings storage facility effluent could result in exceedances of MMER, CCME and/or PWQO criteria.	Secondary treatment (reverse osmosis) to achieve water quality criteria for chemicals of concern in the effluent.	Level I - No water quality effects in receiving waters anticipated within applicable federal and provincial regulations and guidelines	Level I - No anticipated adverse environment effects beyond any defined mixing zones	Level 1 - Residual effect is not measurable beyond early operation period (3 years).	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level I - Unlikely to occur	Apply science-based performance measurements to conduct EEM studies
	Release of chemicals and petroleum products due to spills during handling and/or equipment malfunctions.	Equipment refueling conducted at a refueling station over a spill collection system. Spill kits stationed throughout the mine and on vehicles to rapidly address spills from equipment failure. Chemical transfer conducted in dedicated, contained transfer areas.	Level I - No water quality effects in receiving waters anticipated within applicable federal and provincial regulations and guidelines	Level I - No anticipated adverse environment effects beyond any defined mixing zones	Level 1 - Residual effect is not measurable beyond early operation period.	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	Apply science-based performance measurements to conduct EEM studies
Surface Water Quantity	Increased flows in Blackwater Creek in years 1 -3 due to increases in the runoff coefficient of developed areas and discharge from the secondary treatment plant, including mine dewatering and process water	Developed areas with increased runoff coefficients will be contained and directed to tailings management area for secondary treatment and release to Blackwater Creek and later the pit lake.	Level I - No surface water quantity effects in receiving waters anticipated as flow changes are within natural variation and channel capacity	Level II - Residual effect extends into LSA	Level 1 - Residual effect is not measurable beyond early operation period (3 years).	Level III - Residual effect occurs frequently or continuously	Level I - Effect is readily reversible over a relatively short period	Not significant	Level III - Will occur.	Surface water hydrology monitoring of Blackwater Creek.



**Table 14.0. 5 Environmental Effects Assessment for the Operational Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
	Decreased flows in Blackwater Creek in years 4 -12 due to redirection of runoff from developed areas and discharge from the secondary treatment plant to facilitate pit filling	None	Level I - No surface water quality effects in receiving waters anticipated as flow changes are within long-term natural variation	Level II - Residual effect extends into LSA	Level 1 - Residual effect is not measurable beyond early operation period (4 - 12 years).	Level III - Residual effect occurs frequently or continuously	Level I - Effect is readily reversible over a relatively short period	Not significant	Level III - Will occur.	Surface water hydrology monitoring of Blackwater Creek.
	Decreased flows in Hoffstrom's Bay tributary in due to raw water needs for process plant	Installation and operation of secondary treatment plant to recirculate treated mine water to process plant and reduce raw water needs.	Level I - No surface water quality effects in receiving waters anticipated as flow changes are within long-term natural variation and historic use of tributary as a water source	Level II - Residual effect extends into LSA	Level 1 - Residual effect is not measurable beyond early operation period.	Level III - Residual effect occurs frequently or continuously	Level I - Effect is readily reversible over a relatively short period	Not significant	Level III - Will occur.	Surface water hydrology monitoring of Hoffstrom's Bay tributary.
Groundwater Quality	Groundwater quality impacted by accidental point source release of environmental contaminants of concern.	Contaminant storage areas and handling practices in accordance's with current industry practices, spill response and remediation measures implemented, and groundwater table depression system controls potential subsurface migration.	Level III - Introduction of non-native contaminant	Level I - Residual effect is expected to be limited to release area.	Level I - Residual effect is not measurable beyond site operations assuming site remediation measures are implemented.	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period when remediation measures are implemented.	Not significant	Level II - Could reasonably be expected to occur; however, spill prevention measures and response plan will minimize likelihood.	Contaminated site assessment and monitoring program, or remediation action plan implementation.



**Table 14.0. 5 Environmental Effects Assessment for the Operational Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
	Groundwater quality impacted by seepage from WRSA, TSF and low grade ore stockpile.	Seepage collection ditches will be installed around the WRSA, TSF, and low-grade ore stock pile and any water collected will be returned to the tailings storage facility for treatment prior to release.	Level I - No groundwater quality effects in receiving waters anticipated within applicable federal and provincial regulations and guidelines	Level I - No anticipated adverse environment effects beyond the collection ditches	Level 1 - Residual effect is not measurable beyond operation period (12 years).	Level I - Residual effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	Groundwater quality monitoring program around containment areas to assess potential leakage.
Groundwater Quantity	Groundwater quantity impacted by disturbance of recharge and/or discharge areas.	Minimize project footprint.	Level I - No measurable residual effect due to limited scale of development within groundwater basin.	Level I - Residual effects limited to the project footprint.	Level III - Change in groundwater recharge within project footprint will be permanent.	Level III - Residual effect within project footprint is permanent.	Level III - Residual effect is not reversible.	Not significant	Level III - Will occur.	None required.
	Groundwater discharge to creeks and wetlands impacted by operation of groundwater dewatering system	Minimize project footprint.	Level I - No measurable residual effect.	Level III - Residual effect extends into the RSA	Level III - Residual effect is expected to persist, but decrease in intensity for 20 years following suspension of groundwater dewatering efforts.	Level III - Residual effect will be continuous, decreasing in intensity over a period of 20 years.	Level I - Effect is readily reversible over time.	Not significant	Level II - Could reasonably be expected to occur	Hydrogeological monitoring of study area to assess groundwater level fluctuations and extent of impact to surface water base flow (if any).
	Expansion of groundwater drawdown cone could potentially lead to reduced or loss of production in private wells surrounding the mine site.	Groundwater monitoring wells between mine site and private wells will provide early warning if groundwater quantity dropping off. Mitigation includes installation of deeper wells for private users or installation of alternative domestic water supply as necessary.	Level III - Residual effect is outside of range of natural variation.	Level III - Residual effect extends into the RSA	Level III - Residual effect is expected to persist, but decrease in intensity for 20 years following suspension of groundwater dewatering efforts.	Level III - Residual effect will be continuous, decreasing in intensity over a period of 20 years.	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur	Active groundwater elevation monitoring network to assess extent of drawdown cone growth and revisions to predictive modeling to assess potential impact to off-site receptors.



**Table 14.0. 5 Environmental Effects Assessment for the Operational Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Wildlife Species at Risk	Direct mortality from vehicular collision or other human activity.	Enforce speed limits on Project roads. No hunting/trapping by Project personnel. Awareness training	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond operations period.	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System
Ungulates	Direct mortality from vehicular collision or other human activity (e.g., increased hunting pressure resulting from increased access).	Enforce speed limits on Project roads. No hunting/trapping by Project personnel. Awareness training	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond operations period.	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System
Furbearers	Direct mortality from vehicular collision or other human activity (e.g., increased trapping pressure resulting from increased access).	Enforce speed limits on Project roads. No hunting/trapping by Project personnel. Awareness training	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond operations period.	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System
Upland Birds	Direct mortality from vehicular collision or other human activity.	Enforce speed limits on Project roads. No hunting/trapping by Project personnel. Awareness training	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond operations period.	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System
Wetland Birds	Direct mortality from vehicular collision or other human activity	Enforce speed limits on Project roads. No hunting/trapping by Project personnel. Awareness training	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond operations period.	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System



**Table 14.0. 5 Environmental Effects Assessment for the Operational Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
	Direct and indirect effects of attraction to waterbodies within Project footprint (e.g., tailings ponds).	Develop bird deterrent systems for all open water within footprint	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond operations period.	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level I - Unlikely to occur	Develop a Wildlife Incident Response and Reporting System
Fish	Mortality of individuals because of physical activities that occur within or adjacent to a watercourse (e.g., access roads, tailing area dam construction, pit excavation).	Minimize work within watercourses. Schedule works to occur during reduced risk periods (i.e., outside of spawning, hatching). Conduct fish salvage where possible.	Level II - Activity has the potential to measurably affect productive capacity of local fishery.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect may extend beyond 10 years after operation initiation	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	None required
	Mortality of individuals due to changes in water quality from increased sediment loads from runoff and/or release of deleterious substances (e.g., chemical/fuel spills)	Project should include an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization.	Level II - Activity has the potential to measurably affect productive capacity of local fishery.	Level II - Residual effect extends into LSA	Level III - Residual effect may extend beyond 10 years after operation initiation	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Significant	Level II - Could reasonably be expected to occur	Develop and implement a Water Quality Monitoring program to comply with <i>Fisheries Act</i> and MMR.
	Potential changes to population abundance and distribution of fish species due to changes in habitat quality and/or availability within and beyond the project footprint.	Minimize operation activities and project footprint in vicinity of watercourses. Implement EMP measures to minimize potential for habitat disturbance.	Level II - Activity has the potential to measurably affect productive capacity of local fishery.	Level III - Residual effect extends into the RSA	Level III - Residual effect may extend beyond 10 years after operation initiation	Level III - Residual effect occurs frequently or continuously	Level II - Residual effect is partially reversible	Significant	Level I - Unlikely to occur	Conduct follow up fish surveys to assess fish distribution and species composition



**Table 14.0. 5 Environmental Effects Assessment for the Operational Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
	Noise and vibration disturbances to fish from heavy equipment operation.	EMP should include measures to reduce potential impacts of noise and vibration (e.g., utilizing well-maintained equipment operated at optimum loads).	Level I - There is no measurable residual effect to fishery.	Level 1 - Residual effect is restricted to Project footprint	Level 1 - Residual effect is not measurable beyond construction period (3 years).	Level II - Residual effect expected to occur intermittently	Level I - Residual effect is reversible.	Not significant	Level III - Will occur.	None required
Fish Habitat	Physical disturbance to or loss of aquatic habitat by equipment working in or adjacent to a waterbody. Mine infrastructure (e.g., ponds, pits, WSRA, roads) will result in loss of 5.991 ha of aquatic habitat. <i>Most of the footprint will be cleared during construction but total footprint will expand during operations.</i>	Minimize work within watercourses. Schedule works to occur during reduced risk periods (i.e., outside of spawning, hatching). Conduct fish salvage where possible. Habitat compensation, as per the Fisheries Act will be provided.	Level II - Activity has the potential to measurably affect productive capacity of local fish habitat.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level III - Residual effect occurs frequently or continuously	Level II - Residual effect is partially reversible	Not significant	Level III - Will occur.	Implement Fish Habitat Compensation as per <i>Fisheries Act</i> requirements.
	Changes to water quality due to release of deleterious substances into a watercourse (e.g., sediment runoff, chemical/fuel spills). Effect could be within and beyond project footprint.	Project should include an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization. Habitat compensation, as per the <i>Fisheries Act</i> , will be provided.	Level II - Activity has the potential to measurably affect productive capacity of local fish habitat.	Level II - Residual effect extends into LSA	Level III - Residual effect could persist beyond 10 years of project initiation.	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur	Develop and implement a Water Quality Monitoring program to comply with <i>Fisheries Act</i> and MMR.
	Changes to water quantity and subsequent habitat availability/quality downstream of the project footprint due to assumed altered surface water hydrology particularly during natural low-flow periods	On site water management should be planned in order to maintain downstream water balance or to ensure minimum flows to support fish habitat within affect channels	Level II - Activity has the potential to measurably affect productive capacity of local fish habitat.	Level II - Residual effect extends into LSA	Level III - Residual effect could persist beyond 10 years of project initiation.	Level II - Residual effect expected to occur intermittently	Level I - Residual effect is reversible.	Not significant	Level III - Will occur.	Hydrology (flow) and fish habitat monitoring within Blackwater Creek during critical low flow periods (summer/autumn)



**Table 14.0. 5 Environmental Effects Assessment for the Operational Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Wetlands	May store polluted runoff and create attractive nuisance.	Divert runoff from operations area to isolated tailings pond.	Level I - Effect is not anticipated to be measurable	Level I - Effect should be confined to a localized area	Level II - Residual effect may extend up to 10 years after operation initiation	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	Monitor wetland soils and vegetation for presence of heavy metals and organic compounds.
Vegetation Species at Risk. Species of Special Concern and Provincially Rare Species	Potential change in abundance and distribution of floating marsh marigold	Maintain outflow water quality standards to maintain wetland health.	Level I - There is no measurable residual effect to population abundance and distribution	Level II - Residual effect extends into LSA	Level II - Residual effect may extend up to 10 years after operation initiation	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur	None required
Country Foods	Potential change in abundance and health of wild rice downstream of Project	Maintain outflow water quality standards to maintain wetland health	Level I - There is no measurable residual effect to population abundance and distribution	Level II - Residual effect extends into LSA	Level II - Residual effect may extend up to 10 years after operation initiation	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur	Monitor health of wild rice populations periodically during first years of operation





**Table 14.0. 6 Environmental Effects Assessment for the Closure Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Terrain and Soils	Natural viewscales from nearby residences and lakes interrupted by TSF.	Contouring of TSF during closure to blend with surrounding terrain, cap, and vegetate TSF.	Level I - There is no measurable residual effect.	Level I - No anticipated adverse environment effects beyond TSF	Level I - Residual effect is not measurable beyond closure period (3 years).	Level II - Residual effect expected to occur intermittently and decline as vegetation cover is established.	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	Periodic monitoring of vegetation cover.
	Natural viewscales from nearby residences and lakes interrupted by WRSA, overburden storage area and low-grade stockpile.	Overburden storage area will be removed as the soils are progressively used as cover material during reclamation. The low-grade stockpile will be processed during the mining operation. Residual ore will be removed and placed in the TSF. Material from WRSA will be used to fill the pits during closure	Level I - No measurable residual effect.	Level I - No anticipated adverse environment effects beyond Project footprint	Level I - Residual effect is not measurable beyond closure period (3 years).	Level II - Residual effect expected to occur intermittently and decline as closure progresses.	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	Periodic monitoring of vegetation cover.
	Soil chemistry changes resulting from WRSA runoff and TSF seepage.	WRSA and TSF covered with water-shedding caps tied into surrounding clay layers to prevent runoff and limit water infiltration and seepage.	Level I - Seepage anticipated within applicable federal and provincial regulations and guidelines	Level II - Residual effect extends into LSA	Level II - Residual effect will extend beyond closure monitoring period.	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	Periodic monitoring of collection systems.
	Dust particulates may become airborne during closure and reclamation operations affecting the TSF, WRSA, low-grade stockpile and overburden as a result of disturbing the various materials.	Implement industry best practices to minimize fine particles suspension (e.g. material will be loaded into haul trucks in a manner that minimizes the drop height)	Level I - Dust emissions above background but within applicable federal and provincial regulations and guidelines; or if guidelines exceeded, effects limited to the project footprint	Level I - No anticipated adverse environment effects beyond Project Footprint	Level I - Residual effect is not measurable beyond closure period (3 years).	Level II - Residual effect expected to occur intermittently and decline as vegetation cover is established.	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	Periodic monitoring of surroundings for presence of dust.



**Table 14.0. 6 Environmental Effects Assessment for the Closure Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Noise	Noise from closure including ventilation fans, blasting, crusher, and mobile equipment.	Use new, low-noise mobile equipment and crusher; limit night-time activities.	Level I - Noise levels anticipated within applicable federal and provincial regulations and guidelines	Level II - Residual effect extends into LSA	Level 1 - Residual effect is not measurable beyond closure period (3 years).	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	Periodic monitoring of noise levels at site and receptor areas.
	Disturbance effects on local wildlife.	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure. Utilize proper waste management strategies to minimize wildlife attraction.	Level 1 - There is no measurable residual effect to population abundance and distribution.	Level II - Residual effect extends into LSA	Level 1 - Residual effect is not measurable beyond closure period (3 years).	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible following closure.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System
Light	Light trespass to nearby occupied properties.	Limit Project lighting to areas required for safe operations; orient Project lighting towards the interior of the Project area; where possible, use down-shaded lighting on Project buildings and infrastructure.	Level I - Light levels anticipated within applicable federal and provincial regulations and guidelines	Level II - Residual effect extends into LSA	Level 1 - Residual effect is not measurable beyond closure period (3 years).	Level III - Residual effect occurs frequently or continuously	Level I - Effect is readily reversible following closure.	Not significant	Level III - Will occur.	Follow-up monitoring at key receptor locations.
	Wildlife attraction to novel light sources.	Limit Project lighting to areas required for safe operations; orient Project lighting towards the interior of the Project area; where possible, use down-shaded lighting on Project buildings and infrastructure.	Level 1 - There is no measurable residual effect to population abundance and distribution.	Level II - Residual effect extends into LSA	Level 1 - Residual effect is not measurable beyond closure period (3 years).	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible following closure.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System



**Table 14.0. 6 Environmental Effects Assessment for the Closure Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Air Quality	Potential increase in the ambient concentrations of airborne contaminants (i.e. TSP, PM10, PM2.5, NOx, SOx, CO)	Implement industry best practices to minimize emissions (e.g. Blasting to be conducted in a phased manner that optimizes the amount of explosives, and that minimizes the area being blasted; Material will be loaded into haul trucks in a manner that minimizes the drop height; Ensure that all engines are properly maintained and all emission control systems are in good working order; Water and chemical suppressants will be used for dust control).	Level I - Emissions above background but within applicable federal and provincial regulations and guidelines; or if guidelines exceeded, effects limited to the project footprint	Level I - Emissions above background but within applicable federal and provincial regulations and guidelines; or if guidelines exceeded, effects limited to the project footprint	Level I - Residual effect is not expected to be measurable beyond the construction period.	Level I - Residual effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level I - Unlikely to occur	None required
Surface Water Quality	Physical alteration of the surrounding landscape could result in increased sediment loading to receiving waters associated with the Project which could result in increased total suspended solids (TSS) in surface waters. Alteration of water quality could occur from accidental release of deleterious substances (e.g., chemical/fuel spills).	Implement an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization.	Level II - Activity has the potential to effect water quality in receiving waters that could exceed applicable federal and provincial regulations and guidelines	Level II - Potential to adversely affect drinking water uses, aquatic life, and/or wildlife, beyond any defined mixing zones	Level I - Residual effect is not measurable beyond construction period.	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur however mitigation measures outlined in an EMP are designed to reduce likelihood of occurrence.	Groundwater monitoring wells installed around facilities and between the Project and private wells; implement MMER monitoring program
	Exposed mine rock in pit could go acid and result in metal leaching and could result in exceedances of MMER, CCME and/or PWQO criteria.	Accelerated pit filling to ensure stored waste rock and pit walls under water prior to going acid.	Level I - No water quality effects in receiving waters anticipated within applicable federal and provincial regulations and guidelines	Level I - No anticipated adverse environment effects beyond any defined mixing zones	Level 1 - Residual effect is not measurable beyond early closure period (3 years).	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level I - Unlikely to occur	Monitor pit lake and receiving waters following closure



**Table 14.0. 6 Environmental Effects Assessment for the Closure Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
	Runoff from tailings storage facility, low-grade ore stock pile and waste rock storage area could result in exceedances of MMER, CCME, DWSOG and/or PWQO criteria.	Above grade waste rock and tailings stored under water-shedding caps to prevent infiltration and runoff to surface waters. Low-grade ore stockpile fully reclaimed with any residual ore deposited in tailings management facility prior to capping.	Level I - No water quality effects in receiving waters anticipated within applicable federal and provincial regulations and guidelines	Level I - No anticipated adverse environment effects beyond Blackwater Creek	Level 1 - Residual effect is not measurable beyond early closure period (3 years).	Level I - Residual effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level I - Unlikely to occur	Monitor receiving waters following closure
	Increased peak flows in Blackwater Creek due to increases in the runoff coefficient of reclaimed areas	Convert seepage ditches and collection ponds to wetland areas to retain runoff and reduce runoff coefficient. Pit lake will function as reservoir further reducing peak flows. Encourage recolonization of disturbed areas by surrounding forest.	Level I - No surface water quantity effects in receiving waters anticipated as flow changes are within natural variation and channel capacity	Level I - No anticipated adverse environment effects beyond Blackwater Creek	Level 1 - Residual effect is not measurable beyond early closure period (3 years).	Level I - Residual effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	Surface water hydrology monitoring of Blackwater Creek.
Groundwater Quality	Groundwater quality impacted by accidental release of environmental contaminants of concern.	Contaminant storage areas and handling practices in accordance's with current industry practices, spill response and remediation measures implemented, and groundwater table depression system controls potential subsurface migration.	Level III - Introduction of non-native contaminant	Level I - Residual effect is expected to be limited to release area.	Level I - Residual effect is not measurable beyond site operations assuming site remediation measures are implemented.	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period when remediation measures are implemented.	Not significant	Level II - Could reasonably be expected to occur; however, spill prevention measures and response plan will minimize likelihood.	Contaminated site assessment and monitoring program, or remediation action plan implementation.



**Table 14.0. 6 Environmental Effects Assessment for the Closure Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
	Groundwater quality impacted by seepage from WRSA, TSF and low grade ore stockpile.	WRSA and TSF to be decommissioned with water-shedding caps to minimize infiltration and seepage of water. Waste rock in pits stored under water. Low-grade ore stockpile fully reclaimed with any residual ore deposited in tailings management facility prior to capping.	Level I - No water quality effects in receiving waters anticipated within applicable federal and provincial regulations and guidelines	Level I - No anticipated adverse environment effects beyond Project Footprint.	Level 1 - Residual effect is not measurable beyond early closure period (3 years).	Level I - Residual effect expected to occur infrequently	Level II - Residual effect of leachate seepage into groundwater is expected to be mitigated by natural dispersion.	Not significant	Level II - Could reasonably be expected to occur	Groundwater monitoring well network to be monitored during early closure period.
Groundwater Quantity	Groundwater quantity impacted by disturbance of recharge and/or discharge areas.	None.	Level I - No measurable residual effect due to limited scale of development within groundwater basin.	Level I - Residual effects limited to the project footprint.	Level III - Change in groundwater recharge within project footprint will be permanent.	Level III - Residual effect within project footprint is permanent.	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	Groundwater monitoring to assess natural restoration of aquifer system recharge and discharge.
	Slow recovery of groundwater drawdown cone could limit development of private wells surrounding the mine site.	Mitigation measures implemented during operations will be maintained until dewatering cone reversed.	Level II - Residual impacts would be less than during period of dewatering system operation.	Level II - Residual impacts would extend throughout the LSA.	Level III - Recovery of groundwater elevations in drawdown cone is expected to be up to 20 years.	Level II - Residual effect is expected to decrease over time.	Level I - Effect gradually reverse once mine dewatering ceases	Not significant	Level II - Could reasonably be expected to initially occur but will fully reverse over time.	Active groundwater elevation monitoring network to assess extent of drawdown cone recovery and revisions to predictive modeling to confirm rate of recovery.



**Table 14.0. 6 Environmental Effects Assessment for the Closure Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Wildlife Species at Risk	Direct mortality from vehicular collision or other human activity	Enforce speed limits on Project roads. No hunting/trapping by Project personnel. Awareness training	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond closure period.	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System
Ungulates	Direct mortality from vehicular collision or other human activity (e.g., increased hunting pressure resulting from increased access)	Enforce speed limits on Project roads. No hunting/trapping by Project personnel. Awareness training	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond closure period.	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System
Furbearers	Direct mortality from vehicular collision or other human activity (e.g., increased trapping pressure resulting from increased access)	Enforce speed limits on Project roads. No hunting/trapping by Project personnel. Awareness training	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond closure period.	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System
Upland Birds	Direct mortality from vehicular collision or other human activity	Enforce speed limits on Project roads. No hunting/trapping by Project personnel. Awareness training	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond closure period.	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	Develop a Wildlife Incident Response and Reporting System
Wetland Birds	Direct and indirect effects of attraction to waterbodies within Project footprint (e.g., tailings ponds)	Develop bird deterrent systems for all open water within footprint	Level I - There is no measurable residual effect to population abundance and distribution	Level I - Residual effect is restricted to Project footprint	Level I - Residual effect is not measurable beyond closure period.	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level I - Unlikely to occur	Develop a Wildlife Incident Response and Reporting System



**Table 14.0. 6 Environmental Effects Assessment for the Closure Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Fish	Mortality of individuals because of physical activities that occur within or adjacent to a watercourse (i.e., physical alteration of landscape for reclamation, infrastructure removal).	Minimize work within watercourses. Schedule works to occur during reduced risk periods (i.e., outside of spawning, hatching). Conduct fish salvage where possible.	Level II - Activity has the potential to measurably affect productive capacity of local fishery.	Level 1 - Residual effect is restricted to Project footprint	Level 1 - Residual effect is not measurable beyond closure period.	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	None required
	Mortality of individuals due to changes in water quality from increased sediment loads from runoff and/or release of deleterious substances (e.g., chemical/fuel spills)	Project should include an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization.	Level II - Activity has the potential to measurably affect productive capacity of local fishery.	Level II - Residual effect extends into LSA	Level 1 - Residual effect is not measurable beyond closure period.	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level I - Unlikely to occur	Develop and implement a Water Quality Monitoring program to comply with <i>Fisheries Act</i> and <i>MMER</i> .
	Potential changes to population abundance and distribution of fish species due to changes in habitat quality and/or availability.	Minimize reclamation disturbances in vicinity of watercourses if possible. Implementation of comprehensive EMP measures (including erosion and sediment control measures) that minimize the potential for habitat disturbance. Reclamation activities should be conducted to return watercourses as close to pre-disturbance as possible.	Level II - Activity has the potential to measurably affect productive capacity of local fishery.	Level III - Residual effect extends into the RSA	Level II - Residual effect may extend up to 10 years after project initiation.	Level III - Residual effect occurs frequently or continuously	Level II - Residual effect is partially reversible	Significant	Level I - Unlikely to occur	Conduct follow up fish surveys to assess fish distribution and species composition
	Noise and vibration disturbances to fish from heavy equipment operation.	Closure Plan should include measures to reduce potential impacts of noise and vibration (e.g., utilizing well-maintained equipment operated at optimum loads).	Level I - There is no measurable residual effect to fishery.	Level 1 - Residual effect is restricted to Project footprint	Level 1 - Residual effect is not measurable beyond closure period.	Level II - Residual effect expected to occur intermittently	Level I - Residual effect is reversible.	Not significant	Level III - Will occur.	None required



**Table 14.0. 6 Environmental Effects Assessment for the Closure Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Fish Habitat	Physical disturbance to or loss of aquatic habitat by equipment working in or adjacent to a waterbody. Reclamation works may include disturbance or alteration of aquatic features.	Develop a closure plan that minimizes disturbance to existing natural features and aims to restore pre-mine conditions.	Level II - Activity has the potential to measurably affect productive capacity of local fish habitat.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level III - Will occur.	Closure plan will be approved by regulatory bodies. All follow-up and monitoring requirements will be met.
	Physical alteration of landscape during reclamation could result in changes to water quality due to release of deleterious substances into a watercourse (e.g., sediment runoff, chemical/fuel spills, release of effluent).	Project should include an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan and an Erosion and Sediment Control Plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization. Habitat compensation, as per the <i>Fisheries Act</i> will be provided.	Level II - Activity has the potential to measurably affect productive capacity of local fish habitat.	Level II - Residual effect extends into LSA	Level II - Residual effect may extend up to 10 years after project initiation.	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur	Closure plan will be approved by regulatory bodies. All follow-up and monitoring requirements will be met. Develop and implement a Water Quality Monitoring program to comply with <i>Fisheries Act</i> and <i>MMER</i> .
Wetlands	Losses of wetlands incurred during construction, and residual contamination that may have occurred during operations, may remain for the long term.	Prior to project, perform assessment to determine wetland functions and values. Using the functional assessment as a baseline, develop plan to restore wetland functional values after closure.	Level II - Activity has the potential to measurably affect fish and wildlife habitat, and hydrologic functions.	Level II - Residual effect extends into LSA	Level II - Residual effect may extend up to 10 years after project initiation.	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur	Closure plan will include measures to restore wetland functions and values.





**Table 14.0. 6 Environmental Effects Assessment for the Closure Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Vegetation Species at Risk. Species of Special Concern and Provincially Rare Species	Potential change in abundance and distribution of floating marsh marigold	Maintain outflow water quality standards to maintain wetland health.	Level I - There is no measurable residual effect to population abundance and distribution	Level II - Residual effect extends into LSA	Level I - Residual effect is not measurable beyond closure period.	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur	None required
Country Foods	Potential change in abundance and health of wild rice downstream of Project	Maintain outflow water quality standards to maintain wetland health	Level I - There is no measurable residual effect to population abundance and distribution	Level II - Residual effect extends into LSA	Level I - Residual effect is not measurable beyond closure period.	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur	None required



**Table 14.0. 7 Socio Economic Effects Matrix for the Construction Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Land and Resource Use	Potential obstruction, loss and/or usage of trapping areas associated with the mine footprint	Limit mine footprint; Reclamation and Closure Plan implementation; ensure ongoing communication with local stakeholders	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level I - Residual effect is confined to the Project footprint.	Level III - Residual effect likely to persist beyond closure	Level III - Residual effect expected to occur regularly or continuously	Level III - Residual effect is not reversible	Not significant	Level II - Could reasonably be expected to occur	None required
	Change in local ambience due to noise, vibration and decreased aesthetics at mine site	Noise Management Plans, Emergency and Spill Response Plans ensure ongoing communication with local stakeholders	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level II - Residual effect is confined to the LSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is reversible in the long-term.	Not significant	Level II - Could reasonably be expected to occur	None required
	Direct effects associated with Project traffic and improved access	Transportation and Access Management Plan.	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is reversible in the long-term.	Not significant	Level II - Could reasonably be expected to occur	None required
Transportation	Increased traffic effects on road conditions, dust, and risk of collisions with other vehicles, animals and load spills	Traffic safety protocols, regulatory and cautionary signage, road maintenance, emergency response plan implementation	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level I - Residual effect extends throughout the construction phase	Level III - Residual effect expected to occur regularly or continuously	Level I - Effect is readily reversible over a relatively short period	Not significant	Level I - unlikely to occur	None required
Population Demographics	In-migration of job seekers and their dependents	Training programs for unemployed and underemployed, local and in-migrant workforce	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level I - Residual effect extends throughout the construction phase	Level III - Residual effect expected to occur regularly or continuously	Level I - Effect is readily reversible over a relatively short period	Not significant	Level I - unlikely to occur	None required



**Table 14.0. 7 Socio Economic Effects Matrix for the Construction Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Education	Change in in- and out-migration creates increase in student enrolment	Work with school districts regarding planning and resourcing. Make educational attainment or the equivalent competencies a hiring requirement for the mine workers.	Level I - Effect that occurs might or might not be detectable, but is within the normal range of variability	Level III - Residual effect extends to the RSA.	Level I - Residual effect extends throughout the construction phase	Level III - Residual effect expected to occur regularly or continuously	Level I - Residual effect is readily reversible over a relatively short period	Not significant	Level I - unlikely to occur	None required
Regional Infrastructure and Services	Traffic volume, construction operations, and change from in- and outmigration create demand for regional services	Work with the various service providers to incorporate increased traffic, construction operations and population demands into their planning and resourcing processes	Level I - Effect that occurs might or might not be detectable, but is within the normal range of variability	Level III - Residual effect extends to the RSA.	Level I - Residual effect extends throughout the construction phase	Level III - Residual effect expected to occur regularly or continuously	Level I - Residual effect is readily reversible over a relatively short period	Not significant	Level I - unlikely to occur	None required
Housing	Changes in in- and out-migration affect housing demand and change the housing market	Work with Government to minimize in-migration	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level I - Residual effect extends throughout the construction phase	Level III - Residual effect expected to occur regularly or continuously	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	None required
Crime	Traffic volume, construction operations create demand for public safety services	Work with the various service providers and develop safety and work policy guidelines for mine workers	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level I - Residual effect extends throughout the construction phase	Level III - Residual effect expected to occur regularly or continuously	Level I - Residual effect is readily reversible over a relatively short period	Not significant	Level I - unlikely to occur	None required
	Effects related to immigrant behaviour and income/spending levels	Work with local agencies to assist in monitoring community wellbeing and to take corrective actions where appropriate.	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level I - Residual effect extends throughout the construction phase	Level III - Residual effect expected to occur regularly or continuously	Level I - Residual effect is readily reversible over a relatively short period	Not significant	Level I - unlikely to occur	None required



**Table 14.0. 7 Socio Economic Effects Matrix for the Construction Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Employment	Proposed Project spending would generate employment	Preferred hiring for local and regional labour	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level I - Residual effect extends throughout the construction phase	Level III - Residual effect expected to occur regularly or continuously	Level I - Residual effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	None required
Income	Project spending would generate income for employees and supply industries	Effects are positive so no mitigation necessary	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level II - Residual effect is confined to the LSA.	Level I - Residual effect extends throughout the construction phase	Level III - Residual effect expected to occur regularly or continuously	Level I - Residual effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	None required
Economic Development	Increases in Gross Domestic Product, employment, and government revenues due to capital expenditures	Not mitigated at a provincial level	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the Province	Level I - Residual effect extends throughout the construction phase	Level III - Residual effect expected to occur regularly or continuously	Level I - Residual effect is readily reversible over a relatively short period	Not significant	Level III - Will occur, or is likely to occur	None required
Archeological Sites	Land-altering activities impacting sites	Archaeological identification, recording, consultation, avoidance and /or systematic data recovery	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level I - Residual effects on geographically small resources such as an isolated artefact	Level III - Residual effects to archaeological site are permanent	Level I - Impacts to archaeological sites are one-time events	Level III - Residual effect is not reversible	Not significant	Level I - unlikely to occur as no sites were identified during baseline studies	None required
Historic Heritage Sites	Land-altering activities impacting sites	Historic heritage resource identification, recording, consultation, avoidance and/or systematic data recovery	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level I - Residual effects on geographically small resources such as an isolated artefact	Level III - Residual effects to historic heritage site are permanent	Level I - Impacts to historic heritage sites are one-time events (once destroyed the impacts are permanent)	Level III - Residual effect is not reversible	Not significant	Level I - unlikely to occur as no sites were identified during baseline studies	None required



**Table 14.0. 7 Socio Economic Effects Matrix for the Construction Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Aboriginal Peoples	Health Effects - release of deleterious materials to air or water	Implement an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization.	Level II - Activity has the potential to effect water quality in receiving waters that could exceed applicable federal and provincial regulations and guidelines	Level II - Potential to adversely affect drinking water uses, aquatic life, and/or wildlife, in the LSA	Level I - Residual effect is not measurable beyond construction period.	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur; however, mitigation measures outlined in an EMP are designed to reduce likelihood of occurrence.	Apply science-based performance measurements to conduct EEM studies during construction
	Gathering of Country Foods	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure; Maintain outflow water quality standards to maintain wetland health.	Level 1 - There is no measurable residual effect to abundance and distribution of country foods.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is partially reversible.	Not significant	Level III - Will occur, or is likely to occur	None required
	Hunting and Trapping	None	Level 1 - There is no measurable residual effect on hunting and trapping opportunities.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is partially reversible.	Not significant	Level III - Will occur, or is likely to occur	None required
	Fishing	Measures proposed for water quality.	Level 1 - There is no measurable residual effect on fishing opportunities.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is partially reversible.	Not significant	Level III - Will occur, or is likely to occur	None required



**Table 14.0. 8 Socio Economic Effects Matrix for the Operation Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Land and Resource Use	Potential obstruction, loss and/or usage of trapping areas associated with the mine footprint	Limit mine footprint; Reclamation and Closure Plan implementation; ensure ongoing communication with local stakeholders	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level I - Residual effect is confined to the Project footprint.	Level III - Residual effect likely to persist beyond closure.	Level III - Residual effect expected to occur regularly or continuously.	Level III - Reversible effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	None required
	Change in local ambience due to noise, vibration and decreased aesthetics at mine site	Noise Management Plans, Emergency and Spill Response Plans ensure ongoing communication with local stakeholders	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level II - Residual effect extends to the LSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level II - Could reasonably be expected to occur	None required
	Direct effects associated with Project traffic and improved access	Transportation and Access Management Plan.	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level II - Could reasonably be expected to occur	None required
Transportation	Increased traffic effects on road conditions, dust, and risk of collisions with other vehicles, animals and load spills	Traffic safety protocols, regulatory and cautionary signage, road maintenance, emergency response plan implementation	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level I - unlikely to occur	None required



**Table 14.0. 8 Socio Economic Effects Matrix for the Operation Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Population Demographics	In-migration of job seekers and their dependents	Training programs for unemployed and underemployed, local and in-migrant workforce	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level I - unlikely to occur	None required
Education	In-migration creates demand on educational services	Work with school districts regarding planning and resourcing. Make educational attainment or the equivalent competencies a hiring requirement for the mine workers.	Level I - Effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Effect expected to occur regularly or continuously	Level II - Effect is reversible at a substantial cost, and/or over a long period	Not significant	Level I - unlikely to occur	
Regional Infrastructure and Services	Traffic volume, construction operations, and change from in- and outmigration create demand for regional services	Work with the various service providers to incorporate increased traffic, construction operations and population demands into their planning and resourcing processes	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level I - unlikely to occur	None required
Housing	In-migration creates housing demand and changes the housing market	Work with Government to minimize in-migration	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level II - Could reasonably be expected to occur	None required
Crime	Traffic volume, construction operations create demand for public safety services	Work with the various service providers and develop safety and work policy guidelines for mine workers	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level I - unlikely to occur	None required



**Table 14.0. 8 Socio Economic Effects Matrix for the Operation Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
	Effects related to immigrant behaviour and income/spending levels	Work with local agencies to assist in monitoring community wellbeing and to take corrective actions where appropriate.	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level I - unlikely to occur	None required
Employment	Proposed Project spending would generate employment	Preferred hiring for local and regional labour	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level II - Could reasonably be expected to occur	None required
Income	Project spending would generate income for employees and supply industries	Effects are positive so no mitigation necessary	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability	Level II - Residual effect extends to the LSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Effect is reversible in the long-term.	Not significant	Level II - Could reasonably be expected to occur	None required
Economic Development	Increases in Gross Domestic Product, employment, and government revenues due to operational expenditures	Not mitigated at a provincial level	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability	Level III - Effect extends to the Province.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Effect expected to occur regularly or continuously	Level II - Residual effect is reversible in the long-term.	Not significant	Level III - Will occur, or is likely to occur	None required





**Table 14.0. 8 Socio Economic Effects Matrix for the Operation Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Archeological Sites	Land-altering activities impacting sites	Archaeological identification, recording, consultation, avoidance and /or systematic data recovery	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability	Level I - Effects on geographically small resources such as an isolated artefact.	Level III - Effects to archaeological site are permanent	Level I - Impacts to archaeological sites are one-time events	Level III - Negative effects to archaeological sites are not reversible	Not significant	Level I - unlikely to occur as no sites were identified during baseline studies	None required
Historic Heritage Sites	Land-altering activities impacting sites	Historic heritage resource identification, recording, consultation, avoidance and/or systematic data recovery	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability	Level I - Effects on geographically small resources such as an isolated artefact.	Level III - Effects to historic heritage site are permanent	Level I - Impacts to historic heritage sites are one-time events (once destroyed the impacts are permanent)	Level III - Negative effects to historic heritage sites are not reversible	Not significant	Level I - unlikely to occur as no sites were identified during baseline studies	None required
Aboriginal Peoples	Human Health - Release of tailings storage facility effluent could result in exceedances of MMER, CCME and/or PWQO criteria.	Secondary treatment (reverse osmosis) to achieve water quality criteria for chemicals of concern in the effluent.	Level I - No water quality effects in receiving waters anticipated within applicable federal and provincial regulations and guidelines	Level I - No anticipated adverse environment effects beyond any defined mixing zones	Level 1 - Residual effect is not measurable beyond early operation period (3 years).	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level I - Unlikely to occur	Apply science-based performance measurements to conduct EEM studies
	Human Health - Release of chemicals and petroleum products due to spills during handling and/or equipment malfunctions.	Equipment refueling conducted at a refueling station over a spill collection system. Spill kits stationed throughout the mine and on vehicles to rapidly address spills from equipment failure. Chemical transfer conducted in dedicated, contained transfer areas.	Level I - No water quality effects in receiving waters anticipated within applicable federal and provincial regulations and guidelines	Level I - No anticipated adverse environment effects beyond any defined mixing zones	Level 1 - Residual effect is not measurable beyond early operation period.	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur	Apply science-based performance measurements to conduct EEM studies



**Table 14.0. 8 Socio Economic Effects Matrix for the Operation Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
	Gathering of Country Foods	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure; Maintain outflow water quality standards to maintain wetland health.	Level 1 - There is no measurable residual effect to abundance and distribution of country foods.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is partially reversible.	Not significant	Level III - Will occur, or is likely to occur	None required
	Hunting and Trapping	None	Level 1 - There is no measurable residual effect on hunting and trapping opportunities.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is partially reversible.	Not significant	Level III - Will occur, or is likely to occur	None required
	Fishing	Measures proposed for water quality.	Level 1 - There is no measurable residual effect on fishing opportunities.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is partially reversible.	Not significant	Level III - Will occur, or is likely to occur	None required



**Table 14.0. 9 Socio-Economic Effects Matrix for the Closure Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Land and Resource Use	Potential obstruction, loss and/or usage of trapping areas associated with the mine footprint	Limit mine footprint; Reclamation and Closure Plan implementation; ensure ongoing communication with local stakeholders	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level I - Residual effect is confined to the Project footprint.	Level III - Residual effect likely to persist beyond closure.	Level III - Residual effect expected to occur regularly or continuously.	Level III - Reversible effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur	None required
	Change in local ambience due to noise, vibration and decreased aesthetics at mine site	Noise Management Plans, Emergency and Spill Response Plans ensure ongoing communication with local stakeholders	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level II - Residual effect extends to the LSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level II - Could reasonably be expected to occur	None required
	Direct effects associated with Project traffic and improved access	Transportation and Access Management Plan.	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level II - Could reasonably be expected to occur	None required
Transportation	Decreased traffic would reduce the risk to motor vehicle safety for road users, collisions with animals or load spills	n/a	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level I - unlikely to occur	None required



**Table 14.0.9 Socio-Economic Effects Matrix for the Closure Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Population Demographics	Out-migration of job seekers and their dependents	None	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level III - Reversible effect is not reversible.	Not significant	Level III - Will occur, or is likely to occur	None required
Education	Out-migration reduces school enrolment	Work with school districts regarding planning and resourcing.	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level I - unlikely to occur	None required
Regional Infrastructure and Services	Termination of traffic volume and construction operations, and out-migration of population decrease demand for regional services	Work with the various service providers to incorporate decline in population in planning	Level I - Effect that occurs might or might not be detectable, but is within the normal range of variability	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level I - unlikely to occur	None required
Housing	Out-migration decreases housing demand and changes the housing market	Work with Government to minimize in-migration	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level II - Could reasonably be expected to occur	None required



**Table 14.0. 9 Socio-Economic Effects Matrix for the Closure Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Crime	Termination of traffic volume, construction operations create demand for public safety services	Work with the various service providers to incorporate employment and wages decrease variables in management initiatives	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Effect expected to occur regularly or continuously	Level II - Residual effect is reversible in the long-term.	Not significant	Level I - unlikely to occur	None required
	Crime increase due to job losses	Develop a mine closure plan that identifies strategies and actions to help minimize the potential adverse effects of closing the mine; and ensure ongoing training opportunities to help residents to increase their competitiveness and chances to get employment elsewhere.	Level I - Effect that occurs might or might not be detectable, but is within the normal range of variability	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level I - unlikely to occur	None required
Employment	Cessation of mining operations would lead to reduction in project-related employment	Adverse effects of mine closure can be partially mitigated by developing and implementing a mine closure plan	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level II - Could reasonably be expected to occur	None required
Income	Cessation of mining operations would lead to lower direct, indirect and induced income	Adverse effects of mine closure can be partially mitigated by developing and implementing a mine closure plan	Level II - Effect is unlikely to pose a serious risk or benefit to the VC or to represent a management challenge	Level II - Residual effect extends to the LSA.	Level II - Medium-term, effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level II - Could reasonably be expected to occur	None required



**Table 14.0. 9 Socio-Economic Effects Matrix for the Closure Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Economic Development	Changes in Gross Domestic Product, employment, and government revenues due to closure expenditures	None	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Effect extends to the Province	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously.	Level II - Residual effect is reversible in the long-term.	Not significant	Level III - Will occur, or is likely to occur	None required
Archeological Sites	Land-altering activities impacting sites	Archaeological identification, recording, consultation, avoidance and /or systematic data recovery	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level I - Effects on geographically small resources such as an isolated artefact	Level III - Effects to archaeological site are permanent	Level I - Impacts to archaeological sites are one-time events	Level III - Negative effects to archaeological sites are not reversible	Not significant	Level I - unlikely to occur as no sites were identified during baseline studies	None required
Historic Heritage Sites	Land-altering activities impacting sites	Historic heritage resource identification, recording, consultation, avoidance and/or systematic data recovery	Level I - A small portion of the site is lost	Level I - Effects on geographically small resources such as an isolated artefact	Level III - Effects to historic heritage site are permanent	Level I - Impacts to historic heritage sites are one-time events (once destroyed the impacts are permanent)	Level III - Negative effects to historic heritage sites are not reversible	Not significant	Level I - unlikely to occur as no sites were identified during baseline studies	None required



**Table 14.0.9 Socio-Economic Effects Matrix for the Closure Phase**

VC	Potential Effect	Proposed Mitigation	Residual Effects Characterization					Significance (assuming implementation of mitigation)	Likelihood of Occurrence	Follow-up and Monitoring
			Magnitude	Geographic Extent	Duration	Frequency	Reversibility			
Aboriginal Peoples	Human Health - Physical alteration of the surrounding landscape could result in increased sediment loading to receiving waters associated with the Project which could result in increased total suspended solids (TSS) in surface waters. Alteration of water quality could occur from accidental release of deleterious substances (e.g., chemical/fuel spills).	Implement an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization.	Level II - Activity has the potential to effect water quality in receiving waters that could exceed applicable federal and provincial regulations and guidelines	Level II - Potential to adversely affect drinking water uses, aquatic life, and/or wildlife, beyond any defined mixing zones	Level I - Residual effect is not measurable beyond construction period.	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur however mitigation measures outlined in an EMP are designed to reduce likelihood of occurrence.	Groundwater monitoring wells installed around facilities and between the Project and private wells; implement MMER monitoring program
	Gathering of Country Foods	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure; Maintain outflow water quality standards to maintain wetland health.	Level 1 - There is no measurable residual effect to abundance and distribution of country foods.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is partially reversible.	Not significant	Level III - Will occur, or is likely to occur	None required
	Hunting and Trapping	None	Level 1 - There is no measurable residual effect on hunting and trapping opportunities.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is partially reversible.	Not significant	Level III - Will occur, or is likely to occur	None required
	Fishing	Measures proposed for water quality.	Level 1 - There is no measurable residual effect on fishing opportunities.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is partially reversible.	Not significant	Level III - Will occur, or is likely to occur	None required



**Table 14.0. 10 Potential Accidents and Malfunctions Summary for the Project**

Potential Failure Mode	Potential Environmental Effects	Control Measures and Preventative Procedures	Emergency Response and Contingency Procedures	Follow-up Monitoring
Failure of tailing storage facility	The potential primary effects would be to soil, terrain, and surface water in the vicinity of the release with potential secondary effects on aquatic resources and fish and fish habitat.	<ul style="list-style-type: none"> <li>• Dam Safety Management Plan</li> <li>• CDA Dam Safety Guidelines</li> <li>• OMNRF Best Management Practices</li> <li>• Provincial Lakes and Rivers Improvement Act</li> <li>• Operational and storm water management</li> <li>• Existing site conditions and historical climatic data incorporated into the predictive hydrological modelling</li> <li>• The spillway will be designed to route flows resulting from the Inflow Design Flood as prescribed by the HPC of the dam.</li> <li>• The embankment heights will also be designed with the required freeboard allowances, for normal and minimum freeboard, as prescribed by the guidelines listed above.</li> <li>• The embankments will be designed with zoned earth fill raises and meet the standards set forth by the applicable guidelines. The embankments will be designed to be stable and meet the required minimum Factors of Safety under the required conditions.</li> <li>• A qualified Engineer will inspect the system as part of the annual Dam Safety Inspections and routine Dam Safety Review.</li> <li>• Operations, Maintenance and Surveillance (OMS) Plan will be developed for the TSF. The OMS will include items such as                             <ul style="list-style-type: none"> <li>○ Operational pond levels will be established and an allowance to hold the volume of water resulting from the EDS will be developed.</li> <li>○ Dam inspections will be completed as required by guidelines and best managements practices.</li> <li>○ The seepage collection system will be inspected as part of the daily visual inspections to identify early potential problems or concerns.</li> <li>○ Ground movement sensors will be used to detect any early movement on TSF</li> </ul> </li> <li>• Emergency Preparedness Plan (EPP) will be prepared to include the proper procedure for dealing with a failure of the TSF. This Plan will be updated as required by the current operating plan.</li> <li>• A compliance monitoring program will be developed prior to construction to assess the performance of the TSF and collection</li> </ul>	<p>In the event of a dam breach, the following must occur as outlined in the EPP</p> <ul style="list-style-type: none"> <li>• The seepage reclaim system would be shut down to prevent water from being routed to the containment area.</li> <li>• The reclaim system would be re-routed to transfer water back to the plant site if capacity is available, or alternatively it could be pumped to the open pit for temporary storage if worker safety is not compromised.</li> <li>• In the event of a pump failure, a temporary pump can be installed during repairs. The standby pump can also be diesel-powered in the event of power loss at the site.</li> <li>• In the event that water breaches the seepage collection system; the area would be cleaned up by removal and proper disposal of the potentially impacted material into the TSF.</li> </ul>	<p>If the TSF was to fail as in-depth review will be conducted which may warrant design changes, procedure changes, or need for additional measures.</p> <p>A compliance monitoring program would be developed to ensure that cleanup activities are effective.</p>
Spills/Releases	Primary effects would be to the soil, snow and surface water. Potential secondary effects on aquatic resources, fish and fish habitat and wildlife habitat.	<ul style="list-style-type: none"> <li>• OMS Plan will be developed mine operations. The OMS will include items such as                             <ul style="list-style-type: none"> <li>○ Regular maintenance of fuel trucks;</li> <li>○ Speed limits are to be strictly adhered to, to be posted and enforced by Treasury security personnel;</li> <li>○ Strict adherence to national trucking hour limits and other applicable requirements;</li> <li>○ Drivers will be required to meet all applicable regulatory training requirements, be trained in spill response procedures for the materials they transport, and carry the appropriate MSDS;</li> <li>○ Right-of-way procedures will be defined and haul trucks and loaded vehicles will be given preference;</li> <li>○ Traffic will be required to yield to wildlife as observed;</li> </ul> </li> </ul>	<p>The emergency response protocols will be followed as outlines in the ERP and SMP in the event of a worst-case scenario fuel release include the following:</p> <ul style="list-style-type: none"> <li>• Identify immediate hazards to human life and health;</li> <li>• Identify source of spill and control source;</li> <li>• Contain the released material;</li> <li>• Notify appropriate personnel and reporting to applicable government agencies;</li> <li>• Conduct clean-up area impacted by release;</li> <li>• Incident investigation; and</li> <li>• Further assessment of effected environment, including surface water bodies in vicinity of the release.</li> </ul>	<p>Review of reported spill will be conducted periodically which may warrant design changes, procedure changes, or need for additional measures.</p> <p>Compliance monitoring programs would be implemented to assess clean-up requirements and disposal of impacted soil/snow, if required.</p>





**Table 14.0. 10 Potential Accidents and Malfunctions Summary for the Project**

Potential Failure Mode	Potential Environmental Effects	Control Measures and Preventative Procedures	Emergency Response and Contingency Procedures	Follow-up Monitoring
		<ul style="list-style-type: none"> <li>○ Where possible, heavy traffic will be limited to site haul roads and other traffic limited to site access roads;</li> <li>○ Transportation of material (i.e., fuel) during times of limited visibility will be avoided where possible;</li> <li>○ All vehicles transporting fuel to site will be required to maintain a supply of basic emergency response equipment, including communication equipment, first aid materials and a fire extinguisher; and</li> <li>○ Penalties for infractions.</li> <li>● All materials will be stored and handled according to manufacture specification or MSDS</li> <li>● All liquid containments will be designed to include a secondary containment area which will hold 150% the contained volume.</li> <li>● All personnel on the project site will be trained in the proper handling proper handling of chemicals.</li> <li>● Spill Management Plan (SMP) will be prepared to include the proper procedures for handling spills to land and water, locations of spill containment equipment, safe areas to access spills, disposal of spill contaminated material and reporting requirements. This plan will be updated as required by the current operating plan.</li> <li>● EPP will include the proper procedure for dealing with spills. This Plan will be updated as required by the current operating plan.</li> </ul>		
Cyanide	Primary effects would be to the terrain and soil, as well as surface water if the release occurs near a surface water body. Potential secondary effects on aquatic resources, fish and fish habitat and wildlife habitat.	<ul style="list-style-type: none"> <li>● Cyanide, cyanide compounds and related chemicals will each have an MSDS in order to comply with the best practices in the industry for health and safety, and to provide relevant regulatory standards for the safe use of these materials. All materials will be stored and handled according to manufacture specification or MSDS</li> <li>● All liquid containments will be designed to include a secondary containment area which will hold 150% the contained volume.</li> <li>● All personnel on the project site will be trained in the proper handling proper handling of cyanide chemicals and associated PPE.</li> <li>● Regular inspections of holding tanks and operational procedures will be carried out. This program will have continual reviews and updates to remain current. These will also be used in the training programs conducted by the health and safety department personnel.</li> <li>● Operations and designs for hazardous materials, such as cyanide transport, will comply with applicable regulatory requirements for the transportation of dangerous goods.</li> <li>● Operational safeguards for compressed gases will be enforced, operations personnel will be trained to use appropriate health and safety safeguards, and infrastructure will be regulatory maintained and inspected as per standard operating procedures.</li> <li>● Operations and designs for hazardous materials, such as cyanide transport, will comply with applicable regulatory requirements for the transportation of dangerous goods.</li> <li>● All vehicles and drivers involved with transport will be licensed, trained, and inspected for competency.</li> </ul>	<p>The contingency and emergency response plan for transport related emergencies will ensure the following:</p> <ul style="list-style-type: none"> <li>● Best route for access to incident site, including an evaluation of transportation route condition</li> <li>● Specific remediation measures are implemented and followed including:                             <ul style="list-style-type: none"> <li>○ Recovery and treatment of contaminated soil;</li> <li>○ Decontamination or management of soil and other contaminated material;</li> <li>○ Disposal of clean-up debris; and</li> <li>○ If possibility of contamination to drinking water, appropriate emergency response measures will be enforced to protect drinking water users.</li> </ul> </li> </ul> <p>Emergency response plans for SO<sub>2</sub>-Air cyanide destruction process failure:</p> <ul style="list-style-type: none"> <li>● Ore processing plant will be shut down and all pumping outputs and inputs to the plant will cease.</li> <li>● Body and eye wash stations will be established at the ore processing plant as a first response measure.</li> <li>● Personnel and the ore processing plant area will be equipped with HCN gas sensors with an alarm system, should gas reach unacceptable ambient levels.</li> </ul>	<p>After any major release or accident from cyanide use, transport, storage or handling an in-depth review will be conducted which may warrant design changes, procedure changes, or need for additional measures.</p> <p>Compliance monitoring programs would be implemented to assess clean-up requirements and disposal of impacted materials, if required.</p>



**Table 14.0. 10 Potential Accidents and Malfunctions Summary for the Project**

Potential Failure Mode	Potential Environmental Effects	Control Measures and Preventative Procedures	Emergency Response and Contingency Procedures	Follow-up Monitoring
		<ul style="list-style-type: none"> <li>• Proper transportation containers and proper transport vessels (appropriate vehicle) will be used. If liquid cyanide must be transported, containers will have appropriate hydraulically controlled internal valves.</li> <li>• All trucks will have their needed MSDS, will be properly maintained to company and Transport Canada standards, and will have all safety equipment on hand (including medical and spill response material).</li> <li>• All incidents and near-misses will be reported, and regular audits will be conducted.</li> <li>• Drivers will maintain constant communication and/or GPS tracking during the transportation of cyanide.</li> <li>• SMP will be prepared to include the proper procedures for handling CN spills to land and water, locations of spill containment equipment, safe areas to access spills, disposal of spill contaminated material and reporting requirements. This plan will be updated as required by the current operating plan.</li> <li>• EPP will include the proper procedure for dealing with Cyanide. This Plan will be updated as required by the current operating plan.</li> </ul>	<ul style="list-style-type: none"> <li>• All workers will be provided notification and cease all work and be evacuated as per established emergency response procedures.</li> <li>• Any gas plume present will be allowed to dissipate to ensure worker safety. Notification to workers downwind of the incident and ore processing plant shutdown may be required in order to secure the area.</li> <li>• SO<sub>2</sub>-Air cyanide destruction process will remain closed until full operational ability is restored.</li> </ul>	



**Table 14.0. 11 Environmental Cumulative Effects Matrix for the Goliath Gold Project**

VC	Potential Effect	Project Stage	Proposed Mitigation	Residual Effects Characterization					Significance of Project contribution to cumulative effects (assuming implementation of mitigation)	Likelihood of Occurrence
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility		
Terrain and Soils	Natural viewscales from nearby residences and lakes interrupted by WRSA, TSF, overburden storage area and low-grade stockpile.	Construction and Operations	Contouring of WRSA and TSF during construction and closure to blend with surrounding terrain; progressive reclamation to cap and vegetate WRSA during operations. Overburden storage area to be used as cover material during reclamation.	Level I - There is no measurable residual effect.	Level III - Residual effect extends into the RSA	Level II - Residual effect will extend beyond construction period.	Level III - Residual effect occurs frequently or continuously	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur
		Closure		Level I - There is no measurable residual effect.	Level I - No anticipated adverse environment effects beyond TSF	Level I - Residual effect is not measurable beyond closure period (3 years).	Level II - Residual effect expected to occur intermittently and decline as vegetation cover is established.	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur
Noise	Increase in traffic noise due to movements of construction vehicles.	All	Use new, low-noise mobile equipment; time construction activities to minimize effects.	Level I - Noise levels anticipated within applicable federal and provincial regulations and guidelines	Level II - Residual effect extends into LSA	Level I - Residual effect is not expected to be measurable beyond the construction period.	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur
	Disturbance effects on local wildlife.	All	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure. Utilize proper waste management strategies to minimize wildlife attraction	Level 1 - There is no measurable residual effect to population abundance and distribution.	Level II - Residual effect extends into LSA	Level II - Residual effect will extend beyond construction period.	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible following closure.	Not significant	Level II - Could reasonably be expected to occur



**Table 14.0. 11 Environmental Cumulative Effects Matrix for the Goliath Gold Project**

VC	Potential Effect	Project Stage	Proposed Mitigation	Residual Effects Characterization					Significance of Project contribution to cumulative effects (assuming implementation of mitigation)	Likelihood of Occurrence
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility		
Light	Light trespass to nearby occupied properties.	All	Limit Project lighting to areas required for safe operations; orient Project lighting towards the interior of the Project area; where possible, use down-shaded lighting on Project buildings and infrastructure.	Level I - Light levels anticipated within applicable federal and provincial regulations and guidelines	Level II - Residual effect extends into LSA	Level II - Residual effect will extend beyond construction period.	Level III - Residual effect occurs frequently or continuously	Level I - Effect is readily reversible following closure.	Not significant	Level III - Will occur.
	Wildlife attraction to novel light sources.	All	Limit Project lighting to areas required for safe operations; orient Project lighting towards the interior of the Project area; where possible, use down-shaded lighting on Project buildings and infrastructure.	Level 1 - There is no measurable residual effect to population abundance and distribution.	Level II - Residual effect extends into LSA	Level II - Residual effect will extend beyond construction period.	Level II - Residual effect expected to occur intermittently	Level I - Effect is readily reversible following closure.	Not significant	Level II - Could reasonably be expected to occur
Air Quality	Potential increase in the ambient concentrations of airborne contaminants (e.g., TSP, PM10, PM2.5, NOx, SOx, CO)	Construction	Implement industry best practices to minimize emissions (e.g. Blasting to be conducted in a phased manner that optimizes the amount of explosives, and that minimizes the area being blasted; Material will be loaded into haul trucks in a manner that minimizes the drop height; Ensure that all engines are properly maintained and all emission control systems are in good working order; Water and chemical suppressants will be used for dust control).	Level I - Emissions above background but within applicable federal and provincial regulations and guidelines; or if guidelines exceeded, effects limited to the project footprint	Level I - Emissions above background but within applicable federal and provincial regulations and guidelines; or if guidelines exceeded, effects limited to the project footprint.	Level I - Residual effect is not expected to be measurable beyond the construction period.	Level I - Residual effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level I - Unlikely to occur



**Table 14.0. 11 Environmental Cumulative Effects Matrix for the Goliath Gold Project**

VC	Potential Effect	Project Stage	Proposed Mitigation	Residual Effects Characterization					Significance of Project contribution to cumulative effects (assuming implementation of mitigation)	Likelihood of Occurrence
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility		
		Operations		Level II - Emissions have the potential to exceed federal or provincial guidelines for areas beyond project footprint, resulting in potential for meaningful adverse environmental effects to resources (land, water, biota) or residents outside the project footprint.	Level II - Emissions have the potential to exceed federal or provincial guidelines for areas beyond project footprint, resulting in potential for meaningful adverse environmental effects to resources (land, water, biota) or residents outside the project footprint.	Level I - Residual effect is not expected to be measurable beyond the operations period.	Level III - Residual effect occurs frequently or continuously	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur



**Table 14.0. 11 Environmental Cumulative Effects Matrix for the Goliath Gold Project**

VC	Potential Effect	Project Stage	Proposed Mitigation	Residual Effects Characterization					Significance of Project contribution to cumulative effects (assuming implementation of mitigation)	Likelihood of Occurrence
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility		
		Closure		Level I - Emissions above background but within applicable federal and provincial regulations and guidelines; or if guidelines exceeded, effects limited to the project footprint	Level I - Emissions above background but within applicable federal and provincial regulations and guidelines; or if guidelines exceeded, effects limited to the project footprint	Level I - Residual effect is not expected to be measurable beyond the construction period.	Level I - Residual effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level I - Unlikely to occur
Climate	Climate change effects resulting from Project GHG emissions.	Construction and Operations	Project power provided by existing capacity within the power grid rather than onsite generation.	Level 1 - There is no measurable residual effect	Level III - Residual effect extends into the RSA	Level II - Residual effect will extend into operations period.	Level III - Residual effect occurs frequently or continuously	Level I - Effect is readily reversible following closure.	Not significant	Level III - Will occur.
Surface Water Quality	Physical alteration of the surrounding landscape could result in increased sediment loading to receiving waters associated with the Project which could result in increased total suspended solids (TSS) in surface waters.	All	Implement an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization.	Level II - Activity has the potential to effect water quality in receiving waters that could exceed applicable federal and provincial regulations and guidelines	Level II - Potential to adversely affect drinking water uses, aquatic life, and/or wildlife in the LSA	Level I - Residual effect is not measurable beyond construction period.	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur; however, mitigation measures outlined in an EMP are designed to reduce likelihood of occurrence.



**Table 14.0. 11 Environmental Cumulative Effects Matrix for the Goliath Gold Project**

VC	Potential Effect	Project Stage	Proposed Mitigation	Residual Effects Characterization					Significance of Project contribution to cumulative effects (assuming implementation of mitigation)	Likelihood of Occurrence
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility		
	Alteration of water quality could occur from accidental release of deleterious substances (e.g., chemical/fuel spills).	All	Implement an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization.	Level II - Activity has the potential to effect water quality in receiving waters that could exceed applicable federal and provincial regulations and guidelines	Level II - Potential to adversely affect drinking water uses, aquatic life, and/or wildlife in the LSA	Level I - Residual effect is not measurable beyond construction period.	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur; however, mitigation measures outlined in an EMP are designed to reduce likelihood of occurrence.
Surface Water Quantity	Increased flows in Blackwater Creek in years 1 -3 due to increases in the runoff coefficient of developed areas and discharge from the secondary treatment plant, including mine dewatering and process water	Operations	Developed areas with increased runoff coefficients will be contained and directed to tailings management area for secondary treatment and release to Blackwater Creek and later the pit lake.	Level I - No surface water quantity effects in receiving waters anticipated as flow changes are within natural variation and channel capacity	Level I - No anticipated adverse environment effects beyond Blackwater Creek	Level 1 - Residual effect is not measurable beyond early operation period (3 years).	Level III - Residual effect occurs frequently or continuously	Level I - Effect is readily reversible over a relatively short period	Not significant	Level III - Will occur.
	Increased peak flows in Blackwater Creek due to increases in the runoff coefficient of reclaimed areas	Closure	Convert seepage ditches and collection ponds to wetland areas to retain runoff and reduce runoff coefficient. Pit lake will function as reservoir further reducing peak flows. Encourage recolonization of disturbed areas by surrounding forest.	Level I - No surface water quantity effects in receiving waters anticipated as flow changes are within natural variation and channel capacity	Level I - No anticipated adverse environment effects beyond Blackwater Creek	Level 1 - Residual effect is not measurable beyond early closure period (3 years).	Level I - Residual effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur



**Table 14.0. 11 Environmental Cumulative Effects Matrix for the Goliath Gold Project**

VC	Potential Effect	Project Stage	Proposed Mitigation	Residual Effects Characterization					Significance of Project contribution to cumulative effects (assuming implementation of mitigation)	Likelihood of Occurrence
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility		
	Decreased flows in Blackwater Creek in years 4 -12 due to redirection of runoff from developed areas and discharge from the secondary treatment plant to facilitate pit filling	Operations	None	Level I - No surface water quality effects in receiving waters anticipated as flow changes are within long-term natural variation	Level I - No anticipated adverse environment effects beyond Blackwater Creek	Level 1 - Residual effect is not measurable beyond early operation period (4 - 12 years).	Level III - Residual effect occurs frequently or continuously	Level I - Effect is readily reversible over a relatively short period	Not significant	Level III - Will occur.
	Decreased flows in Hoffstrom's Bay tributary in due to raw water needs for process plant	Operations	Installation and operation of secondary treatment plant to recirculate treated mine water to process plant and reduce raw water needs.	Level I - No surface water quality effects in receiving waters anticipated as flow changes are within long-term natural variation and historic use of tributary as a water source	Level I - No anticipated adverse environment effects beyond Hoffstrom's Bay tributary	Level 1 - Residual effect is not measurable beyond early operation period.	Level III - Residual effect occurs frequently or continuously	Level I - Effect is readily reversible over a relatively short period	Not significant	Level III - Will occur.
Groundwater Quality	Groundwater quality impacted by accidental point source releases of environmental contaminants of concern.	All	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure. Utilize proper waste management strategies to minimize wildlife attraction	Level III - Introduction of non-native contaminant	Level I - Residual effect is expected to be limited to release area.	Level I - Residual effect is not measurable beyond construction period assuming site remediation measures are implemented.	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period when remediation measures are implemented.	Not significant	Level II - Could reasonably be expected to occur; however, spill prevention measures and response plan will minimize likelihood.





**Table 14.0. 11 Environmental Cumulative Effects Matrix for the Goliath Gold Project**

VC	Potential Effect	Project Stage	Proposed Mitigation	Residual Effects Characterization					Significance of Project contribution to cumulative effects (assuming implementation of mitigation)	Likelihood of Occurrence
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility		
	Groundwater quality impacted by seepage from WRSA, TSF and low grade ore stockpile.	Operations and Closure	Seepage collection ditches will be installed around the WRSA, TSF, and low-grade ore stock pile and any water collected will be returned to the tailings storage facility for treatment prior to release.	Level I - No groundwater quality effects in receiving waters anticipated within applicable federal and provincial regulations and guidelines	Level I - No anticipated adverse environment effects beyond the collection ditches	Level 1 - Residual effect is not measurable beyond operation period (12 years).	Level I - Residual effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur
Groundwater Quantity	Groundwater quantity impacted by disturbance of recharge and/or discharge areas.	All	None	Level I - No measurable residual effect due to limited scale of development within groundwater basin.	Level I - Residual effects limited to the project footprint.	Level III - Change in groundwater recharge within project footprint will be permanent.	Level III - Residual effect within project footprint is permanent.	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur
	Groundwater discharge to creeks and wetlands impacted by operation of groundwater dewatering system	Operations	Minimize project footprint.	Level I - No measurable residual effect.	Level III - Residual effect extends into the RSA	Level III - Residual effect is expected to persist, but decrease in intensity for 20 years following suspension of groundwater dewatering efforts.	Level III - Residual effect will be continuous, decreasing in intensity over a period of 20 years.	Level I - Effect is readily reversible over time.	Not significant	Level II - Could reasonably be expected to occur



**Table 14.0. 11 Environmental Cumulative Effects Matrix for the Goliath Gold Project**

VC	Potential Effect	Project Stage	Proposed Mitigation	Residual Effects Characterization					Significance of Project contribution to cumulative effects (assuming implementation of mitigation)	Likelihood of Occurrence
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility		
	Expansion of groundwater drawdown cone could potentially lead to reduced or loss of production in private wells surrounding the mine site.	Operations	Groundwater monitoring wells between mine site and private wells will provide early warning if groundwater quantity dropping off. Mitigation includes installation of deeper wells for private users or installation of alternative domestic water supply as necessary.	Level III - Residual effect is outside of range of natural variation.	Level III - Residual effect extends into the RSA	Level III - Residual effect is expected to persist, but decrease in intensity for 20 years following suspension of groundwater dewatering efforts.	Level III - Residual effect will be continuous, decreasing in intensity over a period of 20 years.	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur
	Slow recovery of groundwater drawdown cone could limit development of private wells surrounding the mine site.	Closure	Mitigation measures implemented during operations will be maintained until dewatering cone reversed.	Level II - Residual impacts would be less than during period of dewatering system operation.	Level II - Residual impacts would extend throughout the LSA for an extended period (up to 20 years).	Level III - Recovery of groundwater elevations in drawdown cone is expected to be up to 20 years.	Level II - Residual effect is expected to decrease over time.	Level I - Effect gradually reverse once mine dewatering ceases	Not significant	Level II - Could reasonably be expected to initially occur but will fully reverse over time.
Wildlife and Wildlife Habitat	Habitat removal	Construction	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure	Level II - Activity has the potential to affect population abundance and distribution	Level III - Residual effect extends into the RSA	Level I - Residual effect is not measurable beyond construction period.	Level III - Residual effect occurs frequently or continuously	Level II - Residual effect is partially reversible	Not significant	Level III - Will occur.
	Direct mortality from vehicular collision or other human activity (e.g., habitat clearing)	All	Time major habitat clearing activities to avoid critical seasonal windows. Minimize construction of new roads. Enforce speed limits on Project roads. No hunting/trapping by Project personnel. Awareness training.	Level 1 - There is no measurable residual effect to population abundance and distribution	Level II - Residual effect extends into LSA	Level I - Residual effect is not measurable beyond construction period.	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur



**Table 14.0. 11 Environmental Cumulative Effects Matrix for the Goliath Gold Project**

VC	Potential Effect	Project Stage	Proposed Mitigation	Residual Effects Characterization					Significance of Project contribution to cumulative effects (assuming implementation of mitigation)	Likelihood of Occurrence
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility		
Fish	Mortality of individuals due to changes in water quality from increased sediment loads from runoff and/or release of deleterious substances (e.g., chemical/fuel spills)	Construction	Implement an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization.	Level II - Activity has the potential to measurably affect productive capacity of local fishery.	Level II - Residual effect extends into LSA	Level 1 - Residual effect is not measurable beyond construction period (3 years).	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur.
		Operations		Level II - Activity has the potential to measurably affect productive capacity of local fishery.	Level II - Residual effect extends into LSA	Level III - Residual effect may extend beyond 10 years after operation initiation	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur
	Mortality of individuals because of physical activities that occur within or adjacent to a watercourse (e.g., access roads, tailing area dam construction, pit excavation).	Construction	Minimize work within watercourses. Schedule works to occur during reduced risk periods (i.e., outside of spawning, hatching etc.). Conduct fish salvage where possible.	Level II - Activity has the potential to measurably affect productive capacity of local fishery.	Level II - Residual effect extends into LSA	Level 1 - Residual effect is not measurable beyond construction period (3 years).	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur
		Operations		Level II - Activity has the potential to measurably affect productive capacity of local fishery.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect may extend beyond 10 years after operation initiation	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur



**Table 14.0. 11 Environmental Cumulative Effects Matrix for the Goliath Gold Project**

VC	Potential Effect	Project Stage	Proposed Mitigation	Residual Effects Characterization					Significance of Project contribution to cumulative effects (assuming implementation of mitigation)	Likelihood of Occurrence
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility		
		Closure		Level II - Activity has the potential to measurably affect productive capacity of local fishery.	Level 1 - Residual effect is restricted to Project footprint	Level 1 - Residual effect is not measurable beyond closure period.	Level I - Residual effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level II - Could reasonably be expected to occur
	Noise and vibration disturbances to fish from heavy equipment operation.	All	EMP should include measures to reduce potential impacts of noise and vibration (e.g., utilizing well-maintained equipment operated at optimum loads).	Level I - There is no measurable residual effect to fishery as fish will typically exhibit avoidance behaviour.	Level 1 - Residual effect is restricted to Project footprint	Level 1 - Residual effect is not measurable beyond construction period (3 years).	Level II - Residual effect expected to occur intermittently	Level I - Residual effect is reversible.	Not significant	Level III - Will occur.
Fish Habitat	Decreased habitat quality due to changes in water quality from increased sediment loads (increased turbidity/suspended solids) and/or release of deleterious substances (chemical/fuel spills).	Construction	Project should include an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization. Habitat compensation, as per the <i>Fisheries Act</i> , will be provided.	Level II - Activity has the potential to measurably affect productive capacity of local fish habitat.	Level II - Residual effect extends into LSA	Level II - Residual effect may extend up to 10 years after project initiation.	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur
		Operations		Level II - Activity has the potential to measurably affect productive capacity of local fish habitat.	Level II - Residual effect extends into LSA	Level III - Residual effect could persist beyond 10 years of project initiation.	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur



**Table 14.0. 11 Environmental Cumulative Effects Matrix for the Goliath Gold Project**

VC	Potential Effect	Project Stage	Proposed Mitigation	Residual Effects Characterization					Significance of Project contribution to cumulative effects (assuming implementation of mitigation)	Likelihood of Occurrence
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility		
		Closure		Level II - Activity has the potential to measurably affect productive capacity of local fish habitat.	Level II - Residual effect extends into LSA	Level II - Residual effect may extend up to 10 years after project initiation.	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur
	Physical disturbance to or loss of aquatic habitat by equipment working in or adjacent to a waterbody.	Construction and Operations	Minimize work within watercourses. Schedule works to occur during reduced risk periods (i.e., outside of spawning, hatching). Conduct fish salvage where possible. Habitat compensation, as per the Fisheries Act will be provided. Appropriately size and embed culverts or construct bridges where appropriate.	Level II - Activity has the potential to measurably affect productive capacity of local fish habitat.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level III - Residual effect occurs frequently or continuously	Level II - Residual effect is partially reversible	Not significant	Level III - Will occur.
		Closure		Level II - Activity has the potential to measurably affect productive capacity of local fish habitat.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level III - Will occur.
	Changes to water quantity and subsequent habitat availability/quality in Thunder Lake due to Makeup Water Pipeline.	Construction	Conduct operations as efficiently as possible to minimize requirement for additional water inputs. Habitat compensation, as per the Fisheries Act will be provided.	Level II - Activity has the potential to measurably affect productive capacity of local fishery.	Level II - Residual effect extends into LSA	Level II - Residual effect may extend up to 10 years after project initiation.	Level II - Residual effect expected to occur intermittently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur



**Table 14.0. 11 Environmental Cumulative Effects Matrix for the Goliath Gold Project**

VC	Potential Effect	Project Stage	Proposed Mitigation	Residual Effects Characterization					Significance of Project contribution to cumulative effects (assuming implementation of mitigation)	Likelihood of Occurrence
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility		
		Operations		Level II - Activity has the potential to measurably affect productive capacity of local fish habitat.	Level III - Residual effect extends into the RSA	Level III - Residual effect could persist beyond 10 years of project initiation.	Level II - Residual effect expected to occur intermittently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur
Vegetation and Wetlands	Reduced water quality benefits associated with filtering effects of wetland vegetation (including rare species); impact streams by reducing floodwater attenuation and long-term storage by wetland plants and soils; and diminish groundwater infiltration.	Construction	Avoid wetland habitats to the extent possible. Identify locations for restoration of wetland functions and values.	Level I - Wetlands are common in this area and localized loss of some functions and values is less than significant.	Level I - The extent of impacts to wetlands is confined to the project area.	Level III - Short of active mitigation, effect is permanent.	Level I - Effect expected to occur infrequently	Level III - Residual effect is not reversible.	Not significant	Level III - Will occur.
	May store polluted runoff and create attractive nuisance.	Operations	Divert runoff from operations area to isolated tailings pond.	Level I - Effect is not anticipated to be measurable	Level I - Effect should be confined to a localized area	Level II - Residual effect may extend up to 10 years after operation initiation	Level II - Effect could occur during rainfall or snowmelt.	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur
	Losses of wetlands incurred during construction, and residual contamination that may have occurred during operations, may remain for the long term.	Closure	Prior to project, perform assessment to determine wetland functions and values. Using the functional assessment as a baseline, develop plan to restore wetland functional values after closure.	Level II - Activity has the potential to measurably affect fish and wildlife habitat, and hydrologic functions.	Level II - Residual effect extends into LSA	Level II - Residual effect may extend up to 10 years after project initiation.	Level I - Residual effect expected to occur infrequently	Level II - Residual effect is partially reversible	Not significant	Level II - Could reasonably be expected to occur



**Table 14.0. 12 Socio-Economic Cumulative Effects Matrix for the Goliath Gold Project**

VC	Potential Effect	Project Stage	So	Residual Effects Characterization					Significance of Project contribution to cumulative effects (assuming implementation of mitigation)	Likelihood of Occurrence
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility		
Land and Resource Use	Potential obstruction, loss and/or usage of trapping areas associated with the mine footprint	All	Limit mine footprint; Reclamation and Closure Plan implementation; ensure ongoing communication with local stakeholders	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level I - Residual effect is confined to the Project footprint.	Level III - Residual effect likely to persist beyond closure	Level III - Residual effect expected to occur regularly or continuously	Level III - Residual effect is not reversible	Not significant	Level II - Could reasonably be expected to occur
	Change in local ambience due to noise, vibration and decreased aesthetics at mine site	All	Noise Management Plans, Emergency and Spill Response Plans ensure ongoing communication with local stakeholders	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level II - Residual effect is confined to the LSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is reversible in the long-term.	Not significant	Level II - Could reasonably be expected to occur
	Direct effects associated with Project traffic and improved access	All	Transportation and Access Management Plan.	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level II - Medium-term, residual effect throughout operations and closure.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is reversible in the long-term.	Not significant	Level II - Could reasonably be expected to occur
Housing	Changes in in- and out-migration affect housing demand and change the housing market	All	Work with Government to minimize in-migration	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level I - Residual effect extends throughout the construction phase	Level III - Residual effect expected to occur regularly or continuously	Level I - Effect is readily reversible over a relatively short period	Not significant	Level III - Will occur, or is likely to occur



**Table 14.0. 12 Socio-Economic Cumulative Effects Matrix for the Goliath Gold Project**

VC	Potential Effect	Project Stage	So	Residual Effects Characterization					Significance of Project contribution to cumulative effects (assuming implementation of mitigation)	Likelihood of Occurrence
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility		
Employment	Proposed Project spending would generate employment	All	Preferred hiring for local and regional labour	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the RSA.	Level I - Residual effect extends throughout the construction phase	Level III - Residual effect expected to occur regularly or continuously	Level I - Residual effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur
Income	Project spending would generate income for employees and supply industries	All	Effects are positive so no mitigation necessary	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level II - Residual effect is confined to the LSA.	Level I - Residual effect extends throughout the construction phase	Level III - Residual effect expected to occur regularly or continuously	Level I - Residual effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur
Economic Development	Increases in Gross Domestic Product, employment, and government revenues due to capital expenditures	All	Not mitigated at a provincial level	Level I - Residual effect that occurs might or might not be detectable, but is within the normal range of variability.	Level III - Residual effect extends to the Province	Level I - Residual effect extends throughout the construction phase	Level III - Residual effect expected to occur regularly or continuously	Level I - Residual effect is readily reversible over a relatively short period	Not significant	Level III - Will occur, or is likely to occur





**Table 14.0. 12 Socio-Economic Cumulative Effects Matrix for the Goliath Gold Project**

VC	Potential Effect	Project Stage	So	Residual Effects Characterization					Significance of Project contribution to cumulative effects (assuming implementation of mitigation)	Likelihood of Occurrence
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility		
Aboriginal Peoples	Water quality and health effects	All	Implement an EMP with measures to minimize potential for release of deleterious substances and include a Spill Response plan. Equipment used should be well-maintained and carry appropriately stocked spill kits. Operators should be trained in their use and have a spill response plan in place. Disturbed soils should be stabilized where possible to limit potential for erosion and sediment mobilization.	Level II - Activity has the potential to effect water quality in receiving waters that could exceed applicable federal and provincial regulations and guidelines	Level II - Potential to adversely affect drinking water uses, aquatic life, and/or wildlife, in the LSA	Level I - Residual effect is not measurable beyond construction period.	Level I - Effect expected to occur infrequently	Level I - Effect is readily reversible over a relatively short period	Not significant	Level II - Could reasonably be expected to occur; however, mitigation measures outlined in an EMP are designed to reduce likelihood of occurrence.
	Gathering of Country Foods	All	Minimize project footprint; Minimize activity of project personnel outside of Project areas and infrastructure; Maintain outflow water quality standards to maintain wetland health.	Level 1 - There is no measurable residual effect to abundance and distribution of country foods.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is partially reversible.	Not significant	Level III - Will occur, or is likely to occur
	Hunting and Trapping	All	None	Level 1 - There is no measurable residual effect on hunting and trapping opportunities.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is partially reversible.	Not significant	Level III - Will occur, or is likely to occur
	Fishing	All	Measures proposed for water quality.	Level 1 - There is no measurable residual effect on fishing opportunities.	Level 1 - Residual effect is restricted to Project footprint	Level III - Residual effect could persist beyond 10 years of project initiation.	Level III - Residual effect expected to occur regularly or continuously	Level II - Residual effect is partially reversible.	Not significant	Level III - Will occur, or is likely to occur