LABRADOR IRON MINES LIMITED

Project Description for the

Houston Beneficiation Plant

Submitted by:
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1.0 INTRODUCTION

1.1 Identification of the Proponent

Name of Corporate Body: Labrador Iron Mines Limited (LIM)

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Labrador Iron Mines Limited (LIM), a wholly owned subsidiary of Labrador Iron Mines Holdings Limited, is Canada's newest iron ore producer with a portfolio of direct shipping iron ore (DSO) operations and projects located in the Labrador Trough, in the province of Newfoundland and Labrador. Initial production commenced at the James Mine in June 2011. Leading to the development of the Houston 1 and 2 Deposits Mining Project, the company's objective is to increase production towards 5 million tonnes per year from a portfolio of 20 iron ore deposits in Labrador and Quebec, all within 50 kilometres of the town of Schefferville. LIM is listed on the Toronto Stock Exchange and trades under the symbol "LIM".

LIM is proposing to construct a beneficiation plant to beneficiate iron ore extracted from the approved Houston 1 and 2 Mining Project.

1.2 Contacts and Address

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1.3 Regulatory Framework

1.3.1 Newfoundland and Labrador Environmental Assessment Process

The Houston Beneficiation Plant is subject to an environmental assessment pursuant to Part III of the Newfoundland and Labrador Regulations 54/03, *Environmental Assessment Regulations, 2003*, under the *Environmental Protection Act*, SNL 2002 Ce-14.2. The Environmental Registration will be submitted to the Environmental Assessment Division of the Department of Environment and Conservation (DOEC), and will be distributed to relevant provincial and federal departments, aboriginal groups, as well as posted to the DOEC website, for public review and comment. Following review of the registration document, the DOEC Minister makes a determination of the undertaking; it may be released or rejected; an Environmental Preview Report (EPR) may be required; or an Environmental Impact Statement (EIS) may be required.

1.3.2 Government of Canada Environmental Assessment Process

Federal environmental assessment (EA) is regulated under the *Canadian Environmental Assessment Act (CEAA), 2012*. Under CEAA 2012, only projects that are included within the *Regulations Designating Physical Activities* will possibly require federal EA. The Houston Beneficiation Plant is considered a *Designated Project* pursuant to Section 15(b) of the Regulations as it involves the construction, operation, decommissioning and abandonment of a metal mill with an ore input capacity of 4000 t/d or more. The ore beneficiation target for the Houston Beneficiation Plant is up to 1.5 MT/yr, which is based on a 12,000 t/d projection.

To initiate the federal process, a Project Description document is submitted to the Canadian Environmental Assessment Agency (CEA Agency) by the proponent along with a Summary Document that is provided in both official languages. The Summary Document is distributed by the CEA Agency to federal departments as appropriate and is posted on the CEA Agency website for access by the general public.

The federal decision-making and coordinating authority for a federal environmental assessment (EA) is the CEA Agency. Other federal departments may also provide specialized knowledge or expert advice through the EA processes. These Departments may include Fisheries and Oceans Canada (DFO), Transport Canada, Environment Canada, Health Canada and Natural Resources Canada.

Where both federal and provincial EAs are required, the CEA Agency and the DOEC Environmental Assessment Division typically work together in decision making.

1.3.3 Purpose of this Document

This document serves to file the Project Description in accordance with the requirements of the *Canadian Environmental Assessment Act (CEAA), 2012*.

1.4 Nature of the Undertaking

This undertaking, the Houston Beneficiation Plant, involves the beneficiation of iron ore from the Houston 1 and 2 Deposits Mining Project (Houston Project), in western Labrador. The Houston Project is located approximately 10 km from the existing Schefferville Area Iron Ore Mine (James Mine). The James and Redmond Mines were assessed in the Schefferville Area Iron Ore Mine (Western Labrador) Environmental Impact Statement (EIS) (Labrador Iron Mines, 2009) submitted to the federal and provincial regulators in August 2009 and released from further environmental assessment in November 2009. In addition to the open pits, rail spur, access roads and accommodation facility, the project also includes the Silver Yard Beneficiation Plant. With the exception of being larger, this plant is very similar to the proposed Houston Beneficiation Plant. The James Mine and Silver Yard Beneficiation plant is currently in operation and in compliance with all applicable permits and approvals.

Environmental baseline data for the Houston Project Area, which includes the Houston Beneficiation Plant project area, was initiated in 2008 as part of the overall Schefferville Area Iron Ore Project.

The Houston Project was registered under both the federal and provincial environmental assessment processes in December, 2011 (Labrador Iron Mines 2011) and released from further environmental assessment on March 26, 2012. The Houston Beneficiation Plant, which is to be constructed two to three years following the construction of the Houston Project, is located within the study area assessed in both the EIS and the Houston Project Environmental Registration.

The Houston deposits consist of three ore bodies (Houston 1, 2 and 3) and 12 mineral rights licenses representing 112 mineral claims covering approximately 2,800 hectares (Figure 1-1). The Houston 1 and 2 deposits contain a NI 43-101 resource estimate of 23 million tonnes of Iron ore of potential direct shipping quality with an anticipated 10-15 year mine life.

The operation of the Houston Beneficiation Plant will benefit from the presence of existing or approved infrastructure including the Houston Haul Road and the Rail Siding which are under construction as part of the Houston Project, as well as the Redmond Pit. A unique feature of this project is that there is no discharge to the environment. Process water will be extracted from a previously flooded pit (Redmond Pit) which does not have an outlet and the plant rejects water will be discharged back into the Pit, i.e., a closed loop system.

The proposed Houston Beneficiation Plant will be constructed 2-3 years following the development of the Houston 1 and 2 Deposits Mining Project and will receive ore from those deposits initially and potentially from the Houston 3 deposit at a later date. Mining of the Houston 1 and 2 deposits will be conducted in a sequential manner using conventional open pit mining methods. Once mined, the ore will be hauled by truck, approximately 1.5 km to the proposed beneficiation plant, which is to be located adjacent to the Houston Haul Road. As with the existing approved Silver Yard facility, the proposed Houston Beneficiation process involves the crushing, screening, washing and magnetic separation of the rock. No chemicals will be added as water is the only constituent used in the beneficiation process. The resulting wash water consists of water and fine rock material (reject fines).

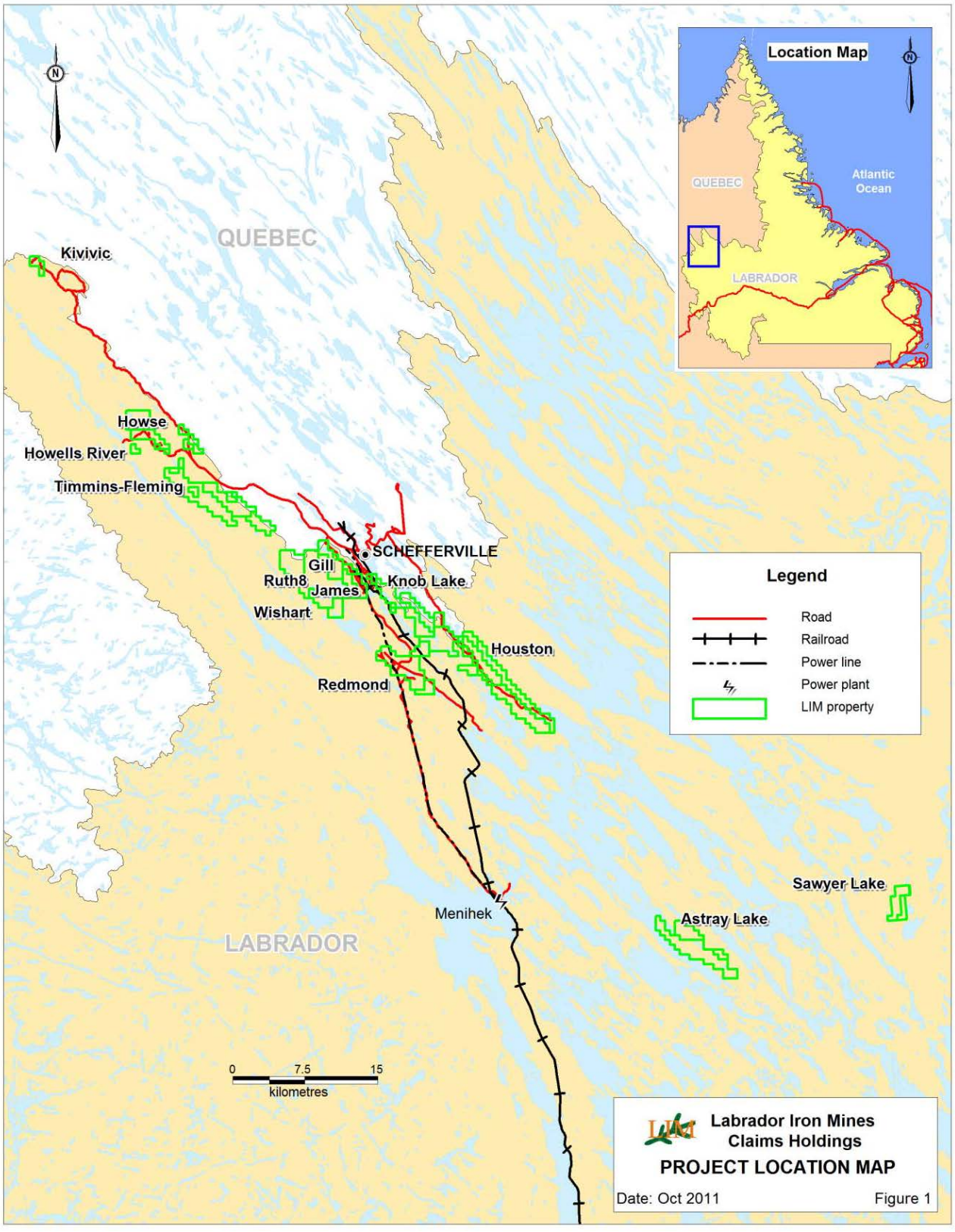


Figure 1-1 Labrador Iron Mines Claims Holdings

The throughput of the plant is designed for 600 tonnes per hour with an average daily production of 12,000 tonnes during peak operation. The processed ore will then be hauled approximately 6 km to the Houston Rail Siding where it will be loaded onto rail cars for transport south to the port of Sept-Iles.

As with LIM's nearby existing James Mine project, the final products to be produced from the Houston 1 and 2 deposits will include lump and sinter fine ores for direct shipping to end users in Europe and/or Asia.

1.5 Purpose and Rationale for the Undertaking

The purpose of the undertaking is to beneficiate iron ore mined from the Houston Project to satisfy market demand for high-grade direct shipping iron ore products. The construction of a wet beneficiation plant will be an economically beneficial addition to LIM's Schefferville Area Iron Ore Mining operation and will provide an additional boost to the economy of western and central Labrador and in turn, contribute to long-term economic stability in the area.

1.6 Alternatives to the Undertaking

Originally, LIM anticipated that the ore from the Houston Project would be beneficiated at either the Silver Yard facility at James Mine or at the proposed Redmond Mine area. However, the Silver Yard facility has reached capacity and the Redmond area has been determined to be uneconomic, therefore, a new facility is required.

1.7 Alternatives within the Undertaking

To assist in the decision making processes involved in the development of the Houston Beneficiation Plant Project, LIM retained DRA Americas to conduct a comprehensive trade-off study. The objective of the study was to select a plant location and configuration that optimized the capital and operating cost of the plant, maximized the resource use of the area, while minimizing the adverse effects to the surrounding environment. The study focused on two major components, water management and plant location. Given the interdependencies between the options, several configurations were considered and compared using both qualitative and quantitative analysis that took into consideration a variety of factors including environmental effects, risk, costs, technical factors and logistics.

1.7.1 Water Management

The two main components for water management that were focused on were: (1) how the plant reject water was to be discharged and (2) where the process water was to be sourced.

Reject Water Disposal

The options for disposal of rejects water were to either discharge to a local water body or into Redmond Pit. Discharging into Redmond Pit was selected for two primary reasons. First of all, it is an abandoned Iron Ore Company of Canada pit which has ample capacity for the predicted plant life of 12 years. Second, direct effluent release into the environment is avoided as there is no discharge outlet. As Redmond Pit is an abandoned pit with no self-sustaining fish

communities (D. Yetman, 2008) or surface connectivity to existing fish habitat, it has been deemed an acceptable location for the wet plant rejects (DFO, 2010).

Process Water

The alternative sources of process water considered were the: extraction form a nearby lake; de-watering water from Houston pit; and extraction from Redmond pit. Extracting process water from a nearby lake was ruled out due to environmental considerations as well as the requirement for an access road. The option of acquiring process water from the Houston 1 and 2 deposits de-watering wells was rejected due to the variability of flow, i.e., there is no assurance of a constant supply. This could potentially adversely affect the operation of the beneficiation plant as well as the management and operation of the rejects line.

Once it was decided that Redmond Pit would be the reject water disposal location, using it as the source for process water as well would result in a closed system with no discharge to the environment. Water will be withdrawn from Redmond Pit, piped to the beneficiation plant, used in the process cycle and piped back to the pit.

1.7.2 **Location**

The two alternative locations for the Beneficiation Plant considered were the Houston Rail Siding and a site 1.5 km from the Houston 1 and 2 mine site.

Reducing the distance for the transportation of unprocessed ore was a major consideration in the selection of the plant location. Approximately 20-25% of the unprocessed ore is removed as reject material during processing. By locating the plant near the mine site, the haulage distance of the unprocessed ore is reduced to 1.5 km, as opposed to the 6.0 km distance to the Houston Rail Siding. This results in an overall reduction of truck haulage by 20 – 25% and a coinciding reduction in exhaust emissions.

2.0 DESCRIPTION OF THE UNDERTAKING

LIM plans to start mining the Houston deposits and initially process the DSO using a portable dry screening and crushing plant that will be re-located from the James Mine. During the construction of the Beneficiation Plant, the ore will be processed through the dry plant and will be sold to generate capital. Off-grade material will be stockpiled and stored until the wet beneficiation plant is in operation.

2.1 Geographic Location

The proposed Project is wholly within the province of Newfoundland and Labrador and is located approximately 10 km from LIM's existing approved James Mine; 1.5 km from the approved Houston Project; and 20 km southeast from the town of Schefferville (Figure 2-1). Approximate co-ordinates of the beneficiation plant site are N 54° 41' 35", W 66° 39' 43".

Access to the property will be via the existing public Menihek access road and the Houston haul road which will be constructed as part of the Houston Project. LIM currently holds a Surface Lease (#135) for the Houston 1 and 2 Project which includes a portion of the Beneficiation Plant site. Prior to commencing construction, LIM will request an amendment to the Lease to include all Project infrastructure.

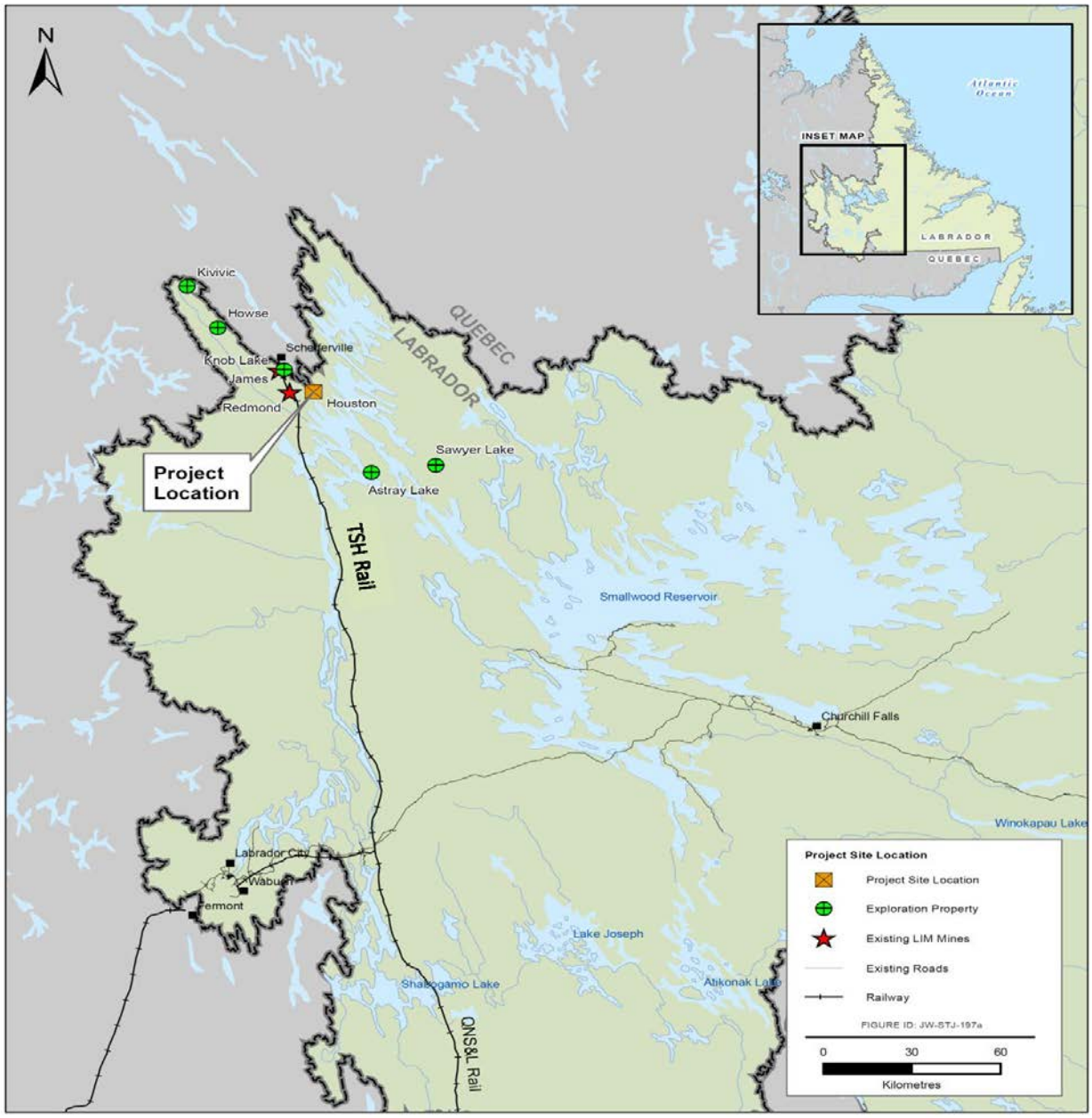


Figure 2-1 Project Location

2.2 Physical Features

This Project is limited to the construction, development and operation of a wet beneficiation plant and supporting infrastructure.

When and where possible, existing infrastructure from James Mine and the approved Houston Project will be utilized to support the Project.

Below is a list of infrastructure associated with the Beneficiation Plant area. Refer to Figure 2-2 and Figure 2-3 for infrastructure location and site layout.

- Site Roads;
- Beneficiation Plant;
- Truck Shop, Warehouse and Workshop;
- Administration Offices and Lunchroom;
- Change House & Washrooms;
- Fuel Storage and Dispensing Facility;
- Oil Storage;
- Diesel Generators;
- Sewage Treatment System;
- Water Supply (potable and fire);
- Stockpiles (Lump Ore, Sinter, Fines, Ultra Fines and Plant Feed); and
- Reject and Process Water Pipelines.

A detailed description of the required infrastructure is provided in Section 2.4.

2.3 Environmental Setting

2.3.1 Physical and Biological Environment

The proposed beneficiation plant and associated infrastructure is located within the study area previously assessed in both the Schefferville Area Iron Ore Mine EIS (LIM 2009) and the Houston 1 and 2 Deposits Mining Project Environmental Registration (LIM 2011). These documents were reviewed by Provincial and Federal regulatory agencies, affected Aboriginal groups and the interested public. The Federal agencies that reviewed the EIS and the Houston 1 and 2 Environmental Registration include: Environment Canada, Canadian Wildlife Service, DFO and Transport Canada.

A large body of knowledge exists as a result of the numerous baseline surveys conducted in the region and the extensive literature reviews undertaken in support of these environmental assessments. A detailed and thorough analysis can be found within these documents while a brief summary is provided below. No additional regional environmental studies have been undertaken.

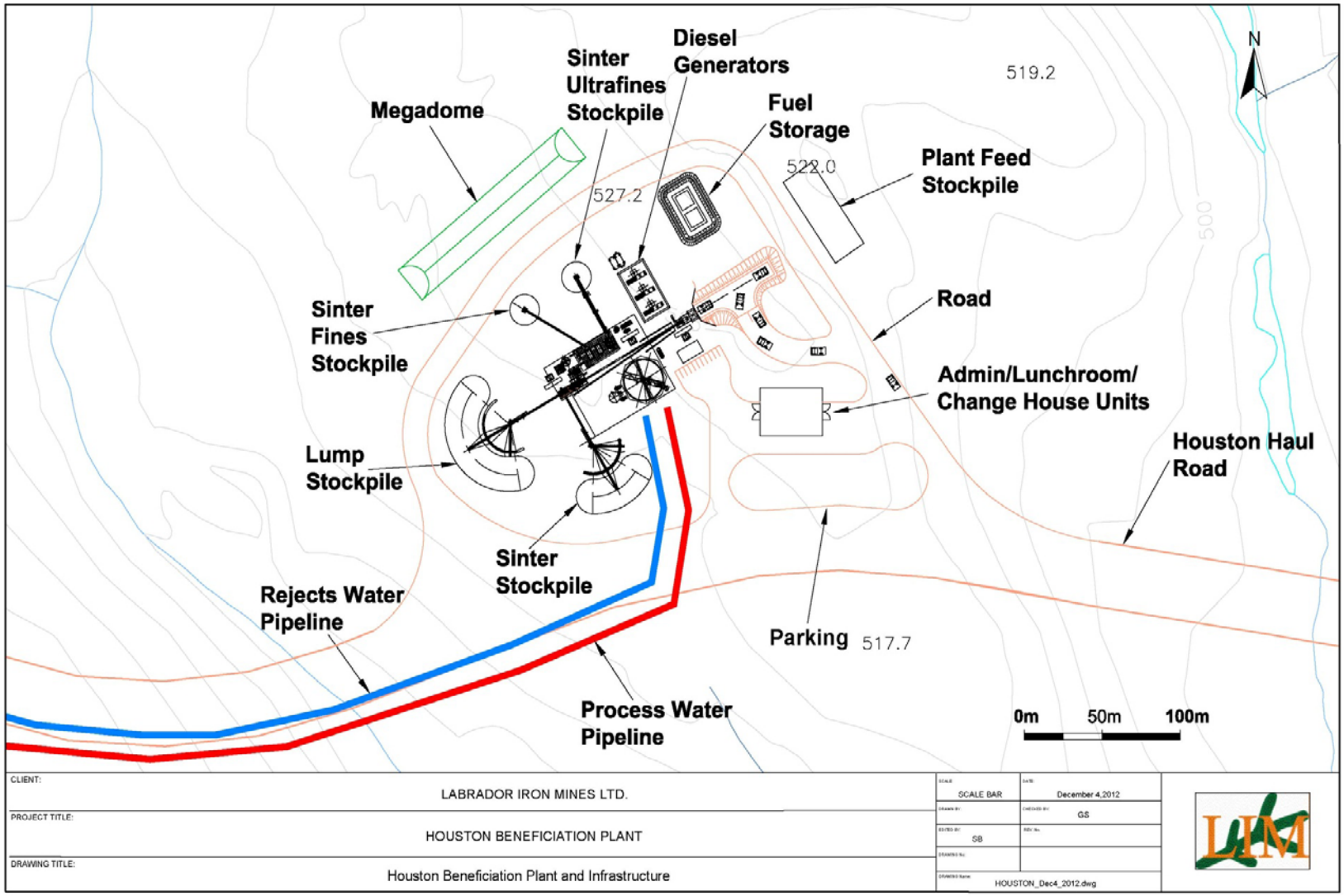


Figure 2-2 Houston Beneficiation Plant Detail View

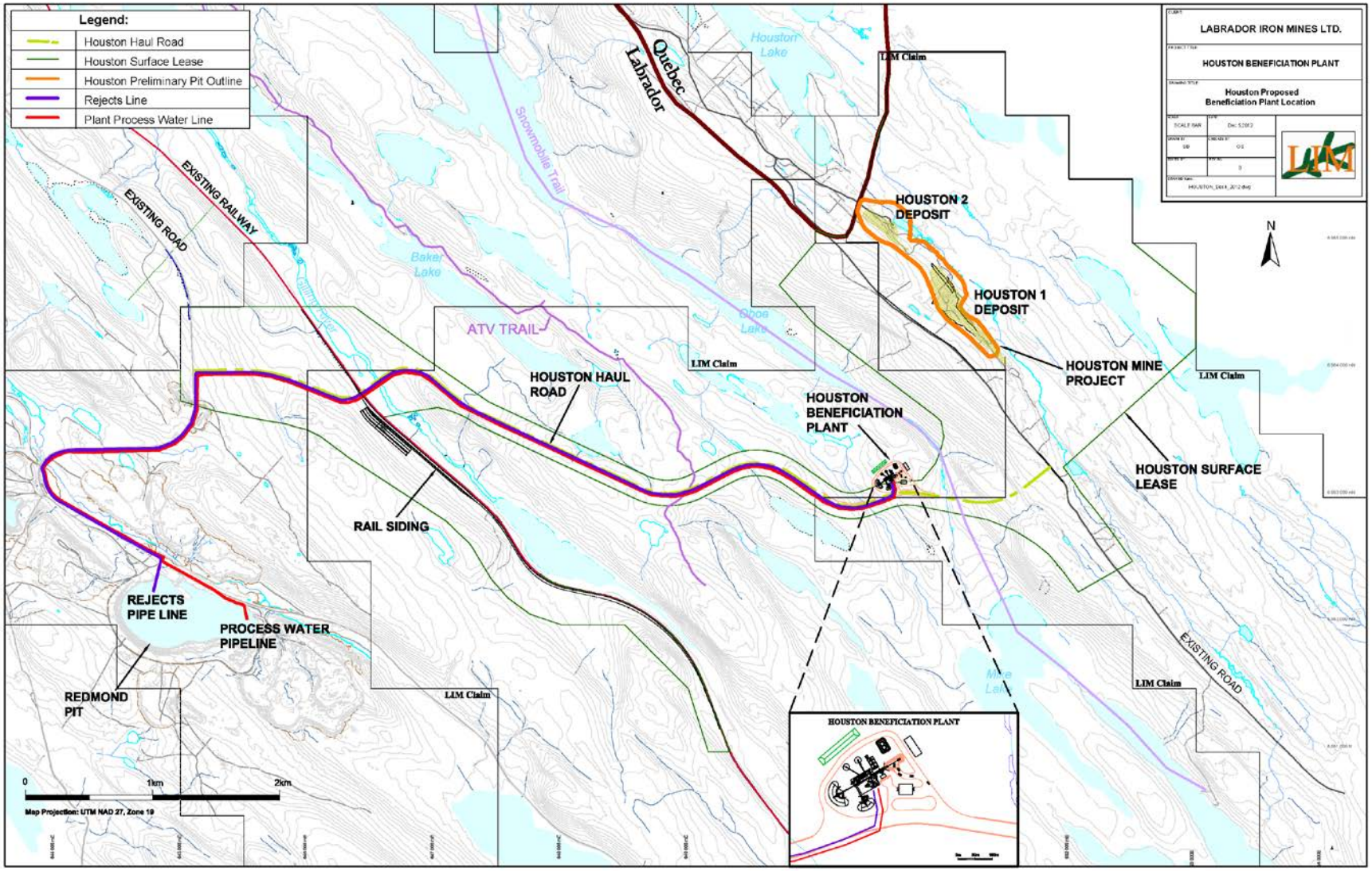


Figure 2-3 Plant Location and General Site Layout

2.3.1.1 Topography

The terrain in the area is comprised of parallel ridges and valleys trending northwest to southeast, with bare rock exposures and barrens. Average elevation of the properties varies between 500 m and 700 m above sea level. (LIM 2011)

2.3.1.2 Climate

The Schefferville area and vicinity have a sub-arctic continental taiga climate with very severe winters. Daily average temperatures exceed 0°C for only five months a year. Daily mean temperatures for Schefferville average -24.1°C and -22.6°C in January and February respectively. Mean daily average temperatures in July and August are 12.4°C and 11.2°C, respectively. Snowfall in November, December and January generally exceeds 50 cm per month and the wettest summer month is July with an average rainfall of 106.8 mm (LIM 2011).

2.3.1.3 Terrestrial

The proposed project area is located in the Schefferville region, situated at the southern edge of the forest tundra (Hustich 1949; Hare 1950; Waterway *et al.* 1984). The area has been subject to surface disturbance associated with historical iron mining activities. Where not disturbed, the Project area contains varied land classes from exposed tundra/exposed bedrock with lichen and very scattered trees and shrubs to low wetland areas (including bogs). Intermediate land classes consist of varied forest types with spruce-moss and spruce-lichen predominating although merchantable timber was not noted. Observed canopy closure for all forest sites ranged from 0 to 80 percent, with most in the range of 30 to 60 percent (Labrador Iron Mines 2011).

2.3.1.4 Rare Plants

Rare plants are categorized as those species listed in Schedule 1 of the federal *Species at Risk Act* (SARA) and designated endangered or threatened under the Newfoundland and Labrador *Endangered Species Act* (NLESA). The SARA Public Registry and the Annotated Checklist of the Vascular Plants of Newfoundland and Labrador (Meades 2010) were reviewed for information on the potential presence of rare plants within or in proximity to the Houston Project area. No listed plant species, protected federally under Schedule 1 of SARA or provincially pursuant to the NLESA, have been identified or are suspected to occur in the Houston Project area (Labrador Iron Mines 2011).

2.3.1.5 Aquatic

There are no water bodies within the proposed footprint of the Beneficiation Plant. The Gilling River and an unnamed tributary (Tributary 1) will be crossed by the process water and reject water pipelines, however the crossings will be along the Houston Haul Road which was previously assessed and approved as part of the Houston 1 and 2 Deposits Mining Project. The only other water body within the project footprint is Redmond Pit.

Tributary 1

Tributary 1 is a small, permanent system that also flows into Astray Lake in a general NW to SE direction between Mike Lake Tributary and the Gilling River. Mean wetted width was 1.5 m, wetted depth was 0.25 m with a mean bankfull width of 3.1 m and mean bankfull depth of 0.66 m. Substrate consisted of approximately 40% boulders, 40% cobbles, 10% gravels and 10% silt/detritus. The riparian zone consists mainly of low shrubs with grasses. Conifers varied in distances from the watercourse edge from 2 to 30 metres depending on the area. Water Quality on July 5, 2009 was the following: water temperature = 12.96°C; conductivity = 187 µS/cm; DO = 10.03 mg/l; pH = 7.81.

Tributary 1 is a coldwater system that provides habitat for brook trout. One dead juvenile brook trout was recovered from the shore of tributary 1 adjacent to a 3 m high water fall directly upstream of the field sampling site (AECOM 2011).

Gilling River

The Gilling River is a larger system that originates from several lakes west of Schefferville and generally flows in a NW to a SE direction. The proposed corridor crossing is situated between Gilling Lake to the north and Astray Lake to the south. Mean wetted depth was 0.38 m with a mean bankfull width of 28 m and mean bankfull depth of 1.5 m. Substrate consisted of approximately 47% boulders, 47% cobbles, 4% gravels and 2% silt. The riparian zone consisted typically of willow shrubs and moss with a predominance of large conifers approximately 4 metres back from the watercourse edge. Water Quality on July 4, 2009 was the following: water temperature = 14.52°C; air temperature was approximately 8°C (Environment Canada); conductivity = 85 µS/cm; DO = 105 mg/l; pH = 7.76. Water Quality on September 16, 2009 was the following: water temperature = 5.43°C; conductivity = 46 µS/cm; DO = 12.82 mg/l; pH = 7.95.

The Gilling River is a coldwater system providing habitat for species such as brook trout. Brook trout were angled by a first nation assistant during the field investigation (AECOM 2011).

Redmond Pit

As previously noted, the DFO have determined that Redmond Pit is not fish habitat (DFO 2010).

2.3.1.6 Wildlife

Various field surveys have been undertaken to identify the presence of wildlife species in the vicinity of the Houston Project area. These include wildlife and vegetation surveys conducted on the Houston Property in August 2009 (Stassinu Stantec 2010), two caribou surveys conducted in May 2009 (D'Astous and Trimper 2009) and May 2010 (D'Astous and Trimper 2010), and additional surveys conducted by AECOM during the summer 2011.

Caribou surveys conducted in May 2009 and May 2010 showed no use of the area by caribou at this time. During the caribou surveys, incidental observations of moose (*Alces alces)*, black

bear (*Ursus americanus*), wolf (*Canis lupus*), river otter (*Lutra candensis*), lynx (*Lynx canadensis*), porcupine (*Erethizon dorsatum*), snowshoe hare (*Lepus americanus*), red squirrel (*Tamiasciurus hudsonicus*), Spruce Grouse (*Falcipennis canadensis*), Willow Ptarmigan (*Lagopus lagopus*), Golden Eagle (*Aquila chrysaetos*), Osprey (*Pandion haliaetus*), Bald Eagle (*Haliaeetus leucocephalus*) and American Crow (*Corvus brachyrhynchos*) were recorded (D'Astous and Trimper 2009; 2010). There was no marten (*Martes americana*) sign observed during the surveys in the Houston Project area, (Labrador Iron Mines 2011).

Migratory Birds

The results of a breeding bird survey conducted at the Houston property and along the road corridor in 2009 are presented in Table 2.1. Of the 20 species observed at the Houston property, White-crowned sparrow was the most frequently recorded species, while Dark-eyed junco was recorded at most stations. There were 17 species observed along the road corridor, of which Swainson's thrush was the most common species and was observed at all stations (AECOM 2009).

Table 2.1 Observed Bird Species at the Houston Property and Houston Road Crossing Corridor Survey Locations 2009 (AECOM 2009)

Scientific Name	Common Name	Houston Total	Road Crossing Total
Aythya affinis	Lesser Scaup	5 / H	
Bucephala clangula	Common Goldeneye	1 / X	
Melanitta perspicillata	Surf Scoter		8 / FY
Actitis macularia	Spotted Sandpiper	2 / P	
Larus argentatus	Herring Gull	1 / X	
Picoides tridactylus	Three-toed Woodpecker		1 / S
Colaptes auratus	Northern Flicker		1 / S
Empidonax alnorum	Alder Flycatcher	1 / S	
Perisoreus canadensis	Gray Jay	2 / S	1 / S
Poecile hudsonicus	Boreal Chickadee	4 / S	
Regulus calendula	Ruby-cheeked Thrush		1 / S
Catharus ustulatus	Swainson's Thrush	3 / S	18 / S
Catharus guttatus	Hermit Thrush	1 / S	4 / S
Turdus migratorius	American Robin	15 / P	7 / S
Dendroica petechia	Yellow Warbler	1 / S	
Dendroica coronate	Yellow-rumped Warbler	2 / CF	4 / A
Dendroica striata	Blackpoll Warbler	3 / S	2 / S
Seiurus noveboracensis	Northern Waterthrush		2 / S
Zonotrichia leucophrys	White-crowned Sparrow	27 / CF	9 / A
Zonotrichia albicollis	White-throated Sparrow	1 / S	13 / S
Junco hyemalis	Dark-eyed Junco	13 / S	8 / S
Passerella iliaca	Fox Sparrow	12 / S	5 / S
Pinicola enucleator	Pine Grosbeak	3 / S	
Loxia leucoptera	White-winged Crossbill	1 / S	1 / S
Carduelis flammea	Common Redpoll	5 / S	4 / S
Total Number of Individuals Observed		103	89
Total Number of Species Observed		20	17

2.3.1.7 Species at Risk

No terrestrial wildlife species at risk were identified within the Project area during the field surveys conducted for the Houston Project. There were no rare or endangered species observed during the 2009 breeding bird survey (AECOM 2009), however, two bird species of special conservation concern were observed in the region during the field studies for the James Redmond EIS: Rusty Blackbird, listed as a COSEWIC species of Special Concern and as vulnerable on Schedule C of the *Newfoundland and Labrador Endangered Species Act*; and the Grey-cheeked Thrush which is listed as vulnerable on Schedule C of the *Newfoundland and Labrador Endangered Species Act*.

2.3.1.8 Historic Resources

No archaeological or cultural sites are known or registered in the Houston Project area. A Stage 1 Historic Resources Overview Assessment (Stage 1 HROA) was completed in June 2008 prior to commencement of proposed exploration activities. Based on a site visit, no sites or materials of historic resources significance, or any areas of potential, were observed. Therefore, no mitigation measures were required or recommended in the assessment report prepared for LIM and the Provincial Archaeology Office (PAO) of the Newfoundland and Labrador Department of Tourism, Culture and Recreation (Jacques Whitford Limited 2009b).

In 2011, an archaeological assessment was conducted of the proposed Houston road by Stantec (formerly Jacques Whitford) on behalf of LIM. Based on the review of available information, including published and unpublished literature, archaeological reports, the Archaeological Site Record Inventory at the PAO and aerial photography, it was determined that given the nature and extent of ground disturbances that have occurred in the area from past mining activities as well as the prevalent topographic and hydrographic features, the majority of locations researched have Low historic resources potential (Labrador Iron Mines 2011).

2.4 Construction and Development

The Project will benefit from the presence of existing approved infrastructure as well as the planned Houston Haul Road. Disturbance to the natural environment will be kept to a minimum and limited to the footprint of the Project infrastructure only.

The primary construction activities for the development of the beneficiation plant will include:

- Site preparation (clearing of vegetation, grading and excavation);
- Transporting equipment, construction materials and related supplies to site;
- Construction and erection of the plant;
- Construction / installation of the maintenance shop, and other buildings (e.g., office and washroom); and
- Environmental monitoring.

During construction, the requirement for temporary facilities (e.g., office, lunchroom, septic, potable water, power supply) will be satisfied through the use of existing infrastructure at the James Mine, and / or the Houston mine site. Once the beneficiation plant and all associated

infrastructure have been constructed, all portable infrastructure from the Houston Project will be transported to the beneficiation plant location and utilized accordingly.

The camp and kitchen located at James Mine (Bean Lake Camp) will be used for both the construction and operation phases of the project.

The total footprint of the plant and associated infrastructure including roads and stockpiles is approximately 300 m x 250 m (75,000 m^2). An estimated 8.5 ha of vegetation clearing and 25,000 m^3 of earthworks will be required for the Project in its entirety.

An overview of the major construction activities is provided below.

2.4.1 **Roads**

The requirement for new roads is limited to plant-site roads only. Approximately 750 m of new site access/haul roads, ranging in width from 7 m to 30 m will be constructed at the plant site and will connect into the Houston Haul Road (Figure 2-2).

2.4.2 **Beneficiation Plant**

The beneficiation plant will occupy a footprint of approximately 20,660 m^2 and will consist primarily of crushing, screening, washing equipment, magnetic separators and conveyors.

2.4.3 **Truck Shop, Warehouse and Workshop**

The truck shop, warehouse and workshop will be housed within a Megadome measuring approximately 137 m x 24 m x 13 m. This will allow sufficient space for the maintenance and storage of heavy equipment (i.e., haul trucks) and spare parts as well as a mechanical and electrical workshop.

The floor in the truck shop portion will be concrete and poured prior to the erection of the structure while the remainder of the flooring will be precast concrete slabs for lining only.

2.4.4 **Administration Offices and Lunchroom**

The administration offices and lunch room will be modular trailer units. There will be a total of eight (8) units, each occupying a footprint of approximately 36 m^2.

2.4.5 **Change House/Washrooms**

The change house/washrooms (male and female) will be a modular unit occupying a footprint of approximately 30 m^2.

2.4.6 **Fuel Storage and Dispensing Facility**

The fuel storage system will consist of two bladders with a combined capacity of 227 m^3. The bladders will be equipped with liners for secondary containment, an oil water separator, fill pump and associated hoses and valves. The fuel will be distributed via two separate fuel dispensing systems.

The bladders will be used to supply fuel for the plant generators and mobile equipment and will be filled by a certified contractor, via mobile supply vehicles.

There will be containment berms located around the bladders and the oil water separator. Following construction of the berms, the liners will be installed and then the bladders will be placed into position.

2.4.7 **Oil Storage**

The oil storage consists of a 6 m^3 container complete with drum storage, flammable cabinets and secondary containment of sufficient capacity.

It`s anticipated that there will be approximately four 200 L drums of oil on-site at any given time.

2.4.8 **Generators**

The expected peak demand load from the beneficiation process is currently estimated at 3,517.70 kW and total connected load is 6,068.55 kW.

Electrical power will be generated by up to four (three on duty, one on standby) mobile diesel generators each running at 1825 kW. The generators will be self-contained units in weatherproof enclosures placed on concrete pads, with all the proper protection, controls and synchronizations in place.

A standby/emergency generator will supply power to emergency systems including the fire suppression system and other necessary items (e.g., lighting, pumps, air compressors).

2.4.9 **Sewage Treatment System**

Sewage will be treated/processed using a rotating biological contractor (RBC) Biodisk.

2.4.10 **Water Supply**

Potable Water

Potable water will be sourced from a domestic well(s) to be developed on site. The specific location has not yet been determined. A water treatment system capable of providing 16,250 L/day will be constructed.

Fire Protection Water

Fire protection water will be supplied to the wet plant via a 100 m^3 tank and distributed, as necessary, via adequate pumps and piping.

2.4.11 **Stockpiles**

There will be five stockpiles located at the plant location: four product stockpiles: lump, sinter, fines, ultra fines, as well as a plant feed stockpile (Figure 2-2).

2.4.12 **Pipelines**

Two pipelines are required for the wet plant as detailed below. Both pipelines will be above-ground and placed along the shoulder of the Houston Haul Road (Figure 2-3).

To support the pipelines, a 2 m wide by 0.75 m high support berm has been proposed for the approximate 9-10 km distance from the plant to Redmond Pit, with concrete blocks placed every 200 m for additional support.

Reject Water Pipeline

A 40 cm high density polyethylene (HDPE) pipe will carry the plant reject water to the discharge location at Redmond Pit. At the Gilling River bridge, the pipe will be encapsulated in an outer protective rigid pipeline for addition protection against accidental rupture or breakage.

Cleanout areas of the reject water pipeline will be established at low points along the pipeline. These areas will be used to drain the pipeline once per year for winter shut-down and in the emergency case that the pipeline becomes blocked and cannot be flushed. The standard procedure to shut-down the rejects pipeline will be to flush the solids to Redmond Pit. The clean out areas will be placed at selected low points along the pipeline where the pipeline can be emptied and discharged into natural or engineered depressions lined with geo fabric to retain solids. These locations will be selected areas away from rivers, streams or lakes. The lowest point in the pipeline is at the Gilling River. A valve and hose will be located at the lowest point such that the pipeline can be emptied into a vacuum truck and the material transported to Redmond pit.

To minimize the volume handled at this point, clean out areas, as discussed above, will be established at higher elevations.

An emergency rejects sump will be located at the plant site in the event that the rejects water line would need to be drained in the case of an unexpected plant shut down.

Process Water Pipeline

A 50 cm HDPE pipe, paralleling the rejects pipeline, will transport process water to the plant from Redmond Pit.

2.5 **Operations**

The Beneficiation plant design is outdoors and due to the harsh winter climates in the Schefferville area is scheduled to operate for six months per year (May through October). An option to extend the plant's operation for a longer period of time may be considered in the future, which would involve enclosing the plant within a building. Such an option would allow the wet plant to operate longer per year, leading to higher volume of processed product per year and, as a result, a reduction in mine life.

2.5.1 Process Description

The beneficiation process is outlined in Figure 2-4. The plant is designed for a nominal operating rate of 600 tph to a maximum of 720 tph and an overall ore recovery estimated to be 75%. The following are the major components of the plant, which are described below:

- Plant Feed Area (Primary Tip and Crushing);
- Scrubbing and Secondary Crushing;
- WHIMS Thickening and Filtration;
- Rejects Pumping;
- Plant Water; and
- Services.

2.5.1.1 Plant Feed (Primary Tip and Crushing)

The plant feed area includes the ramp for the haul truck, static grizzly, inload bin, grizzly feeder, primary (jaw) crusher, sacrificial conveyor and plant feed conveyor (Figure 2-4).

Run-of-mine ore will be dumped directly by trucks into the 250 tonne in-load bin fitted with static grizzly set at 300 mm bar spacing for feed top size control. A vibrating grizzly feeder set at 75 mm will draw ore from the in-load bin. The grizzly feeder oversize will be fed to the jaw crusher set at 75 mm to produce a 125 mm lump size. The product of the primary crushing station will be transported by a series of conveyors to the primary screen. A metal detector will be installed on the plant feed conveyor to prevent tramp iron from damaging subsequent equipment, particularly the secondary crusher. The under-crusher conveyor will be fitted with a programmable hammer sampler for automatic sampling.

This area includes the primary screen, scrubber, secondary crusher, secondary screen and several conveyors. The plant has been designed as a single line process, thus eliminating several machines, conveyors and lessening the footprint of the plant.

Primary screening will be carried out by a horizontal vibrating screen with aperture size of 32 mm which will be operated in closed circuit with the secondary crushing circuit. The screen oversize with particle sizes +26 mm will be conveyed to a 40 t secondary surge bin while the undersize -32 mm particle size, will gravitate to the ore scrubber. A pan feeder will reclaim material from the surge bin feeding it to the cone crusher which will be fitted with a coarse profile cavity set at 45 mm producing 70 mm lump size material. The secondary crusher product will be transported back to primary screening.

A short length belt conveyor will be used to aid the feeding of material to the ore scrubber to minimize clogging issues in the feed chute. Ore scrubbing will be accomplished for 30 sec at 65% solid concentration to disintegrate agglomerated fines from rocks. Process water will be added in the scrubber feed at controlled flows relative to the plant feed rate to maintain the operating pulp density.

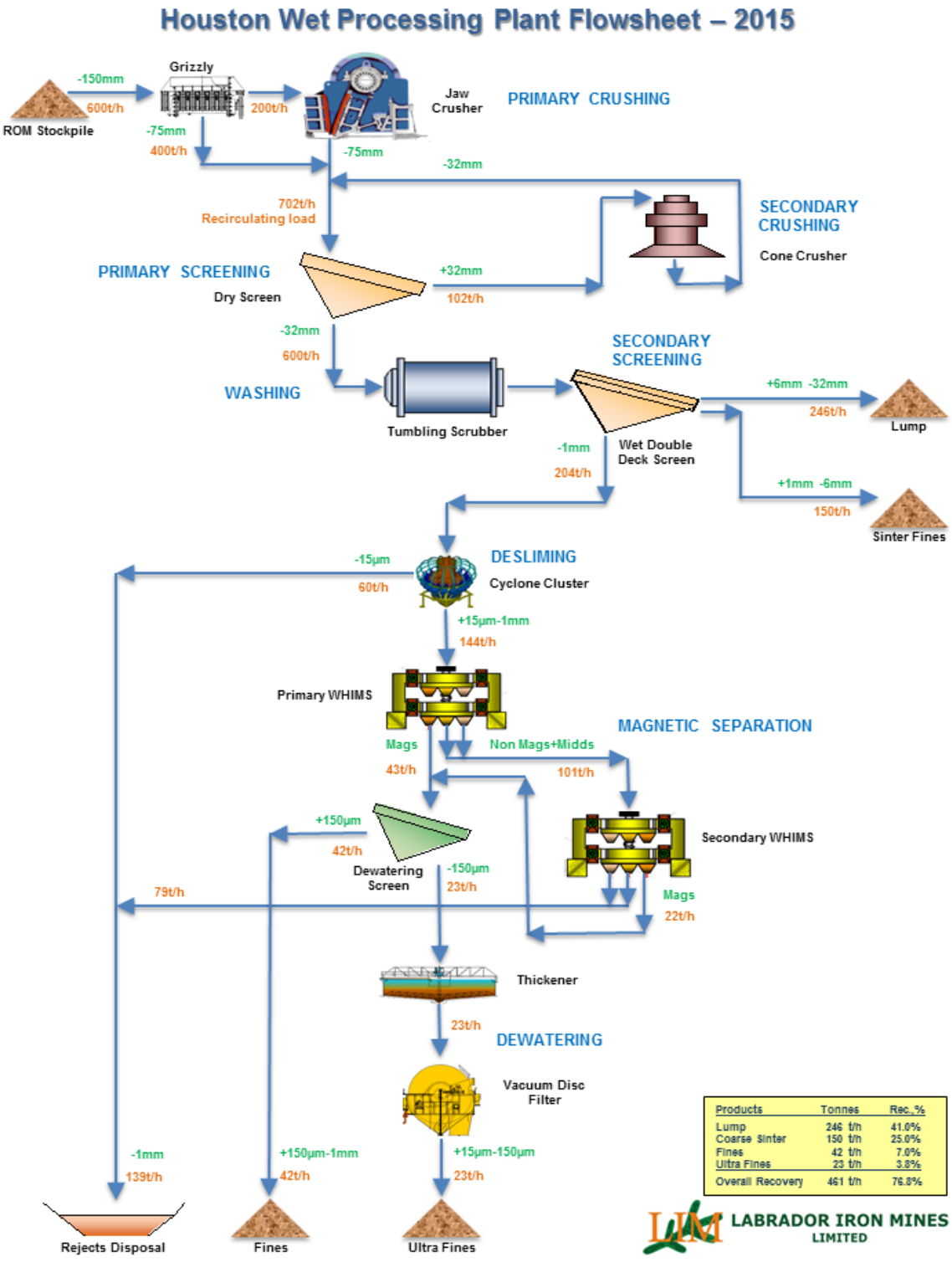


Figure 2-4 Houston Wet Processing Plant Flow Diagram

2.5.1.2 Screening, Scrubbing and Secondary Crushing

The discharge of the ore scrubber will gravity flow to a double deck secondary multi-sloped vibrating screen equipped with water sprays. The top and bottom deck of the secondary screen will be fitted with 6 mm and 1 mm opening panels, respectively. Materials retained on the top deck (-32 mm, +6 mm) and on the bottom deck (-6 mm, +1 mm) will be transported to the lump ore and sinter fines stockpile, respectively, via transfer conveyors and stackers. Materials passing the bottom deck (-1 mm) will be pumped to the cyclone cluster.

Hammer samplers will be installed on the transfer conveyors of lump ore and sinter fines for product quality control and accounting.

2.5.1.3 WHIMS, Thickening and Filtration

This area consists of the cyclone cluster, primary and secondary WHIMS, dewatering screen, thickener, disc filter and a conveyor.

Seven out of the nine 10" hydrocyclones will be operated at any one time to de-slime the secondary screen undersize removing particles finer than 15 microns. The overflow of the cyclone, where majority of the fine particles will be reporting is then pumped to the rejects tank while the underflow will be fed to the primary Wet High Intensity Magnetic Separator (WHIMS). The non-magnetic materials from the primary WHIMS will be reprocessed in the secondary WHIMS to maximize recovery. The combined magnetic products of primary and secondary WHIMS will be pumped to the 5-deck Derrick Screen Stacksizer fitted with 300 micron aperture panels. The Derrick screen oversize (-1 mm, +0.3 mm) at 12% moisture will be conveyed to the fines stockpile while the undersize (-0.3 mm, +0.015 mm) will be pumped to the thickener. Thickener underflow at 75% solid concentration will be pumped to a vacuum disk filter as final dewatering step. The filter cake, with moisture content of 15%, will be conveyed to the ultra-fines stockpile.

At regular frequency, the cloth of the disk filter will be washed to reduce blinding, thus restoring filtration efficiency. The cloth wash water will be pumped back to the thickener feed well for pulp dilution.

2.5.1.4 Rejects Pumping

Three process streams will handle the plant rejects which include the cyclone cluster overflow, secondary WHIMS non-magnetic materials and thickener overflow. The plant rejects will be pumped to Redmond pit by three pumps operating in series. Each pump will be operated with full flow flush seal gland water that will be supplied by a dedicated positive displacement pump.

2.5.1.5 Plant Water

Redmond pit water will be the sole source of water for the process plant as well as for emergency supply. Raw water from the pit will be pumped by diesel-driven pumps to the 140 m^3 process water and 10 m^3 gland water tanks. Water from the vacuum filter drain will be

recycled back to the plant though the process water tank while the filtrate will be pumped to the thickener for dilution.

2.5.1.6 Services

High pressure compressed air for servicing instruments and operating pneumatic tools will be supplied by an air compressor installed with an air dryer and air receiver.

2.6 Rehabilitation and Closure

A Rehabilitation and Closure Plan for the Houston Beneficiation Plant will be prepared and submitted for approval to the Newfoundland and Labrador Department of Natural Resources, as required under the *Newfoundland and Labrador Mining Act*, Chapter M-15.1. In accordance with the Act, the Plan will detail the rehabilitation processes to be implemented at each stage of the project up to and including closure.

The plan will be considered a living document that will be reviewed and updated as necessary throughout the project life. Each year, Operation work plans, outlining schedule and planned rehabilitation activities for the Project, will be submitted to the Department of Natural Resources in accordance with the provincial *Mining Act*.

LIM intends to employ and promote strategies and methods that will minimize adverse effects on the environment throughout the construction and operational phases of the Project which will aid in the overall rehabilitation process. Such mitigating strategies include:

- Terrain, soil and vegetation disturbances will be limited to that which is absolutely necessary to complete the work within the defined project boundaries;
- Wherever possible, organic soils, glacial till, and excavated rock will be stockpiled separately and protected for later rehabilitation work;
- Surface disturbances will be stabilized to limit erosion and promote natural re-vegetation;
- Natural re-vegetation of surface disturbances will be encouraged; and
- LIM will incorporate environmental measures in the contract documents. As such, contract documents will reflect the conditions specified for the construction and operation of the project. Contractors will thus be contractually bound to comply with the environmental protection standards set by LIM and in effect, ensure compliance with the applicable federal and provincial regulatory requirements.

2.6.1 Closure

Approximately one year prior to the cessation of operations the rehabilitation and closure plan will be reviewed and updated in consultation with the Mines Branch, Department of Natural Resources. This final review will define the detailed closure rehabilitation design and procedures to fully reclaim the Houston Beneficiation Plant area.

Closure rehabilitation within the LIM development footprint will generally include the following activities:

- Clean-up, removal and proper disposal of potentially hazardous materials;
- Dismantling and off-site removal of buildings and structures (e.g., beneficiation buildings, conveyors, crushing plant, laydown areas, fuel storage areas);
- Removal of process water, reject water, and sewage water pipelines;
- Replacing overburden and re-vegetation of disturbed area; and
- Re-establishment of site drainage patterns, as near practical, to natural, pre-development conditions.

2.6.2 Post Closure Monitoring

As required, a post-closure monitoring program will be designed and implemented in consultation with appropriate regulatory agencies. Once physical and chemical stability of the site has been achieved, the land will be relinquished to the Crown.

2.7 Potential Sources of Pollution During Construction and Operation

The following are potential sources of pollution identified during the construction, development and operation of the beneficiation plant.

2.7.1 Surface Drainage

There will be a sump to collect spillage from the beneficiation plant process, which will be discharged via the rejects water pipeline into Redmond Pit. A perimeter berm will be constructed to direct drainage to the sump.

2.7.2 Rejects Water

Effluent originating from the beneficiation area will contain rock fines (20%) but will have no chemical constituents. Thus, washwater from the proposed wet plant discharged into Redmond pit will not impact the surrounding environment other than to build the level of solids in the pit for which it has ample capacity for the predicted plant life of 12 years.

2.7.3 Domestic Sewage

During construction, prefabricated skid mounted portable trailer units with a holding tank will be utilized. The tank will be pumped out by a certified contactor and disposed of according to applicable regulations.

During operations, domestic sewage will be treated with the Biodisk system to ensure that it is acceptable before discharging back into the environment. The concentrated waste will be collected by a certified contractor and disposed of in accordance with applicable regulations.

2.7.4 **Solid Waste**

Domestic waste will be generated in small quantities. Proper on-site storage will be provided and the waste will be disposed of off-site in accordance with applicable regulations. Other waste materials including non-hazardous industrial waste (e.g., tires, containers, wood pallets) and technology-related wastes (e.g., batteries) will be identified in LIM's Waste Management Plan and reused or recycled where possible and practical.

2.7.5 **Hazardous Waste**

It is not expected that the beneficiation plant will generate any hazardous waste. However, should any be generated, they will be stored in accordance with the appropriate regulations and moved off-site by a licensed contractor to an approved facility in accordance with applicable regulations.

2.7.6 **Petroleum, Oil and Lubricants**

Construction and operating activity poses a risk for the release of petroleum, oil and lubricants from operating equipment and machinery. All contractor and company equipment will be inspected on a regular basis to ensure compliance. Furthermore, storage tanks will be properly contained and emergency spill kits will be on-hand and available. Used oils and lubricants will be stored in proper bins and disposed of by a licensed waste oil handler.

In the event of a hydrocarbon spill/leak or other hazardous materials, the Schefferville Area Iron Ore Project Emergency Response Plan will be implemented. Response and clean-up activities will be conducted in accordance with applicable legislation and regulations.

2.7.7 **Noise**

As the plant is remote from any dwellings, noise is not anticipated to affect local residents. Noise will also be decreased by the topography as the site is situated within a forested area. Furthermore, use of industry standard equipment compliant with all applicable noise regulations and effective maintenance systems including regular inspections of all noise suppression equipment will be conducted.

2.7.8 **Air Emissions**

Emissions are anticipated to be minimal and limited to combustion and dust emissions resulting from vehicle and heavy equipment operation. There may also be fugitive dust arising from the excavation and transportation of the material and from plant operations (e.g., crushing).

Dust suppression methods, including water spray and water trucks will be used to mitigate any dust generated from plant operations or from the transportation of the material along gravel roads.

All vehicles and heavy equipment will have all required emissions and noise control equipment in place and maintained in good working order. An anti-idling policy will be implemented to limit emissions of vehicles/equipment while not in use.

2.8 Potential Resources Conflicts During Construction and Operations

To reduce the potential for resource conflicts, all activities associated with the construction and operation of the proposed project will be conducted in accordance with the approved Houston Deposits 1 and 2 Environmental Protection Plan.

2.8.1 Wildlife

Minimal clearing and grubbing is required, however, to avoid adverse effects on migratory birds and bird species of special conservation concern, all clearing activities will be conducted in accordance with the approved LIM Avifauna Management Plan. LIM's no hunting, fishing, or trapping policy will be implemented throughout the construction and operation of the Project, therefore no wildlife conflicts are anticipated. Therefore, there will be no changes to wildlife, including migratory birds, as a result of carrying out the project.

2.8.2 Water Resources

No water resource conflicts are anticipated, as there are no water withdrawals, stream crossings or other interactions with waterbodies in the Project area and no discharges to the aquatic environment.

2.8.3 Land Use

The proposed undertaking will not interfere with land use activities in the area. There are no seasonal or temporary residences located within a 2.5 km radius of the proposed Plant site (Figure 2-5). The reserves of Matimekush-Lac John and the Naskapi Nation of Kawawachikamach, are located in Quebec and are approximately 20 km and 25 km northwest of the Project area, respectively. There are no conflicts anticipated with traditional land use in the area by community residents.

There is an all-terrain vehicle trail and a snowmobile trail in the general vicinity (Figure 2-3), which is used by local residents for cross-country travel. The Project is not anticipated to have any adverse effect on these trails or on their use.

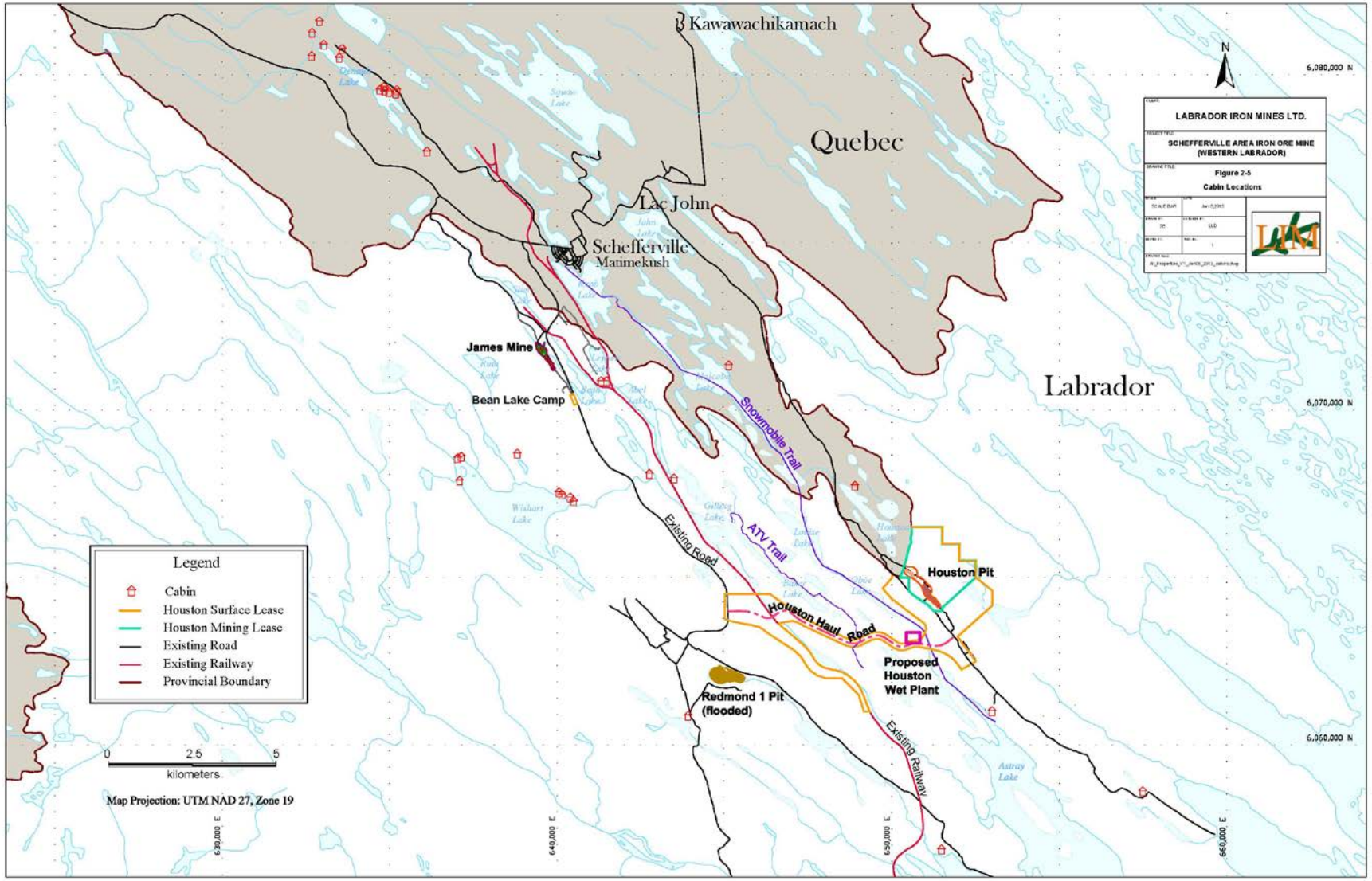


Figure 2-5 Cabin Locations in the vicinity of the Proposed Houston Beneficiation Plant

In the fall of 2012, LIM commissioned a study to collect information on current land use activities in the region by individuals from the communities of Matimekush-Lac John and Kawawachikamach. Land use activities identified include hunting, gathering, fishing, trapping, recreational and cultural / spiritual activities. The information collected will be used by LIM to plan construction and operation activities such that interactions between current and future mining and land users will be minimized. Therefore, there will be no change to land use as a result of carrying out the Project.

2.8.4 **Vegetation**

Clearing or grubbing will be kept to a minimum. Trees cut during clearing will be limbed, cut in 2 m lengths, stacked and made available to local residents.

2.8.5 **Fish and Fish Habitat**

The two pipelines will be built along the Houston Haul Road and will not interact with Tributary 1 or Gilling River. There are no waterbodies within 100 m of the proposed site of the beneficiation plant and process water will not be withdrawn from, or rejects water discharged to, any body of water other than Redmond Pit, which is not fish habitat. Hence, there will be no interaction with fish, fish habitat or with aquatic species as defined in subsection 2(1) of the *Species at Risk Act*. Therefore, there will be no changes to fish or fish habitat or to aquatic species as a result of carrying out the Project.

2.8.5.1 Accidents and Malfunctions

The potential risk to the environment of an accident or malfunction resulting in a spill into a water course was considered. The potential risk to fish and fish habitat of an accidental rupture of the rejects pipeline resulting from a haul truck collision was assessed by considering the likelihood of occurrence and the severity of effect. That is, a low likelihood of occurrence combined with a low severity of effect would result in a low risk to the environment, while a high probability of occurrence and a high severity of effect would result in a high risk to the environment. To reduce the potential for a rupture or breakage resulting from a haul truck collision the rejects pipeline will be encapsulated in an outer protective rigid pipeline at stream crossings. Additional mitigation measures will include posted speed limits, regular vehicle inspection and maintenance and driver education. It is anticipated that these mitigations will result in a low likelihood for a haul truck collision with the rejects pipeline to occur at a water crossing.

In the unlikely event that a collision did result in the rupture of the rejects pipeline and a spill of rejects water did occur, the severity of the event would depend on the volume and characteristics of the of rejects water spilled. In a worst case scenario, a maximum of 315,000 L and 211,000 L of rejects water would be spilled into Gilling River or Tributary 1, respectively. As previously noted the water would consist of approximately 20% rock fines with no chemical pollutants. The effect on the receiving environment would be limited to the physical introduction of a large volume of water containing a low concentration of rock fines. This could potentially have an adverse effect on spawning habitat, however, the habitat at both crossing sites is

predominantly boulder / cobble (Section 2.3.1.5), i.e. not spawning habitat. The potential effects on fish and fish habitat are therefore anticipated to be low to moderate in severity.

Therefore, given the low likelihood of occurrence and the low to moderate severity of effect, the risk to fish and fish habitat resulting from an accidental rupture of the rejects pipeline is considered to be low.

2.8.6 **Sensitive Areas**

There are no designated sensitive areas or special areas in the Project Area, including designated wildlife areas, stewardship zones, parks and natural areas.

2.8.7 **Zoning**

There is no zoning that applies to the Project Area.

2.8.8 **Socio-economic**

The closest community to the Project is Schefferville, Quebec which is located 20 km north of the Project, less than 2 km from the border with Labrador. It was established by the Iron Ore Company of Canada in 1954 to support mining operations in the area.

Iron ore mining at Schefferville ceased in 1982 and many of the 4,000 non-Aboriginal occupants left at that time, leaving a primarily Aboriginal community comprised of people who had settled there in the preceding 30 years. Some houses and public facilities have been demolished since this time, but some new homes have been built. The median age is 39.2 years, with approximately 60 families residing within the community.

LIM's James Mine went into full production in 2011, marking the first mining and production of iron ore from this historic mining area in over 30 years. This development has brought many positive and direct benefits and the continued development of the Houston 1 and 2 Deposits and the construction of the beneficiation plant will build on this work. Direct and indirect economic benefits for various communities and stakeholders are expected from the proposed development. The ongoing economic impact of such employment and contracting business will be very positive and lead to the development of other support and service sector jobs, education and training, and consistent and planned development and growth.

This Project will add an additional economic stimulus to the Schefferville area as well as to the provinces of Newfoundland and Labrador and Quebec.

The EIS (LIM 2009) and the Houston 1 and 2 Project Registration (LIM 2012) both concluded that there are no significant adverse effects on communities or human health anticipated to occur as a result of either Project. Given that the proposed Beneficiation Plant will be within the same region and is much smaller than either Project, it is reasonable to assume that these conclusions will also apply. Therefore, no changes to communities or human health will occur as a result of carrying out the Project.

2.8.8.1 Consultations

Since early exploration activities in 2005, LIM has been in continual contact with the communities located near the development area and with the Innu Nation of Labrador and other Aboriginal/First Nation communities having a stated interest or historic connection to the area. For example, LIM has initiated communications with occupants of cabins identified within the region and will continue communications with them as the Project develops.

As well, LIM maintains contact with the civic administration of the towns of Labrador City, Wabush, Happy Valley-Goose Bay and the town of Schefferville. In these communities stakeholder consultation activities have included frequent meetings with Band Councils, Mayors and Councils, local businesses, local political representatives, local interest groups, provincial and federal regulators, educators and a wide variety of consultants that are involved with stakeholders. The consultations conducted and reported in the Schefferville Area Mining Project EIS are provided in Appendix 1.

LIM has opened community relations offices at the existing Schefferville Area Iron Ore Mine – Silver Yards, and in Labrador City. LIM is dedicated to providing early and clear information to the community and working with all communities towards the common goal of positive, respectful and sustainable development in the area.

Project design and implementation will include consideration of information resulting from ongoing consultation with the communities, traditional environmental knowledge, environmental and engineering considerations and best management practices. These consultations and agreements will ensure a close working relationship with the local communities with respect to their involvement in the provision of labour, goods and services to the Project.

LIM has engaged in substantial community and public consultation activities including aboriginal consultation in both Labrador and Quebec (in the Schefferville area) and surrounding areas since 2008 and will continue to do so during the construction and operation of the plant.

LIM also conducted extensive consultations on the Houston 1 and 2 Deposits Mining Project. These are summarized in the Project Registration (LIM 2011) which is presented in Appendix 2.

2.8.8.2 Aboriginal Consultation

Consultation is a central objective of the environmental assessment process. Aboriginal consultation has a similar objective as public consultation in which to identify and address issues and concerns related to the Project.

The Quebec-Labrador Peninsula area probably has one of the most complicated patterns of aboriginal settlement in eastern Canada with six or possibly seven Aboriginal or First Nation peoples claiming traditional and native rights to all or part of the area underlain by LIM's Iron

Ore Project. Several of the communities have conflicting territorial or land claims. This regional complication of Aboriginal/First Nation issues has recently prompted the Government of Canada to establish an Overlapping Commission on November 2010. This Commission will provide a forum for addressing the issues of jurisdictional overlap for the territories and the sharing of economic development initiatives as a result of mining and hydro-electric development in the region.

The Aboriginal groups of the Quebec-Labrador Peninsula most directly affected by the Project are the Innu Nation of Labrador, the Naskapi Nation of Kawawachikamach, the Innu Nation of Matimekush-Lac John, the Innu Nation of Takuaikan Uashat Mak Mani-Utenam (ITUM) and NunatuKavut (formerly the Labrador Métis Nation) (Figure 2.6). These groups may have overlapping land claims issues or traditional claims covering western Labrador. The Naskapi Nation is the only group with a finalized comprehensive land claim agreement; the others are in various stages of negotiation with the federal and provincial governments. However, the land claims of Quebec Aboriginal groups in Labrador have not been accepted for negotiation by the Government of Newfoundland and Labrador.

LIM has pursued an extensive and proactive engagement with all of the aboriginal communities living close to the project location or having traditional claims to the surrounding territory and commenced such consultations respecting the Schefferville Area Iron Ore Mine (Western Labrador) Project with a meeting between LIM and Naskapi Nation in Kawawachikamach in May 2005. Between May 2005 and October 2012 many consultation meetings were held in Newfoundland and Labrador (Labrador City/Wabush, Happy Valley-Goose Bay and St. John's), Nova Scotia (Halifax), Quebec (Schefferville, Kawawachikamach, Uashat, Matimekush, Montreal and Quebec City) and Ontario (Ottawa and Toronto) with the leadership and negotiating teams representing the various communities. These consultations are discussed in the Environmental Impact Statement (LIM 2009) and are presented in Appendix 1)

These consultations have resulted in the signing of IBA agreements with the Innu Nation of Labrador (July 2008), the Naskapi Nation of Kawawachikamach (September 2010), Uashat mak Mani-Utinem First Nation (June 2011) and the Matimekush – Lac John First Nation (February 2012).

The respective agreements relate to the establishment of a positive ongoing relationship between LIM and the Aboriginal/First Nation relating to the development and operation of the Project and to the economic benefits that will accrue to the aboriginal communities. Specifically the agreements make provisions for employment, education and training, contract opportunities, social and financial benefits, environment and cultural protection measures.

The agreements include processes for the respective communities to directly participate and/or be actively consulted through:

- Implementation committee;
- Community collaboration committee;
- Training and education committee;
- Establishing employment and workplace conditions;

- Business and contracting opportunities;
- Environmental monitoring committee;
- Traditional knowledge collection;
- Heritage resource and cultural protection; and
- Economic benefits.

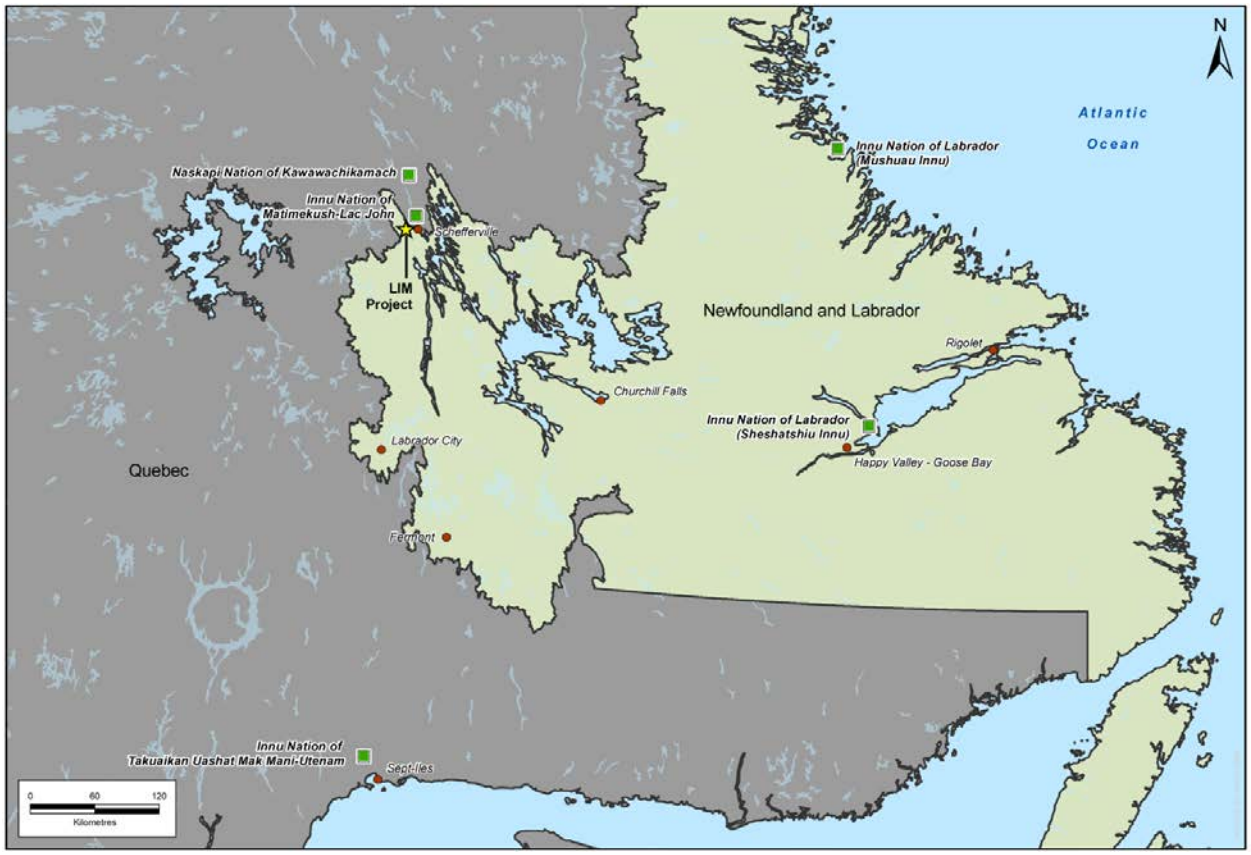


Figure 2.6 Aboriginal Communities

The Implementation Committee is made up of representatives from each of the Aboriginal communities and LIM senior management. The agenda of these quarterly meetings include: a Project Safety report, updates on operations, environmental performance, upcoming contracts, human resources, employment and training and upcoming activities and projects.

Consultations specific to the Houston Beneficiation Plant Project were initiated at the quarterly IBA Implementation Committee meeting held on October 22, 2012 in Schefferville. The following Aboriginal groups were represented:

- Innu Nation of Labrador;
- Naskapi Nation of Kawawachikamach; and
- Matimekush – Lac John First Nation.

There were no concerns expressed by either of the organizations present in regards to the proposed Project. Unfortunately, the Uashat mak Mani-Utinem First Nation (ITUM) were unable to attend. However, subsequent to the meeting, information on the Beneficiation Plant Project was provided to the ITUM and a request for a meeting issued (Letter to Ken Rock from J. Lanzon, November 22, 2012).

The proposed Project was also presented and discussed at the most recent Implementation Committee Meeting held January 22 – 23, 2013 at Sept-Iles (Uashat), Quebec. Attendees at the meeting represented the following Aboriginal groups:

- Innu Nation of Labrador
- Naskapi Nation of Kawawachikamach
- Matimekush – Lac John First Nation, and
- Uashat mak Mani-Utinem First Nation

The following issues were raised and discussed at the meeting:

- Is the scope of the Project within the original mine plan for the area
- Would historical pollution be made worse by the Project
- Is the Project within the scope of the IBAs
- What alternative locations were considered

A summary of the comments and discussion regarding the Houston Beneficiation Plant Project is provided in Appendix 3.

Consultations have also been conducted with the Nunatukavut Community Council through the provision of an information package and a request for comments (email dated January 8, 2013: J. Lanzon to T. Russell) and a telephone conversation between T. Russell, J. Lanzon and L. LeDrew (January 15, 2013). No comments or concerns have been received to date.

In addition to the Implementation Committee meetings, LIM provides information to the communities through the distribution of a Community Newsletter. This bilingual (English and French) publication also provides updates on operations, environmental performance, training, employment and contracting opportunities and community events (Appendix 4).

LIM has consulted with the four Aboriginal organizations on all phases of the Schefferville Area Mine Project as well as the Houston 1 and 2 Deposits Mining Project and has obtained concurrence on the permits required for construction and operation activities.

2.8.8.3 Other Consultations

Consultations have also been conducted with government agencies to inform them of the Houston Beneficiation Project. The following recent meetings and / or correspondence have been held:

- October 2, 2012 – Meeting held with Bas Cleary and Paul Rideout, Environmental Assessment Division, Newfoundland and Labrador Department of Environment and Conservation;
- October 3, 2012 – Telephone conversation with Mike Atkinson, Canadian Environmental Assessment Agency; and
- November – December 2012 – Telephone conversations with Joseph Vigder, Canadian Environmental Assessment Agency regarding information requirements for the Project Description.

2.8.8.4 Consultation Plan

The quarterly Implementation Committee Meetings will be the main forum for informing the Aboriginal Organizations and obtaining their input through the planning, construction, operation and de-commissioning phases of the Project.

A consultation process is also being developed with the Nunatukavut Community Council.

2.8.9 Federal Lands

There are no federal lands, including national parks or Canadian forces bases, proximate to the Project area and the Project is located wholly within the province of Newfoundland and Labrador.

The minimum distances from the project to: the Quebec border is approximately 2.0 km; to the nearest town, Schefferville, is 20 km; and distances to the nearest federal lands are presented in Table 2.2.

Table 2.2 Approximate Distances from the Houston Beneficiation Project to Federal Lands

Nearest Federal Lands	Approximate Distance from Houston Beneficiation Plant (km)
Newfoundland and Labrador	
Torngat Mountains National Park Reserve	450
5 Wing Goose Bay (Canadian Forces Base)	430
Innu Nation of Labrador (Sheshatshiu) (Aboriginal Community)	445
Quebec	
Naskapi Nation Kawawachikamach (Aboriginal Community)	25
Innu Nation Matimekush - Lac John (Aboriginal Community)	20
Innu Nation of Takuaikan Uashat Mak Mani-Utenam (Aboriginal Community)	500
Mingan Archipelago National Park Reserve	540
3 Wing Bagotville (Canadian Forces Base)	765

The potential effects on federal lands or on other provinces (Quebec) resulting from carrying out the project are limited to noise and fugitive dust.

The potential effects of noise generated by the Houston 1 and 2 Deposits Mining project were evaluated and the extent of any potential effects assessed (AECOM 2011). The study concluded that the subjective noise impact at various points of reception were:

- at a site 2.5 km north of Houston property (in Quebec) and at a site 5.8 km west of Houston property there would be negligible noise effect;
- at a site 600 m distance, (Ashtray Lake) noise levels would be approximately twice as loud as current ambient conditions; and
- at a distance of 173 m (Gilling Lake) noise levels greater than twice as loud as current ambient conditions would be experienced (AECOM 2011).

As noted the Quebec border is 2.0 km north of the project, therefore, negligible effects to that province would be anticipated.

Fugitive dust emissions from the Silver Yard processing facility were assessed in the James Mine EIS (LIM 2009). The assessment concluded that no significant adverse environmental effects due to project-related emissions are anticipated during operation of the plant (LIM 2009). Given the similarity between the two facilities, no adverse environmental effects are anticipated from the Houston Beneficiation Plant, thus no changes to the air quality in other provinces (Quebec) or on federal lands are anticipated to occur as a result of carrying out the project.

Therefore, there are no changes anticipated to federal lands or to other provinces as a result of carrying out the Project.

2.9 Environmental Protection

In addition to the the Schefferville Area Iron Ore Project Emergency Response Plan (ERP), LIM also has an approved Waste Management Plan (WMP) and an approved Environmental Protection Plan (EPP) in place for the Houston Project. The WMP provides direction on waste handling, storage, transport and treatment of various waste produced. The EPP outlines practical procedures required for all personnel, contractors or suppliers to reduce or eliminate potential adverse environmental effects associated with the project. These documents will be updated, as necessary, to reflect any required changes and enforced for the duration of the project. Prior to commencing operations all workers will be properly trained in the WMP, ERP and EPP procedures and responsibilities.

Environmental Compliance Monitoring will be conducted during all phases of the work program from construction to closure. Environmental data collection will be conducted to support the requirements for environmental protection.

Several monitoring studies already initiated for the James Mine Project, including, but not limited to air quality monitoring, caribou and wildlife monitoring, avifauna monitoring, groundwater and surface water quality monitoring, Real Time Water Monitoring and traditional environmental

knowledge (TEK) consultation, are anticipated to be expanded to include the Houston Beneficiation Plant, as applicable.

LIM demonstrates commitment to the protection of the environment through its sustainable mining practices at its current operations and this approach will be implemented throughout all phases of the Beneficiation Plant project.

2.10 Employment, Occupations and Economic Benefits

As demonstrated at the existing James Mine, LIM is committed to the creation and implementation of employment equity practices to help achieve maximum employment and training benefits for the region, including the recruitment, training, and advancement of qualified visible minorities and women, and, as such, is fully prepared to implement a Women's Employment Plan in association with the development and operation of the Project. LIM is also committed to ensuring maximum benefit to Newfoundlanders and Labradorians who reside nearest the resources.

LIM currently has an approved Benefits Plan and a Women's Employment Plan in place, which will be implemented during the construction and operation of beneficiation plant.

2.10.1 Construction

As indicated in Table 2-3, approximately 112 employees will be required during the construction phase of the Project. Certain management positions will be required throughout construction and may overlap with positions at LIM's existing operating mines at the James and Houston properties. Construction activities are expected to commence in June 2014 and be completed in June 2015. It is anticipated that construction will be continuous with two 12 hour shifts per day. The number of construction personnel on site at different stages of construction may vary depending on the phase.

Table 2-3 Occupations Required During Construction

National Occupational Classification	Position Description	Number of Personnel
0711	Construction Manager	1
2131	Project Engineer	1
7611	Earthworks Construction Worker	12
7611	Civil Construction Worker	16
7611	Structural Construction Worker	10
7611	Mechanical Construction Worker	22
7611	Platework Construction Worker	8
7611	Piping Construction Worker	20
7611	Electrical Construction Worker	10
7611	Instruments Construction Worker	7
7611	Commissioning Personnel	5
Total		112

2.10.2 **Operations**

As indicated in Table 2-4, Approximately 23 full-time direct or contract employees will be required during the operation phase. The operating schedule is based on two 12 hour shifts per day on a continuous basis from May through to November annually.

Table 2-4 Occupations Required During Operation

National Occupational Classification	Position Description	Number of Personnel
8221	Plant Superintendent	1
8221	Shift Foreman	1
2142	Metallurgist	1
9231	Control Room Operator	2
9411	Crushers Operator	2
9411	Screening/Washing Operator	2
9411	Fines Area Operator	2
9415	Samplers	2
7311	Mechanic (Millwright)	1
7242	Electrician/Instrumentation	1
9411	Product Loader Operator	4
2211	Lab Technologists	4
Total		23

3.0 APPROVAL OF THE UNDERTAKING

Following release from the environmental assessment process, the Project will require various approvals, permits and authorizations prior to Project initiation. Table 3-1 summarizes anticipated permits, approvals and authorizations that may be issued by the province of Newfoundland and Labrador for the Project. There are no Federal permits, approvals or authorizations anticipated to be required for the Project.

Table 3-1 Anticipated Permits, Approvals and Authorizations

Permit, Approval or Authorization Activity	Issuing Agency
▪ Release from environment assessment process	Department of Environment and Conservation (DOEC) – Environmental Assessment Division
▪ Permit to Construct a Non-Domestic Well ▪ Certificate of Approval (C of A) to Alter a Body of Water, Schedule H: Other works within 15 m of a body of water	DOEC – Water Resources Management Division
▪ C of A for Construction and Operation ▪ C of A for Generators ▪ Approval of Environmental Contingency Plan (Emergency Spill Response) ▪ Approval of Environmental Protection Plan	DOEC – Pollution Prevention Division
▪ Permit to Control Nuisance Animals	DOEC – Wildlife Division
▪ Blasters Safety Certificate ▪ Approval for Storage & Handling Gasoline and Associated Products ▪ Fuel Tank Registration ▪ Life and Safety ▪ Permit to Construct a Potable Water System ▪ Permit to Construct a Sewage Treatment System	Government Service Centre (GSC)
▪ Approval of Development Plan, Rehabilitation and Closure Plan, and Financial Security	Department of Natural Resources (DNR) – Mineral Development Division
▪ Surface Rights Lease (Amendment)	Department of Natural Resources (DNR) – Mineral Lands Division
▪ Operating Permit to Carry out an Industrial Operation During Forest Fire Season ▪ Permit to Cut ▪ Permit to Burn	DNR – Forest Resources

4.0 SCHEDULE

Subject to regulatory and environmental approvals, LIM anticipates commencing construction activities for the Houston Beneficiation Plant in June 2014 and finishing approximately one year later (June 2015). There is no construction scheduled during the winter months (December to March). See Table 4-1.

Table 4-1 Proposed Construction Schedule

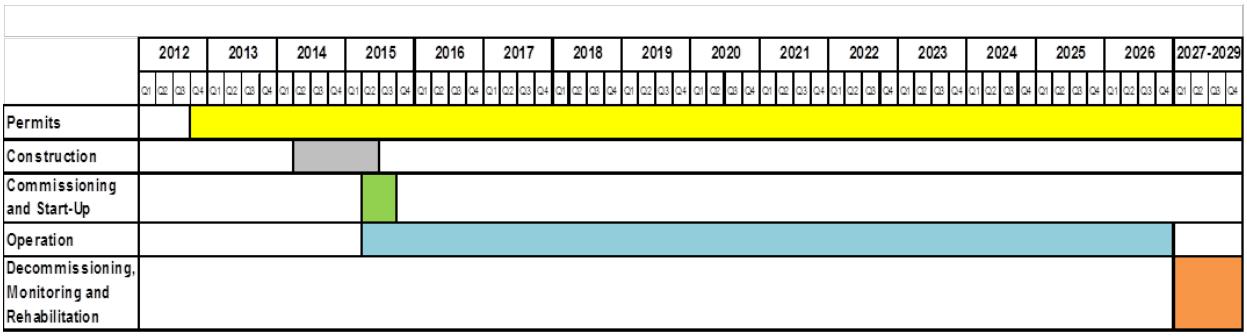
Activity	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec 14 - Mar 15	Apr-15	May-15	Jun-15
Earthworks & Civil										
Struct, Mech & Platework										
Piping										
Electrical & Instruments										

LIM anticipates commencing production in June or July of 2015. The estimated production schedule to year 2026 is based on 600 tonnes per hour (12,000 tonnes per day) capacity with a maximum of 720 tonnes per hour. Based on the 12,000 tonnes per day capacity and the expected overall recovery of 75%, it is estimated that a total of 1.5 million tonnes of product will be recovered from 2.0 million tonnes of feed per year over the 12 year life of mine (Table 4-2). The overall project schedule is shown in Table 4-3. Decommissioning, rehabilitation, closure and monitoring will occur during the 2026 to 2030 time period.

Table 4-2 Proposed Production Schedule

	Ore (Tonnes)	
Period	**Feed**	**Recovered**
2015	1,000,000	750,000
2016	2,000,000	1,500,000
2017	2,000,000	1,500,000
2018	2,000,000	1,500,000
2019	2,000,000	1,500,000
2020	2,000,000	1,500,000
2021	2,000,000	1,500,000
2022	2,000,000	1,500,000
2023	2,000,000	1,500,000
2024	2,000,000	1,500,000
2025	2,000,000	1,500,000
2026	2,000,000	1,500,000
OVERALL	23,000,000	17,250,000

Table 4-3 Project Schedule



5.0 PROJECT RELATED DOCUMENTS

The following is a list of the various project-related documents used in the preparation of this document:

- AECOM, 2009, Breeding Bird Monitoring Report – James, Redmond, Silver Yards, Knob Lake, Houston, Howse, and Proposed Road Crossing Areas. Unpublished Report prepared for Labrador Iron Mines Ltd.
- AECOM 2011, Fish Habitat Assessment Report - Redmond Houston Road Corridor. Unpublished Report prepared for Labrador Iron Mines Ltd.
- AECOM 2011, Fish Habitat Assessment Report –Houston Property Unnamed Tributary. Unpublished Report prepared for Labrador Iron Mines Ltd.
- AECOM 2011, Environmental Noise and Vibration Baseline and Impact Assessment report – Houston Property. Unpublished Report prepared for Labrador Iron Mines Ltd.
- AECOM, 2012, Natural Environment Baseline Report – Road Corridor. Unpublished Report prepared for Labrador Iron Mines Ltd.
- Department of Fisheries and Oceans Canada. 2010 K. Simms. Letter of Advice, File NO.08-HNFL-NA1-0009. Labrador Iron Mines Schefferville Area Iron Ore.
- Labrador Iron Mines Limited, 2009, Environmental Impact Statement (Revised). Schefferville Area Iron Ore Mine (Western Labrador).
- Labrador Iron Mines Ltd. 2010. Avifauna Management Plan for Activities Associated with the James, Silver Yard and Redmond Properties.
- Labrador Iron Mines Ltd. 2010, Labrador Iron Mines Development Plan, Schefferville Area Iron Ore Mine (Western Labrador).
- Labrador Iron Mines Ltd. 2010, Labrador Iron Mines Rehabilitation and Closure Plan, Schefferville Area Iron Ore Mine (Western Labrador).
- Labrador Iron Mines Limited. 2011, Project Registration for the Houston 1 and 2 Deposits Mining Project.
- Labrador Iron Mines Limited, 2011, Waste Management Plan. Schefferville Area Iron Ore Mine.
- Labrador Iron Mines Limited. 2012, Houston 1 and 2 Deposits Mining Project Environmental Protection Plan (Supplemental to the Schefferville Area Iron Ore Mining Project Construction and Operation Activities EPP).
- Yetman D., Senior Habitat Biologist, DFO. 28/09/2008, Email to L. Wrong Labrador Iron Mines.

Appendix 1a

Section 5: Public Consultation and Issues Scoping,

Schefferville Area Iron Ore Mine (Western Labrador)

Environmental Impact Statement (August 2009)

5.0 PUBLIC CONSULTATION AND ISSUE SCOPING

The Newfoundland Environmental Assessment Regulations require that, during the preparation of an EIS, the Proponent must meet with interested members of the public in the local area to provide information on the proposed undertaking, and to record and respond to any concerns regarding the environmental effects of the Project. In accordance with this requirement, and as specified in the EIS Guidelines, public information sessions were held as part of the scoping exercise. These were the culmination of a comprehensive program of community engagement initiated by LIM in 2005, prior to the start up of any exploration or development work on the Project (Appendix O).

5.1 Public Information Sessions

5.1.1 Session Schedule

Public information sessions were held from November 26 to 28, 2008 (Table 5.1). As specified in the EIS Guidelines, this saw a session in Labrador West and, as recommended in the Guidelines, one in Schefferville, Québec. In addition, LIM held a session in Happy Valley-Goose Bay.

Table 5.1 Public Information Session Schedule

Date	Location	Venue
November 26, 2008	Happy Valley-Goose Bay	Hotel North 2, Goose Bay
November 27, 2008	Labrador West	Wabush Hotel, Wabush
November 28, 2008	Schefferville	Community Centre

During the course of its community consultation process since December 2005, the Proponent has held many other public information sessions, and meetings with community and business leaders, in Wabush, Labrador West, Happy Valley-Goose Bay, Schefferville, Sept-Iles and Kawawachikamach.

Aboriginal consultations are discussed in Section 5.2 and in Section 6.

5.1.2 Public Notifications

As required under the provisions of the Newfoundland Environmental Assessment Regulations, and as specified in the EIS Guidelines, the public information sessions were advertised in local newspapers. Public notifications for the session in Labrador West appeared in the Aurora newspaper on November 24, 2008, and for the session in Happy Valley-Goose Bay in the Labradorian newspaper on November 24, 2008. In addition, public notifications of the Labrador sessions were posted in the Town Halls of Wabush, Labrador City and Goose Bay, as well as at a number of other prominent public areas.

The public notices described the nature and purpose of the information sessions, and stated the date, location, and time of the events. These advertisements also included contact information for the Proponent so that interested members of the general public who were not able to attend could forward any questions or comments that they might have about the Project (Appendix P).

5.1.3 The Sessions

The public information sessions provided an opportunity for local residents to obtain information on the Project, and to ask questions and raise any issues or concerns that they might have

directly with the Proponent. Project representatives in attendance included Terence McKillen (Executive Vice-President, LIM), Linda Wrong (Vice-President Environment and Permitting, LIM) and Joseph Lanzon (Manager Government and Community Affairs, LIM). Mr. Lanzon and Ms. Wrong coordinated the sessions, distributed handouts and recorded any questions and comments raised. Mr. Paul Rideout (Newfoundland and Labrador Department of Environment and Conservation), Chairperson of the Environmental Assessment Committee, was present at the Happy Valley-Goose Bay, Labrador City-Wabush and Schefferville meetings to address questions related to the environmental assessment process.

Each of the sessions began at 7:00 p.m. The sessions in Labrador were conducted in English, while that in Schefferville was conducted in French. Visitors were requested to sign a guest book as they entered the venue, and were given a handout consisting of a summary of the Project (Appendix Q). Participants were encouraged to call the Proponent using a toll-free number or to write by email, mail or fax with any comments, questions or concerns relating to the Project.

The sessions featured a PowerPoint presentation by Mr. McKillen and a series of display panels which provided information on the proposed Project (including its location and development schedule, design details, mining and processing methods, and employment), the environmental assessment process and the existing aquatic, terrestrial and marine environments (Appendix R). This was followed by an informal question and answer session. Following this, attendees were invited to view the information panels, and to ask questions and provide comments on the Project to any of the LIM representatives in attendance. Refreshments were provided at each of the sessions. The sessions continued for as long as members of the public remained.

A debriefing session for the Project representatives was held at the end of each public information session. This gave the team members an opportunity to review discussions from the session, and ensured that all issues, concerns, and questions were recorded.

5.1.4 Attendance

Table 5.2 summarizes the attendance at the information sessions. The number of completed comment sheets includes those completed during the sessions, and those received by e-mail, fax or mail following the events.

Table 5.2 Public Information Attendance

Community	Visitor Count	Comments Received
Happy Valley-Goose Bay	25*	Positive interest expressed in: • procurement; • business opportunities; • contracting; and • potential employment.
Wabush-Labrador City	12*	Statement of positive support from the Mayor of Wabush: • hopes that the provincial government approves the Project in a timely manner; and • attended by miners from Wabush Mines interested in potential work opportunities to offset layoffs.
Schefferville	15*	Statement of positive support by Administrator of Schefferville: Identified opportunity for Schefferville to be a positive support to the Project while recognizing that it is a Newfoundland and Labrador Project.
Total	52	
*Some visitors attended the sessions without signing the guest book.		

5.1.5 Issues and Questions Raised

The issues and questions raised during each of the public information sessions are summarized below.

5.1.5.1 Happy Valley-Goose Bay

Attendees at the Happy Valley-Goose Bay public information session included representatives from the business community, representatives from the Innu Development Corporation, and representatives of individual Innu business. There were a number of questions regarding the business opportunities that might be available to residents of Upper Lake Melville. There were no negative comments made and the general impression received was one of support.

5.1.5.2 Wabush-Labrador City

Attendees at the Labrador West public information session included the Mayor of Wabush, a representative from the Economic Development Bureau, representatives from the business community and individual residents. There were questions regarding the employment and business opportunities that might be available to residents of Labrador West. The Mayor made a very supportive statement for the Project. There were no negative comments and the general impression was one of support.

5.1.5.3 Schefferville

The attendees included the Administrator of the Municipality of Schefferville and representatives from the business community and individual residents. There were questions regarding the business opportunities that might be available to residents of Schefferville. The Municipal Administrator noted that the community wanted to indicate its support of the Project and to advise LIM that, subject to discussion and planning, it was prepared to provide municipal services to the Project.

5.1.6 Summary

The public information sessions indicate that the proposed Project is generally viewed as a positive development for Western and Central Labrador, and in Schefferville. Most of the attendees were relatively well informed about mining in general and about the history of the Project. The majority of the questions asked during the sessions related to the employment and business opportunities, and the specifics of the mining, beneficiation and transportation processes. No bio-physical environmental issues were raised and the potential socio-economic benefits associated with the proposed Project were favourably received.

5.2 Aboriginal Consultations

As part of the consultation process, extensive consultations were held with the Aboriginal communities in the Québec-Labrador Peninsula. These communities have overlapping land claims issues or traditional rights issues covering this part of western Labrador. Consultations with the aboriginal communities also started in 2005 (Appendix O). They were conducted with:

- The Innu Nation of Labrador representing the Sheshatshiu Innu First Nation and the Mushuau Innu First Nation, respectively located at the communities of Sheshatshiu and Natuashish, Labrador;
- The Innu Nation of Matimekush-Lac John, located at Schefferville, Québec;
- The Naskapi Nation of Kawawachikamach, located at Kawawachikamach, Québec; and
- The Innu Nation of Takuaikan Uashat Mak Mani-Utenam, living in the communities of Uashat and Maliotenam, near Sept-Îles, Québec.

In July 2008, LIM entered into an IBA with the Innu Nation of Labrador, replacing an earlier Memorandum of Understanding. This life of mine agreement establishes the processes and sharing of benefits that will ensure an ongoing positive relationship between the LIM and the Innu Nation. In return for their consent and support of the Project, the Innu Nation and their members will benefit through training, employment, business opportunities and financial participation in the Project.

LIM has also entered into memoranda of understanding with the Innu Nation of Matimekush-Lac John and the Naskapi Nation of Kawawachikamach, and is in discussion with the Innu Nation of Takuaikan Uashat Mak Mani-Utenam respecting a similar memorandum of understanding. These memoranda relate to the development of an ongoing positive relationship between LIM and each First Nation relating to the development and operation of the Project.

A full description of all aspects of the Aboriginal consultation conducted in association with this Project is provided separately in Chapter 6.

5.3 Other Consultation

During the course of its community consultation process since December 2005, the Proponent held many other public information sessions, and meetings with community and business leaders, in Wabush, Labrador West, Happy Valley-Goose Bay and St. John's. Similar consultations took place in Schefferville, Matimekush-Lac John, Kawawachikamach, Sept-Iles, and Uashat Mak Mani-Utenam in Québec.

Appendix 1b

Section 6: Aboriginal Consultation

Schefferville Area Iron Ore Mine (Western Labrador) Environmental Impact Statement (August 2009)

6.0 ABORIGINAL CONSULTATIONS

The Aboriginal groups of the Québec -Labrador Peninsula most directly affected by the Project are the Innu Nation of Labrador, the Naskapi Nation of Kawawachikamach (NNK), the Innu Nation of Matimekush-Lac John (MLJ) and the Innu Nation of Takuaikan Uashat Mak Mani-Utenam (ITUM) (Figure 6.1). These four groups may have overlapping land claims issues or traditional claims covering western Labrador.

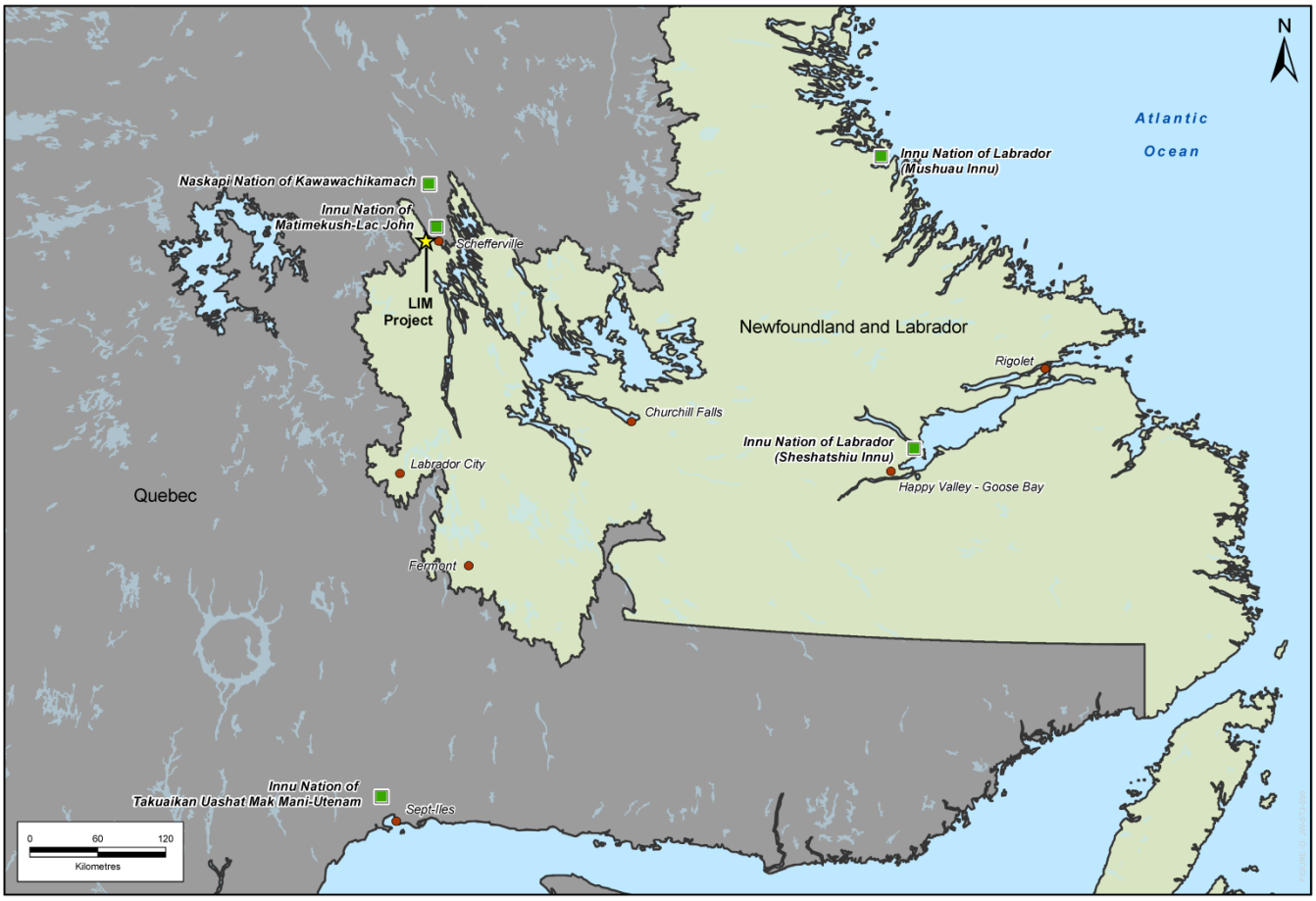


Figure 6.1 Aboriginal Communities

LIM has pursued an extensive and proactive engagement with all of the Aboriginal communities living close to the Project location or having traditional claims to the surrounding territory. LIM commenced consultations respecting the Schefferville Area Iron Ore Mine (Western Labrador) Project with a meeting between LIM and Naskapi Nation in Kawawachikamach in May 2005. Between May 2005 and July 2009, numerous consultation meetings were held in Newfoundland and Labrador (Labrador City/Wabush, Happy Valley-Goose Bay and St. John's), Nova Scotia (Halifax), Québec (Schefferville, Kawawachikamach, Uashat, Matimekush, Montreal and Québec City) and Ontario (Ottawa and Toronto). Participants and summaries of each meeting are provided in Appendix O.

These consultations have resulted in the signing of an IBA with the Innu Nation of Labrador and Memoranda of Understanding with two Aboriginal groups in Québec. These memoranda relate to the establishment of a positive ongoing relationship between LIM and these First Nations relating to the development and operation of the Project.

6.1 Innu Nation of Labrador

The Innu of Labrador live primarily in two communities in central and coastal Labrador: the coastal community of Natuashish (formerly located on Iluikoyak Island/Davis Inlet), and the Upper Lake Melville community of Sheshatshiu. Residents of Natuashish are known as the Mushuau Innu, and residents of Sheshatshiu as Sheshatshiu Innu. Each community is administered by an elected Chief and Band Council. Politically, the two communities are represented by the Innu Nation, which is led by an elected Grand Chief.

The Labrador Innu claim Aboriginal rights and title to most of Labrador, referring to it as Nitassinan. Their land claim was accepted for negotiation by the federal and provincial governments, with formal negotiations beginning in 1991. An Agreement-in-Principle is presently being negotiated.

In 1998, the Mushuau and Sheshatshiu Band Councils formed Innu Development Limited Partnership, a for profit corporation registered with the Province. It is committed to creating opportunities for employment and economic development for private Innu businesses by creating and managing equity ownership and partnerships in strategic industries.

The Honourable Danny Williams, Premier of Newfoundland and Labrador, and Mark Nui, Grand Chief of Innu Nation, announced on September 26, 2008 the signing of the Tshash Petapen Agreement (The New Dawn Agreement). This Agreement resolves key issues relating to matters between the province and Innu Nation surrounding the Innu Rights Agreement, the Lower Churchill IBA and Innu redress for the upper Churchill hydroelectric development. This is described more fully below; however, final agreements based on the Tshash Petapen Agreement will be subject to ratification by the Innu people.

The agreement lays out the areas and location of Innu lands, and establishes economic areas to assure Innu participation in resource projects in the region. The agreement also provides compensation to the Labrador Innu for impacts associated with the Churchill Falls development. This Agreement settles the outstanding grievance of Innu Nation with respect to damages suffered to Innu lands and properties as a result of the flooding caused by the upper Churchill River development in the 1960s. The Agreement also contains the details of the commercial terms of the Lower Churchill IBA, which include a structured royalty regime and implementation funding to support Innu Nation's involvement in the Project during construction. Negotiations will continue in order to execute formal agreements. Once final agreements have been reached, Innu Nation will present the details to the Innu people for ratification, which is planned for 2009.

6.1.1 Issues

The main issues raised by the Innu Nation of Labrador regarding the Project are:

- Economic benefits and revenue sharing;
- Provision of sustainable economic development within the region in order to provide employment and business opportunities for its members;
- Protection for the environment;
- Training and education programmes so that Innu Nation members might fully participate in available opportunities; and
- Cultural and heritage protection and development.

Through discussion and negotiation during the Memorandum of Understanding and IBA process, the parties have reached satisfactory agreement on all of these issues, including the processes for implementation, coordination and oversight of mitigation strategies to address these issues. The communities will directly participate and/or be actively consulted as follows:

- Implementation committee;
- Community collaboration committee;
- Training and education committee;
- Establishing employment and workplace conditions;
- Business and contracting opportunities;
- Environmental monitoring committee;
- Traditional knowledge collection;
- Heritage resource and cultural protection; and
- Financial participation.

6.1.2 Impact Benefits Agreement

In July 2008, LIM entered into an Impact Benefits Agreement with the Innu Nation of Labrador, replacing an earlier Memorandum of Understanding. This life-of-mine agreement establishes the processes and sharing of benefits that will ensure an ongoing positive relationship between the LIM and the Innu Nation. In return for their consent and support of the Project, the Innu Nation and their members will benefit through training, employment, business opportunities and financial participation in the Project.

6.2 Innu Nation of Matimekush-Lac John

The Innu Nation of Matimekush-Lac John, also known as the Montagnais Innu, live primarily in the northeastern Québec towns of Matimekush and Lac-John, near Schefferville. The community is governed by an elected Band Council consisting of a Chief and Councillors.

The Montagnais Innu of Matimekush and Lac-John voluntarily moved to the Schefferville region from Sept-Iles in the early 1950s when the Québec North Shore & Labrador (QNS&L) Railroad was completed. Initially they shared the community at Lac-John with the Naskapi, who arrived in the region at the same time. The Montagnais have historical and traditional interests in the

region, having historically travelled to the region from Sept-Iles to trap and hunt. The community includes the reserve of Matimekush, adjacent to Schefferville, and the reserve of Lac-John, 3.5 kilometres from Matimekush and including the centre of Schefferville. When the Schefferville IOC mines closed in the early 1980s, the Montagnais extended the reserve of Lac-John into the town of Schefferville, to avail of the existing infrastructure no longer in use by the town (sewer and water system, school, arena).

The Montagnais Innu's comprehensive land claim, filed in association with the Atikamekw of southern Québec, was accepted federally in 1979 and provincially in 1980. The two Aboriginal groups were represented by the Atikamekw-Montagnais Council (AMC) until 1994. After dissolution of the AMC, the Montagnais Innu formed three negotiation groups: the Mamuitun mak Natashquan Tribal Council, the Mamu Pakatatau Mamit Assembly and the Ashuanipi Corporation. The Ashuanipi Corporation presently represents the Innu communities of Matimekush-Lac John and Uashat Mak Mani-Utenam in comprehensive land claim negotiations.

Together with the NNK and Innu Nation of ITUM, the Montagnais Innu have acquired in interest in Tshiuetin Rail Transportation Inc (TSH), an aboriginal-owned corporation which owns and operates the northern portion of the QNS&L between Ross Bay Junction and Schefferville. Operations include passenger service twice weekly and weekly freight service between Schefferville and Sept-Iles. The Montagnais Innu are also partially responsible for maintenance at the Schefferville Airport and operate construction businesses.

Gestion Innu is an incorporated Canadian company. The main function of Gestion Innu is to run the day to day garage operations, snow removal contracts, and business development support for the Band office of Matimekush Lac-John. Gestion Innu has a board of directors and a President appointed from the Band Council and a regular community member.

6.2.1 Issues

The main issues raised by the Innu Nation of Matimekush-Lac John regarding the Project are:

- Sustainable economic development in order to provide employment and business opportunities for its members. The community comprises a significant un- or under-employed young population with little or no available employment base;
- Economic benefits;
- Environmentally and culturally sustainable development;
- Desire to see the commercial development of TSH Railway without impact on the existing passenger service; and
- Training and education programmes so that members of the community might fully participate in available opportunities.

Through discussion and negotiation during the Memorandum of Understanding process, the parties have openly discussed all of these issues and a cooperation and impact agreement currently being negotiated will include the processes for implementation, coordination and oversight of mitigation strategies to address these issues. It is expected that the communities will directly participate and/or be actively consulted as follows:

- Implementation committee;
- Community collaboration committee;

- Training and education committee;
- Establishing employment and workplace conditions;
- Business and contracting opportunities;
- Environmental monitoring committee;
- Traditional knowledge collection;
- Heritage resource and cultural protection; and
- Economic benefits.

6.2.2 Memorandum of Understanding

In March 2008, LIM signed a Memorandum of Understanding with the Innu Nation of Matimekush-Lac John and current discussions are underway for the development of an Impact and Benefits Agreement with the Nation.

6.3 Naskapi Nation of Kawawachikamach

The Naskapi Nation of Kawawachikamach was originally a small nomadic tribe, settling in Fort Chimo in the mid-1800s, before moving to Schefferville in the 1950s. The Naskapi relocated to the present site of Kawawachikamach, approximately 16 kilometres north of Schefferville in the 1980s following the James Bay Settlement.

Between 1981 and 1984, self-government legislation was negotiated with the federal government. These negotiations resulted in the *Cree-Naskapi (of Québec) Act* and led to the formation of the Naskapi Band of Québec in 1984. The Naskapi Band of Québec was one of the first self-governing Bands in Canada. The name was changed to Naskapi Nation of Kawawachikamach in 1999.

The community of Kawawachikamach is administered by the Band Council, consisting of an elected Chief and Councillors. In addition to typical municipal duties, the Band Council is responsible for maintaining the local police force, the local volunteer fire department, local childcare centre, and local school.

The Naskapi Nation, through the Band Council, operates several corporate entities within Kawawachikamach and Schefferville including the Naskapi Landholding Corporation, Garage Naskapi, Kawawachikamach Energy Services Inc., Naskapi Imun Inc (an internet service and software company), Naskapi Caribou Meat Inc. and Naskapi Development Corporation. In addition, they hold contracts for maintenance of the Schefferville Airport, local road maintenance, and own interests in Tshiuetin Rail Transportation Inc.

6.3.1 Issues

The main issues raised by the Naskapi Nation of Kawawachikamach regarding the Project are:

- Economic benefits;
- Provision of sustainable economic development in order to provide employment and business opportunities for its members. The community comprises a significant un- or under-employed young population with no significant employment base;

- Environmentally and culturally sustainable development including specific emphasis on the protection of any caribou observed;
- Training and education programmes so that its members might fully participate in available opportunities;
- Interest in the commercial development of TSH Railway; and
- Cultural and heritage protection and development.

Through discussion and negotiation during the Memorandum of Understanding process, the parties have openly discussed all of these issues and a cooperation and impact agreement currently being negotiated will include the processes for implementation, coordination and oversight of mitigation strategies to address these issues. It is expected that the community will directly participate and/or be actively consulted as follows:

- Implementation committee;
- Community collaboration committee;
- Training and education committee;
- Establishing employment and workplace conditions;
- Business and contracting opportunities;
- Environmental monitoring committee;
- Traditional knowledge collection;
- Heritage resource and cultural protection; and
- Economic benefits.

6.3.2 Memorandum of Understanding

In April 2008, LIM signed a Memorandum of Understanding with the Naskapi Nation of Kawawachikamach and current discussions are underway for the development of an Impact and Benefits Agreement. On April 3, 2009, representatives of the Naskapi Nation met with LIM representatives to discuss the EIS and their environmental concerns with the Project. LIM representatives addressed all of the concerns expressed at this meeting.

6.4 Innu Nation of Takuaikan Uashat Mak Mani-Utenam

The Innu Nation of Takuaikan Uashat Mak Mani-Utenam are closely related to the Montagnais Innu of Matimekush-Lac John. They have historical and traditional interests in the Project area, having traditionally used the area for hunting and trapping. They are one of the largest Innu communities in Québec, living in two settlements within their reserve, Uashat and Maliotenam, both on the Québec North Shore, near Sept-Iles. The communities are administered by a Band Council comprised of an elected Chief and Councillors. In addition to typical administrative duties, the Band Council also operates the local police force.

The Innu of Takuaikan Uashat Mak Mani-Utenam joined the Matimekush-Lac John Innu in 2005 to create the Ashuanipi Corporation to represent them in comprehensive land claims negotiations. This corporation also pursues economic development opportunities and has entered into joint ventures and local partnerships with other businesses.

6.4.1 Issues

The main issues of concern to the Innu Nation of Takuaikan Uashat Mak Mani-Utenam are:

- Economic benefits;
- Employment and business development opportunities for its members;
- Commercial development of TSH Railway;
- Environmentally and culturally sustainable development;
- Protection of the trapping activities of the Uashaunnaut families holding Beaver Lots in the region;
- Training and education programmes so that its members might fully participate in available opportunities; and
- Cultural and heritage protection and development.

The parties have openly discussed all of these issues and are currently working on a cooperation and impact agreement which will include the processes for implementation, coordination and oversight. It is expected that the community will directly participate and/or be actively consulted as follows:

- Implementation committee;
- Community collaboration committee;
- Training and education committee;
- Establishing employment and workplace conditions;
- Business and contracting opportunities;
- Environmental monitoring committee;
- Traditional knowledge collection;
- Heritage resource and cultural protection; and
- Economic benefits.

6.4.2 Impact and Benefit Agreement

Negotiations toward an IBA between LIM and the Innu Nation of Takuaikan Uashat Mak Mani-Utenam have been ongoing since September 2005. It is anticipated that the IBA will be signed by both parties in 2009.

LABRADOR IRON MINES LIMITED

Appendix 2

Project Registration for the Houston 1 and 2 Deposits Mining Project (December 2011)

Project Registration for the Houston 1 and 2 Deposits Mining Project

Prepared by:

Labrador Iron Mines Limited
Suite 700, 220 Bay Street
Toronto ON M5J 2W4

December 20, 2011

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1.0 INTRODUCTION

1.1 Identification of the Proponent

Name of Corporate Body:	Labrador Iron Mines Limited (LIM)
Address:	Suite 700, 220 Bay Street Toronto ON M5J 2W4

Labrador Iron Mines, a wholly owned subsidiary of Labrador Iron Mines Holdings Limited, is proposing to develop iron ore deposits on their Houston 1 and 2 properties, as well as a haul road and rail siding, located in the western central part of the Labrador Trough Iron Range, in the province of Newfoundland and Labrador. The Houston 1 and 2 project is located approximately 10 km from the existing approved Redmond Mine project. Labrador Iron Mines Limited, is an Ontario registered company trading on the TSX Exchange under the symbol of "LIM"

1.2 Contacts and Address

Chief Executive Officer

Name:	John F. Kearney
Official Title:	Chairman and Chief Executive Officer
Address:	Suite 700, 220 Bay Street Toronto ON M5J 2W4
Telephone:	647-728-4125

Principal contact for purposes of environmental assessment

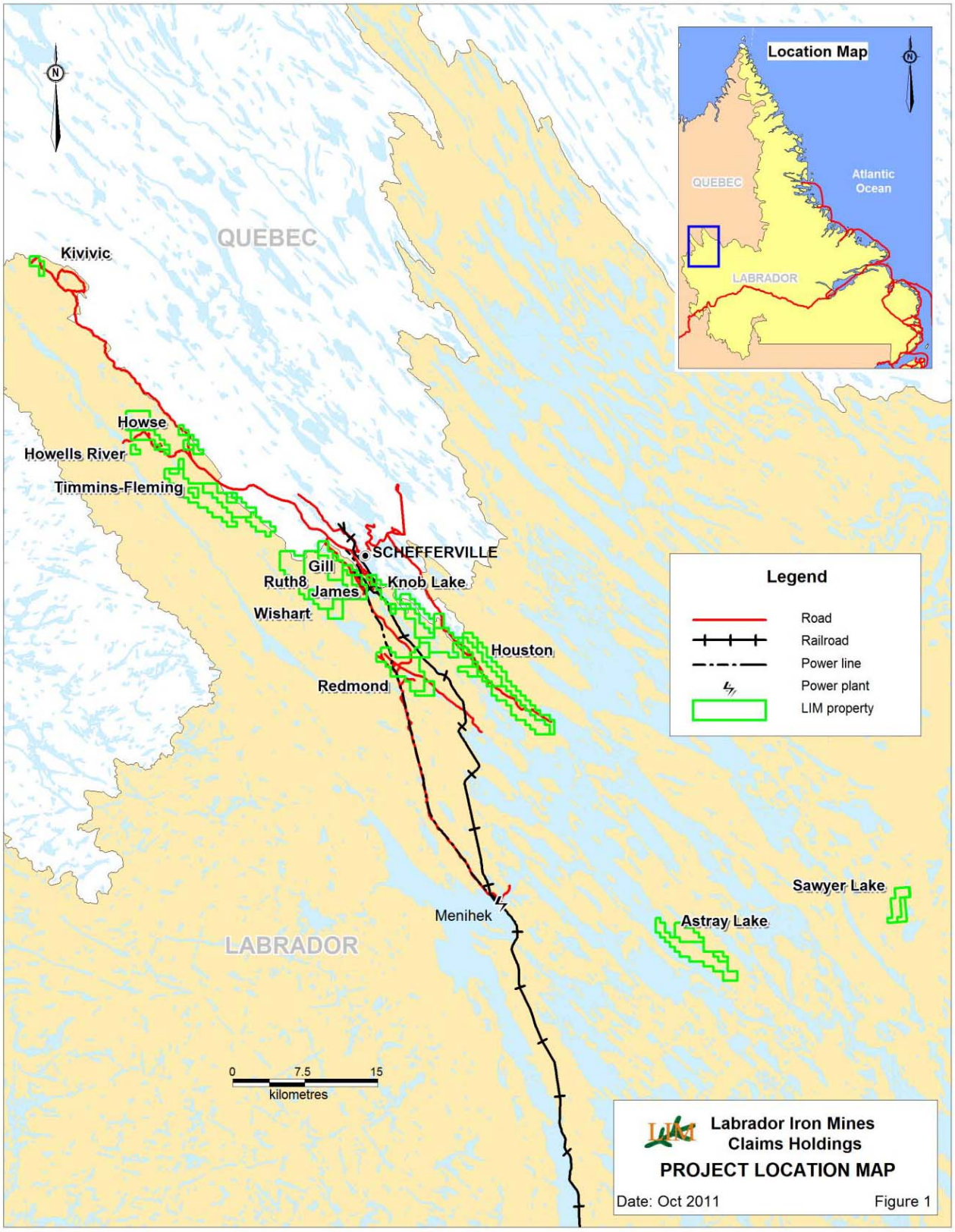
Name:	Linda Wrong, P.Geo.
Official Title:	Vice President, Environment and Permitting
Address:	Suite 700, 220 Bay Street Toronto ON M5J 2W4
Telephone:	647-728-4125

1.3 Nature of the Undertaking

This undertaking, or Project, involves the development and mining of 'direct shipping' iron ore from the Houston 1 and 2 deposits in western Labrador, the construction of a mining haul road that will connect the Houston area to LIM's existing approved Redmond Mine area in an

historical iron ore mining district, and the construction of a 4 km long rail siding near the intersection of the proposed haul road and existing TSH main rail (Project Area) (Figure 1-1). The Houston 1 and 2 ore deposits are located approximately 10 km from the Schefferville Area Iron Ore Mine properties of James and Redmond, which were assessed in the Environmental Impact Assessment submitted to the federal and provincial regulators in August 2009 and released from further environmental assessment in November 2009. The Schefferville Area Iron Ore Mines are currently in operation and in compliance with all applicable permits and approvals. Environmental baseline data for the Project Area, considered to be satellite pits presented as the next phase of development discussed in the Schefferville Area Iron Ore Mine EIS, was initiated in 2008 as part of the overall Schefferville Area Iron Ore Project.

Figure 1-1 Labrador Iron Mines Claims Holdings



Mining will be conducted in a sequential manner using conventional open pit mining methods. Once mined, the ore will be hauled to either the previously approved beneficiation plant at the Silver Yard or, pending approvals, to a new site under consideration at the Redmond 1 mine pit area, where crushing, washing, screening, and gravity separation will take place prior to loading onto rail cars. Direct rail ore (DRO) that does not require any beneficiation will be hauled to a loading area located near the proposed location of a 4 km rail siding, to be located within the existing right-of-way, and loaded on to rail cars for transport south to port. Overburden stripping material, waste rock material, and low grade ore material will be temporarily stockpiled in strategic locations near the open pits and away from any nearby watercourses. The overburden stockpiles would be used for future reclamation purposes. Waste rock piles may be placed back into the pits once mining is completed.

Mining will initially be conducted at an estimated daily production rate of less than 3,000 t/day per pit. As with the James and Redmond properties, minimal blasting is anticipated and no new explosives storage areas will be established as part of this project. Instead, blasting materials will be accessed from the explosive storage area currently in use for the existing nearby James mine. It is expected that mining will commence with three pits to maximize access to the ore. The production will initially start with mining one pit in Houston 1 area and two pits in Houston 2 area, pending exploration results from 2011 drilling campaign and engineering studies.This Project also includes the construction of the Houston-Redmond Haul Road (herein afterwards referred to as “haul road”) and a rail siding along the existing TSH main rail line. The proposed haul road is approximately 10km in length, and will connect the Project area at Houston to the historical Redmond mine area. The Redmond mine area was included in the Schefferville Area Iron Ore Mine EIS (August 2009). The proposed rail siding is expected to measure approximately 4 km and is expected to be located within the existing rail ROW. Temporary ore pile areas will be located near the intersection of the rail siding and the haul road in order to facilitate loading and transport.

Preliminary design informationindicates that minimal water crossings will be required for the development of access routes and, where water crossings are required, they can be constructed without placement of materials below the high water mark and with adequate clearance to provide appropriate clearance for canoes and small boats along the larger watercourse (the Gilling River). Larger crossings are expected to be clear-span structures, less than 30 metres in length and less than 20 metres in width. Smaller water crossings are expected to consist of open-bottom culverts with supports located above the highwater mark. The haul road will require a crossing at the existing TSH main rail line. For the proposed haul road, there are two options available and the final option will be selected in consideration of regulatory and community feedback.

Where required, borrow materials will be accessed either from existing quarries in the area, from benign waste rock sourced from the Redmond Mine area, or sourced from waste rock generated from the Houston area.

The operation will benefit from the presence of existing approved infrastructure, such as the railway line between Schefferville and Sept-Îles, roads, and infrastructure constructed as part of LIM’s previously approved Phase 1a project at the James and Redmond deposits (i.e., Schefferville Area Iron Ore Mine). No major improvements of the local roads or rail are anticipated. Minimal additional infrastructure to be developed is expected to include dewatering

wells, water management features (e.g., sediment control ponds, ditches), a haul road, a rail siding, and internal mine roads. It is anticipated that power requirements for the Houston Mine site will be supplied by diesel generators.

As with LIM's nearby existing Schefferville Area Iron Ore Mine project at the James and Redmond deposits, the final products to be produced from the Houston 1 and 2 areas will include lump and sinter fine ores for direct shipping to end users in Europe and/or Asia. As the deposit is a high-grade iron ore, no further processing will be conducted in Canada, aside from the proposed crushing and washing to be conducted in Labrador.

1.4 Regulatory Context

1.4.1 Environmental Assessment Process

The Houston 1 and 2 Project is subject to Registration pursuant to Part III of the Newfoundland and Labrador Regulations 54/03, *Environmental Assessment Regulations*, 2003, under the *Environmental Protection Act*, SNL 2002 Ce-14.2. Following a review of the registration document, the Minister makes a determination of the undertaking; it may be released; an Environmental Preview Report (EPR) may be required; or an Environmental Impact Statement (EIS) may be required. Based on current project design and initial consultations with federal regulatory agencies, no federal level triggers have been identified.

1.4.2 Environmental Authorizations

Following release from the provincial environmental assessment process, the Project will require various approvals, permits and authorizations prior to Project initiation. In addition, throughout Project construction and operation, compliance with various standards contained in federal and provincial legislation, regulations and guidelines will be required. LIM will also be required to comply with any other terms and conditions associated with the release. Table 1.1 summarizes potential permits, approvals and authorizations that may be required for the Project.

Table 1.1 Potential Permits, Approvals and Authorizations

Permit, Approval or Authorization Activity	Issuing Agency
Provincial	
• Release from environment assessment process	Department of Environment and Conservation (DOEC) – Environmental Assessment Division
• Permit to Occupy Crown Land	DOEC – Crown Lands Division
• Permit to Construct a Non-Domestic Well • Water Resources Real-Time Monitoring • Certificate of Environmental Approval to Alter a Body of Water, Schedule H: Other works within 15m of a body of water (site drainage, dewater pits, settling ponds) • Culvert Installation • Fording	DOEC – Water Resources Management Division

Table 1.1 Potential Permits, Approvals and Authorizations (continued)

Permit, Approval or Authorization Activity	Issuing Agency
Provincial	
• Certificate of Approval for Construction and Operation • Certificate of Approval for Generators • Approval of MMER Emergency Response Plan • Approval of Environmental Contingency Plan (Emergency Spill Response) • Approval of Environmental Protection Plan	DOEC – Pollution Prevention Division
• Permit to Control Nuisance Animals	DOEC – Wildlife Division
• Blasters Safety Certificate • Approval for Storage & Handling Gasoline and Associated Products • Temporary Fuel Cache • Fuel Tank Registration • Approval for Used Oil Storage Tank System (Oil/Water Separator) • National Building Code Fire, Life and Safety Program • Building Accessibility	Government Service Centre (GSC)
• Approval of Development Plan, Closure Plan, and Financial Security • Mining Lease • Surface Rights Lease	Department of Natural Resources (DNR) – Mineral Lands Division
• Operating Permit to Carry out an Industrial Operation During Forest Fire Season on Crown Land • Permit to Cut Crown Timber • Permit to Burn	DNR – Forest Resources
Federal (Not expected, however, shown for information purposes only)	
• *Authorization for Works Affecting Fish Habitat, or* • *Letter of Advice regarding Protection of Fish Habitat*	*Fisheries and Oceans Canada (DFO)*
• *Approval to interfere with navigation*	*Transport Canada*

1.5 Document Organization

The document is organized as follows:

Chapter 1 Identifies the Proponent, describes the nature of the undertaking, the environmental setting of the project, the regulatory context and environmental authorization.

Chapter 2 Describes the purpose, rationale and need for the undertaking as well as Project alternatives.

Chapter 3 Includes physical features of the Project; schedule for construction and implementation; details on operation and maintenance; and decommissioning information. The chapter concludes with a discussion of environmental management planning for the Project.

Chapter 4 Reiterates the overall project schedule.

Chapter 5 Discusses the funding sources for the Project.

Chapter 6 Describes the Community and Aboriginal Consultation that has been conducted to date by LIM, including a listing of issues identified, and where Impact Benefits Agreements or other agreements, such as Memoranda of Understanding have been reached.

Chapter 7 Describes the existing biophysical and socio-economic conditions of the study area, which serves to inform the issues scoping exercise and environmental assessment.

Chapter 8 Describes the scope and methods of the environmental assessment, including details on the issue scoping process and the issues and concerns raised during public consultation sessions and other scoping activities. The Valued Environmental Components (VECs) are identified.

Chapter 9 Discusses environmental effects assessment for each VEC, including fish and fish habitat, caribou, wildlife and habitat, employment and business, and communities, and addresses accidental events that could occur. Mitigation and monitoring requirements are discussed as well as significance of residual effects.

Chapter 10 Presents concluding statements regarding the anticipated environmental effects that may result from the Project, a summary of specific mitigation measures and monitoring and follow-up commitments.

Chapter 11 References and personal communications cited in the environmental assessment are provided.

2.0 PURPOSE AND ALTERNATIVES

2.1 Project Purpose and Rationale

The purpose of the Project is to satisfy market demand for high-grade direct shipping iron ore products. The continuation and expansion of LIM mining activity in the Houston 1 and 2 area, initiated with the successful Schefferville Area Iron Ore Mine projects nearby, will extend the positive economic stimulus to the economy of western and central Labrador. The Project will contribute to the long-term economic stability in the area.

2.2 Alternatives to the Undertaking

There are no alternatives to the proposed undertaking.

2.3 Alternatives within the Undertaking

2.3.1 Construction of Houston-Redmond Haul Road and Rail Siding

The construction of the Houston-Redmond haul road is required to connect the Houston 1 and 2 deposits to the Redmond 1 mine site. Two options for the routing of the haul road between these two areas are currently under evaluation, as shown in Figure 2-1 (Alternative Routes A and B). All options will require the placement of a clear span-type bridge across the Gilling River, however, the maximum length of this bridge would be less than 30 metres and the maximum width would be less than 20 metres. The clearspan bridge would be constructed outside of the highwater mark and with sufficient clearance to provide access to canoes and small boats. Therefore, potential impacts to fish habitat and navigation of the river by small watercraft are not expected.

The two main haul road options both consider crossing the Gilling River at one of its most narrow locations using a clearspan “Mabey/Bailey”-type panel bridge that will be constructed without having to do any in-stream work. The proposed bridge will have a double layer of timber deck with geotextile sandwiched in between to reduce the potential for debris falling from the bridge into the river. The bridge will be less than 30 metres in length, less than 20 meters in width and will provide a minimum clearance of 1.5m above the water level to permit navigation by small boat or canoe. Conceptual cross-sections are presented in Figure 2-2.

Smaller watercourses in the area are not traditionally used for navigation and will be bridged by use of an open-bottom culvert type structure or structural steel plate arches that can span the river with concrete footings used on each side of the river to support the steel arch (as shown in Figure 2-3). Fish habitat will not be disturbed or altered. Prior to the selection of the preferred haul road route and siding location, an options evaluation program will be completed. Additional assessment of preferred options will be conducted in consultation with communities and in consideration of environmental, traditional environmental knowledge, engineering and best management practices.

There are currently two options for a proposed rail siding, to be located within the existing TSH Right of Way, under consideration (Options A and B) and the final location will be selected pending selection of the preferred haul route option.

2.3.2 Beneficiation Site

Iron ore production from the Houston 1 and 2 deposits will be beneficiated at one of two areas, either the currently approved Silver Yard Beneficiation area or the proposed Redmond Beneficiation Area, which is located in the previously disturbed historical Redmond mine area, included as part of the previously EA-released and permitted Schefferville Area Iron Ore Mine (August 2009). The selection of the preferred option will be conducted upon the completion of the beneficiation options evaluations study.

Figure 2-1 Houston Haul Road and Rail Siding Options

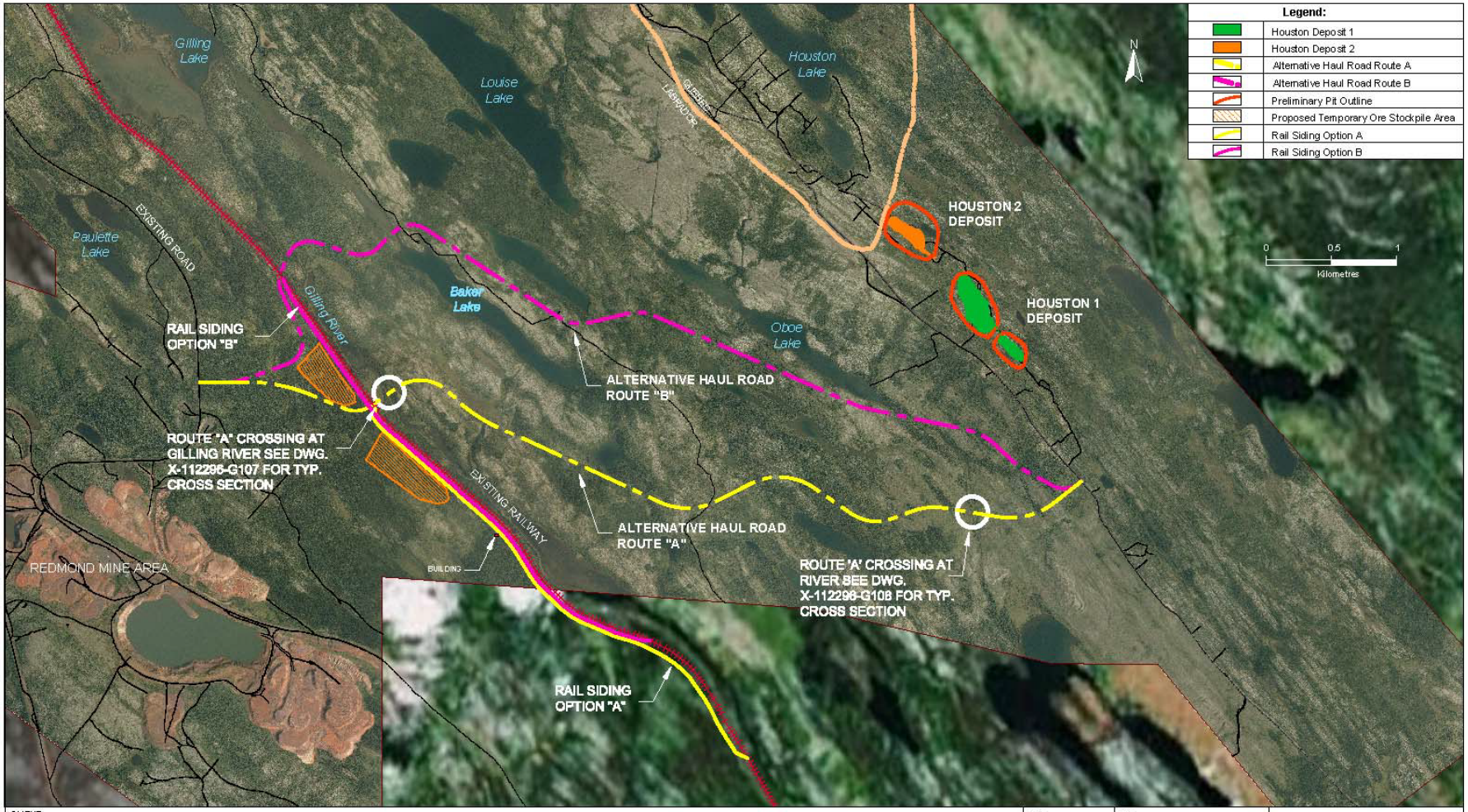


Figure 2-2 Houston Haul Road Conceptual Water Crossing - Gilling River Bridge Cross Section

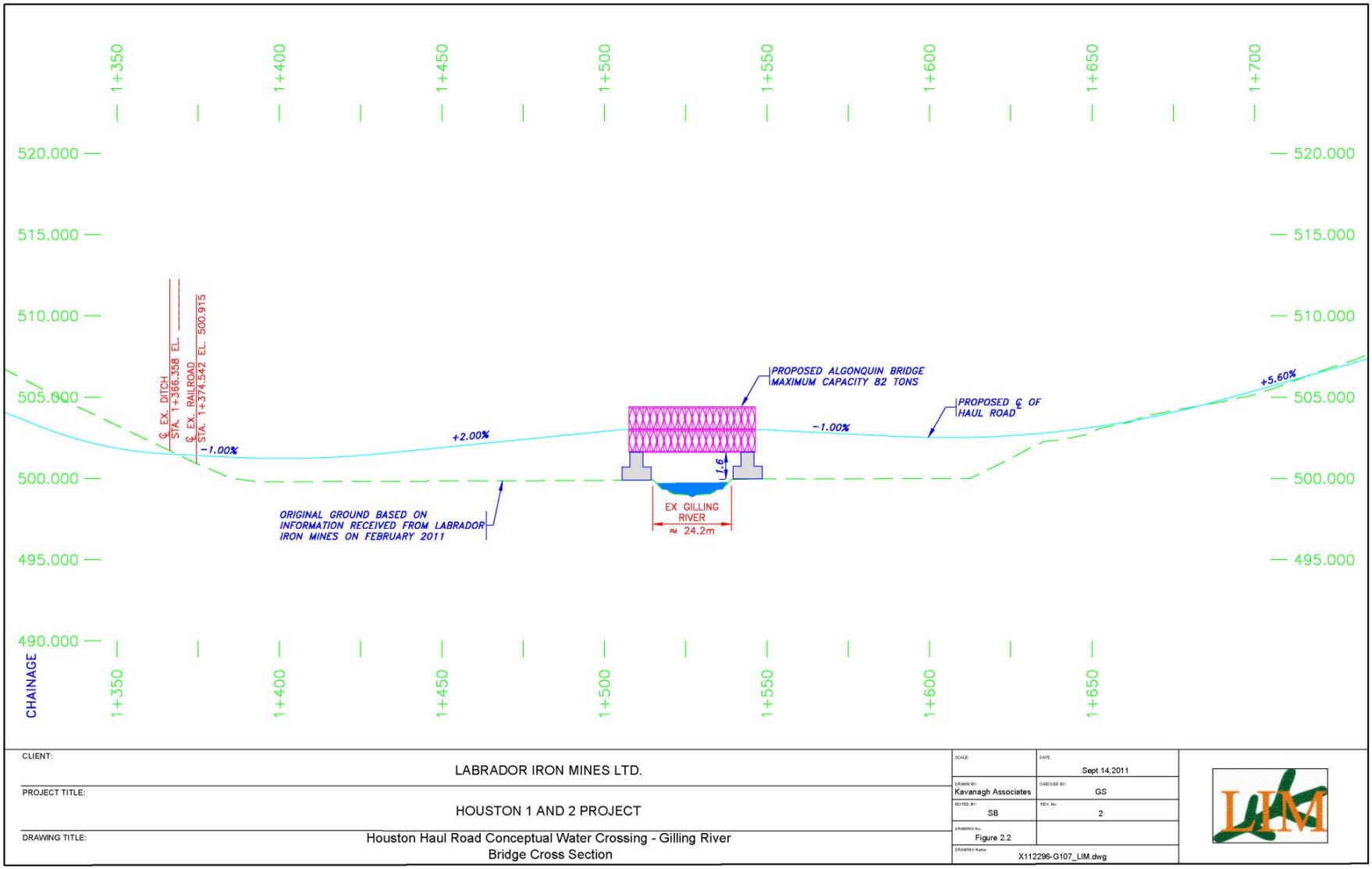
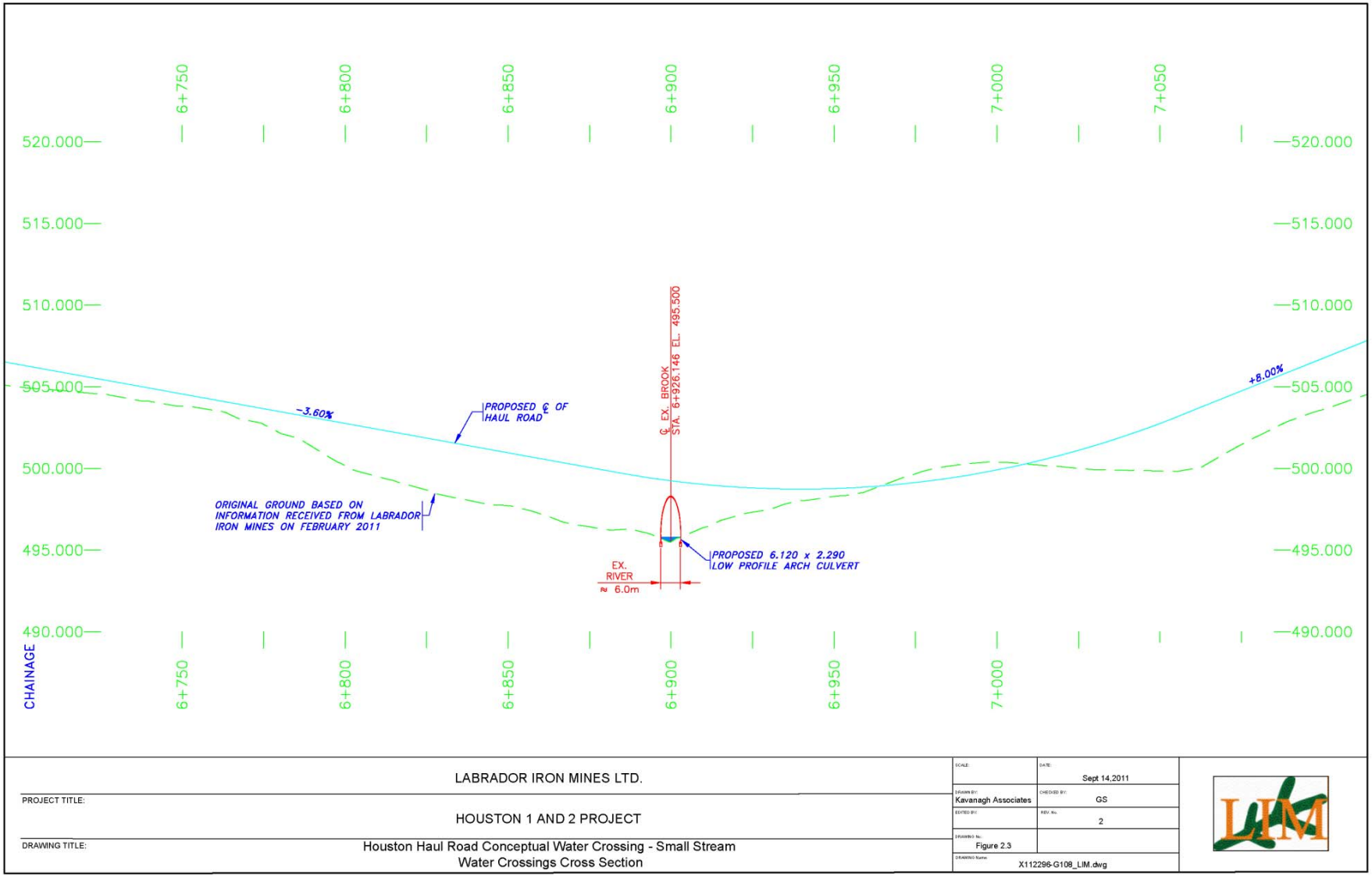


Figure 2-3 Houston Haul Road Conceptual Water Crossing -Small Stream Water Crossings Cross Section



3.0 DESCRIPTION OF THE UNDERTAKING

3.1 Previously Registered Undertakings

Dating back to 2005, LIM initiated ongoing environmental baseline data collection programs in the Schefferville project area, including programs in traditional environmental knowledge, heritage and archaeological resources, wildlife, avifauna, fish and fish habitat, air quality, noise and vibration, acid rock drainage (ARD) potential, surface and groundwater quality and geochemistry. This information formed the basis of the Schefferville Area Iron Ore Mine Project Registration Document (also known as the Schefferville Area Iron Ore Mines), formally submitted to the Newfoundland and Labrador Department of Environment and Conservation (NL DOEC) by LIM in April 2008, as well as the revised Environmental Impact Statement (EIS) submitted to NL DOEC in August, 2009.

In November 2009, LIM was advised by the NL Minister of Environment and Conservation that the EIS complied with the *Environmental Protection Act* and required no further work under the Provincial environmental assessment process. On February 12, 2010, LIM was informed that, under authority of Section 67(3)(a) of the *Environmental Protection Act*, the Lieutenant Governor in Council released the Schefferville Area Iron Ore Mine Project (James and Redmond deposits and Silver Yards processing site) from further environmental assessment.

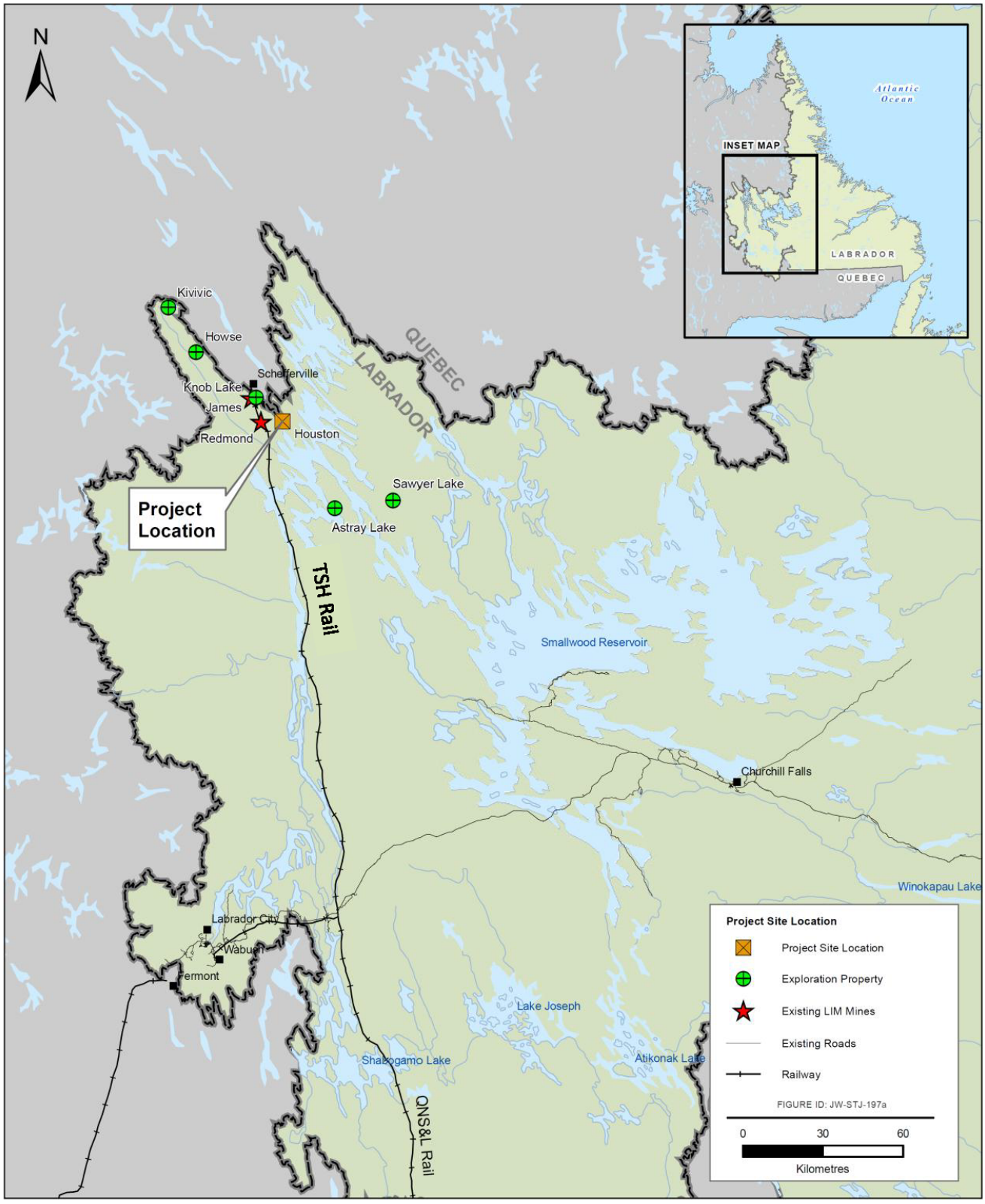
Upon release from the environmental assessment processes, LIM initiated the submission of related construction and operation permit applications to various regulatory agencies. All major approvals to construct and operate the James and Redmond Mines, as well as associated infrastructure, were received by August 2010 and mine construction was initiated in September 2010. The first phase of the beneficiation and processing plant has been constructed at the Silver Yards site and is operational.

The James North and South pit areas and the Silver Yards processing site are now fully operational and shipments of iron ore have been transported offsite to market.Full scale mining operations are conducted on an annual basis and beneficiation is conducted on a seasonal basis, from approximately April to November of each year.

3.2 Geographic Location

The Houston Project area is located in Labrador, at a distance of approximately 10 km from LIM's approved Schefferville Area Iron Ore Mine project and 20km southeast from the town of Schefferville. The general location of LIM's claims holdings is shown in Figure 3-1. The relative location of the properties is shown in Figure 3-1, together with the location of the LIM's beneficiation area and the local community of Schefferville.

Figure 3-1 Project Location



The Houston 1 and 2 Project Area is located in the Schefferville region, situated at the southern edge of the forest tundra (Hustich 1949; Hare 1950; Waterway et al. 1984). The Project Area has been subject to surface disturbance associated with historical IOC activities. Where not disturbed, the Project area contains varied land classes from exposed tundra/exposed bedrock with lichen and very scattered trees and shrubs to low wetland areas (including bogs). Intermediate land classes consist of varied forest types with spruce-moss and spruce-lichen predominating although merchantable timber was not noted. Observed canopy closure for all forest sites ranged from 0 to 80 percent, with most in the range of 30 to 60 percent.

The terrain is comprised of parallel ridges and valleys trending northwest to southeast, is thinly forested, with bare rock exposures and moose barrens.

3.3 Project Description

LIM proposes to advance the Houston Mine Project in a number of Phases. The Houston 1 and 2 deposit development will follow the Schefferville Area Iron Ore Mines and will benefit from much of the approved and exising infrastructure developed for that project. It is expected that the first phase will involve the development and production from the Houston 1 and 2 deposits.

Development of the Houston 1 and 2 deposits will require construction of an approximately 10km haul road from the Houston area to connect with the Silver Yards-Redmond road and the old Redmond 1 mine site as well as the establishment of a 4 km rail siding within the existing ROW to facilitate loading of ore.

Major features of the anticipated Houston 1 and 2 Mine Project include:

- All development will be located within Labrador in a region of historical IOC activity;
- Nearby existing and permitted infrastructure, including the Silver Yard laboratory, beneficiation area, maintenance shed and warehouse facilities, Menihek road, and the Bean Lake accommodation camp will be used to service the Houston Mine Project, as required;
- Mining will be carried out using conventional open truck and shovel pit mining methods, employing drilling and blasting operations, as required;
- Additional small excavations that may be required may include side-hill cuts associated with the construction and maintenance of access roads, mine haulage roads, sumps and settling ponds;
- Where required, borrow materials will be accessed either from existing quarries in the area, from benign waste rock sourced from the Redmond Mine area, or sourced from waste rock generated from the Houston area;
- As demonstrated at the James mine area, minimal explosives use is expected and, as such, no new explosives storage areas are planned for the Houston project. Instead, the Houston project will access any required explosives from the storage areas used by the currently permitted James mine.and,

- A 10km haul road to be constructed between the Houston and Redmond areas which will require the placement of a clearspan-type bridge above Gillings River and smaller bottomless-type culverts across the smaller watercourse crossings. No work will be conducted below the high water mark and adequate clearance will be provided at the Gillings River crossing for small watercraft. A haul road options evaluation program is being completed to select the preferred route alignment.
- The establishment of an approximately 4 km long rail siding along the existing TSH main line, near its intersection with the proposed haul road. Currently, two options for locating the siding (Siding Option A and Option B) are proposed and will be finalized upon selection of the preferred harul road option. Temporary ore stockpiles will be established at this location to facilitate ore loading.

3.3.1 Construction Phase

The Houston 1 and 2 Mine development (Project Area) will benefit from the presence of extensive and approved infrastructure in the area. Iron ore production from the Project Area will be beneficiated at one of two areas, either the currently approved Silver Yard Beneficiation area or the proposed Redmond Beneficiation Area, which is located in a disturbed area that was previously included in the approved EA for the Schefferville Area Iron Ore Mine (August 2009). The selection of the preferred option will be conducted upon the completion of the beneficiation options evaluations study.

The primary construction activity for the development of the open-pit mines at the Project area will include:

- Clearing the area of trees and brush;
- Grubbing the footprints of the open pits, haul roads, service roads, waste disposal areas, stockpile areas, laydown areas, and water management features, and stockpiling overburden material;
- The mine construction will not impact areas of fish habitat;
- Excavation and construction for the water management features (example ditches and sediment control ponds); and
- Construction of the haul road, internal mine service roads and rail siding;

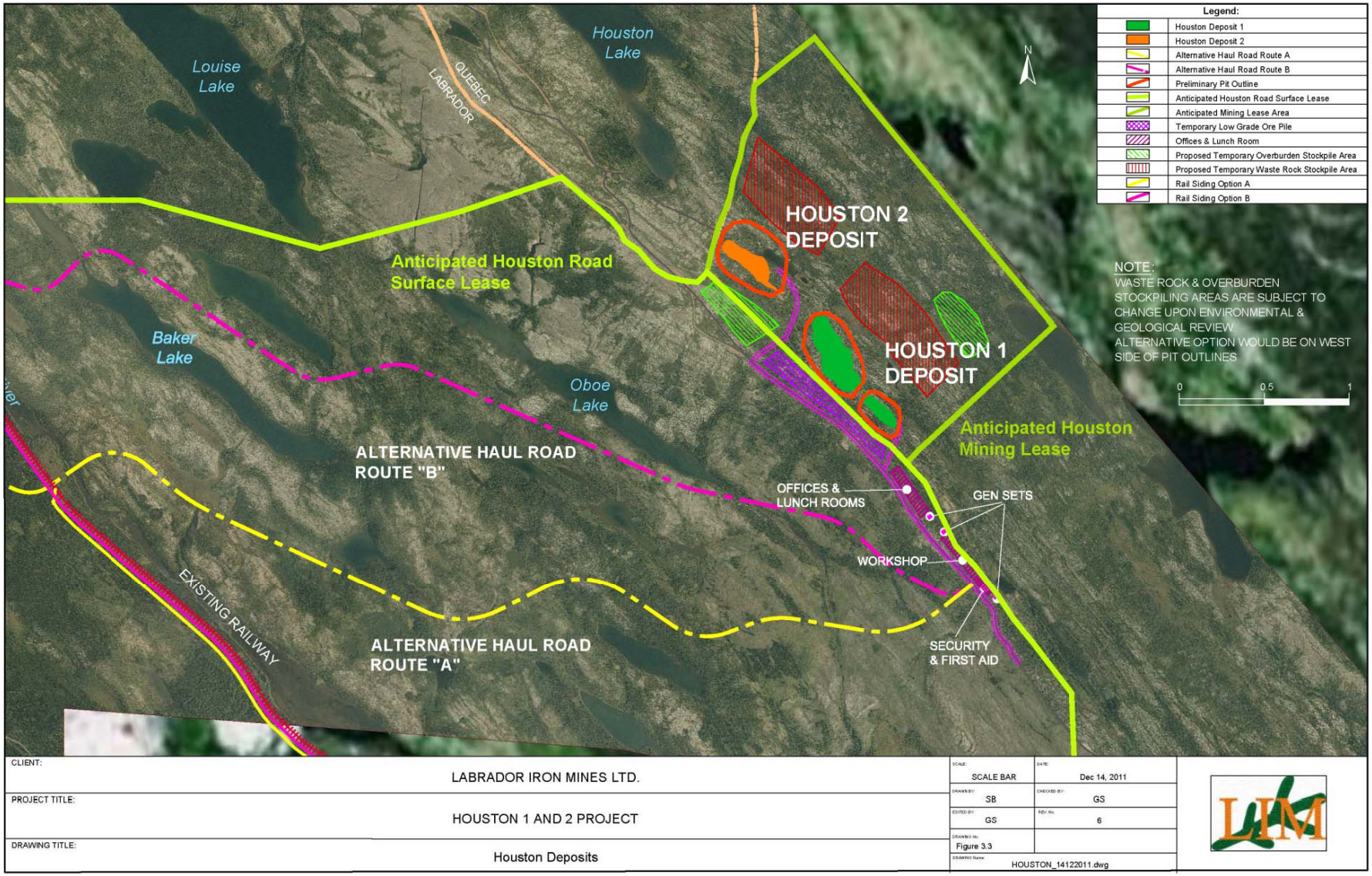
The construction period is expected to be relatively short, probably within a period of three months. Pending the completion of the regulatory and approvals process, LIM anticipates that this work will be completed by the fourth quarter of 2012. The proposed locations of the overburden stockpile area and temporary waste rock stockpiles as well as the preliminary pit outlines at the Houston 1 and 2 mine area are shown in Figure 3-2.

3.3.1.1 Site Facilities

3.3.1.1.1 Supporting Infrastructure

It is not anticipated that any permanent structures will be erected for the mining operations at the Project site. A workshop and warehouse may be established, as well as a portable office which will include services such as washrooms and a first aid room. All of the buildings are expected to be pre-fabricated modular units, i.e. trailers, and will be removed upon completion of operations. General services and infrastructures will be shared with the contractor.

Figure 3-2 Houston Deposits



3.3.1.1.2 Laboratory

The existing LIM laboratory at the Silver Yards area will be used for the Project. An onsite laboratory will not be established at the Project Area.

3.3.1.1.3 Explosives Storage and Mixing Facilities

Mechanical methods will be used, where possible, to break up the rock but this may also require the use of explosives. No new explosives storage facilities are planned for the Houston project. It is currently planned that the existing explosives storage at the James Mine area will be used to source any blasting materials and blasting activities will follow all provincial regulations, including the *Occupational Health and Safety Regulation*, under the *Newfoundland and Labrador Occupational Health and Safety Act 1165* and the *Mine Safety of Workers under Newfoundland and Labrador Regulation 1145/96*.

3.3.1.1.4 Lighting

All buildings will include sufficient perimeter lighting with outdoor fixtures. Exterior lighting will be timer or photocell-controlled. Lighting will also be provided at doorways and overhead doors. Portable lighting plants and lights on mobile equipment will be used within the pit areas to illuminate working areas.

3.3.1.1.5 Camp

The existing camp accommodations at LIM's Bean Lake site will be used for workers.

3.3.1.1.6 Water Use

Initially, it is anticipated that potable water will be tanked to the site and/or bottled water will be transported to the Project. It is also recognized that existing ground water testing has shown that the water may be of suitable quality upon completion of well development and so it is possible that groundwater may be considered at some point in the future. If so, testing and use of groundwater for potable water use will be taken in accordance with applicable regulations and permit requirements. Testing of the potable water quality will be conducted regularly in accordance with provincial requirements. Portable toilets will be installed and emptied on a regular basis.

3.3.1.1.7 Domestic and Solid Waste Disposal

There is no on-site landfill proposed for the Project. In accordance with the existing LIM Schefferville Area Iron Ore Mine approved Waste Management Plan (Appendix E), it is planned that garbage and litter will be collected on-site and delivered to an experienced Labrador-based contractor and placed in a landfill facility in Labrador West, in accordance with applicable regulations. Any food or organic garbage onsite will be held in animal-proof containers to prevent attracting bear, birds, and other wildlife.

No wastes will be deposited in or near watercourses or wetlands. A recycling program is being considered for the area and LIM will support and participate in this initiative, where possible.

3.3.1.1.8 Hazardous Waste

It is not expected that the mine will generate large quantities of hazardous waste. Should any hazardous wastes be generated, they will be stored, transported, and disposed of according to Federal and Provincial waste disposal regulations.

Discarded tires will be handled according to the requirements of the provincial tire recycling program established by the *Waste Management Regulations* and used oil will be collected for recycling or reuse according to the *Used Oil Control Regulations*. In addition, any scrap metals will be taken to a scrap metal recycling operation.

3.3.1.1.9 Power Supply

It is anticipated that power requirement for the Houston Mine site will be supplied by diesel generators.

3.3.1.1.10 Roads, Rail Siding and Water Crossings

There are no roads connecting the area to southern Labrador. Access to the area is by rail from Sept-Îles to Schefferville or by air from Montreal, Sept-Îles or Wabush to the Schefferville airport.

Primary access to the Houston 1 and 2 deposits will be by a new haul road to be developed between Houston 1 and 2 and the Redmond area. The proposed Houston-Redmond haul road is approximately 10km long. Although there are existing roads from the community of Schefferville to the Project area, these roads will be avoided for ore transport to reduce potential impacts on the local community. A rail siding is also proposed to be established alongside the existing TSH main line ROW, near its intersection with the proposed haul road, to facilitate rail transport of the ore and reduce truck-related transport. There are currently two options corresponding to the two haul road options (Options A and B), and the siding location option will be selected once the haul road route option is finalized.

This area currently has several bush roads, used for historical exploration and, where possible, these exploration roads will be incorporated into the haul road construction to reduce the Project footprint. A clear-span-type bridge is proposed for the crossing at the Gilling River and will reduce the need to place any structures below the high water mark of the watercourse. It will be less than 30 metres in length and 20 metres in width. The bridge could be removed upon completion of mining activities in the area, pending regulatory review and further community discussions. Smaller water courses will be crossed using a bottomless culvert or other similar structure, and will also be constructed outside of the high water mark to avoid any potential interactions with fish habitat.

Extensive environmental baseline data has been collected road and rail siding areas, including water course crossings, and this information, in combination with community consultation and incorporation of traditional environmental knowledge, will be used to evaluate the preferred road

option. There are currently two proposed road alignment options (Alternative Routes A and B) as outlined later in this section.

The haul road will be designed and built to permit the safe travel of all of the vehicles in regular service and will follow Section 27 of the *Mines Safety of Workers Regulations*.

Internal mine roads will be engineered and built to permit the safe travel of all vehicles and in accordance with provincial regulations (CNLR 1145/96). These roads will be limited to only mine personnel within the pits.

3.3.1.2 Environmental Protection Procedures during Construction

Monitoring will be conducted during all phases of the work program from construction to closure. Environmental data collection will be conducted to support the requirements for environmental protection. LIM's nearby Schefferville Area Iron Ore Mine currently has an approved Environmental Protection Plan (EPP), including emergency spill response and contingency programs, in place and it is expected that this document will be reviewed and redrafted for use at the Houston 1 and 2 Mine. A copy of this document is presented in Appendix A.

3.3.1.3 Employment and Occupations During Construction

Occupations required during the construction phase are provided in Table 3.1. Certain management positions will be required throughout construction and may overlap with positions at LIM's existing operating mines at the James and Redmond Properties and may only be required on-site for limited periods of time.

As demonstrated at the existing approved Schefferville Area Iron Ore Mine, LIM is committed to the creation and implementation of employment equity practices to help achieve maximum employment and training benefits for the region, including the recruitment, training, and advancement of qualified visible minorities and women, and, as such, will prepare and implement a Women's Employment Plan in association with the development and operation of the Project. LIM is also committed to ensuring maximum benefit to Newfoundlanders and Labradorians who reside nearest the resources.

Table 3.1 Occupations Required During Construction

National Occupational Classification	Number	Position Description
0711	1	Site Manager
0721	1	Lead Foreman
2254	1	Surveyor
7421	2	Equipment Operator - Heavy
7421	2	Equipment Operator – Light
7411	3	Truck Driver
7611	2	Labourer – Specialised
7612	2	Labourer
Total Construction Employment	**14**	

3.3.2 Operation Phase

LIM will perform all mine planning and resource/grade control with its own personnel. All mining operations will be by conventional open pit mining methods. Longitudinal and transverse conceptual pit cross-sections for Houston 1 and 2 are shown in Figure 3-3 and Figure 3-4. The anticipated surface required for the Project is shown in Figure 3-5.

Figure 3-3 Conceptual Pit Cross-Section – Longitudinal

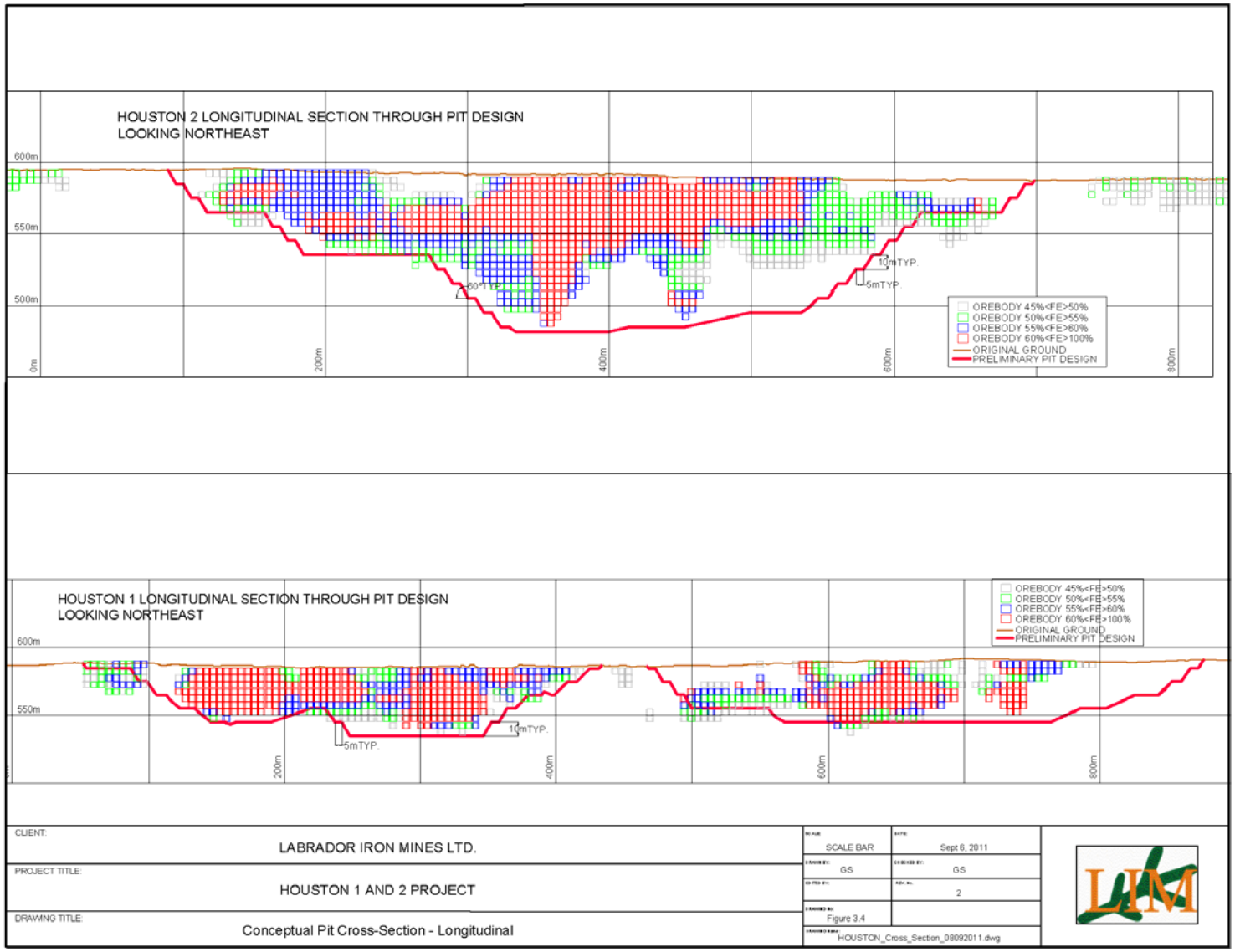


Figure 3-4 Conceptual Pit Cross-Section – Transverse

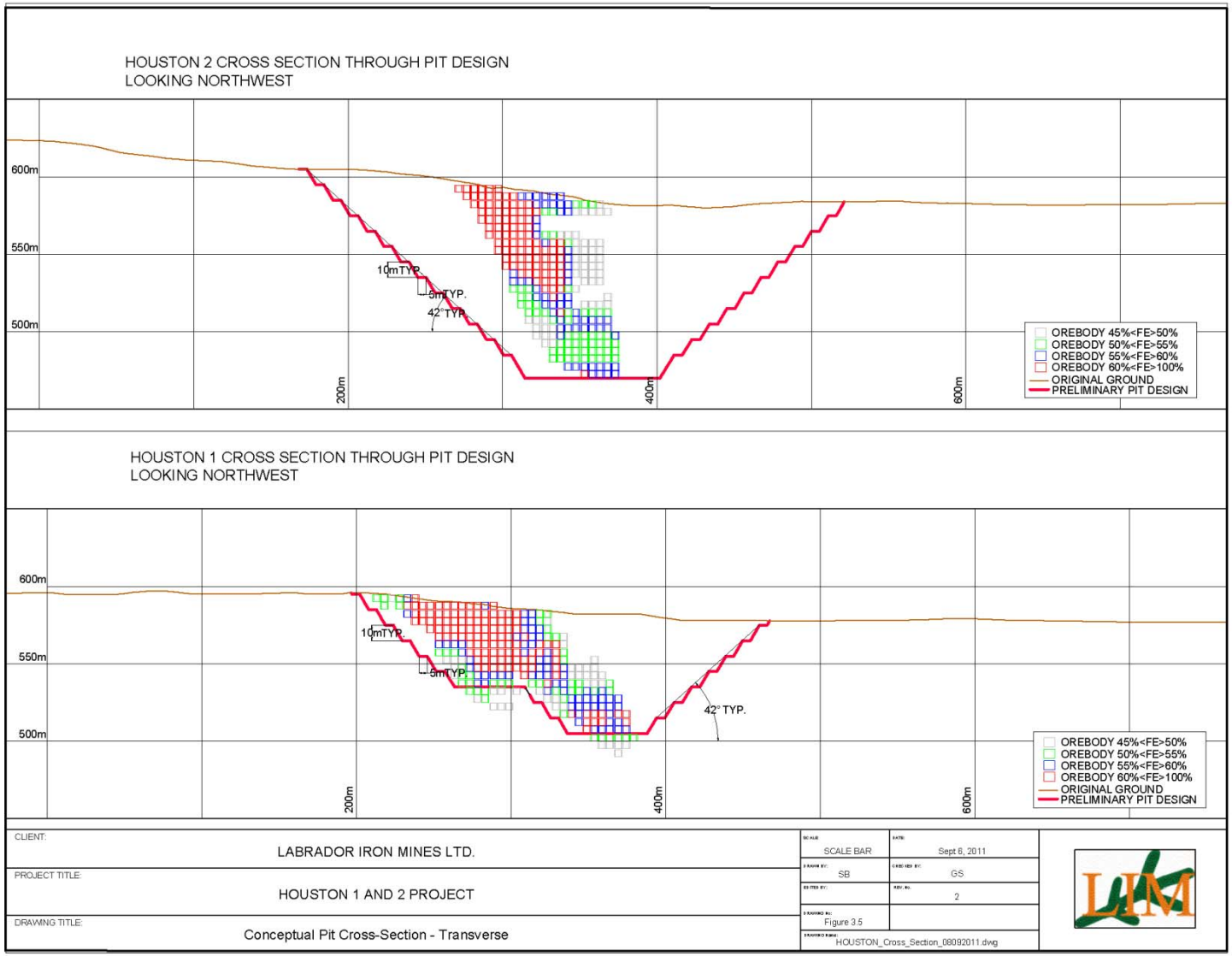
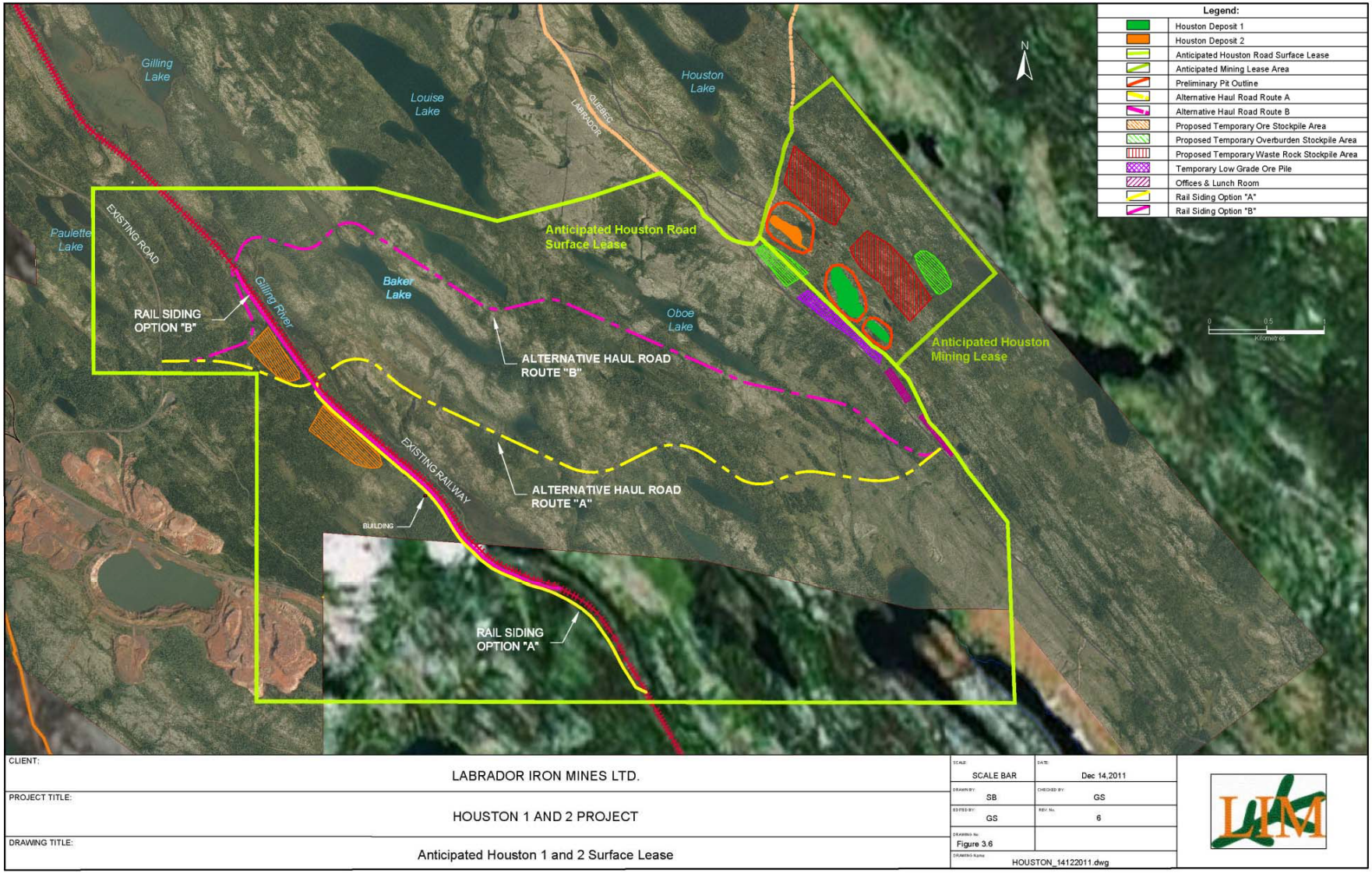


Figure 3-5 Anticipated Houston 1 and 2 Surface Lease



LIM will drill, blast, load and haul ore, waste rock and topsoil to the designated locations. The waste will be hauled to the specific waste dump sites. Upon completion of mining, temporary waste stockpiles may be placed back into the pits from which they originated. Temporary ore stockpiles will also be placed near the rail siding to facilitate loading. Some waste rock may be used for construction of the proposed haul road.

Mining will be conducted year-round and beneficiation will be conducted seasonally, from approximately April to November each year.

3.3.2.1 Maintenance during Operation

Vehicle maintenance will be conducted at the existing approved and permitted LIM facilities, developed as part of the James and Redmond mines (Schefferville Area Iron Ore Mine).

3.3.2.2 Environmental Protection during Operation

Monitoring will be conducted during all phases of the work program from construction to closure.

LIM's nearby Schefferville Area Iron Ore Mine currently has an approved Environmental Protection Plan (EPP), including emergency spill response and contingency programs, in place and it is expected that this document will be updated for use at the Houston 1 and 2 Mine. A copy of this document is presented in Appendix A.

3.3.2.3 Employment and Occupations during Operation

LIM plans to conduct all of the mining operations for the Houston Project – pre-stripping, stockpiling of overburden rock and low-grade ore. LIM currently plans to contract out all transportation services including ore haulage, waste haulage, including service and maintenance of transportation equipment.

The company estimates that approximately 32 full-time direct or sub-contract positions will be created when the mine is in operation. The number of positions may change based on the equipment size selected for mining.

The categories of such permanent positions including contractors, as per the National Occupational Classification are listed below in Table 3.2.

As demonstrated at its nearby approved Schefferville Area Iron Ore Mines (James and Redmond mine areas), LIM is committed to the creation and implementation of employment equity practices to help achieve maximum employment and training benefits for the region, including the recruitment, training, and advancement of qualified visible minorities and women.

Table 3.2 Occupations Required During Operation

National Occupational Classification	Number	Description
1221	1	Administration Officer
1411	1	General Office Clerk
1475	1	Dispatcher/Radio Operator
2113	1	Geologist
2148	1	Professional Engineer
2154	1	Land Surveyor
2212	2	Geological Technologist and Technician
6651	2	Security Guard
7372	2	Driller, Blaster (Surface Mining)
7411	8	Truck Driver
7421	8	Heavy Equipment Operator
8221	2	Supervisor – Mining and Quarrying
8614	2	Mine Labourer
Total Operation Employment	**32**	

3.3.3 Decommissioning/Post-Decommissioning and Reclamation Phase

A Development Plan will be submitted prior to operation to the satisfaction of the Minister, an operational plan will be submitted annually, and a Rehabilitation and Closure Plan will be submitted to provincial Mines Branch before the Project commences. Financial assurance in accordance with applicable regulations will be established, if required.

Progressive rehabilitation will be integrated into mine operations to allow an economical and environmentally effective method of reducing disturbance and potential pollution. At the conclusion of operations, the full plan will be implemented to the satisfaction of the appropriate regulators.

Each mine site will be closed after depletion of mineable reserves and restored according to the approved Rehabilitation and Closure Plan. The aim is to carry out the final closures in a manner that reduces the requirements for long-term monitoring. The rehabilitation measures as established in the rehabilitation and closure plans are to be started as early as practical during the operating mine life, leaving the final closure activities to a minimum.

3.3.4 Potential Accidental Events

LIM is committed to the early identification of potential risks and hazards and addressing these before issues can occur. LIM demonstrates this approach everyday at the nearby Schefferville Area Iron Ore operations through the implementation of Environmental Protection and monitoring programs and Emergency Response Plans.

It is noted that the proper planning, environmental management and monitoring will reduce the potential for such incidents to occur; however, for the purposes of hazard assessment, LIM is aware of the potential for the following accidental events:

- sedimentation events due to slope failure, flooding,
- pollution from vehicular accidents, spills, and
- fire.

LIM has created comprehensive Environmental Protection Plans, Environmental and Emergency Response Plans and training programs to avert the occurrence of such incidents and has proven its ability to manage mine sites in the area in an environmentally sustainable manner through its example at the Schefferville Area Iron Ore mines area. As detailed in Section 3.7, Project-specific Environmental Protection Plans and Environmental monitoring will be implemented to minimize likelihood and significance of any accidents and malfunctions.

A copy of LIM's H&S Policy is presented as follows:

LABRADOR IRON MINES
LIMITED

HEALTH & SAFETY POLICY

Labrador Iron Mines Limited (LIM) and its management are committed to conducting operations in a professional manner in pursuit of excellence in business practices and in compliance with all applicable health and safety legislation. LIM has adopted a Health and Safety Policy to express its commitment to its own and its contractor workforce. During operations LIM is further committed to conducting its operations in a manner that delivers maximum health and safety protection of workers as well as the general public.

In support of excellent business practices, LIM will provide positive avenues for dialogue, communication and training and will work in cooperation with employee representatives from health and safety committees, supervisory personnel, workers and contractors to ensure proper understanding and competency to safely and efficiently perform the work assigned. LIM will further work in cooperation with government representatives and regulatory agencies on all matters related to health and safety compliance.

Routine monitoring and reporting of health and safety performance will form a key part of LIM stewardship and management systems. Where appropriate and necessary LIM will take proactive corrective action to ensure health and safety objectives are attained in support of the overall corporate plan and related regulatory obligations.

LIM will include health and safety performance as an important factor of its management and employee review process and will provide training, resources and staffing so that all employees, contractors and suppliers understand, and are able to conduct their work, in accordance with this Health and Safety Policy.

All LIM executives and their employees and contractors will fulfil their duties and exercise their individual and collective responsibilities in a manner that supports defined health and safety goals and clearly demonstrates compliance with LIM policies, procedures, applicable laws, regulations and industry standards.

John Kearney
Chairman & CEO

Bill Hooley
President & COO

3.4 Potential Effects of the Environment on the Project

LIM demonstrates a daily commitment to the protection of the environment through its sustainable mining practices being conducted at the Schefferville Area Iron Ore Mine. This approach will be implemented at the Houston 1 and 2 deposit area, however, for assessment purposes, the range of potential effects on the Project due to the physical environment can range from minor facility improvement to catastrophic failure. A significant effect of the environment on the Project would be one that results in:

- A substantial delay in construction (e.g., more than one season);
- A long-term interruption in mining operations;
- Damage to infrastructure that compromises public safety; or
- Damage to infrastructure that would not be economically and technically feasible to repair.

The primary mitigation tool to avoid a significant effect of the environment on the Project is the use of sound planning. All engineering design will be done to National and Provincial standards. These standards document the proper engineering design for site-specific extreme physical environmental conditions and provide design criteria, which the federal government considers satisfactory to withstand potential physical environmental conditions.

Based on a climate change analysis conducted for the Schefferville Mine EIS which followed guidance issued by Canadian Environmental Assessment Agency (CEAA 2003), all components of this Project will be designed to avoid any adverse affect to the public or the environment due to the predicted future climate. The Project will be designed and built to safely withstand current climatic conditions in accordance with building codes and standard good practice. All materials specified for this Project will be in compliance with applicable building codes for anticipated temperatures, winds and precipitation levels and as such will maintain the integrity and ductility to function as they were designed. All components of the mine will also be designed to support the structural loadings created by extreme snow and ice events. All erosion and sediment control measures for the mine will be designed to handle extreme participation and sudden snow melt. In particular, settling ponds should be designed with consideration for the predicted increase in extreme precipitation events and overall increase in precipitation.

A site specific weather station was established at the Houston area in 2008 and data from this station, as well as from the nearby Schefferville Airport, have been collected and analysed during this period. Weather forecasts will continue to be monitored during mine construction and operations. If extreme weather conditions in any way compromise a safe operation, accident prevention measures will be taken, including the temporary suspension of operations, as required. Prior to and following extreme precipitation events, all erosion and sediment control structures will be inspected to ensure integrity. Permafrost has not been identified in the Project Area and, therefore the Houston 1 and 2 development is not expected to affect, nor be affected by, permafrost.

The mitigative strategies described above can adequately address potential effects of the environment on the Project such that there will not be a significant adverse effect of the environment on the Project.

3.5 Emissions and Waste Management

3.5.1 Effluent

LIM is committed to environmental protection and monitoring during all phases of the mine development. However, for assessment purposes, there is potential for precipitation infiltration and site drainage during construction to result in run-off water containing suspended solids. To mitigate this, stockpile construction and mine design will incorporate standard prevention strategies for control and treatment of the suspended solids, as required (e.g., ditch blocks, filter cloths, settling ponds).

Storage and management/disposal of sanitary wastewater and greywater will be conducted in accordance with applicable legislation.

Onsite storage of small quantities of hydraulic oils and other materials may be required for limited mine vehicle/equipment maintenance. In addition, diesel storage associated with local or emergency back-up power generation will be required. Petroleum/oil/lubricant (POL) transport, storage, use and disposal will be conducted in accordance with applicable legislation and workers involved in these activities will be trained in the appropriate Environmental, Health & Safety (EHS) approach to working with these materials. Spill kits will be available at key locations on site and workers will be trained in their use and other emergency response procedures. Any required fuel storage would be constructed and operated in accordance with applicable regulations and secondary containment methods, including the use of double-walled tanks and berms to 110 percent of total volume, where appropriate.

3.5.2 Waste Rock, Overburden and Reject Rock Fines

The waste rock disposal plan for the Houston mining area includes an option of temporarily storing the waste rock at the Houston pit areas and then subsequently placing this material back into the mined-out pits upon completion of mining in the area. Should in-pit disposal not be possible, appropriate storage locations will be selected. Waste rock may also be sourced for construction projects, including the haul road, pending confirmation of the preferred routing. Permanent waste rock and overburden materials will be stockpiled and contoured in a manner that conforms to provincial guidelines and regulations. Where applicable, waste rock storage areas will be built up in lifts to limit the overall dumping height. The stockpiled materials will be managed to limit the possibility of suspended solids being introduced into site drainage or adjacent waterbodies. Overburden will be used during site reclamation to support re-vegetation.

3.5.3 Garbage and Litter

There is no on-site landfill proposed for the Project. In accordance with the approved Waste Management Plan for LIM's nearby Schefferville Area Iron Ore Mine (Appendix E), it is planned that garbage and litter will be collected on-site and delivered to an experienced Labrador-based

contractor and placed in a landfill facility in Labrador West, in accordance with applicable regulations and with the approval of the operator of the landfill. Any food or organic garbage onsite will be held in animal-proof containers to prevent attracting bear, birds, and other wildlife. No wastes will be deposited in or near watercourses or wetlands. A recycling program is being considered for the area and LIM will support and participate in this initiative, where possible.

3.5.4 Hazardous Waste Management

It is not expected that the development of these pits will generate large quantities of hazardous waste. However, should any hazardous wastes be generated, they will be stored, transported, and disposed of according to federal and provincial regulations. Licensed contractors, located in Schefferville and experienced in the management and transportation of these types of waste to an approved facility, have indicated availability to offer this service to LIM operations, if needed. LIM will require contractors to follow provincial waste diversion regulations or policies, including provincial programs for beverage containers, tires and waste oil and other petroleum waste products.

Discarded tires will be handled according to the requirements of the provincial tire recycling program established by the *Waste Management Regulations* and used oil will be collected for recycling or reuse according to the *Used Oil Control Regulations*. In addition, any scrap metals will be taken to a scrap metal recycling operation.

3.5.5 Air Emissions

Most roads are unpaved and experience in the area from the start of exploration activities in 2005, as well as information gathered through baseline air monitoring work and consultation with members of the local Schefferville community, indicates that the existing unpaved roadways can be dusty in the summer months, therefore appropriate dust reduction strategies, including water spray, will be conducted and an appropriate method will be selected to control airborne dust, when required. All on-site vehicles and fuel–powered equipment will have all required emissions control equipment and will be maintained in good working order.

3.5.6 Noise

Noise is not expected to represent an issue, as the Project areas are distant from the nearest communities and the road access and rail connections already exist. Proper noise suppression equipment during operation will be maintained in good working order on all vehicles and equipment.

3.5.7 Blasting

As observed at the existing nearby approved Schefferville Area Iron Ore mines, minimal blasting is required in the unique geology of the region. It is currently planned for the Houston 1 and 2 development to not have its own separate explosives storage facility, and to benefit from the blasting and explosives storage being used for the nearby James and Redmond mines.

3.6 Monitoring

Monitoring will be conducted during all phases of the work program from construction to closure. Several monitoring studies already initiated for the nearby approved Schefferville Area Mine Project, including, but not limited to air quality monitoring, caribou and wildlife monitoring, avifauna monitoring, groundwater and surface water quality monitoring, Real Time Water Monitoring and traditional environmental knowledge (TEK) consultation, are anticipated to be expanded to include the Houston properties, as applicable.

LIM has in place, an approved Caribou monitoring and mitigation strategy and, through monitoring and ongoing data collection, LIM will continue to enhance the understanding of caribou activities in the Project area. LIM will comply with the approved Caribou Mitigation Strategy, developed during the Schefferville Area Iron Ore mine EIS, and may also update this plan to provide consideration of the absence of woodland caribou in the area. In accordance with this Plan, LIM will implement an advisory to mine management staff should any herd enter the Assessment Area. Caribou movements, and LIM observations and actions, implemented will be recorded and communicated to the Wildlife Division.

3.7 Environmental Protection Plan

LIM has an existing approved Environmental Protection Plan program (EPP) for the existing nearby Schefferville Area Iron Ore Mine program and undertakes EPP orientation onsite with all new staff. As demonstrated at LIM's existing approved James and Redmond mine sites, environmental protection procedures and measures will be implemented for all stages of the Project. The environmental protection measures summarized below will provide the basis for environmental planning and design of the various physical aspects and environmental characteristics of the Project. Detailed environmental protection procedures are described in the Environmental Protection Plan (EPP) which will be developed prior to commencement of construction for the Project.

Table 3.3 presents a revised table of contents for the Houston 1 and 2 Project based on a minor revision of LIM's approved EPP for the nearby Schefferville Area Iron Ore Mines. A copy of the complete currently approved Schefferville Area Iron Ore Mine EPP document is presented in Appendix A.

Table 3.3 Houston 1 and 2 Project: Example Environmental Protection Plan Table of Contents

1.0	**INTRODUCTION**	
	1.1	Purpose of the Environmental Protection Plan
	1.2	Environmental Protection Plan Organization
	1.3	Roles and Responsibilities
	1.4	Environmental Orientation
2.0	**PROJECT OVERVIEW**	
	2.1	Development of Houston Mine
	2.2	Operation of Houston Mine
3.0	**REGULATORY REQUIREMENTS AND COMMITMENTS**	
	3.1	Approvals, Authorizations and Permits
	3.2	Environmental Compliance Monitoring
	3.3	Rehabilitation of Construction Work Sites
	3.4	Reporting
4.0	**ENVIRONMENTAL PROTECTION PROCEDURES**	
	4.1	Surveying
	4.2	Buffer Zones
	4.3	Laydown and Storage Areas
	4.5	Clearing Vegetation
	4.6	Grubbing and Disposal of Related Debris
	4.7	Overburden
	4.8	Excavation, Embankment and Grading (including cutting and filling)
	4.9	Erosion Prevention and Sediment Control
	4.10	Trenching
	4.11	Watercourse (Stream) Crossings
	4.12	Exploration Drilling, Water Well Drilling, and Pump Tests
	4.13	Pumps and Generators
	4.14	Dewatering Work Areas/Trenches and Site Drainage
	4.15	Equipment Installation, Use and Maintenance
	4.16	Storage, Handling and Transfer of Fuel and Other Hazardous Material
	4.17	Propane
	4.18	Waste Disposal
	4.19	Hazardous Waste Disposal
	4.20	Vehicle Traffic
	4.21	Dust Control
	4.22	Noise Control
	4.23	Civil Works
	4.24	Mine, Open Pit and Mine Road Construction and Maintenance
	4.25	Installation of Pre-fabricated Buildings
	4.26	Site Water Management
	4.27	Drilling and Blasting
	4.28	Caribou
5.0	**CONTINGENCY PLANS**	
	5.1	Fuel and Hazardous Material Spills
	5.2	Wildlife Encounters
	5.3	Forest Fires
	5.4	Discovery of Historic Resources
6.0	**Environmental Protection Plan Control Revisions**	
7.0	**Contact List**	
8.0	**Reference Material**	
9.0	**Signature Page**	
Appendices	List of Abbreviations and Acronyms Controlled Copy Distribution List Revision Request Form and Revision History Log Site Check List Form Background Information on Caribou in Western Labrador	

3.8 LIM Benefits Plan

LIM understands the importance of the Project to the Province of Newfoundland and Labrador and in line with the principles described in this policy will provide full and fair opportunity and first consideration for the people, businesses and companies of the Province to secure employment and to participate in and benefit from the business opportunities associated with the Project. LIM has established a Labrador Iron Mines Limited Newfoundland and Labrador Benefits Policy. LIM will review and revise the Benefits Policy to tailor it to the Houston 1 and 2 Project will develop a Benefits Plan to implement the Benefits Policy.

Subject to the various IBAs and agreements in place, LIM is committed to:

- The delivery of associated benefits, including employment, education, training and business and economic development to the Province and in particular to Labrador on a full and fair opportunity and first consideration basis;
- The encouragement and assistance of residents of the Province, and in particular of Labrador, to receive the education and training necessary to maximize their opportunities for employment, retention and advancement on the Project;
- The procurement of goods and services from within the Province and, in particular from Labrador. Provincial suppliers will be provided full and fair opportunity and first consideration for the supply of goods and commercial services to the Project on a competitive basis;
- The implementation of policies and practices in connection with the procurement of goods and services for the Project that enhance economic and business opportunities in Labrador, including the identification and support of industry businesses that would generate long-term economic benefits to Labrador; and
- The provision of timely Project-related information to encourage the participation of all potential employees, businesses and contractors in the economic opportunities of the Project.

In addition LIM will also comply with the provisions of LIM's existing approved Women's Employment Plan and undertakings, commitments and obligations of Impact Benefits Agreements (IBAs) entered into with Innu Nation of Labrador, the Naskapi Nation of Kawawachikamach, and the Innu of Matimekush-Lac John as well as the Memorandum of Understanding with the Innu Takuaikan Uashat Mak Mani-Utenam. These include, amongst others, employment of approved Aboriginal/First Nations persons and the use of suitable Aboriginal/First Nations Contractors and supplies from all affected communities.

3.9 Women's Employment Plan

The Women's Employment Plan details LIM's approach to employment equity, identifies occupations in which women are under-represented, establishes appropriate initiatives and targets and describes a process for achieving these targets, outlines a monitoring approach, and reviews and revises equity initiatives where appropriate.

The Women's Employment Plan describes:

- The responsibilities of LIM and its main contractors, the process for identifying and implementing targets and initiatives, and the process for monitoring and reporting the implementation of those initiatives and success in achieving targets;
- The types of information and communications, employee recruitment and selection, employee development, working environments, and community outreach initiatives that LIM and its contractors will use to achieve employment equity for women;
- Specific LIM initiatives such as an anti-harassment program, community sensitivity program, and a review of childcare services available; and
- LIM will maintain an ongoing liaison and communication with the Women's Policy Office, the Department of Natural Resources Women's Policy Group and the Women in Resource Development Committee (WRDC), so that they are informed about Project employment requirements, opportunities, and plans.

3.10 Project Related Documents

The following is a list of the various project-related documents used in the preparation of this document:

- Annual Report, 2010-11, 1 April 2010 to 31 March 2011, Naskapi Nation of Kawawachikamach
- Registration Form Pursuant to Section 6 of The *Environmental Assessment Act* – James Mine Project, Prepared by La Fosse Platinum Group Inc., May 4, 1990
- Houston Road Concept Design Report, Kavanaugh Associates, November 7, 2011
- Schefferville Area Iron Ore Mine Registration, August 2009
- Labrador Iron Mines Limited Environmental and Engineering Baseline Work Plan, Prepared for Labrador Iron Mines Limited by Earth Tech Canada Inc., 2006.
- High Level Review of Transportation Options, Prepared for Labrador Iron Mines Limited by Met-Chem Canada Inc., January 24, 2006
- Scoping Study For The Labrador Iron Mountain Iron Ore Project, Prepared for Labrador Iron Mines Limited by T.N. McKillen, January 25, 2006
- Information Review, Property Status Report and Strategy Development, Prepared for Labrador Iron Mines Limited by Earth Tech Canada Inc., March 2006
- Iron Mountain Project 2006/2007 Environmental and Engineering Program - James, Houston and Knob Lake Sites, Health and Safety Plan. Prepared for Labrador Iron Mines Limited by Earth Tech Canada Inc., August 2006
- Assessment of Rail Infrastructure Conditions of the Menihek Subdivision of Tshiuetin Rail Transportation Inc., Prepared for Labrador Iron Mines Limited by Hatch Mott MacDonald, September 13, 2006

- Feasibility Study for the Labrador Iron Ore Project, Prepared by Labrador Iron Mines Limited, September 28, 2006
- Iron Mountain Project Environmental Reconnaissance Program, Prepared for Labrador Iron Mines Limited by Earth Tech Canada Inc., March 2007
- Technical Report of an Iron Project in Northwest Labrador, Prepared for Labrador Iron Mines Limited by SNC Lavalin, October 2007
- Iron Mountain Project. Schefferville Socio-Economic Background Information, Prepared for Labrador Iron Mines Limited by Earth Tech Canada Inc., 2008
- Labrador Iron Mines Baseline Limited Terrestrial Report – James, Redmond & Silver Yards, Prepared for Labrador Iron Mines Limited by AECOM, 2008
- Spring Survey of Caribou in the Vicinity of Schefferville, April - May 2009 (Final Report), Prepared for New Millennium Capital Corp. and Labrador Iron Mines Limited, Groupe Hemispheres and Stassinu Stantec Limited Partnership, November 2009
- Spring Survey of Caribou in the Vicinity of Schefferville (Final Report), Prepared for New Millennium Capital Corp. and Labrador Iron Mines Limited, Groupe Hemispheres and Stassinu Stantec Limited Partnership, May 2010
- Air Quality Technical Study, Prepared for Labrador Iron Mines Limited by Jacques Whitford Limited, January 29, 2009
- Socio-economic Baseline Report, Prepared for Labrador Iron Mines Limited, by Jacques Whitford Limited, June 26, 2009
- Labrador Iron Mines Technical Report of an Iron Project in Northwest Labrador, Province of Newfoundland and Labrador
- Environmental Impact Statement (Revised): Schefferville Area Iron Ore Mine (Western Labrador), Prepared by Labrador Iron Mines Limited. 2009
- Avifauna Management Plan for Activities Associated with the James, Silver Yard, and Redmond Properties, Prepared for Labrador Iron Mines by Stassinu Stantec Limited Partnership, August 2010
- Environmental Protection Plan for Construction and Operation Activities, Schefferville Area Iron Ore Mine (Western Labrador), by Labrador Iron Mines Holdings Ltd., 2010
- Schefferville Area Iron Ore Mine Development Plan, by Labrador Iron Mines Limited, April 2010
- Schefferville Area Iron Ore Mine Rehabilitation and Closure Plan, by Labrador Iron Mines Limited, July 2010
- Waste Management Plan, Schefferville Area Iron Ore Mine, by Labrador Iron Mines Holdings Ltd., 2011
- Classification of Wildlife Habitat Suitability for Houston and Howse Mineral Claims Blocks for the Schefferville Area Iron Ore Mine, Prepared for Labrador Iron Mines Limited by Stassinu Stantec Limited Partnership, 2010

- Stage 1 Historic Resources Assessment – Labrador Iron Mines 2008 Exploration Activities, Report prepared for Labrador Iron Mines Limited by Jacques Whitford Stantec Limited, 2009
- Desktop Review of Historic Resources Potential Labrador Iron Mines Ruth 8 and Gill Properties, Prepared for Labrador Iron Mines Limited by Stassinu Stantec Limited Partnership, May 2010

4.0 SCHEDULE

Subject to regulatory and environmental approvals, construction is expected to start at the Houston 1 and 2 deposits and on the Houston-Redmond haul road in 2012 or early 2013.

Mobilization to the site and set-up of basic site services and access will commence once the required permits are in place. Site preparation, infrastructure construction and full start-up (ready for production) are anticipated to take at least three months. Production is preliminary scheduled to commence in the last quarter of 2013 (Table 4.1). The estimated production schedule predicts production out to the year 2019 as shown in Table 4.2.

Table 4.1 Houston 1 and 2 Pre-Production Schedule

Houston 1 & 2 Proposed Development Schedule

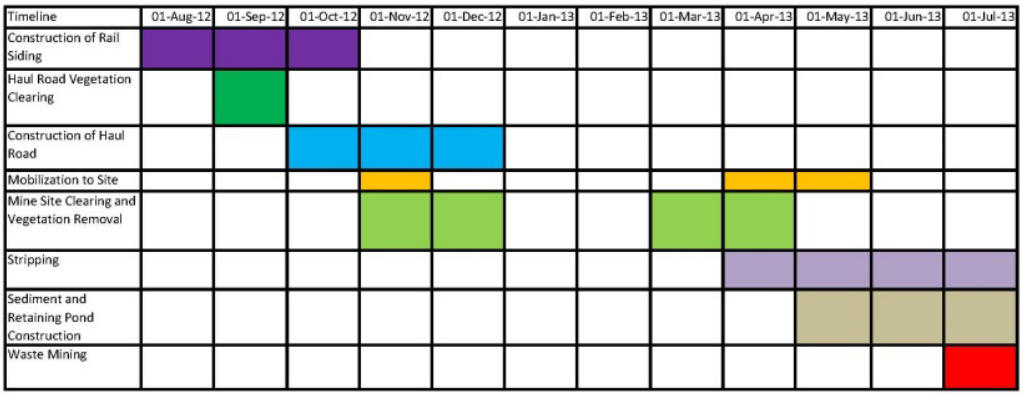


Table 4.2 Houston 1 and 2 Production Schedule

Period	Waste Tonnes	Ore Tonnes	Total Tonnes
2,013	750,000	500,000	1,250,000
2,014	4,525,000	1,500,000	6,025,000
2,015	5,500,000	3,500,000	9,000,000
2,016	5,500,000	3,500,000	9,000,000
2,017	5,500,000	3,500,000	9,000,000
2,018	5,500,000	3,500,000	9,000,000
2,019	1,000,000	750,000	1,750,000
OVERALL	28,275,000	16,750,000	45,025,000

5.0 FUNDING

The Project will be funded internally and will not involve any government funding. The estimated cost for Project development is less than$20 million CAD.

6.0 COMMUNITY AND ABORIGINAL CONSULTATION

6.1 Consultation and Accommodation

6.1.1 General

The closest community to the Project is Schefferville, Quebec which is located less than 2 km from the border with Labrador, on the northern shore of Knob Lake. It was established by the Iron Ore Company of Canada in 1954 to support mining operations in the area.

Iron ore mining at Schefferville ceased in 1982 and many of the 4,000 non-Aboriginal occupants left at that time, leaving a primarily Aboriginal community comprised of people who had settled there in the preceding 30 years. Some houses and public facilities have been demolished since this time, but some new homes have been built. The median age is 39.2 years, with approximately 60 families residing within the community.

Since early exploration activities in 2005, LIM has been in continual contact with the communities located nearthe development area and with the Innu Nation of Labrador and other Aboriginal/First Nation communities having a stated interest or historic connection to the area. For example, LIM has initiated communications with occupants of cabins identified within the region, although not within the Project Area, and will continue communications with them as the Project develops.

As well, LIM maintains contact with the civic administration of the towns of Labrador City, Wabush, Happy Valley-Goose Bay and the town of Schefferville. In these communities stakeholder consultation activities have included frequent meetings with Band Councils, Mayors and Councils, local businesses, local political representatives, local interest groups, provincial and federal regulators, educators and a wide variety of consultants that are involved with stakeholders.

LIM has opened community relations offices at the existing Schefferville Area Iron Ore Mine – Silver Yards, Labrador City and Happy Valley-Goose Bay. LIM is dedicated to providing early and clear information to the community and working with all communities towards the common goal of positive, respectful and sustainable development in the area.

Project design and implementation will include consideration of information resulting from ongoing consultation with the communities, traditional environmental knowledge, environmental and engineering considerations and best management practices. These consultations and agreements will ensure a close working relationship with the local communities with respect to their involvement in the provision of labour, goods and services to the Project.

LIM's nearby Schefferville Area Iron Ore Mine went into full production in 2011, marking the first mining and production of iron ore from this historic mining area in over 30 years. This

development has brought many positive and direct benefits and the Houston 1 and 2 project will build on this work, Direct and indirect economic benefits for various communities and stakeholders are expected from the proposed mine development. The ongoing economic impact of such employment and contracting business will be very positive and lead to the development of other support and service sector jobs, education and training, and consistent and planned development and growth.

6.1.2 Aboriginal Consultation

Consultation is a central objective of the environmental assessment process. Aboriginal consultation has a similar objective as public consultation in which to identify and address issues and concerns related to the Project.

The Quebec-Labrador Peninsula area probably has one of the most complicated patterns of aboriginal settlement in eastern Canada with six or possibly seven Aboriginal or First Nation peoples claiming traditional and native rights to all or part of the area underlain by LIM's Iron Ore Project. Several of the communities have conflicting territorial or land claims. This regional complication of Aboriginal/First Nation issues has recently prompted the Government of Canada to establish an Overlapping Commission on November 2010. This Commission will provide a forum for addressing the issues of jurisdictional overlap for the territories and the sharing of economic development initiatives as a result of mining and hydro-electric development in the region.

The Aboriginal groups of the Quebec-Labrador Peninsula most directly affected by the Project are the Innu Nation of Labrador, the Naskapi Nation of Kawawachikamach (NNK), the Innu Nation of Matimekush-Lac John (MLJ), the Innu Nation of Takuaikan Uashat Mak Mani-Utenam (ITUM) and NunatuKavut (formerly the Labrador Métis Nation). These groups may have overlapping land claims issues or traditional claims covering western Labrador. The Naskapi Nation is the only group with a finalized comprehensive land claim agreement; the others are in various stages of negotiation with the federal and provincial governments. However, the land claims of Quebec Aboriginal groups in Labrador have not been accepted for negotiation by the Government of Newfoundland and Labrador.

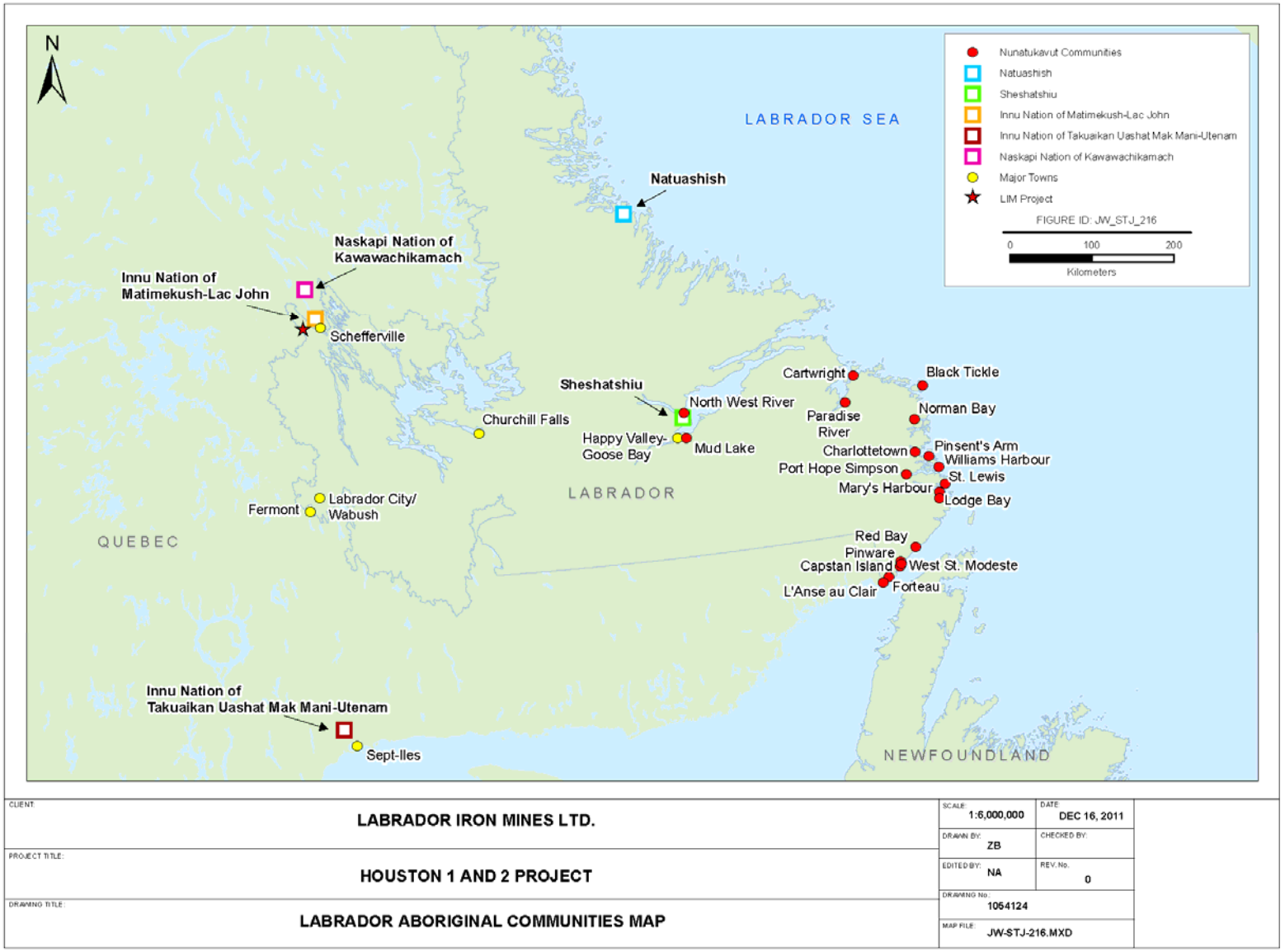
LIM has pursued an extensive and proactive engagement with all of the aboriginal communities living close to the project location or having traditional claims to the surrounding territory and commenced such consultations respecting the Schefferville Area Iron Ore Mine (Western Labrador) Project with a meeting between LIM and Naskapi Nation in Kawawachikamach in May 2005. Between May 2005 and June 2011 many consultation meetings were held in Newfoundland and Labrador (Labrador City/Wabush, Happy Valley-Goose Bay and St. John's), Nova Scotia (Halifax), Quebec (Schefferville, Kawawachikamach, Uashat, Matimekush, Montreal and Quebec City) and Ontario (Ottawa and Toronto) with the leadership and negotiating teams representing the various communities. Participants and summaries of each meeting are provided in Appendix F.

These consultations have resulted in the signing of IBA agreements with the Innu Nation of Labrador, the Naskapi Nation of Kawawachikamach, and the Innu Nation of Matimekush-Lac John, as well as the development of a draft IBA agreement withthe Innu Nation of Takuaikan Uashat Mak Mani-Utenam. These agreements relate to the establishment of a positive ongoing

relationship between LIM and these Aboriginal/First Nation relating to the development and operation of the Project and to the economic benefits that will accrue to the aboriginal communities.

Refer to Figure 6-1 for locations of the Aboriginal communites in Labrador.

Figure 6-1 Labrador Aboriginal Communities Location Map



6.1.2.1 Labrador Innu Nation

The Innu of Labrador live primarily in two communities in central and coastal Labrador: the coastal community of Natuashish, and the Upper Lake Melville community of Sheshatshiu. Residents of Natuashish are known as the Mushuau Innu, and residents of Sheshatshiu as Sheshatshiu Innu. Each community is administered by an elected Chief and Band Council. Politically, the two communities are represented by the Labrador Innu Nationwhich is led by an elected Grand Chief.

The Labrador Innu claim Aboriginal rights and title to most of Labrador, referring to it as Nitassinan. Their land claim was accepted for negotiation by the federal and provincial governments, with formal negotiations beginning in 1991. An Agreement-in-Principle is presently being negotiated.

In 1998, the Mushuau and Sheshatshiu Band Councils formed Innu Development Limited Partnership, a for profit corporation registered with the Province. It is committed to creating opportunities for employment and economic development for private Innu businesses by creating and managing equity ownership and partnerships in strategic industries.

The Premier of Newfoundland and Labrador and the Grand Chief of Innu Nation, announced on September 26, 2008 the signing of the Tshash Petapen Agreement (The New Dawn Agreement). This Agreement resolves key issues relating to matters between the province and Innu Nation surrounding the Innu Rights Agreement, the Lower Churchill Impacts and Benefits Agreement (IBA) and Innu redress for the Upper Churchill hydroelectric development. The final agreements based on the Tshash Petapen Agreement were ratified by the Innu people on June 30, 2011.

6.1.2.1.1 Issues

The main issues raised by the Innu Nation of Labrador during the IBA negotiations and the consultation process for the Schefferville Area Iron Ore Mine (Western Labrador) Project (the James and Redmond) mine development were:

- economic benefits and revenue sharing;
- the provision of sustainable economic development within the region in order to provide employment and business opportunities for its members;
- protection for the environment;
- training and education programmes so that Innu Nation members might fully participate in available opportunities;
- cultural and heritage protection and development.

Through discussion and negotiation during and subsequent to the Impact Benefits Agreement process, the parties reached satisfactory agreement on all of these issues, including the processes for implementation, coordination and oversight of mitigation strategies to address these issues. The communities will directly participate and/or be actively consulted as follows:

- Implementation committee;
- Community collaboration committee;
- Training and education committee;
- Establishing employment and workplace conditions;
- Business and contracting opportunities;
- Environmental monitoring;
- Traditional knowledge collection;
- Heritage resource and cultural protection;
- Financial participation

6.1.2.1.2 Impact Benefits Agreement

In July 2008, LIM entered into an Impact Benefits Agreement with the Innu Nation of Labrador, replacing an earlier Memorandum of Understanding. This life-of-mine agreement establishes the processes and sharing of benefits that will ensure an ongoing positive relationship between the LIM and the Innu Nation. In return for their consent and support of the Project, the Innu Nation and their members will benefit through training, employment, business opportunities and financial participation in the Project.

6.1.2.2 Innu Nation of Matimekush-Lac John

The Innu Nation of Matimekush-Lac John, also known as the Montagnais Innu, live primarily in the northeastern Quebec towns of Matimekush and Lac-John, near Schefferville. The community is governed by an elected Band Council consisting of a Chief and Councillors.

The Montagnais Innu voluntarily moved to the Schefferville region in the early 1950s when the Quebec North Shore & Labrador (QNS&L) Railroad was completed. The people were traditionally members of the Innu Nation of Takuaikan Uashat Mak Mani-Utenam located adjacent to Sept-Iles. Initially they shared the community at Lac-John with the Naskapi who arrived in the region at the same time. The Montagnais have historical and traditional interests in the region, having historically travelled to the region from Sept-Iles to trap and hunt. The community includes the reserve of Matimekush, adjacent to Schefferville, and the reserve of Lac-John, 3.5 km from Matimekush. When IOC's Schefferville mines closed in the early 1980s, the Montagnais extended the reserve of Lac-John into the town of Schefferville, to avail of the existing infrastructure no longer in use by the town (sewer and water system, school, arena).

The Montagnais' comprehensive land claim, filed in association with the Atikamekw of southern Quebec, was accepted federally in 1979 and provincially in 1980. The two Aboriginal groups were represented by the Atikamekw-Montagnais Council (AMC) until 1994. After dissolution of the AMC, the Montagnais formed three negotiation groups: the Mamuitun mak Natashquan Tribal Council, the Mamu Pakatatau Mamit Assembly, and the Ashuanipi Corporation.

Together with the Naskapi Nation of Kawawachikamach and the Innu Nation of Takuaikan Uashat Mak Mani-Utenam, the Montagnais have acquired in interest in Tshiuetin Rail Transportation Inc. (TSH), an aboriginal-owned corporation which owns and operates the northern portion of the former QNS&L rail line between Ross Bay Junction and Schefferville. Operations include passenger service twice weekly and weekly freight service between Schefferville and Sept-Iles. The Montagnais are also partially responsible for maintenance at the Schefferville Airport and operate construction businesses.

6.1.2.2.1 Issues

The main issues raised by the Innu Nation of Matimekush-Lac John during IBA negotiations and the consultation process for the Schefferville Area Iron Ore Mine (Western Labrador) Project (the James and Redmond) mine development were:

- Sustainable economic development in order to provide employment and business opportunities for its members. The community comprises a significant un- or under-employed young population with little or no available employment base;
- Economic benefits;
- Environmentally and culturally sustainable development;
- Desire to see the commercial development of TSH Railway without impact on the existing passenger service;
- Training and education programmes so that members of the community might fully participate in available opportunities;

Through discussion and negotiation during a Memorandum of Understanding and IBA process, the parties have openly discussed all of these issues and a cooperation and impact agreement include the processes for implementation, coordination and oversight of mitigation strategies to address these issues. It is expected that the communities will directly participate and/or be actively consulted as follows:

- Implementation committee;
- Training and education;
- Employment, business and contracting opportunities;
- Traditional knowledge collection;
- Heritage resource and cultural protection;
- Economic benefits;

6.1.2.2.2 Agreements

In March 2008 LIM signed a Memorandum of Understanding and in June 2011 a full IBA agreement was signed with the Innu Nation of Matimekush-Lac John following community ratification. This life-of-mine agreement establishes the processes and sharing of benefits that will ensure an ongoing positive relationship between the LIM and the Innu Nation of Matimekush-Lac John. In return for their consent and support of the Project, the Nation and their

members will benefit through training, employment within the limits of the Newfound Land and Labrador's benefit agreement, business opportunities and financial participation in the Project.

6.1.2.3 Innu Nation of Takuaikan Uashat Mak Mani-Utenam

The Innu Nation of Takuaikan Uashat Mak Mani-Utenam are closely related to the Montagnais Innu of Matimekush-Lac John. They have historical and traditional interests in the Project area, having traditionally used the area for hunting and trapping. They are one of the largest Innu communities in Quebec, living in two settlements within their reserve, Uashat and Maliotenam, both on the Quebec North Shore, near Sept-Iles. The communities are administered by a Band Council comprised of an elected Chief and Councillors. In addition to typical administrative duties, the Band Council also operates the local police force.

The Innu of Takuaikan Uashat Mak Mani-Utenam joined the Matimekush-Lac John Innu in 2005 to create the Ashuanipi Corporation initially to represent them in comprehensive claims negotiations. This arrangement has been dissolved but the corporation has been revived by the Innu Nation of Takuaikan Uashat Mak Mani-Utenam to pursue economic development opportunities.

Together with the Naskapi Nation of Kawawachikamach and the Montagnais, the Innu Nation of Takuaikan Uashat Mak Mani-Utenam have acquired in interest in Tshiuetin Rail Transportation Inc. (TSH), an aboriginal-owned corporation which owns and operates the northern portion of the former QNS&L rail line between Ross Bay Junction and Schefferville.

6.1.2.3.1 Issues

The main issues raised by the Innu Nation of Takuaikan Uashat Mak Mani-Utenam during the consultation process for the current Schefferville Area Iron Ore Mine (Western Labrador) Project (the James and Redmond) mine development and IBA negotiations were:

- economic benefits;
- employment and business development opportunities for its members;
- commercial development of TSH Railway;
- environmentally and culturally sustainable development;
- protection of the trapping activities of the Uashaunnaut families holding Beaver Lots in the region;
- Training and education programmes so that its members might fully participate in available opportunities;
- cultural and heritage protection and development.

The parties have openly discussed all of these issues and have developed agreementsthat will include the processes for implementation, coordination and oversight. It is expected that the community will directly participate and/or be actively consulted as follows:

- Implementation committee;

- Training and education;
- Employment, business and contracting opportunities;
- Environmental monitoring committee;
- Traditional knowledge collection;
- Foundation for Ushaunnaut families and traditional heritage protection;
- Economic benefits.

6.1.2.3.2 Agreements

Negotiations toward an Impact and Benefit Agreement (IBA) between LIM and the Innu Nation of Takuaikan Uashat Mak Mani-Utenam were conducted between September 2005 and April 2011. The parties reached draft agreement on the terms and scope of an impact benefits agreement in April 2011. This life-of-mine agreement establishes the processes and sharing of benefits that will ensure an ongoing positive relationship between the LIM and the Innu Nation of Takuaikan Uashat Mak Mani-Utenam. In return for their consent and support of the Project, the Nation and their members will benefit through training, employment, business opportunities and financial participation in the Project. The agreement has yet to be ratified by the Council and Community.

6.1.2.4 Naskapi Nation of Kawawachikamach

The Naskapi Nation of Kawawachikamach was originally a small nomadic tribe, settling in Fort Chimo in the mid-1800s, before moving to Schefferville in the 1950s. The Naskapi relocated to the present site of Kawawachikamach, approximately 16 km north of Schefferville in the 1980s following the James Bay Settlement.

Between 1981 and 1984, self-government legislation was negotiated with the federal government. These negotiations resulted in the Cree-Naskapi (of Quebec) Act and led to the formation of the Naskapi Band of Quebec in 1984. The Naskapi Band of Quebec was one of the first self-governing Bands in Canada. The name was changed to Naskapi Nation of Kawawachikamach in 1999.

The community of Kawawachikamach is administered by the Band Council, consisting of an elected Chief and Councillors. In addition to typical municipal duties, the Band Council is responsible for maintaining the local police force, the local volunteer fire department, local childcare centre, and local school.

The Naskapi Nation, through the Band Council, operate several corporate entities within Kawawachikamach and Schefferville including the Naskapi Landholding Corporation, Garage Naskapi, Kawawachikamach Energy Services Inc., Naskapi Imun Inc (an internet service and software company), Naskapi Caribou Meat Inc., and Naskapi Development Corporation. In addition, they hold contracts for maintenance of the Schefferville Airport, local road maintenance, and own interests in Tshiuetin Rail Transportation Inc.

6.1.2.4.1 Issues

The main issues raised by the Naskapi Nation of Kawawachikamach regarding the project during IBA negotiations and the consultation process for the Schefferville Area Iron Ore Mine (Western Labrador) Project (the James and Redmond) mine development were:

- economic benefits;
- the provision of sustainable economic development in order to provide employment and business opportunities for its members. The community comprises a significant un- or under-employed young population with no significant employment base;
- environmentally and culturally sustainable development including specific emphasis on the protection of any caribou observed;
- training and education programmes so that its members might fully participate in available opportunities;
- interest in the commercial development of TSH Railway;
- cultural and heritage protection and development.

Through discussion and negotiation during the Memorandum of Understanding and IBA agreement processes, the parties have openly discussed all of these issues and the cooperation and impact benefits agreement includes the processes for implementation, coordination and oversight of mitigation strategies to address these issues. The community will directly participate and/or be actively consulted as follows:

- Implementation committee;
- Community collaboration committee;
- Training and education committee;
- Establishing employment and workplace conditions;
- Business and contracting opportunities;
- Environmental monitoring committee;
- Traditional knowledge collection;
- Heritage resource and cultural protection;
- Economic benefits.

6.1.2.4.2 Agreements

In April 2008 LIM signed a Memorandum of Understanding and in August 2010 an Impact Benefits Agreement with the Naskapi Nation of Kawawachikamach. This life-of-mine agreement establishes the processes and sharing of benefits that will ensure an ongoing positive relationship between the LIM and the Naskapi Nation of Kawawachikamach in Labrador. In return for their consent and support of the Project, the Nation and their members will benefit through training, employment, business opportunities and financial participation in the Project.

6.1.2.5 NunatuKavut Community Council

TheNunatuKavut Community Council (NCC), also identified as NunatuKavut, comprises those peoples of Inuit and mixed Inuit/European ancestry residing in the southern part of Labrador, from the Churchill River, south to Lodge Bay and west to the extent of the official border between Quebec and Labrador. NunatuKavut states that its 6,000 members live in 23 Labrador communities, seventeen of which are on the southeast coast from Paradise River to L'Anse au Clair. It also states that members reside in six other communities in central and western Labrador, including Happy Valley-Goose Bay and Labrador City.

This area is referred to as NunatuKavut, meaning "Our ancient land" in the Inuktitut dialect of the NunatuKavummuit people. NCC asserts that its members are the ancestors of the southern Inuit of Labrador who have continuously occupied and used the region for almost a thousand years. During the 18th century, some European men, settled, took Inuit wives, and permanently assimilated into the local culture. The descendents of these two cultures can be seen within the communities that line the southern coastal and interior waterways of Labrador. Although influenced in many ways by prolonged contact with seasonal workers and merchants, the culture and way of life has remained distinctly Inuit. There are more than 6,000 Inuit-Métis of Labrador. Membership in the LMN is open to people of Native ancestry, originally from Labrador.

NunatuKavut is led by a President and Council. Since its formation as a society in 1981 (as LMN), and its incorporation under provincial law in 1985, NunatuKavut has grown to become the largest Aboriginal group in Labrador. As a not-for-profit organization, NunatuKavut is committed to promoting and ensuring the basic human rights of its members as Aboriginal persons, and the collective recognition of these rights by all levels of government. The LMN is an affiliate of a national Aboriginal representative body, the Congress of Aboriginal Peoples.

NunatuKavuthas filed a comprehensive land claim with the province of Newfoundland and Labrador as well as with the Federal government of Canada.

6.1.2.5.1 Issues

LIM's consultation with LMN has been somewhat limited and sporadic in comparison with the Aboriginal/First Nation communities. The issues raised by the Labrador Métis Nation are similar to those of other aboriginal groups in the area and revolve around the sharing of economic benefits and the provision of sustainable economic development in order to provide employment and business opportunities for its members.

6.2 Community Consultation

Since early exploration activities in 2005, LIM has also been in continual contact with the non-aboriginal communities situated near the development area as well as with the Aboriginal/First Nation communities. LIM maintains regular contact with the civic administration of the towns of Labrador City, Wabush, Happy Valley-Goose Bay, Schefferville and Kawachicamach. These community and stakeholder consultation activities have included frequent meetings with Mayors

and Councils, local businesses, Chiefs and Councils, local political representatives, local interest groups, provincial and federal regulators, educators and a wide variety of stakeholders.

As there are no nearby established communities in Labrador, LIM has opened community relations offices in Schefferville, Labrador City and Happy Valley-Goose Bay. LIM is dedicated to providing early and clear information to the community and working with all communities towards the common goal of positive, respectful and sustainable development in the area.

The Community Consultation process has already been described in detail in the Environmental Impact Statement for the Schefferville Area Iron Ore Mine (Western Labrador) Project August 2009, which refers specifically to the development of the James and Redmond deposits in the first phase of LIM's proposed sequential development of the deposits making up its Western Labrador Iron Ore Project.

Subsequent to the preparation of that document, discussions and negotiations with the non-Aboriginal communities has been detailed and ongoing and each community has been appraised of the totality of LIM's direct shipping iron ore Project and the decision to develop the constituent iron ore deposits in a sequential manner commencing first with the James and Redmond deposits to be followed by other deposits in the area, including the Houston 1 and 2 deposits, with additional plant construction and related facilities and the subsequent future development to be determined as deposit resource evaluation is completed.

Through regular meetings with Mayors and Councils or town administrators and other representatives and community organisations, the communities are being kept appraised of the on-going development of each stage of the Project. Each community will be consulted in detail during the Environmental Assessment or similar process for each new part of the Project development.

Consultation communications are tracked using the Sustainet consultation database management system.A comprehensive cataloguing of the consultation process is included in Appendix F.

6.3 Traditional Ecological Knowledge

A Traditional Ecological Knowledge (TEK) program, including the collection of hunting, trapping, berry-picking and other traditional activities, has been undertaken by LIM. This program includes consultation with an Elder's Committee as well as a mail-out of letters and summary reports prior to and after the 2009 and 2010 Caribou Surveys.

The TEK program includes the following components:

- A significant portion of environmental baseline work has been conducted by Stassinu, a joint venture company between Stantec and the Labrador Innu Nation, facilitating the onsite collaborative involvement of the Labrador Innu in the various environmental programs.
- Copies of government submissions and reports have been out to all four involved communities for their review and approval before finalization and issuance of any approvals.

- Meetings have been conducted with the Councils and representatives of the involved communities to present and discuss the proposed environmental baseline programs, present details of proposed development programs for discussion, and to collect information on the natural and social environment for consideration in program design.
- In areas of existing development, such as the current Schefferville Area Iron Ore mine (James and Redmond properties), discussions have been initiated with local communities to discuss environmental initiatives and to incorporate local knowledge and observations into the environmental program. Valuable information collected during these programs will be incorporated into future development program rehabilitation efforts, including that of the Houston site.
- During environmental baseline work, LIM has continually sought to partner local community representatives with environmental consultants during their field work to facilitate collaborative sharing of information and technology transfer and training.

Direct and indirect economic benefits for various communities and stakeholders are expected and this will continue the positive developments initiated by LIM as part of its Schefferville Area Iron Ore Mines at James and Redmond deposits. The ongoing economic impact of such employment and contracting business will be very positive and lead to the development of other support and service sector jobs, and consistent and planned development and growth.

7.0 ENVIRONMENTAL SETTING AND EXISTING CONDITIONS

The Houston area is located in the Province of Newfoundland and Labrador in the western central part of the Labrador Trough iron range, approximately 20km southeast of the town of Schefferville, Quebec, and approximately 10km from the approved Redmond mine area. The Houston 1 and 2 properties (Project Area) comprise twelve Mineral Rights Licenses, representing 112 mineral claims, covering approximately 2,800 hectares (ha). The Houston deposits comprise three separate deposits currently identified as Houston 1, 2 and 3.

There are no roads connecting the Project area to southern Labrador or southern Quebec. Access to the area is by rail from Sept-Îles to Schefferville, and by air from Montreal and Quebec City via Sept-Îles and Wabush.

The Project Area is located in the Schefferville mining district which consists of bedrock-controlled deposits with the average elevation of the properties varying between 500m and 700m above sea level (asl). The Project Area shows evidence of surface disturbance related to historic exploration and mine activities.The Schefferville region is situated at the southern edge of the forest tundra (Hustich 1949; Hare 1950; Waterway et al. 1984).The Properties contain varied land classes from exposed tundra/exposed bedrock with lichen and scattered trees and shrubs to low wetland areas, including bogs. Intermediate land classes consist of varied forest types with spruce-moss and spruce-lichen predominating although merchantable timber was not noted. Observed canopy cover for all forest sites ranged from 0 to 80 percent, with most in the range of 30 to 60 percent. The terrain is comprised of parallel ridges and valleys trending northwest to southeast, is thinly forested, with bare rock exposures and moose barrens.

Environmental baseline work, initiated in the Project area in 2005, includes:

- Geology and Preliminary ARD Assessment;
- Surface water sampling, geochemistry, and general water quality;
- Aquatic habitat mapping (lake, pits and streams);
- Benthic community and sediment surveys;
- Vegetation surveys;
- Avifauna and Wildlife Surveys;
- Traditional Environmental Knowledge programs;
- Caribou surveys;
- Snow and ice pack;
- Bathymetry Studies;
- Air quality;
- Noise and vibration;
- Climatology (temperature and precipitation) surveys;

- Fish community surveys;
- Fish tissue sampling;
- Hydrology and hydrogeology;
- Detailed fish habitat assessments of watercourse crossings;
- Traditional Environmental Knowledge (TEK) programs; and
- Cultural resources and archaeological assessment.

Relevant information from selected programs is summarized below to provide a better understanding of the existing conditions in the Project area.

7.1 Regional Geology

At least 45 hematite-goethite ore deposits have been discovered in an area 20 km wide that extends 100 km northwest of Astray Lake, referred to as the Knob Lake Iron Range, which consists of tightly folded and faulted iron-formation. The iron deposits occur in deformed segments of iron-formation, and the ore content of single deposits varies from one million to more than 50 million tonnes.

The Knob Lake properties are located on the western margin of the Labrador Trough adjacent to Archean basement gneisses. The Labrador Trough, known as the Labrador-Québec Fold Belt, extends for more than 1,000 km along the eastern margin of the Superior craton from Ungava Bay to Lake Pletipi, Québec. The belt is about 100 km wide in its central part and narrows considerably to the north and south.

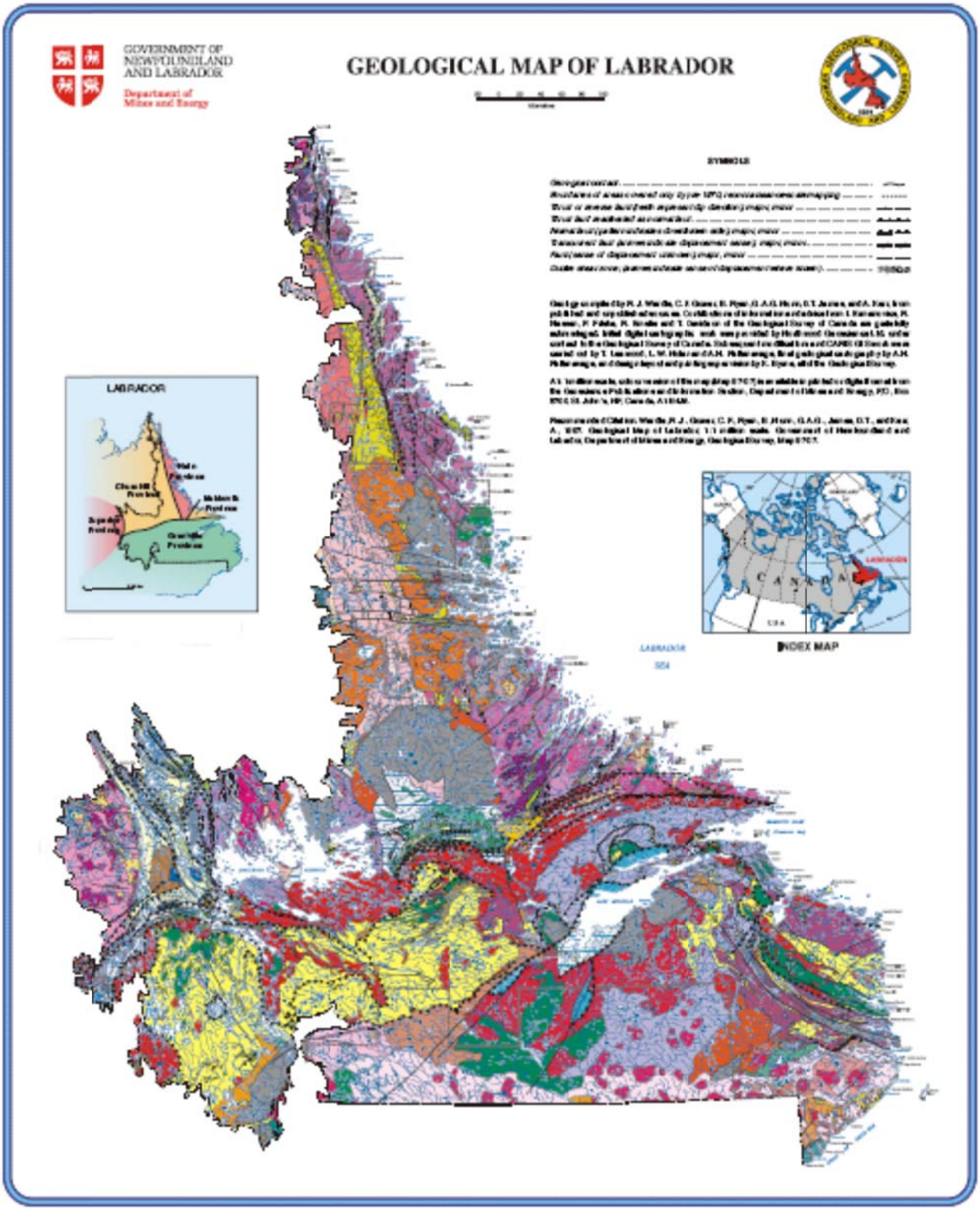
The western half of the Labrador Trough can be divided into three sections based on changes in lithology and metamorphism (North, Central and South). The Trough is comprised of a sequence of Proterozoic sedimentary rocks including iron formation, volcanic rocks and mafic intrusions known as the Kaniapiskau Supergroup (Gross, 1968). The Kaniapiskau Supergroup consists of the Knob Lake Group in the western part of the Trough and the Doublet Group, which is primarily volcanic, in the eastern part.

The Central or Knob Lake Range section extends for 550 km south from the Koksoak River to the Grenville Front located 30 km north of Wabush Lake. The principal iron formation unit, the Sokoman Formation, forms a continuous stratigraphic unit that thickens and thins from sub-basin to sub-basin throughout the fold belt.

The southern part of the Trough is crossed by the Grenville Front. Trough rocks in the Grenville Province to the south are highly metamorphosed and complexly folded, which has caused recrystallization of both iron oxides and silica in the primary iron formation to meta-taconites.

Geological conditions throughout the central division of the Labrador Trough are generally similar to those in the Knob Lake Range.

Figure 7-1 Geological Map of Labrador



7.1.1 Knob Lake Range Geology

The general stratigraphy of the Knob Lake area is representative of most of the range, except that the Denault dolomite and Fleming Formation (described below) are not uniformly distributed. The Knob Lake Range occupies an area 100 km long by 8 km wide. The sedimentary rocks including the cherty iron formation of this area are weakly metamorphosed to greenschist facies. In the structurally complex areas, leaching and secondary enrichment have produced earthy textured iron deposits. Unaltered banded magnetite iron formation (taconite) occurs as gently dipping beds west of Schefferville in the Howells River deposits.

Most of the secondary earthy textured iron deposits occur in canoe-shaped synclines with some as tabular bodies. In the western part of the Knob Range, the iron formation dips gently eastward over the Archean basement rocks for about 10 km to the east, then forms an imbricate fault structure with bands of iron formation.

Subsequent supergene processes converted some of the iron formations into high-grade ores, preferentially in synclinal depressions and/or down-faulted blocks. Original sedimentary textures are commonly preserved by selected leaching and replacement of the original deposits. Jumbled breccias of enriched ore and altered iron formations, locally called rubble ores, are also present.

The stratigraphy of the Schefferville area is represented by the following formations.

Attikamagen Formation. It consists of argillaceous material that is thinly bedded, fine grained, greyish green, dark grey to black, or reddish grey. Calcareous or arenaceous lenses occur locally interbedded with the argillite and slate, and lenses of chert are common.

Denault Formation. The Denault Formation consists primarily of dolomite being more clastic at its base and cherty at its top. Leached and altered beds near the iron deposits are rubbly, brown or cream coloured.

Fleming Formation. It occurs a few kilometres southwest of Knob Lake and only above dolomite beds of the Denault Formation. It consists of rectangular fragments of chert and quartz within a matrix of fine chert.

Wishart Formation. The Wishart Formation is a sandstone formation (quartzite and arkose) cemented by quartz and minor amounts of hematite and other iron oxides. It is well differentiated from the iron ore bearing overlaying formations by its texture and color.

Ruth Formation. It is a black, grey-green or maroon ferruginous slate, 3 to 36 metres thick. This thinly banded material contains lenses of black chert and various amounts of iron ore.

Sokoman Formation. More than 80 percent of the ore in the Knob Lake Range occurs within this formation. Lithologically, the iron formation varies in detail in different parts of the range and the thickness of individual members is not consistent.

A thinly bedded, slatey facies at the base of the formation consists largely of fine chert with an abundance of iron silicates and disseminated magnetite and siderite. Fresh surfaces are grey to

olive green, and weathered surfaces brownish yellow to bright orange. Thin-banded oxide facies of iron formation occurs above the silicate-carbonate facies in nearly all parts of the area. The thin (<1.25cm) jasper bands are mostly deep red, but in some places are greenish yellow to grey, and are interbanded with hard, blue layers of fine-grained hematite and a minor magnetite.

The thin jasper beds are located underneath thick massive beds of grey to pinkish chert and beds that are very rich in blue and black iron oxides, and make up most of the Sokoman Formation. The upper part of the Sokoman Formation comprises discontinuous beds of dull green to grey or black massive chert.

Menihek Formation. A thin-banded, grey to black argillaceous slate conformably overlies the Sokoman Formation in the Knob Lake area. Thicknesses are unknown since the slate is found in faulted blocks in the main ore zone.

7.1.2 Regional Mineralization

The earthy bedded iron deposits are a residually enriched type within the Sokoman iron formation that formed after two periods of intense folding and faulting, followed by the circulation of meteoric waters in the fractured rocks. The enrichment process was caused largely by leaching and the loss of silica, resulting in a strong increase in porosity. This produced a friable, granular and earthy-textured iron ore. The siderite and silica minerals were altered to hydrated oxides of goethite and limonite. The second stage of enrichment included the addition of secondary iron and manganese which appear to have moved in solution and filled pore spaces with limonite-goethite. Secondary manganese minerals, i.e., pyrolusite and manganite, form veinlets and vuggy pockets. The types of iron ores developed in the deposits are directly related to the original mineral facies. The predominant blue granular ore was formed from the oxide facies of the middle iron formation. The yellowish-brown ore, composed of limonite-goethite, formed from the carbonate-silicate facies, and the red painty hematite ore originated from mixed facies in the argillaceous slaty members. The overall ratio of blue to yellow to red ore is approximately 70:15:15. The proportion of each varies widely within the deposits.

Only the direct shipping ore is considered beneficial to produce lumps and sinter feed and will be part of the resources for the LIM Project. The direct shipping ore was classified by IOC in six categories based on their chemical, mineralogical and textural compositions. This classification is still used in the evaluation of the mineralization. The following ore categories and other mineralization categories, not part of the potential economic mineralization, are:

- High Non-Bessemer (HNB);
- Lean Non Bessemer (LNB);
- High Silica (HiSiO2) (waste); and
- Treat Rock (TRX) (waste but previously stockpiled for possible later treatment).

The blue ores, which are composed mainly of the minerals hematite and martite, are generally coarse grained and friable. They are usually found in the middle section of the iron formation.

The yellow ores, which are made up of the minerals limonite and goethite, are located in the lower section of the iron formation. These ores have the unfavourable characteristic of retaining high moisture content.

The red ore is predominantly a red earthy hematite. It forms the basal layer that underlies the lower section of the iron formation. Red ore is characterized by its clay and slate-like texture.

Direct shipping ores and lean ores mined in the Schefferville area during the period 1954-1982 amounted to some 150 million tons. Based on the original ore definition of IOC (+50% Fe <18% SiO2 dry basis), approximately 250 million tonnes of iron resources remain in the area, exclusive of magnetite taconite. LIM has acquired rights to approximately 50 percent of this remaining iron resource.

7.1.3 Deposit Types

The Labrador Trough contains four main types of iron deposits:

- soft iron ores formed by supergene leaching and enrichment of the weakly metamorphosed cherty iron formation; they are composed mainly of friable fine-grained secondary iron oxides (hematite, goethite, limonite);
- taconites, the fine-grained, weakly metamorphosed iron formations with above average magnetite content and which are also commonly called magnetite iron formation;
- more intensely metamorphosed, coarser-grained iron formations, termed metataconites which contain specular hematite and subordinate amounts of magnetite as the dominant iron minerals; and
- minor occurrences of hard high-grade hematite ore occur southeast of Schefferville at Sawyer Lake, Astray Lake and in some of the Houston deposits.

The Labrador Iron Mountain deposits are composed of iron formations of the Lake Superior-type. The Lake Superior-type iron formation consists of banded sedimentary rocks composed principally of bands of iron oxides, magnetite and hematite within quartz (chert)-rich rock, with variable amounts of silicate, carbonate and sulphide lithofacies. Such iron formations have been the principal sources of iron throughout the world.

The Sokoman iron formation was formed as chemical sediment under varied conditions of oxidation-reduction potential (Eh) and hydrogen ion concentrations (pH) in varied depth of seawater. The resulting irregularly bedded, jasper-bearing, granular, oolite and locally conglomeratic sediments are typical of the predominant oxide facies of the Superior-type iron formations, and the Labrador Trough is the largest example of this type.

The facies changes consist commonly of carbonate, silicate and oxide facies. Typical sulphide facies are poorly developed. The mineralogy of the rocks is related to the change in facies during deposition, which reflects changes from shallow to deep-water environments of sedimentation. In general, the oxide facies are irregularly bedded, and locally conglomeratic, having formed in oxidizing shallow-water conditions. Most carbonate facies show deep-water features, except for the presence of minor amounts of granules. The silicate facies are present

in between the oxide and carbonate facies, with some textural features indicating deep-water formation.

Each facies contains typical primary minerals, ranging from siderite, minnesotaite, and magnetite-hematite in the carbonate, silicate and oxide facies, respectively. The most common mineral in the Sokoman Formation is chert, which is closely associated with all facies, although it occurs in minor quantities with the silicate facies. Carbonate and silicate lithofacies are present in varying amounts in the oxide members.

The sediments of the Labrador Trough were initially deposited in a stable basin which was subsequently modified by penecontemporaneous tectonic and volcanic activity. Deposition of the iron formation indicates intraformational erosion, redistribution of sediments, and local contamination by volcanic and related clastic material derived from the volcanic centers in the Dyke-Astray area.

The consolidation of the sediments into cherty banded iron formation is due to diagenesis and low grade metamorphism, which only reached the greenschist rank. The iron may be a product of erosion. It is unlikely that the Nimish volcanism made a significant contribution.

The Project currently involves the Houston 1 and 2 deposits.

Houston 1 and 2 Deposits

The Houston 1 and 2 Project is composed of two separate areas of iron enrichment with a continuously mineralized zone of over 2 km in strike length which remains open to the south. These areas of enrichment are referred to as the Houston 1 and 2 deposits. Iron ore of direct shipping (DSO) quality strikes to the northwest, dips to the northeast, and extends northwest-southeast for up to 2 km with a lateral extent of up to 150m in its wider section. The Houston DSO iron deposits are stratigraphically and structurally controlled, and consist of hard and friable banded, blue and red hematite that locally becomes massive. Manganese mineralization occurs in relatively low concentrations throughout the Houston 1 and 2 deposits.

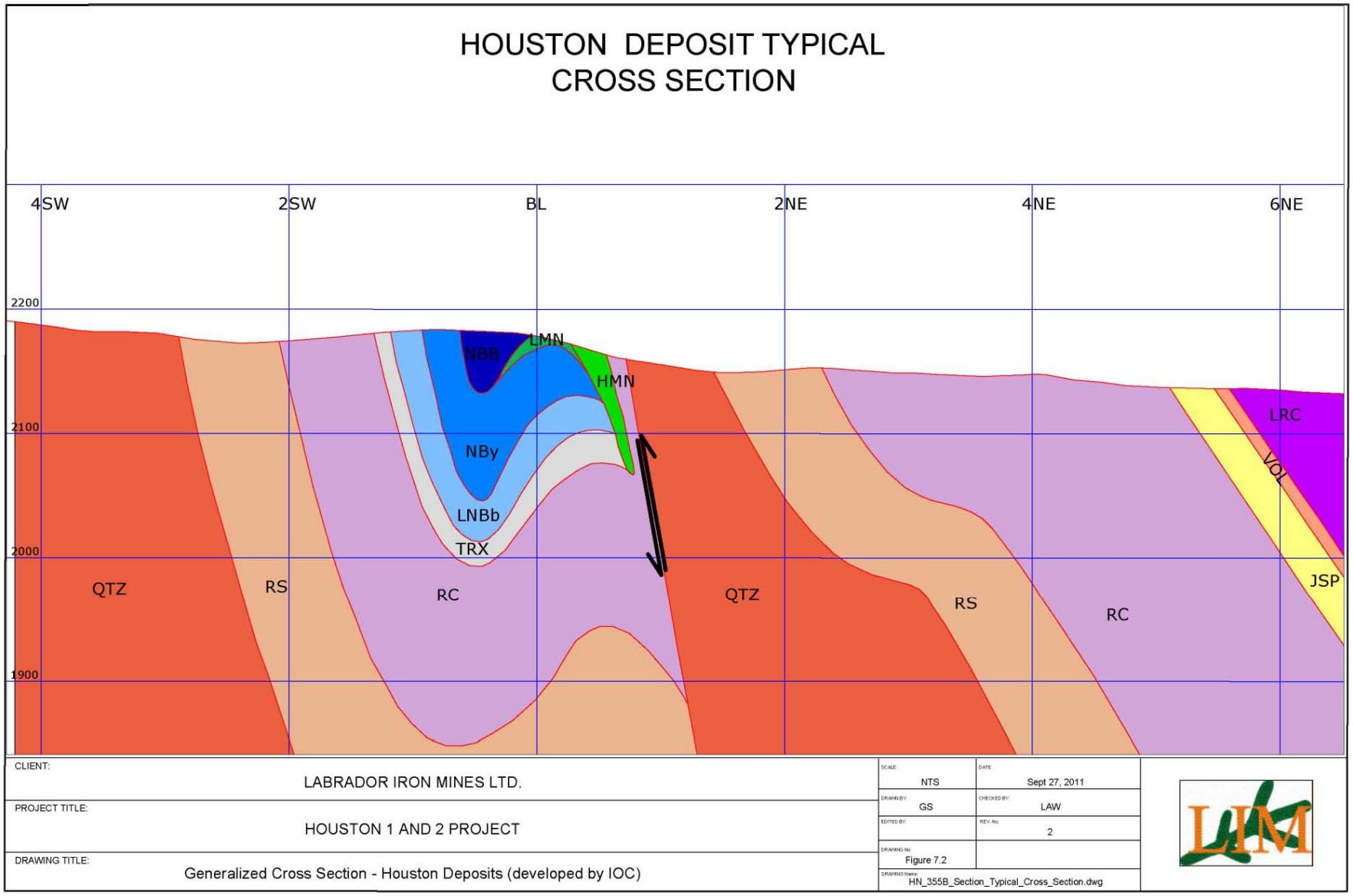
Drilling programs conducted between 2006 and 2011 indicate that the majority of the potentially economic iron mineralization in the Houston area occurs within the very lower horizon of the iron formation, the unit historically referred to as the Ruth Formation. A band of blue ore up to 50m thick occuring in the iron formation makes Houston distinct from most other deposits in the Schefferville area. The Middle Iron Formation (MIF) and Upper Iron Formation are, for the most part, unenriched.

In cross sections of the Houston deposit composed by IOC, there is evidence of a reverse fault system striking northwest through the Houston 1 and 2 deposits. Along the western margin of this reverse fault system, sporadic concentrations of up to 24% manganese mineralization occurs within the Middle Iron formation (MIF), and is structurally controlled by folding and faulting.

Houston 1 and 2 mineralization has been found to extend down dip to the northeast. Mineralization is still open to depth and remains a potential for additional resources.

For the purposes of this Project, the Houston 1 and 2 deposits form the Project Area. Houston 3 is currently under exploration, as is the Malcolm property located to the north of the Houston 2 deposit, in Quebec, and additional assessment of these deposits will be conducted in the future. A representative cross section of the Houston deposit is presented in Figure 7-2.

Figure 7-2 Generalized Cross Section-Houston Deposits (developed by IOC)



7.1.4 Geomorphology, Surficial Geology, Soils and Permafrost

There are dominant surficial materials within the area surrounding the Project deposits of drift-poor areas, glacial till and other surficial deposits (undifferentiated), with occasional areas of glaciofluvial deposits.

The till and other surficial deposits (undifferentiated), are predominantly nonstratified, poorly sorted, silty to sandy diamicton, gravel, and sandy gravel, deposited either directly from ice or by meltout during ablation and includes glaciofluvial, glaciolacutrine, marine, and fluvial deposits of either minor areal extent or thin (less than two m) and discontinuous.

The drift-poor areas are described as greater than 80 percent bedrock; including areas of till and other surficial materials generally < 1 m thick and discontinuous.

The glaciofluvial deposits are classified as proglacial or ice contact sand and gravel, forming ice contact fans and deltas, outwash plains and terraces, pitted outwash, crevasse fillings, kames and kame terraces, commonly associated with eskers and including areas of extensive, thick fluvial sediments derived from pre-existing glaciofluvial deposits.

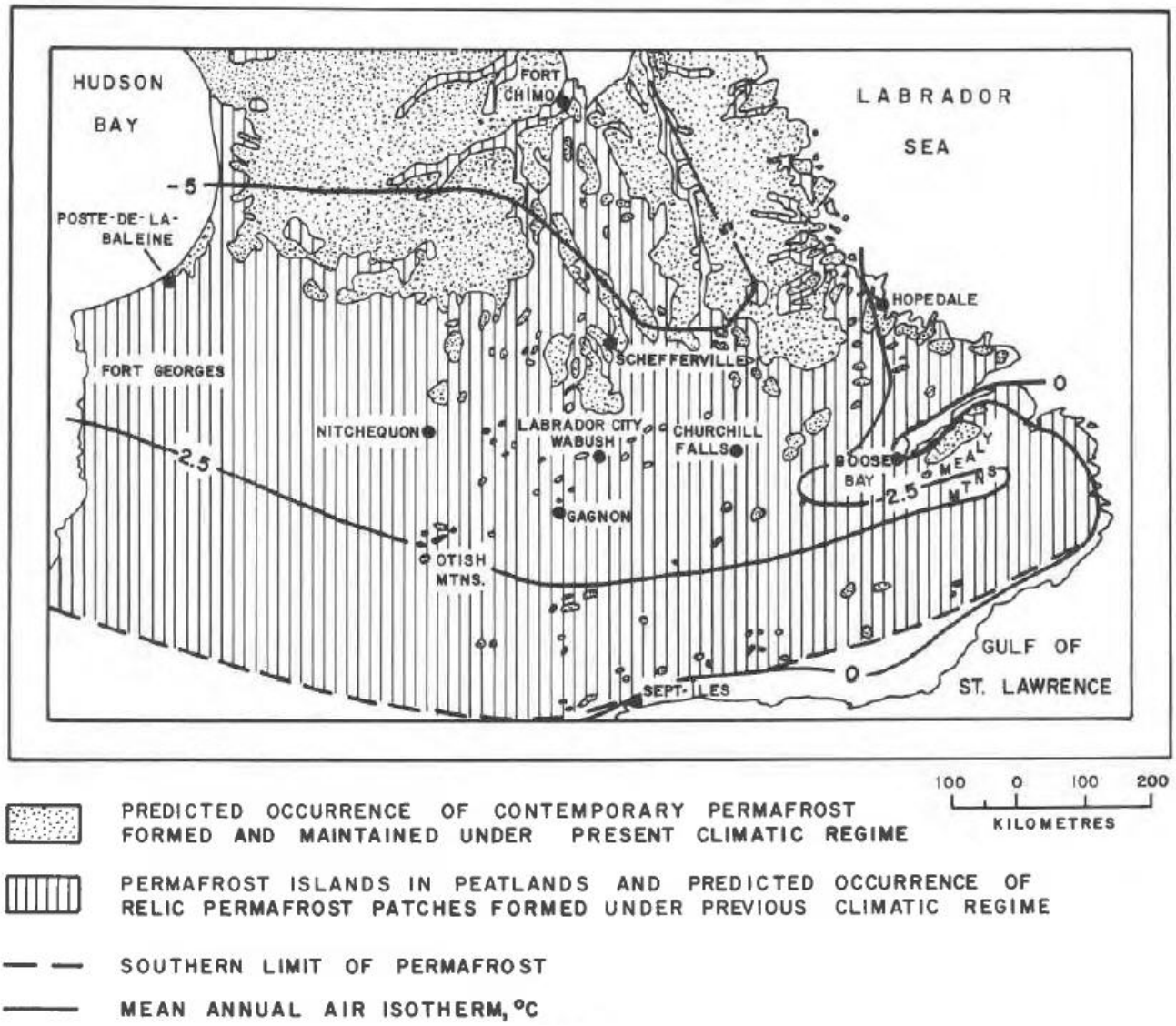
The areas in and surrounding the deposits associated with the Project being predominantly greater than 80 percent bedrock, and a previously mined area, do not possess a high number of identifiable landforms. There is evidence of striae, indicating direction of flow known and unknown, as well as identified eskers (esker ridge; kame or splay deposit) in the area (R.A. Klassen et al. 1992).

7.1.4.1 Permafrost

Although permafrost is reported within the Fleming-Timmins group of deposits, 25 km northwest of Schefferville (Garg 1982), permafrost has not been identified within the current Houston 1 and 2 Project area. Although the Schefferville area has been previously identified as the “tentative southern limit of continuous permafrost”, Jenness (1949), then later as the “approximate southern limit of permafrost”, Thomas (1953), it was later concluded that there were no continuous zones of permafrost in the Labrador-Ungava and boundaries of discontinuous and sporadic zones were specified (Black 1951). An area 160 km north of Schefferville was indicated as the southern limit of discontinuous permafrost and extending to within 80 km of the Gulf of St. Lawrence was the sporadic zone (Pryer 1966). There have been observations of permafrost of 120 m in thickness in the Schefferville region (Brown 1979).

Various studies on permafrost refer to vegetation and snow cover as having correlation with permafrost presence and thickness. Snow depth and density changes with relief, weather and vegetation (Thom 1969). Thom suggests thick permafrost (up to 60 m) is likely in areas where snow cover is less than 0.4 m during the winter months of January and February.

Figure 7-3 Permafrost Distribution in Nouveau-Québec and Labrador (Source Brown, 1979)



Research on permafrost distribution at numerous sites in the Schefferville area has been conducted by Nicholson (February 1978). Two sites at a great distance north of the Project included Timmins 4 and Fleming 7, at an elevation of 700 m, between 1973 and 1975. It was determined that deep permafrost underlies areas of high elevation, which were exposed and vegetation cover consisted of tundra. The permafrost ranged from 60 to 100 m in depth, and entirely unfrozen areas occurred in valleys on the edge of these sites. No permafrost was present on less exposed and low-lying wood covered ground surfaces (Nicholson and Lewis 1976). Permafrost was expected to be absent beneath water bodies in the area that are so deep they do not freeze solid during winter, due to the water bodies' ability to produce higher ground temperatures. Permafrost is not expected to occur within 30 m from permanently covered shoreline (Nicholson February 1978).

Permafrost has not been observed in the Houston 1 and 2 Project Area and therefore it is not anticipated that permafrost will interfere with mining at the Houston deposit areas.

7.1.4.1.1 Acid Rock Drainage

The Houston 1 and 2 property is located approximately 20 km southeast of Schefferville and approximately 10 km from the Redmond deposit which, together with the James deposit, currently forms part of LIM's first phase mine development. Based on the geology associated with iron ore deposits and specifically the geology associated with the previously assessed James and Redmond deposits, the geological materials to be excavated, exposed and processed during mining of the Houston 1 and 2 deposits are anticipated to have a low to no potential for Acid Rock Drainage (ARD). Due diligence requires that ARD potential for any new mine site be fully evaluated and LIM has committed to ensuring the long term chemical stability of the Project through all stages of the mine life through the initiation of an ARD assessment program during the Fall 2011.

Based on sampling of representative materials obtained from the James and Redmond deposits, similar in geology to those at Houston, sufficient historical and baseline data, as well as current laboratory test work, exists to suggest that ARD potential is extremely low for this Project. The following sections summarize the available data and the ongoing test work that will be completed.

Historical and Baseline Water Quality

Exploration and mining activities have occurred at the Project site dating back to the 1950s. IOC excavated large open pits and stockpiled considerable waste rock, low grade ore and other materials around the site. These materials have been exposed to both water and air (both required conditions for acid generation from rock) for decades and to date there is no evidence of poor or deteriorating water quality (lowered pH, elevated metals) in the flooded pits, stockpile drainage areas, or the surrounding natural water bodies.

Water quality monitoring on and around the Houston area has been completed annually since 2008 and indicates generally good water quality with pH ranging from 6.24 to 8.01.

ARD Sampling and Testing Program

A phased ARD sampling and testing program has been initiated to investigate and confirm the ARD potential for all geological materials (ore and waste) to be exposed at the Houston 1 and 2 Project area.

To provide regional perspective, the results of the acid base accounting test work completed to date on the geologically similar deposits at the nearby James and Redmond Mine areas are compiled in Table 7.1. These samples contain very low concentrations of sulphur and the NP/AP ratios for these samples tested range from 37 to 44 over seven samples. Based on the static ARD test results available to date, it is not anticipated that any of the ore or waste materials for this Project will be acid generating.

Bulk metals analysis was completed on seven samples by strong acid digestion (4 Acid) for trace metals (ICP-AES and ICP-MS). These results are shown in Table 7.1 and show generally typical element composition with the exception of iron, as would be expected.

Additional ARD test work will be completed as additional samples from LIM's 2011 sampling (trenching and boreholes) program become available. Additional test work will be designed to provide coverage of all geological materials and spatial extents of the planned mine workings.

Table 7.1 Acid Base Accounting (ABA) Results for the Nearby James and Redmond Deposits and Ruth Pit Waste Rock

Deposit	Sample Method	Material Type	Paste pH	Total Sulphur	Acid Leachable SO_4-S	Sulphide -S	Total Carbon	Carbonate	NP (t $CaCO_3$/ 1000t)	AP (t $CaCO_3$/ 1000t)	Net NP (t $CaCO_3$/ 1000t)	NP/AP Ratio
			(units)	(%)	(%)	(%)	(%)	(%)				
James	Bulk	HGO	6.98	< 0.005	< 0.1	< 0.01	0.040	0.127	12.5	0.31	12.2	40.3
James	Bulk	LGO	7.10	< 0.005	< 0.1	< 0.01	0.091	0.024	12.5	0.31	12.2	40.3
Redmond 2	Bulk	LGO	7.55	< 0.005	< 0.1	< 0.01	0.048	0.029	13.0	0.31	12.7	41.9
Redmond 2	Bulk	Waste	6.95	< 0.005	< 0.1	< 0.01	0.047	0.119	11.6	0.31	11.3	37.4
Redmond	Bulk	HGO	7.04	< 0.005	< 0.1	< 0.01	0.141	0.228	13.4	0.31	13.1	43.2
Redmond 5	Bulk	HGO	7.41	< 0.005	< 0.1	< 0.01	0.081	0.017	13.7	0.31	13.4	44.2
Ruth	Bulk	Waste	8.03	0.121	0.3	< 0.01	0.026	0.031	12.1	0.31	11.8	39.0

7.2 Physiography

The terrain in the area of the Houston property is comprised of parallel ridges and valleys trending northwest to southeast, with bare rock exposures and barrens. Ground elevation along the longitudinal axis of the proposed Houston 1 and 2 open pits ranges approximately from 560 600 masl.

The physiography of the Schefferville area, as described in the independent report entitled "*Technical Report, Silver Yards, Direct Shipping Iron Ore Projects in Western Labrador, Province of Newfoundland and Labrador ad North Eastern Quebec, Province of Quebec* (Prepared by Maxime Dupere, P.Geo. and Justin Taylor, P.Eng., April 15, 2011: "The topography of the Schefferville mining district is bedrock controlled with the average elevation of the properties varying between 500m and 700m above sea level. The terrain is generally gently rolling to flat, sloping north-westerly, with a total relief of approximately 50 to 100m. In the main mining district, the topography consists of a series of NW-SE trending ridges while the Astray Lake and Sawyer Lake areas are within the Labrador Lake Plateau. Topographic highs in the area are normally formed by more resistant quartzites, cherts and silicified horizons of the iron formation itself. Lows are commonly underlain by softer siltstones and shales. Generally, the area slopes gently west to northeast away from the land representing the Quebec – Labrador border and towards the Howells River valley, parallel to the dip of the deposits….The mining district is within a "zone of erosion" in that the last period of glaciations has eroded away any pre-existing soil/overburden cover, with the zone of deposition of these sediments beings well away from the area of interest. Glaciation ended in the area as little as 10,000 years ago and there is very little subsequent soil development. Vegetation commonly grows on glacial sediments and the landscape consists of bedrock, a thin veneer of till as well as lakes and bogs".)

The proposed Houston pits 1 and 2 will be developed within an elongate area approximately 350m, at its widest, by approximately 1.5km in total length.

7.3 Temperature and Precipitation

Temperature and precipitation data for the site area are presented in Table 7.2. LIM established an independent weather station at the Houston area in 2007 and has collected data from this station since that time. The location of the LIM weather station is presented on Figure 7-4. As well, LIM has collected climtate information from Environment Canada's National Climate and Information Archive with data collected at the Schefferville airport from 1971 to 2000

The climate in the Schefferville area, as described in the independent report entitled "*Technical Report, Silver Yards, Direct Shipping Iron Ore Projects in Western Labrador, Province of Newfoundland and Labrador ad North Eastern Quebec, Province of Quebec* (Prepared by Maxime Dupere, P.Geo. and Justin Taylor, P.Eng., April 15, 2011: "The Schefferville area and vicinity have a sub-arctic continental taiga climate with very severe winters. Daily average temperatures exceed 0°C for only five months a year. Daily mean temperatures for Schefferville average -24.1°C and -22.6°C in January and February respectively. Mean daily average temperatures in July and August are 12.4°C and 11.2°C, respectively. Snowfall in November,

December and January generally exceeds 50 cm per month and the wettest summer month is July with an average rainfall of 106.8 mm".)

Table 7.2 Temperature and Precipitation Data

Parameter	Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Daily Avg. Temperature (°C)	Environment Canada	-24.1	-22.6	-16	-7.3	1.2	8.5	12.4	11.2	5.4	-1.7	-9.8	-20.6
	LIM Weather Station	-20.4	-13.4	-12.1	-2.1	2.0	11.3	14.4	13.3	7.1	-0.1	-6.3	-17.3
Daily Max. Temperature (°C)	Environment Canada	-19	-16.9	-9.8	-1.5	6	13.7	17.2	15.8	8.9	1.3	-6.1	-15.9
	LIM Weather Station	2.5	7.0	15.2	17.5	21.3	39.2	34	30.7	32.2	16.4	8.6	0.7
Daily Min. Temperature (°C)	Environment Canada	-29.2	-28.1	-22.2	-13.1	-3.6	3.3	7.6	6.5	1.7	-4.6	-13.5	-25.2
	LIM Weather Station	-38	-36.5	-32.5	-20.2	-12.3	-5.8	2	-0.2	-4.8	-18.1	-24.3	-36.5
Rainfall (mm)	Environment Canada	0.2	0.2	1.6	8.4	27.7	65.4	106.8	82.8	85.3	24.4	4.5	0.9
	LIM Weather Station	1.6	15.2	13.7	30.4	26.6	56.3	125.8	90.3	63.6	64.4	17.6	0.1
Snowfall (cm)	Environment Canada	57.4	42.6	56.6	54.8	22.9	8	0.5	1.7	12.7	57.2	70.7	55.4
Precipitation (mm)	Environment Canada	53.2	38.7	53.3	61.4	52.1	73.7	107.2	84.5	98.4	80.5	69.4	50.7

7.4 Air Quality

There is no industry in the area of the Houston Project area, and background concentrations of air contaminants are expected to be minimal. Fugitive dust levels in the area may be slightly higher due to the use of predominantly dirt roads for transportation in the area.

An ambient air quality monitoring program was conducted between August and October 2009 to monitor average daily concentrations of Total Suspended Particulate (TSP) levels at the Houston deposits. Sampling was generally conducted every six days. A total of nine 24-hour TSP samples were obtained. All but one of the nine samples were well below (no more than 41 percent of) the Newfoundland and Labrador Department of Environment and Conservation (NLDEC) ambient air quality standard for TSP (120 $\mu g/m^3$). The remaining sample, from October 7th, 2009, was slightly above the NLDEC TSP standard (139 $\mu g/m^3$). It should be noted that there was no test drilling at the Houston site on this day and is therefore considered to represent ambient conditions.

A search of the National Air Pollution Surveillance (NAPS) Network data records indicated that there was limited data available to determine background air quality for other air contaminants in the vicinity of the proposed operations. The nearest available sources of ambient air quality monitoring data are in Happy Valley-Goose Bay and Labrador City, both of which are more than 300km from the site location.

Based on the results of the ambient monitoring and the remote location of the site, it is expected that background air quality in the area would generally be within National Ambient Air Quality Objectives "Desirable" levels.

7.5 Aquatic Environment

The following presents the hydrological and hydrogeological field data that were collected in 2010, a preliminary site characterization, and a preliminary assessment of potential surface water and groundwater impacts that may result from the proposed open pits and from the Houston-Redmond Road. The existing conditions and mitigation for the local fish populations and fish habitat are also presented.

7.5.1 Surface Water Quality

Background surface water quality sampling was initiated at the Houston 1 and 2 area in 2007. The following locations were sampled as part of the baseline surface water quality monitoring program and the resulting data is presented in Appendix D of this document:

- HP-6: Houston Property, Tom's Pond
- HP-M: Houston Creek, Middle Section
- HP3: Houston Creek, South End
- MT: Mike's Tributary
- GR: Gilling River

The Houston 1 and 2 mine property has two surface water features, Tom's Pond (HP6) and Houston Creek (HP-M and HP-3) (Figure 7-5). Tom's pond is a small surface water feature with no connection to any other surface water systems. Surface water from Tom's Pond indicates that in-situ water quality parameters during late winter months are extremely anoxic and correspond to freshwater criteria exceedances for the protection of aquatic life (CCME CWQG) in aluminum, iron, copper, magnesium, nickel and zinc. The pH values for Tom's Pond range from 6.24 to 6.91.

Houston Creek surface water samples (HP-M and HP-3) indicate that the aesthetic value for colour and magnesium Drinking Water Quality (GCDWG) is occasionally exceeded at various times of the year (Appendix D) and can be attributed to the seasonality of the associated wetlands. The pH value for the Houston Creek samples range from 6.73 to 7.29.

Surface water features sampled along the proposed haul road corridor (i.e., samples collected from MT and GR sample locations) were found to contain total zinc in exceedance of Freshwater Criteria (CCME CWQG) during the course of the sampling program. There has been no known disturbance within the road corridor that could explain the noted zinc values (Appendix D) and so this value is considered to be representative of naturally-occurring baseline conditions. The pH values for the Gilling River and Mike's Tributary samples, located in the proposed haul road corridor, range from 7.76 to 8.01.

7.5.2 Hydrology

7.5.2.1 Drainage Patterns

The drainage system in the area is strongly influenced by the underlying geology. Streams and lakes tend to be oriented northwest to southeast to match the strike of the bedrock units. A major watershed flow divide exists between Houston Lake and the proposed Houston open pit areas. Drainage in the Houston Lake catchment area flows northwest as part of the Knob Lake catchment, which is part of the larger Ungava Bay drainage basin watershed. Drainage from the Houston open pit areas and the area of the Houston-Redmond road is within the Astray Lake catchment and within the Petitsikapau catchment, both part of the Churchill River drainage basin watershed.

The local drainage patterns in the vicinity of the Houston Mine open pit area and the Houston-Redmond Road area have been based on topographical contours and mapping of streams and lakes. These drainage patterns are shown on Figure 7-4 and a description is provided in the following subsections.

Figure 7-4 Houston Property Drainage

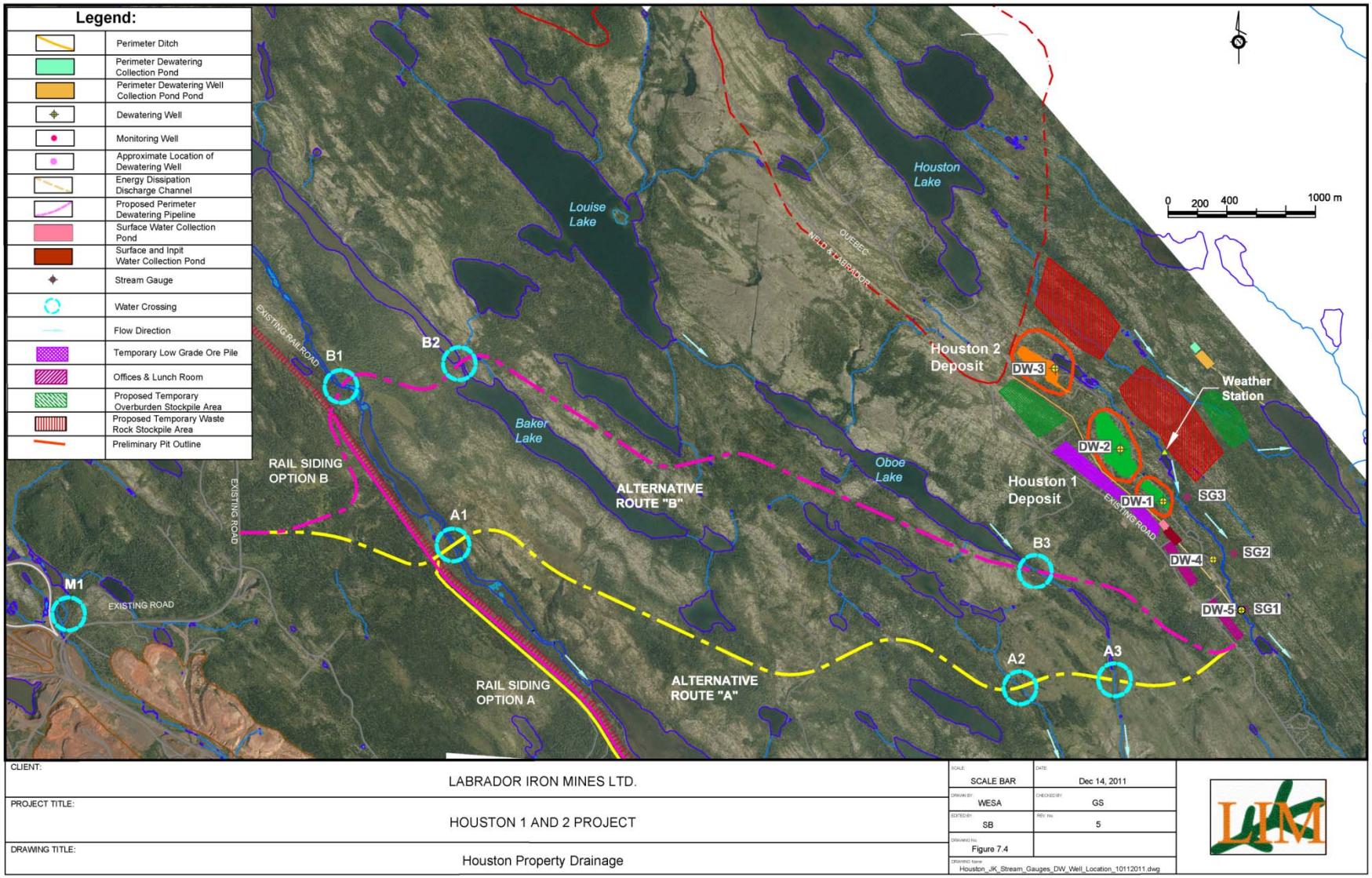
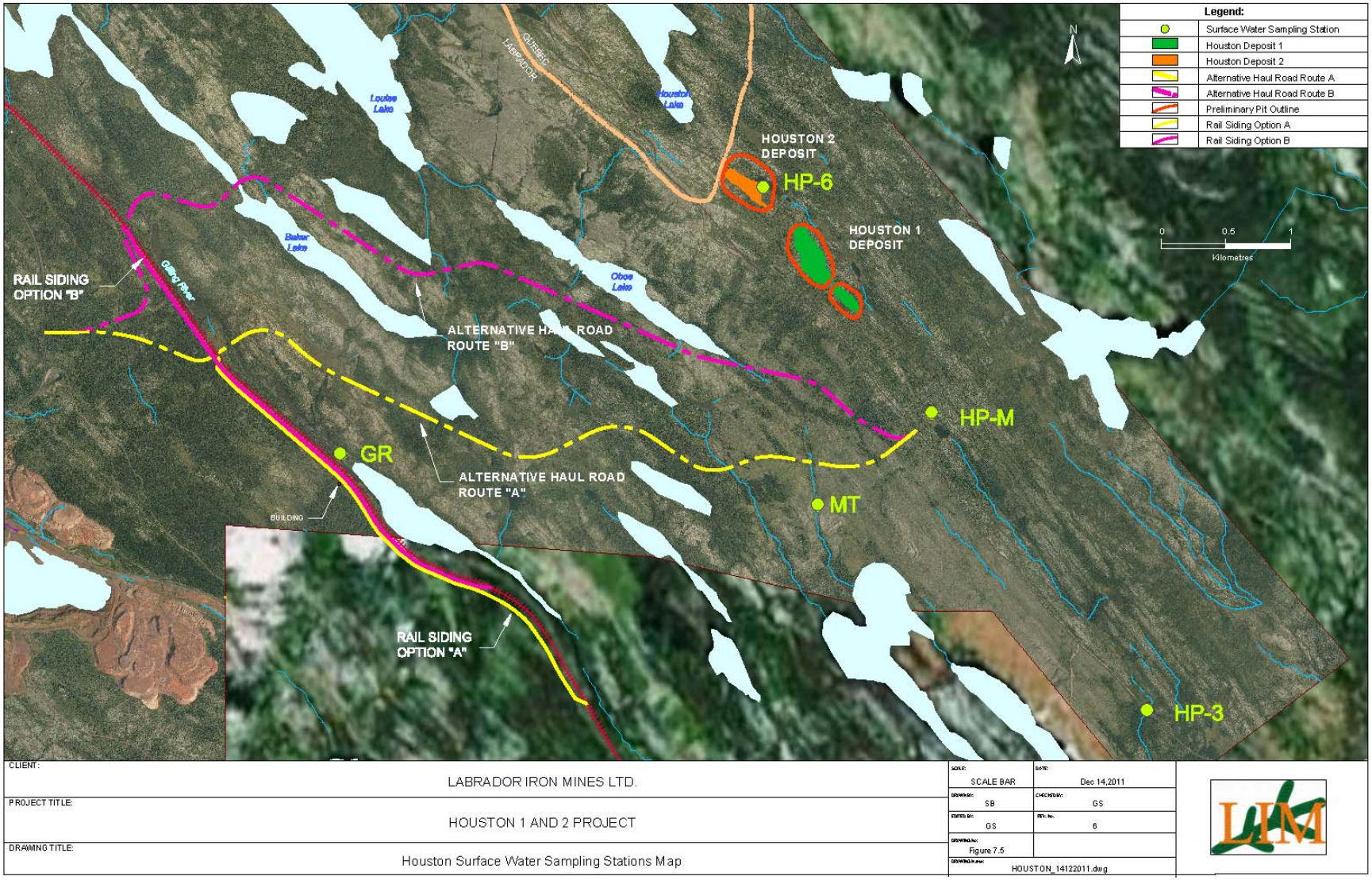


Figure 7-5 Houston Surface Water Sampling Location Plan



7.5.3 Drainage in the Houston Mine Open Pit Area

On the northeast side of the proposed Houston 2 open pit area, drainage flows southeast within a stream and its associated wetlands and then passes through two unnamed lakes that drain into a creek which eventually discharges into Petitsikapau Lake (Figure 7-4). Drainage northeast of Houston 1 is within a stream and its associated wetland areas that runs parallel to the longitudinal axis of the pits, with surface water eventually discharging into a northern part of Astray Lake, located directly downgradient from Mike Lake (Figure 7-4).

7.5.4 Drainage in the Houston-Redmond Road Area

Drainage in the vicinity of the proposed Houston-Redmond Road area is to the southeast with eventual discharge into Astray Lake via either Mike Lake or Gilling River (Figure 7-4). Major tributary lakes and streams include Louise Lake to Oboe Lake to Mike Lake and Baker Lake to Gilling Lake to Gilling River.

7.5.4.1 Stream Gauges and Stream Velocities and Flows

Three stream gauges were installed by WESA at the Houston site on November 12, 2010 in order to measure surface water flow rates in the stream that flows in a south-easterly direction and runs on the east side of Houston 1 and then south with eventual discharge into Astray Lake. The location of the stream gauges are shown on Figure 7-4. Stream velocities were measured on November 13, 2010 (Table 7.3), while flow measurements were recorded between November 12 and 18, 2010 (Table 7.4).

Table 7.3 Stream Gauge Locations and Measured Stream Velocities – November 13, 2010

Stream Gauge	Stream Width	Location	Velocity	
			Mechanical Flow Meter	Stingray
SG-1	0.36 m	6063353N 652217E	0.27	0.33 – 0.40
SG-2	0.36 m	6063845N 651852E	0.58	0.78
SG-3	0.41 m	6064402N 651551E	Flow too low to record manually.	0.055

Table 7.4 Maximum, Minimum and Mean Flows – November 12th-18th, 2010

Stream Gauge	Max	Min	Mean
	m^3/min	m^3/min	m^3/min
SG-1	4.51	3.60	4.01
SG-2	5.79	4.68	5.31
SG-3	2.61	0	0.37

7.5.5 Fish and Fish Habitat

7.5.5.1 Houston Deposits

The proposed pit development is not expected to impact existing fish habitat and will maintain a 15m buffer from fish-bearing habitat observed at Houston Creek that originates to the northeast of the deposits. Houston Creek contains a low productive coldwater fishery with the presence of brook trout being noted during various field surveys in this first order stream (AECOM 2010). If access is required across this small watercourse, an open bottom culvert constructed above the high watermark will be constructed to ensure no physical impediment to fish habitat will occur.

There is one small surface water feature situated within the pit limit of Houston 2. The historic prospecting data provided by IOC refer to this as Tom's Pond. Late winter site inspections during March 2007 and April 2009 indicate the maximum depth of the pond is 2m and exhibits anoxic conditions during the late winter.

Efforts by AECOM in September 2008 consisted of six baited minnow traps (250 hours); electrofishing (2,500 shocking seconds); and seine netting (100 m^2), with no fish being captured or observed. Additional fishing effort was exerted by Parks Environmental Inc. by electrofishing with 1,432 electrofishing seconds, on September 14th, 2010, and by AECOM in the summer 2011, with no fish captured or observed. Parks Environmental also utilized minnow traps (136 hours) during the late summer 2011 and, again, no fish were captured.

Sampling efforts in Tom's Pond are detailed in Table 7.5

Table 7.5 Fishing Effort (by Gear Type), for Tom's Pond, Houston Property 2008-2011

Method	Dates	Total Effort	Total Fish Captured	CPUE*
Minnow Traps				
	June 4 to 6, 2008	250	0	0
	September 11 to 14, 2011	136	0	0
Electrofishing (Shocking Seconds)				
	June 7, 2008	2500	0	0
	September 12, 2010	1432	0	0
Seine Net (m^2)				
	June 7, 2008	100	0	0
*CPUE is Total Fish Captured/Total Effort				

Information provided to DFO regarding Tom's Pond indicates that severe anoxic conditions have been identified in the late winter 2007, indicating a hostile environment as fish habitat. DFO staff acknowledged that would limit the area as fish habitat; however, to provide additional confirmation, DFO requested that fish presence/absence sampling be conducted to further assess whether Tom's Pond could be considered fish habitat, as described by Section 34 of the federal *Fisheries Act*. This requested work was completed in 2011 and additional information supplied to DFO in October 2011 to support a review and decision regarding this matter.

With the noted anoxic conditions and the remoteness of this pond with no surface connectivity to any fish bearing habitat, it is highly unlikely that this pond contains fish habitat. LIM is preparing a detailed submission documenting these conditions to the Federal Department of Fisheries and Oceans and will continue current discussions to assist in their determination on the applicability of the *Fisheries Act* to this location.

7.5.5.2 Water Crossings Habitat Assessment

Although a final haul road route has not yet been determined, an assessment of fish-bearing watercourses within the proposed route options consist of a coldwater fishery with the presence of brook trout being noted at various watercourse crossings (AECOM 2010). Habitat assessments along proposed route alternatives indicate that minor watercourses, 1st through 4th order streams, can be spanned with open bottom culverts, which can be constructed above the high watermark, to minimize impacts to fish habitat. The largest watercourse crossing is at Gilling River. This can be traversed at the reviewed stream crossing locations with a span/bailey bridge measuring less than 30 metres in length and less than 20 metres in width and with supporting abutments constructed above the high watermark, to ensure that no physical impacts to fish habitat occur.

Activities associated with construction of the haul road will include clearing of vegetation, grubbing, and grading. Standard road construction mitigation will be applied throughout the construction process to ensure that the local environment is protected. Construction activities will be done in accordance with the Houston Project EPP. Clearing and removal of trees will be kept to a minimum and will be done in accordance with applicable permits. Clearing will avoid wetlands where possible and chain saws or other hand-held equipment will be used except where alternatives are approved. A minimum 15m buffer will be maintained, where possible, between the development area and waterbodies. If a 15m vegetation buffer cannot be maintained, LIM will notify Water Resources Management Division and apply for a permit under Section 48 of the *Water Resources Act*. Where possible, additional buffer widths will be maintained (Table 7.6).

Table 7.6 Recommended Minimum Buffer Zone Requirements for Activities Near Watercourses

Activity	Recommended Buffer Width
Development around watercourses in urban or other developed area	15m depending upon site-specific considerations
Resource roads or highways running adjacent to water bodies	20m + 1.5 x slope (%)
Piling of wood and Slash Grubbing	30 m
Placement of Site Trailers Fuel Storage	100 m
Source: Gosse et al. 1998	

7.5.5.3 Haul Road and Siding Potential Impacts and Mitigation

The potential surface water impacts resulting from the Houston-Redmond haul road include the disturbance of streambeds or wetlands, erosion of banks and sedimentation of water during construction of water crossings. Water crossings for the two proposed routes are shown in Figures 7-4 and 7-5.

Mitigation efforts will include the implementation of environmental monitoring and sediment control efforts during the construction period to reduce any potential for sediment to be directed into nearby watercourses. Workers will be trained in an Environmental Protection Plan orientation program and onsite LIM Environmental Managers will conduct environmental monitoring. Environmental monitoring will also be conducted during operations to ensure that sediment control efforts are succeeding and to implement additional measures, if required.

All work will be conducted outside of the high water mark and the clearspan bridge proposed for the Gillings River haul road crossing will be designed with sediment control features to reduce any potential for sediment to enter the watercourse from vehicle traffic. Bottomless culverts will be used for smaller crossings and, again, all work including supports will be placed outside of the high water mark. Should the proposed siding require any crossings, similar approaches will be undertaken.

7.6 Groundwater and Hydrogeology

7.6.1 Groundwater Quality

A total of five groundwater test wells, TW1 through TW5, were installed on the Houston property in 2010 and 2011 (Figure 7-4). Test wells TW1, TW2, TW4, and TW5 are low yielding wells, with yields ranging between less than 1 and 30 USGPM. TW3 is a very good producing well, with an estimated yield of approximately 1000 USGPM.

On September 29, 2011 a six hour pumping test was conducted on HS-TW5 at a pumping rate of 40 to 50 USGPM. On October 1, 2011 a step drawdown pumping test was conducted at HS-TW4. A 72 hour constant discharge pumping test was conducted on TW3 from October 7 to October 10, 2011 at a pumping rate of 500 USGPM. Water levels were recorded in the pumping well and in six nearby observation wells.

The water was very clear for the duration of the test at both TW3 and TW5. Water samples were collected at Houston well TW3 just before the pump was turned off and the results are presented in Appendix C. The pumping test data is currently being analyzed.

As well, to provide a regional context, groundwater chemistry results for the nearbyJames and Redmond Properties hydrogeological assessment wells are also included in Appendix C. The regional groundwater chemistry, as demonstrated by the results from the test wells installed at James, Houston and Redmond wells, show general consistency amongst most parameters, although pH is shown to be quite variable. The chemistry data for TW3 presented in Appendix C is generally consistent with the results collected historically at the James and Redmond wells.

7.6.2 Hydrogeology

7.6.3 General Groundwater Conditions in the Schefferville Area

Ore-grade iron deposits are often found on the ridge flanks, where groundwater flowing down through higher-permeability fault zones leaches the silica from the iron silicate Sokoman Iron Formation. Because of this leaching process, the ore and the country rocks in the immediate vicinity of mines are soft, friable and porous. These characteristics have been observed in the field. The presence of alternating bands of hard rock and more friable rock, as well as red, blue and yellow ore in the area, appear to contribute to the presence of particulate in the water.

Depending on the degree of alteration, the hydrogeological and strength properties of the rock units vary widely. In Garg and Kalia (1975), the following relative permeability ranges are listed for the different formations:

Stratigraphy	Relative Permeability Range	
	Unaltered State	Altered State
Cretaceous Rubble	Very Low to Low	Low
Menihek Slate	Low	Very Low
Sokoman Formation	Low to Medium	Medium to High
Ruth Formation	Low to Medium	Very Low
Wishart Formation	Low to Medium	Medium to High
Fleming Formation	Low to Medium	Low
Denault Formation	Medium	Medium to High
Attikamagen	Low	Very Low

Hydrostratigraphic units acting as aquifers include the Sokoman, Wishart and Denault formations while aquitards include the slate and shales of the Knob Lake Group, and the Attikamagen, Ruth and Menihek slates.

Static water levels on ridges are generally far below ground surface (>30 m) while static water level in the valleys, where there are many lakes and wetlands, is near ground level. Although the ridges are usually recharge zones and the valleys are discharge zones, small springs are found of the side of some ridges at the base of the Sokoman Formation.

7.6.3.1 Preliminary Hydrogeological Investigation

A total of five groundwater test wells, TW1 through TW5, were installed on the Houston property in 2010 and 2011 (Figure 7-4). Test wells TW1, TW2, TW4, and TW5 are low yielding wells, with yields ranging between less than 1 and 30 USGPM. TW3 is a very good producing well, with an estimated yield of approximately 1000 USGPM.

On September 29, 2011 a six hour pumping test was conducted on HS-TW5 at a pumping rate of 40 to 50 USGPM. Water levels were taken over the six hours and a maximum drawdown of 61.01 m was reached at the end of the six hours. The discharge water was red at the start of the test but began to clear as the test progressed. The pumping test data is currently being analyzed.

On October 1, 2011 a step drawdown pumping test was conducted at HS-TW4. A drawdown of 65.02 m was reached after 45 minutes of pumping at an estimated pumping rate of 0.5 USGPM.

The discharge water was clear for the 45 minutes of pumping during the optimization test. As a result of the low yield produced at this well, a six hour pumping test could not be conducted.

A 72 hour constant discharge pumping test was conducted on TW3 from October 7 to October 10, 2011 at a pumping rate of 500 USGPM. Water levels were recorded in the pumping well and in six nearby observation wells. The water was very clear for the duration of the test. Water samples were collected just before the pump was turned off and the chemistry results are presented in Appendix C. The pumping test data is currently being analyzed.

The preliminary hydrogeological information suggests that the Houston 1 pit may not encounter significant amounts of water while the Houston 2 pit may encounter significant water infiltration. Water quality observations made during the long term pumping test at Houston indicate that groundwater is very clear.

7.6.3.2 Preliminary Surface Water and Groundwater Impact Assessment and Mitigative Measures

7.6.3.3 Houston 1 and 2 Open Pits

The development of the Houston 2 open pit will entail the loss of a small pond located partially in the southeastern portion of the pit area. The pond has been characterized aquatic specialists (AECOM 2008 and PEI, 2010 and 2011) as a non-fish habitat body of water and, pending review by DFO of the detailed report currently in preparation, it is anticipated that the proposed development will not be considered to result in fish habitat impact.

Open pit dewatering operations at Houston 1 and 2 may reduce stream baseflow in the two main identified drainage routes toward Petitsikapau Lake, and toward Astray Lake (downgradient of Mike Lake). To mitigate, pit perimeter dewatering water will be discharged into these streams to compensate for loss of flow. This mitigation strategy was developed for the James Mine, approved by DFO, and has been effectively implemented at James mine.

A drainage ditch will run along the west side of the pit to collect water draining from higher elevations to the west to prevent it from entering the pit. Water collected from in-pit sumps will also flow into this ditch. The ditch will flow to the south to a proposed collection pond. The collection pond will be sized and designed to collect maximum flow during spring run-off for retention of the water. Should it be required, appropriate systems will be developed to treat water for any suspended solids prior to testing and discharge. It is currently planned that clear water will be released to the stream east of the pit (see Figure 7-6).

Dewatering wells will be drilled and installed at the perimeter of and within the pits, if required. The water pumped from these wells is expected to be clean and not require treatment. The dewatering water will flow to a collection pond to the east of the pits and then will be released towards the unnamed lake to the southeast. In the event that the dewatering water is not clear, appropriate systems will be developed to treat water for any suspended solids prior to testing and discharge towards the unnamed lake to the south-east.

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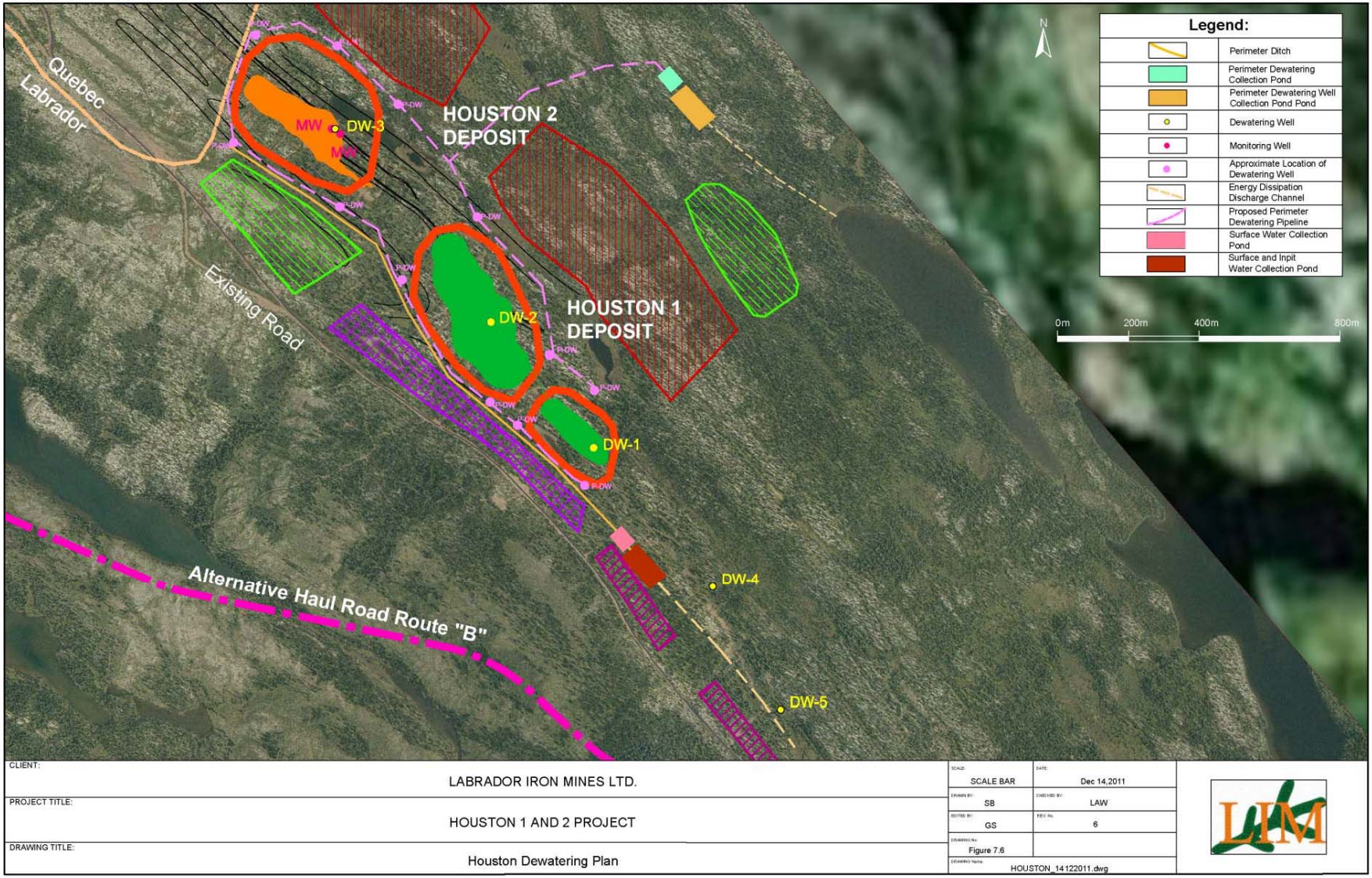
Figure 7-6 Houston Dewatering Plan Map



7.7 Vegetation

7.7.1 Habitat Types

Information related to vegetation and vegetation communities (including wetlands) occurring within the Houston Property has been based on baseline data collected in the region since 2008 and reported in the Schefferville Area Iron Ore Mine EIS (August 2009) as well as site-specific baseline data collected since 2009 by AECOM and a Wildlife Habitat Suitability Study (Stassinu Stantec 2010) based on Canada's National Ecological Land Classification (ELC) Framework.

At a continental scale, the Houston Property is contained within the Eastern Taiga Shield Ecozone (Environment Canada 2010). This Ecozone extends across the Canadian sub-Arctic at the northern edge of the boreal forest. In general terms, cool temperatures, a short growing season and thin, acidic soils are the main features of this Ecozone. Within the Eastern Taiga Shield Ecozone are several Ecoregions which are defined mainly on the basis of distinctive regional climate (Environment Canada 2010). The Houston Property occurs primarily within that of the Smallwood Reservoir-Michikamau (SRM) Ecoregion, bordering the Ungava Bay Basin Ecoregion along the properties northern boundary.

The SRM Ecoregion extends right across central Labrador and is marked by cool summers and very cold winters. The mean annual temperature is approximately -3.5°C. The mean summer temperature is 9°C and the mean winter temperature is -16°C. Mean annual precipitation ranges from 700 mm in the north to 1,000 mm along the Quebec/Labrador border in the south. The Ecoregion is classified as having a low subarctic ecoclimate. Its open coniferous forests are transitional, both to tundra and alpine tundra vegetation communities to the north, and to the closed cover of typical coniferous boreal forests to the south. Open stands of black/white spruce -lichen woodland with an understory of feathermoss, are dominant. Humo-Ferric Podzolic soils are dominant with significant inclusions of Ferro-Humic Podzols, Mesisols, and Organic Cryosols. Permafrost occurs in isolated patches, mainly in wetlands.

Ecodistricts are the next level of division in the ELC framework. These are characterized by distinctive assemblages of topography, landform, geology, soil, vegetation, water bodies, and fauna.

Habitat Types, the final level of division in the ELC framework, are defined as distinct assemblages of plant species that can often be associated with particular environmental conditions and given the right conditions, reoccur predictably within a particular habitat. In total, nine vegetated ELC Habitat Types were identified (Stassinu Stantec 2010), including: Black Spruce/Lichen Woodland, Spruce/Feathermoss Forest, Black Spruce/Dwarf Birch/Lichen/ Feathermoss Forest, Black Spruce/Sphagnum Woodland, Dwarf Birch/Blueberry Shrubland, Tamarack-Spruce/Feathermoss Forest, Tamarack/Sphagnum Woodland, Low Shrub Bog, and Fen.

The predominant upland Habitat Type observed throughout the property was Black Spruce/Lichen Woodland. This Habitat Type was found primarily on well to rapidly drained, sandy and/or stony glacial till deposits, as well as on shallow soils overlying bedrock. It also occurs on sandy glaciofluvial deposits and sandy/stony colluvium deposits. Overall, this Habitat

Type tends to be dry (xeric to sub-mesic moisture regime) and of poor fertility. Vegetative cover is characterized by small patches of black spruce (*Picea mariana*) imbedded in a carpet of lichens dominated largely by grey (*Cladina rangiferina*) and star-tipped (*Cladina stellaris*) reindeer moss (lichen). Other commonly occurring ground species include red-stemmed feathermoss moss (*Pleurozium schreberi*), bunchberry (*Cornus canadensis*), lesser green reindeer moss (*C. mitis*), grey reindeer moss (*C. rangiferina*), and broom moss (*Dicranum* sp.). Shrub cover consists mainly of stunted black spruce and dwarf birch (*Betula glandulosa*), along with black crowberry (*Empetrum nigrum*), alpine blueberry (*Vaccinium uliginosum*), common Labrador tea (*Rhododendron groenlandicum*) and northern blueberry (*Vaccinium borealae*). Shrub-size black spruce (as well as red-stemmed feathermoss) is mainly associated with patches of mature black spruce, while the dwarf birch is more widely distributed.

Bogs occur to a lesser extent on the Houston property, with the majority concentrated in peat filled depressions occurring between parallel formations of sinuous bedrock ridges and valleys. Low Shrub Bog Habitat Types are relatively uniform in species composition, typically with a sparse tree cover consisting of scattered black spruce and tamarack (*Larix laricina*). Shrub cover is stunted and forms a low patchy cover composed largely of bog rosemary (*Andromeda glaucophylla*), bog willow (*Salix pedicellaris*) and blueberry. The ground vegetation consists of a mixture of sphagnum mosses, sedges, cottongrass (*Eriophorum* spp.) and small cranberry (*Vaccinium oxycoccus*).

Additionally, two Non-habitat Areas (non-vegetated) were also observed; these include Exposed Earth/Anthropogenic/Disturbed and Open Water.

7.7.2 Rare Plants

Rare plants are categorized as those species listed in Schedule 1 of the federal *Species at Risk Act* (SARA) and designated endangered or threatened under the Newfoundland and Labrador *Endangered Species Act* (NLESA). The SARA Public Registry, ACCDC and the Annotated Checklist of the Vascular Plants of Newfoundland and Labrador (Meades 2010) were reviewed for information on the potential presence of rare plants within or in proximity to the Houston Project area. No listed plant species, protected federally under Schedule 1 of SARA or provincially pursuant to the NLESA, have been identified or are suspected to occur in the Houston Project area.

7.7.3 Timber

There are insufficient timber volumes to consider the Project area suitable for the harvest of merchantable timber.

7.8 Wildlife

7.8.1 Caribou

The Project overlaps with the range of the migratory George River Caribou Herd (GRCH). Specifically, this area of western Labrador overlaps a portion of the herd's winter range (Jacobs et. al 1996). Straddling the Quebec-Labrador peninsula (Ungava peninsula), the George River Herd was once one of the world's largest caribou populations, with estimates peaking at almost

800,000 individuals in the 1980's (Couturier et al. 1996; Russell et al. 1996; Rivest et al. 1998). More recently, a 2004 survey estimated the GRCH at 300,000 animals (Courturier et al. 2004) and a 2010 survey of the herd noted a substantial decline to approximately 74,000 animals (NLDEC 2010). This decline can likely be attributed to wolf predation and both legal and illegal hunting (Hearn et al. 1990). Emigration to other herds has also been suggested as a possible reason for the decline (Boulet et al. 2007).

Although there is no evidence of sedentary caribou near the Project area at present, they were reported historically (e.g., Caniapiscau or McPhadyen Herds) (LWCRT 2005; Bergerud et al. 2008). The sedentary herds of this region have declined or disappeared since the 1960s with the advent of the snowmobile allowing greater access for hunting.

The Committee on the Status of Endangered Wildlife in Canada listed the sedentary caribou populations of Labrador as "Threatened" (COSEWIC 2008, SARA 2008). Hunting of sedentary herds is illegal; however, the hunting of the GRCH is legal within the seasons and quotas defined by the provincial government (NLDEC 2008). The decline of the GRCH has resulted in the implementation of conservation measures restricting the hunt for Labrador residents and suspending the non-resident and commercial hunt (NLDEC 2010).

For the migratory George River herd, habitat can be described as tundra, forest-tundra and boreal forest habitat characteristic of the Boreal and Taiga Shield Ecozones. Habitat use is affected seasonally as the ranges change from winter to summer. Following an increase in herd population, summer habitat is considered spatially limited and alternative summer range is not available (Messier et al. 1988). Animals tend to avoid areas grazed during the previous winter and select alternate sites with more abundant lichen cover (Schmelzer and Otto 2003) having a preference for Cladina spp. (Cote 1998).

Woodland caribou do not make migratory movements but there is a seasonal shift during calving and post-calving periods to such forest types as black spruce forest, scrub or bog (Nalcor Energy 2009).

To complete the requirements of the environmental assessment for the James and Redmond properties, LIM and New Millennium Capital Corp (NML) were asked to perform a spring survey of the area within a specified radius of their properties in 2009 and 2010 to assess the presence of sedentary caribou herds. In 2009, only three sightings of caribou totaling seven individuals were confirmed over a 50km radius. One adult female was fitted with a satellite telemetry collar and on February 6, 2010 was legally shot on the Naskaupi River in the Grand Lake Extension Zone of the Caribou Management Area (D'Astous and Trimper 2009). Based on the migratory route of the GRCH during this time and the caribou's body length (192 cm), the Senior Wildlife Biologist in Labrador considered this animal to belong to the migratory ecotype rather than to the sedentary ecotype (D'Astous and Trimper 2009). This location was over 400 km distant from the capture location and its movements were consistent with the migratory George River Caribou Herd.

In addition to these surveys and marking efforts, D'Astous and Trimper (2009) collected caribou tissue samples for genetics analysis. Samples of ear dermis were collected from the same lone adult female that was collared by the field team, and from a recently killed (by wolf) adult

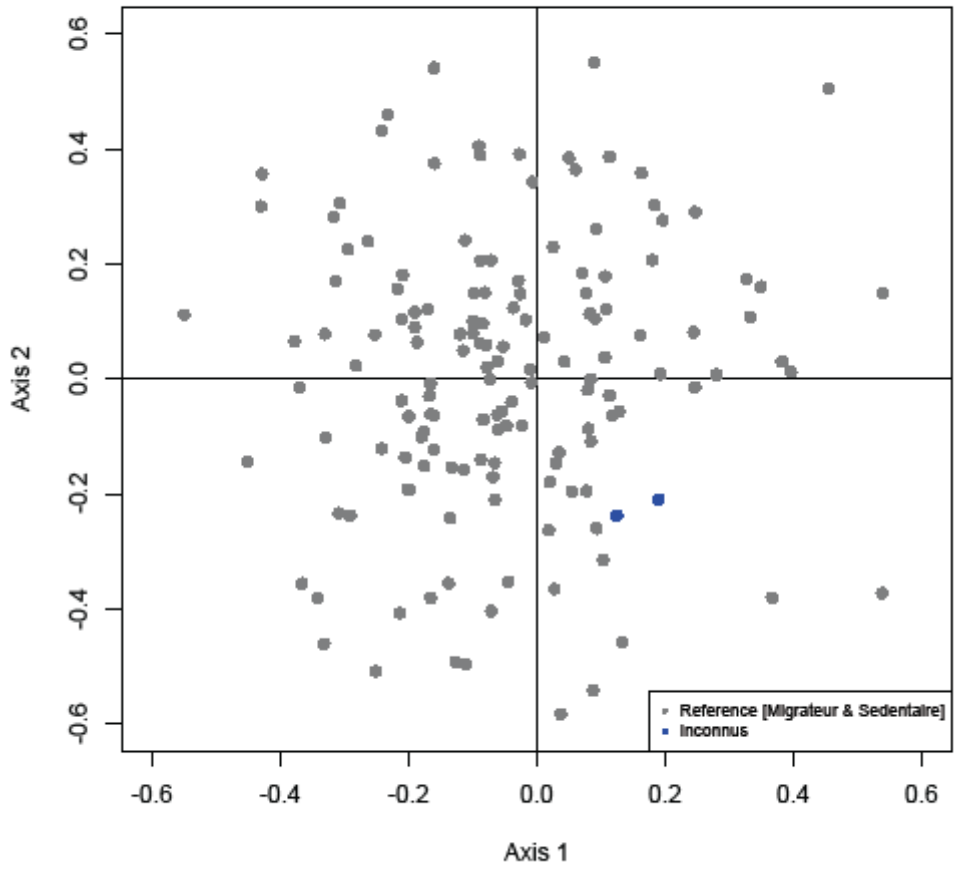
female. These samples were stored frozen at Laval University, Québec, until they could be analyzed at the specialized laboratory directed by Dr. Steeve Côté.

The genetic analysis and comparison to on-file genetic reference samples from known individuals were completed in May 2011 by Mr. Glenn Yannic. Several multivariate techniques (e.g., Factor Correspondence Analysis, Bayesian STRUCTURE) were used to compare the tissue samples to those collected from known ecotypes and herd affiliations in northeastern Quebec and Labrador such as the George River and Leaf River Herds (migratory ecotype), the Red Wine Mountains and Lac Joseph Herds (woodland ecotype) and the Torngat Mountains Herd (montane ecotype) [as described in Bergerud et al. (2008)] (Figure 7-7).

The results indicated the samples could not be assigned to any of the ecotypes or herds in the reference collection (below). Both caribou sampled are genetically similar, suggesting that they belong to the same ecotype. As a result of the extensive variability observed in the genetic testing, attributable to gene flow between the different migratory herds of caribou in the Quebec-Labrador Peninsula (Boulet et al. 2007), a clear assignment of the sampled individuals to a known reference herd, based solely on genetics, is not possible at this time. However, efforts expended to date indicate that the sampled caribou were of the migratory ecotype based on the following (D'Astous and Trimper 2010).

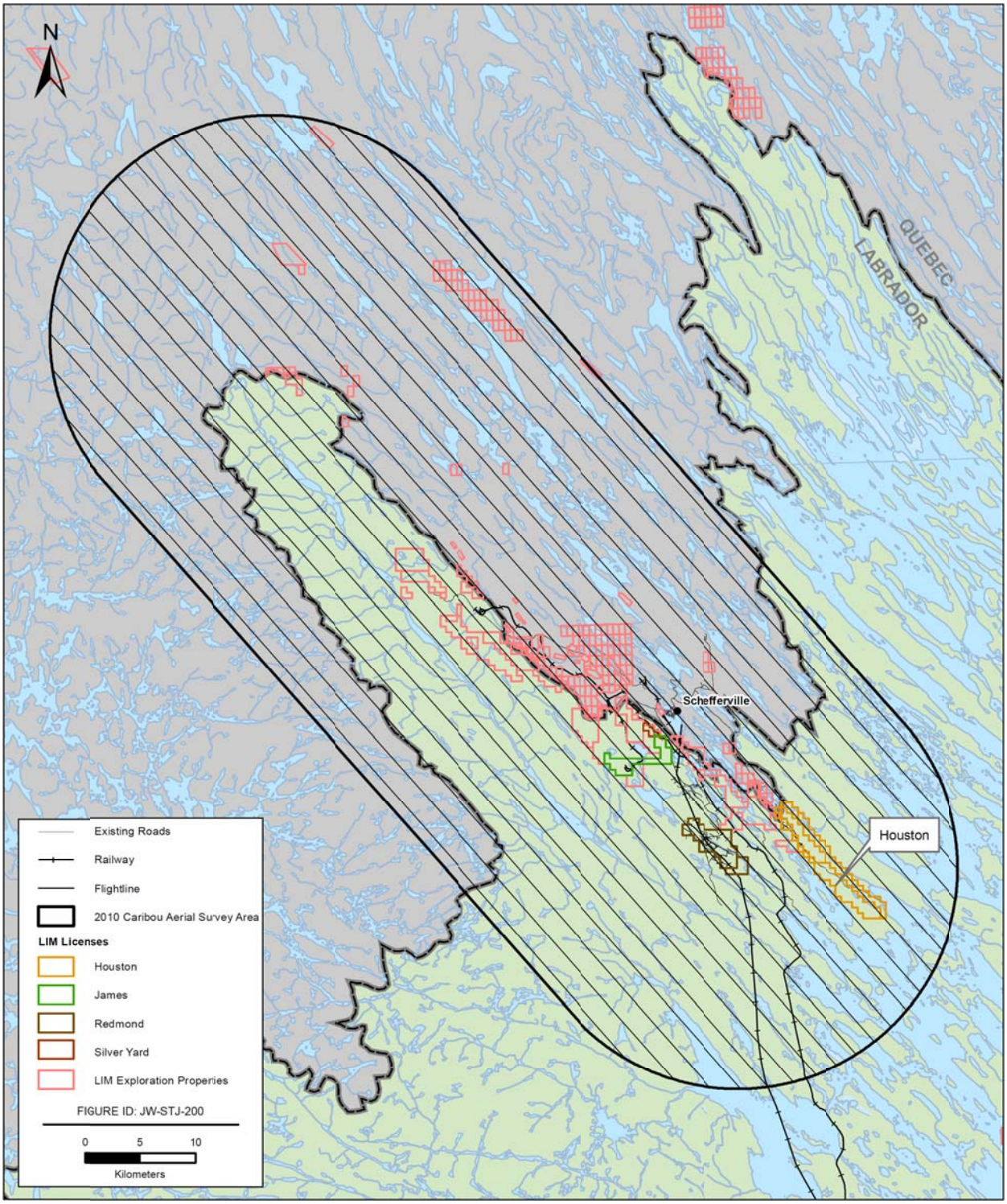
- body measurements;
- subsequent behaviour and movement of the collared caribou to a distance of over 400 km from the capture area prior to its demise from hunting on February 6, 2010 (D'Astous and Trimper, 2009 and 2010);
- statements from a Senior Wildlife Biologist that, based on the migratory route of the George River Caribou Herd in the fall of 2009 and winter of 2010, this caribou was considered to belong to the migratory ecotype rather than to the sedentary type (T. Chubbs, pers. comm.); and
- no other evidence of sedentary caribou has been identified during this period.

Figure 7-7 Comparison of genetic components collected from two caribou in the Schefferville area with those from known ecotypes using multivariate analysis (AFC).



The 2010 survey was completed between April 26 and May 1 and the survey area was a radius of 20km centered on the James and Redmond properties. This survey area also included the Houston Project area. The survey was completed under good tracking conditions, yet no Woodland caribou were observed. The results from both years' surveys indicate that it is unlikely that sedentary caribou are present in the Project area during the pre-calving period (D'Astous and Trimper 2010).

Figure 7-8 Caribou Survey Area



7.8.2 Wildlife Surveys

Various field surveys have been undertaken to identify the presence of wildlife species in the vicinity of the Houston Project area. These include wildlife and vegetation surveys conducted on the Houston Property in August 2009 (Stassinu Stantec 2010), two caribou surveys conducted in May 2009 (D'Astous and Trimper 2009) and May 2010 (D'Astous and Trimper 2010), and additional surveys conducted by AECOM during the summer 2011

Caribou surveys conducted in May 2009 and May 2010 showed no use of the area by caribou at this time (Figure 7-8). During the caribou surveys, incidental observations of moose (*Alces alces)*, black bear (*Ursus americanus*), wolf (*Canis lupus*), river otter (*Lutra candensis*), lynx (*Lynx canadensis*), porcupine (*Erethizon dorsatum*), snowshoe hare (*Lepus americanus*), red squirrel (*Tamiasciurus hudsonicus*), Spruce Grouse (*Falcipennis canadensis*), Willow Ptarmigan (*Lagopus lagopus*), Golden Eagle (*Aquila chrysaetos*), Osprey (*Pandion haliaetus*), Bald Eagle (*Haliaeetus leucocephalus*) and American Crow (*Corvus brachyrhynchos*) were recorded (D'Astous and Trimper 2009; 2010). There was no marten (*Martes americana*) sign observed during the surveys in the Houston Project area.

Porcupine may find adequate cover within the Houston Project area but may lack summer forage in pure conifer forest. The occasional occurrence of stony patches within the dominant Habitat Types on the Houston Property may be selected for denning sites (Morin et al. 2005). Evidence of porcupine was found in all Habitat Types sampled within the Houston Project area, reflective of their generalist nature (Schmelzer and Fenske ND), but predominantly in coniferous-dominated forests. Porcupine display seasonal changes in their foraging ranges (Sweitzer 1996) and shift from a diet containing conifer bark in the winter to one containing leaves and other foliage in the summer and fall (Woods 1973; Banfield 1974). Given the nature of conifer browse versus leaf browse during studies such as this (100 percent of observations were of browse dominated by evidence on coniferous trees), results are likely reflective of winter habitat use in the region.

The dominant Habitat Types also provide cover and winter forage for snowshoe hare (Dodds 1960; Wolff 1978; Newbury and Simon 2005). Snowshoe hare were detected in black spruce/lichen woodland, and spruce/feathermoss forest Habitat Types. It is well documented that lynx favour snowshoe hare as prey and their cycles follow closely. The habitat potential for lynx would be rated the same as snowshoe hare because of this connection. Winter tracking data collected during the winter of 2007 and 2008 indicate that red fox (*Vulpus vulpus*) and snowshoe hare were abundant throughout the vicinity of the Project area.

There were many small mammal trails and holes found during field surveys. Voles, shrews and mice occupy a range of niches within main habitats encountered at the Houston Project area. The importance of small mammals and snowshoe hare as a keystone species in both Arctic and boreal ecosystems is recognized: Pearce and Venier 2004; Hinterland Who's Who 2006; International Arctic Science Committee 2010). They are a major prey species for many northern carnivores and cyclic fluctuations in the abundance of small mammals and hares are shown in the repeated fluctuations in the abundance of their predators.

7.8.3 Species at Risk

No species at risk were identified within the Project area during the field surveys. The breeding territory of the Short-eared Owl (*Asio flammeus*) (recognized by the Committee on the Status of Endangered Wildlife in Canada COSEWIC as a Species of Special Concern) extends all across Canada although they avoid forested areas and are attracted to areas with local microtine outbreaks (COSEWIC 2008). Large open habitats with dense grasses or taiga with willows in close proximity to small mammal populations may be selected as breeding sites from March to May. Nesting begins in June. Open stony areas within the four dominant Habitat Types, where present, may meet hunting requirements for some species of owl, although no evidence of owls was found during field surveys in August 2009. Short-eared Owls require a minimum habitat size of approximately 20 ha and use open areas for hunting small mammals and occasionally small birds (I. Schmeltzer pers. comm.). Environmental baseline data collection which began in 2005 and continued until August 2009 has not identified the presence of limiting or critical habitats that would be essential for Short-eared owls within the Houston Project area.

Ongoing baseline programs will continue to assess habitats and presence for non-listed species, but designated as vulnerable and/or threatened by the Newfoundland and Labrador *Endangered Species Act* or COSEWIC. These include Harlequin Duck (*Histrionicus histrionicus*), Common Nighthawk (*Chordeiles minor*), Rusty Blackbird (*Euphagus carolinus*), Olive-sided Flycatcher (*Contopus cooperi*), and Gray-cheeked Thrush (*Catharus minimus*). An Avifauna Management Plan consistent with the *Migratory Birds Convention Act* has been prepared and approved for the nearby Schefferville Area Iron Ore Mine and it is expected that this document will be implemented prior to the start of construction to address any Project interactions.

7.9 Historic Resources

No archaeological or cultural sites are known or registered in the Houston Project area. A Stage 1 Historic Resources Overview Assessment (Stage 1 HROA) was completed in June 2008 prior to commencement of proposed exploration activities. Based on a site visit, no sites or materials of historic resources significance, or any areas of potential, were observed. Therefore, no mitigation measures were required or recommended in the assessment report prepared for LIM and the Provincial Archaeology Office (PAO) of the Newfoundland and Labrador Department of Tourism, Culture and Recreation (Jacques Whitford Limited 2009b).

In 2011, an archaeological assessment was conducted of the proposed Houston-Redmond haul road Route Options A and B by Stantec (formerly Jacques Whitford) on behalf of LIM. Based on the review of available information, including published and unpublished literature, archaeological reports, the Archaeological Site Record Inventory at the PAO and aerial photography, it was determined that given the nature and extent of ground disturbances that have occurred in the area from past mining activities as well as the prevalent topographic and hydrographic features, the majority of locations researched have Low historic resources potential:

- Route A crosses terrain that is considered to have Low potential for human settlement. Thus no assessment of the route is recommended. According to this assessment, Route

A of the Houston Road Options is approximately 8 km in length and runs roughly southeast to northwest along the west side of Oboe Lake, across the north end of Baker Lake to an existing access road. Site assessments conducted since 2008 shows that this access road option intersects waterways at the southeast end of Oboe Lake and at the northeast end of Baker Lake. However, neither of the waterways appears to be significant and it is unlikely they were used for human settlement in the distant or recent past. Therefore the historic resources potential of Route appears to be low and assessment of the corridor is not warranted.

- Route B is also approximately 10 km in length. It runs northwest from an existing access road situated to the southeast of to an existing access on the west side of Gilling River. The route crosses a number of minor watercourses at the southern end of Oboe Lake and continues northwest through forested terrain. The historic resources potential of Route B is generally low, except in the area where it crosses Gilling River. In this area the potential is considered moderate. Therefore assessment at this river crossing will be conducted prior to the initiation of construction at this water crossing.

7.10 Socio-Economic Environment

It is anticipated that this Project will provide sustainable social and economic benefits to the region. The area most likely to be affected are the primary places of residence of the Project labour force: Matimekush-Lac John, Schefferville, Kawawachikamach, Labrador West and Upper Lake Melville,. While all Project activity will occur in Labrador, the baseline conditions in central Labrador and parts of Quebec are included because Project labour, goods and services will also potentially be drawn from these areas. The communities of Matimekush-Lac John, Schefferville, Kawawachikamach are located in Quebec in close proximity to the Quebec-Labrador border and the Project. All three can be reached by air, through the Schefferville Airport, or by train from Sept-Îles.

This section provides information on the existing socio-economic conditions, including demography, community infrastructure and services, and employment and business. The geographic extent of the discussion varies by subject. Most aspects of the socio-economic environment will be examined for the Assessment Area, which includes both western and central Labrador, defined geographically as the Hyron (Labrador West) and Central Labrador (Upper Lake Melville) Economic Zones (Figure 7-9). The Project will make use of some municipal facilities and the airport, and will employ some workers and services located in these communities.

Baseline information is presented at the provincial, Labrador, and Assessment Area levels as appropriate, with further detail for communities within the Assessment Area provided where necessary. Selected data are also presented for Schefferville and other Québec communities adjacent to the Project site.

7.10.1 Methodology

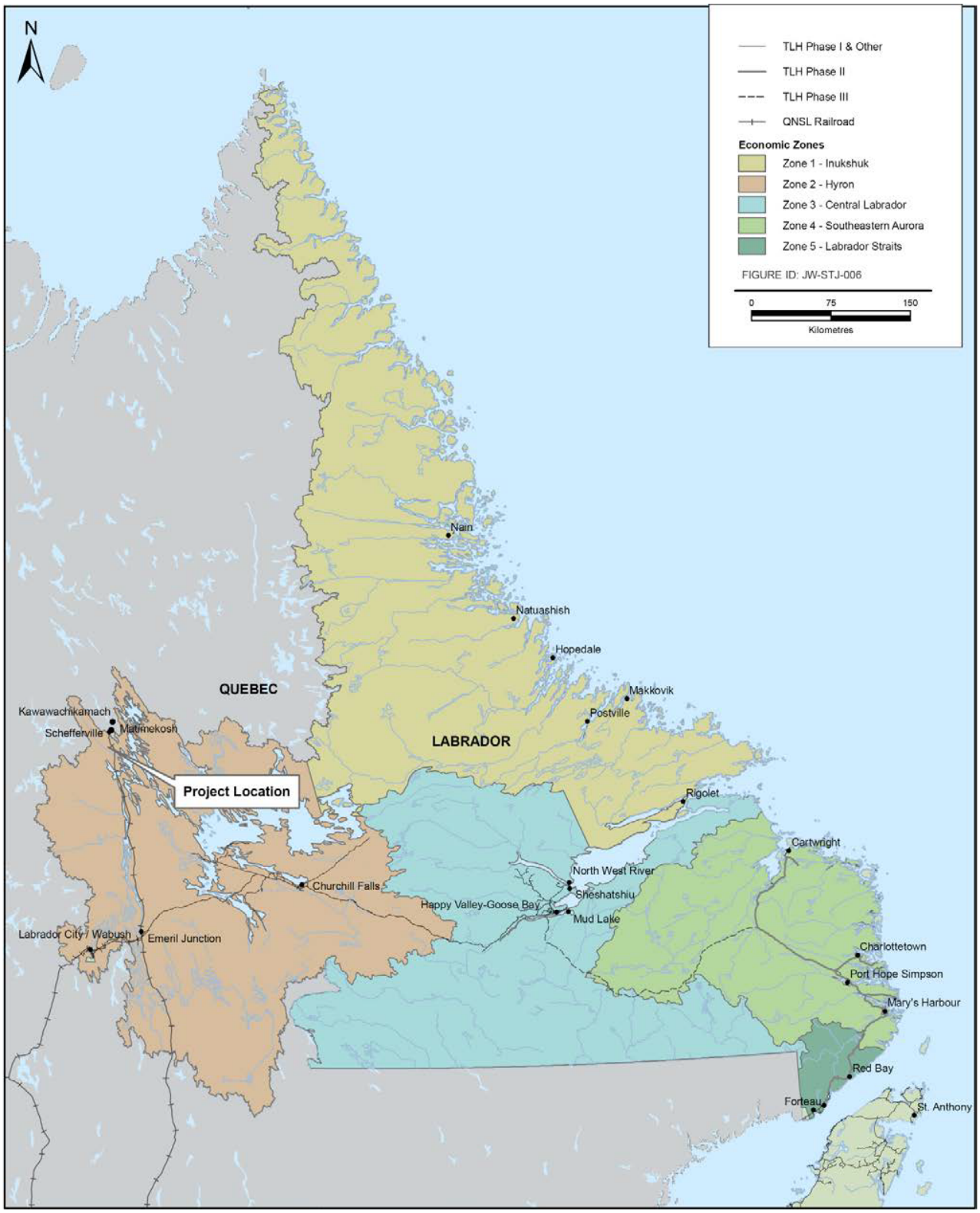
The baseline data presented in this section were drawn from a wide range of secondary sources including:

- Statistics Canada and other agencies and departments of the Government of Canada;
- Newfoundland and Labrador Statistics Agency and other agencies and departments of the Government of Newfoundland and Labrador; and
- Municipal governments and local and regional authorities and boards.

Not all information is available for the same geographic areas. For instance, census data are available for some communities in the Upper Lake Melville Area (for example, Happy Valley-Goose Bay and North West River, which are located in Census Division 10, Subdivision C), but data for Sheshatshiu and Mud Lake are aggregated and classified as Census Division 10, Subdivision C, SUN. Other data are only available by Economic Zone and not for individual communities. The communities in Labrador West fall under Economic Zone 2 – Hyron Regional Economic Development Corporation and the communities of the Upper Lake Melville Area comprise Economic Zone 3 – Central Labrador Economic Development Board.

In addition to data from the above secondary sources, primary information was collected through personal and telephone interviews with key informants with groups and agencies at the community, regional and provincial levels.

Figure 7-9 Project Location and Economic Zones of Labrador



7.10.1.1 Demography

An understanding of the demographic structure and its potential for change without the Project provides a basis for determining Project-related changes. The following discussion focuses on the demography of western and central Labrador and, where relevant, that of Labrador and the Province. There is also an overview of the Québec communities in close proximity to the Project site.

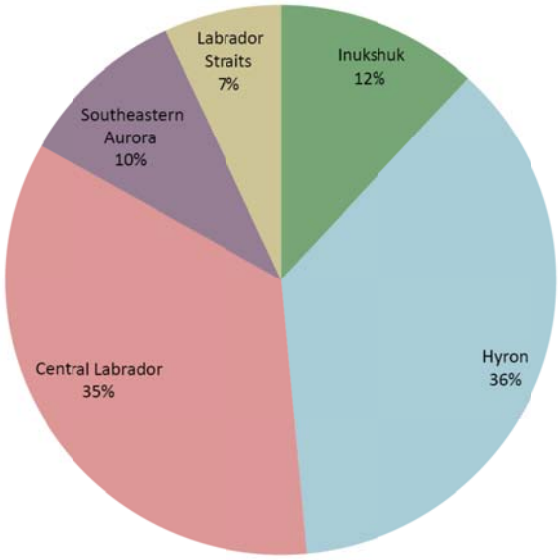
7.10.1.1.1 Labrador

The 2006 Census reports that there are 26,364 people residing in 32 communities across Labrador, of which 50.7 percent are male and 49.3 percent are female. In 2006, Labrador's population made up 5.2 percent of the provincial total (Statistics Canada 2006). In Labrador and the Province in 2006, the majority of the population was between the ages of 35 and 64 (44.4 and 46.2 percent, respectively) Those aged 15 to 34 represented the smallest portion of the Province's population (6.1 percent), while the 65 plus age group represented the smallest portion of Labrador's population (6.3 percent) (Statistics Canada 2006). Thirty-five percent of the people living in Labrador have Aboriginal ancestry, self-identifying as Innu, Inuit or Métis (Newfoundland and Labrador Department of Labrador and Aboriginal Affairs [NLDLAA] 2006).

Between 1991 and 2006 Labrador's population fell by 13.1 percent, from 30,375 to 26,364. This was slightly greater than the overall provincial decline of 11.1 percent (Statistics Canada 2006).

For the purposes of economic analysis and planning, Newfoundland and Labrador is divided into 20 economic zones, five of which are in Labrador (Figure 7-9). In 2006, the economic zones in Labrador with the largest populations were those that are the focus of concern in this assessment: Hyron, comprised of Labrador City and Wabush, and Central Labrador, which comprises Upper Lake Melville with populations of 9,660 and 9,175, respectively (Figure 7-10). The zone with the smallest population was Zone 5 ('Labrador Straits') with 1,825 people (Newfoundland and Labrador Statistics Agency 2006).

Figure 7-10 Population by Economic Zone, as a Percentage of Labrador's Population, 2006

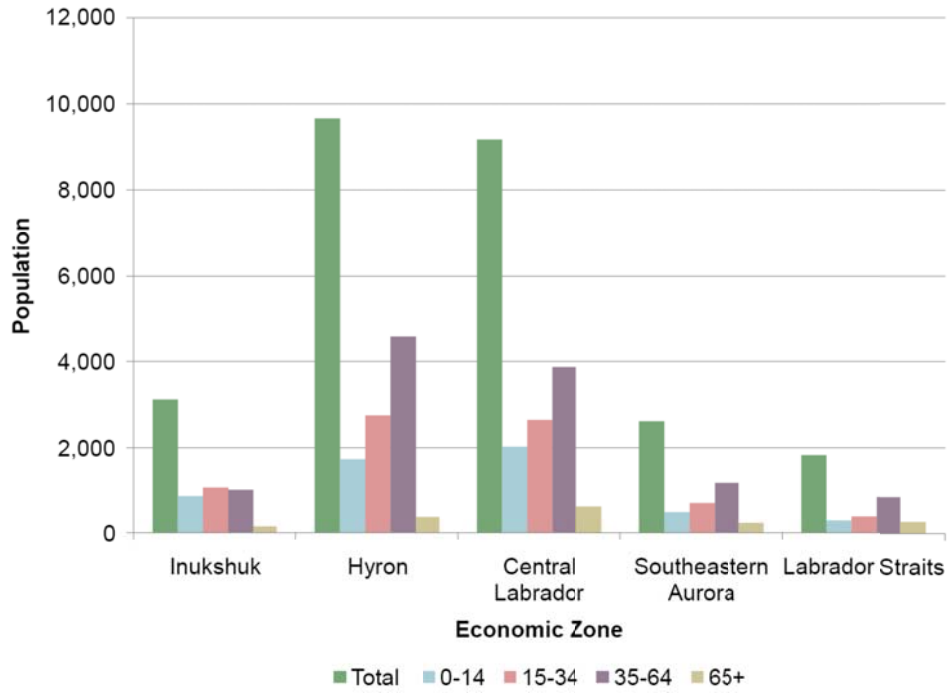


Source: Newfoundland and Labrador Statistics Agency 2006

The populations of all but one of the economic zones in Labrador decreased between 1991 and 2006 (Newfoundland and Labrador Statistics Agency 2006). The greatest declines occurred in Hyron (Labrador West and Churchill Falls) and Labrador Straits. The population of Hyron fell by 20.8 percent, from 12,200 to 9,660, and Labrador Straits decreased from 2,185 to 1,825 (16.5 percent). Inukshuk (the North Coast of Labrador), however, increased by 4.5 percent from 2,985 to 3,120, but it too has declined between 2001 and 2006.

The age-structure of the populations of the economic zones is illustrated in Figure 7-11 Inukshuk is unique insofar as the proportion of younger people in the 0 to 14 and 15 to 34 categories is much higher than for the other zones (Newfoundland and Labrador Statistics Agency 2006).

Figure 7-11 Population of Labrador Economic Zones by Age Group, 2006



Source: Newfoundland and Labrador Statistics Agency 2006

7.10.1.1.2 Labrador West

In 2006, the population of Labrador West was 8,979, with the majority living in Labrador City (Table 7.7). The area represents 34.1 percent of Labrador's population with slightly more men (51.6 percent) than women (48.4 percent) (Statistics Canada 2006).

Table 7.7 Population of Labrador West, Upper Lake Melville, Labrador and Province, 2006

	Total Population	Male	Female
Labrador City	7,240	3,740	3,505
Wabush	1,739	895	845
Labrador West Total	**8,979**	**4,635**	**4,350**
Happy Valley-Goose Bay	7,572	3,740	3,835
North West River	492	240	250
Sheshatshiu and Mud Lake (Census Division 10, Subdivision C)	1,112	560	555
Upper Lake Melville Total	**9,176**	**4,540**	**4,640**
Labrador	**26,364**	**13,380**	**12,985**
Province	**505,469**	**245,735**	**259,735**
Source: Statistics Canada 2006			

Compared to other parts of Labrador, a relatively small proportion of the population of Labrador West is identified as Aboriginal. In 1996, Aboriginal people represented only 1.5 percent of the population. However, by 2006, this had increased to 6.6 percent (Statistics Canada 1991; 1996; 2001; 2006). Visible minorities (persons who are identified according to the *Employment Equity*

Act as being non-Caucasian in race or non-white in colour, with the exception of Aboriginal people) made up only 1.2 percent of Labrador West population.

7.10.1.1.3 Upper Lake Melville

With a population of 9,176, Upper Lake Melville has 34.8 percent of the total population of Labrador (Table 7.7) (Statistics Canada 2006). In 2006, there were slightly more women (50.6 percent) than men (49.4 percent) living in the area and 82.5 percent of residents lived in Happy Valley-Goose Bay, the area's largest community.

As in Labrador West, the population of Upper Lake Melville has been in decline. It fell from 10,050 in 1991 to 9,654 in 2001, a decline of 3.9 percent. By 2006, the population had decreased a further 5.0 percent to 9,176, with Happy Valley-Goose Bay and North West River experiencing declines of 12.0 percent and 6.8 percent respectively. However, Census Division 10, Subdivision C (Sheshatshiu and Mud Lake) experienced a population increase of 21.9 percent. It should be noted that Statistics Canada data combine information for Sheshatshiu (approximately 1,050 people) with that for the much smaller community of Mud Lake (approximately 60 people), and few disaggregated data are available.

Sheshatshiu is an Innu community, and many Innu, Inuit and Métis live in Happy Valley-Goose Bay, North West River and Mud Lake. The Aboriginal population of the Upper Lake Melville Area increased from 2,035 to 4,130 between 1991 and 2001 and then decreased to 4,095 in 2006. Most (66.4 percent) Aboriginal people in that area reside in Happy Valley-Goose Bay. Of the 1,112 people in Sheshatshiu and Mud Lake in 2006, 1,035 (93 percent) were Aboriginal. In North West River, 340 (68.7 percent) of the population were Aboriginal, as were 2,720 (35.9 percent) of those in Happy Valley-Goose Bay.

Visible minorities comprised only 0.4 percent of the 2006 population in Upper Lake Melville, all of them living in Happy Valley-Goose Bay (Statistics Canada 2006).

7.10.1.1.4 Québec Communities

In 2006, there were 1,315 people residing in the four communities near the Project that are located in Eastern Québec (Statistics Canada 2006) (Table 7.8). In contrast with most of Labrador, the population rose in these communities between 2001 and 2006 by 5.8 percent from 1252 in 2001 to 1315 in 2006 (Statistics Canada 2006).

Table 7.8 Population, Eastern Québec Communities, 2001 and 2006

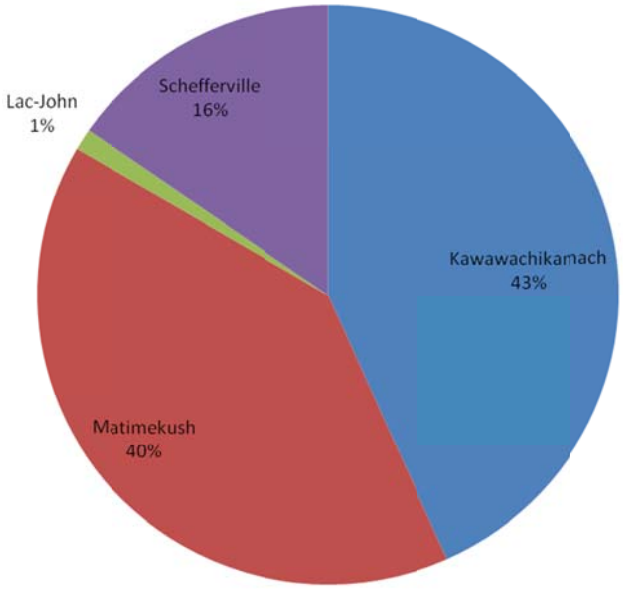
	Kawawachikamach	Matimekush	Lac-John	Schefferville	Total
Population in 2006	569[1]	528	16	202	1315
Population in 2001	540	449	23	240	1252
2001 to 2006 population change (%)	5.37	17.59	-30.43	-15.83	5.03

Source: Statistics Canada 2001, 2006
[1] The total population of Kawawachikamach in March 2011 was 842 (NNK 2011)

The Naskapi Nation of Kawawachikamach is comprised of the Village of Kawawachikamach, approximately 16 kilometres northeast of Schefferville, and a larger uninhabited area to the northeast of the Village. Kawawachikamach is largest community in the area. With a population of 842 people, it contains approximately 43.2 percent of the total population of the Québec communities (NNK Annual Report, 2011) (Figure 7-12).

In 2011, there were slightly less women (48.8 percent) than men (51.2 percent) living in the area. The compounded annual growth rate of the Naskapi general population between 1986 and 2011 has been 3.83% (NNK Annual Report, 2011).

Figure 7-12 Percentage Population of Eastern Québec Communities, 2006 (Statistics Canada)



Matimekush Innu community has approximately 544 people (Statistics Canada 2006). It is divided into two territories: the reserve of Matimekush (528 people), on the edge of Pearce Lake adjacent to the Schefferville Municipality; and the reserve of Lac-John (16 people), which is 3.5 kilometres from Matimekush and the centre of Schefferville. With a population of 528 people, Matimekush contains approximately 40 percent of the total population of the Québec communities (Statistics Canada 2006) (Figure 7-12). In 2006 there were more women (52.83 percent) than men (47.17 percent) living in the area. Of the 528 people in Matimekush, 495 (93 percent) were Aboriginal. Between 2001 and 2006, its population saw the largest increase in the Québec communities, growing by approximately 18 percent from 449 people in 2001 to 528 people in 2006 (Statistics Canada 2006).

Lac-John, which is located 3.5 kilometres from Matimekush, will be considered a part of the analysis for Matimekush due to information being suppressed due to confidentially issues. Where disaggregated data exist, Lac-John will be presented separately. It is the smallest of the four Québec communities with 16 people (Statistics Canada 2006). The population has decreased by 30 percent from 23 people in 2001 to 16 people in 2006.

Schefferville is approximately 2 kilometres from Labrador on the north shore of Knob Lake. It was established by IOC in 1954 to support mining operations in the area. The Municipality and Matimekush Reserve are adjacent and closely linked to it. With a population of 202, the Municipality of Schefferville contains approximately 16 percent of the total population of the Québec communities (Statistics Canada 2006) (Figure 7-12). In 2006, there were more men (55 percent) than women (45 percent) living in the area. Of the 202 people in the Municipality of Schefferville, 90 (44.5 percent) were Aboriginal. Between 2001 and 2006, its population decreased by approximately 15 percent from 240 people in 2001 to 202 people in 2006 (Statistics Canada 2006).

7.10.1.2 Employment and Business

7.10.1.2.1 Outlook

A recent publication by the Newfoundland & Labrador Department of Human Resources, Labour and Employment entitled Outlook 2020 (Labour Market Outlook Study)[1] has concluded that the historical challenge of too many people and not enough work is now giving way to a new reality of increased jobs and opportunities and not enough people to fill the positions. It has been noted that the long-standing history of net out-migration has turned to a net in-migration of the past two years and this trend will have to be accelerated to keep pace with labour demand over the next ten years.

The document forecasts that total employment will grow by 2.8% from 2011 to 2010, representing approximately 7,700 new jobs in the Labrador economy. In 2010, the Province recorded the highest level of employment in the past 35 years. The sectors that are expected to grow faster than average over the forecast period include utilities, health, trade and mining. Further, job openings that will arise due to retirements and deaths will account for a significant number of job openings over the next ten years with over 70,000 job openings being anticipated to arise between 2011 and 2020, with attrition accounting for up to 89% of these openings.

The study forecasts that skill demands will continue to increase with approximately 67% of all job openings in the 2011 to 2020 period being in management occupations or will require some form of post-secondary education.

7.10.1.2.2 The Mining Industry

Mining has provided a valuable foundation and cornerstone for economic development and growth in Labrador West, with a primary focus on iron ore. Large scale mining development projects are generally long term and capital intensive and often result in major economic and employment benefits similar to operations already existing in Labrador West (NLDLAA 2008).

Production mining is the main activity in Labrador West. IOC operates its Carol Lake Mine out of Labrador City, and Wabush Mines operates its Scully Mines from Wabush. The situation has not changed substantially since 1993 in terms of both mines being dependent on the fluctuations in the international market for steel and subsequently iron ore. In June 2011, the Company

1 Newfoundland and Labrador Department of Human Resources, Labour and Employment, 2011

(Labrador Iron Mines Limited) commenced mining operations at its James Mine, located near the proposed project.

The Iron Ore Company of Canada (IOC) began production from the Carol Lake Mine in 1962. IOC is Canada's largest iron ore pellet producer and operates a mine, concentrator, and pellet plant at Carol Lake, port facilities in Sept-Iles, Québec and a 420-km rail line that links the mine and the port. Total resources at Carol Lake are estimated to be 5.5 billion tonnes. Proven and probable reserves are 1.4 billion tonnes; indicated and referred reserves are 4.1 billion tonnes. Annual mine production at the open pit operation is in the 35 to 38 million tonne range at an average grade of approximately 40 percent total iron. Annual production capacity is 18 million tonnes of concentrate of which 12.5 million tonnes can be pelletized. In 2005 and 2006, IOC shipped a total of 15 million tonnes of iron ore, up 30 percent from 2004 (AMEC Earth and Environmental Ltd and Gardner Pinfold 2008).

IOC announced a $500 million expansion in March 2008, and a further $300 million expansion in September 2008. However these plans, which would have increased production to 25 million tons per year by 2011, have been postponed and have not yet be introduced into the environmental assessment process.

Wabush Mines began mining iron ore from the Scully Mine in Labrador in 1965 and now operates a mine and concentrating plant at Wabush and a pellet plant and shipping facilities in Point Noire, Québec. All ore is mined by open pit and sent through the Scully Mine concentrator. The final concentrate is transported 443 kilometres by rail to the port at Pointe Noire for pelletizing and shipment. The majority of ore is loaded onto ships bound for the Canadian and US Great Lakes region while the remainder is loaded for the US East Coast, Europe and more recently China. In 2005, Wabush Mines shipped five million tonnes of concentrate, up almost 29 percent from 2004. In 2006 it shipped 4.2 million tonnes, a drop of 17.9 percent from the previous year. In 2006 it spent more than $18 million on capital projects (AMEC Earth and Environmental Ltd and Gardner Pinfold 2008). However, in December 2008, Wabush Mines cut its production target for 2009 in half, and announced it was eliminating 160 jobs in February 2009. Other materials of interest in Labrador West are aggregate, nickel, gold and graphite (AMEC Earth and Environmental Ltd and Gardner Pinfold 2008).

Labrador Iron Mines commenced development of its James and Redmond Mine project (Schefferville Area Iron Ore Mine), located in Western Labrador in 2010 following receipt of all approvals from the Province and shipped the first production of direct-shipping iron ore from the James Mine and the Silver Yard beneficiation plant to the Port of Sept-Iles by train on June 29, 2011. Labrador Iron Mines expects to ship 500,000 tonnes of DSO during 2011 building up to 2,500,000 tonnes in 2012 and increasing gradually to a steady state of 5,000,000 tonnes a year by 2015.

During LIM's Schefferville Area Iron Ore mine construction and operation phases, numerous jobs were created and filled by residents of Newfoundland and Labrador and local communities. A further 25 to30 jobs have been created in exploration and base-line environmental data collection and management and these programs will be ongoing during the assessment, development and rehabilitation of LIM's future phases of development

On October 25th, 2011, Alderon Iron Ore Corp. announced that it initiated the Federal and Provincial Environmental Assessment processes for the 100% owned Kamistiatusset ("Kami") Iron Ore Project in western Labrador. The Registration Documents include provision to produce up to 16 million tonnes of iron ore concentrate annually as part of a second phase capital expansion. Alderon believes that on the completion of definition drilling planned for the winter 2012 drill program, that it will be able to upgrade a substantial portion of its currently defined inferred resources to the indicated resource category.

The Labour Market Outlook Study has concluded that 67% of all job openings in the 2011 to 2020 period will be in management occupations or will require some form of post-secondary education. By contrast, the jobs likely to be created in the resource sector, particularly in open cast mining operations, and specifically in the mining of DSO type iron deposits being developed by the Company, can to a greater extent be classified as “entry level” jobs requiring no more than a secondary level of education. Consequently, the creation of additional full time jobs will be of significant advantage to the Province.

Labour Market Outlook Study forecasts a very significant tightening in the labour supply-demand situation throughout the Province over the next decade. Elsewhere in Canada labour force growth is supported by immigration. However, traditionally, Newfoundland and Labrador attracts only 0.2%[2] of all immigrants to Canada and retains only 36% of these immigrants.

7.10.1.2.3 Employment and Labour Force

Labrador

The current employment situation in Labrador is considered to be robust. Participation rates have been higher, unemployment rates have beenlower, and the average annual income has been higher in Labrador West. Although the most recent data, provided below, is from the Statistics Canada report produced in 2006 (Table 7.9), current conditions are even more prosperous in 2011 with expected growth to continue.

Table 7.9 Labour Force Characteristics, Labrador, 2006

	Labrador City	Wabush	Total Labrador West	Upper Lake Melville	Labrador	Province
Total Population, 15 years and older	5,935	1,460	7,395	7,045	20,815	422,385
Labour Force	4,325	1,045	5,370	5,105	14,340	248,685
Participation Rate (%)	72.9	71.6	72.3	64.3	63.2	58.9
Unemployment Rate (%)	8.9	8.1	8.5	20.4	24.5	18.6
Median Income, 2005	$30,884	$36,091	$33,488	$24,196	$21,845	$19,573
Source: Statistics Canada 2006						

In 2006, the labour force (i.e., individuals who have, or are seeking employment) of Labrador West consisted of 5,370 individuals (Table 7.9), an increase from 4,395 in 2001. The participation rate, which is the percentage of the work-age population that is working or actively

2 Building Healthy Labour Markets, Doug May (MUN) and Pamela Toope (HRLE), Oct. 2006

looking for employment, is much higher in Labrador West (72.3 percent in 2006, up from 67.5 percent in 2001) than in the Province (58.9 percent) or Upper Lake Melville (64.3 percent). Between 2001 and 2006, the unemployment rate in Labrador West fell from 9.1 to 8.5 percent.

Wages in Labrador West are higher on average than in the rest of the Province. In 2005, the median income from employment for residents of Labrador West averaged $33,488, substantially higher than the provincial figure of $19,573, and the Upper Lake Melville average of $24,196 (Table 7.9) (Statistics Canada 2001; 2006).

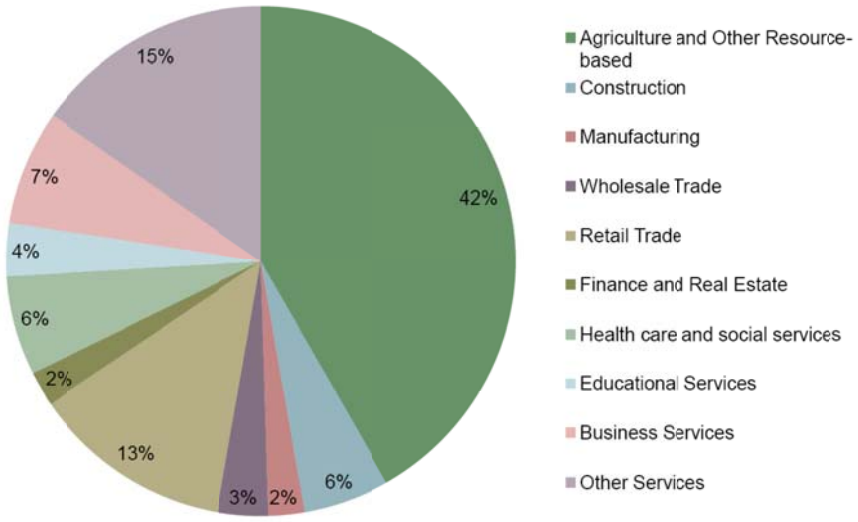
The number of individuals in Labrador West receiving employment insurance (EI) benefits decreased by 6.3 percent between 1996 and 2006. During the same period, the number of EI beneficiaries in the Upper Lake Melville decreased by 10.9 percent and the provincial beneficiaries decreased by only 4.7 percent (Table 7.10).

Table 7.10 Beneficiaries of Employment Insurance, Labrador City and Wabush, 2002 to 2006

	1996			2006			*% Change*		
	Labrador West	**Upper Lake Melville**	**Province**	**Labrador West**	**Upper Lake Melville**	**Province**	**Labrador West**	**Upper Lake Melville**	**Province**
EI Beneficiaries (Individuals)	1,370	1,605	102,825	1,155	1,430	98,025	*-15.7%*	*-10.9%*	*-4.7%*
EI Incidence (% of labour force)	21.4%	28.8%	39.9%	18.0%	25.5%	35.5%	*-15.9%*	*-11.5%*	*-11.0%*
Source: Newfoundland and Labrador Statistics Agency 2008									

The occupational structure of Labrador is weighted toward goods-producing and seasonal industries. The main source of employment by industrial sector in 2006 was agriculture and other resource-based industries (including mining) which employed 42 percent of the area's population (Figure 7-13). Other services and retail trade employed 15 percent and 13 percent of the population, respectively, while health care and construction each employed 6 percent of the area's residents. Few Labrador West residents worked in wholesale trade (three percent), manufacturing (two percent) or finance and real estate (two percent) (Statistics Canada 2006).

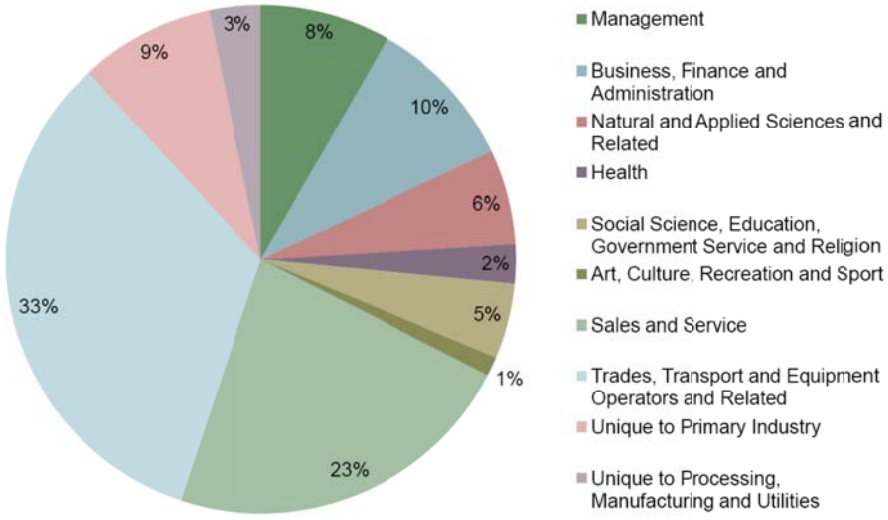
Figure 7-13 Labour Force by Industry, Labrador West, 2006



Source: Statistics 2006

The main occupations of residents of Labrador City and Wabush are trades, transport and equipment operation (33 percent) and sales and service (23 percent) (Figure 7-14). Occupations unique to primary industry and positions in business, finance and administration are held by nine percent of the area's population (Statistics Canada 2006).

Figure 7-14 Labour Force by Occupation, Labrador West, 2006

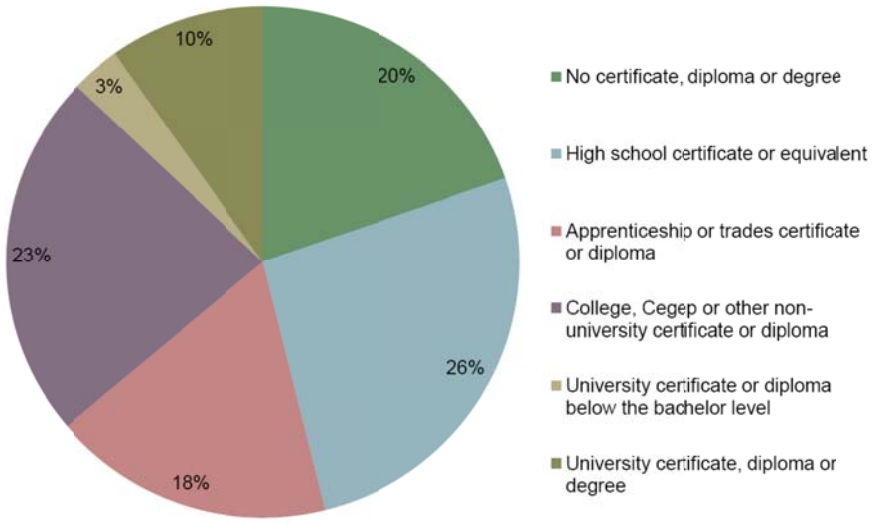


Source: Statistics 2006

The main occupations of residents of Kawawachikush, Matimekush and Schefferville are sales and services (30 percent), and trades, transport and equipment operation (21 percent) (Figure 7-21). (Statistics Canada 2006).

In Labrador West, approximately half of the population (54 percent) has some form of post-secondary training, while only 20 percent have less than a high school education (Figure 7-15). Thirteen percent of Labrador West residents have a university degree, and an additional 23 percent hold a post-secondary certificate or diploma. In Upper Lake Melville ten percent of the population holds a university degree, and 33 percent have not completed a high school education (Figure 7-17); Statistics Canada 2006).

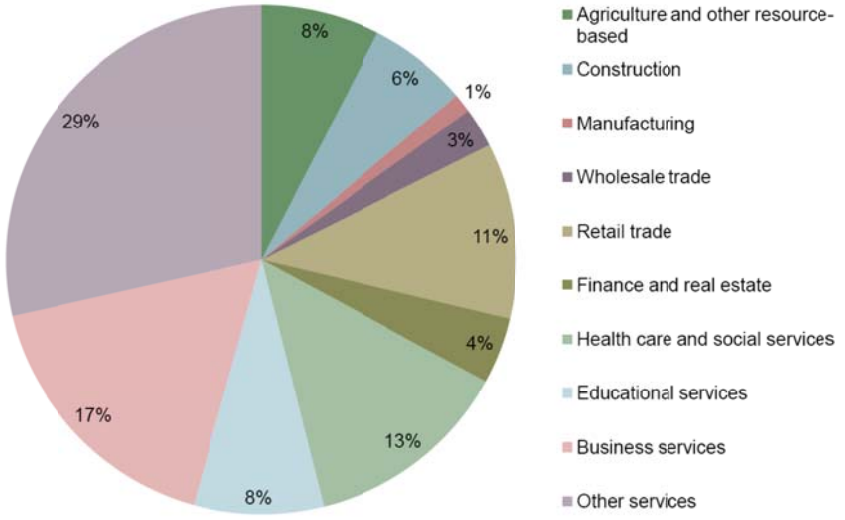
Figure 7-15 Education Level, Labrador West, 2006



Source: Statistics 2006

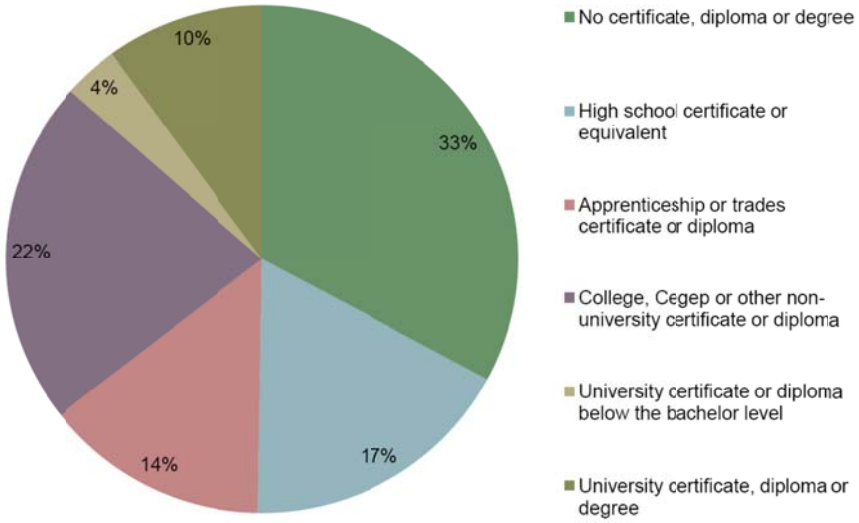
In 2006, 5,035 people aged 15 and over were employed in Upper Lake Melville. The main sources of employment, by industry (Figure 7-16), were Business Services, which employed 860 people, Health Care and Social Services (660), Retail Trade (565) and Other Services (1,435). There were few people employed in Finance and Real Estate (280), Wholesale Trade (125) or Manufacturing (60). The main occupations of Upper Lake Melville Area residents were Sales and Service (1,420), Trade, Transport, and Equipment Operation (970), and Business, Finance and Administration (875) (Statistics Canada 2006).

Figure 7-16 Employment by Industry, Upper Lake Melville, 2006



Source: Statistics 2006

Figure 7-17 Education Level, Upper Lake Melville, 2006



Source: Statistics 2006

Eastern Quebec

In the Eastern Québec communities (Kawawachikamach, Matimekush, and Schefferville), the 2006 labour force consisted of 855 people (Table 7.11). The participation rate is lower for the Eastern Québec towns (35.6 percent) when compared to Labrador West (72.3 percent) (Table 7.14). The unemployment rate for Eastern Québec is also higher at 19.4 percent compared to Labrador West, which is 8.5 percent (Table 7.11). Wages in Eastern Québec ($10,648) were also lower on average when compared to Labrador West ($33,488) (Table 7.11).

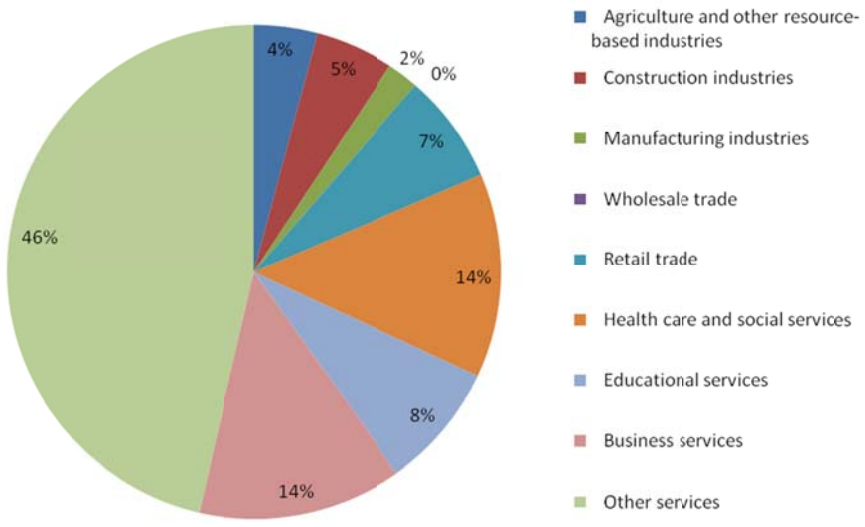
Table 7.11 Labour Force Characteristics, Eastern Québec and Comparison to Labrador West, 2006

	Kawawachikamach	Matimekush	Schefferville	Québec Total	Labrador West Total
Total Population, 15 years and Older	360[1]	335	160	855	7,395
Labour Force	170	200	120	490	5,370
Participation Rate (%)	47.2	59.7	75	35.6	72.3
Unemployment Rate (%)	20.6	37.5	12.5	19.4	8.5
Median Income, 2005	$12,768	$8,528	$0.00[2]	$10,648	$33,488

Source: Statistics Canada 2006
[1]Kawawachikamach workforce was 512 in 2008 (NNK 2008)
[2] Data is suppressed. Statistics Canada suppresses income data in census areas with populations less than 250 persons, or where the number of private households is less than 40. All suppressed data and associated averages, medians and standard errors of average income are replaced with zeros, but are included in the appropriate higher-level aggregate subtotals and totals. This practice has been adopted to protect the confidentiality of individual respondents' personal information.

The occupational structure of Eastern Québec is weighted to other services. The main source of employment by industrial sector in 2006 was other services which employed 46 percent of the area's population (Figure 7-18). Health care and social services and business services employed 14 percent of the population, each, while education, retail trade and construction each employed eight, seven and five percent of the area's residents respectively. Few Eastern Québec residents worked in agriculture and other resource based industries (four percent), or manufacturing (two percent).

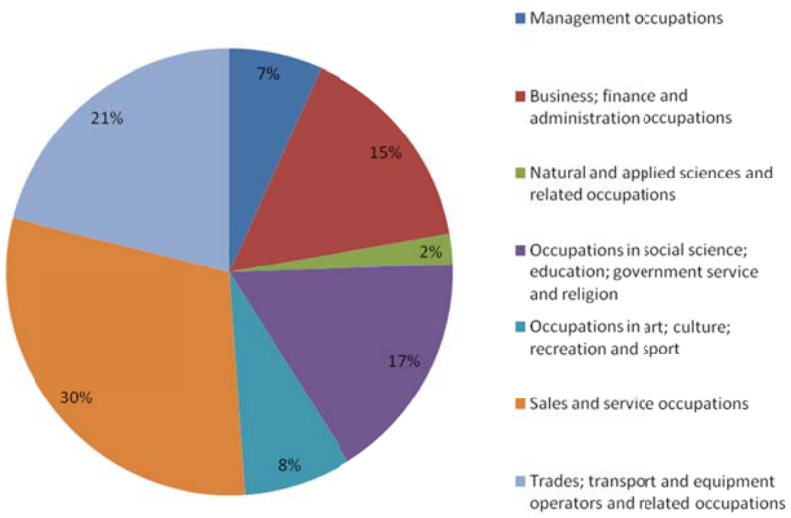
Figure 7-18 Labour Force by Industry, Eastern Québec, 2006



Source Statistics Canada 2006

The main occupations of residents of Kawawachikush, Matimekush–Lac John, and Schefferville are sales and services (30 percent), and trades, transport and equipment operation (21 percent) (Figure 7-19) (Statistics Canada 2006).

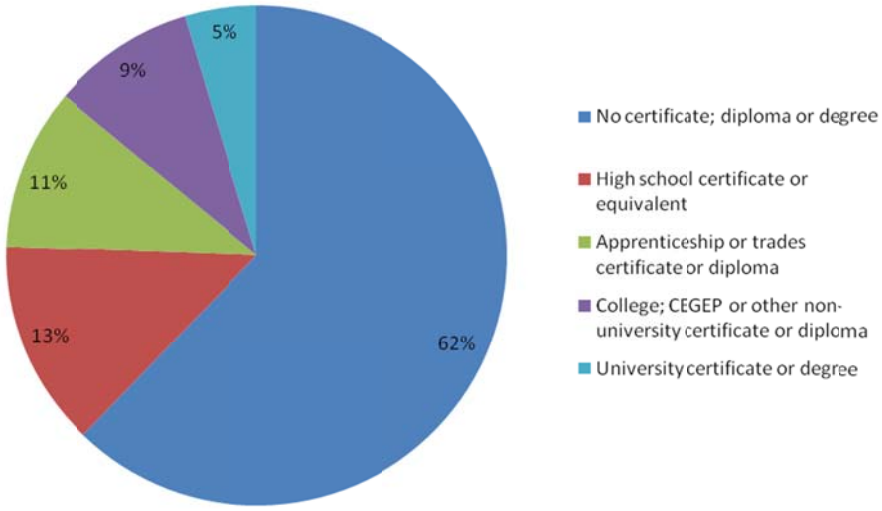
Figure 7-19 Labour Force by Occupation, Eastern Québec, 2006



Source Statistics Canada 2006

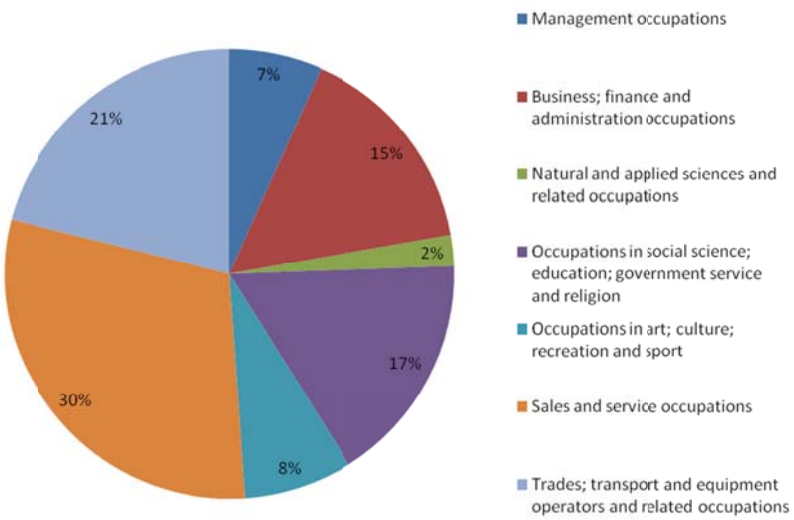
In the Québec communities, over half of the population (62 percent) has less than a high school education, while approximately 30 percent has some form of post secondary education. Five percent of the Eastern Québec residents have a university degree, and an additional 20 percent hold a post-secondary certificate or diploma (Figure 7-20).

Figure 7-20 Education Level, Eastern Québec, 2006



Source Statistics Canada 2006

Figure 7-21 Employment by Industry Residents of Kawawachikush, Matimekush and Schefferville



Source Statistics Canada 2006

7.10.1.2.4 Business

Western Labrador

The business community of Labrador West includes 311 companies, approximately two percent of all businesses in the Province (Statistics Canada Business Register). Most of them have one to four employees (Table 7.12). These businesses, categorized by North American Industrial Classification System (NAICS) Industry Code, are presented in Table 7.13.

Table 7.12 Number of Businesses by Employment Size, Hyron Region, 2006

Number of Employees	Number of Businesses
1-4	139
5-19	121
20-99	43
Total	311
Source: Statistics Canada Business Register	

Table 7.13 Number of Businesses by Industry, Hyron Region, 2006

Industry Code	Number of Businesses
Agriculture, Forestry, Fishing and Hunting	X
Mining and Oil and Gas Extraction	6
Utilities	X
Construction	21
Manufacturing	7
Wholesale Trade	25
Retail Trade	64
Transportation and Warehousing	17
Information and Cultural Industries	5
Finance and Insurance	7
Real Estate and Rental Leasing	16
Professional, Scientific and Technical Services	10
Management of Companies and Enterprises	X
Administrative and Support, Waste Mgmt, and Remediation Services	16
Educational Services	X
Health Care and Social Assistance	26
Arts, Entertainment and Recreation	8
Accommodation and Food Services	27
Other Services (Except Public Admin.)	45
Public Admin	4
Total	**311**

Note: x = data not available
Source: Economics and Statistics Branch (Newfoundland and Labrador Statistics Agency)
http://www.stats.gov.nl.ca/Statistics/Trade/PDF/BR_Zone_NAICS_2006.pdf

The major employers in Labrador West include IOC, which employs more than 2,000 individuals in Labrador City and Sept-Îles, Wabush Mines, with 300 to 400 employees, and the provincial government, including healthcare workers, education employees, and other government employees (B. Jerrett pers. comm.).

Upper Lake Melville

Upper Lake Melville is the government service centre for Labrador. Offices of many provincial and federal government departments are located and staffed in Happy Valley-Goose Bay. Regional governments and Aboriginal groups also provide opportunities for employment in the area. The main employers and number of employees for each are listed in Table 7.14.

Table 7.14 Major Employers and Number of Employees, Upper Lake Melville

Employer	Number of Employees
Regional Agencies	
Labrador-Grenfell Regional Integrated Health Authority	370
Labrador School Board and six public schools	192
College of the North Atlantic	125
Regional Governments and Aboriginal Groups	
Sheshatshiu Innu First Nation and Social Services	214
Town of Happy Valley-Goose Bay	51 permanent and 30 seasonal
Nunatsiavut Government	53
Labrador Métis Nation	12 permanent and 4 seasonal
Private Employers	
SERCO	350-400 full-time and seasonal
Vale Inco	250
Woodward's Group of Companies	200 full-time and seasonal
NorthMart and affiliated businesses	130
Terrington Consumers Co-operative	47
Labrador Friendship Centre	32 permanent and 40 seasonal
Source: CLEDB 2006.	

Historically, the main employer and most important driver of the economy in Upper Lake Melville has been 5 Wing Goose Bay, the military base. Currently, it employs approximately 400 civilians and 100 military personnel and in 2006-07, total wages and salaries were estimated at $14.9 million (AMEC Earth and Environmental Ltd. and Gardner Pinfold 2008). The largest employer associated with the base is SERCO, providing base operation services, including maintenance and catering. SERCO employs approximately 350 of the 400 civilians. Spending by those employed in base-related activities has also had beneficial employment multiplier effects on the local retail sector (CLEDB 2006).

As of 2006, there were 329 businesses in Upper Lake Melville (Table 7.15), representing 35.8 percent of businesses in Labrador. The majority of businesses in the Upper Lake Melville Area (145) were small, with one to four employees. There were 42 businesses with 20 to 99 employees (Newfoundland and Labrador Statistics Agency 2007).

Table 7.15 Number of Businesses, Upper Lake Melville, 2006

Industry	Number of Businesses
Agriculture, Forestry, Fishing and Hunting	X
Mining and Oil and Gas Extraction	-
Utilities	-
Construction	40
Manufacturing	9
Wholesale Trade	10
Retail Trade	77
Transportation and Warehousing	14
Information and Cultural Industries	X
Finance and Insurance	6
Real Estate, Rental and Leasing	15
Professional, Scientific and Technical	16
Management of Companies and Enterprises	X
Administrative and Support, Waste Management and Remediation	9
Educational Services	6
Health Care and Social Assistance	50
Arts, Entertainment and Recreation	10
Accommodation and Food Services	34
Other Services	28
Public Administration	5
Source: Newfoundland and Labrador Statistics Agency 2007a Note: x = data not available	

The majority of businesses in the area fall into the in the same five sectors as for the Province and Labrador as a whole, with construction firms ranking third by number (Table 7.15). At least a quarter of all local firms are self-described as tourism businesses (CLEDB 2007).

Québec Communities

Retail businesses in Schefferville include the Northern Store, which employees 16 people on a part-time and full-time basis providing food, alcohol and general merchandise, as well as Duberco, Inc and Radio which both provide fuel services including aircraft and diesel. Both Duberco, Inc. and Radio employ one person full-time and hire up to an additional two seasonal workers. National Automobile Rentals are also located in Schefferville, employing a single person. There is also a hardware store and a convenience store, each with two employees, in Schefferville.

Within Kawawachikamach, the majority of businesses are owned, either wholly or through joint-ventures, by members of the Naskapi Nation or the Naskapi Band. These businesses include Naskapi Imuun Inc., a wholly-owned Naskapi company responsible for internet services and cellular telephone services, Garage Naskapi Inc. which operates a gas bar, and Kawawachikamach Energy Services Inc., which operates the Menihek Generating Station, manages utility billing to Schefferville regionand maintains the associated transmission lines and Naskapi Hwavy Machinery Limited Partnership, a new heavy machinery rental business recently established to provide services to the mining activities in the Kawachicamach-Schefferville region (NNK 2011). Communities and Services

This section describes the current situation and recent trends with respect to housing, health care, education, recreation, transportation, utilities and security services in Labrador West, Upper Lake Melville and the Eastern Québec communities.

7.10.1.2.5 Housing

Labrador West

In Labrador City, the number of occupied dwellings increased by 3.2 percent between 1991 and 2006, from 2,695 to 2,780. In 2006, 78.8 percent of these were owned and 21.4 percent were rented. The average value of a home in Labrador City in 2006 was $107,604 and the average monthly rent was $521 (Statistics Canada 2006).

Between 1991 and 2006, the number of occupied private dwellings in Wabush increased from 680 to 690 (1.5 percent). The majority (84.1 percent) was owned and 15.2 percent was rented in 2006. The average value of a home in Wabush was $86,216 in 2006 and average monthly rent was $401 (Statistics Canada 2006).

Upper Lake Melville

The number of occupied private dwellings in the Upper Lake Melville increased from 2,820 in 1991 to 3,130 in 1996, and rose again to 3,180 in 2001. In 2006, the number decreased to 3,130, of which 1,870 (59.7 percent) were owned and 1,145 (36.6 percent) were rented. Most occupied dwellings were in Happy Valley-Goose Bay and most of those were single detached homes (Statistics Canada 2006).

Happy Valley-Goose Bay had 2,725 occupied private dwellings, 59.4 percent of which were owned and 40.1 percent rented. Of the total occupied dwellings, 61.8 percent were single detached homes, 18.2 percent were semi-detached and 5.7 percent were apartments. In 2006 the average value of owned dwellings in Happy Valley-Goose Bay was $133,504 and median monthly rent was $611 (Statistics Canada 2006).

Québec Communities

In total, the Québec communities near the Project site contained 370 occupied dwellings in 2006 (Statistics Canada 2006). Of these, approximately seven percent were owned and 21 percent rented, with the remaining 72 percent being band housing (Statistics Canada 2006).

There is a shortage of housing in Kawawachikamach. The housing stock comprises approximately 154 single-family dwellings, duplexes, apartments, maisonettes, and cottages, including five units constructed in 2007-2008. All of these units are owned by the Naskapi Nation of Kawawachikamach (NNK) and maintained with funds from its operations and maintenance budget. They are allocated on a first-come-first-served basis. The NNK maintains a chronological list of housing requests, and at the close of the 2007-08 fiscal year, there were 96 names on this list, the oldest from January 1997 (NNK 2008).

In 2006, there were 197 private dwellings in Schefferville; however, only 95 were occupied, down from 110 in 2001, a decrease of approximately 14 percent. Of these occupied dwellings,

15 are privately owned with an approximate average value of $54,700, and 60 are rented (Statistics Canada 2001; 2006). Almost half (47 percent) of the dwellings in Schefferville are single-detached houses. The remaining housing consists of semi-detached houses (approximately 32 percent) and small apartment buildings (approximately 21 percent) (Statistics Canada 2006). Some small cabins are present in the area.

In 2006-2007, there were 172 residential units in Matimekush and 12 in Lac-John (INAC Matimekush/Lac John First Nation 2008).

There are also three hotels with a total of 42 rooms in the Schefferville region (Table 7.16). The Hôtel Royale also offers a 200-person conference hall and 20-person meeting room (S. Fortier pers. comm.).

Table 7.16 Temporary Accommodations in Schefferville, 2008

Hotel	Number of Rooms
Hôtel Auberge	12
Hôtel-Motel Royale	24
Hotel-Bla-Bla	6

7.10.1.2.6 Healthcare

Labrador West

Facilities and Services

The Captain William Jackman (CWJ) Memorial Hospital, located in Labrador City, is a fully accredited health facility which serves Labrador West. It has 20 beds, six of which are designated long-term care beds for levels three and four nursing care. Fourteen beds are for acute care. Inpatient units provide care to medical, surgical, obstetrical, pediatric, respite, palliative and intensive care patients. Maternity care is provided by family physicians and nurses.

The hospital is served by six family physicians, a general surgeon, and an anaesthesiologist. There are also a number of visiting specialists who come to the hospital on a regular basis (Labrador-Grenfell Health 2007). There are two dentists in the area with one other who visits for two weeks each month (O. Simpson, pers. comm.).

The 2008 provincial budget includes plans to spend $59 million on construction of a new Labrador West Health Centre to replace the CWJ. This is expected to be complete in 2011 (NLDF 2008).

There is a Medical Clinic in Wabush which is staffed by one doctor, who is also the physician for Wabush Mines.

Community Service Programs

Labrador-Grenfell Health has a Child, Youth and Family Services office in Labrador West. It has the mandate to provide child protective intervention services, youth services, adoption services,

family and rehabilitative services, community corrections, child care services and residential services (Labrador Grenfell Health 2007).

Mental Health Services are provided at the CWJ. It has two addictions counsellors, one addictions coordinator/officer, 4.5 mental health counsellors as well as the regional mental health and addictions clinical manager. Churchill Falls employs one part time mental health nurse. Wait times for mental health counselling in Labrador City are up to four to six weeks, as position vacancies are a challenge to the department (Aura Environmental Research and Consulting Ltd., 2008).

Shelters

Hope Haven, a shelter and resource facility for women and children escaping domestic abuse, opened in 2004. The building can accommodate up to 225 women and children each year. It was expected to expand with the addition of ten new affordable housing units during the summer of 2008, but plans were put on hold due to construction delays (CBC 2008).

Ambulance Service

Labrador-Grenfell Health operates a provincial air ambulance service out of St. Anthony. In addition, it operates road ambulances, has specialized equipment to facilitate medical evacuation by snowmobile and provides physician/nursing escorts and paramedic services (Labrador-Grenfell Health 2007).

IOC also services Labrador City and surrounding area with an industrial ambulance that serves as a back up to the town's ambulance (A. Johnson, pers. comm.).

Upper Lake Melville

Facilities and Services

There is one hospital in Upper Lake Melville, the Labrador Health Centre in Happy Valley-Goose Bay. The Labrador Health Centre offers full diagnostic and rehabilitative services and it is the referral centre for the community clinics in North West River, Mud Lake and Sheshatshiu. It is equipped with 26 beds and has a 24-hour Emergency Department, as well as out-patient clinics. When fully staffed, the Labrador Health Centre has 12 full-time physicians.

Specialists at the hospital include a general surgeon, an anaesthetist, and an obstetrician and gynecologist. Special clinics offered by the hospital include a well-woman clinic and several clinics offered by visiting specialists (D. Rashleigh, pers. comm.).

There is one long-term care facility in Upper Lake Melville. The Harry L. Paddon Memorial Home in Happy Valley-Goose Bay offers Level 2, 3, and 4 nursing care to residents (T. Dyson, pers. comm.). The Paddon Home has 29 rooms, including seven single-occupancy, 20 double-occupancy, one respite and one special care. A senior citizens' home located on the grounds of the Paddon Home is staffed by registered nurses, licensed practical nurses and personal care attendants on a 24-hour basis. Seniors' care is supplemented by visiting doctors and other services are available from various visiting professionals (Healthy Newfoundland and Labrador

ND). The Paddon Home is more than 30 years old and not designed for patients with high care needs. In 2003 a need was identified to construct a new long-term care facility in Happy Valley-Goose Bay (NLDLAA 2006) which is under construction and should be completed in 2009.

Mental health and addictions services are located in the Labrador Health Centre and are staffed by a regional director, an addictions counsellor, an addictions coordinator, four mental health counsellors, an adolescent services coordinator and a community youth network coordinator. The Happy Valley-Goose Bay office is primarily responsible for services in other communities in Labrador, with the exception of Labrador City and Wabush.

Shelters

Libra House, located in Happy Valley-Goose Bay, has 10 beds and provides support programs and safe shelter for women and children in Upper Lake Melville and those from North Coast communities. In Sheshatshiu, the Nukum Munik Shelter provides 24-hour service and is funded by Indian and Northern Affairs Canada, the CMHC, and is sponsored by the Sheshatshiu Innu Band Council. Both shelters are sufficient to meet current demand, but are frequently at capacity.

Public Health

The Public Health Unit in the Labrador Health Centre is responsible for providing health clinics to the public including childbirth education, postnatal, child health and school health. It employs three public health nurses. It also employs a discharge planner and community supports coordinator, a regional home nursing coordinator, and a full-time communicable disease control nurse. A full-time medical officer of health, a regional cervical screening coordinator, a regional health promotion coordinator and a regional director are also on staff. The Public Health Unit is presently recruiting another continuing care nurse due to increasing demands related to acute care services (T. Dyson, pers. comm.). Labrador-Grenfell Health, under the direction of the medical officer of health, also offers a variety of programs that are aimed at health protection. Programs include Environmental Health, Communicable Disease Control, and Health Emergency Management (Labrador-Grenfell Health 2007).

Emergency Services

The Labrador Health Centre in Happy Valley-Goose Bay has an Emergency Department that is open 24 hours a day, seven days a week. On average, the Emergency Room sees 60 clients in a 24-hour period and approximately one-third of these are seen during the day (S. Jesseau, pers. comm.). Labrador-Grenfell Health operates a provincial air ambulance service out of St. Anthony on the Northern Peninsula and the Labrador Health Centre has its own plane in Happy Valley-Goose Bay to move patients to and from the Labrador coast. Labrador-Grenfell Health also operates road ambulances, has specialized equipment to facilitate medical evacuation by snowmobile and provides physician and nursing escorts and paramedic services (Labrador-Grenfell Health 2007).

The Labrador Ambulance Service in Happy Valley-Goose Bay is privately owned and operates two vehicles that service Happy Valley-Goose Bay and Mud Lake (albeit, in the latter case, only

once patients have been transported across the river). The Labrador Ambulance Service is staffed by nine emergency response technicians, two of whom are full-time. The Service responded to 743 calls in 2007, up from 685 calls in 2004. Labrador Ambulance Service personnel believe that they could support additional demands (J. Squire, pers. comm.; J. Stacey, pers. comm.).

North West River has one ambulance, which is operated by the Labrador Health Centre, to serve people in North West River and Sheshatshiu. 5-Wing Goose Bay also has an ambulance that responds only to airfield emergencies.

Québec Communities

Since 2001, healthcare and social services in Kawawachikamach have been provided by the Naskapi Local Community Service Centre (CLSC) (Naskapi Nation 2008 – Naskapi Corporate Organizations List; M-S Lapointe, pers. comm.). The CLSC is administered by a board of directors composed mainly of Naskapis, overseen by the Council of the Nation, and jointly funded by Health Canada and the Government of Québec (Naskapi Nation 2008 – Naskapi Corporate Organizations List).

The CLSC employs 18 staff, including six nurses, three part-time physicians and one part-time dentist (Table 7.17). It offers minor emergency services, sampling and diagnostic services, nurse/physician consultation, home care, childhood prevention and promotion services, pharmacological services, pre- and post-natal services, psycho-social services, immunization, medical transportation of patients, and specialist services for dentistry, opthamology, otorhinolaryngology, nutrition, psychology, ergotherapy, and occupational therapy.

Table 7.17 Staff Employed by the Naskapi Local Community Service Centre, 2008

Position	Number of Employees
Nurses, full-time	2 nurses
Nurses, part-time	4 nurses
Physicians, full-time	1
Physicians, part-time	3
Dentists, part-time	1
Social Workers	2
Other, full-time	1 physio-therapist,
Other, part-time	2 Secretarial, 3 Support staff
Source: Marcel Lortie, pers. comm.	

CLSC medical services are provided exclusively to the Naskapi. However, emergency services are provided to people outside of the community, with the cost for such services billed to the Québec provincial government (L.M. Lortie, pers. comm.). The CLSC's medical centre and social services currently operate at capacity, and the CLSC has incurred a deficit each year since 2007. Current staffing levels cannot accommodate the growth of Kawawachikamach, which is expected to see a doubling of population within 15 years (L.M. Lortie, pers. comm.).

Schefferville Aboriginal healthcare and social services have been provided by the Innu Local Community Service Centre (CLSC) (M-S Lapointe, pers. comm.). The CLSC is an incorporated body administered by a board of directors composed mainly of and jointly funded by Health

Canada and the Québec provincial government. The Innu CLSC employs 16 staff (Table 7.18). The dispensary provides the following services for the Innu community: minor emergency services; pharmacological services; sampling and diagnostic services; pre- and post-natal services; nurse/physician consultation; psycho-social services; home care; immunization; childhood prevention and promotion services; medical transportation of patients; specialization in diabetes treatment and prevention; and specialist services for dentistry, opthamology, otorhinolaryngology, nutrition, psychology, ergotherapy, and occupational therapy.

Table 7.18 Staff Employed by the Innu Local Community Service Centre, 2008

Position	Number of Employees
Nurses, full-time	2
Nurses, part-time	2
Physicians, full-time	3
Physicians, part-time	1
Dentists, part-time	1 (up for 2 weeks at a time)
Social Workers	2 child protection services
Other, full-time	2 psychologists come up for 2 weeks per month
Other, part-time	3 support staff
Source: Marie-Sylvie Lapointe, pers. comm.	

The Dispensarie de Shefferville provides the non-Aboriginal community with the following health care services: minor emergency services; pharmacological services; sampling and diagnostic services; pre- and post-natal services; nurse/physician consultation; medical transportation of patients; and immunization. The Schefferville CLSC has six staff, including four nurses, one full-time physician and one part-time dentist, but no psychologists or child care workers (Table 7.19).

Table 7.19 Staff Employed by the Schefferville Local Community Service Centre, 2008

Position	Number of Employees
Nurses, full-time	3
Nurses, part-time	1
Physicians, full-time	1 (1 to 2 month full time rotation
Dentists, part-time	1 (up for 2 weeks at a time)
Social Workers	None listed
Source: Helen Littlejohn, pers. comm.	

7.10.1.2.7 Education

Labrador West

Childcare and Early Childhood Education

The one early child care facility in Labrador West is located in Labrador City. Wee College Childcare Centre accepts children aged 2 to 6 years and can accommodate 32 children on a part-time basis (NLDHCS 2004).

Primary, Elementary and High School

There are four schools in Labrador City and Wabush (Table 7.20). Three are managed by the Labrador School Board and one is managed through the Conseil Scolaire Francophone Provincial de Terre-Neuve-et-Labrador. Between the 2000-01 and 2007-08 school years, the total student enrolment in Labrador West increased by 8.9 percent, from 1,387 to 1,510. During that time, the number of full-time teacher equivalents increased by only 0.3 percent (Newfoundland and Labrador Statistics Agency 2008). The Labrador School Board has had problems with the recruitment and retention of teachers (The Aurora, 2007).

Table 7.20 Schools, Enrolment and Number of Teachers, Labrador City and Wabush, 2007/08

School	Location	Grades	Enrolment 2007/08[A]	Full-Time Equivalent Teachers 2007/08	Pupil-Teacher Ratio	School Capacity
A.P. Low Primary	Labrador City	K-3	402	24.0	14.7	6
Menihek High	Labrador City	8-12	594	35.5	17.1	800[C]
Centre Educatif L'ENVOL	Labrador City	K-8, 10, 12	31	4.0	7.8	
J. R. Smallwood Middle	Wabush	4-7	485	30.8	15.3	1000[D]

[A] T. Pye pers. comm.
[B] S. Kennedy pers. comm.
[C] L. Simmons pers. comm.
[D] H. Costa pers. comm.

Post-Secondary

Post-secondary education is available in Labrador West through the College of the North Atlantic, which has a campus in Labrador City. Approximately 200 full-time and part-time students are registered there each semester (Table 7.21). An additional 200 students participate in continuing education evening courses (College of the North Atlantic 2008). The Labrador West CNA campus is the only campus in the Province to offer a two-year Mining Technician program and has been designated CNA's Mining Centre of Excellence. In 2007, a millwright and an electrical program began to be offered. In 2008, a welder program was added to the campus' trades offerings.

Table 7.21 Enrolment by Program, College of the North Atlantic, Labrador City Campus, 2008/2009

Trade Program	Number of Seats	Capacity
Welder	15	15
Construction/Industrial Electrician	16	16
Industrial Mechanic (Millwright)	16	16
Mining Technician (1st-year)	33	60
Mining Technician (2nd year)	66	75
Adult Basic Education	18	18
CAS Transfer: College- University	20	60
Engineering Technology (First Year)	5	30
Total Number of Students	**189**	**290**

Source: R. Sawyer pers. comm.

There is one private training institution, RSM Safety Institute, Inc., in Labrador City. It is a subsidiary of RSM Mining Services and offers 40 to 50 occupational health and safety training services for the mining and construction industries. These include Accident Investigation, Forklift Operation and Safety, Excavation and Trenching Safety and Safety for Supervisors. Class sizes at the Institute range from one to 40 participants, depending on the type of course and time of year. Courses are offered on a monthly schedule but are also available on an as-needed basis and typically are no longer than two days. Courses are generally offered in English, and some are offered in French (K. McCarthy, pers. comm.; K. Lee, pers. comm.).

Upper Lake Melville

Primary, Elementary and High School

There are six primary and secondary schools in Upper Lake Melville, including one francophone school (Table 7.22). Four are in Happy Valley-Goose Bay, while North West River, Sheshatshiu and Mud Lake each have one. Kindergarten through Grade 12 is offered in all of the communities except Mud Lake, which provides only Kindergarten through Grade 9 (Our Labrador 2004). The schools in the area have a total enrolment of 1,901 and the physical capacity to accommodate 2,340 students (Table 7.22).

Table 7.22 Student Populations, Primary and Secondary Schools, 2006/2007

School	Location	Grades	Service Areas	Number of Registered Students	Physical Capacity of School	Number of Full-time Equivalent Teachers
Peacock Primary	Happy Valley-Goose Bay	K-3	Happy Valley-Goose Bay	394	500	25
Queen of Peace Middle School	Happy Valley-Goose Bay	4-7	Happy Valley-Goose Bay	425	525	29
Mealy Mountain Collegiate	Happy Valley-Goose Bay	8-12	Upper Lake Melville Area	594	700	36
Lake Melville School	North West River	K-12	North West River and Sheshatshiu	118	200	11
Mud Lake School	Mud Lake	K-9	Mud Lake	4	15[A]	1
Peenamin Mackenzie School	Sheshatshiu	K-12	Sheshatshiu	351	400	34.5
École Boréale de Goose Bay	Happy Valley-Goose Bay	K-12	Happy Valley-Goose Bay and Sheshatshiu	15	N/A	3
Total				**1,901**	**2,340**	**139.5**

Note:
[A] The capacity of the school is 15 students, depending on the number of grades being taught in a given academic year.
Source: Newfoundland and Labrador Statistics Agency 2008.

The 2007 provincial budget includes $4 million to construct a new school in Sheshatshiu and $1.3 million to replace the francophone school in Happy Valley-Goose Bay (NLDF 2007).

Post-Secondary

Each year, the Happy Valley-Goose Bay campus of the CNA admits approximately 300 full-time students in a variety of programs, including Adult Basic Education, Automotive Service Technician and Office Administration (Table 7.23).

The CNA has recently expanded its Happy Valley-Goose Bay campus by adding six classrooms and a new library. The Labrador Institute is also co-located on the CNA campus. These changes will allow CNA to accommodate 200 additional students and will add to its overall service capacity to the Upper Lake Melville area (W. Montague, pers. comm.).

Table 7.23 College of the North Atlantic, Enrolment by Program, Happy Valley-Goose Bay Campus, 2005/2006

Program	Number of Students
Adult Basic Education	51
Office Administration	12
Office Administration (Executive)	10
Computer Support Specialist	5
Early Childhood Education	10
Millwright/Industrial Mechanic	16
Welding	15
Automotive Service Technician	16
Heavy Duty Equipment Technician	17
Carpentry	10
Construction/Industrial Electrical	14
Integrated Nursing Access	17
Comprehensive Arts and Sciences: Transition [A]	31
Comprehensive Arts and Sciences: College University Transfer	32
Orientation to Trades and Technology	15
Total [B]	**271**

Source: S. Cochrane, pers. comm.
Notes:
[A] This program is for students that graduate from high school but may not have the requirements to get into a program
[B] These do not include figures for Adult Basic Education for the coastal Learning Centres, other contract programs, or advanced trades training.

Québec Communities

The Sachidun Childcare Centre in Kawawachikamach has Naskapi as its operational language and delivers the Aboriginal Head Start program. Funded by Health Canada, it prepares Aboriginal children for school by meeting their emotional, social, nutritional, and psychological needs (NNK 2008). The Centre is administered by a Board of Directors and employed more than 15 individuals, including six permanent educators, during 2007-08 (NNK 2008). It is presently operating at its capacity of 26 children, including two spaces reserved for emergency cases referred by Social Services (NNK 2008; M. Mameanskum pers. comm.).

The Garderie Matimekush daycare is located in Schefferville within the reserve of the Matimekush/Lac John Nation and currently provides places for 26 Innu children, which is its legal capacity. The Garderie employs five early childhood educators and two support staff.

Two schools, both managed by the Central Québec School Board, serve the Québec communities (Tables 7.24 and 7.25).

Table 7.24 Schools, Enrolment and Number of Teachers, Eastern Québec, 2007/08

School	Location	Grades	Enrolment 2007/08	Full-Time Equivalent Teachers 2007/08	Pupil-Teacher Ratio
Jimmy Sandy Memorial School	Kawawachikamach	K-11	238	23.0	10.34
École Kanatamat Tahitipetetamunu	Schefferville	K-11	130	23	5.7

Table 7.25 Staff Employed by Jimmy Sandy Memorial School, Kawawachikamach, 2008

Position	Number of Employees
Teachers	23
Guidance Counsellor	1
Librarian	1
Liaison Officer	2
School Administration	6
Bus Transportation	2
Janitorial	2
Total	37

There are 238 students attending the school, providing an average of 10.34 students per teacher. The school also employs a special education teacher (NNK 2007: 92-93). The Government of Québec has approved further funding for the Adult Education Programme, which will facilitate the addition of more adult education resources (NNK 2007: 92).

Matimekush/Lac-John is served by a single K-11 school, École Kanatamat Tahitipetetamunu, in Schefferville (Table 7.26). During the 2007/08 academic year its enrollment was 130, an increase from 115 students in 2006/07 (C. Basque pers. comm.; INAC 2008 – Matimekush/Lac John First Nation). The school has 23 teachers, with a student-teacher ratio of 5.7:1 (Table 7.26). There is also a resource specialist, an administrator serving as Principal and Vice-Principal, a secretary, and two psychologists. The Principal has stated that the school structure could accommodate up to an additional 50 students (C. Basque pers. comm.).

Almost all of the École Kanatamat Tahitipetetamunu students are Innu; only two are non-Aboriginal. The languages of instruction are French and Innu, in keeping with the mandates of the provincial education authority (C. Basque, pers. comm.). The school currently has 30 adolescents who have dropped out without achieving Secondary 3 (M. Beaudoin, pers. comm.).

Table 7.26 Staff Employed by École Kanatamat Tahitipetetamunu, Schefferville, 2008

Position	Number of Employees
Teachers	23
Resource Specialist	1
Psychologists	2
Secretary	1
Principal/Vice-Principal	1
Bus Transportation	1
Janitorial	1
Total	30

7.10.1.2.8 Recreation

Labrador West

There are a number of indoor recreational facilities in Labrador City and Wabush. The Labrador City Arena is a gathering point for recreation in Labrador City. The building can accommodate 1,800 people and it has one rink which hosts large tournaments, games and activities. It has five dressing rooms, a meeting room and is also home of the Polaris Figure Skating Club and Labrador West Minor Hockey Association. Wabush also has an arena that is used by the Wabush Figure Skating Club, Labrador West Minor Hockey, Recreational and Olympic Hockey (Labrador West 2008). Other indoor recreational facilities in Labrador City and Wabush include the Carol Lake Curling Club and the Mike Adam Recreation Complex.

Outdoor activities are also popular in Labrador West as it has a number of walking trails, softball fields, soccer pitches and Labrador's only 18-hole golf course. The Jean Lake recreational area in Wabush is used extensively by local organizations for their outings. Outdoor sport clubs in the area include the Menihek Nordic Ski club and the White Wolf Snowmobile Club (Labrador West 2008).

Upper Lake Melville

Happy Valley-Goose Bay has indoor and outdoor recreation facilities. NLDTCR operates the Labrador Training Centre in the town which houses the only swimming pool in Eastern Labrador, a gymnasium which is used for numerous community activities, a fitness room, and a judo room. Other sport facilities in Happy Valley-Goose Bay include a 1,000 seat arena, soccer and softball fields operated by the Town Council and four school gymnasiums (DND 2008). The Amaruk Golf and Sports Club operates a nine-hole golf course in the Summer.

5 Wing Goose Bay also has recreational facilities, including a full-scale gymnasium, an exercise room, two squash courts, a fully equipped weight room and two sauna baths. Other recreation facilities administered by the Base include a 10-bay auto hobby shop, a wood hobby shop and a softball field. Cultural recreation opportunities have also been increased with the development of a new theatre located adjacent to the new high school.

Québec Communities

The Kawawachikmach Recreation Facility provides an indoor pool (supervised), supervised indoor gym, and a snack bar. It provides employment to 13 staff including one recreation and sports coordinator, one manager, two lifeguards (two trainees), four games room attendants, and two janitors.

The community centre (NNK 2007) provides space for clubs to meet, community feasts and gatherings, family reunions, dances and fundraising activities. The centre has a multi-purpose room, a community library, a youth centre with couches, pool table, ping-pong table, big-screen television, a stereo and board and electronic games and three public-use computers with Internet access. It provides employment to 14 staff.

Other recreation facilities in the Kawawachikmach area include an open area hockey rink, basketball court and softball field.

The only recreation facility in Schefferville is an arena that is paid for by the Town and the Nation Innu Matimekush-Lac John. It provides ice hockey and skating on the indoor rink, with a snack bar and change rooms, and employs a recreation director and a support/maintenance person. In 2010 and 2011, LIM provided assistance to the community to undertake repairs and restoration at the arena.

7.10.1.2.9 Transportation

Labrador West

Roads

The Trans Labrador Highway (TLH) is the primary public road in Labrador. Phase I of the TLH (Route 500) runs between Labrador West and Happy Valley-Goose Bay. In Labrador West it connects with Québec Route 389, which runs 570 kilometres north from Baie-Comeau to the Québec-Labrador border. This section of the TLH is a two-lane gravel highway between Labrador City and Happy Valley-Goose Bay. It has a service level of "A" (free-flowing traffic), with a capacity to carry 1,000 vehicles per hour. Currently, the highway carries 200 vehicles per day (D. Tee, pers. comm.).

The 2007-08 provincial budget allocated $15 million to commence hard-surfacing of Phase I of the TLH. In June 2007, tenders were issued to widen three sections of road in preparation for hard-surfacing, including a section in Labrador West and a section from Churchill Falls to the Churchill Falls Airport. Crews managed to widen 37 kilometres of road and complete 1.8 kilometres of hard-surfacing by March 31, 2008 (NLDTW 2008).

Airport

Labrador City and Wabush are serviced by the Wabush Airport, which is located within 5 kilometres of each town's centre. A number of air carriers operate scheduled flights, including Air Labrador, Air Canada Jazz and Provincial Airlines Ltd. (Labrador West 2008). The paved runway strip is 1948 m in length.

In 2006, Wabush Airport reported the highest percentage gain in airport passenger movements (16 percent) mainly due to a rise in mining activity. Between 2006 and 2007, the number of passenger movements at the airport in Labrador West increased by 6.2 percent, from 67,180 to 71,344 (NLDTCR 2007).

Railway

IOC operates the 420-km Québec North Shore and Labrador Railway (QNS&L), which IOC built to move iron ore to Sept-Îles. It also provides regularly scheduled, year-round, passenger service (NLDTW 2006). In 2005, Tshiuetin Rail Transportation Inc. (TRH) acquired the northern section of the QNS&L Railway line (the Menihek Subdivision), which runs between Emeril Junction, situated on the Trans Labrador Highway, 63 kilometres from Labrador West, and

Schefferville, Québec. TRH now operates this portion of the rail line for passenger and freight rail services.

Upper Lake Melville

Roads

The local road system in Upper Lake Melville links Happy Valley-Goose Bay with North West River and Sheshatshiu. Mud Lake is not accessible by road but can be reached by boat in summer and by snowmobile in winter. The roads in Happy Valley-Goose Bay are paved, as are some in North West River, but those in Sheshatshiu are not.

Construction on Phase III of the TLH, a 280-km section connecting Cartwright Junction and Happy Valley-Goose Bay, is scheduled to be completed in 2009. As a result of these road improvements, established trucking companies may face increased competition from other companies moving into the area (AMEC Earth and Environmental Ltd. and Gardner Pinfold 2008).

Ports

The Port of Goose Bay is on the western end of Lake Melville in an area known as Terrington Basin and has two industrial docks. Infrastructure includes storage sheds, asphalt and fuel tanks and a transshipment warehouse. There is also a substantial area of laydown space. There is a large area of land within easy access of these docks that could be converted to suit a variety of industrial needs.

Terrington Basin cannot handle large freight or passenger vessels and would require significant dredging for expansion of services (CLEDB 2006). The dock receives three to four oil tankers each year and one freighter every two weeks between mid-June and mid-November, which is the current operating season (D. Tee, pers. comm.).

Airports

Both civilian and military aircraft use the Goose Bay Airport, at 5 Wing Goose Bay. Operated by the Goose Bay Airport Corporation, it is one of the largest airports in eastern Canada. A number of air carriers operate scheduled flights, including Air Labrador, Air Canada Jazz and Provincial Airlines Ltd. (which operates Innu Mikun Airlines), as well as Universal Helicopters and Canadian Helicopters (NLDTW 2006).

The airport has two runways, 3,367 m and 2,920 m in length, both capable of handling large aircraft. DND spent approximately $20 million on resurfacing and concrete replacement during the summer of 2006. The airport terminal was constructed in 1972 and has a design capacity of 32,000 people per year, but it is now handling more than three times this capacity. The number of passengers flying into the Goose Bay Airport in 2003 was 83,430 and in 2005, the number increased to 104,612, an increase of 15.1 percent. However, in 2006, only 94,422 passenger movements were recorded for the Goose Bay Airport, a decrease of 9.7 percent from 2005. They increased again in 2007 by 1.6 percent to 95,921 (NLDTCR 2007).

The Goose Bay Airport Corporation has hired a design and engineering firm to complete the plans for an improved and expanded terminal facility at its current location. Construction of the new terminal will begin in April 2009 and should be completed by the fall of 2010. The new facility will be able to accommodate an annual flow of 100,000 passengers, with further expansion capabilities incorporated into the design (G. Price, pers. comm.).

Québec Communities

Schefferville has an 8 km municipal road network, including access roads to such transport infrastructure as the airport and railway station. A municipal road also connects to the provincial highway, giving access to the community of Kawawachikmach. The municipal limits also contain approximately 200 kilometres of former mining roads constructed by IOC. These are on government land and give access to resources mostly in Labrador. They also lead to the resort area of Squaw Lake, Chatal Lake and Maryjo Lake. The municipality has no obligation to maintain these access roads (M. Beaudion, pers. comm.).

Several companies fly into Schefferville Airport, including Air Saguenay, Aviation Québec, Air Labrador and Air Inuit. The airport has a 1500 m runway, and employs four people. It is owned by Transport Canada and managed by the Societe aeroportuaire de Schefferville, representing the Naskapi Nation of Kawawachikamach, the Municipality of Schefferville and the Innu Nation of Matimekosh Lac-John (M. Beaudion, pers. comm.)

Schefferville is also served by the Menihek subdivision of the Québec North Shore and Labrador Railway, which delivers most of the freight that comes into the community, because there are no roads linking it to external communities.

7.10.1.2.10 Water, Sewer, Solid Waste, Power and Communications

Labrador West

Water

Beverly Lake, which is located northeast of Labrador City, is the Town's only municipal water supply.

The municipal water supply in Wabush comes from Ouananiche Lake, which is located south of the town. The Town of Wabush has a grid distribution network which services approximately 700 households and businesses (Labrador West 2008).

Sewer

The Town of Labrador City maintains two separate primary Sewage Treatment Plants and three sewage lift stations (Labrador West 2008).

The Town of Wabush maintains one primary Sewage Treatment Plant. The town is in the process of upgrading the plant to better serve the residents of Wabush.

Solid Waste

The garbage from both towns is currently sent to an incinerator, however, in accordance with the Province's waste management plan it is scheduled to close by December 21, 2008. A study was commissioned in early 2008 to determine whether Labrador should develop one super-site to accommodate all of the garbage from Labrador West and Labrador East. In the meantime, the Labrador West regional waste management committee is considering setting up a temporary landfill at an old dump site (Morrissey 2008).

Power and Communications

Power is provided to Labrador West by Newfoundland and Labrador Hydro. Labrador City and Wabush are equipped with technological and telecommunications infrastructure with advanced fibre optic cables throughout communities and industrial sites. Internet service is provided to the communities by Sympatico and CRRS (Labrador West 2008).

Upper Lake Melville

Water

Happy Valley-Goose Bay, North West River and Sheshatshiu have piped water systems, while Mud Lake has ground wells that are fed by seepage from the Churchill River. Happy Valley-Goose Bay receives its water from two sources: the Water Treatment Plant and Spring Gulch, each of which provide 50 percent of the water to the town (Town of Happy Valley-Goose Bay 2001). The water system can support a population of about 12,000 people, but is currently serving only approximately 9,150 (S. Normore, pers. comm.).

Sewer

Happy Valley-Goose Bay and North West River have piped sewage systems that serve all dwellings. Most houses in Sheshatshiu and Mud Lake have septic systems. (S. Normore, pers. comm.)

Solid Waste

The landfill in Happy Valley-Goose Bay (3 kilometres north of Goose Bay Airport) has the capacity to last another 12 to 15 years at current use levels. Sheshatshiu and North West River have their own garbage collection services, but use the landfill in Happy Valley-Goose Bay. This may change in the future as the provincial government is in the process of setting up regional landfill sites (S. Normore, pers. comm.).

Power and Communications

Newfoundland and Labrador Hydro provides electricity to all communities in Upper Lake Melville with power generated at Churchill Falls. The communities of Mud Lake, North West River and Sheshatshiu are all part of the Happy Valley-Goose Bay interconnected service area. Aliant Telecom (Aliant) provides telephone service to Labrador through a microwave radio network.

Québec Communities

Waste Disposal

The present landfill opened in 1997 and services the three communities of Kawawachikamach, Lac-John and Schefferville. The lifespan of the landfill was originally 21 years although due to an absence of a waste management plan for discarded electrical appliances and other scrap metals, the life span has been reduced to approximately 15 years. Under Québec legislation, waste materials generated outside Québec cannot be disposed of in a landfill in Québec. Consequently, mining companies operating in Labrador have to have their own management plan for the disposal of all waste material including vehicles, tires of all size and scrap metals (M. Beaudoin. pers. comm.).

Water Supply and Sewage

In Schefferville, drinking water is taken from Lac Knob which lies within the municipal boundary. The chlorination and pumping station is gravity fed, with water being distributed to the community at large via waterlines that serve both Schefferville and the Matimekosh reserve. The sewer and water systems were both originally installed in 1955. A physico-chemical wastewater treatment system was installed in 1999.

In Kawawachikamach, water is supplied to households from two community wells with a pump station, while sewage is pumped to a community septic tank and lagoon.

7.10.1.2.11 Police and Emergency Response Services

Labrador West

Police services are provided to Labrador City and Wabush by the Royal Newfoundland Constabulary (RNC). In 2007, there were 22 police officers in Labrador West, 18 of whom were male and four of whom were female (Statistics Canada 2007).

The Labrador City Fire Department provides fire protection services to that community and answers an average of 60 calls each year (Labrador West 2008). The Town of Wabush operates a volunteer fire department consisting of 28 firefighters. They protect the residents of Wabush and offer backup to the Town of Labrador City. This department also provides services to Wabush Mines and the Wabush Airport.

Upper Lake Melville

The Royal Canadian Mounted Police (RCMP) is responsible for policing Upper Lake Melville and other parts of Labrador, with the exception of Labrador West. The Labrador District RCMP Headquarters in Happy Valley-Goose Bay has a staff of three. The Happy Valley-Goose Bay detachment is staffed by a Sergeant, two Corporals, 11 General Duty Constables, a District Support Services member, two General Investigation Section (GIS) Investigators and a Community Constable. Sheshatshiu is policed by the RCMP with consultation with and input from the community (RCMP 2008).

There are three fire departments in Upper Lake Melville. There is a municipal department in Happy Valley-Goose Bay with 34 firefighters, 30 of whom are volunteers and four of whom are full-time firefighters (D. Webber, pers. comm.).

5-Wing Goose Bay also has a fire department operated by DND and staffed by 39 paid firefighters. It provides 24-hour crash and emergency rescue services and general fire protection services for the Base.

Québec Communities

As for other remote areas of Québec, police services are ensured by the Surete du Québec through an outpost station. Of the four positions allocated for Schefferville, there are usually only two full-time police officers at the station considering assignments, training and vacation benefits. Upon request, they provide support to the native police forces of NIMLJ and Kawawachikmach (M. Beaudoin, pers. comm.).

For Schefferville and Matimekush-Lac John, policing is provided by the Surete du Québec, with an agreement to co-ordinate with the Naskapi police of Kawawachikamach when necessary. There are five employees including one support worker, three officers on patrol with one exchange person. At least two of the officers are available specifically to provide police services for the Innu reserve. For Kawawachikamach, policing is provided by the Naskapi Police Force. It has nine employees, including a director, an assistant director, five full-time officers, and a secretary/janitor.

For Schefferville and the Nation Innu Matimekush-Lac John, fire services are administered by the Town of Schefferville (Boudreau, pers. comm. and Securite Publique Québec website). There is a part-time fire chief as well as 15 volunteer firefighters. In Kawawachikamach, the Fire Department provides fire suppression and rescue, fire prevention and public fire safety education. It employs a full-time fire chief, one deputy fire chief, three team captains and 11 volunteer firefighters.

All ambulance services for Schefferville, Innu Matimekush-Lac John reserve and Kawawachikamach are handled by Ambulance Porlier, which provides continual coverage via dispatch for ambulance services throughout Eastern Québec. It employs three dispatchers and on-call drivers using two ambulances on rotation.

7.10.1.2.12 Local Government

Labrador West

Both Labrador City and Wabush are municipalities, each with a mayor and a town council.

Upper Lake Melville

Happy Valley-Goose Bay is an incorporated municipality administered by a mayor, town council and town manager. Mud Lake, 5 kilometres east of Happy Valley-Goose Bay, is a small unincorporated community of around 60 residents administered by a volunteer Local Improvement Committee.

North West River is 33 kilometres northeast of Happy Valley-Goose Bay. It is an incorporated municipality administered by a mayor, town council and town manager or clerk.

Sheshatshiu is approximately 25 kilometres northeast of Happy Valley-Goose Bay and adjacent to the settlement of North West River. It is an Innu community which acquired Federal Reserve status in 2006 and is administered by a Band Council.

Québec Communities

The Innu Nation community of Matimekush-Lac John is governed by an elected Band Council consisting of a Chief and Councillors. The community of Kawawachikamach is administered by the Band Council, consisting of an elected Chief and Councillors.

The town of Schefferville has an incorporated area of 25.11 square kilometres (9.70 sq mi) and is located within the Caniapiscau Regional County Municipality or Municipalité Régionale de Comté (MRC). The regional county municipality seat is Fermont. Schefferville completely surrounds the autonomous community of Matimekush and it abuts the small community of Lac-John Reserve. The Town is administered by members of the Administrative Council of the CLD and the current Adminstrator is Madam Marcella Beaudoin.

7.11 Future Environment

The following describes the likely future environmental conditions in the proposed Project area if the Project did not proceed. This information is provided to help distinguish Project-related environmental effects from environmental change due to natural and/or other anthropogenic processes and trends in the Project area.

Some wildlife species in the Project area are subject to natural cycles and will likely undergo some natural changes over the designated time period in the absence of the Project. Air quality in the area is generally good, except for the generation of dust along unpaved existing local roads during the summer months, and in the absence of the Project, air quality could be expected to remain generally the same, perhaps with some marginal improvements resulting from improved air quality regulations and controls in other parts of Canada and the United States that provide some long-range transport of airborne contaminants to the Project area. The effects of climate change on the Project area (as described in Section 7.7.1) will likely result in changes to the existing environment whether or not the Project goes forward.

Without the Project, current trends in the region's socio-economic environment will continue. The populations of the local area communities will continue to decrease (in the absence of other influences or projects), as has been the trend in recent years.

The construction and expansion of other projects in the region are expected to continue with or without the Project.

LIM will use their existing accommodations camp located at Bean Lake for this Project, and there will be minimal demand for additional housing.

LIM has engaged the communities in its proposed development and will continue to work closely with community representatives. A community outreach office has been established in Schefferville, and an Elder's Committee has been organized in order to facilitate the sharing of information between LIM and the community.

8.0 ENVIRONMENTAL ASSESSMENT METHODS AND SCOPING

The environmental assessment (EA) methods for this Project Registration document are consistent with those used in the Shefferville Area Mine EIS (LIM 2009) and are intended to:

- Focus on issues of greatest concern;
- Address regulatory requirements;
- Address issues raised by the public and other stakeholders during Project-specific consultation; and
- Integrate engineering design, mitigation, and monitoring programs into a comprehensive environmental management planning process.

The approach and methods used are based largely on the work of Beanlands and Duinker (1983), the CEA Agency (1994; 1999), and Barnes et al. (2000), as well as the study team's experience in conducting environmental assessments. The EA methods provide a systematic evaluation of the potential environmental effects that may arise from each Project phase (construction, operation, and decommissioning) as well as malfunctions and accidents, with regard to each of the identified VECs. Project related environmental effects are assessed within the context of temporal and spatial boundaries established for each VEC. The evaluation of potential cumulative environmental effects includes past, present and likely future projects and activities that may interact with Project-related environmental effects. The specific steps involved in the environmental assessment for each VEC include:

- Determination of the assessment boundaries;
- Identification of potential project-vec interactions;
- Overview of existing knowledge and mitigation or effects management measures;
- Definition of the significance criteria for residual environmental effects;
- Assessment of the environmental effects, including mitigations or effects management measures;
- Determination of the significance of project residual environmental effects;
- Assessment of accidental events;
- Cumulative effects assessment; and
- Identification of any monitoring or follow-up requirements.

8.1 Scope of the Project

As discussed in Section 3.2, LIM proposes to advance the Houston Mine Project in a number of phases. The scope of this assessment includes the first phase which involves development and production from the Houston 1 and 2 deposits. Table 8.1 lists the key Project activities to be assessed for biophysical and/or socio-economic interactions.

Table 8.1 Scope of Project Activities

Construction Activities
Site Preparation (grubbing, clearing, and excavating)
Haul and Service Road and Rail Siding Construction
Employment and Expenditures
Operation
Iron Ore Extraction (excavation – primarily mechanical, minimal blasting)
Iron Ore Beneficiation – offsite
Stormwater Management
Transportation (on-site trucking, hauling, rail transport)
Operations (on-site power generation, solid waste, grey water, human presence)
Employment and Expenditures
Decommissioning
Removal of Facilities and Equipment
Site Reclamation (grading, re-vegetation)

8.2 Issues Scoping

An important part of this preliminary environmental assessment process conducted in support of the Project Registration is the identification of a concise list of those components of the environment that are considered "valued" (socially, economically, culturally, and/or scientifically) and thus of interest when considering the potential environmental effects of a project. Valued Environmental Components (VECs) are defined as broad components of the biophysical and human environments that if altered by the Project, would be of concern to regulators, resource managers, scientists and the public.

VECs were identified through issues scoping activities that included:

- A review of regulatory requirements;
- Field programs and preliminary background research;
- Public meetings and presentations including those undertaken for the Schefferville Area Mine Project (section 6.0 of this report provides an overview of the public consultation program undertaken by the proponent);
- A review of listed species and/or species at risk found within the area using existing regional information and baseline surveys; and
- The professional judgment of the Study Team.

The Houston Mine Project contains many of the same project description components and potential environmental and socio-economic interactions as LIM's nearby approved Schefferville Area Mine Project. Therefore, issues scoping conducted for the Schefferville Area Mine Project has provided the foundation for issues scoping for this Project.

Many issues raised during previous consultations around the Scheffervile Area Iron Ore Mine development as well as the EIS scoping guidelines for that project (NLDEC 2008) remain relevant for the Houston Project and have influenced issues scoping. These include:

- Economic benefits;

- Employment and business development opportunities for Aboriginals, including Aboriginal training and education programs to enhance participation in available opportunities;
- Protection of traditional land use (e.g., trapping, hunting);
- Cultural and heritage protection and development;
- Alterations to waterbodies;
- Waste management;
- Fish and fish habitat;
- Caribou species and habitat; and
- Cumulative effects.

8.3 Selection of Valued Environmental Components

Based on the issues scoping exercise, the following VECs were selected to form the basis of the environmental assessment:

- Caribou was selected as a VEC based on the knowledge that the large and migratory George River Caribou Herd historically occured in the Project area on a seasonal basis, although their movements locally are difficult to predict year to year. Despite the dramatic decline in numbers of migratory Caribou since the 1980's, and the apparent absence of Woodland Caribou in the Project area, Caribou was selected as a VEC as it has important cultural and recreational benefits for residents.
- Other Wildlife includes terrestrial wildlife, avifauna, and unique or uncommon habitats. Protection of terrestrial habitats and wildlife are mandated by the *Migratory Birds Convention Act*, *Species at Risk Act*, Newfoundland and Labrador's *Endangered Species Act*, *Newfoundland and Labrador Wildlife Act*, and Newfoundland and Labrador's *Water Resources Act*.
- Employment and Business was selected as a VEC based on potential concern that economic benefits accrue to local communities, Labrador and the Province as a whole. This includes benefits to the population and economy as a whole, and to under-represented groups.
- Communities are another aspect of the socio-economic environment that may be affected by the Project. The communities most likely to be affected are the primary places of residence of the Project labour force: Labrador West, Upper Lake Melville, Schefferville, and Kawawachikamach.

Further to confirmation from DFO regarding Tom's Pond, the proposed pit development is not expected to impact existing fish habitat and a 15 m buffer from fish-bearing habitat will be maintained. Houston Creek, which is not within the development footprint, but is located in the vicinity, contains a low productive coldwater fishery with the presence of brook trout being noted during various field surveys in this first order stream (AECOM 2010). If access is required across this small watercourse, an open bottom culvert constructed above the high watermark

will be constructed to ensure no physical impediment to fish habitat will occur. Therefore, the effects of the Project on fish and fish habitat are predicted to be not significant, and are not assessed further.

Similarly, baseline surveys at the Houston area have indicated there are no historic resources at that site. Therefore further assessment is not required. Where the potential has been rated as moderate along one of the two haul road routes, a site investigation will be conducted prior to project construction to ensure the project does not interact with historic resources.

8.4 Boundaries

This preliminary EA effort in support of the Project Registration document considers the potential effects of the proposed Project within the spatial and temporal boundaries defined for each VEC. These boundaries may vary with each VEC but generally reflect consideration of:

- The proposed schedule/timing of the construction, operation, maintenance, and abandonment phases;
- The natural variation of a VEC;
- The timing of sensitive life cycle phases in relation to the scheduling of proposed Project activities;
- Interrelationships/interactions between and within VECs;
- The time required for recovery from an effect and/or return to a pre-effect condition, including the estimated proportion, level, or amount of recovery; and
- The area within which a VEC functions and within which a Project effect may be felt.

8.4.1 Spatial Boundaries

This preliminary EA effort in support of the Project Registration documente will be limited to the development of the Houston property. Spatial boundaries may be limited to the immediate Project area (e.g., project “footprint” or zone of influence) or may be regional or larger in extent in consideration of the distribution and/or movement of some VECs. The geographic limits and migration patterns of wildlife populations, for example, are important considerations in determining spatial boundaries and may influence the extent and distribution of an environmental effect.

For this assessment, the area that could potentially be affected by Project activities and interact with VECs is referred to as the Assessment Area. The Assessment Area is also developed in consideration of the timing and type of Project activity being considered and the sensitivities within the particular VEC being assessed. The assessment of potential Project effects and determination of the significance of those effects occurs within the Assessment Area.

8.4.2 Temporal Boundary

Project effects for this preliminary EA effort in support of the Project Registration documente have been assessed from construction through to decommissioning and abandonment. Construction is scheduled to take place in 2012. With the exception of those activities which will occur seasonally, effects of Project operations activities have been assessed as “year-round” for

the period 2013-2020. The effects of decommissioning, abandonment and site rehabilitation will be assessed and are assumed to occur after 2020. Potential accidental events will be considered and could occur at any point during the life of the Project.

8.4.3 Administrative Boundaries and Technical Boundaries

Administrative boundaries refer to the spatial and temporal dimensions imposed on the assessment for political, socio-cultural or economic reasons. Administrative boundaries can include such elements as the legislation, regulations, and government agencies that govern Project-related activities and the VECs selected for the assessment. Administrative boundaries can also include pertinent government guidelines and wildlife management zones. These boundaries are defined for each VEC individually.

Technical Boundaries include data and information gaps with a focus on data gaps important to environmental effects predictions and determination of significance or to satisfaction of the assessment guidelines. Such boundaries could include limits on availability of existing information and/or field surveys.

8.5 Potential Interactions and Existing Knowledge

A list of potential interactions between the Project activities and each VEC is presented in Table 8.2. These interactions represent the pathways/mechanisms through which the Project could have environmental effects on the VECs being considered in the assessment. Existing knowledge concerning these potential interactions is also reviewed and summarized.

Table 8.2 Potential Project-VEC Interactions (Example)

Project Activities and Physical Works	Environmental Effects	
	Environmental Effect 1	Environmental Effect 2
Construction (Project activities in 2012)		
Site Preparation (grubbing, clearing, and excavating)		
Haul and Service Road and Rail Siding Construction		
Employment and Expenditures		
Operation (Project activities starting in 2013)		
Iron Ore Extraction (excavation – mechanical, blasting)		
Iron Ore Beneficiation		
Stormwater Management		
Transportation (on-site trucking, hauling, rail transportation)		
Operations (on-site power generation, solid waste, grey water, human presence)		
Employment and Expenditures		
Abandonment and Decommissioning		
Removal of Facilities and Equipment		
Site Reclamation (grading, re-vegetation)		
x = Interaction		

8.6 Residual Environmental Effects Assessment and Significance Criteria

Significant adverse environmental effects are those effects that will cause a change that will alter the status or integrity of a VEC beyond an acceptable level. The significance of environmental effects is determined according to criteria defined for each of the VECs.

The definitions for significant adverse environmental effects are based primarily on key factors such as: magnitude (i.e., the portion of the VEC population affected); potential changes in VEC distribution and abundance; effect duration (i.e., the time required for the VEC to return to pre-project levels); frequency; and geographic extent. They also consider other important considerations such as interrelationships between populations and species, as well as any potential for changes in the overall integrity of affected populations.

A positive effect is one that may enhance a population or socio-economic component.

Effects are analyzed qualitatively and, where possible, quantitatively using existing knowledge, professional judgment and appropriate analytical tools. The assessment of accidental events and cumulative effects will be considered within each individual VEC chapter.

Potential environmental effects on each VEC are characterized using the following six descriptors:

- Magnitude – the nature and degree of the predicted environmental effect. Rating depends on the nature of the VEC and the potential effect.
- Geographical Extent – describes the area within which an effect of a defined magnitude occurs;
- Frequency – the number of times during the Project or a specific Project phase that an effect may occur (i.e., one time, multiple);
- Duration – typically defined in terms of the period of time required until the VEC returns to its baseline condition or the effect can no longer be measured or otherwise perceived. It is defined specifically for each VEC. At a minimum, it is divided into three timeframes: short-term, mid-term and long-term;
- Reversibility – the likelihood that a VEC will recover from an effect, including through active management techniques such as habitat restoration works; and
- Ecological Context – the general characteristics of the area in which the project is located; typically defined as limited or no anthropogenic disturbance (i.e., not substantially affected by human activity) or anthropogenically developed (i.e., the area has been substantially disturbed by human development or human development is still present).

Based on the potential interactions identified for each VEC, technically and economically feasible mitigation measures will be identified to reduce or eliminate potentially significant adverse effects.

Where possible, a proactive approach to mitigating potential environmental effects has been taken by incorporating environmental management considerations directly into program design

and planning; these are noted in the Project Description (Section 3.0). Additional mitigation measures are identified in the environmental assessment to further mitigate potential adverse effects where economically and technically feasible. These mitigation measures are identified and discussed within each individual VEC chapter. Residual environmental effects predictions are made taking into consideration these identified mitigation measures.

A summary of the environmental assessment for each VEC is presented for Project construction and operation as noted in Table 8.3.

Table 8.3 Example: Summary of Residual Environmental Effects

Proposed Mitigation	
Significance Determination	
Geographic Extent	
Frequency of Occurrence	
Duration of Effect	
Magnitude of Effect	
Permanence/Reversibility	
Significance	
Confidence	
Likelihood of Occurrence	
Proposed Follow-up and Monitoring	

The evaluation of the significance of the predicted residual environmental effects is based on a review of relevant literature and professional judgment. In some instances, assessing and evaluating potential environmental effects is difficult due to limitations of available information. Ratings are therefore provided to indicate the level of confidence in each prediction. The level of confidence ratings provide a general indication of the confidence within which each environmental effects prediction is made based on professional judgment and the effects recorded from similar existing projects. The likelihood of the occurrence of any predicted significant adverse effects is also indicated, based on previous scientific research and experience.

8.7 Cumulative Environmental Effects

Cumulative effects are considered as part of the Project-specific environmental effects analyses described above (i.e., the overall effect of each project on a VEC). Other projects or activities that could interact cumulatively with the Houston Mine Project have been identified based on their current status in the Environmental Assessment process and include the New Millenium Elross Lake Mine, increased railway traffic as a result of the Bloom Lake Railway, Alderon's proposed Kami development, and LIM's mine operations at James, Redmond and Silver Yards.

Consistent with CEAA guidance, the scope of cumulative effects includes those projects that have entered a formal approval process. As a result, some projects such as the recently announced expansion of IOC in Western Labrador have not been included in the assessment of cumulative effects because they have not entered a formal approval process.

Projects that will be considered in the cumulative effects assessment are detailed in Table 8.4.

Table 8.4 Projects and Activities Considered in Cumulative Environmental Effects Analysis

Project	Status
Elross Lake Iron Ore Mine Proponent: New Millenium Capital Corporation • New Millenium Capital Corporation is planning to develop an iron ore mine at a previously mined site in Western Labrador, approximately 10km northwest of Schefferville, QC. • Ore will be transported via rail to a marshalling yard in Schefferville and then sent via rail to Sept-Îles , QC, for shipment to customers.	Existing Project
Bloom Lake Railway Proponent: Consolidated Thompson Iron Mines Ltd. • Consolidated Thompson Iron Mines has constructed and operates a new 31.5km-long single-track railway line to connect the company's new load-out facilities within Labrador with the existing railway line between Wabush Mines and the Quebec North Shore & Labrador Railway.	Existing Project
Schefferville Area Iron Ore Mine Proponent: Labrador Iron Mines • LIM is in operation at the James and Redmond mines and Silver Yard beneficiation site.	Existing Project
Kami Iron Ore Project Proponent: Alderon Iron Ore Corp • Alderon is proposing to develop an iron ore mine in western Labrador. The minue will produce up to 16 million metric tonnes of iron ore concentrate annually and is currently scheduled to begin construction in Q4 2013.	Potential Future Project
Mining Exploration Proponent: Labrador Iron Mines • LIM is conducting on-going mineral exploration at several properties in western Labrador. These properties are all within 50km of the Houston deposits.	Potential Future Project

The assessment of cumulative environmental effects will be consistent with the Schefferville Area Mine assessment. It will involve consideration of the following:

- Temporal and spatial boundaries;
- Interactions among the Project's environmental effects;
- Interactions between the Project's environmental effects and those of existing projects and activities;
- Interactions between the Project's environmental effects and those of planned projects and activities; and
- Mitigation measures employed toward a no-net-loss or net-gain outcome (e.g., recovery and restoration initiatives pertinent to a VEC that can offset predicted effects).

8.8 Accidental Events

The potential environmental effects resulting from malfunctions or accidental events that may occur in connection with the Project will be assessed for each VEC. These shall be discussed with respect to risk, severity and significance.

8.9 Monitoring and Follow-up

The purpose of a follow-up program is to:

- Verify the accuracy of the environmental assessment; and
- Determine the effectiveness of mitigation measures.

As part of the environmental effects analysis, monitoring and follow-up programs are described where warranted. Monitoring and follow-up is considered where there are important Project-VEC interactions, where there is a high level of uncertainty, where significant environmental effects are predicted, or in areas of particular sensitivity.

9.0 ENVIRONMENTAL EFFECTS ASSESSMENT

9.1 Caribou

Caribou was chosen as a VEC based on the importance of caribou to the local communities and the understanding that, although there has been a significant reduction in caribou herds across the Canadian North since the early 1980's, the migratory George River Caribou Herd (GRCH) has been historically reported in the Region on a seasonal though unpredictable basis. No evidence of Woodland caribou has been noted in the Project Area since environmental baseline programs were initiated in 2007.

There is no recent evidence to suggest that other caribou herds potentially overlap the Houston Property at this time. The nearest other herd of consequence is the Lac Joseph herd, a sedentary population of woodland Labrador, that has been observed more than 100km south of the Project. This population, along with Labrador's other sedentary populations located at greater distances, are designated as "Threatened" by the Committee on the Status of Endangered Wildlife in Canada since May 2002 (COSEWIC 2008; SARA 2008) due the population decrease throughout most of the range. Formerly sedentary caribou existed also to the west and were known as the McPhayden and Caniapiscau Herds (Bergerud et al. 2008).

To learn more of the status of caribou in the vicinity of their properties, LIM embarked on original research in the area, including aerial and ground surveys for caribou and other wildlife. The results of an extensive aerial survey in May 2009 indicated that some caribou (three sightings over a two-day period totalling seven individuals) were observed in the area at a distance greater than 20 km from the project area (D'Astous and Trimper 2009). Anecotoal evidence provided by local hunters indicated that they were not aware of these caribou at the time of sighting and their records indicated that there had been no sightings of the GRCH during that winter (R. McKenzie, pers. comm.). To assist in identifying the herd affiliation of these animals, one adult female caribou who was located in a group of 4 caribou, was fitted with an Argos GPS collar (PTT 53572, VHF signal 149.970 MHz) on 6 May 2009 (D'Astous and Trimper 2009). While no signal was received from the collar (due to a technical malfunction), this animal was shot by a hunter on the Naskaupi River (about 400km east of the capture location) on 6 February 2010 (T. Chubbs and J. Neville, pers. comm.). Based on the migratory route of the GRCH during the fall and winter of 2009-2010, the Senior Wildlife Biologist for Labrador considered this animal to belong to the migratory ecotype (i.e., affiliated with the GRCH) rather than to the sedentary ecotype (T. Chubbs, pers. comm.). This animal's body length (192 cm) (D'Astous and Trimper 2009) was consistent with this interpretation (T. Chubbs, pers. comm.).

The 2009 body measurements also supported the interpretation that the two caribou measured in the study area probably belonged to the migratory ecotype (D'Astous and Trimper 2009). Based on the absence of caribou observations during a similar aerial survey in 2010 and the 2009 results accumulated to date, and the fact that there has been no evidence that the study area is used by sedentary caribou during the pre-calving period in recent years, it was concluded that sedentary caribou do not exist in the vicinity of the Project.

In addition to these surveys and marking efforts, D'Astous and Trimper (2009) collected caribou tissue samples for genetics analysis. Samples of ear dermis were collected from the same lone

adult female that was collared by the field team, and from a recently killed (by wolf) adult female. These samples were stored frozen at Laval University, Québec, until they could be analyzed at the specialized laboratory directed by Dr. Steeve Côté.

The genetic analysis and comparison to on-file genetic reference samples from known individuals were completed in May 2011 by Mr. Glenn Yannic. Several multivariate techniques (e.g., Factor Correspondence Analysis, Bayesian STRUCTURE) were used to compare the tissue samples to those collected from known ecotypes and herd affiliations in northeastern Quebec and Labrador such as the George River and Leaf River Herds (migratory ecotype), the Red Wine Mountains and Lac Joseph Herds (woodland ecotype) and the Torngat Mountains Herd (montane ecotype) [as described in Bergerud et al. (2008)].

The results indicated the samples could not be assigned to any of the ecotypes or herds in a reference collection (below). Both caribou sampled are genetically similar, suggesting that they belong to the same ecotype. As a result of the extensive variability observed in the genetic testing, attributable to gene flow between the different migratory herds of caribou in the Quebec-Labrador Peninsula (Boulet et al. 2007), a clear assignment of the sampled individuals to a known reference herd, based solely on genetics, was not possible at that time. However, efforts expended to date indicate that the sampled caribou were of the migratory ecotype based on the following (D'Astous and Trimper 2010):

- body measurements;
- subsequent behaviour and movement of the collared caribou to a distance of over 400 km from the capture area prior to its demise from hunting on February 6, 2010 (D'Astous and Trimper, 2009 and 2010);
- statements from a Senior Wildlife Biologist that, based on the migratory route of the George River Caribou Herd in the fall of 2009 and winter of 2010, this caribou was considered to belong to the migratory ecotype rather than to the sedentary type (T. Chubbs, pers. comm.); and
- no other evidence of sedentary caribou has been identified during this period.

Ongoing monitoring for the GRCH will be conducted because the Project overlaps with its historical seasonal range (i.e., during winter).

A full description of the existing conditions regarding the caribou population, historical seasonal movements, and habitat use are presented in Section 7.7.1.

9.1.1 Environmental Assessment Boundaries

9.1.1.1 Temporal Boundaries

Temporal boundaries for the GRCH and possible woodland caribou herd effects assessment comprise three timeframes: construction phase (approximately three months), operation phase, and decommissioning phase (post-operation phase).

The range of the migratory GRCH occupies over 800,000km^2 in Labrador and Northern Quebec. Caribou from this herd travel large distances over the Quebec-Labrador peninsula and

aggregate on traditional calving grounds each June demonstrating strong site fidelity (i.e., returning to similar locations annually) (Schmelzer and Otto 2003). The GRCH has historically been known to rut and overwinter in the region, but there is no evidence to demonstrate calving occurs in the Assessment Area.

The nearest sedentary herd known to exist in the Schefferville area is the Caniapiscau Herd, located approximately 100km west. The recognized range of this herd and of the Lac Joseph Herd (Bergerud et al. 2008), located southeast of the Project area (200km), are not believed to interact with the Project. Historically, RRCS (1989) indicated that the McPhadyen River Herd was known to have overlapped the Schefferville area. There has been no recent evidence since this time to indicate whether caribou from this sedentary herd (or other sedentary herd) still exist. Prior to the May 2009 and 2010 surveys (D.Astous and Trimper 2009 and 2010), the most recent documented search effort was from the mid-1980s (Phillips 1982; St. Martin 1987).

9.1.1.2 Administrative and Technical Boundaries

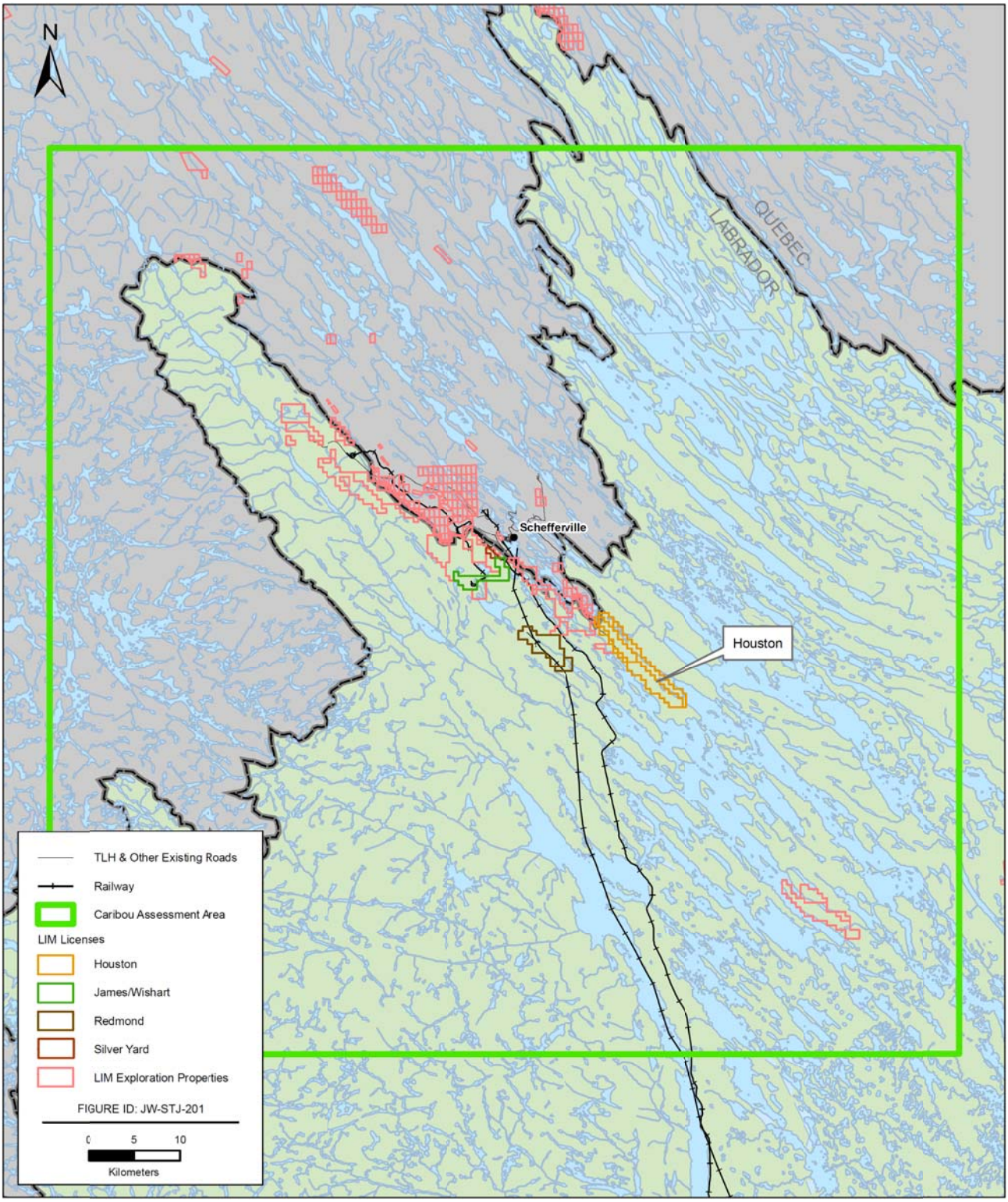
Hunting of sedentary caribou herds is illegal; however, the hunting of the migratory GRCH is legal within the seasons (August 10 through April 30) and established quotas. Quotas for the GRCH are defined by the provincial government and, as previously noted, hunting bans have been put into effect as a result of dramatic drops in the caribou population.

Given the available information from the literature and from the results of the May 2009 and 2010 aerial surveys, there is sufficient information available on the migratory caribou population (i.e., the GRCH) of the area to assess the potential interactions and environmental effects of the Project in light of the proposed mitigation (ongoing) and monitoring efforts associated with this Project.

9.1.1.3 Assessment Area

The Caribou Assessment Area is delineated in Figure 9-1. This area includes Houston 1 and 2 as well as the James and Redmond properties and Silver Yard beneficiation area. It is also the boundary used for the 2009 and 2010 aerial caribou surveys conducted by LIM and New Millenium (D'Astous and Trimper 2009; 2010).

Figure 9-1 Caribou Assessment Area



9.1.2 Potential Environmental Effects

Potential issues and concerns relating to Caribou and the Project can be considered within two effects:

- Change in Habitat – related to the loss or reduction of potential caribou habitat from site clearing, and/or sensory (e.g., noise) disturbance associated with the presence and operation of people and equipment. This change in habitat can also result in an alteration of movements and distribution into lower quality habitat, and enhanced susceptibility to predation; and
- Mortality – directly related to increased hunting pressure as a result of improved access, and collisions with vehicles or other equipment.

9.1.2.1 Potential Project-VEC Interactions

The potential interactions between Caribou (from the GRCH) and each Project activity during construction, operations, and decommissioning comprise the scope of the environmental assessment for this VEC (Table 9.1).

Table 9.1 Potential Project-VEC Interactions for Caribou

Project Activities and Physical Works	Environmental Effects	
	Habitat Change	Mortality
Construction (Project activities in 2009)		
Site Preparation (grubbing, clearing, excavating)	X	
Haul and Service Road and Rail Siding Construction	X	
Employment and Expenditures		
Operation (Project activities starting in 2010)		
Iron Ore Extraction (excavation – mechanical, blasting)	X	X
Iron Ore Beneficiation		
Stormwater Management		
Transportation (on-site trucking, hauling, rail transportation)	X	X
Operations (on-site power generation, solid waste, grey water, human presence)	X	
Employment and Expenditures		
Decommissioning		
Removal of Facilities and Equipment	X	
Site Reclamation (grading, re-vegetation)	X	

Construction

Project activities that involve some level of alteration and/or loss of habitat in the vicinity of the deposits have the potential to interact with caribou. This includes site preparation and road construction. These activities may result in some habitat loss through clearing and removal of vegetation or through disturbance associated with noise, dust and/or visual changes that can displace caribou from suitable habitats that may exist near the development sites. It is noted that several portions of the Assessment Area were previously disturbed by historical mining operations. Caribou also react to vehicle movements based on the rate of approach, and proximity (Horesji 1981). In most instances, caribou flee for a short period, once the perceived

threat is removed. Temporary or longer-term displacement can result in a functional loss of habitat.

Mortality of caribou related to the Project may occur as a result of collisions with increased vehicular traffic and may also occur in association with transportation during operations. New roads may also result in increased mortality through increased access and harvest. However, there are already numerous roads in the area remaining from development.

Operation

During the operation phase of activity, there is further potential for interactions with caribou, given the relative length of operation in comparison to the more short-term construction phase. Activities such as blasting will create noise levels that will likely have disturbance effects on caribou.

Decommissioning

During decommissioning, removal of facilities and equipment will result in further sensory disturbance to caribou in the area. In addition, site reclamation, including grading and re-vegetation, will result in conditions that would eventually be attractive to caribou. Following decommissioning, the quality of habitat for caribou will improve over the long-term.

9.1.3 Review of Existing Knowledge

9.1.3.1 Change in Habitat

Mining and similar resource development projects on the landscape have been the subject of many assessments in relation to caribou. Bergerud et al. (1984) studied eight caribou populations exposed to industrial activities or transportation corridors and found that there was no evidence that disturbance activities or habitat alteration affected caribou productivity. They observed caribou's resilience to human disturbance and also concluded that seasonal movement patterns and extent of range occupancy appear to be a function of population size as opposed to disturbance (Bergerud et al. 1984). Weir et al. (2007) looked at the impacts of Hope Brook gold mine in southwest Newfoundland on the La Poile Caribou Herd and concluded that prior to mine development, caribou were dispersed throughout the study area, but the number of caribou increased linearly with distance away from the mine over all five seasons during both construction and operation phases. Within 6km of the mine center, group size and the number of caribou decreased as mine activity increased, indicating an avoidance of the development (Weir et al. 2007).

Monitoring of the Buchans Plateau Caribou Herd, another Newfoundland herd, during the development of a hydroelectric project indicated that caribou densities were lower within 3km of the site during the first year of construction (Mahoney and Schaefer 2002). The lowered caribou densities of this herd (particularly females with calves) within 3km of the site persisted for at least two years after the construction phase had been completed. In addition to the change in distribution, they concluded that the development caused a disruption of migration timing during the construction phase and longer-term through operations (Mahoney and Schaefer 2002).

Other reported distances of lower density around developments for caribou (usually females) include: 100 to 150m for seismic lines (Dyer et al. 2001), and 1.2 to 50km for forest harvesting (Chubbs et al. 1993; Smith et al. 2000; Mahoney and Schaefer 2002; Vors et al. 2007). This avoidance is cited as being related to the removal of suitable forage, increased susceptibility to predation particularly by wolves, and/or sensory disturbance associated with the presence of workers and equipment. Studies on the impacts of noise on wildlife indicate that the threshold above which potential negative effects are expected is 90 dBA (Manci et al. 1988). Noises at this level are associated with a number of behaviours such as retreat from the sound source, freezing, or a strong startle response. Caribou react to noise and display startle reflexes, such as running or ceasing feeding, but these reactions are relatively short-term, resuming normal activities 5 to 15 minutes later (Harrington 2003). It is the extended period of noise that bring about concerns such as “masking”, or the inability of an animal to hear important environmental signals, such as noises made by potential mates, predators, or prey (Manci et al. 1988).

9.1.3.2 Mortality

Increased access through the development of expanding road networks may result in increased legal and illegal hunting (Dzus 2001; Vistnes and Nelleman 2001). Hunting is normally not considered to be a population limiting factor but could become so if the caribou herd is in decline (Messier et al. 1988; Thomas and Gray 2002). Most mortality from hunting is therefore considered additive and not compensatory to other mortality factors (Bergerud et al. 2008).

Although statistics are unavailable, Nalcor Energy (2009) report that caribou are known to be struck by vehicles when attempting to cross the Trans-Labrador Highway. Collisions with trains are cited by Goldwin (1990) as a significant source of mortality for caribou in northwestern Ontario.

9.1.4 Residual Environmental Effects Significance Criteria

Residual environmental effects are those which are predicted to affect caribou populations, once mitigation measures have been applied. Each prediction is described according to:

- Geographic extent (i.e., site-specific, within the assessment area, throughout the assessment area and beyond);
- Frequency of occurrence (i.e., once, infrequently, continuous, not likely to occur);
- Duration (i.e., less than one generation, over several generations, permanent);
- Magnitude (i.e., low - no measurable change relative to baseline conditions, moderate - measurable change that does not cause management concern, high - measurable change that does cause management concern);
- Reversibility (i.e., reversible or irreversible);
- Confidence (i.e., low or high confidence regarding the significance prediction; and
- Likelihood (i.e., significant effect is likely or unlikely).

A significant adverse residual environmental effect is one in which the Project would cause a population decline, such that the viability or recovery of the herd is threatened.

9.1.5 Mitigation Measures

The results of the caribou surveys completed in 2009 and 2010 (and other information) indicate that that it is unlikely that sedentary caribou are present in the area surveyed (Figure 7-8), which includes the Assessment Area, during the pre-calving period. Despite this conclusion, LIM has already undertaken a caribou mitigation strategy for the James and Redmond mining operations which protects all ecotypes of caribou, including the potential for sedentary caribou to exist. This mitigation strategy will be expanded to include the Houston Project area, however, additional discussions will be conducted with the Wildlife Division to determine the validity of applying a woodland caribou mitigation strategy in context of the lack of evidence of their presence in the Project Area.

The appropriate level of action for any encounter with a caribou is one that removes risk to the caribou and personnel with a minimal amount of disturbance to the caribou. Mitigation of disturbance may involve the potential for modification or adjustment of construction, mining and operational activities. All caribou management actions will be reported to the Wildlife Division. In order to mitigate potential effects of the Project on caribou, activities during all phases of the Project will be planned with three main considerations:

- Any activity that may potentially affect caribou habitat will be implemented with appropriate mitigation regardless of whether caribou are actually present.
- In the event that caribou are observed by personnel, a set of procedures will be incorporated to reduce or eliminate disturbance and avoid encounters with caribou; and
- This caribou mitigation strategy will be employed by on-site personnel until such time that this plan is revised or replaced by mutual agreement between LIM and Wildlife Division. A joint review of the current mitigation strategy by LIM and Wildlife Division to be conducted annually at the end of Year 1 to accommodate the inclusion of any new data and to assess the strategy for appropriateness.

LIM is firmly committed to ensuring no animals are disturbed, harmed, or killed as a result of this Project. LIM is also concerned that delays in Project activities could occur due to caribou or other wildlife being present and remaining within a certain distance, seemingly tolerant of the localized industrial activity. Therefore it is proposed that if caribou approach the Project there be a progressive level of heightened awareness by Project personnel and increased interaction with Wildlife Division, to ensure both objectives are met.

A Caribou Mitigation Strategy for LIM's James and Redmond properties has been approved by Wildlife Division. This strategy will be reviewed for application at this site. Specific caribou mitigation and monitoring measures associated with the Project include but are not limited to:

- Sightings as a result of this survey or reports of caribou, e.g., through co-ordination with Wildlife Division authorities and/or other stakeholders, within 20km of Project infrastructure and activities will be described in a one-page update of mining activity and wildlife observations and will be sent immediately to the Wildlife Division. When caribou are known to occur within 20km, a 5km buffer around each area of activity will be monitored on a weekly basis by scanning for tracks or animals from road-accessible vantage points within this radius. Observations reported by personnel or others will also

be recorded and investigated within this area. Reporting to the Wildlife Division would be increased to a weekly basis in this scenario. Note that if caribou are not seen within the 20km radius during the aerial survey or otherwise, the 5km buffer would be monitored on a bi-weekly basis (from road-accessible vantage points) over the course of the calving and post-calving period.

- If caribou are observed at a distance of less than 5km from Project infrastructure and activities, LIM will issue an advisory of their proximity to personnel to be alert and that activities that would potentially disturb or otherwise harm these animals may need to be curtailed until these animals have left the area. Construction and operation of the Project will not be audible beyond a short distance (i.e., less than 1km) and would not need to be delayed if caribou are within 5km. The monitoring from road accessible vantage points will occur on a daily basis.
- Should caribou be observed within 3km of Project facilities and/or by site personnel, activities that would potentially disturb or otherwise harm these animals will be assessed and, if required, curtailed until these animals have left the area.
- While caribou are within 5km of Project infrastructure and activities, all sightings of caribou will be reported to the LIM Labrador Site Manager, and will be immediately communicated to all vehicle operators. There will be no hunting or other harassment of these animals at any time. The monitoring from road accessible vantage points will occur on a daily basis and reported bi-weekly unless caribou are observed whereby the Wildlife Division is to be contacted immediately
- Ongoing traditional knowledge reports, including documentation of animal movements and activities, will be conducted by LIM with local communities to provide further information on caribou behaviour and locations.

Other mitigation measures to be implemented with Project activities are outlined in Table 9.2.

Table 9.2 Proposed Mitigation Measures for Caribou

Project Activities	Mitigation Measures
Construction	
Site Preparation (grubbing, clearing, excavating)	Clear vegetation in a pattern that does not leave a recognizable trail, where practical. This reduces accessibility and visibility to humans and predators. These activities would be restricted to the physical footprint of the Project. Fire prevention and response procedures, training and equipment will be implemented.
Haul and Service Road and Rail Siding Construction	The width, density and length of access roads and rail lines will be minimized. Where possible, any new disturbance will be reduced by locating these facilities adjacent to existing areas of surface disturbance. Ensure that linear facilities such as rail lines and roads are separated by more than 100 m, where practical. Personnel authorized to operate company vehicles will possess a valid driver's license, undergo employee orientation and safety training, and be briefed on seasons of greater risk of wildlife-vehicle collisions. Speed limits of 50km/hr (daylight) and 30km/hr (darkness) and wildlife caution signs will be posted and enforced along Project roads. Traffic reduction/convoying would be implemented through sensitive caribou areas such as crossings in the event of caribou being reported in the area. All observations of caribou by staff will be recorded (including observer, time and location) and submitted to wildlife monitors and LIM management to determine appropriate mitigation.

Table 9.2 Proposed Mitigation Measures for Caribou (continued)

Project Activities	Mitigation Measures
Construction	
Employment and Expenditures	Enforce a "no hunting and firearms' policy among all personnel. Use monitors to keep construction staff and management informed on the presence of caribou at the mine site as described above.
Operation	
Iron Ore Extraction (excavation – mechanical, blasting)	Note that caribou were not observed within a 20km radius of proposed activities during the aerial survey of 26 April to 1 May 2010. Therefore, a 5km buffer will be monitored on a bi-weekly basis (from road-accessible vantage points) over the course of the calving and post-calving period (i.e., 28 May to 20 September). If caribou are observed at a distance of less than 5km from Project infrastructure and activities, LIM will issue an advisory of their proximity to personnel to be alert and that activities that would potentially disturb or otherwise harm these animals may need to be curtailed until these animals have left the area.
Transportation (on-site trucking, hauling, rail transportation)	Personnel operating company vehicles will possess a valid driver's license, undergo employee orientation and safety training, and be briefed on potential for and strategies for avoiding, wildlife-vehicle collisions. All mine roads will be limited to Project personnel only. Speed limits of 50km/hr (daylight) and 30km/hr (darkness) and wildlife caution signs will be posted along Project roads.
Operations (on-site power generation, solid waste, grey water, human presence)	Observations of caribou (and other wildlife) by staff will be recorded (including observer, time and location) and submitted to monitors and LIM management to determine appropriate mitigation.
Employment and Expenditures	Enforce a "no hunting and firearms' policy among all personnel. Use monitors to keep construction staff and management informed on the presence of caribou at the mine site as described above.
Decommissioning	
Removal of Facilities and Equipment	Personnel operating company vehicles will possess a valid driver's license, undergo employee orientation and safety training, and be briefed on potential for and strategies for avoiding wildlife-vehicle collisions. Enforce a "no hunting and firearms" policy among all personnel. Use monitors to keep staff and management informed on the presence of caribou at the mine site. Mine roads will be restricted to Project personnel only. Speed limits of 50km/hr (daylight) and 30km/hr (darkness) and wildlife caution signs will be posted along mine roads and rail lines.
Site Reclamation (grading, re-vegetation)	Reclamation techniques will emphasize the re-vegetation of the pre-disturbance vegetated areas of the site with local plants that would encourage growth of caribou winter forage.

Throughout construction and operations, LIM will maintain liaison with the Wildlife Division, and other stakeholders and officials regarding the movements of the GRCH in the Project area. Through existing satellite collar monitoring and other monitoring activities (e.g., community networking, traditional knowledge programs, and incorporation of recent observations into Project planning), LIM will implement an advisory to mine management staff should any caribou enter the Project area. Such caribou movements, observations and actions implemented by LIM would be recorded and reported to the Wildlife Division immediately.

9.1.6 Environmental Effects Assessment and Residual Effects Determination

The determination of residual environmental effects examines the potential change in habitat and/or mortality as a result of the interactions identified in Table 9.3, for each phase of the Project.

9.1.6.1 Construction

Measures will be implemented to limit the amount of surface disturbance (e.g., limit the width, density and length of access roads). In addition, no harassment policies will reduce the potential amount of sensory displacement associated with the Project during construction.

Vehicle operators will be instructed to yield to all wildlife, including caribou. Reduced speed limits will be maintained regardless of the presence of caribou. Potential entrance points at open pits, potentially dangerous construction areas, and steep slopes will be fenced.

The clearing associated with the Project will be minimal as the development area is within a currently disturbed former mining area. The geographic extent of construction activities will be site-specific, will occur continuously, and will be reversible. As a result, the Project effect is not at a level that would cause management concerns. Therefore, the effects associated with the LIM Project development are not significant (Table 9.3).

Table 9.3 Summary of Residual Environmental Effects for Caribou: Construction

Proposed Mitigation	
Monitor movements of caribou. Reduce speed limits, fencing construction sites, patterns of vegetation clearing, no hunting policy, reduce construction activities while caribou are present within 3km of construction	
Significance Determination	**George River Caribou Herd**
Geographic extent	Site-specific
Frequency of occurrence	Continuous
Duration of effect	Less than one generation
Magnitude of effect	Moderate
Reversibility	Reversible
Significance	**Not Significant**
Confidence	High
Likelihood of occurrence	Not Applicable
Proposed Follow-up and Monitoring	
See Section 9.1.9	
Note – As residual environmental effect is not significant, description of Likelihood of Occurrence is Not Applicable	

9.1.6.2 Operation

No further habitat loss will occur during operation. Controlled speed limits, yielding to wildlife and no-harassment policies will limit sensory disturbance resulting from the road. Furthermore, alerts to LIM workers when caribou enter the Assessment Area and communication with the Wildlife Division, particularly when blasting activities are planned, will limit disturbance during operations.

As with construction, the mitigation measures (Table 9.2) to reduce the possibility of mortality related to the Project will be in place. Speed limits will be posted, a no harassment policy will remain in place, no hunting in work areas, and onsite access will be restricted to personnel.

The geographic extent of Project effects during the Operation phase will be site-specific, will occur continuously, and will be reversible. Therefore, the effect of the Project is not at a level that would cause management concern, and is not significant (Table 9.4).

Table 9.4 Summary of Residual Environmental Effects for Caribou: Operation

Proposed Mitigation	
Monitor movements of caribou. Reduce speed limits, fence work areas, no hunting policy, delay blasting while caribou are present	
Significance Determination	**George River Caribou Herd**
Geographic extent	Site-specific
Frequency of occurrence	Continuous
Duration of effect	Over Several Generations
Magnitude of effect	Moderate
Reversibility	Reversible
Significance	**Not Significant**
Confidence	High
Likelihood of occurrence	Not Applicable
Proposed Follow-up and Monitoring	
See Section 9.1.9	
Note – As residual environmental effect is not significant, a description of Likelihood of Occurrence is Not Applicable	

9.1.6.3 Decommissioning

One of the main objectives of decommissioning will be to restore the LIM Project work areas to a usable state that meets the requirements of the Rehabilitation and Closure Plan. Areas will be sloped, and/or re-vegetated, and/or left in a situation that would allow re-vegetation such that there would be a net gain in available habitat. There will be some ongoing sensory disturbance associated with the site reclamation but this will be temporary. Should caribou be present at the time, a similar avoidance of at least 3km could be expected. Again, the mitigation measures (Table 9.2) to reduce the possibility of mortality related to the Project will be in place. Speed limits will be posted, a no harassment policy will remain in place, no hunting will be allowed by Project workers in work areas, and onsite access will be restricted to personnel.

Decommissioning activities will be of a relatively short-term nature, and once completed, no further presence of vehicles or personnel will occur. During this relatively brief period, appropriate monitoring and mitigation measures for caribou will remain in place. The surface disturbance during the reclamation and associated sensory disturbance would continue to be site-specific in terms of geographic extent. The continuous activities during this phase would result in enhanced conditions for encouraging a return to natural conditions. While the recovery would take several generations, the eventual natural state would be permanent. While measurable, these activities will not be at a level that would cause management concern. The adverse residual Project effects will be not significant (Table 9.5).

Table 9.5 Summary of Residual Environmental Effects for Caribou: Decommissioning

Mitigation	
Monitor movements of caribou during decommissioning. Reduce speed limits, and implement no hunting policy	
Significance Determination	**George River Caribou Herd**
Geographic extent	Site-specific
Frequency of occurrence	Continuous
Duration of effect	Permanent
Magnitude of effect	Moderate
Reversibility	Reversible
Significance	**Not Significant**
Confidence	High
Likelihood of occurrence	Not Applicable
Follow-up and monitoring	
No longer required following decommissioning	
Note – As residual environmental effect is not significant, a description of Likelihood of Occurrence is Not Applicable	

9.1.7 Accidental Events

Accidental events and malfunctions for this Project could result in change in habitat and/or mortality for caribou. Provided that the effects management measures, as described in previous sections, are adhered to, the risk of an accidental event and the extent of its influence would be minimized. The most probable accidental event would be that of a forest fire related to Project activities or a hazardous material spill. Fire prevention and response measures will be in place throughout the Project. The geographic extent of a forest fire could extend beyond the site (within the Assessment Area), but is not likely to occur. The effects could last for several generations (Foster 1985; review by Bergerud et. al 2008), and be of a magnitude that would cause management concern. Although a forest fire is not likely to result from the Project, the effect of such an event could be significant.

A hazardous material spill would be confined to the site and would not be expected to interact in a measurable manner with caribou. This event would be considered not likely to occur and would result in no measurable change to baseline conditions. The adverse environmental effect would be reversible and not significant.

9.1.8 Cumulative Environmental Effects

The boundaries for cumulative environmental effects assessment are the same temporal and spatial boundaries for caribou as defined above.

Other projects that are included in the cumulative effects assessment are Alderon Iron Ore Corp's proposed Kami Iron Ore Mine, Elross Lake Iron Ore Mine, the Bloom Lake Railway, the operation of LIM's existing mine at the James and Redmond properties and beneficiation operations at Silver Yards, and exploration at LIM's remaining properties in the region.

As discussed above, caribou observed in the Assessment Area are likely to be part of the George River Herd (Schmelzer and Otto 2003; Bergerud et al. 2008). The Assessment Area of

7,850km^2 represents approximately one percent of the range of the GRCH, and the physical disturbance associated with the Project would represent less than one percent of the Assessment Area. The other projects have been or will be subject to the same scrutiny, regulatory environment and codes of best practice as LIM and therefore it is anticipated they will reduce their respective effects as much as possible. These activities would be continuous, and persist over several generations. Regardless, and based on the extensive range of the GRCH and the location of the Assessment Area at its periphery, it is expected that the development of the Houston deposits within the context of other regional activities would result in a negligible change that would not cause management concern. These effects are considered reversible and not significant (Table 9.6).

Table 9.6 Summary of Residual Environmental Effects for Caribou: Cumulative Environmental Effects

Proposed Mitigation	
Existing and likely future projects would be subject to applicable federal and provincial regulations	
Significance Determination	**George River Caribou Herd**
Geographic extent	Assessment Area
Frequency of occurrence	Continuous (throughout Project)
Duration of effect	Over several generations
Magnitude of effect	Measurable change that does not cause management concern
Reversibility	Reversible
Significance	**Not Significant**
Confidence	High
Likelihood of occurrence	Not Applicable
Proposed Follow-up and Monitoring	
LIM will not conduct follow-up or monitoring of caribou on a regional scale.	
Note – As residual environmental effect is not significant, description of Likelihood of Occurrence is Not Applicable	

9.1.9 Follow-up and Monitoring

Effects of mining activities on caribou is “fragmentary” (Wier et al. 2007) and it is therefore important to understand herd affiliation, distribution of caribou within and around the Project, and to understand the usage of these areas - whether as a travel corridor, overwintering foraging area, or as year-round habitat in the event that sedentary woodland caribou occur.

In May 2009, the Project conducted a strip-transect aerial survey of a 12,900km^2 area that included the 7,850km^2 Assessment Area and overlapped both Labrador and northeastern Quebec. The objective of the survey was to determine if caribou are present in this area at a time when the GRCH was not expected to be present. The single collared caribou from this survey was shot months later and 400km east indicating that it was of the migratory ecotype. A subsequent aerial survey in May 2010 did not identify any sightings or sign of caribou. Based on this effort, D’Astous and Trimper (2010) concluded that any caribou observed in the vicinity of Schefferville are likely to be of the migratory ecotype and affiliated with the GRCH.

Throughout the life of the Project, LIM proposes to maintain liaison with Wildlife Division, community representatives and Elders, and other stakeholders and officials regarding the movements of any caribou in the Project area. Mitigation strategies will be implemented to ensure no harm or harassment of caribou occurs. Through monitoring and ongoing data

collection, LIM will continue to enhance the understanding of caribou activities in the Project Area and will implement an advisory to mine management staff should any caribou enter the Assessment Area. Caribou movements, and LIM observations and actions implemented will be recorded and communicated to the Wildlife Division.

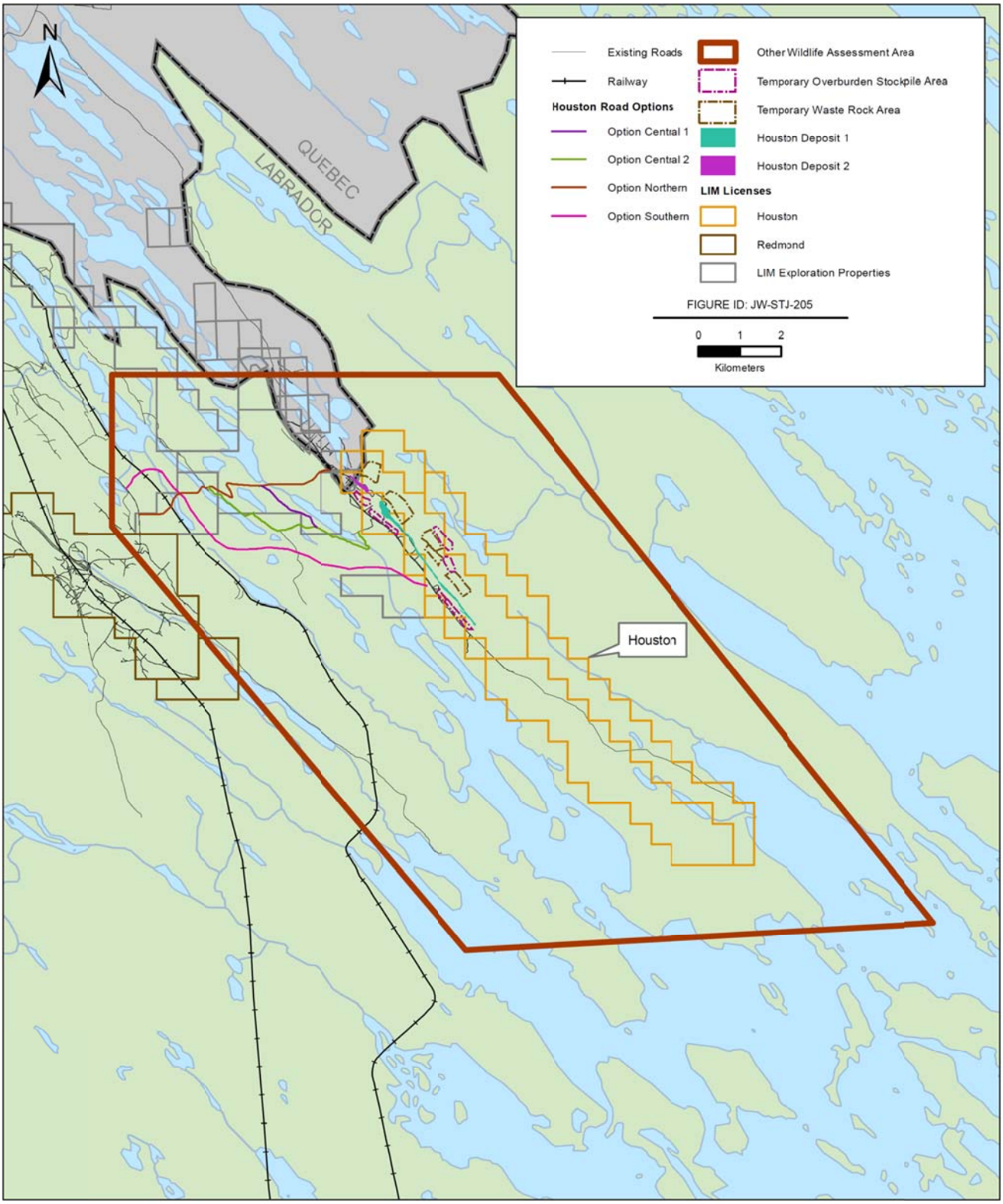
9.2 Other Wildlife

Other Wildlife (i.e., common wildlife species other than caribou) was chosen as a VEC because of the ecological importance of the various species, their importance to area residents, and the potential for project interactions to occur.

9.2.1 Environmental Assessment Boundaries

The ecological and administrative boundaries for Other Wildlife varies in accordance with each species. The selection of the Assessment Area was informed by the different boundaries, and was based, in part, in providing an appropriate scale for the effects assessment. The Assessment Area for Other Wildlife is a 160km^2 area shown in Figure 9-2. It includes the entire Houston property and route options, and incorporates the area surveyed for the Classification of Wildlife Habitat Suitability study (Stassinu Stantec 2010).

Figure 9-2 Other Wildlife Assessment Area



9.2.2 Potential Environmental Effects

Issues relating to wildlife and the proposed Project can be considered within two effects:

- Change in Habitat – related to the loss or reduction of wildlife habitat from site clearing and/or sensory disturbance (e.g., noise) associated with the presence and operation of people and equipment.
- Mortality – directly related to increased hunting pressure and collisions with vehicles or other equipment.

9.2.2.1 Potential Project-VEC Interactions

The potential interactions between wildlife and each Project activity during construction, operation, and decommissioning comprise the scope of the environmental assessment for this VEC (Table 9.7).

Table 9.7 Potential Project-VEC Interactions for Other Wildlife

Project Activities and Physical Works	Environmental Effects	
	Habitat Change	Mortality
Construction (Project activities in 2009)		
Site Preparation (grubbing, clearing, excavating)	X	
Haul and Service Road and Rail Siding Construction	X	
Employment and Expenditures		
Operation (Project activities starting in 2010)		
Iron Ore Extraction (excavation – mechanical, blasting)	X	X
Iron Ore Beneficiation		
Stormwater Management		
Transportation (on-site trucking, hauling, rail transportation)	X	X
Operations (on-site power generation, solid waste, grey water, human presence)	X	
Employment and Expenditures		
Decommissioning		
Removal of Facilities and Equipment	X	
Site Reclamation (grading, re-vegetation)	X	

Construction

Project activities that involve some level of alteration and/or loss of habitat in the vicinity of the deposits have the potential interact with wildlife. This includes site preparation and road construction. These activities may result in some habitat loss through clearing and removal of vegetation or through disturbance associated with noise, dust and/or visual changes that can displace caribou from suitable habitats that may exist near the development sites. However, portions of the Assessment Area were previously disturbed by historical mining operations, and therefore loss of habitat will be limited to previously undisturbed areas.

Mortality of wildlife related to the Project may occur as a result of collisions with increased vehicular traffic and may also occur in association with transportation during operations. Related to this potential interaction is the possibility of increased hunting due to the increased accessibility resulting from road construction.

Operation

During the operation phase of the Project, there is further potential for interactions with Other Wildlife, given the relative length of operation to the comparatively short-term construction phase. Although no further habitat will be lost, activities such as blasting will create noise levels that can be expected to have disturbance effects on Other Wildlife.

Decommissioning

During decommissioning, removal of facilities and equipment will result in further sensory disturbance to Other Wildlife in the area. However, site reclamation, including grading and re-vegetation of roads and other disturbed areas, will result in conditions that would eventually be attractive to wildlife. Following decommissioning, the quality of habitat for wildlife will improve over the long-term.

9.2.3 Review of Existing Knowledge

9.2.3.1 Change in Habitat

Project activities that result in the alteration of vegetation influence wildlife populations through habitat loss and fragmentation. Whereas such influences are typically adverse, the resiliency of wildlife to landscape change is largely species-specific. For example, although certain boreal songbird populations have been found to alter movement behaviour in response to moderate changes in landscape structure such as forest harvesting, some species experience reduced local survival from vegetation clearing (Whitaker et al. 2008). The influence of habitat modification on individual species varies with the spatial and temporal context. For example, whereas snowshoe hare will avoid recently cleared areas, their abundance typically increases following initial regeneration and the creation of vegetative cover and this can ultimately lead to greater prey availability for species such as lynx and coyote (Harron 2003).

Project activities are likely to adversely influence wildlife through sensory disturbance, including visual stimuli and noise. In terms of sound, two main primary effects include auditory changes (e.g., hearing loss or threshold shift) and the masking of key auditory signals, such as mating calls and prey sounds. Secondary effects are non auditory in nature, including increased stress levels and changes in mating and feeding patterns (Manci et al. 1988). Masking becomes an issue when the noise levels are able to mask acoustic signals on which an animal relies for survival, such as defending territory, attracting mates, or delivering distress calls (Warren et al. 2006). Noise levels that have an effect on wildlife vary with the species, the time of day, habitat, season and other potentially masking sounds in the area. However, studies on the impacts of noise on wildlife indicate that the threshold above which potential negative effects are expected is 90 dBA (Manci et al. 1998). Noises at this level are associated with a number of behaviours such as retreat from the sound source, freezing, or a strong startle response. Such activities could influence the fitness levels of individuals in a variety of ways, including through displacement to less productive feeding areas or through increased stress levels.

The importance of sensory disturbances varies with the different life stages of wildlife. For example, because denning black bears are dependent on fat reserves and use the reduced

energetic costs of torpor and thermal insulation of the den to survive, noise during this phase of the life cycle could have much greater costs in terms of survival and reproduction than at other times of the year (Tietje and Ruff 1980; Linnell et al. 1996). Additionally, although bald eagles are quite sensitive to disturbances throughout the breeding and nesting period, they are most sensitive during the courtship and nest building phase and disturbance during this period is typically manifested in nest abandonment (USFWS 2010). The sensitivity of wildlife also varies among individuals of a species. Osprey show a wide range in tolerance to human disturbance (Ruddock and Whitfield 2007) and in much of its range, they nest close to human activity and appear unaffected by moderate levels of disturbance (Vana-Miller 1987). Similarly, some pairs of bald eagles nest successfully near human activity, while others abandon nest sites in response to activities much farther away. Such variability is likely attributable to a number of factors, including visibility of the activity, its duration and noise level, extent of the area affected by the activity, the pair's prior experiences with humans, and tolerance of the individuals (USFWS 2010).

As a result of human presence, Project activities also have potential to alter wildlife habitat through accidental fires. The response of wildlife to fire will vary according to the type of fire, its frequency, forest composition and age. Infrequent fires can provide long-term ecological benefits by enhancing nutrient recycling but if fires occur too frequently, forests are unable to reproduce, creating barren areas that are slow to re-vegetate. Wildlife species can be affected positively or negatively by fires according to their respective habitat requirements. Although the short-term loss in cover generally represents an adverse influence, species such as black bears generally benefit from improved foraging opportunities in burned areas, (Jonkel and Cowan 1971; Rowe and Scotter 1973).

9.2.3.2 Mortality

Project activities have potential to result in the direct mortality of wildlife through a variety of interactions. Collisions with vehicles are a potential issue for wildlife during the operations of the Project. In particular, avifauna is well known to be susceptible to collisions with vehicles (Hirvonen 2001), with low-flying birds such as upland game species and many passerines being particularly sensitive (Erickson et al. 2005). Spills of fuels and associated products/hazardous or controlled products during Project activities could also lead to the direct or indirect mortality of wildlife, such as through contamination of habitat and food sources. Additionally, increased access through the development of expanding road networks or other linear corridors such as railways has potential to result in increased legal and illegal hunting and trapping.

9.2.4 Residual Environmental Effects Significance Criteria

Residual environmental effects are those which are predicted to affect wildlife, once mitigation measures have been applied. Each prediction is described according to:

- Geographic extent (i.e., site-specific, within the Assessment Area, throughout the Assessment Area and beyond);
- Frequency of occurrence (i.e., once, infrequently, continuous, not likely to occur);
- Duration (i.e., less than one generation, over several generations, permanent);

- Magnitude (i.e., low - no measurable change relative to baseline conditions, moderate - measurable change that does not cause management concern, high - measurable change that does cause management concern);
- Reversibility (i.e., reversible or irreversible);
- Confidence (i.e., low or high confidence regarding the significance prediction; and
- Likelihood (i.e., significant effect is likely or unlikely).

A significant adverse residual environmental effect is one in which the Project would cause a population decline, such that the viability or recovery of a wildlife population is threatened.

9.2.5 Mitigation Measures

LIM is firmly committed to ensuring that no animals are disturbed, harmed, or killed as a result of this Project. LIM has worked with Wildlife Division and Canadian Wildlife Service (CWS) to develop mitigation and management approaches for wildlife. Specific plans have been developed for avifauna at the James and Redmond mines to ensure that the local populations of these species are not affected by those mines. Activities at the Houston Project area will also be subject to these management plans and standard wildlife mitigation.

Labrador Iron Mines' Avifauna Management Plan was designed for the James and Redmond operating mines, and will be implemented at the Houston site, to reduce the possibility of incidental take of active nests, resulting from habitat clearing, consistent with the recommendations of Canadian Wildlife Service (CWS 2007). Labrador Iron Mines (LIM) is aware of the requirements of the *Migratory Birds Convention Act* and its regulations and has prepared the Avifauna Management Plan for James and Redmond mines accordingly. LIM has consulted with Environment Canada (CWS) during development of the Plan and the most effective mitigation measure, which is temporal avoidance (J. Goulet, pers. comm. in Stantec 2010). There are three main mitigation measures that LIM will implement during the construction of this Project to reduce and attempt to eliminate incidental take during vegetation clearing:

- Monitoring: The environmental monitor overseeing construction activities will direct clearing activities and be empowered to adjust clearing activities to address possibilities for incidental take. The environmental monitor will survey areas to be cleared in advance of any disturbance using the guidance provided above in terms of the species known or suspected to breed in each area. The habitat associations for each in each property will be used as a guide during the advance monitoring. If a bird nest is identified, an area of 30m radius will be implemented and left undisturbed until nesting is completed (i.e., at least after the young have fledged). Where LIM is not able to avoid such nests, LIM will consult directly with Environment Canada before any disturbance to the site occurs.
- Temporal Avoidance: LIM will complete as much vegetation clearing as possible after the period when migratory birds may be breeding in a particular habitat.
- Spatial Avoidance: LIM will avoid disturbing and/or clearing sensitive wildlife areas (e.g., riparian vegetation) during site preparation, where possible to minimize the physical footprint of the Project. Vegetation buffers (approximately 30m) will be maintained around natural water bodies except where crossings of such features are

required. Disturbance to wetlands will also be avoided or minimized. Maintaining vegetated buffer zones will aid in managing suspended solids in watercourses and reduce erosion and sedimentation.

Consistent with standard mitigation practice, clearing of vegetation around active nests of Osprey or Bald Eagle that may breed in the Project area, will be limited to 800m. Should such a nest site occur within the footprint of the Project, it would be removed after the breeding season (mid-May through end of August (Jacques Whitford 1998)). The alternative artificial nest structure would be similar to that used by other proponents in Newfoundland and Labrador, and designed in consultation with Wildlife Division. It would be established in the immediate area and maintained over the life of the Project. Standard mitigation measures regarding construction and operation-related activities for active Osprey nests are to avoid such areas by at least 200m.

Other standard mitigation measures that will benefit wildlife include:

- Wildlife encounters may impose risk to both wildlife and Project personnel. There will be no fishing, hunting, or trapping by personnel at the Project site. Additional 'bear aware' measures will be in place to reduce attraction of wildlife, such as black bears, other predators, or avifauna, to the site including storage of all food and organic waste in animal-proof containers.
- Hydrocarbon (fuels) and hazardous materials required during construction and operation will be stored pursuant to all applicable regulations. Hazardous materials will be stored in appropriate locations/facilities with proper containment and ventilation as required for each product;
- Controlled speed limits on Project roads;
- Dust from construction activities will be controlled by using water if required; and
- Noise associated with blasting and heavy equipment will be addressed by adherence to all permits and approvals.
- Consistent with standard procedures advocated by the provincial Wildlife Division, clearing of vegetation around active nests of Osprey or Bald Eagle that may be breeding in the Project area, will be limited to 800m. Should such a nest site occur within the footprint of the Project, it would not be removed until after the breeding season. An alternative artificial nest structure would be established in the immediate area.

9.2.6 Environmental Effects Assessment and Residual Effects Determination

The determination of residual environmental effects examines the potential change in habitat or mortality as a result of the interactions in Table 9.8, for each phase of the Project.

Table 9.8 Summary of Residual Environmental Effects for Other Wildlife: Construction

Proposed Mitigation	
• Implementation of the Avifauna Management Plan • No hunting and no harassment policies for workers on-site • Reduce speed limits on Project roads • Standard dust and noise control • Buffer around Osprey and Eagle Nests	
Significance Determination	**Other Wildlife**
Geographic extent	Site-specific
Frequency of occurrence	Continuous
Duration of effect	Over Several Generations
Magnitude of effect	Low
Reversibility	Reversible
Significance	**Not Significant**
Confidence	High
Likelihood of occurrence	Not Applicable
Proposed Follow-up and Monitoring	
See Section 9.2.9	
Note – As residual environmental effect is not significant, a description of Likelihood of Occurrence is Not Applicable	

9.2.6.1 Construction

Clearing and construction activities will result in loss of vegetative cover and noise and dust emissions, which will reduce habitat quality for other wildlife. Implementation of LIM's Avifauna Management Plan will reduce potential adverse effects on avifauna primarily through temporal and spatial avoidance (e.g., avoidance of clearing during breeding activities, minimizing disturbance to wetlands and other sensitive habitats, and maintaining vegetative buffers). Project personnel will take measures to minimize wildlife encounters.

Road construction and increased traffic through the area may contribute to mortality of wildlife directly through collisions with vehicles and indirectly through increased accessibility and potential increased hunting activity. Several measures will be in place to restrict personnel from hunting on the Houston Property and to restrict others from accessing. Reduced speed limits will be maintained. Project construction activities are considered minimal when compared to the current state of historical disturbance in the Assessment Area. The effects are considered reversible and are not significant.

9.2.6.2 Operation

No further habitat loss will occur during operation. Controlled speed limits, yielding to all wildlife and no-harassment policies will limit the sensory disturbance and associated avoidance of the Project area by wildlife. These measures will also minimize Project-related mortality.

The geographic extent of this phase will continue to be site-specific and will occur continuously over several generations. The magnitude is considered low because measurable changes in wildlife populations are not likely. The Project effects are not significant due to the localized nature of the interactions, the low magnitude and the reversibility of the effects (Table 9.9).

Table 9.9 Summary of Residual Environmental Effects for Other Wildlife: Operation

Proposed Mitigation	
• Implementation of the Avifauna Management Plan • No hunting and no harassment policies for workers on-site • Reduce speed limits on Project roads • Standard dust and noise control	
Significance Determination	**Other Wildlife**
Geographic extent	Site-specific
Frequency of occurrence	Continuous
Duration of effect	Over Several Generations
Magnitude of effect	Low
Reversibility	Reversible
Significance	**Not Significant**
Confidence	High
Likelihood of occurrence	Not Applicable
Proposed Follow-up and Monitoring	
See Section 9.2.9	
Note – As residual environmental effect is not significant, a description of Likelihood of Occurrence is Not Applicable	

9.2.6.3 Decommissioning

One of the main objectives of decommissioning will be to restore the Project site to a more natural state. Areas will be sloped, and/or re-revegetated, and/or left in a situation that would allow natural re-vegetation such that there would be a net gain in available wildlife habitat. There will be some sensory disturbance associated with site reclamation, but this will be temporary. Mitigation measures related to the operation of equipment and the responsibility of LIM and its workforce regarding wildlife will be in place throughout the decommissioning period. Active work sites will continue to be posted as no hunting areas and workers will be required to adhere to LIM's no hunting and no wildlife harassment policies.

Decommissioning activities will be of a relatively short-term nature, and once completed no further presence of vehicles or personnel will occur. During this relatively brief period, appropriate mitigation measures for wildlife will remain in place. The surface disturbance during the reclamation and the associated sensory disturbance would continue to be site-specific in terms of geographic extent. The activities during this phase would result in enhanced conditions for encouraging a return to natural conditions. Therefore, the adverse residual environmental effects are predicted to be not significant (Table 9.10).

Table 9.10 Summary of Residual Environmental Effects for Other Wildlife: Decommissioning

Proposed Mitigation	
• Implementation of the Avifauna Management Plan • No hunting and no harassment policies for workers on-site • Reduce speed limits on Project roads • Standard dust and noise control	
Significance Determination	**Other Wildlife**
Geographic extent	Site-specific
Frequency of occurrence	Continuous
Duration of effect	Over Several Generations
Magnitude of effect	Low
Reversibility	Reversible
Significance	**Not Significant**
Confidence	High
Likelihood of occurrence	Not Applicable
Proposed Follow-up and Monitoring	
No longer required following decommissioning	
Note – As residual environmental effect is not significant, a description of Likelihood of Occurrence is Not Applicable	

9.2.7 Accidental Events

Accidental events and malfunctions for this Project could result in a change to habitat and/or mortality for wildlife. Provided that the effects management measures, as described in Sections 3.3.4 and 3.7, are adhered to, the risk of an accidental event and the extent of its influence would be minimized. The most probable of accidental events would be that of a forest fire related to Project activities or a hazardous material spill. Fire prevention and response measures will be in place throughout the Project. The geographic extent of a forest fire could extend beyond the site (within the Assessment Area), but is unlikely to occur also due to the presence and implementation of Project-specific Environmental Protection Plan. Depending on the time of year and extent of a forest fire, the environmental effect could be significant.

A hazardous material spill would be confined to the site and would not be expected to measurably interact (if at all) with wildlife. This event would be considered not likely to occur and would result in no measurable change to baseline conditions. The adverse environmental effect would be reversible and not significant.

9.2.8 Cumulative Environmental Effects

The boundaries for cumulative environmental effects assessment are the same temporal and spatial boundaries for caribou as defined above.

Other projects for this area include the construction of Alderon Iron Ore Corp's proposed Kami Iron Ore Mine, Elross Lake Iron Ore Mine, the Bloom Lake Railway, the operation of LIM's existing mine at the James and Redmond properties and beneficiation operations at Silver Yards, and exploration at LIM's remaining properties in the region.

The area of physical disturbance associated with the Project is approximately 2km^2, approximately one percent of the Assessment Area (160km^2). Each of the other projects have been or will be subject to the same scrutiny, regulatory environment and codes of best practice as LIM and therefore will reduce their respective effects as much as possible. These activities would be continuous, and persist over several generations. Based on the extensive area of undisturbed wildlife habitat in Labrador west as a whole, it is expected that the development of the Houston deposits within the context of other regional activities would not likely affect population levels of wildlife species at the population level. These effects are considered reversible and not significant (Table 9.11).

Table 9.11 Summary of Residual Environmental Effects for Other Wildlife: Cumulative Environmental Effects

Proposed Mitigation	
Existing and potential future projects would be subject to applicable federal and provincial regulations	
Significance Determination	**Other Wildlife**
Geographic extent	Assessment Area
Frequency of occurrence	Continuous (throughout Project)
Duration of effect	Over several generations
Magnitude of effect	Low
Reversibility	Reversible
Significance	**Not Significant**
Confidence	High
Likelihood of occurrence	Not Applicable
Proposed Follow-up and Monitoring	
See Section 9.2.9	
Note – As residual environmental effect is not significant, a description of Likelihood of Occurrence is Not Applicable	

9.2.9 Follow-up and Monitoring

Follow-up and monitoring is not required for Other Wildlife because the proposed mitigation measures have been shown to be effective for similar projects.

9.3 Employment and Business

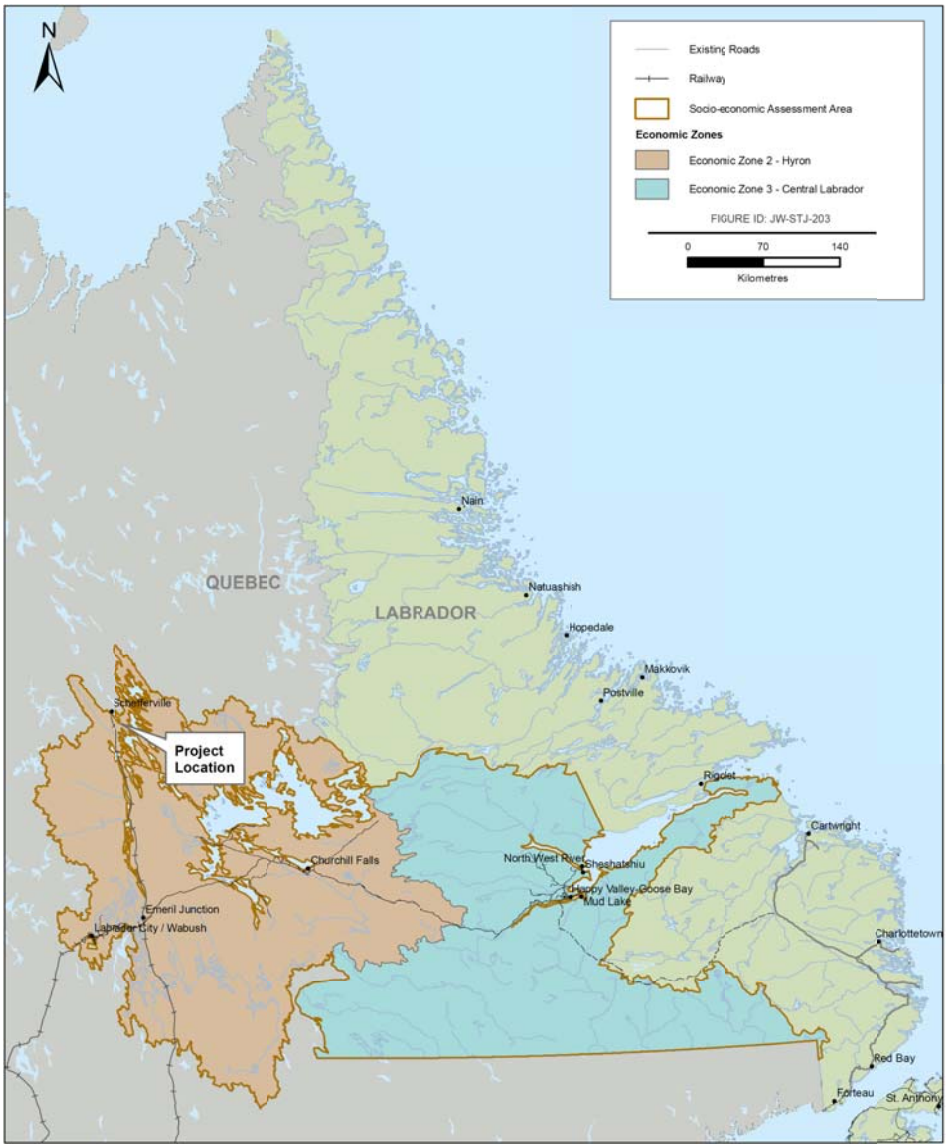
Employment and business was chosen as a VEC based on public concern that economic benefits accrue to local communities, Labrador and the Province. This includes benefits to the population and economy as a whole, and to such under-represented groups as the Aboriginal groups in the region and women. The effects on employment and business have been assessed on other recent projects including the Schefferville Area Mine EIS for the James and Redmond properties.

9.3.1 Environmental Assessment Boundaries

The Province compiles statistical data based on defined economic development zones. While all Project activity will occur in Labrador West, the baseline conditions in central Labrador and parts of Quebec must be considered because Project labour, goods, and services are going to be drawn from these areas. Therefore the Assessment Area for Employment and Business is

defined as the Hyron (Labrador West) and Central Labrador (Upper Lake Melville) Economic Zones (Figure 9-3).

Figure 9-3 Socio-economic Assessment Area



9.3.2 Potential Project-VEC Interactions

Issues relating to employment and business were recorded during stakeholder consultation sessions and public meetings held for the Schefferville Area Mine EIS. These include:

- The creation of employment for residents of the Province, including Labradorians, Aboriginal groups, and women;
- Training requirements associated with Project employment, in support of the above employment objective;

- The creation of business opportunities for Newfoundland and Labrador companies, and especially those located in Labrador; and
- Inflationary effects on the costs of labour, goods and services.

It is anticipated these issues will also apply to this Project.

The potential interactions between Employment and Business and the Project will be limited to employment and expenditures. These interactions during construction and operations comprise the scope of the assessment for this VEC (Table 9.12).

Table 9.12 Potential Project-VEC Interactions for Employment and Business

Project Activities and Physical Works	Environmental Effect
	Employment and Business
Construction (Project activities in 2009)	
Site Preparation (grubbing, clearing, excavating)	
Haul and Service Road and Rail Siding Construction	
Employment and Expenditures	X
Operation (Project activities starting in 2010)	
Iron Ore Extraction (excavation – mechanical, blasting)	
Iron Ore Beneficiation	
Stormwater Management	
Transportation (on-site trucking, hauling and rail transportation)	
Operations (on-site power generation, solid waste, grey water, human presence)	
Employment and Expenditures	X
Decommissioning	
Removal of Facilities and Equipment	
Site Reclamation (grading, re-vegetation)	

There will be direct and indirect employment and business impacts resulting from, first, the construction of the Project and, second, from its operation. These will include the employment of, and income to, those working directly on the Project, indirect employment and income impacts to workers providing goods and services to the Project, and induced impacts, which are generated when those working directly and indirectly on the Project spend their incomes in the economy. These Project and Project-related expenditures have the potential to have inflationary effects.

9.3.3 Residual Environmental Effects Significance Criteria

Residual environmental effects are those which are predicted to affect the local labour market and business community once mitigation measures have been applied. Predictions are described according to:

- Geographic extent (i.e., Assessment Area, Labrador, the Province);
- Frequency of occurrence (i.e., once, infrequently, continuous, not likely to occur);
- Duration (i.e., short term - less than two years, medium term - two to ten years, long term - more than ten years);

- Magnitude (i.e., low – no measurable change relative to baseline conditions, moderate – measurable change that does not cause inflationary effects in the cost of labour and goods and services throughout the Assessment Area, high – change that causes inflationary effects in the cost of labour and goods and services throughout the Assessment Area and beyond);
- Reversibility (i.e., reversible or irreversible);
- Confidence (i.e., low or high confidence regarding the significance prediction); and
- Likelihood (i.e., significant effect is likely or unlikely).

A significant adverse residual effect on Employment and Business will result if the Project causes substantial decreases in income, level of employment and business access over the life of the Project.

9.3.4 Effects Management

The effects management for Employment and Business will be achieved primarily through the Houston Project Benefits Policy and the related Houston Benefits Plan initiatives. These initiatives include a commute work system, a Project Women's Employment Plan, and IBAs and other agreements with local Aboriginal groups. These are discussed in further detail in Section 9.3.5.

9.3.5 Effects Assessment

9.3.5.1 Construction

Direct Impacts

There will be substantial short-term employment benefits during the construction phase of the Project. This will involve a total of approximately 14 workers employed over the three-month construction period. The direct construction phase employment is described, by NOC Code, in Table 3.1. LIM will fill all positions not filled locally through a commute system. Commute arrangements include air and rail from Happy Valley-Goose Bay, Wabush and Labrador City, and elsewhere as appropriate. Workers who are required to commute to the Project site from outside the Schefferville area will be housed on-site at the existing Bean Lake accommodations complex.

Employment of workers, including women, will be promoted through the various agreements that LIM has entered into with the affected communities.

LIM will continue to liaise with the College of the North Atlantic to investigate training for local residents for construction employment. However, it is recognized that the opportunities for training specifically for employment during construction of the Houston Mine Project are limited given the small number of positions, short duration of employment, and short time period before construction begins.

Project construction will be completed in advance of the construction labour requirements of other proposed Labrador projects such as the Lower Churchill Hydroelectric Generation Project

(peak employment of 1,700, construction scheduled to begin in 2012) and will not likely compete with them for labour. A discussion of other projects planned for Western Labrador is included in the assessment of cumulative effects. The Project will also provide workers with an opportunity to further develop their skills and employment experience, thereby assisting in the development of the labour force for subsequent projects.

It is anticipated that a number of the Project-specific engineering, design and specialized Project management positions will be filled from outside the Province. Targets and initiatives with respect to Project employment are discussed in the Houston NL Benefits Plan and Women's Employment Plan.

Indirect Impacts

Local supply and service contracts will be maximized through the LIM Houston Benefits Policy and Plan. This will build on, and is consistent with, LIM's past performance of delivering local benefits. For example, the following contracts have been awarded to Newfoundland and Labrador companies in the past:

- SNC-Innu conducted an engineering study on the Project;
- Cartwright Drilling carried out an exploration drilling program in 2006;
- RSM Engineering carried out a bulk-sampling, crushing, and screening program in 2008;
- Jacques Whitford (now Stantec) prepared the environmental assessment, EPPs, Mine Development Plan, and Rehab and Closure Plan for the Schefferville Mine Project.
- Stassinu Stantec has conducted baseline surveys, Caribou and Avifauna Management Plans, and has also been retained to support the preparation of this enhanced registration;
- Kavanaugh and Associates was retained to evaluate haul road conceptual design and routing options;
- Davidson Drilling was retained as the hydrogeological drilling contractor;
- Innu Municipal was awarded the contract for mining and operations at the Schefferville Area Iron Ore Mines; and,
- N.E. Parrot Surveys to execute legal land surveys.

In addition, preliminary discussions have been conducted with other Newfoundland and Labrador-based companies and this work may be awarded at the appropriate phase of the Project.

The construction of the mine will require procurement of a wide range of goods and services, the majority of which are available In the Province:

- earthworks;
- site construction;
- mine preliminary works and overburden stripping;

- fuel and refuelling services;
- land surveying;
- blasting;
- road construction; and
- independent environmental monitoring.

Induced Impacts

The use of a commute system will deliver Project-related economic benefits to those parts of the Province in which workers and their families live. Similarly, expenditures by employees of the companies contracted by LIM will benefit the Province and the region and communities in which they live.

9.3.5.2 Operation

Direct Impacts

The Project will also help build the capacity of, and support, the local labour market and businesses during operations. For example, the operating plan of the mine will generate a smaller level of longer-term seasonal employment benefits to Labrador. In total, the mine will directly require 32 positions (Table 3.2), mostly for approximately eight months per year.

Given the nature of the occupations involved, the lead time available to train local people for them, and the LIM Houston Benefits Policy, the majority of the mine operation workers will be hired from Labrador. The Houston Benefits Policy (see Section 2.2.3), which will apply to LIM and Project contractors, will give employment preference to, first, qualified residents of Labrador, and then qualified residents of the Province as a whole subject to IBA's and agreements in place. Specific targets for operations employment and with respect to women's employment will be provided in the Benefits Plan and Women's Employment Plan.

LIM will continue to liaise with the College of the North Atlantic to investigate training opportunities for local residents for these positions. However, it is recognized that there are few senior and experienced mine operation personnel in Labrador who are unemployed or under-employed, and these positions may have to be filled from elsewhere.

While some workers will be hired from, and live in, Schefferville, some of the Project operations workers and their families will be hired from Labrador and contribute to its economy and community life. As during construction, these Labrador residents may commute from Happy Valley-Goose Bay, Wabush, and Labrador City.

Indirect Impacts

Mine operations will also require a range of goods and services, the majority of which are available locally. For example, a review of local capabilities indicates that the following will be available on a commercial basis from within western Labrador:

- Fuel and refuelling services;
- Welding and machining goods and services;
- Vehicle rental, rail passenger and air transportation services;
- Maintenance operations;
- Hardware stores miscellaneous tools and small equipment;
- Heavy equipment rental (e.g. Cranes, excavators and loaders);
- Local contracting services (e.g. Construction, electrical and mechanical); and
- Power supply.

Some other goods and services will be available from elsewhere in the Province.

9.3.5.3 Decommissioning

The amount of employment and business opportunities associated with decommissioning of the Project will depend upon the specific techniques employed, but will likely involve grading, material transportation, monitoring and other activities that Labradorians and Labrador-based companies are well qualified to undertake. These opportunities will only be better defined closer to decommissioning.

9.3.5.4 Accidental Events

Any cessation of Project activity as a result of accidental events or malfunctions will have a negative effect on Project-related employment and business. However, such cessations would be anticipated to be short-term and resulting adverse socio-economic effects would not likely be significant.

9.3.5.5 Summary of Effects on Employment and Business

The Project will make a substantial contribution to the economic development of the Province and, in particular, Labrador, through:

- Providing local employment and incomes during construction and operations;
- Providing local business during construction and employment;
- Providing an important opportunity for participation by the Innu Nation of Labrador and women in the provision of services, businesses, employment and training;
- Increasing the capacity and skills of local labour force and businesses, in advance of Lower Churchill, proposed IOC expansion, Alderon's recently registered Kami project, and other projects; and

- Facilitating further mining development by putting in place these new labour and business capabilities, thereby making existing and new Labrador projects more competitive globally.

The residual effects on Employment and Business are summarized in Table 9.13. Given that the numbers of workers and expenditures are not likely to result in inflationary effects within the Assessment Area (low magnitude), and that the Project will increase the labour and business capacity within the Assessment Area, providing employment for more than 10 years, the adverse residual effects associated with the Project are not significant.

Table 9.13 Summary of Residual Environmental Effects for Employment and Business: All Project Phases

Proposed Mitigation	
• LIM and its contractors will include a copy of the LIM Houston Benefits Plan in all Project calls for expressions of interest, requests for proposals, and contracts; • LIM will liaise with provincial, and especially Labrador, educational institutions and human resources agencies so that they are informed about employment requirements and plans; • LIM will liaise with provincial, and especially Labrador, business groups and economic development agencies so that they are informed about goods and services requirements and plans; • LIM will implement the provisions of its Women's Employment Plan	
Significance Determination	**Employment and Business**
Geographic extent	Assessment Area
Frequency of occurrence	Continuous
Duration of effect	Long-term
Magnitude of effect	Low
Reversibility	Reversible
Significance	**Not Significant**
Confidence	High
Likelihood of occurrence	Not Applicable
Proposed Follow-up and Monitoring	
• LIM will monitor the Project labour force to establish the percentage of positions held by residents of • the Province; • LIM will monitor the award of Project contracts to establish the percentage of the work, by value, awarded to companies based in the Province; • LIM will, on an annual basis, compile the above monitoring data, assess them relative to Project benefits targets and, if necessary, review and revise its benefits approach, initiatives and targets; and • Make the above annual compilation of benefits data available to government departments and agencies, upon request	
Note – As residual environmental effect is not significant, a description of Likelihood of Occurrence is Not Applicable	

9.3.6 Cumulative Environmental Effects

Existing and future projects for this area include the construction of Alderon Iron Ore Corp's proposed Kami Iron Ore Mine, Elross Lake Iron Ore Mine, the Bloom Lake Railway, the operation of LIM's existing mine at the James and Redmond properties and beneficiation operations at Silver Yards, and exploration at LIM's remaining properties in the region.As described above, the Project will employ approximately 14 workers for a construction period of three months. The Elross Lake Project could employ up to 150 people over a 15-month

construction phase. This project received release from the provincial EA process in January 2011.

The numbers employed in operations are smaller than construction for the other projects. It has been indicated that during the operation of the three-year Phase 1 of Elross Lake, 150 people will be employed (New Millennium 2008). The operation of the Bloom Lake Railway project began in 2009 and employs 12 full-time positions (Consolidated Thompson 2008). LIM's operating mines, currently require 140 positions including direct employees and contractors (LIM 2011). In conjunction with the Houston Project, this results in a total operations employment of approximately 140 + 32jobs. This should make a valuable contribution to the economy through continuity of employment while not resulting in labour shortages or wage inflation.

The cumulative business effects of the indicated projects will be important to the contracting companies involved, but not place any undue demands resulting in wage and price inflation in western Labrador. Given the duration of the operations phases, activity on these projects may also result in some expansion of business capabilities. Therefore, the adverse residual effects are not significant (Table 9.14).

Table 9.14 Summary of Residual Environmental Effects for Employment and Business: Cumulative Effects, All Phases

Proposed Mitigation	
Existing projects would be subject to applicable federal and provincial regulations.	
Significance Determination	**Employment and Business**
Geographic extent	Assessment Area
Frequency of occurrence	Continuous
Duration of effect	Long-term
Magnitude of effect	Low
Reversibility	Reversible
Significance	**Not Significant**
Confidence	High
Likelihood of occurrence	Not Applicable
Proposed Follow-up and Monitoring	
See Table 9.13	
Note – As residual environmental effect is not significant, a description of Likelihood of Occurrence is Not Applicable	

9.3.7 Follow-up and Monitoring

LIM will monitor Project employment and expenditures, including the proportions of work going to Labrador and the Innu of Labrador. This information will be compiled on an annual basis and made available to government upon request.

Provisions respecting the employment of women are specified in the Women's Employment Plan.

9.4 Communities

The communities most likely to be affected by the Project are the primary places of residence of the Project labour force. This includes: Matimekush-Lac John, Kawawachikamach, Schefferville,

Labrador West, and Upper Lake Melville. Labrador West is also the home of many contracting companies providing goods and services to the Project. This assessment of the effects of the Project on Communities is focused on physical infrastructure and social services. LIM has an office in Happy Valley-Goose Bay and in Labrador West. In addition, the Goose Bay and Wabush Airports, and the Tshiuetin Rail Transportation (TSH) railroad from Emeril Junction will be used in the provision of some labour and supplies.

9.4.1 Environmental Assessment Boundaries

While all Project activity will occur in Labrador West, the baseline conditions in central Labrador and parts of Quebec must be considered because the Project and the people it employs may make use of social and physical infrastructure in these areas. The Assessment Area for Communities is defined as the Hyron (Labrador West) and Central Labrador (Upper Lake Melville) Economic Zones (Figure 9-3).

9.4.1.1 Potential Project-VEC Interactions

Issues relating to Communities include provision of health services and commute/housing arrangements for workers. The potential interactions between Communities and the Project will be limited to employment and expenditures. These interactions during construction and operations comprise the scope of the assessment for this VEC (Table 9.15).

Table 9.15 Potential Project- VEC Interactions for Communities

Project Activities and Physical Works	Environmental Effect
	Communities
Construction (Project activities in 2009)	
Site Preparation (grubbing, clearing, excavating)	
Haul and Service Road and Rail Siding Construction	
Employment and Expenditures	X
Operation (Project activities starting in 2010)	
Iron Ore Extraction (excavation – mechanical, blasting)	
Iron Ore Beneficiation	
Stormwater Management	
Transportation (on-site trucking, hauling, rail transportation)	
Operations (on-site power generation, solid waste, grey water, human presence)	
Employment and Expenditures	X
Decommissioning	
Removal of Facilities and Equipment	
Site Reclamation (grading, re-vegetation)	

9.4.2 Residual Environmental Effects Significance Criteria

Residual environmental effects are those which are predicted to affect Communities (social and physical infrastructure) once mitigation or management measures have been applied. Predictions are described according to:

- Geographic extent (i.e., Assessment Area, Labrador, the Province);
- Frequency of occurrence (i.e., once, infrequently, continuous, not likely to occur);

- Duration (i.e., short term - less than two years, medium term - two to ten years, long term - more than ten years);
- Magnitude (i.e., low – no measurable change relative to baseline conditions, moderate – measurable change that does not result in capacity exceedances in physical infrastructure or provision of social services throughout the Assessment Area, high – change that results in capacity exceedances in the physical infrastructure or provision of social services throughout the Assessment Area and beyond);
- Reversibility (i.e., reversible or irreversible);
- Confidence (i.e., low or high confidence regarding the significance prediction); and
- Likelihood (i.e., significant effect is likely or unlikely).

A significant adverse residual effect on Communities will result if the Project causes substantial increases in demand for social services and demand on physical infrastructure over the life of the Project.

9.4.3 Effects Management

Adverse effects will be managed through limiting worker interaction with the local communities. A commute system will be implemented to minimize the amount of time that workers will spend in the local communities while en route to the Project site. This system will also include accommodations of workers at LIM's existing Bean Lake Accommodations Camp. To minimize impacts on the local healthcare services in Schefferville and Labrador West communities, any minor injuries or health issues will be addressed through provision of first-aid at the worksite. If additional care is required, workers will use the health clinic in Schefferville. If specialized care is required, workers will be transported to Labrador City.

9.4.4 Effects Assessment

9.4.4.1 Construction

The construction of the Project will have a negligible short-term direct effect on the physical infrastructure or provision of social services by communities of Labrador West and Upper Lake Melville. It will only employ approximately 14 workers for three months, and some of these workers will already be residents of these communities when hired. As a result, it is very unlikely that any workers will move to these communities as a result of Project construction, and hence unlikely that there will be a longterm effect on public or community health services, or other community social or physical infrastructure or services, as a result of Project-related population increase.

The commute system for construction workers will be designed to transport construction workers to and from their communities as efficiently as possible. As a result, there will be few occasions when commuting workers will spend more than a short period in Labrador West and Upper Lake Melville communities while en route to or from the workplace. There is a very small likelihood of negative interactions between workers and local residents that might place longterm demands on policing or healthcare services and infrastructure.

Most workers will continue to receive general healthcare in their home communities. Any minor injuries or health problems will be addressed through the provision of first-aid at the worksite. If additional care is required, workers will use the health clinic in Schefferville, Quebec. If more specialized care is needed, workers will be transported to the Captain William Jackman Memorial Hospital in Labrador City. However, the effects of the construction phase on local healthcare services and infrastructure will also be minor because the labour force will be small, the workers will mostly be in the prime of life, and accidents will be minimized through rigorous enforcement of LIM's occupational health and safety standards. As a result, no substantial new Project-related demand on health services and infrastructure is anticipated.

9.4.4.2 Operation

The Project will also help build the capacity of, and support, local labour market and businesses during operations. In total, the mine will directly require 32 positions (Table 3.2), mostly for approximately eight months per year.

As with the construction phase, the commute system for non-local workers will be designed to minimize the possibility of negative interactions between workers and local residents that might place demands on policing or healthcare services and infrastructure. Furthermore, most workers will continue to receive general healthcare in their home communities, minor injuries or health problems will be addressed through worksite first-aid, and if additional care is required, workers will utilize the health clinic in Shefferville. Only when more specialized care is needed, workers will be transported to the Captain William Jackman Memorial Hospital in Labrador City, but the workers will again mostly be in the prime of life, and accidents will be minimized through rigorous enforcement of LIM's occupational health and safety standards. As a result, no substantial new Project-related demand on health services and infrastructure is anticipated.

9.4.4.3 Decommissioning

The employment associated with decommissioning will depend upon the specific techniques employed, but Labradorians are likely to be well qualified for this work. However, the scale of such employment will likely be smaller and of shorter duration than operations, and hence is not expected to result in substantial new Project-related demand on health, or other community, social, or physical services and infrastructure.

9.4.4.4 Accidental Events

All Labrador communities are at such a distance from the Project site that they will not be directly affected by any accidental effects and malfunctions, and therefore the adverse effects are not likely significant.

9.4.5 Summary of Effects on Communities

Given the predicted low level of increased demand on social and physical infrastructure, including health care, and use of a commute system and accommodations camp for non-local workers, the adverse effects on Communities associated with the Project are considered

reversible and not significant. The residual environmental effects of the Project on communities are summarized in Table 9.16.

Table 9.16 Summary of Residual Environmental Effects for Communities: All Project Phases

Proposed Mitigation	
• Use a commute system and camp accommodations for Project workers • Minimize time that commuting workers spend in communities while en route • Rigorous occupational health and safety provisions and implementation	
Significance Determination	**Employment and Business**
Geographic extent	Assessment Area
Frequency of occurrence	Continuous
Duration of effect	Long-term
Magnitude of effect	Low
Reversibility	Reversible
Significance	**Not Significant**
Confidence	High
Likelihood of occurrence	Not Applicable
Proposed Follow-up and Monitoring	
The monitoring of demands on community services and infrastructure is the responsibility of the relevant government departments and agencies, as part of their normal planning processes. LIM will assist by liaising with them, as requested, and through the timely provision of information about Project activities and plans.	
Note – As residual environmental effect is not significant, a description of Likelihood of Occurrence is Not Applicable	

9.4.6 Cumulative Environmental Effects

Likely future projects in this area include the construction of Alderon Iron Ore Corp's proposed Kami Iron Ore Mine, Elross Lake Iron Ore Mine, the Bloom Lake Railway, the operation of LIM's existing mine at the James and Redmond properties and beneficiation operations at Silver Yards, and exploration at LIM's remaining properties in the region. Given the scale of these projects, it is not expected that they will have or are having significant effects on healthcare or other community services or infrastructure in Labrador West or Upper Lake Melville (Table 9.17).

Table 9.17 Summary of Residual Environmental Effects for Employment and Business: Cumulative Effects, All Phases

Proposed Mitigation	
Existing projects would be subject to applicable federal and provincial regulations.	
Significance Determination	**Employment and Business**
Geographic extent	Assessment Area
Frequency of occurrence	Continuous
Duration of effect	Long-term
Magnitude of effect	Low
Reversibility	Reversible
Significance	**Not Significant**
Confidence	High
Likelihood of occurrence	Not Applicable
Proposed Follow-up and Monitoring	
The monitoring of demands on community services and infrastructure is the responsibility of the relevant government departments and agencies, as part of their normal planning processes. LIM will assist by liasing with them, as requested, and through the timely provision of information about Project activities and plans	
Note – As residual environmental effect is not significant, description of Confidence and Likelihood of Occurrence is Not Applicable	

9.4.7 Follow-up and Monitoring

The monitoring of demands on community services and infrastructure is the responsibility of the relevant government departments and agencies, as part of their normal planning processes. LIM will assist by liaising with them, as requested, and through the timely provision of information about Project activity and plans.

10.0 CONCLUSION

Based on the environmental effects assessment undertaken in support of the Project Registration document, considering the mitigation and effects management measures, overall Project construction, operation and decommissioning are not likely to result in significant adverse environmental effects on any of the VECs identified. The potential residual effects of accidental events will likely not be significant and are unlikely to occur. No significant adverse cumulative effects have been identified for the Project.

However, the Project will result in socio-economic benefits. It will continue the considerable direct and indirect employment and business opportunities that LIM has already contributed to the economy of the local region as well as that of the Provinces as a whole.

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APPENDIX A

Schefferville Area Iron Ore Mine EPP

Schefferville Area Iron Ore Project

Construction and Operation Activities

FINAL

Environmental Protection Plan

Labrador Iron Mines
220 Bay Street
Suite 700, Toronto, ON M5J 2W4

14 June 2010

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1.0 INTRODUCTION

The Schefferville Area Iron Ore Project (the Project) is being developed by Labrador Iron Mines Limited ("LIM"), which is a wholly owned subsidiary of Labrador Iron Mines Holdings Limited, a public company listed on the Toronto Stock Exchange. This EPP has been prepared to address mine construction and operations activities; exploration and the construction and operation of the spur line have been addressed under separate cover.

The Project involves the development of the James and Redmond deposits and the ongoing exploration and evaluation of other mineral licenses in the area, including Houston, Knob Lake, Howse, Sawyer Lake, Astray Lake and Kivivik, which are all located in Labrador. James, Redmond, Houston and Knob Lake are located within 10 kilometres of the former Iron Ore Company of Canada (IOCC) rail yard (called Silver Yard), which is approximately three kilometres west of Schefferville, Québec. It is LIM's intention to initially mine and beneficiate the James and Redmond deposits, commencing in 2010.

In general, there is extensive land disturbance in the Project area resulting from past exploration and/or historical IOCC mining activities. Evidence of past exploration and mining activities include the presence of flooded abandoned pits, trenches, access roads, a former rail line railbed and stockpiles.

The proposed initial mine development area for the Project including the James and Redmond deposits has a resource base to provide for three to four years of production at a starting rate of between 1 and 2 million tonnes per year and increasing to up to 3 million tonnes per year by Year 4. Ongoing exploration is being conducted on the James and Redmond Properties, as well as LIM's other properties and, pending the positive results of the exploration programs for these areas and the confirmation of data, other adjacent deposits may proceed as satellite projects to the currently proposed operation and will provide for up to an estimated 20 years of continuous mine life.

Construction and operations activities, at LIM's Properties are the subject of this Environmental Protection Plan (EPP). The Project location is shown on Figure 1.1, and property locations are shown on Figure 1.2.

Figure 1.1 Project Location

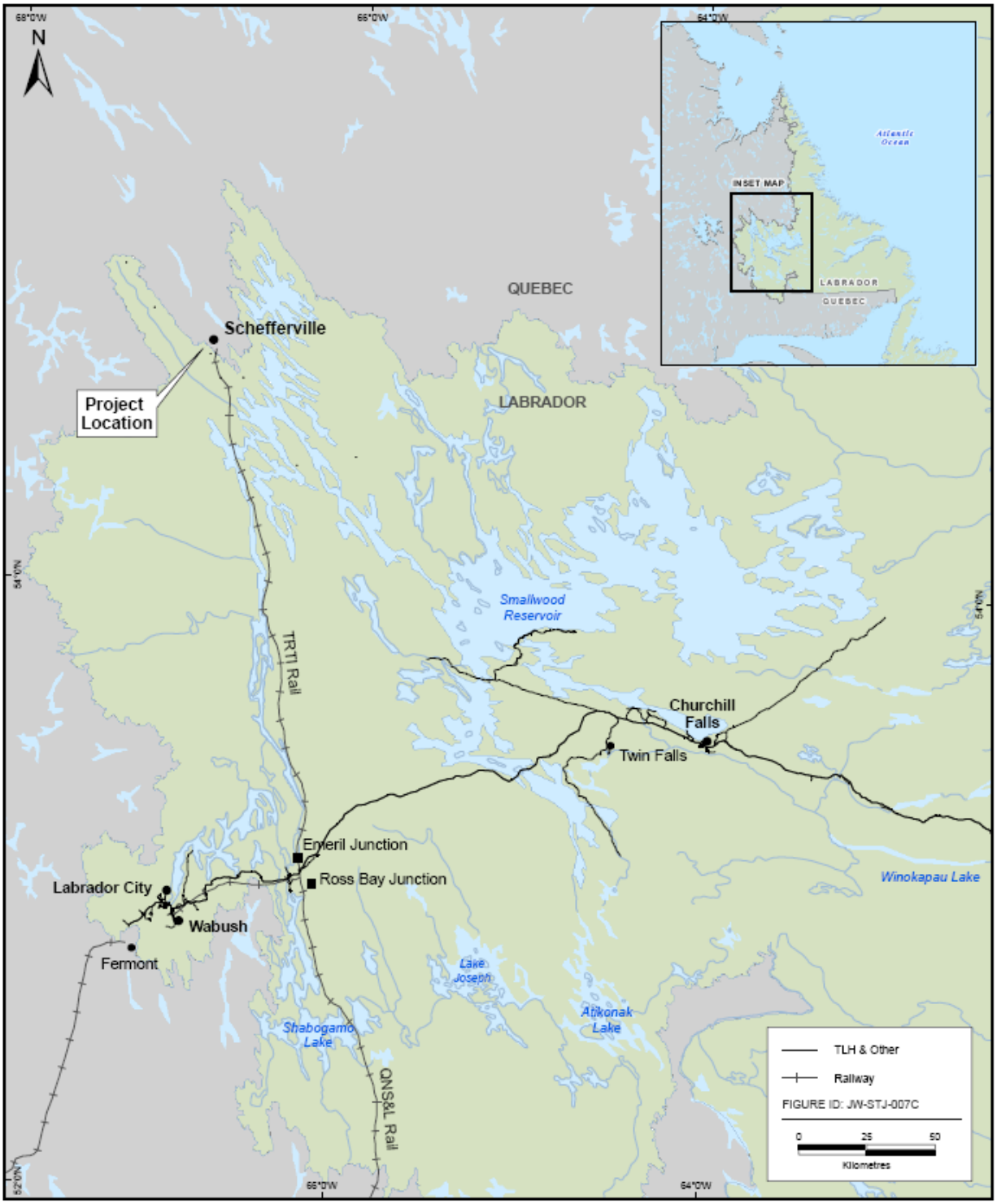
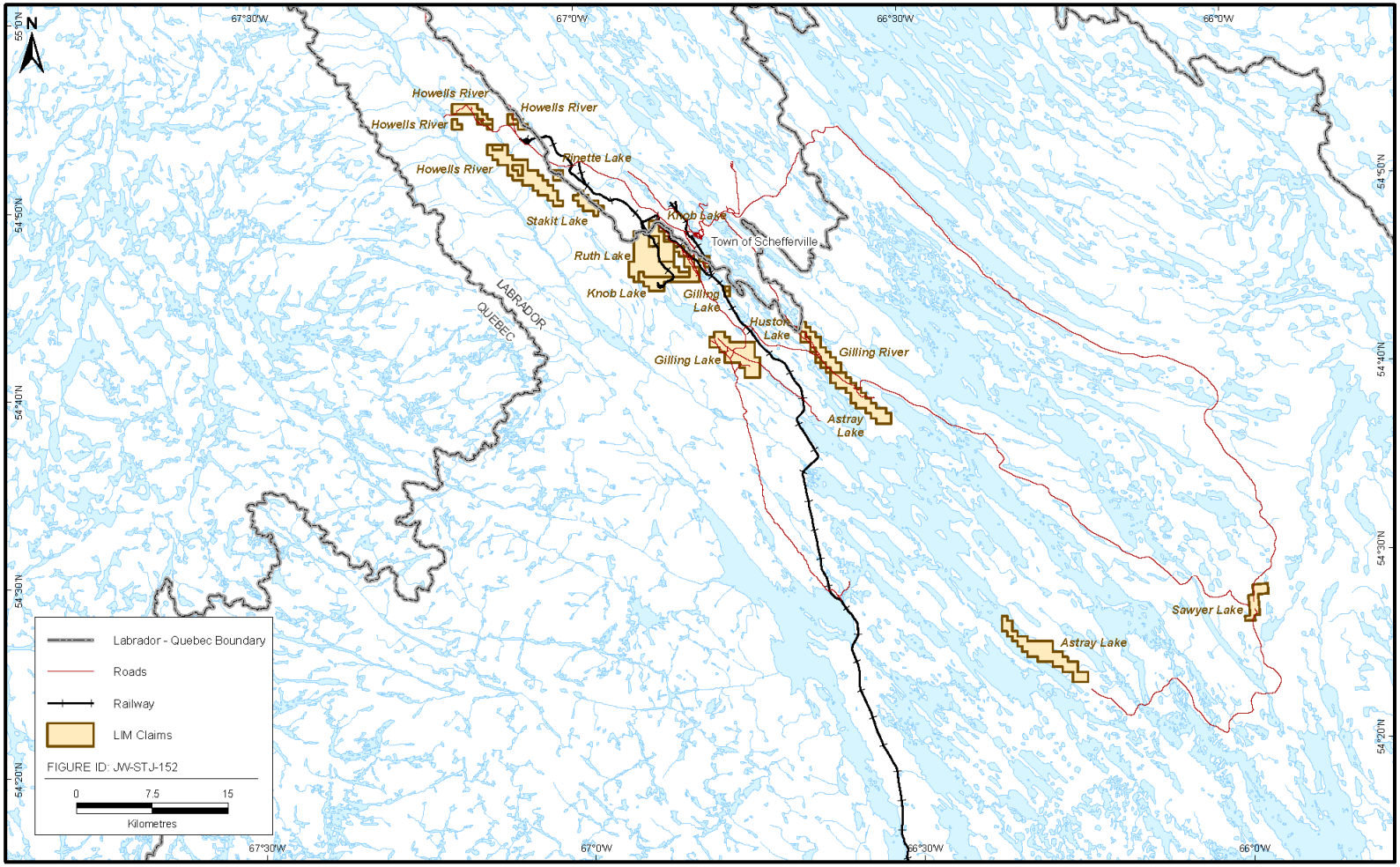


Figure 1.2 LIM Property Holdings



1.1 Purpose of the Environmental Protection Plan

This EPP outlines practical procedures required for all personnel (i.e., LIM employees, contractors and suppliers) to reduce or eliminate potential adverse environmental effects associated with the construction and operations work in Newfoundland and Labrador. The objectives of the EPP also include:

- confirm commitments to reduce environmental effects are met;
- document environmental concerns and appropriate protection measures;
- provide a reference document for personnel when planning and/or conducting specific activities;
- provide direction for accidental events;
- communicate changes in the program through the revision process;
- provide a reference to and instructions for LIM to understand applicable legal and other requirements;
- include a quick reference for both personnel and regulators to monitor compliance and recommend improvements; and
- provide direction at the corporate level for ensuring commitments made in policy statements are implemented and monitored.

Any deviation from the procedures and commitments outlined in the EPP must be discussed with, and approved by LIM.

1.2 Environmental Protection Plan Organization

This EPP has been developed for specific activities to be conducted in support of the construction and operations work carried out on LIM's Properties. It provides instructions for addressing both planned and unplanned activities/events associated with the construction and operations work. This EPP contains the following sections:

- **Section 1.0** introduces the EPP. It outlines the EPP purpose and organization, roles and responsibilities and environmental orientation.
- **Section 2.0** provides a description of the undertaking.
- **Section 3.0** lists the permits, approvals and authorizations that may be required for the undertaking, and provides an overview of compliance monitoring.
- **Section 4.0** describes environmental concerns and environmental protection procedures for planned construction and operations activities.
- **Section 5.0** outlines the contingency plans for potential unplanned and accidental events.
- **Section 6.0** describes procedures for revising the EPP.
- **Section 7.0** contains a list of key Project and regulatory contacts.
- **Section 8.0** lists references cited in the EPP, as well as a number of sources of further information.
- **Section 9.0** contains a signature page for employee and contractor sign-off.
- **Appendix A** is a list of abbreviations and acronyms.

- **Appendix B** is a Controlled Copy Distribution List.
- **Appendix C** is a Revision Request Form.
- **Appendix D** is a Revision History Log.
- **Appendix E** is a sample Site Check List Form.
- **Appendix F** is background information on caribou in western Labrador.

1.3 Roles and Responsibilities

LIM will:

- provide final approval for the EPP and any subsequent revisions;
- monitor and inspect the work being carried out; and
- liaise with relevant government agencies and community interest groups as required.

The designated LIM Vice President (VP) of Environment and Permitting will:

- distribute the EPP;
- review revision requests;
- conduct a review of the EPP on an as-needed basis;
- distribute revisions to controlled distribution representatives, identified in Appendix B (Controlled distribution representatives are LIM employees who will maintain copies of the EPP document); and
- maintain document control;

The designated LIM Labrador Site Manager will:

- be LIM's representative on-site responsible for environmental protection and will report any issues or developments related to environment to LIM's Vice President of Environment;
- hold an environmental orientation session for contractors and their personnel, and any other personnel to be involved in Schefferville area activities on an as-needed basis;
- confirm LIM workers and LIM contractors/sub-contractors and their staff onsite are familiar with the EPP and its procedures and maintain a master file of all EPP orientation efforts and signature sheets;
- implement the EPP onsite and confirm that all workers implement the EPP;
- confirm LIM workers and LIM contractors/sub-contractors in the field review revisions;
- communicate with LIM VP of Environment and Permitting about proposed work activities so that all applicable approvals, authorizations and permits can be obtained;
- monitor or designate a representative to monitor construction and operation activities for compliance with the EPP, and all regulatory requirements and commitments;
- report to LIM VP Environment and Permitting any incidents of environmental non-compliance; and
- in the event of an emergency, contact the appropriate reporting agency as indicated in the EPP immediately, as well as the LIM VP Environment and Permitting.

The contractors, subcontractors, LIM representatives, and site personnel will:

- familiarize themselves with the EPP and any revisions;
- sign that they have read, understood, and accept the conditions of the EPP prior to being approved to conduct work (see Signature Page in Section 9.0);
- implement the EPP commitments;
- confirm all personnel and subcontractors comply with the EPP, all requirements of the contract and with all applicable laws and regulations;
- maintain a training record (record of names and dates when training was administered including the signature page in Section 9.0 of the EPP) and provide updated files on a monthly basis to LIM's VP of Environment;
- maintain regular contact with the LIM VP Environment and Permitting, including, but not limited to:
    - immediately reporting concerns to the LIM Labrador Site Manager and/or LIM VP Environment and Permitting (LIM's Environment Team) of any aspect of the EPP; and
    - immediately reporting any spills or other event that may have an effect on the environment to LIM's Environment Team (Labrador Site Manager, VP Environment and Permitting) and the appropriate regulatory contacts (Environment Canada etc.);
- obtain all applicable approvals, authorizations and permits required to conduct the work and provide copies to the LIM Environment Team;
- implement any conditions outlined in approvals, authorizations and permits;
- carry out clean-up, reclamation or restorative measures as directed by the LIM Environment Team and/or appropriate government agency; and
- contribute feedback to the LIM Environmental Team any changes/comments they feel would improve the quality of the EPP.

1.4 Environmental Orientation

Through orientation and ongoing awareness training throughout the undertaking, LIM will confirm that all personnel are competent to do their jobs properly. Workers will understand their roles and responsibilities, as well as the potential environmental effects of the overall project and their specific work activities. All workers will receive an orientation from an immediate superior prior to the start of any new activity and thereafter on an as-needed basis. All new personnel arriving at the site during the construction and operations phases will also receive an orientation, to be given by the LIM Labrador Site Manager. The orientation will include a presentation on environmental protection procedures to be applied to all work. All necessary precautions will be taken during the work program to reduce the potential for spills. To achieve this, employees will receive orientation in spill response and reporting procedures and the **Environmental Emergencies 24-Hour Report Line** will be clearly posted in all work areas.

2.0 CONSTRUCTION AND OPERATIONS OVERVIEW

This EPP will cover the activities associated with the mine construction and operations including the extraction of iron ore by re-developing open pit mines at James North, James South, Redmond 2B and Redmond 5 deposits, beneficiation at the Silver Yard area and operation of a 4.4 km rail spur between the Silver Yard area and Schefferville.

The Project will operate under current provincial and federal regulations, environmental protection standards, and industry best practices.

2.1 Construction of the Schefferville Area Iron Ore Mine (James and Redmond Properties)

Construction of the Schefferville Area Iron Ore Mine is scheduled to be completed in 2010 and includes:

- Site development, including:
  - Clearing vegetation and grubbing overburden
  - Storage/disposal of overburden, soil, and related debris
  - Vehicle movement including heavy equipment
  - Upgrading of site roads and limited new road construction
  - Site preparation for semi-mobile building installation at Silver Yard and the work camp
  - Building installation, erection, and placement at Silver Yard and the work camp
  - Generators
  - Biodisk
  - Power-line and switchyard installation
  - Installation of water lines and pipes
  - Transportation of workers to and from site
  - Concrete production and placement
  - Transportation and storage of fuel
- Work camp
- Water supply
- Surface water management
- Sewage treatment
- Waste rock and overburden management

Re-establishment of the 4.4 km spur line is addressed in an activity-specific EPP. Operations of the spur line will also be addressed under separate cover in an activity specific EPP.

2.2 Operation of the Schefferville Area Iron Ore Mine (James and Redmond Properties)

The life of the first phase of the Project (James and Redmond) is estimated to be five years. Major features of Project operations are shown in Figures 2.1, 2.2, 2.3, 2.4, 2.5, and 2.6 and include:

- Mining to be carried out using conventional open pit mining methods, employing drilling and blasting operations;
- Ore will be beneficiated by crushing, washing and screening at the Silver Yard area. No chemicals will be used in the beneficiation process. The beneficiation building will house a primary crusher, tumbling scrubber, secondary crusher, primary screening equipment, secondary screening equipment, filtration equipment, and various chutes, conveyors, and pumps. The beneficiation plant will be designed to process 10,000 tonnes per day (tpd) of iron ore, however during operation, the initial processing rate will be 3,000 tpd per pit over a period of approximately 212 days per year;
- Other buildings at the Silver Yard will include: site offices, laboratory, maintenance shed, and warehouse facilities;
- The camp will have approximately 70 single rooms with their own bathroom within two dormitories. The kitchen /living room area will be able to feed more than 100 people on a sequence. Two generators will be installed: a 450 KW primary generator and another one of 250 KW. Both will follow the noise level requirements for a camp. A biodisk system will be installed for sewage treatment and will be emptied every year with a “pumper truck” coming from Labrador City;
- Subsequent to the washing and screening process, reject fines will be pumped via pipeline to be deposited in Ruth Pit, a flooded historical open pit, which will act to remove suspended solids; and
- A 4.4 km spur line previously operated and abandoned will be re-established, and a siding track will be laid at the Silver Yard area. This spur line will facilitate transportation of processed ore to Schefferville and subsequent transportation to market.

Figure 2.1 Project Features

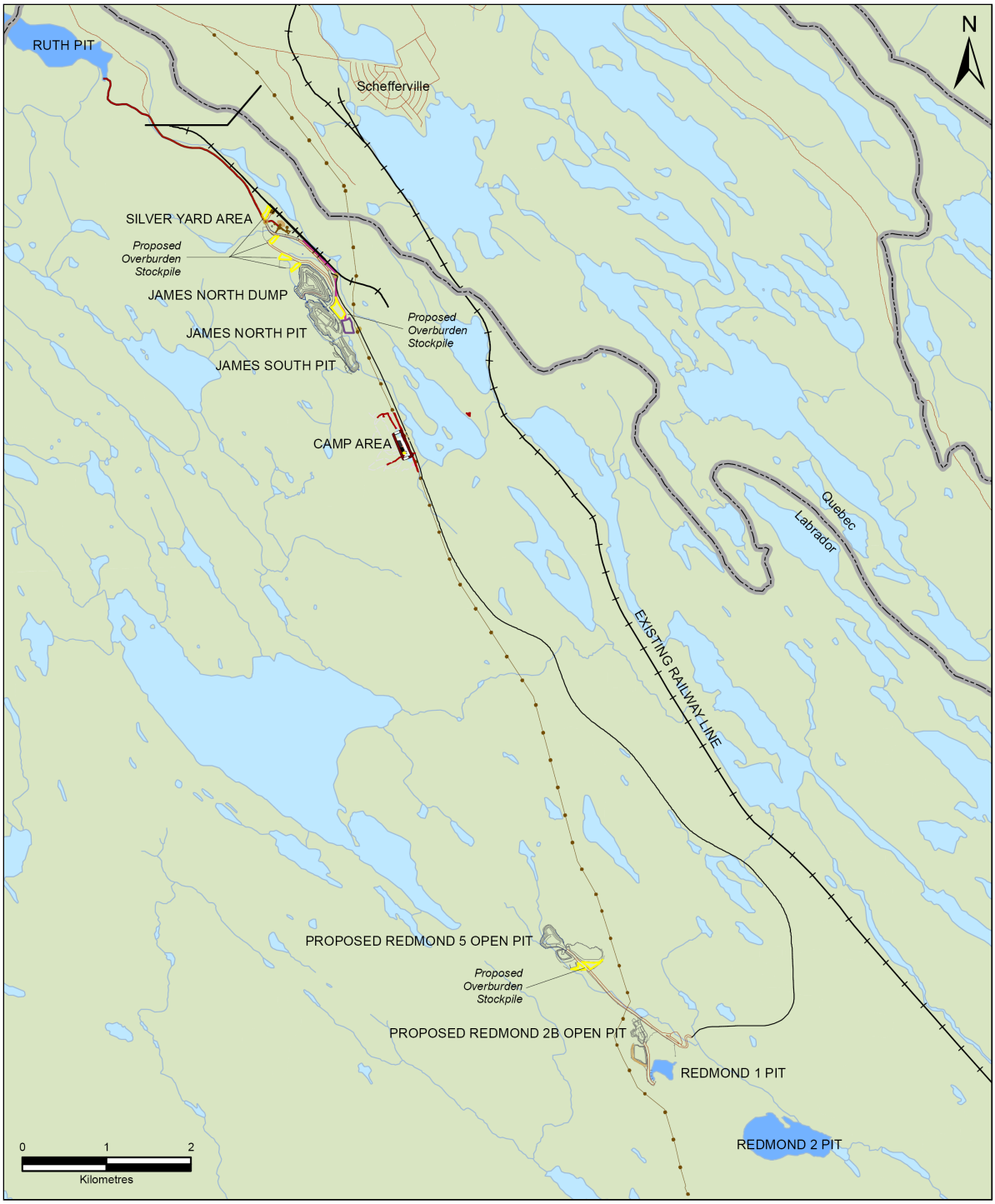


Figure 2.2 James and Silver Yard Infrastructure

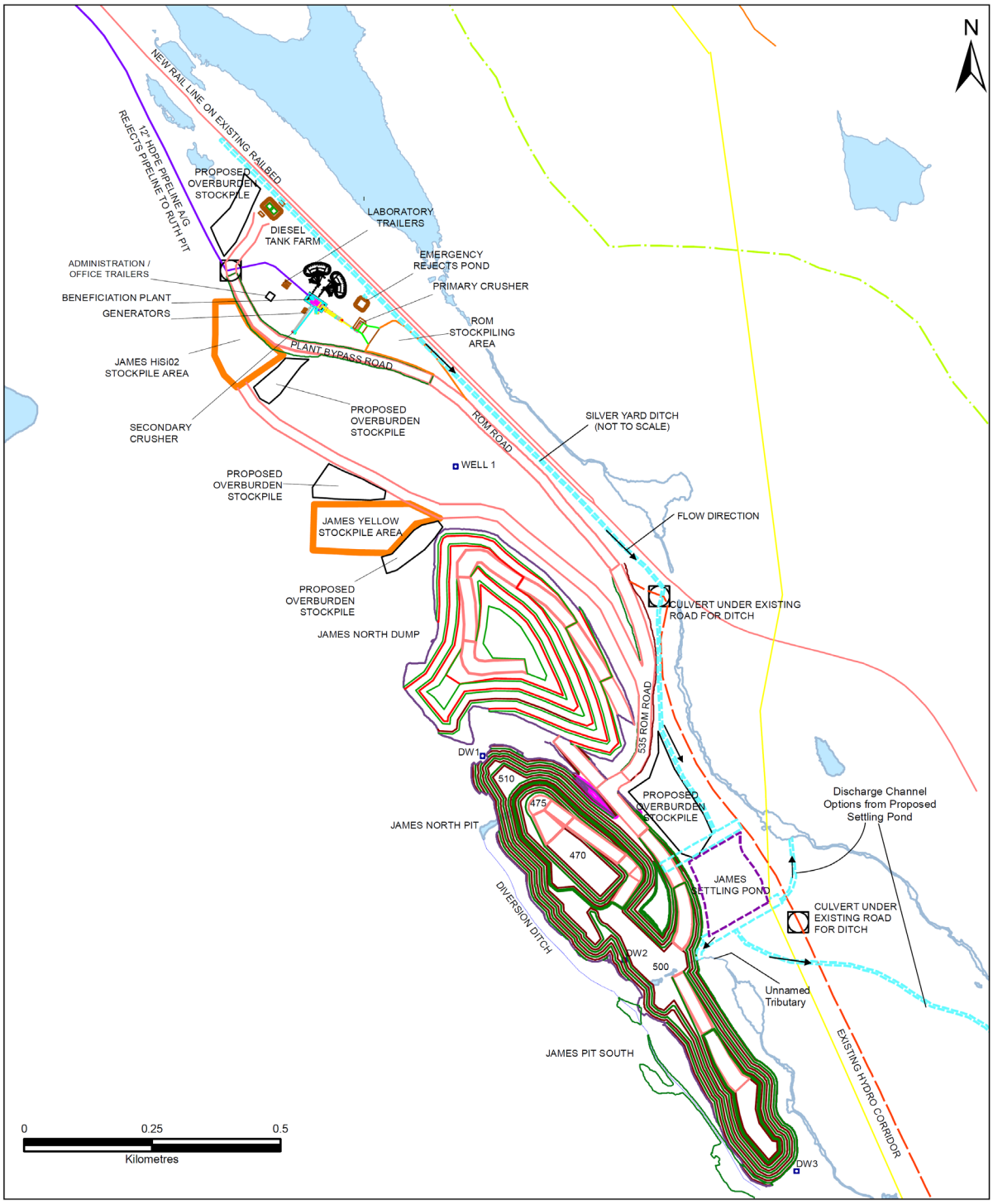


Figure 2.3 Silver Yard Features

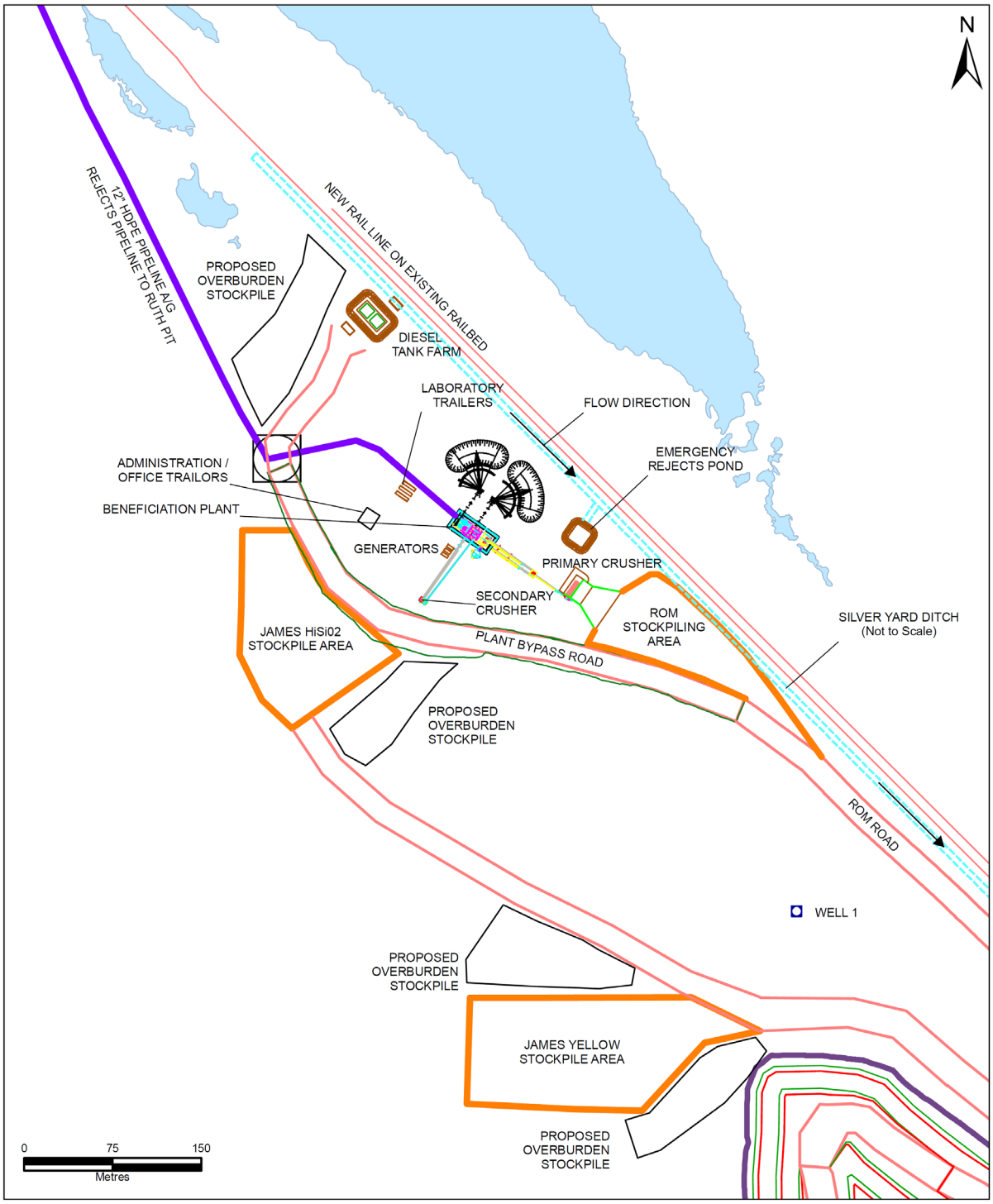


Figure 2.4 James Features

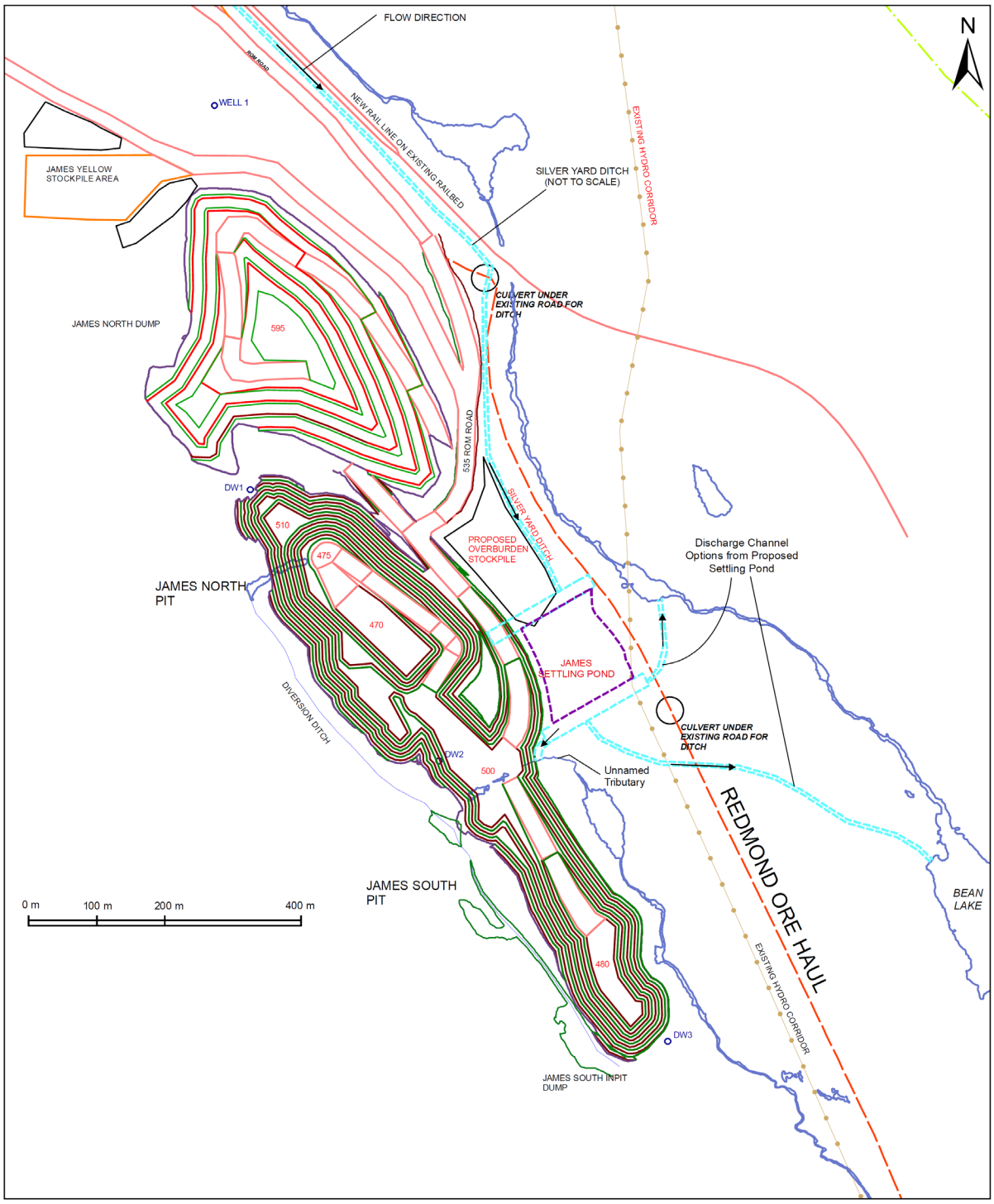


Figure 2.5 Redmond Features

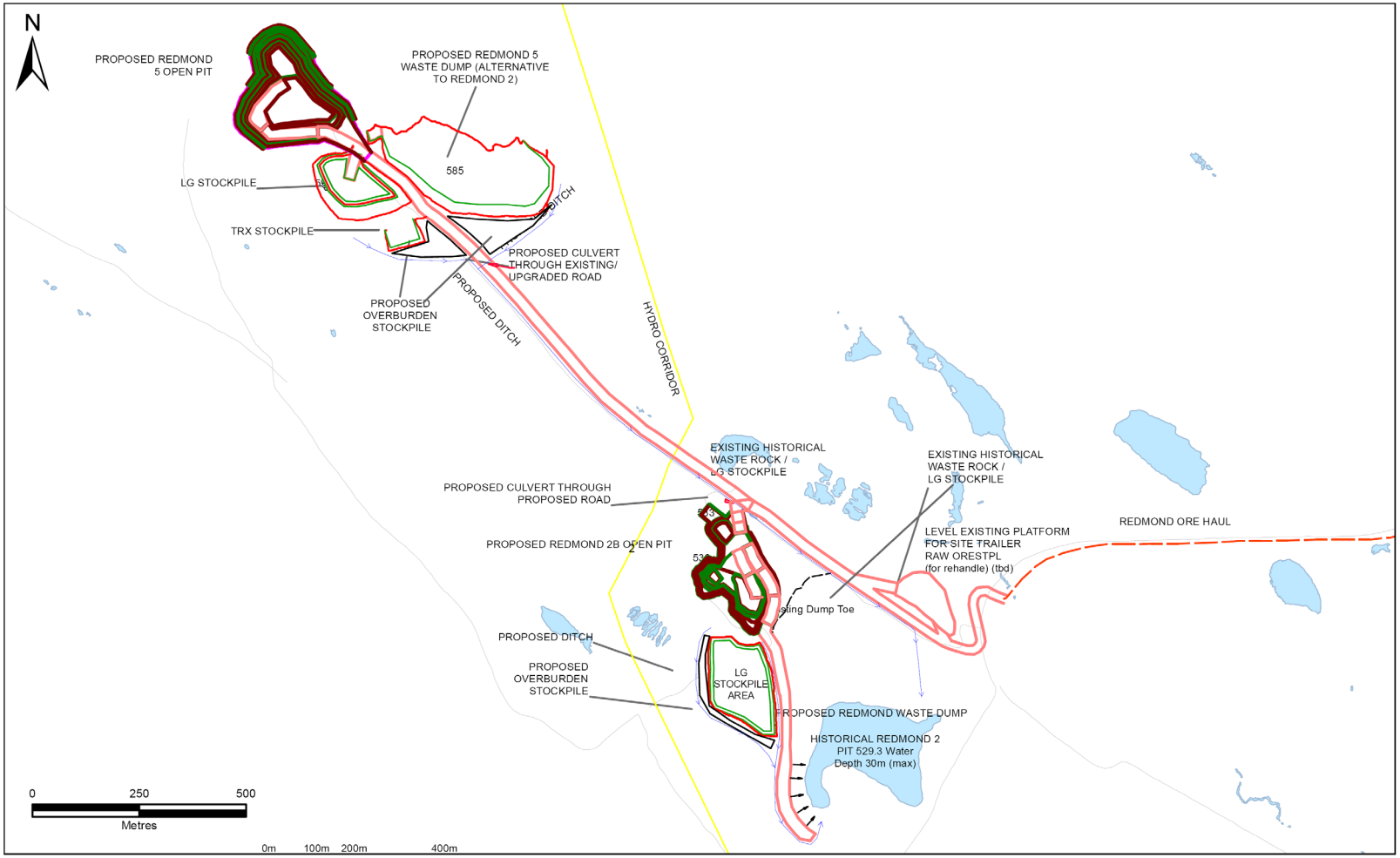


Figure 2.6 Work Camp Features

3.0 REGULATORY REQUIREMENTS AND COMMITMENTS

3.1 Approvals, Authorizations and Permits

Several approvals, permits and authorizations may be required for construction and operations activities. Conditions or expiry dates attached to these permits should be considered as elements of this EPP and all personnel should be familiar with and adhere to all relevant permits and approvals.

The permits, approvals, and authorizations for construction and operations are listed in Table 3-1.

Table 3.1 Applicable Permits/Approval/Authorizations for Construction and Operations Activities for the Schefferville Area Iron Ore Project

Department/Agency	Applicable Legislation	Approval/Certificate/Permit	Project Element
Federal Government Requirements			
Fisheries and Oceans Canada	*Fisheries Act*	*Contingency: Fisheries Act* S35(2) Authorization for works in fish bearing waters	Culvert replacement (only if required)
		Letter of Advice regarding protection of fish habitat	Establishment of groundwater flow to unnamed tributary during mine operations
Transport Canada	*Transportation of Dangerous Goods Act*, 1992	Permit to store, handle and transport dangerous goods	Storage, handling and transportation of fuel and chemicals
Provincial Government Requirements			
Department of Natural Resources, Forestry Branch	*Forestry Act*	• Contingency: Cutting permit • Contingency: Permit to Burn	Clearing (only if required)
Department of Natural Resources, Mines Branch, Mineral Lands Division	*Mineral Act*	Mining Lease	Operation of mine
		Surface Rights Lease	Operation of mine
		Development Plan	In place prior to construction of mine
		Rehabilitation and Closure Plan	In place prior to construction of mine
		Financial Assurance	In place prior to construction of mine
Department of Environment and Conservation, Pollution Prevention Division	*Environmental Protection Act*	Industrial Processing Works Certificate of Approval	Mine operations
		Approval of MMER Emergency Response Plan	Reject fines water discharge
		Approval of Emergency Spill Response Plan	Construction and Operations
		Approval of Environmental Protection Plan	Construction and Operations
	Environmental Protection Act *(GAP Regulations)*	Certificate of approval for storage and handling of gasoline and associated products	Storage, handling and transportation of fuel and chemicals

Department/Agency	Applicable Legislation	Approval/Certificate/Permit	Project Element
Department of Environment and Conservation, Water Resources Management Division	*Water Resources Act*	Real-time Water Monitoring Memorandum of Understanding (MOU)	Water quantity/water quality
		Certificate of environmental approval to alter a body of water: • Fording • Site Drainage • Culvert Installation • Other works within 15 m of a body of water	Activities within 15 m of a body of water (as required)
		Water Use Licence	Water utilization
		Non-domestic well permit	Process water supply
Department of Environment and Conservation, Wildlife Division	*Wildlife Act* and *Regulations*	Authorization to control nuisance animals	Construction and operations activity
		Approval of Caribou Mitigation Strategy and Monitoring Program	Construction and operations activity
Department of Works, Services and Transportation	*Dangerous Goods Transportation Act,* 1995 and *Regulations*	Compliance standard; no permit required	Storage, handling and transportation of fuel
	Rail Services Act	*Rail Services Act* Approval	Construction and Operation of spur line
Government Service Centre	*Environmental Protection Act*	Certificate of Approval for a Sewage/Septic System	Operation of sewage treatment system (Biodisk)
		Approval for Storage and Handling of Gasoline and Associated Products	Storage, handling and transportation of fuel
		Fuel tank registration	Storage, handling and transportation of fuel
		Fuel storage permit (propane)	Storage of propane
		Approval for used oil storage tank system	Temporary storage of used oil till offsite disposal at licensed facility by contractor
		Food Establishment License	Operation of cafeteria and dining facilities
		Building Accessibility Design Registration	Construction and operation of buildings
Department of Health		Approval for Operation of Lunchroom/Washroom Facilities	Operation of cafeteria, dining room, and washrooms

3.2 Environmental Compliance Monitoring

Site Inspections

Site inspections will be completed before, during, and within seven (7) days after any site disturbances related to construction and operations activities performed by LIM, or contractors on behalf of LIM. Site inspections will be conducted by trained personnel and details recorded on the Site Check List Form located in Appendix E. For site inspections conducted prior to any construction or operations activity, details including vegetation, general terrain/topography, and drainage patterns will be recorded. Photographs should be taken during each site inspection. The required frequency of site inspections performed during construction and operations activities will be determined by the LIM VP of Environmental and Permitting (or designate) and will depend on the duration and type of activity being performed.

These regular site inspections will aid in the implementation of the environmental protection measures that are specified in this document and that will be specified in the applicable contracts and other relevant permits, approvals and authorizations.

Any environmental issues or concerns should be reported to the LIM Labrador Site Manager and the LIM VP of Environment and Permitting.

Monitoring

Monitoring will also confirm that all construction and operations activities comply with applicable regulatory requirements and that mitigation measures are being employed effectively.

The LIM Labrador Site Manager and local environmental staff will:

- be responsible for environmental compliance monitoring on-site; and
- instruct the contractor on the environment-related general, special, and technical clauses to be implemented as part of the contract(s).

Compliance monitoring will be required for various activities during construction and operations. Monitoring of site run-off at the construction and operation sites will be conducted as per provincial requirements. Other federal and provincial government compliance standards that apply to the construction and operations activities include but are not limited to those listed in Table 3.2. Personnel will comply with all relevant approvals, authorizations, permits and legislation.

Table 3.2 Environmental Compliance Standards

Legislation/ Guidelines	Activity Requiring Compliance	Responsible Agency	Comment
Federal Regulations			
Fisheries Act, S36(3), Deleterious Substances	Run-off from the site to receiving waters	Environment Canada	The deposit of any material into waters frequented by fish or to an area that may enter waters frequented by fish must be non-deleterious to fish (i.e., must be non-acutely lethal). All materials that may enter waters frequented by fish must comply with the Act. There will be no work below the high water mark of any surface water features. The proponent will be subject to the *Metal Mining Effluent Regulations* (MMER), as administered under the *Fisheries Act*. MMER regulate the deposit of mine effluent and other waste matter produced during mine operating into natural, fish-bearing water bodies.
Migratory Birds Convention Act and Regulations	Mortality of migratory birds, and any species under federal authority.	Canadian Wildlife Service, Environment Canada	CWS should be notified about the mortality of any migratory bird in the project area, including passerine (songbirds), seabird and waterfowl species. Harmful substances (e.g., oil, wastes, etc.) that are harmful to migratory birds must not be deposited into waters that are frequented by them. Nests, eggs, nest shelters of migratory birds must not be disturbed or destroyed. Although the proposed work is planned along an previously developed and existing cleared corridor and no further clearing is planned, and all activities will be completed prior to nesting season, certain activities such as clearing will be avoided, where possible, during the nesting period for migratory birds in the region (from May to around mid-July). As well, efforts will be taken to complete any clearing in these areas, if required, outside of the breeding season. Should additional clearing be required, and it is not possible to undertake clearing outside of the breeding season and a nest is found, the following mitigative actions will be taken: • the nest site and neighbouring vegetation should be left undisturbed until nesting is completed; and, • construction activities should be minimized in the immediate area until nesting is completed. The best approach will be identified based on the circumstances and in compliance with the MBCA.

Legislation/ Guidelines	Activity Requiring Compliance	Responsible Agency	Comment
			During the past four years of baseline data collection at the Project area, and as identified in the EIS, no SARA species have been identified within the project area. However, should any federally list species at risk (endangered, threatened, or special concern) be identified in the project area and considered to be at risk for potential impacts as a result of Project activities (disturbed or incidental mortality), LIM's VP of Environment, or designate will contact CWS at (709) 772-7456.
Transportation of Dangerous Goods Act and Regulations	Handling and transporting of dangerous goods.	Transport Canada	If the materials are transported and handled fully in compliance with the regulations, a permit is not required. A Permit of Equivalent Level of Safety is required if a variance from the regulations is necessary.
Canadian Environmental Protection Act	Activities that have the potential to interact with the environment and human health.	Environment Canada	CEPA provides framework for setting environmental quality objectives, guidelines and codes of practice, pollution prevention plans, regulation of toxic substances, controlling pollution of other wastes and environmental emergency plans
Species at Risk Act	Mortality of endangered species or other species under federal authority.	Environment Canada	Measures must be taken to avoid or lessen adverse effects on species at risk and that effects are monitored. Mitigation measures must be consistent with recovery strategies and action plans for species.
Provincial Regulations			
Environmental Protection Act, Part IV	Schefferville Area Iron Ore Project	Pollution Prevention Division, NLDOEC (PP-NLDOEC)	All waste material shall be considered, prior to disposal, for reuse, resale or recycling. All waste materials shall be disposed at an approved waste disposal site.
Environmental Protection Act, Part VI	Schefferville Area Iron Ore Project	PP-NLDOEC	All activities are subject to the *Air Pollution Control Regulations*. Materials as stipulated in the Regulations cannot be burned in the open.
	Storage, handling and disposal of gasoline and other fuels.	PP-NLDOEC	Petroleum storage and handling is subject to the *Storage and Handling of Gasoline and Associated Products Regulations*. Refer to Section 5.1 of the EPP for the Fuel and Hazardous Material Spills Contingency Plan.

Legislation/ Guidelines	Activity Requiring Compliance	Responsible Agency	Comment
	Disposal of used oil.	PP-NLDOEC	The storage and disposal of used oil is subject to the *Used Oil Control Regulations*.
	Handling and storage of hazardous materials.	Occupational Health and Safety Division, Department of Government Services	Activities involving the use of designated hazardous materials are subject to *Workplace Hazardous Materials Information System.* WHMIS outlines procedures for handling hazardous materials and provides details on various hazardous materials.
Water Resources Act	Site drainage	PP-NLDOEC	All waters discharged must comply with the *Environmental Control Water and Sewage Regulations*.
Dangerous Goods Transportation Act and *Regulations*	Transporting fuel to the site.	Department of Works, Services and Transportation	Transporting goods considered dangerous to public safety must comply with regulations.
Historic Resources Act	Construction and operation activities.	Cultural Heritage, Archaeology Section, Department of Tourism, Culture and Recreation	All archaeology sites and artifacts are considered the property of the Crown and must not be disturbed. Any archaeology materials encountered must be reported to the Provincial Archaeology Office.

3.3 Rehabilitation of Construction Work Sites

Once construction activities have ceased in an area, rehabilitation procedures will commence in non-operational areas. Overall mine development rehabilitation and closure will be addressed under separate cover with accompanying financial assurance in the Rehabilitation and Closure submission to NLDNR.

3.4 Reporting

3.4.1 Internal Communication

Environmental performance and issues during construction and operation activities associated with the Project will be communicated internally as required. The LIM Labrador Site Manager is responsible for communicating LIM policies and procedures and legal and other requirements to workers. Workers will communicate all environmental incidents to LIM's Labrador Site Manager as per the LIM Emergency Call Out and Reporting

Procedures. EPP orientation and sign-off for new staff/contractors onsite will also be conducted by LIM's Labrador Site Manager prior to start of work.

3.4.2 External Communication

When required, LIM, through the VP of Environment and Permitting, will report on environmental issues relating to construction and operations activities for the Project to the Newfoundland and Labrador Department of Environment and Conservation (NLDOEC). Issues, which may be communicated include, but are not necessarily limited to:

- dust;
- erosion;
- historic resources;
- wildlife encounters of note; and
- permits and authorizations.

Any spills of petroleum products or other hazardous materials will be reported immediately to the:

Environmental Emergencies 24 Hour Report Line (Coast Guard Traffic Centre, St. John's)
(St. John's: **709-772-2083** or Other Areas: **1-800-563-9089**)

The *Fisheries Act* requires all spills to be reported, regardless of size. Any spills in ditches or on roadways that may enter waterways must also be reported.

Additionally, if construction or operation activities requires removal of any merchantable timber, the Newfoundland and Labrador Department of Natural Resources, Forest Resources Branch, will be contacted by LIM.

Instruction in Health and Safety issues is provided under separate cover as part of LIM's existing Health and Safety (H&S) program.

4.0 ENVIRONMENTAL PROTECTION PROCEDURES

This Section provides a description of environmental protection procedures for the following anticipated construction- and operations-related activities:

4.1 Surveying
4.2 Buffer Zones
4.3 Laydown and Storage Areas
4.4 Clearing Vegetation
4.5 Grubbing and Disposal of Related Debris
4.6 Overburden
4.7 Excavation, Embankment and Grading (including cutting and filling)
4.8 Erosion Prevention and Sediment Control
4.9 Water Supply (Plant Operations, Camp)
4.10 Trenching
4.11 Watercourse (Stream) Crossings
4.12 Exploration Drilling, Water Well Drilling and Pump Tests
4.13 Pumps and Generators
4.14 Dewatering Work Areas/Trenches and Site Drainage
4.15 Equipment Installation, Use and Maintenance
4.16 Storage, Handling and Transfer of Fuel and Other Hazardous Material
4.17 Propane
4.18 Waste Disposal
4.19 Sewage Disposal
4.20 Hazardous Waste Disposal
4.21 Vehicle Traffic
4.22 Dust Control
4.23 Noise Control
4.24 Civil Works
4.25 Mine, Open Pit and Mine Road Construction and Maintenance
4.26 Processing Activities
4.27 Installation of Pre-fabricated Buildings
4.28 Process Washwater Treatment and Monitoring
4.29 Site Water Management - Settling Ponds, Including Sediment Control Ponds
4.30 Drilling and Blasting
4.31 Caribou

When required, this EPP will be revised to include new or amended environmental protection procedures so that construction and operations activities conducted for the Project are completed properly and that the significant environmental aspects of the site are well managed.

4.1 Surveying

Potential Environmental Concerns

Surveying activities could potentially disturb wildlife species, vegetation and historic resources.

Environmental Protection Procedures

Vegetation Removal

a) Width of survey lines will be limited to that which is necessary for line of sight and unobstructed passage.

b) Whenever possible, cutting lines to the boundary between treed and open areas will be avoided.

c) Trees and shrubs will be cut flush with the ground wherever possible.

d) Cutting of survey lines will be kept to a minimum. Where possible, alternate areas not requiring cut lines will be used.

e) All trees not exactly on transit lines shall be left standing.

f) When surveying the site limit, areas that will be cleared require a modified adherence to the above, except trees, shrubs and areas to be saved or left natural as noted on the plans or marked in the field.

g) No attempt to harass or disturb wildlife will be made by any worker (refer to Section 5.2).

h) Vehicles will yield the right-of-way to wildlife.

i) There will be no cutting in areas designated as sensitive without notification and approval of the LIM Labrador Site Manager

j) Any historic resource discoveries will be reported to the Provincial Archaeology Office within the Culture and Heritage Division, Newfoundland and Labrador Department of Tourism and Recreation (see Section 5.4, Discovery of Historic Resources Contingency Plan).

k) All sites where surface disturbances are planned or may occur will be inspected and monitored prior to, during, and after the work as described in Section 3.2 (Environmental Compliance Monitoring).

Traversing

a) All-terrain vehicles (ATVs) will not be allowed off the right-of-way except as approved by the LIM Labrador Site Manager. The use of ATVs will be restricted to designated trails, thus minimizing ground disturbance. ATV use will comply with the *Motorized Snow Mobile and All-Terrain Vehicle Regulations*, 1996 under the Motorized Snow Mobile and All-Terrain Vehicle Act and the Environmental Guidelines for Stream Crossings by All-Terrain Vehicles issued by the NLDOEC.

b) No attempt to harass or disturb wildlife will be made by any worker.

c) No motorized vehicles will enter the areas designated as sensitive without notification and approval of the LIM Labrador Site Manager.

Establishing Targets, Permanent Benchmarks and Transponder Locations

a) In normal ground conditions a 15 mm x 400 mm long rebar is driven approximately 350 mm into the surface with an 8-lb sledgehammer. When bedrock or a large boulder is encountered less than 300 mm below the ground surface, a 15 mm x 150 mm long rebar is cemented in a hole drilled in the rock. The rebar will be set into the rock a minimum distance of 80 mm.

b) No attempt to harass or disturb wildlife will be made by any worker.

c) Access to sensitive areas is to be approved by the LIM Labrador Site Manager.

d) Iron bars and sledgehammers are to be used to establish benchmarks.

e) Access by heavy equipment to sensitive areas such as wetlands will not be conducted without prior approval of the LIM VP Environment and Permitting, and only be through established right-of-ways.

4.2 Buffer Zones

Potential Environmental Concerns

Buffer zones are boundaries of undisturbed vegetation maintained along water bodies. Without adequate buffer zone vegetation, streams, ponds and lakes can potentially become laden with silt from run-off. Vegetation also provides cover for fish.

Environmental Protection Procedures

As much as possible, a minimum buffer zone of 15 m of undisturbed natural vegetation is to be maintained between work areas and water bodies. If this buffer zone cannot be maintained around waterbodies, the LIM VP of Environment will be notified and a permit will be obtained from NLDOEC, Water Resources Management Division under Section 48 of the *Water Resources Act*. Where possible, additional buffer widths will be maintained according to the guidelines shown in Recommended Minimum Buffer Zone Requirements for Activities near Watercourses in Table 4.1.

Table 4.1 Recommended Minimum Buffer Zone Requirements for Activities near Watercourses

Activity	Recommended Buffer Width
Development around watercourses in urban or other developed area	15 m depending upon site specific considerations
Resource roads or highways running adjacent to water bodies	20 m + 1.5 X slope (%)
Piling of wood and slash Grubbing	30 m
Placement of Site Trailers Fuel storage	100 m
Source: Gosse et al. 1998.	

4.3 Laydown and Storage Areas

Potential Environmental Concerns

Areas will be required for storing and maintaining equipment and supplies during construction and operations activities associated with the Project. Potential erosion and run-off of sediment into nearby water bodies must be prevented.

Environmental Protection Procedures

a) Existing laydown and storage areas will be used, where feasible.

b) Any new laydown, maintenance or storage areas required for construction and operations activities will only be established within the claim boundaries.

c) Establishing any new laydown or storage areas will follow the procedures for vegetation clearing (Section 4.4), grubbing and debris disposal (Section 4.5), and erosion prevention (Section 4.8).

d) External storage areas will be placed on level terrain and kept free of ponding or run-off.

e) Drainage from areas of exposed soil will be controlled by grade or ditching and directing run-off away from water bodies.

f) Water quality monitoring of run-off may be required by NLDOEC Pollution Prevention Division to ensure no adverse effects on the receiving environment.

g) Laydown and storage areas no longer required for construction and operations activities will be rehabilitated.

h) Fuel will be stored, handled and transported according to Section 4.16.

4.4 Clearing Vegetation

Potential Environmental Concerns

Vegetation clearing (e.g., trees, shrubs, etc.) may be required. Potential concerns include stockpiling vegetation in or near watercourses and, or potential scheduling of clearing in bird-nesting areas during nesting periods.

Environmental Protection Procedures

a) Clearing activities will comply with the requirements of all applicable permits, including the Permit to Burn.

b) Clearing or removal of trees will be kept to a minimum.

c) Nests, eggs, nest shelters of migratory birds must not be disturbed or destroyed. Although the proposed work is planned along an previously developed and existing cleared corridor and no further clearing is planned, and all activities will be completed prior to nesting season, certain activities such as clearing will be avoided, where possible, during the nesting period for migratory birds in the region (from May to around mid-July). As well, efforts will be taken to complete any clearing in these areas , if required, outside of the breeding season.

d) Should additional clearing be required, and it is not possible to undertake clearing outside of the breeding season and a nest is found, the following mitigative actions will be taken:
   - the nest site and neighbouring vegetation should be left undisturbed until nesting is completed; and
   - construction activities should be minimized in the immediate area until nesting is completed.

   The best approach will be identified based on the circumstances and in compliance with the MBCA.

e) During the past four years of baseline data collection at the Project area, and as identified in the EIS, no SARA species have been identified within the project area. However, should any federally list species at risk (endangered, threatened, or special concern) be identified in the project area and considered to be at risk for potential impacts as a result of Project activities (disturbed or incidental mortality), LIM's VP of Environment, or designate will contact CWS at (709) 772-7456.

f) Clearing will consist of cutting to within 15 cm of the ground and disposing of all standing trees, as well as removing all shrubs, debris and other vegetation from the area. These materials will be stacked clear of on-going activities for future rehabilitation. The *Environmental Protection Guidelines for Ecologically Based Forest Resource Management* (DFRA 1998*)* will be observed.

g) In the event that usable or merchantable timber is removed during vegetation clearing, the Newfoundland and Labrador Department of Natural Resources (DNR), Forest Resources will be contacted by the LIM VP of Environment.

h) Disposing of cleared un-merchantable timber, slash and cuttings by burning will comply with the *Forest Fire Regulations, 1996 (a*mended 2002) under the *Forestry Act*, Environmental Code of Practice for Open Burning and the Permit to Burn (from the Newfoundland and Labrador Department of Natural Resources). At no time will a fire be left unattended.

i) Slash and any other material or debris related to construction or operations activities will not be permitted to enter any watercourse, and will be piled above spring flood levels and retained for final rehabilitation efforts.

j) Chain saws or other hand-held equipment will be used in clearing vegetation except where alternative methods or equipment is approved by LIM, such as mechanical harvesters. The use of mechanical clearing methods, such as bulldozers, will not be permitted except where it can be demonstrated that there is no merchantable timber, and where the resulting terrain disturbance and erosion will not result in the loss of topsoil or the sedimentation of nearby waterbodies.

k) As much as possible, a minimum 15 m buffer zone of undisturbed vegetation will be maintained between the development area and all other waterbodies (Section 4.2). If a 15 m buffer of vegetation cannot be maintained around waterbodies, the LIM VP of Environment will be notified and a permit will be obtained from NLDOEC, Water Resources Management Division under Section 48 of the *Water Resources Act*. Where possible, additional buffer widths will be maintained according to the guidelines in the Recommended Buffer Zones Requirements for Activities Near Watercourses, shown in Table 4.1.

l) Timber shall be felled inward toward the work area to avoid damaging any standing trees within the immediate work area.

m) Workers will not destroy or disturb any features indicative of a cultural or archaeological site. Such features should be avoided until a report has been made to the Provincial Archaeology Office and clearance to proceed has been received.

n) There are several wetlands in the work area. LIM is aware of the value of wetlands and will attempt to avoid such disturbance of wetlands outside of the work areas where feasible.

o) All sites where surface disturbances are planned or may occur will be inspected and monitored prior to, during, and after the work as described in Section 3.2.

4.5 Grubbing and Disposal of Related Debris

Potential Environmental Concerns

The principle concerns associated with grubbing and disposal of related debris are the potential adverse effects on freshwater ecosystems and water quality through the release of sediment into watercourses, as well as the potential for disturbing historic resources.

Environmental Protection Procedures

a) Grubbing of the organic vegetation mat and/or the upper soil horizons will be restricted to the minimum area required.

b) The organic vegetation mat and upper soil horizon material that has been grubbed will be spread, in a manner to cover inactive exposed areas or retained for use in rehabilitation efforts.

c) Nests, eggs, nest shelters of migratory birds must not be disturbed or destroyed. Although the proposed work is planned along an previously developed and existing cleared corridor and no further clearing is planned, and all activities will be completed prior to nesting season, certain activities such as clearing will be avoided, where possible, during the nesting period for migratory birds in the region (from May to around mid-July). As well, efforts will be taken to complete any clearing in these areas, if required, outside of the breeding season.

d) Should additional clearing be required, and it is not possible to undertake clearing outside of the breeding season and a nest is found, the following mitigative actions will be taken:
   - the nest site and neighbouring vegetation should be left undisturbed until nesting is completed; and
   - construction activities should be minimized in the immediate area until nesting is completed.

   The best approach will be identified based on the circumstances and in compliance with the MBCA.

e) During the past four years of baseline data collection at the Project area, and as identified in the EIS, no SARA species have been identified within the project area. However, should any federally list species at risk (endangered, threatened, or special concern) be identified in the project area and considered to be at risk for potential impacts as a result of Project activities (disturbed or incidental mortality), LIM's VP of Environment, or designate will contact CWS at (709) 772-7456.

f) If grubbing or disposal of debris is to occur within 15 m of a wetland (defined as bodies of water showing on a 1:50,000 map, per the *Water Resources Act*), a permit for work will be obtained from Water Resources Management Division under Section 48 of the *Water Resources Act*.

g) Any surplus of such material will be stored or stockpiled for site rehabilitation and revegetation purposes. Topsoil and organics should be stored in low (1 to 2 metres high) stable piles (Gosse et al. 1998). The location of the stockpiles will be recorded and accessible for future rehabilitation purposes.

h) Measures will be implemented to reduce and control runoff of sediment-laden water during grubbing, and the re-spreading and stockpiling of grubbed materials. Where grubbed materials are re-spread or stockpiled, as many stumps and roots as possible will be left on the ground surface to maintain soil cohesion, dissipate the energy of runoff and promote natural revegetation. Erosion control measures will be implemented in areas prone to soil loss (Section 4.8).

i) The length of time that inactive grubbed areas will be left exposed to the natural elements will be minimized to prevent unnecessary erosion. Mitigations such as the placement and maintenance of silt curtains will be used to prevent erosion from exposed areas.

j) Grubbing activities will adhere to the buffer zone requirements outlined in Section 4.2.

k) Water quality monitoring of run-off may be required by NLDOEC Pollution Prevention Division to ensure no adverse effects on the receiving environment.

l) During grubbing, grubbed material will not be pushed into areas that are to be left undisturbed. Grubbing material will be buried with 60 cm of soil cover.

m) Discovery of historic resources will be handled according to the procedures outlined in Section 5.4.

n) LIM is aware of the value of wetlands and will attempt to avoid such disturbance of wetlands outside of the work areas where feasible.

4.6 Overburden

Potential Environmental Concerns

The principal concern associated with the placement of overburden is potential siltation of the aquatic environment, pertaining to water quality and substrate, as well as loss of habitat and displacement of wildlife.

Environmental Protection Procedures

a) Overburden storage areas will be located at least 50 m from any waterbody on well drained soil (Gosse et al. 1998).

b) If required, collection ditches and settling ponds will be used to manage surface runoff from overburden stockpiles.

c) Overburden will be stored in stable piles and sloped to prevent pooling of surface water pending use in site rehabilitation efforts.

4.7 Excavation, Embankment and Grading (including cutting and filling)

Potential Environmental Concerns

The principal environmental concern associated with excavation, embankment and grading are the potential impacts on aquatic ecosystems and water quality due to runoff of sediment-laden water.

Environmental Protection Procedures

Work will be conducted with the minimum amount of disturbance necessary. All works within 15 m of waterbodies or watercourses will strictly follow the requirements outlined in the acquired watercourse alteration approvals from the NLDOEC and Fisheries and Oceans (DFO). Work will be conducted in a manner that controls potential sedimentation of watercourses and waterbodies in or adjacent to the work areas as outlined in the following procedures. No work below the high water mark of any surface water feature will be conducted without the prior notification and assessment by the LIM VP of Environment and Permitting.

a) During excavation, embankment and grading activities, excavated materials will be sorted into separate stockpiles (i.e., topsoil, overburden, bedrock) for later rehabilitation purposes and to prevent mixing.

b) Excavation, embankment and grading within 15 m of a stream crossing will be done in such a manner that erosion and sedimentation of watercourses and waterbodies is minimized and strictly follows the requirements outlined in the acquired watercourse alteration approvals from the NLDOEC and DFO.

c) A buffer zone of undisturbed vegetation will be maintained between Project activities and all watercourses, as per Section 4.2 (Buffer Zones).

d) Water quality monitoring of run-off may be required by NLDOEC Pollution Prevention Division to ensure no adverse effects on the receiving environment.

4.8 Erosion Prevention and Sediment Control

Potential Environmental Concerns

Eroded material could potentially cause siltation in water bodies and, subsequently, potentially decrease suitable habitat for aquatic and terrestrial animals.

Environmental Protection Procedures

a) All work relating to the construction and operations activities for the Project will be conducted according to the conditions set out in the permits and/or approvals and authorizations from the NLDOEC.

b) Primary means for controlling erosion is avoiding activity that contributes to erosion. The disturbance of new areas will be minimized.

c) Drainage ditches will be stabilized if required (e.g., lining with vegetation or rock, terracing, interceptor swales, installation of rock check dams) to reduce soil erosion. Any such measures will be properly maintained following installation.

d) All areas of exposed erodible soil will be stabilized by back-blading, grading and/or compacting to meet engineered slope requirements.

e) If an environmental inspection reveals that silt is entering any waterbody, further mitigative measures will be implemented, such as temporary drainage ditches, siltation control (settling) ponds, ditch blocks/check dams or sediment dam traps, to intercept run-off. The necessary or appropriate measures will be determined in the field.

f) All work and laydown and storage areas will be monitored for erosion and appropriate repair action taken as necessary.

g) Existing or new siltation control structures used in this work will be monitored by the contractor for excessive accumulation of sediment. The contractor will remove accumulated sediment from control structures to gain full effectiveness of the systems. Effluent from control structures will be released to flow overland for appropriate filtration prior to entering any waterbody.

h) Water quality monitoring of run-off may be required by NLDOEC Pollution Prevention Division to ensure no adverse effects on the receiving environment.

i) The contractor will be required to remove excess water from siltation control systems prior to excavation of sediment. Trucks will be equipped with liners to prevent loss of wet sediment during transport.

4.9 Water Supply (Plant Operations, Camp)

Potential Environmental Concerns

Environmental concerns related to water supply include potential detrimental effects to the habitat (and populations) in and around the potentially affected waterbody. Although groundwater quality is such that potential use as a possible water source may be considered in the future, current potable water will be supplied to the site by truck or as bottled water.

Environmental Protection Procedures

a) The water intakes must have an appropriate screen to prevent damage to fish. Guidelines for the screening of water intakes are provided by DFO (1995).

4.10 Trenching

Potential Environmental Concerns

Where excavation for the trenching programs is undertaken, potential runoff of sediment-laden water could result in effects on freshwater fish habitat and water quality.

Environmental Protection Procedures

The following measures are employed to minimize the potential impacts of trenching.

a) The topsoil and excavated overburden and bedrock are stored in separate stockpiles for later use during rehabilitation.

b) Any material unsuitable for future rehabilitation is disposed of in a disposal area approved by the LIM Labrador Site Manager.

c) Dewatering of trenches will make use of measures to minimize and control the release of sediment laden water through the use of filtration through various measures, including but not limited to erosion control devices, settling ponds, straw bales, geotextile or other devices. Dewatering water will be directed to the settling pond system prior to discharge.

d) Water quality monitoring of run-off or discharges may be required by NLDOEC Pollution Prevention Division to ensure no adverse effects on the receiving environment.

4.11 Watercourse (Stream) Crossings

Currently, there are no plans to install new watercourse crossings. This section of the EPP is included in the event culverts are required for stream crossings.

Potential Environmental Concerns

Although all water crossings required are currently in place, the potential environmental concerns associated with stream crossings and culvert installations include potential direct disturbances to or mortality of fish, and potential loss of fish habitat resulting from sedimentation and removal of habitat and stream bank vegetation. An evaluation of soil erosion potential will be conducted at each of the stream crossings. This assessment of potential erosion risk will assist in the development of specific erosion stabilization methods and effective sedimentation control practices on a site-specific basis.

Environmental Protection Procedures

No work below the high water mark of any surface water feature will be conducted without the prior notification and assessment by the LIM VP of Environment and Permitting. Stream crossings will be constructed in compliance with the required Permit for Culvert Installation from NLDOEC, Water Resources Management Division and any approvals required from NLDOEC and DFO.

The following measures will be implemented to minimize the potential impacts of stream crossings, if stream crossings are required:

a) Between September 15 and June 15 (sensitive fish life stages), stream crossing activities will be undertaken under the direct supervision of the LIM Labrador Site Manager.

b) Avoid the entry of deleterious substances including, but not limited to, materials such as sediment and fuel to watercourses and waterbodies during watercourse crossing work.

c) A minimum buffer of undisturbed natural vegetation must be left between the access road and the bank of any watercourse that it parallels. The buffer width will be determined through the formula:

Buffer width (m) = 20 m + 1.5 x slope (%) (Gosse et al. 1998)

d) In those locations within fish habitat, where culverts are required, application will be made to NLDOEC and DFO. The culverts used will be sized to handle the 1-in-25 year return period flood and will be constructed in accordance with the Environmental Guidelines for Culverts from the NLDOEC, Water Resources Management Division.

The following measures will also be implemented:

i) install culvert(s) in accordance with good engineering and environmental practices;

ii) unless otherwise indicated, all work should take place in dry conditions, either by the use of cofferdams or by diverting the stream;

iii) installation of cylindrical culverts shall be counter sunk only where necessary to protect fish habitat such that the culvert bottom is one-third the diameter below the streambed in the case of culverts less than 750 mm outside the diameter; for culverts greater than 750 mm outside diameter, the culvert bottom shall be installed a minimum of 300 mm below the streambed;

iv) in multiple (gang) culvert installations, install one culvert at an elevation lower than the others;

v) the natural low flow regime of the watercourse will not be altered;

vi) a culvert will not be installed before site specific information such as localized stream gradient, fish habitat type and species present have been evaluated. Culverts are to be installed using the guidelines provided in Gosse et al. (1998);

vii) riprap outlets and inlets to prevent erosion of fill slopes;

viii) use culverts of sufficient length to extend a short distance beyond the toe of the fill material;

ix) use backfilling material that is of a texture that shall support the culvert and limit seepage and subsequent washing out;

x) align culverts such that the original direction of stream flow is not significantly altered;

xi) remove fill and debris from the culvert area to a location above the peak flow level to prevent its entry into the stream;

xii) fill material shall not be removed from streambeds or banks; except when installing a culvert when removal of material is necessary for a flat foundation;

xiii) minimize and restrict the use of heavy equipment in and near watercourses; where possible, an excavator will be used from shore rather than a bulldozer in the watercourse. Where it is absolutely necessary to do so, instream work will be performed by rubber tired vehicles (Gosse et al. 1998) only and will only be done with prior notification of LIM's VP Environment and Permitting, in compliance with NLDOEC, and with approvals from and DFO;

xiv) as required, cofferdams of non-erodible material shall be used to separate work areas from the watercourse when excavating for culverts and footings, and

xv) cofferdams shall be removed upon completion of the construction phase and the streambed returned as closely as possible to its original condition.

e) When fording any watercourse, the *Environmental Guidelines for Fording* from NLDOEC, Water Resources Management Division 1992 will be applied in conjunction with the following:

i) areas of spawning habitat will be avoided;

ii) crossings shall be restricted to a single location and crossings made at right angles to the watercourse;

iii) equipment activity within the watercourse shall be minimized by limiting the number of crossings;

iv) all equipment will be mechanically sound to avoid leaks of oil, gasoline and hydraulic fluids;

v) no servicing or washing of heavy equipment will occur adjacent to watercourses; temporary fuelling, servicing or washing of equipment in areas other than the main fuel storage site will not be allowed within 30 m of a watercourse except within a refuelling site approved by LIM, where conditions allow for containment of accidentally spilled fuels; remove from the work area and properly dispose of all waste oil, filters, containers or other such debris in an approved waste disposal site;

vi) stabilize the entire fording area using vegetation mats, corduroy roads or coarse material (125 mm diameter or greater), and the ford area is not natural bedrock, or is easily disturbed by fording; when the substrate of the ford area is not subject to easy disturbance by fording, or coarse material is not easily available within the lease boundaries, fording under existing substrate conditions may occur under the direction of the LIM Labrador Site Manager;

vii) fording activities will not decrease the depth of the watercourses to less than 20 cm; where the existing depth is less than 20 cm, that depth shall be maintained;

viii) fording activities will be halted during high flow periods;

ix) stabilize all bank sections which contain loose or erodible materials; if banks must be sloped for stabilization, no material shall be deposited within the watercourse; sloping shall be accomplished by back-blading and the material removed shall be deposited above the high water mark of the watercourse;

x) all fording activities will comply with specific requirements and conditions detailed in the acquired approvals from the NLDOEC and DFO;

xi) to enable work in the dry, the flow of water must be diverted around the work area during the installation of a culvert (Gosse et al. 1998), and

xii) culverts should be marked to indicate their position under the snow.

4.12 Exploration Drilling, Water Well Drilling and Pump Tests

Potential Environmental Concerns

The environmental concerns with ongoing exploration drilling, water well drilling and pump tests in and around the construction and development areas are potential surface disturbances, disposal of drilling fluids and cuttings, potential siltation, generation of dust, noise and the potential impacts on terrestrial habitats, air quality, aquatic ecosystems and historic resources.

Environmental Protection Procedures

a) Potential drilling sites in sensitive areas should be inspected prior to any drill site preparation by the LIM Labrador Site Manager, whenever possible.

b) Vegetation will be cleared following the procedures detailed in Section 4.4.

c) Waste oil will be removed from the drill site and properly disposed of.

d) Water applications will be used to control dust where necessary. The use of water for dust control or lubrication during drilling will be undertaken in such a manner that runoff will not enter watercourses.

e) Water used throughout the drilling process will remain on the drill site. A Water Use Licence will be issued as part of the Approval for Exploration and Notice of Planned Mineral Exploration Work from the Newfoundland and Labrador Department of Natural Resources (NLDNR) Mines Branch. Every effort will be made to prevent turbid water from entering any watercourse.

f) Cuttings from drill activities will not be removed from the site; they will remain in the immediate location of drilling activities.

g) Drilling equipment will have muffled exhaust to minimize generated noise.

h) Fuel will be stored, handled and transported according to Section 4.16.

i) Garbage and solid waste will be removed from the drill site and deposited in an approved waste disposal area. Waste generated in Labrador will be disposed of at an approved NL facility.

j) Due to the nature of drilling activities (i.e., quicksnaps and couplings) oil drops and leaks may occur and every attempt possible will be made to clean up the area. All rigs will be equipped with oil absorbent material in case of a leak or spill.

k) During the winter season, snow machines are to be used to transport drill materials, core and personnel to and from the drill sites.

l) Drilling of water wells must be conducted in compliance with the *Water Resources Act* and Well Drilling Regulations, 2003.

m) Abandoned exploration drill holes will be temporarily capped or indefinitely sealed with appropriate material depending on the timing to allow for any necessary downhole testing. When all test work on the hole has been completed, it is permanently sealed.

4.13 Pumps and Generators

Potential Environmental Concerns

Water pumps, hoses and generators will be in-use at the Silver Yard and Camp locations. Generator locations are shown in Figures 2.1 and 2.4. Environmental concerns are associated with any potential accidental spills or chronic leaks contaminating waterbodies.

Environmental Protection Procedure

a) To reduce fire hazards, fuel should not be stored immediately adjacent to generators, and the fuel storage area should be well ventilated. Fuel should not be stored within 100 m of waterbodies (Gosse et al. 1998).

b) All fuel storage containers are to have spill trays beneath with a potential capacity of 110 percent of volume. They should also be in a covered and secured area.

c) Drip pans are placed underneath pumps, nozzles and generators located near waterbodies.

d) Hoses and connections on equipment located near waterbodies are inspected routinely for leaks and drips.

e) All leaks are reported immediately to the LIM Labrador Site Manager, and in turn to the LIM VP Environment and Permitting.

f) In addition to spill kits located at fuel storage tanks additional spill kits are located at designated central storage location(s). Personnel who deal with fuelling, fuel transfer and pumps and generators are trained in the use of the kits.

4.14 Dewatering Work Areas/Trenches and Site Drainage

Potential Environmental Concerns

The major concern associated with site dewatering and drainage is potential siltation and direct fish mortality and/or habitat destruction for freshwater species. Dewatering of the mine via the use of perimeter dewatering wells will be controlled through the program outlined in the LIM-DFO Letter of Advice.

Environmental Protection Procedures

a) Site water will be discharged to vegetated work areas to reduce any potential effects on watercourses.

b) Discharged water will be encouraged to follow natural surface drainage patterns.

c) Perimeter dewatering will be conducted and monitored in accordance with the LIM-DFO Letter of Advice. Additional water monitoring will be conducted under the Real Time Water Monitoring Memorandum of Understanding (MOU) program and *Metal Mines Effluent Regulations* (MMER) sampling.

d) Monitoring of site run-off will be conducted as per federal and provincial requirements following effluent quality standards.

e) If silt is entering any waterbody, filtration or other suitable measures, such as silt fences and dykes will be provided to remove silt from, and reduce the turbidity of, water pumped from work areas before discharging.

f) If monitoring indicates regulated water quality standards are exceeded, LIM will develop additional protocols in consultation with the NLDOEC and Environment Canada.

4.15 Equipment Installation, Use and Maintenance

Potential Environmental Concerns

A variety of vehicles and heavy equipment will be used. Environmental concerns associated with operating and using such equipment includes potential air emissions, accidental spills; and chronic leaks that may contaminate on-site water bodies.

Environmental Protection Procedure

a) Equipment maintenance and fuelling activities will be performed at sites designated by the LIM Labrador Site Manager and in compliance with applicable regulations.

b) Drip pans will be placed underneath pumps, fuel storage, and generators.

c) Hoses and connections on equipment will be inspected routinely for leaks and drips.

d) Only minor repairs and maintenance (e.g., lubrication) of 'non-mobile' equipment such as the cranes, flatbeds, shovel or drilling equipment will be performed on-site. All major repairs, where possible, are to be performed at an existing garage location outside of the project area.

e) All leaks will be repaired and reported immediately to the LIM Labrador Site Manager.

f) All fuel and other hazardous materials will be handled according to the procedures in Section 4.16.

g) In addition to spill kits located at fuel storage tanks additional spill kits will be located at designated central storage location(s). Personnel who deal with fuelling, fuel transfer and pumps and generators will be trained in the use of the kits.

4.16 Storage, Handling and Transfer of Fuel and Other Hazardous Material

Typical hazardous substances that may be used on site include, but are not necessarily limited to:

- petroleum, oil and lubricants;
- chlorinated and non-chlorinated solvents (e.g., cleaner-degreasers);
- flammable gases (e.g., acetylene);
- waste petroleum products (e.g., used engine oil);
- corrosives (e.g., battery acid); and/or
- glycol (e.g., antifreeze).

Potential Environmental Concerns

The primary concern with using hazardous substances is a potential uncontrolled release to the environment through spillage, and subsequent adverse effects on terrestrial and aquatic habitat and species, soil, groundwater quality, and human health and safety.

Environmental Protection Procedures

a) The *Workplace Hazardous Materials Information System (WHMIS) Regulations* under the *Occupational Health and Safety Act* will apply to all handling and storage of hazardous materials. All relevant current Material Safety Data Sheets (MSDS) will be readily available for the site.

b) All necessary precautions will be taken to prevent and reduce the spillage, misplacement or loss of fuels and other hazardous materials. In the event of a reportable spill on-land or a spill, regardless of size, in the freshwater environment, the **Environmental Emergencies 24-Hour Report Line** will be contacted.

St. John's: **709-772-2083** or Other Areas**: 1-800-563-9089**

c) A spill is defined as reportable, depending on the class and quantity of dangerous goods involved, which varies between applicable Regulations:

- Reportable spill quantities for hazardous materials are listed in the Transportation of Dangerous Goods Act: Clear Language Regulations – Part 8.
- A reportable hydrocarbon spill is defined as loss of gasoline or associated products in excess of 70 litres in the *Storage and Handling of Gasoline and Associated Products Regulations, 2003.*
- A spill, regardless of size, that may enter the freshwater environment, must be reported according to the *Fisheries Act.*

d) A copy of the LIM Contingency Plan (located in Section 5.1) for fuel and hazardous material spills will be readily available.

e) All fuel storage systems will be registered and comply with the *Storage and Handling of Gasoline and Associated Products Regulations*. Verification of the storage tank approval will be retained for LIM.

f) Only workers who are qualified and trained in handling these materials as stated in the manufacturer's instructions and government laws and regulations will handle fuel and other hazardous materials.

g) Operators will attend the entire refuelling operations.

h) Fuel and other hazardous materials should be stored at least 100 m from any surface water (Gosse et al. 1998).

i) Handling and fuelling procedures will comply with the *Storage and Handling of Gasoline and Associated Products* and any additional requirements put forth by the NLDOEC in order to limit potential contamination of soil or water.

j) Fuel storage areas and non-portable transfer lines will be clearly marked or barricaded so that they are not damaged by moving vehicles. The markers will be visible under all weather conditions. Barriers will be constructed in compliance with the *Storage and Handling of Gasoline and Associated Product Regulations*.

k) Waste oils, lubricants, and other used oil will be retained in a tank or closed container, and disposed of in accordance with the *Used Oil Control Regulations*. Spill trays will be used and substances will be stored in a secured area/shed.

l) Fire and spill response materials will be kept nearby.

m) Despite measures taken to reduce the potential for spills or leaks, should any soils be contaminated by petroleum hydrocarbons, they will be assessed and managed in accordance with the *Environmental Protection Act.* All storage tank systems will be inspected on a regular basis by the operator as per Section 18 of the *Storage and Handling of Gasoline and Associated Products Regulations*. This involves, but is not limited to, gauging or dipping, reconciliation of records and the proper maintenance of reconciliation records for a period of two years.

n) Contracted fuel suppliers will, before transporting or positioning fuel or oil, have on file at LIM a copy of their fuel and hazardous material spills contingency plan which is required under *Storage and Handling of Gasoline and Associated Products Regulations* and which is acceptable to LIM. The fuel and hazardous material spills contingency plan for LIM is provided in Section 5.1.

o) Transportation of hazardous and dangerous materials shall be conducted in accordance with provincial, territorial and federal transportation regulations. Transportation documents shall be retained in a retrievable filing system and stored for the duration of the undertaking.

p) Smoking will be prohibited within 10 m of a fuel storage area.

q) Fuelling or servicing of mobile equipment will be conducted in designated areas and should not occur within 100 m of any body of water (Gosse et al. 1998).

r) Drum storage areas will not be located within 100 m of a water body (Gosse et al. 1998). Drums containing hydrocarbon or other hazardous materials will be transported, stored, handled and disposed of such that spillage or leakage does not occur. Drums will be tightly sealed against corrosion and rust and surrounded by an impermeable barrier in a dry building with an impermeable floor or outside with appropriate spill containment (110%) and covers. LIM must approve the location of drum storage areas.

s) Small quantities of hazardous material (drums, cans and other containers under 20-L volume) will be stored in a secure location protected from weather and freezing, as well as vehicle traffic.

t) Where hazardous materials are to be stored outdoors, a designated area will be established, graded and fitted with an impermeable membrane covered with local soil and surrounded by an earth berm.

u) Within thirty (30) days of decommissioning of a storage tank system, the system will be emptied of all products, the tank and associated piping will be removed (including any contaminated soil) and the area will be cleaned and the site restored.

v) Decommissioning of any temporary storage tank system will be conducted according to the *Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products* (CCME 1994).

w) Hazardous waste will be moved to an appropriate hazardous waste storage area (refer to Section 4.20 for disposal). These areas are constructed in compliance with all applicable federal and provincial legislation.

4.17 Propane

Potential Environmental Concerns

There are currently no plans for propane storage or use at the Project areas, therefore, this information is provided for information purposes only.

There are potential risks associated with propane storage and use. It is a flammable substance and poses potential threat as an asphyxiate to human and animals. In the liquid form, propane could potentially cause frostbite on skin contact. Propane containers could potentially explode if exposed to heat or fire.

Environmental Protection Procedures

a) Propane storage tanks will be installed as per manufacturer's specifications.

b) Tank maintenance schedules will be set and followed.

c) Tanks will be painted and free of corrosion and damages.

d) Areas surrounding propane storage tanks will be well ventilated and free of any possible ignition sources, and combustible materials.

e) Tanks will be grounded to avoid static accumulation.

f) There are currently no plans for propane use or storage onsite. Propane is listed under Schedule 1 of the *Canadian Environmental Protection Act's* (CEPA) *Environmental Emergency Regulations*. The *Environmental Emergency Regulations* require any facility that has management, control, or ownership of any of the substances listed under Schedule 1 to fulfill specific reporting requirements. An Environmental Emergency Plan and other reporting requirements will be put in place by LIM (or the responsible contractor) if the quantity of propane stored on-site will exceed the established threshold quantities (4.5 tonnes) and containment capabilities, as required by CEPA's *Environmental Emergency Regulations*.

4.18 Waste Disposal

Potential Environmental Concerns

Waste (e.g., domestic and industrial wastes, grey water, paper, cardboard and wood), if not properly controlled and disposed of, will be unsightly and could potentially cause human safety and health concerns. It could also attract wildlife leading to the potential for human-wildlife conflicts.

Environmental Protection Procedures

a) All solid waste will be handled according to the provincial *Environmental Protection Act*.

b) Waste will not be transported across the provincial boundary.

c) Waste disposal will be managed by the Mine Contractor and will be transported offsite for disposal in Labrador.

d) All solid waste materials shall be considered, prior to disposal, for reuse, resale, or recycling.

e) Solid waste produced by site personnel and operations will be collected and disposed of at an approved facility.

f) Waste accumulated on site prior to disposal will be confined, so that it does not pose an environmental or health hazard.

g) Work areas will be kept clear of waste and litter to reduce the potential for attracting wildlife and reducing potential interactions with wildlife (see procedures in Section 5.2 for handling wildlife encounters).

h) Any waste that may attract animals (i.e., food) will be stored in covered, wildlife-proof containers.

i) Burning of waste is not permitted without appropriate permits.

j) All hazardous wastes generated will be handled according to the procedures for handling fuel and hazardous materials (Section 4.16).

4.19 Sewage Disposal

Potential Environmental Concerns

The release of untreated sewage is a potential concern to human health, drinking water quality, and freshwater and marine ecosystems. A portable toilet system will be used during mine construction. A permitted Biodisk system will be used during the mine operation period.

Environmental Protection Procedures

a) The sewage from portable toilets will be delivered to a licensed contractor and is disposed in compliance with the Newfoundland and Labrador Department of Health guidelines, the *Lands Act*, Waste Management Regulations, 2003 under the *Environmental Protection Act* and the *Environmental Control Water and Sewage Regulations, 2003* under the *Environmental Protection Act*. The federal *Fisheries Act* also requires that any sewage effluent must be non-deleterious to fish upon disposal.

b) Portable toilets will be located a distance of at least 25 m from any work site in a direction away from bodies of water and must be removed upon completion of construction activities.

c) Sewage from facilities at Silver Yard will be processed using an LJ-30 rotating biological contractor (RBC) Biodisk. Treated effluent will be discharged to Ruth Pit (see Section 4.28, Washwater Treatment and Monitoring). This RBC is designed for a total flow of 8,200 litres per day and meets the requirements of the provincial *Environmental Control Water and Sewage Regulations* (23/09) under the *Water Resources Act*.

d) Sewage from facilities at the work camp will be processed using a LJ-100 RBC Biodisk designed to handle a total flow of 22,620 litres per day and meets the requirements of the provincial *Environmental Control Water and Sewage Regulations* (23/09) under the *Water Resources Act*. Treated effluent will be transferred by gravity to a small settling pond (see Figure 2.6) and subsequently drain through an existing culvert into Bean Lake.

4.20 Hazardous Waste Disposal

Potential Environmental Concerns

The primary concern with the use or disposal of a hazardous substance is the potential for an uncontrolled release to the environment through leakage or accidental spillage, and subsequent adverse effects on terrestrial and aquatic habitat and species, soil, groundwater quality, and human health and safety.

Environmental Protection Procedures

a) All hazardous waste will be handled according to the provincial *Environmental Protection Act*. Waste classified as "hazardous" or "special" that cannot be disposed of in regular landfill sites will be sent for disposal to a licensed hazardous waste management company.

b) All necessary precautions will be taken to prevent and reduce the spillage, misplacement or loss of fuels and other hazardous materials. In the event of a spill on-land or in the freshwater environment, refer to the LIM Contingency Plan (Section 5.1).

c) A copy of the LIM Contingency Plan will be present at hazardous material storage sites and fuel transfer locations.

d) Hazardous waste materials will only be handled by workers who are qualified and trained in handling these materials as stipulated in government laws and regulations.

e) Waste accumulated on site prior to disposal will be confined, so that it does not pose an environmental or health hazard.

f) Waste material will not be disposed of on-site or in a body of water.

g) Burning of waste is not permitted.

h) Where hazardous waste materials are to be stored outdoors, a designated area will be established, graded and fitted with an impermeable membrane covered with local soil and surrounded by an earth berm.

i) Waste oils, lubricants, and other used oil will be retained in an approved tank or closed container, and disposed of in accordance with the *Used Oil Control Regulations*.

j) Any soil contaminated by small leaks of oil or grease from equipment will be disposed of according to the *Environmental Protection Act*.

k) All hazardous wastes generated, by alternative treatments will be handled according to the procedures for handling fuel and hazardous materials (Section 4.16).

4.21 Vehicle Traffic

Potential Environmental Concerns

Vehicular traffic can potentially result in fugitive dust, emissions and noise. LIM is committed to the proper operation and maintenance of its vehicles to reduce environmental effects. During 2010, very little impact will occur on the road because only a small tonnage will come from the Redmond deposit. For subsequent years, in order to minimize the effects of vehicular traffic on the general public, LIM will post notices indicating that heavy duty vehicles will be in the area and will instruct vehicle operators to yield the right-of-way to the public, pursuant to vehicular traffic regulations. In addition, LIM will provide training to mine workers on safe driving awareness, and monitor vehicle use.

Environmental Protection Procedures

a) All vehicle and equipment use, including use of all-terrain vehicles (ATVs), will be restricted to designated routes within and between work, laydown, maintenance and storage areas.

b) All vehicles and equipment will be properly maintained to meet emission standards.

c) Travel in areas outside designated work areas will not be permitted.

d) All vehicles and equipment will yield to wildlife (see procedures in Section 5.2 for handling wildlife encounters).

e) All vehicles and equipment will yield to people, if present, and reduced speeds will be maintained on all roadways.

f) Chasing and/or harassing wildlife with vehicles and equipment will not be permitted.

g) Maintaining and refuelling vehicles will be restricted to designated areas (See Section 4.16).

h) Heavy equipment (e.g., dump trucks and front-end loaders) will only be used in work areas.

i) Access roads will be monitored for signs of erosion and appropriate action will be taken to repair roads, when necessary.

j) As required, the contractor will implement dust suppression measures such as watering the roads.

4.22 Dust Control

Potential Environmental Concerns

The environmental concerns associated with dust include potential human health effects and potential effects on aquatic ecosystems and vegetation.

Environmental Protection Procedures

a) Dust from operating activities will be controlled using water. In the event of excessive dust, water will be applied to travel and work surfaces.

b) Waste oil will not be used for dust control, but other agents such as calcium chloride may be used with the approval of the appropriate regulatory agencies.

4.23 Noise Control

Potential Environmental Concerns

A variety of noises associated with Project activity can potentially cause negative effects on wildlife resources in terms of their distribution and abundance. Noises associated with heavy equipment use are temporary in nature and noises associated with drilling are considered long term, but localized.

Environmental Protection Procedures

Measures will be implemented wherever possible to minimize potential impacts arising from a variety of noise sources.

a) Adherence to all permits, and approvals.

b) All vehicles and generators will have exhaust systems regularly inspected and mufflers will be operating properly.

4.24 Civil Works

Potential Environmental Concerns

Civil works includes compaction, construction of the concrete pads for conveyors, and construction of retaining walls. Due to concerns relating to the effects of concrete production on washwater released to the environment, it is LIM's preference to use pre-cast concrete and/or steel foundations (for the conveyors), thereby avoiding the effects that may result from concrete production on site. Liquid wastes may contain hazardous materials such as cement, concrete additives and form oil.

Environmental Protection Procedures

Measures will be implemented wherever possible to minimize potential effects arising from concrete production, including:

a) Washwater from the cleaning of concrete trucks will be discharged either at the concrete manufacturer's place of business (assuming that the plant is in close proximity to the work site), or alternately, at a washwater settling pond for control and treatment, as appropriate. All such discharges will be of minimal volume and will not occur within the buffer zone of water bodies and watercourses or other environmentally sensitive areas.

b) In the event that water from the closed settling system is released, it will be tested, prior to release, for parameters related to any concrete additives to be used in the production of concrete (e.g., total hydrocarbons, sodium hydroxide), pH and TSS. The water to be released will also meet the limits specified by NLDEC, and will adhere to those portions of the Fisheries Act that relate to fish habitat protection and pollution prevention. Release will be via runoff control procedures.

c) The settling basin will be cleaned on an as required basis to ensure that the retention capacity is maintained at all times.

d) Concrete additives, if required, will be stored in approved sealed containers.

e) Settling basins will be provided to control run off from aggregate stockpiles.

f) Wash down water will be contained in settling ponds prior to disposal.

g) Regular inspections of equipment will be performed.

h) Form work and concrete placement procedures will be implemented to prevent the spillage of concrete to any waterbody.

i) Miscellaneous concrete equipment cleaning will involve minimal discharge volumes and will not occur within the buffer zone of water bodies and watercourses or other environmentally sensitive areas.

4.25 Mine, Open Pit and Mine Road Construction and Maintenance

A ramp will be constructed in the open pit to provide access to the bottom of the pit. Existing on-site haulage roads will be upgraded. Construction of new haulage roads will be limited to within the new pit areas.

Potential Environmental Concerns

Erosion of road beds and siltation of watercourses may result from improperly constructed or upgraded roads. Road maintenance (e.g., snow clearing) activities may result in discharges to waterbodies. There will be no new roads constructed near watercourses.

Environmental Protection Procedures

a) See environmental protection procedures for Buffer Zones (Section 4.2), Clearing Vegetation (Section 4.4), Grubbing and Disposal of Related Debris (Section 4.5), Overburden (Section 4.6), Excavation, Embankment and Grading (Section 4.7), Erosion Prevention and Sediment Control (Section 4.8), Equipment Installation, Use and Maintenance (Section 4.15), Vehicle Traffic (Section 4.21), Dust Control (Section 4.22), and Noise Control (Section 4.23).

b) Snow clearing equipment will be inspected and maintained per Section 4.15.

c) Salt will not be used on roads for ice removal.

d) Roadbeds will be inspected on an annual basis for slumping and potholes.

4.26 Processing Activities

Potential Environmental Concerns

The primary environmental concerns related to beneficiation are related to dust control and potential human health effects and potential effects on aquatic ecosystems and vegetation (see Section 4.22). There are also environmental concerns related to the noises associated with ore processing activities and potential impacts of wildlife distribution and abundance (see Section 4.23).

Environmental Protection Procedures

Measures to control dust and minimize noise will be implemented whenever possible to minimize potential impacts arising from beneficiation activities.

a) All machinery used in ore processing will have exhaust systems regularly inspected and mufflers will be operating properly to minimize exhaust output and noise.

b) The primary mobile crushing plant at Silver Yard will not be enclosed, however a dust collection system will be in prevent any potential dust from being released into the environment. This system will be inspected and maintained regularly to minimize dust release, and is designed to meet the *Air Pollution Control Regulations* (39/04) under the provincial *Environmental Protection Act*.

c) We could have dust at the primary crusher. A sprinkler system will be installed on the wings of the jaw crusher dump. Since, it is a wet process, no more dust suppression equipment is identified so far.

d) Dust from ore processing activities will be minimized per standard environmental protection procedures for dust control (see Section 4.22).

e) Noise from ore processing activities will be minimized per standard environmental protection procedures for noise control (See Section 4.23)

f) Waste oil will not be used for dust control. Water or other agents such as calcium chloride may be used with the approval of the appropriate regulatory agencies.

4.27 Installation of Pre-fabricated Buildings

Potential Environmental Concerns

It is not anticipated that any permanent structures will be erected for the mining and beneficiation operations at the Silver Yard area or at the work camp. Buildings at the Silver Yard area will include a workshop and laboratory, a warehouse, a small fuelling station nearby, and administration buildings including a mobile office, cafeteria facility and first aid station. Administration buildings will include washrooms connected to a sewage treatment system (see Section 4.19).

Camp accommodations will be constructed for workers at a previously developed site of a former ski hill, located in Labrador. Camp structures will consist of mobile to semi-mobile pre-fabricated modular trailers and will accommodate approximately 70 workers seasonally, from April to November on an annual basis. The camp will include a kitchen (with catering), dining room, laundry facilities, and a recreation area. All camp buildings will be connected to a sewage treatment system (see Section 4.19) (Figure 2.4).

The environmental concerns associated with the installation and operation of pre-fabricated buildings include potential disturbance of wildlife due to installation noise and human presence, and potential impacts on water quality due to domestic waste.

Environmental Protection Procedures

a) Domestic sewage from administration buildings at Silver Yard and the work camp will be processed and discharged according to the Sections 4.19 and 4.28.

b) Noise related to installation of pre-fabricated buildings will temporary and will be minimized per Section 4.23.

c) All domestic waste will be controlled per environmental protection procedures in Section 4.18 (Waste Disposal).

4.28 Process Washwater Treatment and Monitoring

Potential Environmental Concerns

The main environmental concerns associated with reject fines disposal are the potential impacts on freshwater ecosystems and water quality. There will be no use of chemicals in the beneficiation process and settling ponds and discharge pipe locations have been designed to reduce any suspended particulates, if present.

Environmental Protection Procedures

Water Discharge: Ruth Pit

Clean water from direct precipitation and runoff will be diverted from contact with the mine workings, infrastructure, and waste where possible or practical.

a) All water coming in contact with mine workings, infrastructure, or waste will be controlled and handled to ensure no free water release from the site during construction or production.

b) Water that comes in contact with mine workings, infrastructure or waste ("mine effluent") will be controlled, monitored, and treated to ensure that any chemistry (TSS, hydrocarbons, pH, metals, etc.) is maintained below regulatory release requirements. Ruth Pit will function as a reject fines washwater settling pond to remove suspended fines.

c) Current plans to upgrade the discharge area at Ruth Pit include the installation of a small dyke and spillway upstream of the existing culvert. If necessary, the existing culvert will be repaired or replaced to ensure operable. The spillway will control the release of water to the environment by insertion of stop logs or stop-valve arrangement. The following sources of water will be pumped to Ruth Pit from the project area:

    i) Reject fines washwater from ore processing at the Silver Yard;

    ii) Sewage from the Silver Yard will be treated using a LJ-30 RBC Biodisk (see Section 4.19). The treated grey water will be sterilized by UV disinfection and the resulting sterilized water will be pumped to Ruth Pit; and,

    iii) The maintenance building will include a closed-circuit wash bay, which will be used for washing vehicles, haulage trucks, and explosive trucks. This facility will contain an oil-water separator to separate oil and sludge from the wash-water. Oil and sludge will be removed and disposed of by a licensed contractor. The wash-water will be pumped to Ruth Pit.

d) Reuse and recycling of water will be maximized in the beneficiation plant and across the site to minimize the use and impact of clean water resources.

Water Discharge: James Pit Operation

a) During mining operations, the water management activities for the James North and James South areas are anticipated to include a combination of perimeter pit dewatering wells and in-pit sumps which will collect any groundwater infiltration and site stormwater to the pits and convey this water away from the pit. Where possible, ground surface stormwater will be diverted away from the mine workings. Water required for washwater and firewater at the Silver Yards area will be extracted from the pit perimeter dewatering wells and pumped to the Silver Yard storage tank. Water collected via pit perimeter wells and in-pit sumps will be pumped to the nearby James Settling Pond area (SP-1) and managed separately as described below.

   The dewatering of the pit areas is expected to impact two existing springs on the James Property which flow to the Unnamed Tributary that flows from the James Property to Bean Lake. In order to preserve the flow in this tributary and to preserve downstream fish habitat, clean groundwater from the pit perimeter dewatering wells will be used to supplement inflow to the tributary via the James Settling Pond as detailed above (4-29 (e)). This arrangement has been designed based on ongoing consultation with DFO to ensure that the fish habitat in the tributary is maintained.

b) Dewatering water, occasionally present within the pit, will be pumped into the settling pond and managed separately from the perimeter dewatering water.

Water Discharged: Redmond Pit Operation

a) Dewatering of Redmond Pit 2B and Redmond Pit 5, including perimeter dewatering wells, will be accomplished by pumping the water to historical Redmond Pit 2. Information obtained to date indicates that Pit 2 can accommodate the pit water from the operating pits (and a limited amount of waste rock disposal) without any overflow from Pit 2. There will be no discharge release from Redmond Pit operation.

Monitoring

a) LIM has entered into an MOU with the NLDOEC Real Time Water Monitoring Program.

b) LIM has received approval for the Letter of Advice from DFO (May 31, 2010). Monitoring will be conducted in accordance with the Letter of Advice.

c) Monitoring will also be conducted under the federal MMER program.

d) As construction and site water management is started, all water releases will fall under the provincial *Environmental Control Water and Sewage Regulations*. Compliance with these regulations, particularly in regard to total suspended solids (TSS) will be verified by periodic monitoring.

e) Further monitoring requirements will be detailed in the Certificate of Approval (C of A) issued by Pollution Prevention Division of the NLDOEC. The details of these monitoring requirements will include: sampling stations; parameters to be monitored; a schedule for the monitoring; and a requirement to report the results.

f) Throughout the construction and operation, the *Environmental Control Water and Sewage Regulations* and MMER will apply.

4.29 Site Water Management - Settling Ponds including Sediment Control Ponds

Potential Environmental Concerns

The main environmental concerns associated with the settling pond are potential contamination of surrounding surface water and ground water, and associated effects on aquatic life.

Environmental Protection Procedures

Silver Yard Settling Pond

The Silver Yard Settling Pond will be constructed and operational prior to any processing or operations. It has been designed to serve two functions:

a) The Pond is designed to receive the flush of water from the regular maintenance of the pumping/pipeline system. In order to complete regular Plant and/or pipeline maintenance (approximately once a week), the reject fines discharge pipeline to Ruth Pit will be flushed with clean water to push all reject fines washwater in the system to Ruth Pit. Once the pipeline is flushed and contains only clear water, the water will either be left in the pipe (typical for Plant maintenance under warm ambient temperatures) or the water will be released from the pipeline (as required for pump and pipeline maintenance or plant maintenance during freezing ambient conditions). The pipeline cannot be pumped dry; therefore, in order to clear the pipeline of water, it must be released to drain via gravity. The low point on the line is the Silver Yard Settling Pond and this clean water will be released into this pond prior to discharge to the environment.

b) The pond is also designed to receive any emergency discharge from the pipeline during a power or pumping failure. The Beneficiation Plant will be interrupted during this event and therefore the volume of discharge to the pond should only be the volume of effluent in the pipeline. In this case, the washwater discharged into the pond will be the same quality as the washwater being deposited in Ruth Pit except that, due to the decrease in pumping pressure and pipeline velocities, some larger fines particles may settle in the pipeline and not be discharged with the washwater.

   Treated discharge from the pond will be directed to an engineered stormwater collection ditch which extends across the north boundary of the site. The ditch conveys stormwater and discharge from the Silver Yard Pond east to cell 3 of the James Settling Pond (see Section 4.29(h)) for mixing with the in-pit dewatering from James Pit for treatment and subsequent discharge to James Creek or Bean Lake.

James Settling Pond

The James Settling Pond will be constructed and operational prior to any processing or operations.

a) Three settling pond cells will be constructed using cut and fill earthworks, utilizing the silty sand overburden for core material and waste rock for erosion control and flow conveyance. Cells 1 and 2 measure approximately 24 m by 100 m in plan (water area) with an average water depth of 2 m.

b) The inlets will be constructed of rock-lined ditches and rip-rap lined dispersion channels to evenly distribute the flow across the width of the cell.

c) The outlet is designed to collect and convey the discharge flow via a constant head tank arrangement. The constant head tank will divert water discharge to the Unnamed Tributary within the range of flow required to maintain the naturally existing flows in this tributary (4 to 8 m^3/min) as per consultation with DFO. This flow path will be monitored real time and an alarm system will be set up to warn mine personnel if the flow in the tributary is too low. In the event that flow through the constant head tank system is disrupted, backup systems to supply water to the tributary will include pump systems to convey water from cells 1 and 2 or nearby James Creek to supplement the flow in the tributary to maintain the flow range required (4 to 8 m^3/min).

   In addition to water flow, the real time monitoring of the outflow from the James Settling Pond will include specific conductance, dissolved oxygen level, pH, turbidity, and water level.

d) The remainder of the discharge from Cells 1 and 2 will be conveyed via an engineered channel and ditch to either James Creek or directly to Bean Lake.

e) Cell 3 will be constructed to approximately 100 m by 40 m and will receive water from the in-pit sumps (from James North and South) and from the stormwater ditch from the Silver Yards area. The inlet construction will be similar to Cells 1 and 2, however the outlet will be a simple discharge channel to combine with the discharge from Cells 1 and 2 for conveyance to James Creek or Bean Lake.

f) The options for discharge to either James Creek or directly to Bean Lake will be confirmed via detailed route surveying during construction.

Redmond 2 Pit

The Redmond 2 Pit will be prepared for use as a settling pond prior to any processing or operations.

a) Redmond 2 Pit will be used as a settling pond for the dewatering wells for the Redmond 2b and Redmond 5 open pits and as a waste rock storage area for a portion of rock from these open pits. Redmond 2 Pit currently has no surface connection to nearby surface water bodies. LIM will maintain the non-

connectivity of Redmond 2 Pit to surface water bodies. Per Section 4.28(g), there will be no discharge from Redmond 2 into the surrounding water bodies.

Sewage Wastewater

a) Sewage wastewater will be generated at Silver Yard and at the work camp. Each will have a separate aerated RBC Biodisk sewage treatment system. After treatment, grey water from Silver Yard will be pumped to Ruth Pit (Section 4.28(b, ii)). Grey water from the work camp treatment system will be pumped to a small settling pond on-site and then discharged to Bean Lake. See Section 4.19 for environmental protection measures associated with sewage wastewater.

4.30 Drilling and Blasting

LIM's mining contractor will be responsible for the transportation, storage, and use of explosives.

Environmental Concerns

Potential environmental concerns associated with on-land blasting include destruction of vegetation outside construction zone, noise disturbances to wildlife, effects to fish and aquatic animals, disturbance of historic resources, dust generation, and the potential introduction of silt and ammonia into water bodies.

Environmental concerns related to drilling are potential surface disturbances, disposal of drilling fluids and cuttings, potential siltation, generation of dust, noise and the potential impacts on terrestrial habitats, air quality, aquatic ecosystems, and historic resources.

Environmental Protection Procedures

General Blasting Environmental Protection Procedures:

a) The contractor will conduct all blasting work in compliance with the appropriate permits and/or approvals and authorizations. All blasters will have a Blasters Safety Certificate and all blasting will be conducted in adherence to LIM's safe work procedures and the Occupational Health and Safety legislation.

b) The contractor will obtain the appropriate approvals for all magazines for explosive.

c) The contractor will handle, transport, store and use explosives and all other hazardous materials in compliance with all applicable laws, regulations, orders of the Newfoundland and Labrador Department of Government Service (NLDGS) and Newfoundland and Labrador Department of Natural Resources (NLDNR), and the Dangerous Goods Transportation Act.

d) The contractor will use blasting patterns and procedures which minimize shock or instantaneous peak noise levels.

e) The contractor will not blast in the vicinity of fuel storage facilities.

f) The contractor will restrict use of explosives to authorized personnel who have been trained in their use.

g) The contractor will ensure that there are separate magazines on site for explosives and for dynamite blasting caps.

h) Where necessary, runoff from blasted areas will be monitored at discharge sites for parameters including, but not limited to, pH, total suspended sediment (TSS), total petroleum hydrocarbon (TPH), ammonia and iron, as required by the Pollution Prevention Division. The Certificate of Approval will outline the exact requirements for monitoring. Runoff from blasted areas will also be monitored by Acute Lethality Testing, if the discharge is captured under MMER (more than 50,000 L discharged in a single event). Discharge will be treated, if required, prior to entering a water body.

i) All personnel must have been trained in the use of explosives and comply with safe blasting procedures established by LIM.

j) The contractor will coordinate and schedule blasting activities to minimize the number of blasts required. In order to minimize the seismic effect, blasting patterns and procedures will be used to reduce the shock wave and noise.

k) The contractor will store explosives and auxiliary materials as stipulated in relevant legislation and in compliance with their operations permit and this EPP. Licensed blasters under direct supervision of a professional engineer will undertake blasting.

l) The contractor will use explosives in a manner that will minimize damage or defacement of landscape features, trees and other surrounding objects by controlling through the best methods possible (including time-delay blast cycles) the scatter of blasted material beyond the limits of activity.

m) If birds or wildlife are detected in the area, described blasting will only proceed when wildlife have left the area, or when consultation with Wildlife Division has occurred.

n) The contractor will take precautions if blasting is necessary within the vicinity of an archaeological site to ensure that blaster material and shock waves do not disturb any part of the site. If necessary, protective covering is applied to the site under the supervision of an archaeologist. Blasting is not undertaken in these areas without notifying the LIM Labrador Site Manager. Any historic resource discoveries will be reported to the PAO.

Blasting in Close Proximity to Water Bodies Environmental Protection Procedures:

a) Drilling and blasting activities will be undertaken in a manner that ensures the magnitude of explosions is limited to that which is absolutely necessary. A blasting plan will be reviewed with one of the local DFO officers in advance of work in close proximity to water bodies.

b) If birds, fish or wildlife are detected in the area, described blasting will only proceed when the birds, fish or wildlife have left the area or when consultation with Wildlife Division has occurred.

c) Use of acoustic harassment devices or a ramp-up of detonation pressures to encourage fish to move away from blasting area.

d) Use of bubble curtains and other acoustic absorbents, where feasible; to contain shock waves from blasting.

e) Notification of area residents and fishers prior to blasting operations.

Drilling will be completed per the environmental protection procedures in Section 4.12.

4.31 Caribou

Potential Environmental Concerns

Background information on caribou in western Labrador is provided in Appendix F.

Environmental Protection Procedures

The appropriate level of action for any encounter with a caribou is one that removes risk to the caribou and personnel with a minimal amount of disturbance to the caribou. Mitigation of disturbance may involve the potential for modification or adjustment of construction, mining and operational activities. All caribou management actions will be reported to the NLDOEC Wildlife Division (Wildlife Division).

In order to mitigate any potential effects of the Project on caribou, activities during the construction and operations of the Project will be planned with three main considerations:

- Any activity that may potentially affect caribou habitat will be implemented with appropriate mitigation regardless of whether caribou are actually present.
- In the event that caribou are observed by personnel, a set of procedures will be incorporated to reduce or eliminate disturbance and avoid encounters with caribou; and
- That the woodland caribou mitigation strategy will be employed by on-site personnel until such time that this plan is revised or replaced by mutual agreement between LIM and Wildlife Division. A joint review of the current mitigation strategy by LIM and Wildlife Division to be conducted annually at the end of Year 1 to accommodate the inclusion of any new data and to assess the strategy for appropriateness.

Note that LIM is firmly committed to ensuring no animals are disturbed, harmed, or killed as a result of this Project. LIM is also concerned that delays in Project activities could occur due to caribou or other wildlife being present and remaining within a certain distance, seemingly tolerant of the localized industrial activity. Therefore it is proposed that if caribou approach the Project, there be a progressive level of heightened awareness by Project personnel AND increased interaction with Wildlife Division, to ensure both objectives are met. Specific caribou mitigation and monitoring measures associated with the re-establishment of the spur line will include:

- An initial helicopter survey of a 20 km radius area around the proposed activity that would occur in early May 2010. All techniques (e.g., transect density, aircraft height, speed, study team composition) will be identical to that completed by Groupe Hémisphères and Jacques Whitford Stantec Limited (2009) the previous year – with the exception of the size of the area (i.e., 20 km radius versus 50 km radius). Representative(s) of the Wildlife Division will be invited to participate and in the event that caribou are observed, the Study Team will attempt to deploy satellite collars and collect tissue samples for genetic analyses – to assist in the identification of herd affiliation.

- Sightings as a result of this survey or reports of caribou, e.g., through co-ordination with Wildlife Division authorities and/or other stakeholders, within 20 km of Project infrastructure and activities will be described in a one-page update of mining activity and wildlife observations associated with this EPP. This update will normally be sent by LIM to the Wildlife Division in Wabush and Corner Brook on a bi-weekly basis (whenever Project activities are ongoing). However, if caribou are observed during the survey or thereafter within 20 km of the Project, reports will be sent immediately (i.e., same day) to the Wildlife Division. When caribou are known to occur within 20 km, a 5 km buffer around each area of activity will be monitored on a weekly basis by scanning for tracks or animals from road-accessible vantage points within this radius. Observations reported by personnel or others will also be recorded and investigated within this area. Reporting to the Wildlife Division would be increased to a weekly basis in this scenario. Note that if caribou are not seen within the 20 km radius during the aerial survey or otherwise, the 5 km buffer would be monitored on a bi-weekly basis (from road-accessible vantage points) over the course of the calving and post-calving period.
- If caribou are observed at a distance of less than 5 km from Project infrastructure and activities, LIM will issue an advisory of their proximity to personnel to be alert and that activities that would potentially disturb or otherwise harm these animals may need to be curtailed until these animals have left the area. Construction and operation of the Project involves the following activities: vegetation clearing, grubbing, grading and levelling; laydown and storage of equipment and material in existing areas; generators to support the activity; vehicle and heavy equipment use; handling and transfer of fuel and other hazardous material; waste disposal; sewage disposal; hazardous waste disposal; and vehicle traffic. None of these activities will be audible beyond a short distance (i.e., less than 1 km) and would not need to be delayed if caribou are within 5 km. The monitoring from road accessible vantage points will occur on a daily basis. **The Wildlife Division is to be contacted immediately at 1-709-637-2029 (Corner Brook) or 1-709-282-6881 (Wabush).**
- Should caribou be observed within 3 km of Project facilities and/or by site personnel, activities that would potentially disturb or otherwise harm these animals will be assessed and, if required, curtailed until these animals have left the area. Specifically, if in the event caribou approach to within sight of these work areas, activities will be delayed allowing the animals to proceed onwards beyond the work site. This mitigation will avoid any collisions with wildlife that may disturb or harm caribou or personnel. Note that blasting will not be required as part of the spur line.
- While caribou are within 5 km of Project infrastructure and activities, all sightings of caribou will be reported to the LIM Labrador Site Manager, and will be immediately communicated to all vehicle operators. Caribou will not be blocked from crossing mine-related roads or work areas. If caribou are crossing or attempting to cross the site roads, then traffic will stop and wait for them to cross. There will be no hunting or other harassment of these animals at any time. The monitoring from road accessible vantage points will occur on a daily basis and reported bi-weekly unless caribou are observed whereby the **Wildlife Division is to be contacted immediately at 1-709-637-2029 or 1-709-282-6881**.

Other mitigation measures to be implemented with Project activities are outlined in Table 4-2.

Table 4.2 Proposed Mitigation Measures for Caribou

Project Activities	Mitigation Measures
Construction	
Site Preparation (grubbing, excavating)	Clear vegetation in a pattern that does not leave a recognizable trail, where practical to reduce accessibility and visibility to humans and predators. These activities would be restricted to the physical footprint of the Project. Fire prevention and response procedures, training and equipment will be implemented.
Placement of Infrastructure (re-establishment of on-site roads)	The width, density and length of access roads lines will be minimized. Where possible, any new disturbance will be reduced by locating these facilities adjacent to existing areas of surface disturbance. Ensure that linear facilities such as rail lines and roads are separated by more than 100 m, where practical.
Placement of Equipment and Buildings	Fence hazardous construction areas.
Employment and Expenditures	Enforce a "no hunting and firearms" policy among all personnel. Use monitors to keep construction staff and management informed on the presence of caribou at the mine site as described above.
Operation	
Iron Ore Extraction (excavation – mechanical, blasting)	Note that caribou were not observed within a 20 km radius of proposed activities during the aerial survey of 26 April to 1 May 2010 (report in preparation). Therefore, a 5-km buffer will be monitored on a bi-weekly basis (from road-accessible vantage points) over the course of the calving and post-calving period (i.e., 28 May to 20 September). If caribou are observed at a distance of less than 5 km from Project infrastructure and activities, LIM will issue an advisory of their proximity to personnel to be alert and that activities that would potentially disturb or otherwise harm these animals may need to be curtailed until these animals have left the area.
Iron Ore Beneficiation (crushing, washing, screening, stockpiling, hazardous and mining waste disposal)	Fence hazardous construction areas. Fire prevention and response procedures, training and equipment will be implemented. Hazardous material handling procedures, training and response in the event of a spill will be implemented.
Stormwater and Wastewater Management	Ensure materials are handled and disposed consistent with federal and provincial regulations

Project Activities	Mitigation Measures
Transportation (on-site trucking, rail loading)	Personnel operating company vehicles will possess a valid driver's license, undergo employee orientation and safety training, and be briefed on potential for and strategies for avoiding wildlife-vehicle collisions. All mine access roads to be limited to Project personnel only. Speed limits of 50 km/hr (daylight) and 30 km/hr (darkness) and wildlife caution signs will be posted along mine roads and rail lines.
Operations	A "bear aware" waste management plan will be developed and implemented to reduce the likelihood of bears (predators) in the Project areas. Observations of caribou (and other wildlife) by staff will be recorded (including observer, time and location) and submitted to monitors and LIM management to determine appropriate mitigation/follow-up.
Decommissioning	
Removal of Facilities and Equipment	Personnel operating company vehicles will possess a valid driver's license, undergo employee orientation and safety training, and be briefed on potential for and strategies for avoiding wildlife-vehicle collisions. Enforce a "no hunting and firearms" policy among all personnel. Use monitors to keep staff and management informed on the presence of caribou at the mine site. Mine roads will be restricted to Project personnel only. Speed limits of 50 km/hr (daylight) and 30 km/hr (darkness) and wildlife caution signs will be posted along mine roads and rail lines.
Site Reclamation (grading, re-vegetation)	Reclamation techniques will emphasize the revegetation of the pre-disturbance vegetated areas of the site with local plants that would encourage growth of caribou winter forage. Fire prevention and response procedures, training and equipment will be implemented. Hazardous material handling procedures, training and response in the event of a spill will be implemented.

Throughout construction and operations, LIM will maintain liaison with the provincial Wildlife Division, and other stakeholders and officials regarding the movements of the George River Herd and/or possible woodland caribou sightings of caribou in the Project area. Through existing satellite collar monitoring and other monitoring activities (e.g., community networking, traditional knowledge programs, and incorporation of recent observations into Project planning), LIM will implement an advisory to mine management staff should any herds enter the Project area. Such caribou movements, observations and actions implemented by LIM would be recorded and reported to the Wildlife Division immediately.

5.0 CONTINGENCY PLANS

Contingency plans to address accidents and unplanned situations have been developed, and will be modified as required throughout ongoing construction and operation phases.

Contingency plans have been developed for the following potential accidental and unplanned situations:

- Fuel and Hazardous Material Spills (Section 5.1)
- Wildlife Encounters (Section 5.2)
- Forest Fires (Section 5.3)
- Discovery of Historic Resources (Section 5.4)

Notwithstanding the existence of these contingency plans, a policy to implement preventative measures as the first line of defence against the possibility of accidents will be adopted.

5.1 Fuel and Hazardous Material Spills

Potential Environmental Concerns

Fuel and hazardous materials can potentially be damaging to vegetation, soil, surface water, ground water, wildlife, aquatic organisms, historic resources and human health and safety.

Environmental Protection Procedures

In case of a fuel or hazardous material spill, the following procedures will apply.

a) The individual who discovers the leak or spill will make a reasonable attempt to immediately stop the leakage and contain the flow. Spill kits are located at fuel storage tanks and at designated central storage location(s).

b) Spill location, type of fuel or hazardous material, volume and terrain condition at the spill site will be determined and reported immediately to the LIM Labrador Site Manager, who will report it immediately to Environment Canada (Item c).

c) In the event of a reportable spill on-land or any spill regardless of size that may enter a waterbody frequented by fish must be reported immediately to the

Environmental Emergencies 24 Hour Report Line
709-772-2083 or **800-563-9089**

(Refer to Section 4.16 for the definition of reportable spills on-land versus in freshwater environments.)

Required pertinent information includes:

i) name of reporter and phone number;

ii) time of spill or leak;

iii) time of detection of spill or leak;

iv) type of product spilled or leaked;

v) amount of product spilled or leaked;

vi) location of spill or leak;

vii) source of spill or leak;

viii) type of accident - collision, rupture, overflow, other;

ix) owner of product and phone number;

x) if the spill or leak is still occurring;

xi) if the spill or leaked product is contained, and if not, where it is flowing;

xii) wind velocity and direction;

xiii) temperature;

xiv) proximity to waterbodies, water intakes, and facilities, and

xv) snow cover and depth, terrain, and soil conditions.

d) The LIM Labrador Site Manager will act as the "On-Scene-Commander" for the purposes of cleaning up a fuel or hazardous materials spill. The LIM Labrador Site Manager will be familiar with spill clean-up procedures and mobilization procedures of the clean-up equipment. The LIM Labrador Site Manager will have full authority to take necessary and appropriate action without unnecessary delay.

The overall responsibility of coordinating a clean-up and maintaining this contingency plan current and up-to-date will be the LIM VP Environment and Permitting.

Staff will be trained on the procedures to follow in case of hydrocarbon spills as well as information related to general communication line. LIM will provide personnel a responsibilities list before the start of construction and operation activities.

A complete list of spill response equipment will be generated and distributed on-site before the start of construction activities.

e) In reaching decisions on containment and clean-up procedures, the following criteria will be applied:

i) minimize danger to workers and public;

ii) protect water supplies;

iii) minimize pollution of watercourses;

iv) minimize area affected by spill, and

v) minimize the degree of disturbance to the area and watercourses during clean-up.

f) The LIM Labrador Site Manager will act in consultation with the regulating authorities to:

i) assess site conditions and environmental impacts of various cleanup procedures;

ii) assess potential for fuel recovery versus burning;

iii) deploy on-site staff to mobilize pumps and empty 215-L drums or other appropriate storage containers to the spill site;

iv) deploy on-site staff to build containment dykes and commence pumping contaminant into drums;

v) apply absorbent as necessary;

vi) dispose of all contaminated debris, cleaning materials and absorbent by burning, if appropriate, or by placing it in an approved land-fill site, and

vii) take all necessary precautions to avoid the incident in the future.

g) The LIM Labrador Site Manager will be responsible for the preparation of a written report which will be sent (as soon as possible and no later than 30 days after the spill) to the LIM VP Environment and Permitting; and, from there to:

Kenneth Russell
Manager of Operations
Government Services
Happy Valley-Goose Bay Regional Office

(709) 896-5709 (tel)
(709) 896-4340 (fax)

and

Graham Thomas
Environmental Emergencies Coordinator
Environment Canada
6 Bruce Street
Mount Pearl, NL A1N 4T3

(709) 772-4285 (bus)
(709) 687-5634 (cell)

5.2 Wildlife Encounters

Potential Environmental Concerns

Wildlife encounters pose a potential risk for stress or injury to both the wildlife and site personnel. Control measures and environmental protection procedures have been put in place to reduce this potential risk to wildlife and humans.

As a protection measure, hunting, trapping or fishing by construction and operations personnel is not permitted on the site.

Environmental Protection Procedures

Prevention

The operator is responsible to see that the following procedures are implemented:

a) Site and working areas will be kept clean of food scraps and garbage.

b) Waste will be collected for disposal in appropriate containers and routinely transferred to the local landfill.

Certain activities such as clearing will be avoided, where possible, during the nesting period for migratory birds in the region (from May to around mid-July). As well, efforts will be taken to undertake any required clearing in these areas outside of the breeding season. Should additional clearing be required, and it is not possible to undertake clearing outside of the breeding season and a nest is found, the following mitigative actions will be taken:

- the nest site and neighbouring vegetation should be left undisturbed until nesting is completed; and,
- construction activities should be minimized in the immediate area until nesting is completed.

The best approach will be identified based on the circumstances and in compliance with the *MBCA*. Should a nest of a birds listed in the CWS Occasional Paper Birds Protected in Canada under *Migratory Birds Convention Act* be encountered during the proposed work program, the Canadian Wildlife Service will be contacted.

Response Actions

All construction/operations personnel will abide by the following rules in the case of wildlife encounters:

a) No attempt will be made by any worker at the project site to chase, catch, divert, follow or otherwise harass wildlife by vehicle or on foot.

b) Equipment and vehicles will yield the right-of-way to wildlife.

c) No personal pets, domestic or wild, will be allowed on the site.

d) All personnel should be aware of the potential for encounters with bears, wolves, caribou, moose, etc. and they will be instructed to immediately report any sightings to the LIM Labrador Site Manager. The LIM Labrador Site Manager will notify the LIM VP Environment and Permitting to report any wildlife sitings and to assess actions for follow-up.

e) The LIM Labrador Site Manager will be responsible for all actions in response to nuisance animals (e.g., bears) in the project area and will advise the LIM VP Environment and Permitting for further action.

f) Under provincial wildlife regulations, the displacement and release of any animal is the sole jurisdiction of the NLDOEC and is to be undertaken only under appropriate supervision.

g) If the nest of any raptor or other bird is encountered during construction and operation activities, work in the vicinity of the nest is to be curtailed until the LIM VP Environment and Permitting is contacted and has had the opportunity to contact the Wildlife Division and appropriate mitigation is applied. This includes a 200 m buffer zone around any active raptor next during most of the year, extending to an 800 m buffer zone during the breeding season (March 31 to July 31).

h) During the past four years of baseline data collection at the Project area, and as identified in the EIS, no SARA species have been identified within the project area. However, should any federally list species at risk (endangered, threatened, or special concern) or provincially listed species under the Newfoundland and Labrador *Endangered Species Act* be identified in the project area and considered to be at risk for potential impacts as a result of Project activities (disturbed or incidental mortality), LIM's VP of Environment, or designate will contact CWS at (709) 772-7456.

5.3 Forest Fires

Potential Environmental Concerns

Activities related to construction and/or operations could potentially result in a fire, which could spread to the surrounding area. Such events could potentially be damaging to vegetation and wildlife, air and water quality, human health and safety, and LIM assets.

Environmental Protection Procedures

LIM or the contractor will take all precautions necessary to prevent fire hazards when working at the site. These include but are not limited to:

a) Disposal of all flammable waste on a regular basis.

b) LIM or the contractor making available, in proper operating condition, sufficient firefighting equipment to suit its labour force and fire hazards. Such equipment will comply with, and be maintained to the manufacturer's standards.

c) LIM or the contractor ensuring that its personnel are trained in the use of such equipment.

d) In the event of a forest fire, LIM or the contractor will take immediate steps to contain or extinguish the fire.

e) LIM's Labrador Site Manager will appoint a supervisory staff member as "On-Scene-Commander" for fighting any forest fires.

f) Fires should be reported immediately to:

    i) the LIM Labrador Site Manager;

    ii) Wabush Forestry Office 709-282-6881, and ultimately to the

    iii) Forest Management Unit Office in Corner Brook **709-637-2408**.

g) The following information will be provided:

    i) name of the reporter and phone number;

    ii) time of detection of the fire;

    iii) size of the fire; and

    iv) location of the fire.

h) The police will also be notified immediately at:

709-944-7602 (Lab West RNC Detachment).

5.4 Discovery of Historic Resources

Potential Environmental Concerns

Historic resource material that is disturbed, destroyed or improperly removed from a site represents a potential cultural loss of information and history that could otherwise be handled and interpreted in an efficient and appropriate manner.

Environmental Protection Procedures

a) If suspected archaeological material is encountered, stop all work in the immediate area of the discovery until authorized personnel from LIM, having consulted with the Provincial Archaeologist, permit resumption of the work.

b) Report the find immediately to the LIM Labrador Site Manager.

c) Mark the site's visible boundaries. Personnel will not move or remove any artefacts or associated material unless the integrity of the material is threatened.

d) The LIM Labrador Site Manager will report the find with the following information to the Provincial Archaeology Office, Culture and Heritage Division, Department of Tourism, Culture, and Heritage, St. John's, and comply with the instruction provided:

    i) nature of the find;

    ii) precise descriptive and map location and the time of the find:

    iii) nature of the activity resulting in the find;

    iv) identity of the worker(s) making the find;

    v) present location of the material, if moved, and any protective measures initiated for the material and the site, and

    vi) Extenuating circumstances.

6.0 ENVIRONMENTAL PROTECTION PLAN CONTROL REVISIONS

Holders of controlled copies (i.e., those version which contain all of the up-to-date procedures) of the EPP are listed in Appendix B.

The EPP will be revised as necessary to reflect site-specific environmental protection requirements, and allow updates as work progresses. All EPP holders may initiate revisions by forwarding proposed revisions to the LIM Labrador Site Manager and/or the VP of Environment and Permitting. The following information will be provided on the Revision Request Form (see Appendix C) for all revision requests:

- section to be revised;
- nature of the revision;
- rationale for the revision (i.e., environment/worker safety), and
- who submitted the revision request.

Approval for revisions will be sought from LIM. When the LIM VP of Environment and Permitting receives approval for the revision request, details of the revision will be distributed to all EPP holders and will be documented in the Revision History Log (Appendix D). Each revision will be accompanied by:

- revision instructions;
- list of sections being superseded; and
- an updated Table of Contents indicating the status of each section in the EPP.

When EPP Holders receive a revision, they will, within two working days:

- read the text of the revision;
- check the control sheet to confirm that all the listed pages have been received;
- remove and destroy the superseded pages from their copy of the EPP;
- insert the revised pages in the proper place in their copy of the EPP;
- page check the EPP, using the updated table of contents to confirm the EPP is complete and current;
- enter the revision number and date entered on the Revision History Log;
- incorporate the revision into the area of responsibility, as appropriate, and
- confirm that their personnel are familiar with the revisions.

7.0 CONTACT LIST

LABRADOR IRON MINES LIMITED
Linda Wrong, P.Geo.
Vice President, Environment and Permitting
Suite 700-220 Bay Street
Toronto, Ontario M5J 2W4
Tel. (416) 362-2435
Cell (416) 660-2979
Fax. (416) 368-5344

Frank Johnson
Labrador Site Manager
Tel. (418) 585-2223

ENVIRONMENTAL EMERGENCIES
24-HOUR REPORT LINE
St. John's (709) 772-2083
Other Areas 1-800-563-9089

ENVIRONMENT CANADA
ENVIRONMENTAL PROTECTION
Mount Pearl, NL
Environmental Assessment Coordinator
Glenn Troke
Tel. (709) 772-4087
Fax. (709) 772-5097

Environmental Emergencies Coordinator
Graham Thomas
Tel. (709) 772-4285
Cell (709) 687-5634

ENVIRONMENT CANADA
CANADIAN WILDLIFE SERVICE
Kim Mawhinney,
Manager
Canadian Wildlife Service
Mount Pearl, NL
Tel. (709) 772-7456
Fax. (709) 772-5097

Paul MacDonald
P.O. Box 1116, Station C
512 Lahr Blvd.
5 Wing Goose Bay
Happy Valley-Goose Bay, NL A0P 1C0
Tel. (709) 896-6166

FISHERIES AND OCEANS CANADA
Kathleen Simms
Area Habitat Biologist - Labrador
Happy Valley – Goose Bay, NL
Tel. (709) 896-6151
Fax: (709) 896-8419

DEPARTMENT OF GOVERNMENT SERVICES
Regional Director
Happy Valley - Goose Bay, NL
Tel. (709) 896-5428
Fax. (709) 896-4340

Kenneth Russell
Manager of Operations
Happy Valley - Goose Bay, NL
Tel. (709) 896-5471
Fax. (709) 896-4340

DEPARTMENT OF NATURAL RESOURCES

Forestry Branch

Chuck Porter
Conservation Officer
Wabush, NL
Tel. (709) 282-6881
Fax. (709) 282-5352

DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Wildlife Division

Kirsten Miller
Biologist
Corner Brook, NL
Tel. (709) 637-2029

David Elliot
Wildlife Biologist
Happy-Valley Goose Bay, NL
Tel. (709) 896-1181

Pollution Prevention Division

Stephen Dyke
St. John's, NL
Tel. (709) 726-2738

Water Resources Management Division

Clyde McLean
Manager, Water Investigations Section
St. John's, NL
Tel. (709) 729-5713
Fax. (709) 729-0320

Renee Paterson
Real-Time Water Quality Coordinator
St. John's, NL
Tel. (709) 729-1159
Fax. (709) 729-0320

Wabush Forestry Office

Tel. (709) 282-6881

Forest Management Unit Office

Corner Brook, NL
Tel. (709) 637-2408

ROYAL NEWFOUNDLAND CONSTABULARY

Booth Avenue
Labrador City, NL
Tel. (709) 944-7602

8.0 REFERENCE MATERIAL

Canadian Council of Ministers of the Environment. 1994. Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products.

Department of Environment and Conservation, Water Resources Management Division. Chapter 3A. Environmental Guidelines for Stream Crossings by All-Terrain Vehicles.

Department of Natural Resources. Estimated 1995. Environmental Guidelines for Construction and Mineral Exploration Companies.

DFRA (Department of Forest Resources and Agrifoods). 1998. Environmental Protection Guidelines for Ecologically Based Forest Resource Management (Stand Level Operations).

Gosse, M.M., A.S. Power, D.E. Hyslop, and S.L. Pierce. 1998. Guidelines for Protection of Freshwater Fish Habitat in Newfoundland and Labrador. Fisheries and Oceans, St. John's, NL. X + 105 pp., 2 appendices.

Stantec. February 27, 2009. Stage 1 Historic Resources Assessment – Labrador Iron Mines 2008 Exploration Activities Draft Report.

9.0 SIGNATURE PAGE

LABRADOR IRON MINES

The undersigned certify that they have reviewed, and understand their role and responsibility regarding:

SCHEFFERVILLE AREA IRON ORE PROJECT

CONSTRUCTION AND OPERATIONS ACTIVITIES

ENVIRONMENTAL PROTECTION PLAN

As part of their Schefferville Area Iron Ore Project Safety Orientation.

_____ representing _____

Name (Printed) Company

_____ _____

Signature of above Date

_____

Name of Manager or Supervisor

_____ _____

Manager or Supervisor's Signature Date

APPENDIX A

LIST OF ABBREVIATIONS AND ACRONYMS

LIST OF ABBREVIATIONS AND ACRONYMS

ATV	–	All-terrain Vehicle
CEPA	–	*Canadian Environmental Protection Act*
CWS	–	Canadian Wildlife Service
DFO	–	Fisheries and Oceans Canada
H&S	–	Health and Safety
IOCC	–	Iron Ore Company of Canada
NLDNR	–	Newfoundland and Labrador Department of Natural Resources
NLDOEC	–	Newfoundland and Labrador Department of Environment and Conservation
EPP	–	Environmental Protection Plan
LIM	–	Labrador Iron Mines
MBCA	–	*Migratory Birds Convention Act*
MMER	–	Metal Mines Effluent Regulations
MSDS	–	Material Safety Data Sheet
MOU	–	Memorandum of Understanding
RBC	–	Rotating Biological Contractor
SARA	–	Species at Risk Act
tpd	–	Tonnes per Day
VP	–	Vice President
WHMIS	–	Workplace Hazardous Materials Information System

APPENDIX B

CONTROLLED COPY DISTRIBUTION LIST

CONTROLLED COPY DISTRIBUTION LIST

Department or Organization	Individual or Location
LIM Environment Team	Linda Wrong, VP Environment and Permitting (Toronto Office)
	Glenn Coyne, Labrador Site Manager (Schefferville Office)
LIM Toronto Office	Daniel Dufort, VP Operations
	Joanne Robinson, Senior Mining Engineer
LIM Montreal Office	Marc Duclos, VP Transportation

APPENDIX C

REVISION REQUEST FORM

SECTION TO BE REVISED:

NATURE OF REVISION:

RATIONALE FOR REVISION:

(i.e., environment/worker safety, etc.)

SUBMITTED BY:

Please submit request to the LIM's Environment Team

APPENDIX D

REVISION HISTORY LOG

REVISION HISTORY LOG

Version	Date Issued	Revision Notes
0.0		Draft
1.0	June 14, 2010	Final

APPENDIX E

SITE CHECK LIST FORM

LABRADOR IRON MINES LIMITED

SITE CHECK LIST

Please check one | Before | During | After |

PROJECT: _____ **HOLE/TRENCH:** _____

PROPERTY: _____

PERMIT NUMBER: _____ **DATE:** Start: _____ End: _____

PROJECT GEOLOGIST: _____ **CONTRACTOR:** _____

- Ensure that personnel have been trained in EHS protocols.
- Ensure personnel are equipped with personal protective equipment.

SITE CONDITION : _____

SITE WORKED PREVIOUSLY: Yes: _____ No: _____ **OLD DRILL HOLES MAKING WATER:** Yes: _____ No: _____

COMMENTS: _____

INDICATIONS OF WILDLIFE (tracks, nests, etc.)**:** Yes: _____ No: _____

COMMENTS (If Yes): _____

WATER MANAGEMENT: Water Source (lake, creek): _____ Sump(s) Location: _____

SEDIMENT RUN-OFF?:

COMMENTS: _____

NEARBY WATER COURSES:

PRESENCE OF SEDIMENTS? Yes: No:

DRILL COLLAR SITE:

Casing Pulled: Yes: _____ No: _____ Hole Grouted: Yes: _____ No: _____

Making Water: Yes: _____ No: _____ Capped: Yes: _____ No: _____

DRILL CUTTINGS DEPOSITED DOWN HOLE: Yes: _____ No: _____

COMMENTS: _____

SPILLS: Reportable Spill-Date Occurred: _____ Type (oil, mud): _____

COMMENTS: _____

SITE CONIDITIONS AFTER WORK: Site Cleared of all Garbage/Metal: Yes: No:

TRENCHES SLOPED: Yes: _____ No: _____ **EQUIPMENT REMOVED:** Yes: _____ No: _____

COMMENTS: _____

SITE INSPECTED BY: _____ **DATE:** _____

Feb-09

APPENDIX F

BACKGROUND INFORMATION ON CARIBOU IN WESTERN LABRADOR

Background Information on Caribou in Western Labrador

Labrador has both migratory and sedentary ecotypes of caribou that are distinguished by how and where their calving grounds occur as well as other characteristics. Migratory caribou travel large distances, occupy large home ranges, and gather together during calving periods. Conversely, sedentary caribou display limited movements, occupy smaller home ranges, and tend to occur alone or in low densities during the calving period (Schaefer et al. 2000; Bergerud et al. 2008). Sedentary caribou also tend to be larger in size than migratory caribou (Couturier et al. 2010).

The Project occupies a portion of Western Labrador which overlaps with the range of the migratory George River Caribou Herd. Straddling the Quebec-Labrador peninsula, the George River Herd is one of the world's largest caribou populations, with estimates peaking at almost 800,000 individuals in the 1980's (Couturier et al. 1996; Russell et al. 1996, Rivest et al. 1998), however was most recently estimated at 296,000 individuals (Courturier et al. 2004). This area of western Labrador overlaps the George River Herd as a portion of their winter range (Jacobs 1996).

In addition to the George River Herd, there is another migratory population that is recognized on the Ungava Peninsula and known as the Rivière-aux-Feuilles ('Leaf River') Caribou Herd. Existing and recognized sedentary caribou populations include the Lac Joseph Herd located south of the Project, and the Red Wine Mountains, the Joir River, and the Mealy Mountains Herds all much further to the east. Schmelzer et al. (2004) indicates that during the winter months, the George River Caribou Herd encounters the outer limits of the ranges of these sedentary herds providing the opportunity for the intermingling of animals. The Project occurs entirely within the range of the George River Caribou Herd.

Although there is no evidence of sedentary caribou near the Project at present, they were reported historically (e.g., Caniapiscau or McPhadyen Herds) (LWCRT 2005, Bergerud et al. 2008). The sedentary herds of this region have declined or disappeared since the 1960s with the advent of the snowmobile and expanded transportation network allowing greater access for hunting. The migratory and sedentary caribou inhabiting the Ungava peninsula (i.e., Labrador and northeastern Quebec) are, and historically have been, an integral component of the way of life for aboriginal and non-aboriginal people for many centuries (Schmelzer and Otto 2003; Loring 2008).

The Committee on the Status of Endangered Wildlife in Canada listed the sedentary caribou populations of Labrador as "Threatened" (COSEWIC 2008, SARA 2008). Hunting of sedentary herds is illegal; however, the hunting of the migratory George River Caribou Herd is legal within the seasons (August 10 to April 30) and quotas for this Herd are defined by the provincial government (NLDEC 2008).

As part of the baseline and monitoring research associated with this Project, LIM co-sponsored an intensive aerial survey during May 2009 (Groupe Hémisphères and Jacques Whitford Stantec Limited 2009). Completed in

co-operation with the Provincial Governments of Newfoundland and Labrador and of Quebec, this intensive survey located 7 caribou [one group of four (one adult female that was captured and equipped with satellite collar, an adult female with a male calf, and a yearling male), a group of two (one adult male and one yearling male) and a dead female (estimated at 10+ years that was killed by a single wolf), west and southwest of Schefferville. Measurements of two animals suggested these animals belong to the migratory ecotype. In fact, the adult female equipped with the satellite collar was shot by a hunter approximately 400 km east in the Naskuapi River watershed in February 2010, indicating that this animal and probably the others observed the previous year were of the migratory ecotype (Addendum to Groupe Hémisphères and Jacques Whitford Stantec Limited 2009). A second aerial survey was completed of the area during April-May 2010 in which no caribou were observed within the study area. Although tissue samples collected from two caribou in 2009 have yet to be analyzed for possible genetic affiliation, it is believed that there are no longer sedentary caribou in the vicinity of the Project.

Additional information regarding caribou and mitigation strategies is presented in LIM's approved EIS document (Available at: http://www.env.gov.nl.ca/env/Env/EA%202001/Project%20Info/1379.htm).

APPENDIX B

Schefferville Area Iron Ore Mine ERP

METAL MINING EFFLUENT REGULATIONS

EMERGENCY RESPONSE PLAN

SCHEFFERVILLE AREA IRON ORE PROJECT

WESTERN LABRADOR,

NEWFOUNDLAND AND LABRADOR

Date Issued: June 30, 2011
Version 0.0

SUMMARY OF ALERTING AND NOTIFICATION PROCEDURES

In the event of an effluent release, follow the steps outlined below:

- The person (i.e., employee, contractor, etc.) who identifies the release should immediately notify the onsite Environmental Manager and give details of the release (e.g., location, volume, effluent/material type, cause, date and time, etc.). Should it be safe to do so, this person should attempt to contain or limit the flow of materials to the environment.
- During normal work hours, the Environmental Manager can be reached at 1-418-585-2166. During off hours, please call 1-418-585-1959 (Corey McLister, onsite Environmental Manager) or 1-902-220-7189 (Brian Chisolm, Innu Municipal onsite Manager). Once notified, the Environmental Manager will immediately notify the VP of Environment and Permitting and the General/Mine Manager to report the release, then continue with release response activities and provide cleanup and follow-up actions. The Environmental Manager may request the General/Mine Manager to deploy additional emergency response efforts to the incident site.
- Based upon the information provided by the Environmental Manager, the Vice President (VP) of Environment and Permitting will then call the 24-hour Environmental Response Canadian Coast Guard Hotline 1-800-563-9089 or 1-709-772-2083 with a preliminary report (see Section 5.3 for information requirements). The VP of Environment and Permitting may request the Environmental Manager to make this call on their behalf.
- The VP Environment and Permitting and the Environmental Manager will consult with the General/Mine Manager, and Health and Safety Coordinator, as appropriate, to address the concerns associated with the release.
- Only the VP Environment and Permitting or the Environmental Manager (or designate) shall have the role of formally initiating the Emergency Response Plan. Once this decision is made, they may request the General/Mine Manager or Health and Safety Coordinator to activate the plan.
- The Vice President of Environment and Permitting, in consultation with the Environmental Manager, will decide whether communication with external agencies (e.g., consulting firms, response agencies, etc.) is required and will follow up with government agencies if necessary.
- The Vice President of Environment and Permitting will handle all reporting and correspondence with the applicable regulatory agencies.
- The Vice President of Environment and Permitting will be responsible for any necessary reporting to LIM Corporate, the public or media regarding the release.

Telephone numbers for internal and external emergency contacts are included in Appendix F.

IMPORTANT MESSAGE

An emergency situation, such as a spill or release of a deleterious substance, may occur at any time. Any person who identifies a release is expected to take reasonable actions to stop the release and contain released materials, provided it is safe to do so. Only personnel trained in emergency release response are expected to initiate cleanup or full containment. All personnel and employees are expected to know and understand their responsibilities and related procedures contained in this Emergency Response Plan.

It is imperative to ensure that the health and safety of the Schefferville Area Iron Ore Project personnel is the highest priority in any emergency. Any measures or actions taken in response to a release incident should reflect the health and safety policies of this company.

For information on the emergency response actions to be taken in the event of a spill or release of petroleum, propane, or hazardous chemical products, refer to the Schefferville Area Iron Ore Project Environmental Contingency Plan (November 18, 2010, version 1.0), which is available at several locations throughout the property.

In the event of a serious or major accident, the person(s) who discovers the release is responsible for following the Emergency Procedures and securing the scene – doing everything reasonably possible to prevent further damage without risking safety or health of self or others.

Table of Contents

LIST OF APPENDICES

LIST OF TABLES

1.0 INTRODUCTION

This Emergency Response Plan for the Schefferville Area Iron Ore Mine (Western Labrador) Project located in Newfoundland and Labrador has been prepared by Labrador Iron Mines Limited (LIM). LIM's overall Project includes the re-activation and development of James North and South, and Redmond 2B and 5 mineral deposits which are located in Western Labrador, near the community of Schefferville, Quebec. The Project is located within the Labrador Trough Iron Range. The James and Redmond deposits are located approximately 5 km and 17 km, respectively, southwest of the town of Schefferville.

The beneficiation area, where ore will be crushed and washed, will be situated within an area called the Silver Yard, located approximately 1 km northeast of the James property in Labrador. An historical mining pit, the Ruth Pit, will be utilized as a reject fines disposal area for the washwater that originates from the Silver Yard beneficiation area. Site personnel will be provided camp and lunchroom facilities at a historically developed area approximately 3 km south of the Silver Yard area.

A general plan of the Project layout is shown in Figure 1 in Appendix A. The Redmond area is not shown in the appended figures, as it will be added at a later date, prior to work being conducted in that area, and this plan will be updated accordingly.

The Schefferville Area Iron Ore Mine will generate effluent mainly through the operation of the open pit dewatering systems (perimeter wells and in-pit sumps), the beneficiation process (reject fines washwater), sewage system treated wastewater, and stormwater.

Open pit dewatering water, Silver Yard area treated sewage system wastewater, and stormwater runoff will be directed to a combination of ditching and settling ponds. Camp area treated sewage system wastewater will be directed to a containment area. The beneficiation process water, or reject fines washwater, will be directed to the historical Ruth Pit. The main components of the reject fines washwater, other than water, are suspended solids and minimal potential residual chemical parameters (eg. Ammonia from occasional blasting which is considered to be minimal). Outlet locations include:

- the historical Ruth Pit discharge; and
- the James Settling Pond discharges into the Unnamed Tributary and James Creek.

These outlet locations and the containment area at the Camp, are shown on Figures 2 through 5 in Appendix A, below.

The Emergency Response Plan (ERP) for the Schefferville Area Iron Ore Mine is a key element in protecting the environment within and around the mine. This Plan will help ensure that any effluent releases to the environment are handled safely and efficiently, and in a manner that will limit any environmental damage and satisfy the appropriate regulatory requirements.

1.1 Purpose and Scope

Section 30 of the Metal Mining Effluent Regulations (MMER) requires that an Emergency Response Plan (ERP) be completed and must be available for review by Environment Canada. The ERP is intended to address potential releases of deleterious substances to the environment. The Plan must include the following elements:

- a site risk analysis;
- an organizational scheme for emergency responses, including the roles and responsibilities of the mine's personnel;
- alerting and notification procedures;
- an inventory of release-response equipment, including the location of that equipment; and
- a training plan for the mine's personnel.

The ERP is a tool to provide guidance to company personnel who assume the various jobs, tasks and duties that are necessary to cope with and respond to emergency situations to ensure the protection of the environment, company assets and other stakeholders. The ERP defines the responsibilities of key personnel and outlines the step-by-step action plans that describe the immediate measures needed to prevent, control, limit, contain and/or neutralize releases of deleterious substances, as identified under MMER, on the Schefferville Area Iron Ore Mine property, thereby:

- minimizing their impact on the environment;
- reducing subsequent cleanup costs; and
- allowing operations to return to normal without undue delay.

2.0 EMERGENCY RESPONSE PLAN DOCUMENT CONTROL

This document is the sole property of Labrador Iron Mines Ltd. (LIM). This section describes the distribution, review and update requirements, testing, and the revision history of the Plan.

2.1 Distribution

The ERP shall be accessible to all employees, departments and agencies having responsibilities in the plan. Controlled copies of the ERP will be distributed to those individuals, organizations and/or locations listed in the Controlled Copy Distribution List (Appendix B). Controlled copy holders will be provided with a copy of the Plan that is up-to-date and contains the most current information. All revisions, additions and deletions to the Plan will be provided and/or communicated to those holders by the Environmental Manager.

In addition to the locations and with the personnel listed in the Controlled Copy Distribution List, the controlled version of the ERP is located on the company's shared directory (Note: any copy of the ERP printed from the database is considered to be "uncontrolled"):

LIM link to file: P:\Environment\ERP

Upon request, the Environmental Manager may provide "uncontrolled copies" (i.e., copies of the Plan that will not receive future revisions, additions and deletions) to individuals and/or organizations not listed in the Controlled Copy Distribution List. The Environmental Manager will retain a record of those provided with uncontrolled copies of the Plan.

Additional copies or updates of the ERP may be obtained from:

Linda Wrong, P.Geo.
Vice President, Environment & Permitting
Tel: 1-647-728-4115
E-mail: wrong.l@labradorironmines.ca

Note: Where appropriate, visitors to the mine site will be made aware of the key elements of the ERP.

2.2 Review, Update and Revision History

The Vice President (VP) of Environment and Permitting, Environmental Manager, General/Mine Manager, Plant/Crushing Superintendent, and Health and Safety Coordinator will annually, or as necessary, review the ERP to ensure it accurately reflects LIM's needs and the requirements of the MMER. Following review, if revisions to the ERP are required, necessary changes will be made and the Plan will be marked with the version and the date of issue. Changes in the document will be distributed to those individuals, locations and organizations included in the Controlled Copy Distribution List

(Appendix B), and will be communicated to those individuals who have responsibilities in the Plan. A log of revisions to the ERP will be retained (Appendix C) and will include the:

- the version of the Plan;
- the date of issue;
- name of last issuer; and
- brief description of the revisions to the Plan.

Any Plan holder or reader can suggest revisions be made to the Plan. If individuals/organizations believe the ERP should be revised, a revision request must be submitted to the VP of Environment and Permitting. It is at the discretion of the VP of Environment and Permitting whether or not the Plan will or will not be revised. Revision of the ERP may only be completed with the approval of Management. Personnel affected by any revisions or changes should be notified and their training updated if necessary. Revisions or changes in the ERP should also be incorporated into the site environmental and safety training.

2.3 Monitoring, Reporting and Audits

Continual review and enhancement of the ERP will be conducted with a goal of continuous improvement. The purpose of monitoring and auditing the emergency response systems is to identify any problems or aspects of the plan that can be improved, and to determine appropriate actions to address these issues.

2.4 Reporting of Problems or Concerns

All LIM employees and contractors/sub-consultants are responsible and encouraged to report problems or concerns related to any aspect of this ERP to the VP, Environment & Permitting.

3.0 SITE RISK ANALYSIS

To identify potential areas of the operations that could impact the environment, a site risk analysis was completed. The analysis assessed potential emergency situations at the site for their probability or frequency of occurrence and their consequence or magnitude of impact.

3.1 Risk Analysis Methodology

The following steps were completed to identify the hazards associated with potential emergency releases of deleterious substances as defined under MMER:

1. ***Determine Risk Assessment Framework*** – The concepts outlined in the "CSA Plus 1145 - A Guide to Identifying Significant Environmental Aspects" were applied to analyze site risk.
2. ***Identify Activities or Situations*** – Activities or situations that could occur at the facility that would result in the release of a deleterious substance were identified. Only the releases that are considered emergencies (i.e., those releases which occur that are uncontrolled) and are regulated under MMER were considered during the analysis.
3. ***Identify the Environmental Aspects of Each Activity or Situation*** – The environmental aspects (or how an element or elements of an activity or situation interact with the environment) were identified. In the case of this risk analysis, the environmental aspect for all activities was the release of effluent containing high TSS (total suspended solids) and potentially trace chemical parameters (eg. Ammonia).
4. ***Determine the Environmental Impacts of Each Aspect*** – The actual or potential environmental impacts for each identified aspect (see Step 3) were determined. Impacts include those that have an effect on the biophysical environment, LIM assets or stakeholders (e.g., employees, public, regulators, media, etc.).
5. ***Evaluate Significance of Environmental Impacts (Risk Ranking)*** – After the actual or potential environmental impacts were identified, the significance or risk rankings were determined. The risk was determined by assessing both the probability of the aspect/impact occurring and what its overall consequence (i.e., impact on the environment, assets and stakeholders) would be. Refer to Appendix D for the risk assessment matrix template that was used during the assessment. Based on the probability and consequence, each aspect/impact was given an overall risk score.
6. ***Identify Controls*** – For those impacts identified to have an effect on the environment, recommended controls or measures to manage those impacts were identified.
7. ***Determine Responsibility for Controls*** – For each of the identified controls, the person/department/organization responsible for implementing the control was determined.

Information from Steps 2 to 7 of the risk analysis were documented in tabular format (Table E-1 in Appendix E). For each potential emergency situation, the environmental aspect, potential environmental impact, risk ranking, recommended controls and responsibilities are provided.

All risks identified during the site-risk analysis are managed in order to reduce the likelihood or impact of an accident. These controls are described in Section 6.0 – Spill Control and Cleanup Procedures of this Plan.

3.2 Potential Emergency Response Situations

Potential emergency response situations due to un-planned or un-controlled releases of effluent at the Schefferville Area Iron Ore Mine may include the following:

- Reject fines pipeline emergency drainage at the Silver Yard Beneficiation Plant or pipeline rupture or failure;
- Silver Yard Beneficiation Plant washing equipment rupture or leak or breach, failure, or overtopping at the Silver Yard Settling Pond;
- Dewatering or in-pit sump piping arrangement rupture or leak (between the open pits and the James Settling Pond);
- Breach, failure, or overtopping at the Ruth Pit control/conveyance structures;
- Breach, failure, or overtopping at the James Settling Ponds; and
- Breach, failure, or overtopping at the Camp Biodisk Discharge Containment Area.

<u>Reject Fines Washwater Pipeline</u>

If a power outage should occur and the reject fines washwater pipeline requires drainage, effluent will flow (by gravity) to the Silver Yard Settling Pond (SYSP), then in turn to the James Settling Pond #3 (JSP3) via the Silver Yard Ditch, and will not impact any natural water course. The settling ponds and ditch are designed to control and treat effluent resulting from this event. The probability of this event occurring is occasional and controls (settling ponds) are in place to prevent any direct environmental impact.

Although the probability of a rupture or leak from the reject fines washwater pipeline is remote; the consequences of environmental impacts may be as follows:

- impact to the surrounding land and vegetation;
- impact to water quality, fish, and fish habitat if the effluent reaches James Creek; and
- impact to mine assets (roadways, pipeline, etc.).

In the event of an un-planned or un-controlled release, controls would include diversion of flow away from vegetation, undisturbed land, James Creek, and LIM infrastructure.

Silver Yard Beneficiation Plant

The Silver Yard Beneficiation Plant site is generally graded to direct surface runoff to the Silver Yard Ditch which directs drainage to the James Settling Pond #3 (as shown on Figure 4 in Appendix A). The Silver Yard Settling Pond, which is in place to accept discharge from the Beneficiation Plant wastewater treatment plant, and emergency and maintenance discharge from the reject fines washwater pipeline, also discharges to the Silver Yard Ditch. Should plant washing equipment rupture or leak, any effluent will be directed by general grading to the Silver Yard Ditch, then in turn to the James Settling Pond #3. Any effluent release as a result of breach, failure, or overtopping at the Silver Yard Settling Pond will also be directed to the James Settling Pond #3, via the Silver Yard Ditch.

The probability of an un-planned or un-controlled release in these situations is remote and controls (settling pond and ditching) are in place to prevent any resulting environmental impact. In addition, the surrounding land will be disturbed through mine development, with little to no vegetation. There could be minor impact to mine assets, resulting in repairs, which could be controlled by flow diversion.

Dewatering and In-pit Sump Piping

Dewatering water from the perimeter dewatering wells and the in-pit sumps in the open pit will be directed to the James Settling Ponds via pump and surface piping arrangements and ultimately to the Unnamed Tributary and Bean Lake. It is important to note that this groundwater will be relatively clean with typically minor TSS concentrations and that the ponds used for dewatering will not receive water contributions from any other source (other than seasonal precipitation). The probability of a leak or rupture in these piping systems is remote, and the potential impacts to surrounding undisturbed land, vegetation, and mine assets would be relatively minor, however, there could be a significant environmental impact should effluent discharge directly into the Unnamed Tributary if the flow erodes and transports surficial sediments during the release event.

Preventative measures to reduce the probability and impacts of such an event occurring would include scheduled monitoring and maintenance of the piping systems, and grading of slopes and direction of the ditching surrounding the piping systems to direct flow away from the Unnamed Tributary, where possible. In the event of a release, recommended control measures include diversion of flow from undisturbed land, vegetation, the Unnamed Tributary, and mine infrastructure (roadways, pipelines, etc.).

Ruth Pit Control/Conveyance Structures

The control/conveyance structures in place at Ruth Pit could potentially fail, be breached or overtopped allowing effluent release to James Creek. The probability of such an occurrence is remote as these structures will be designed and constructed to current standards. The potential environmental impacts to surrounding undisturbed land, vegetation and mine assets would be considered intermediate, however, should effluent discharge directly into James Creek there could be intermediate to significant environmental impacts to the water quality, fish and/or fish habitat. Preventative measures to reduce the probability and impacts of such an event occurring would include scheduled monitoring and

maintenance of the control/conveyance structures. In the event of an un-planned or un-controlled release, recommended control measures include diversion of flow from James Creek, undisturbed land, vegetation and mine infrastructure (roadways, pipelines, etc.).

James Settling Ponds and Camp Biodisk Discharge Containment Area

The embankments containing the James Settling Ponds, and the Camp Biodisk Discharge Containment Area are designed, and constructed using current engineering principles and practices, and will be monitored for erosion and maintenance requirements forming part of the preventative measures in place to reduce the probability and impacts from an un-controlled or un-planned release event. The embankments are designed and constructed to contain design storms and floods in accordance with current accepted engineering practice.

James Settling Pond #3

James Settling Pond #3 accepts discharge from the Silver Yard Ditch and from the in-pit sumps from the open pits. It drains, via ditch, to James Creek. The probability of a breach, failure, or overtopping of the embankments is considered remote. In the event of an un-planned or un-controlled release, downstream environmental impact to James Creek, undisturbed land or vegetation, would be considered negligible to minor depending on the time of year (fish hatching season). Impacts to mine assets would include relatively minor embankment repair. Preventative measures, as described above would include scheduled monitoring and maintenance of the pond. Recommended control measures in the event of an un-planned or un-controlled release would include diversion of flow away from undisturbed land, vegetation, James Creek, and mine infrastructure (roadways, pipelines, etc.).

James Settling Pond #1 and #2

James Settling Ponds #1 and #2 accept discharge from the pit dewatering systems. It is important to note that this water will be relatively clean with typically minor TSS concentrations. These ponds drain, via ditch, to the Unnamed Tributary and to James Creek. The probability of a breach, failure, or overtopping of the embankments is considered remote. In the event of an un-planned or un-controlled release, downstream environmental impact to the Unnamed Tributary and/or James Creek, could be considered significant if the flow erodes and transports surficial sediments during the release event. Environmental impact to undisturbed land, vegetation, and mine assets would be classified as intermediate. Preventative measures, as described above would include scheduled monitoring and maintenance of the ponds. Recommended control measures in the event of an un-planned or un-controlled release would include diversion of flow away from undisturbed land, vegetation, the Unnamed Tributary, James Creek and mine infrastructure (roadways, pipelines, etc.).

Camp Biodisk Discharge Containment Area

The Camp Biodisk Discharge Containment Area will be accepting discharge from the wastewater treatment plant. Currently, there is no discharge from the containment area; however, future infiltration of compliant discharge into the ground of treated wastewater is planned upon confirmation of

compliance with the applicable permits. Surrounding general drainage is directed to Bean Lake via ditching. The probability of a breach, failure, or overtopping of the embankment is considered remote and any environmental impact to undisturbed land, vegetation, Bean Lake or mine assets would be classified as negligible. Preventative measures, as described above, would include scheduled monitoring and maintenance of the area. Recommended control measures in the event of a non-compliant release, would include diversion of flow away from undisturbed land, vegetation, Bean Lake, and mine infrastructure.

3.3 Risk Review

On an annual basis as part of the review of the ERP, environmental risks identified during the site risk analysis will be reviewed to determine if there are any changes (i.e., additions, removals or changes) to the activities/situations, aspects or impacts.

4.0 STRUCTURE AND RESPONSIBILITY

The initial stage of any emergency is critical and the effectiveness of the response will determine if the emergency situation will escalate to a higher level. Therefore all personnel must be fully aware of their individual duties and responsibilities contained in this Plan, including the prompt notification of additional/support personnel. To reduce potential confusion, the roles and responsibilities of all personnel/groups associated with emergency response in the ERP are outlined below. All positions outlined below will have a designate should they not be available.

4.1 Employees

Understand their roles and responsibilities in preventative measures, and emergency release response, including the contents of this ERP.

4.2 Release Observer

- Assess the situation and note any immediate risk to site personnel, the environment or mine assets (example buildings, tanks, other pipelines, etc.).
- Immediately notify the Environmental Manager at 418-585-2166 (during daytime hours) or 418-585-1959 (Corey McLister, Environmental Manager) and provide details of the spill (e.g., location, volume, product, cause, immediate emergency response measures taken, date and time, etc.).
- Until the arrival of the Environmental Manager, act as On Scene Commander and, if possible, stop the release of, or contain the product without risking safety or health of self or others.
- Fill out an Environmental Incident Report Form (see Appendix G) and forward it to the Environmental Manager.

4.3 On Scene Commander

NOTE: *For all situations, the first person on the scene of an emergency is designated the On Scene Commander until such time as the Environmental Manager arrives on sight or an alternate is designated.*

- Upon being notified of an emergency, the On Scene Commander will assess the situation based on all current information, and immediately contact the Environmental Manager and the VP of Environment and Permitting.
- Restrict access to the release area to only authorized personnel.
- Continue corrective action to regain control.
- Contact the General/Mine Manager to obtain additional emergency response support.

- Inform the Health and Safety Coordinator.
- Inform and consult with applicable operating departments.
- Aid in any emergency response and remediation effort.
- If required, assist in conducting a root cause analysis to determine the cause of release or spill of any deleterious substance.

4.4 Environmental Manager

NOTE: *Only the VP Environment and Permitting or the Environmental Manager (or designate) shall have the role of formally initiating the Emergency Response Plan. Once this decision is made, they may request the General/Mine Manager or Health and Safety Coordinator to activate the plan.*

The Environmental Manager's responsibilities are as follows:

- Assume role of On Scene Commander once on site or once regular telephone or radio contact has been established.
- Contact the VP of Environment and Permitting for consultation and further direction on:
  - Initiating the External Alerting Procedures as outlined in Section 5.3;
  - Requirements for communication and/or support with/from external agencies (e.g., consulting firms, response agencies, etc.); and
  - Who will take on the responsibility of informing applicable Government agencies as required under existing regulations.
- Inform and consult with the General/Mine Manager and Health and Safety Coordinator as appropriate.
- Ensure the efficient execution of this Plan. The Environmental Manager is responsible for providing overall direction on the remediation of environmental issues.
- Provide expertise with respect to cleanup and follow-up actions once notified of a release.
- Take responsibility for overseeing external specialized resources if required.
- If the spill has the potential to enter the natural environment, ensure the Plant/Crushing Superintendent and/or external specialists contain the release by installing silt curtains (or other) or by placing berms, dykes or other obstructions to divert the flow of effluent.
- Conduct all required sampling to determine concentrations of deleterious substances as identified under MMER.
- Document all scene information, including field reporting and GPS-orientated photographs.
- Conduct root cause analysis to determine cause of release of any deleterious substance as identified under MMER, and provide information to the VP Environment and Permitting to identify risks and potential preventive measures to reduce the likelihood of the release recurring.

- Take all necessary steps to identify activities/processes/etc. which led to elevated levels of any deleterious substance as identified under MMER, and provide mitigative measures.
- Keep the VP of Environment and Permitting informed about the spill and status of remediation and/or investigation.
- Provide relevant information to the VP of Environment and Permitting for dissemination to the public or media regarding the release.
- In consultation with the VP of Environment and Permitting, review and revise the ERP on an annual basis, or as required, insuring that it is up-to-date and effective.
- Ensure that each operating department has identified a list of personnel that could be called upon to assist the On Scene Commander in a release response incident.
- Ensure that spill response training is conducted with any designated employees who have been identified by their departments as responders to release incidents.
- Update the list of materials required for the Release/Spill Response materials storage area and other infrastructure every 6 months.
- Maintain a current listing of available support equipment at the Schefferville Area Iron Ore Mine indicating the locations of the same.
- Retain records required by this Plan, including training records, environmental incident reports, etc. and forward copies to the VP of Environment and Permitting.

4.4.1 Reporting

In the event of an unplanned occurrence of a deposit or release a deleterious substance, it is the responsibility of the Environmental Manager to prepare a written report. This written report shall be reviewed by the VP Environment and Permitting and submitted to the appropriate regulatory authority(ies) as soon as possible or no later than 30 days after the incident.

The written report shall contain information on the occurrence as outlined in Section 31(2) of the Metal Mining Effluent Regulations (MMER), and also summarized in section 5.3 of this Plan.

4.5 Vice President of Environment and Permitting

The LIM Vice President of Environment and Permitting's responsibilities are as follows:

- Upon notification of an emergency, consult with the Environmental Manager, Plant/Crushing Superintendent, Health and Safety Coordinator and General/Mine Manager as appropriate.
- Contact the Environmental Manager for consultation on:
  - **o** Initiating the External Alerting Procedures as outlined in Section 5.3;
  - **o** Requirements for communication and/or support with/from external agencies (e.g., consulting firms, response agencies, etc.); and

- **o** Who will take on the responsibility of informing applicable Government agencies as required under existing regulations.

- Act as the company's spokesperson to the public or media.
- Keep Schefferville Area Iron Mine Project/LIM senior management informed about the release and status of remediation and/or investigation.
- Review the report that was prepared by the Environmental Manager, which covers all aspects of the release, and submit to the appropriate personnel/organizations. The appropriate personnel/organizations are dependent on the details of the release event (i.e. type, volume, impact, etc).
- Review any emergency response training programs developed and implemented by the Health and Safety Coordinator.
- In consultation with the Environmental Manager, review and revise the Emergency Response Plan on an annual basis, or as required, ensuring that it is up-to-date and effective.
- Review copies of the records forwarded by the Environmental Manager which include training records, environmental incident reports, etc.

4.6 Plant/Crushing Superintendent

The Plant/Crushing Superintendent's responsibilities are as follows:

- Along with the On Scene Commander, secure the scene (i.e., doing everything reasonably possible to prevent further damage without risking safety or health of self or others) until arrival of the Environmental Manager.
- In the event of an unplanned power outage that leads to effluent discharge, evaluate the need to flush the reject fines pipeline with water.
- In the event of a rupture of the reject fines pipeline, dewatering piping or in-pit sumps piping, if the release has the potential to impact the receiving environment, take all necessary steps to halt the flow of effluent.
- Where applicable and possible, divert the flow of effluent away from Schefferville Area Iron Ore Mine infrastructure (e.g., buildings, equipment, other pipelines, etc.) and vegetation using berms, dykes or other obstructions.
- Undertake required works to remediate the impact to the receiving environment as directed by the Environmental Manager.
- Undertake all required repairs/replacement of reject fines pipeline, dewatering and/or in-pit sump systems infrastructure.

4.7 General/Mine Manager

The General/Mine Manager's responsibilities are as follows:

- Upon being notified by the On Scene Commander or Environmental Manager of an emergency, proceed directly to the scene.
- Assist the On Scene Commander and/or Environmental Manager in assessing the situation.
- Along with the On Scene Commander and/or Environmental Manager, secure the scene (i.e., doing everything reasonably possible to prevent further damage without risking safety or health of self or others).
- Provide resources for adequate and appropriate emergency response.
- Overall responsibility and authority to organize emergency response measures concerning plant operations, i.e., shutting down mine/plant operations to protect the health and safety of personnel on site, the environment or company assets/infrastructure.
- In the event of a release of a deleterious substance, consult with Environmental Manager, Plant/Crushing Superintendent, Vice President of Environment and Permitting, and Health and Safety Coordinator to determine if it is appropriate to shut down the Plant, Mine or evacuate the site.
- Determine when it is safe to return to routine operations.
- Assist Environmental Manager with root cause analysis of the event to identify risks and potential preventive measures to reduce the likelihood of the release recurring.

4.8 Health and Safety Coordinator

The Health and Safety Coordinator's responsibilities are as follows:

- Prepare and implement emergency response training programs.
- Maintain training records.
- Provide support to the On Scene Commander and Mine/Plant/Crushing Superintendents for adequate and appropriate emergency response.
- Assist General/Mine Manager in assessing emergency response measures concerning plant operations, i.e., shutting down mine/plant operations to protect the health and safety of personnel on site, the environment or company assets/infrastructure.
- In the event of a release, consult with Environmental Manager, Plant/Crushing Superintendent, VP of Environment and Permitting, to determine if it is appropriate to shut down the Plant, Mine or evacuate the site.
- Assist General/Mine Manager in determining when it is safe to return to routine operations.

- Assist Environmental Manager with root cause analysis of the event to identify risks and potential preventive measures to reduce the likelihood of the release recurring.

5.0 ALERTING AND NOTIFICATION PROCEDURES

5.1 Communications Procedures

Responsibilities for internal and external communication, including the reporting of releases, must be clearly defined. In the event of a release, follow the steps outlined below:

- The person (i.e., employee, contractor, etc.) who identifies the release should immediately notify the onsite Environmental Manager and give details of the release (e.g., location, volume, effluent/material type, cause, date and time, etc.). Should it be safe to do so, this person should attempt to contain or limit the flow of materials to the environment.
- During normal work hours, the Environmental Manager can be reached at 1-418-585-2166. During off hours, please call 1-418-585-1959 (Corey McLister, onsite Environmental Manager) or 1-902-220-7189 (Brian Chisolm, Innu Municipal onsite Manager). Once notified, the Environmental Manager will immediately notify the VP of Environment and Permitting and the General/Mine Manager to report the release, then continue with release response activities and provide cleanup and follow-up actions. The Environmental Manager may request the General/Mine Manager to deploy additional emergency response efforts to the incident site.
- Based upon the information provided by the Environmental Manager, the Vice President (VP) of Environment and Permitting will then call the 24-hour Environmental Response Canadian Coast Guard Hotline 1-800-563-9089 or 1-709-772-2083 with a preliminary report (see Section 5.3 for information requirements). The VP of Environment and Permitting may request the Environmental Manager to make this call on their behalf.
- The VP Environment and Permitting and the Environmental Manager will consult with the General/Mine Manager, and Health and Safety Coordinator, as appropriate, to address the concerns associated with the release.
- Only the VP Environment and Permitting or the Environmental Manager (or designate) shall have the role of formally initiating the Emergency Response Plan. Once this decision is made, they may request the General/Mine Manager or Health and Safety Coordinator to activate the plan.
- The Vice President of Environment and Permitting, in consultation with the Environmental Manager, will decide whether communication with external agencies (e.g., consulting firms, response agencies, etc.) is required and will follow up with government agencies if necessary.
- The Vice President of Environment and Permitting will handle all reporting and correspondence with the applicable regulatory agencies.
- The Vice President of Environment and Permitting will be responsible for any necessary reporting to LIM Corporate, the public or media regarding the release.

Telephone numbers for internal and external emergency contacts are included in sub-sections 5.2 – Internal Emergency Contacts and 5.3 – External Emergency Contacts, and both are included in Appendix F.

All contacts (internal and external) included in the telephone contact lists shall be aware that they are on the list and know what is expected of them. When necessary, training will be provided to these individuals to ensure they are capable of responding to the situation.

5.2 Internal Emergency Contacts

Names and telephone numbers for internal Schefferville Area Iron Ore Mine emergency contacts are presented in Table 5-1, below and in the LIM Emergency Phone Numbers table in Appendix F.

Table 5-1 Internal Emergency Contacts

On-Site Emergency Contacts		
Department/Process	**Name**	**Phone Numbers**
VP of Environment and Permitting	Linda Wrong	Office: 647-728-4115 Cell: 416-660-2979
Environmental Manager	Corey McLister	Office: 418-585-2166 Cell: 418-585-1959
Environmental Scientist	Shawn Duquet	Office (Lab): 647-776-7873
LIM General/ Mine Manager	Rowan Maule	Office: 418-585-2666
Innu Municipal (IM) Mine Superintendant	Kevin Taylor	Cell: 709-280-3569
LIM Manager of Health and Safety	Don Hindy	Office: (780) 433-2112 Cell: (780) 850-2026
IM Health and Safety Coordinator	Mark Dunne/ Terry Hawco	Office: 418- 585-2666
IM Site Manager	Brian Chisolm	Office: 418-585-2665 Cell: 709-280-4493
IM General Superintendent of Operation	John Young	Cell: 709-280-4703
IM Plant/Crushing Superintendent	Al Wagner	Cell: 709-282-8635

5.3 External Alerting Procedures

The Environmental Manager, in consultation with the VP Environment and Permitting will initiate the External Reporting Procedure when required.

The following steps will be taken:

1. Immediately call the Environmental Response Canadian Coast Guard at the Spill Report Line (709) 772-2083 or (800) 563-9089 to report the release (as required by the Fisheries Act). Required pertinent information includes:

    a. Name of reporter and phone number;
    b. Time of release;
    c. Time of detection of release;
    d. Type of effluent/material released;
    e. Amount of effluent/material released;
    f. Location of release;
    g. Source of release;
    h. Type of accident – rupture, overflow, other;
    i. If the release is still occurring;
    j. If the release is contained, and if not, where it is flowing;
    k. Wind velocity and direction;
    l. Temperature;
    m. Proximity to waterbodies, water intakes, and facilities;
    n. Snow cover and depth, terrain, and soil conditions; and
    o. Potential health and environmental hazards.

The Environmental Incident Report Form in Appendix G gives the categories of information required for this call.

2. Within 24 hours, fax or email a copy of the Environmental Incident Report Form to:

    Troy Duffy, Environmental Engineer
    Department of Environment and Conservation, Pollution Prevention Division
    Fax: (709) 643-8654 (Stephenville)
    Email: duffyt@gov.nl.ca; and

    Graham Thomas, Environmental Emergencies Coordinator
    Environment Canada
    Fax: (709) 772-5097
    Email: graham.thomas@ec.gc.ca.

3. Send copies of the Environmental Incident Report Form to:

   General/Mine Manager;
   Health and Safety Coordinator; and
   Environmental Manager.

Note: If all the release information is not available at the time of the release, an Environmental Incident Report is still required in the timeframes noted above. When a report is incomplete, then a completed report should be sent to (2) and (3) above, when it is available.

The Environmental Manager's designate will follow the external reporting procedure, in consultation with the VP Environment and Permitting, when the Environmental Manager is not available.

Other external emergency contact information is provided in Table 5-2.

Table 5-2 External Emergency Contacts

Agency/Organization	Telephone Number
Environmental Response Canadian Coast Guard 24-Hour Hotline	1-800-563-9089 (709) 772-2803
Department of Environment and Conservation (Pollution Prevention Division), Mr. Troy Duffy	W: (709) 643-6114 Cell: (709) 639-3980
Environment Canada Environmental Emergencies Co-ordinator, Mr. Graham Thomas	Bus (709) 772-4285 Cell (709) 687-5634
LIM Schefferville Office	Office: 418-585-2166 Fax: 418-585-2277
Schefferville Police	418-585-2626
Schefferville Nursing Station	418-585-2644
Kawawachikamach Nursing Station	418-585-2110
Matimekosh Nursing Station	418-585-3664
Schefferville Ground Ambulance	418-585-2055
Air Ambulance	Called by the Nursing Station
Schefferville Fire Department	418-585-2863
Surête du Québec (Police) – **for Québec**	418-585-2626
Royal Canadian Mounted Police (RCMP) – **For Newfoundland and Labrador**	418-585-2225

6.0 RELEASE CONTROL AND CLEANUP PROCEDURES

To respond to an effluent discharge resulting from any of the activities or situations identified in the risk assessment, the following steps should be followed:

- Limit the release.
- Contain and control the release.
- Remove or clean up the deleterious substance.
- Complete an environmental incident report.

Note that any release of effluent or deleterious substance may have significant environmental consequences. Initial containment and control should be implemented as soon as possible. However, any further containment and remedial measures should be reviewed and/or supervised by the Environmental Manager, prior to implementation.

7.0 EMERGENCY RESPONSE RESOURCES

7.1 Release/Spill Response Inventory

Existing and planned spill response inventory is listed in Table 7-1, below. Figures 1 through 5 in Appendix A present the locations of existing and planned spill response equipment and infrastructure across the site. Figures 2 through 5 present these locations more specifically for Ruth Pit, Silver Yard, the James Mine area, and the Camp. As previously stated, the Redmond area will be added at a later date, and the plan will be updated accordingly. Existing locations presented on the figures reflect the construction period and planned locations reflect the operations period. This operation is a seasonal operation from April to November, therefore, a review of the spill kit locations and areas of high vehicle traffic/use will be evaluated each February or March to determine the necessity for new locations and the plan will be reviewed accordingly.

A Spill Response Trailer will be strategically located for operations prior to start up. To gain entry to the trailer, keys are held in trust with the Environmental Manager, the Plant/Crushing Superintendent, and the General/Mine Manager.

7.2 Infrastructure and Equipment Maintenance

Emergency response infrastructure and equipment includes any or all infrastructure and equipment related to emergency response situations related to spills, leaks, fires, environmental impact, health and safety or any other emergency situation. All emergency response infrastructure and equipment must be maintained to ensure the health and safety of employees and avoid undue environmental impacts that could have otherwise been prevented.

An inspection and maintenance schedule will be developed for all equipment. Inspections will include review of the condition, necessity, location and cleaning/repair/maintenance requirements for each piece of equipment or infrastructure. This will be carried out by the Environmental Manager.

See Table 7-1 for a list of infrastructure and equipment. The associated inspection and maintenance schedule will be added to the Table during the plan review process.

7.3 Local Emergency Phone Numbers

Local emergency phone numbers are presented in Appendix F.

Table 7-1 Spill Response Inventory

STATUS	LOCATION	ITEMS			COMMENTS
		Product	Size	Quantity	
EXISTING	Silver Yard (SY) – near main road	45 gallon lab pack with lid		1	45 Gallon spill kit and temporary trailer with 5 packs of replacement pads (200 each)
		Absorbent pads	15”x18”	50	
		Socks	3”x4’	6	
		Pillows	9”x15”	4	
		Pair Nitrile gloves		2	
		Pair splash resistant goggles		2	
		Disposable bags		4	
	West of Silver Yard	50 gallon lab pack with lid		1	50 Gallon spill kit
		Absorbent pads	15”x18”	50	
		Socks	3”x4’	6	
		Pillows	9”x15”	4	
		Pair Nitrile gloves		2	
		Pair splash resistant goggles		2	
		Disposable bags		4	
	Two (2) James Settling Pond Areas	50 gallon lab pack with lid		1	**2** x 50 Gallon spill kits
		Absorbent pads	15”x18”	50	
		Socks	3”x4’	6	
		Pillows	9”x15”	4	
		Pair Nitrile gloves		2	
		Pair splash resistant goggles		2	
		Disposable bags		4	
	All LIM Trucks	Clear vinyl zip bag		1	Truck Kit – Vinyl Zipper Bags
		Absorbent pads	15”x18”	10	
		Socks	3”x4’	3	
		Pair Nitrile gloves		1	
		Disposal bag		1	
	Additional Materials in Storage	Spill trays	2’x2’x6”	4	Located in Sea Cans at Silver Yard
		Pop up berms	4’x4’x6”	2	
		95 Gallon kits		2	
		65 Gallon kits		5	
		30 Gallon kits		6	(mobile for vehicles)

Table 7-1 Spill Response Inventory (continued)

STATUS	LOCATION	ITEMS			COMMENTS
		Product	Size	Quantity	
PLANNED[1]	Spill Response Trailer at SY[2]				Location and contents to be determined
	Ruth Pit Outlet				Contents to be determined
	SY Fuel Storage				Contents to be determined
	SY Plant Generators				Contents to be determined
	SY Ramp to Primary Crusher				Contents to be determined
	SY Office/Laboratory				Contents to be determined
	SY Crusher Oil Storage Tank				Contents to be determined
	Maintenance Workshop				Contents to be determined
	Haul Road / Rail Loading				Contents to be determined
	Generators for James Dewatering				Contents to be determined
	Road between James and Camp				Contents to be determined
	Camp – fuel storage and generator				Contents to be determined
	Environmental Truck				Large kit with large boom – contents to be determined

Note:
1 – These locations are planned for operations, shown on 1 through 5.
2 – Location to be determined.

8.0 EMERGENCY RESPONSE TRAINING

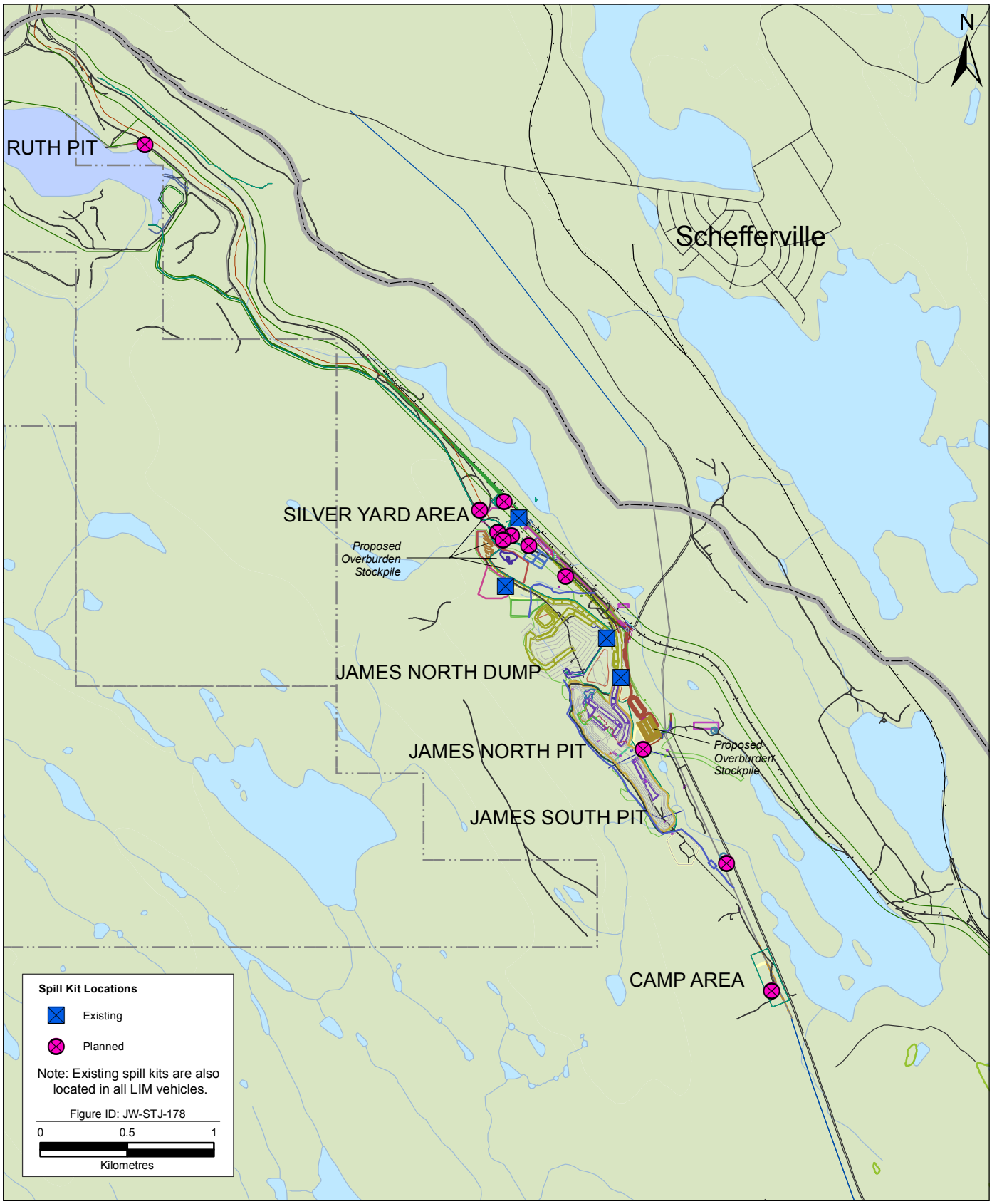
Employee education and awareness about the ERP, and continual communication are important to ensure the success of the Plan. All company staff and contractors/consultants should be informed about the Plan and should know and understand their responsibilities under the Plan. On-going communication about plan implementation, changes and results will ensure a high level of awareness about the Plan.

Information on environmental and safety awareness and the ERP at the Schefferville Area Iron Ore Mine will be provided to all new employees and contractors/consultants during standard site orientation training. Additional information and training will be provided on an individual basis, specific to the work area of the employee or contractor/sub-consultant.

A list of employees, staff and contractors/consultants will be kept by the Environmental Manager and the Human Resources department, and will include the type of training each individual received, the date of the training and any updates or additional training.

APPENDIX A

Figures



LABRADOR IRON MINES LTD.

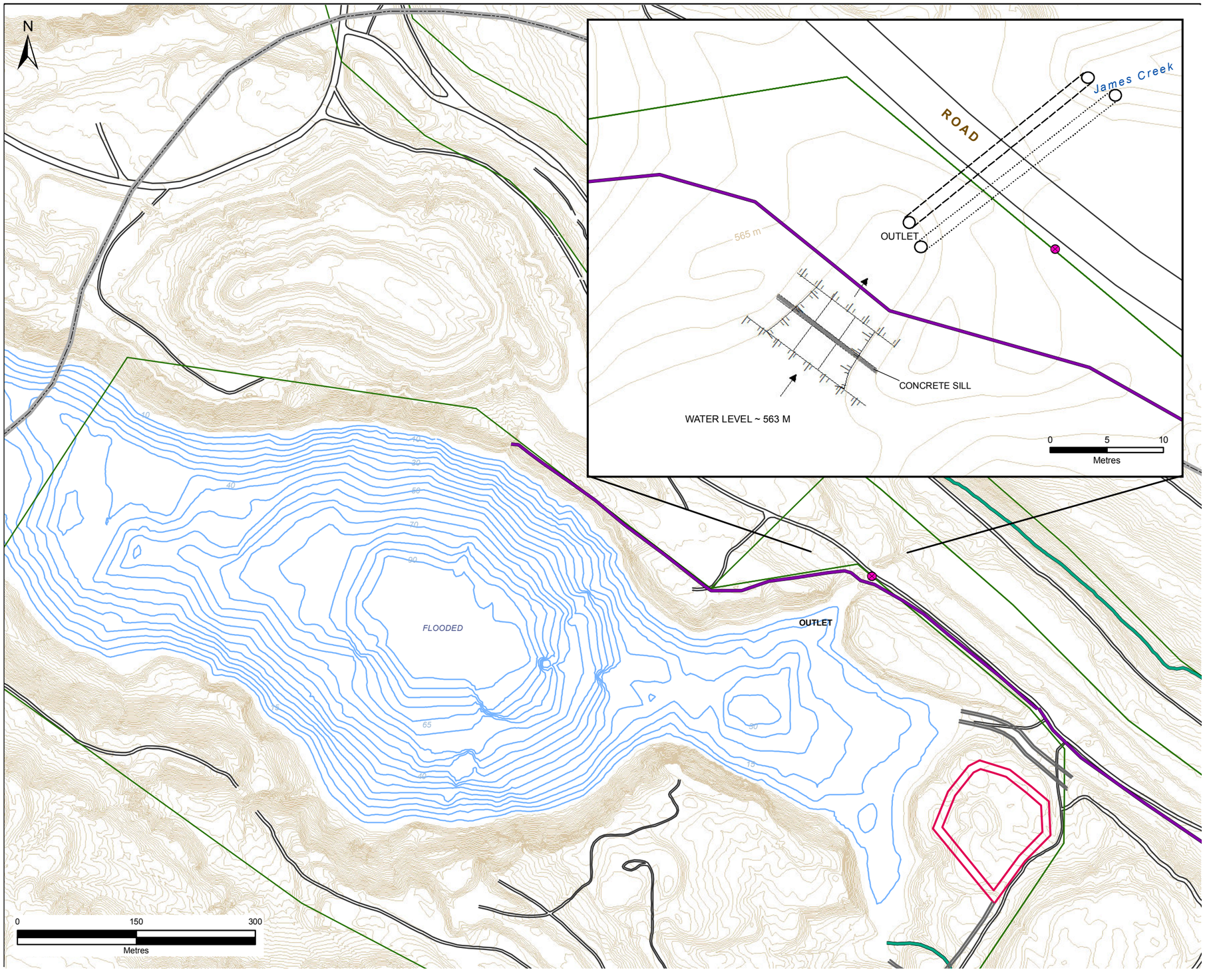
PROJECT TITLE:

SCHEFFERVILLE AREA IRON ORE PROJECT EMERGENCY RESPONSE PLAN

DRAWING TITLE:

SPILL KIT LOCATIONS WITHIN PROJECT AREA

SCALE: 1:31,000	DATE: May 19, 2011
DRAWN BY: CP	CHECKED BY:
EDITED BY: AF	REV. No. 0
DRAWING No.: 1	
MAP FILE: JW-STJ-178	



Legend

- Planned Spill Kit Location
- Sedimentation/Reject Pond
- Ditch
- Reject Pipeline (10 inch pipe inside 12 inch pipe on 24 inch tripods).
- Water Reclaim Pipeline (12 inch)
- Provincial Boundary
- Surface Lease
- Road

NOTE: - Existing spill kits are also located in all LIM vehicles.
- This drawing illustrates supporting information specific to a Stantec Consulting Ltd report and must not be used for other purposes

LABRADOR IRON MINES LTD.

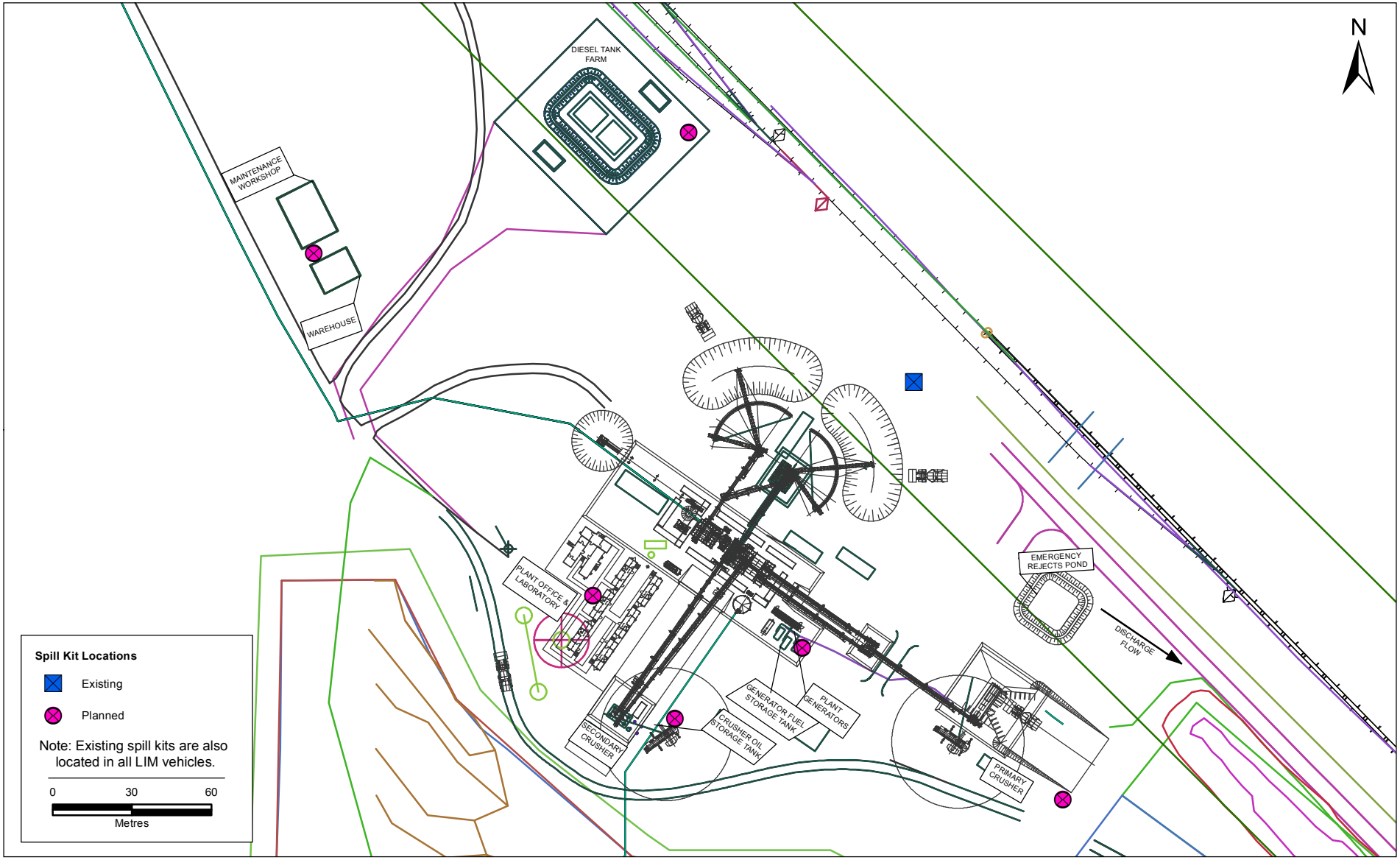
PROJECT TITLE:

SCHEFFERVILLE AREA IRON ORE
PROJECT EMERGENCY RESPONSE PLAN

DRAWING TITLE:

RUTH PIT OUTLET AND
SPILL KIT LOCATION PLAN

SCALE: 1:5000	DATE: MAY 18, 2011
DRAWN BY: CP	CHECKED BY:
EDITED BY: AF	REV. No. 0
DRAWING No.: 2	
MAP FILE: JW-STJ-189	



LABRADOR IRON MINES LTD.

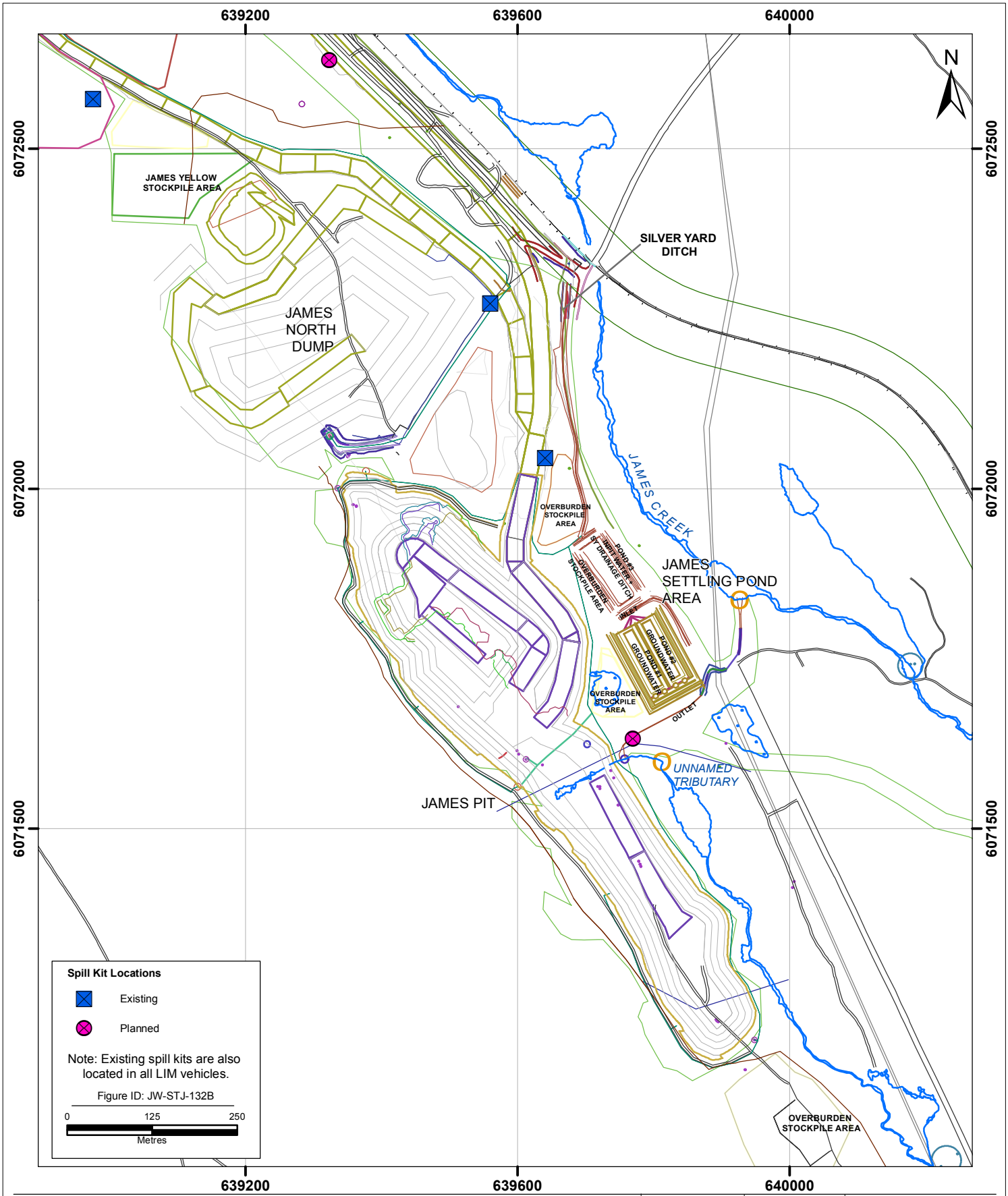
PROJECT TITLE:

SCHEFFERVILLE AREA IRON ORE
PROJECT EMERGENCY RESPONSE PLAN

DRAWING TITLE:

SETTLING POND OUTLET AND
SPILL KIT LOCATIONS AT SILVER YARD BENEFICIATION PLANT

SCALE: 1:2,100	DATE: MAY 19, 2011
DRAWN BY: AF	CHECKED BY:
EDITED BY:	REV. No. 0
DRAWING No.: 3	
MAP FILE: JW-STJ-179.MXD	

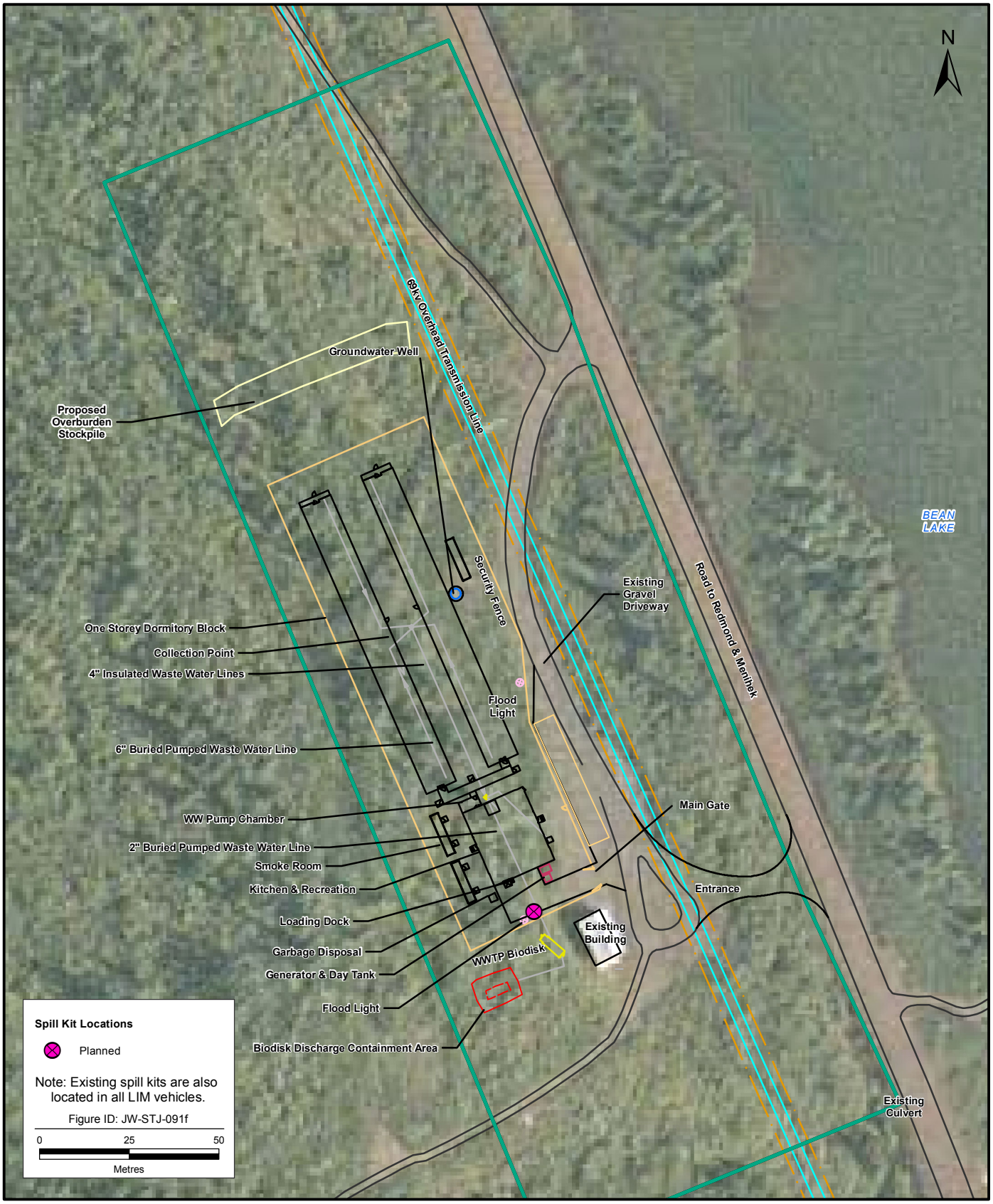


LABRADOR IRON MINES LTD.

PROJECT TITLE:
SCHEFFERVILLE AREA IRON ORE
PROJECT EMERGENCY RESPONSE PLAN

DRAWING TITLE:
JAMES SETTLING POND OUTLET AND
SPILL KIT LOCATIONS

SCALE: 1:7,500	DATE: MAY 19, 2011
DRAWN BY: CP	CHECKED BY:
EDITED BY: AF	REV. No. 0
DRAWING No.: 4	
MAP FILE: JW-STJ-132B	



LABRADOR IRON MINES LTD.

PROJECT TITLE:
SCHEFFERVILLE AREA IRON ORE PROJECT EMERGENCY RESPONSE PLAN

DRAWING TITLE:
BIODISK DISCHARGE CONTAINMENT AREA AND SPILL KIT LOCATIONS AT CAMP

SCALE: 1:1,500	DATE: JULY 14, 2011
DRAWN BY: C.P	CHECKED BY:
EDITED BY: AF	REV. No. 5
DRAWING No.: 5	
MAP FILE: JW-STJ-091e	

APPENDIX B

Controlled Copy Distribution List

ERP Controlled Copy Distribution List

Department or Organization	Individual or Location
Internal	
Management	General/Mine Manager
Beneficiation Plant	Mine Superintendent – Innu Municipal
	Site Manager – Innu Municipal
Environment and Permitting Department	Vice President (VP) of Environment and Permitting
	Environmental Manager
Health and Safety Department	Health and Safety Coordinator
Site Locations	Beneficiation Plant
	Silver Yard Administration/Office Trailer
	Laboratory
	Maintenance Workshop Building
	Camp
External	
Department of Environment and Conservation	Pollution Prevention Division
Department of Government Services	Happy Valley - Goose Bay, NL
Fire Departments	Wabush, NL
	Schefferville, PQ

APPENDIX C

ERP Revision History

ERP Revision History

Version	Date Issued	Name of Last Issuer	Revision Notes
0.0	June 30, 2011	Linda Wrong	For Distribution and Use

APPENDIX D

Risk Assessment Matrix

		PROBABILITY				
		Improbable	**Remote**	**Occasional**	**Probable**	**Frequent**
CONSEQUENCE	**Negligible**	1	2	3	4	5
	Minor	2	4	6	8	10
	Intermediate	3	6	9	12	15
	Significant	4	8	12	16	20
	Critical	5	10	15	20	25

Notes:

1. Regions within this matrix have been shaded to indicate relative significance. The darkest cells have the greatest risk associated with the environmental aspect. For the Schefferville Area Iron Ore Mine, due to the contents of the effluent (only TSS) and the use of above ground settling ponds (rather than existing ponds which feed directly into fish bearing waters), these measures effectively reduce probability and consequence ratings to well below critical or frequent environmental aspects, as they are defined below. Therefore, the risk assessment is generally based on the remaining 4 by 4 portion of the matrix.

2. Consequence

Negligible: Very low or undetectable environmental degradation or asset damage. No remediation/repair required.

Minor: Minor, localized environmental degradation or asset damage. Short term monitoring or immediate remediation/repair with minimal cost.

Intermediate: Some environmental degradation or asset damage. Remediation or repair required (immediate or short term with moderate cost) and short term follow up monitoring.

Significant: Significant environmental degradation or asset damage. Extensive remediation or repair required with long term monitoring.

Critical: Extensive or complete environmental degradation or asset damage. Compensation or long term, extensive remediation or repair required with permanent monitoring.

3. Probability

Improbable:	Event has not been known to occur in history and/or a very low probability of occurring in the future.
Remote:	Event may have occurred in history and/or a low probability of occurring in the future.
Occasional:	Event has occurred in history and/or a low to moderate probability of re-occurrence.
Probable:	Event occurs with some regularity and/or it is probable the event will continue to occur.
Frequent:	Event occurs at frequent intervals and/or it is highly probable the event will continue to occur frequently.

APPENDIX E

Completed Risk Assessment Forms

TABLE E-1

Activity or Situation	Environmental Aspect (Indicate people, environment, or process)	Environmental Impact	Risk Ranking			Recommended Controls	Responsibility for Controls
			P	C	Score		
1. Power Outage-Emergency Reject Fines Pipeline Discharge	Effluent Release (increased TSS in SYSP, then in JSP)	Increased flow and TSS flushing through Settling Pond Systems Increased Water Consumption to flush lines when power up again	O	N/A	N/A	Controls are in place – SYSP will discharge to SY Ditch that will take flow to JSP #3 which is designed to control and treat effluent during these events.	Plant/Crushing Superintendent Site Manager General/Mine Manager
2. Reject Fines Washwater Pipeline Rupture	Effluent Release (increased TSS)	Land Disturbance and Damage to Vegetation	R	I	6	Preventative measures - Scheduled monitoring and maintenance of pipeline. In case of release - Assess corrective and preventative actions; and divert flow away from undisturbed land, vegetation, James Creek and LIM infrastructure.	Environmental Manager Plant/Crushing Superintendent
		Discharge to James Creek	R	S	8		
		Asset Integrity	R	M	4		
3. SY Plant Washing Equipment Rupture/Leak	Effluent Release (increased TSS)	Land Disturbance and Damage to Vegetation	R	N/A	N/A	None required - there is no vegetation or undisturbed land between the plant and the Silver Yard ditch, which will take it to the JSP #3.	Environmental Manager Plant/Crushing Superintendent
		Discharge to SY Ditch	R	N/A	N/A	Controls are in place – SY Ditch will take flow to JSP #3 which is designed to control and treat effluent during these events.	
		Asset Integrity	R	M	4	In case of release - Assess corrective and preventative actions; and divert flow away from LIM infrastructure.	
4. Breach, Failure or overtopping at Silver Yard Settling Pond	Effluent Release (increased TSS)	Discharge to SY Ditch then to JSP	R	N/A	N/A	Controls are in place – SY Ditch will take flow to JSP #3 which is designed to control and treat effluent during these events.	Environmental Manager Plant/Crushing Superintendent
		Land Disturbance and Damage to Vegetation	R	N/A	N/A	None required, there is no vegetation or undisturbed land between the SYSP and the JSP #3, via the SY Ditch,	
		Asset Integrity	R	M	4	In case of release - Assess corrective and preventative actions; and divert flow away from LIM infrastructure.	

TABLE E-1

Activity or Situation	Environmental Aspect (Indicate people, environment, or process)	Environmental Impact	Risk Ranking			Recommended Controls	Responsibility for Controls
			P	C	Score		
5. Dewatering Piping or In-pit Sump Piping Rupture [Between Open Pits and JSP]	Effluent Release (increased TSS)	Land Disturbance and Damage to Vegetation	R	M	4	Preventative measures - Scheduled monitoring and maintenance of piping arrangement; and design (slope and direction) of piping containment ditch to contain and divert flow away from UT direction. In case of release - Assess corrective and preventative actions; and divert flow away from undisturbed land, vegetation, Unnamed Tributary, and LIM infrastructure.	Environmental Manager Plant/Crushing Superintendent
		Discharge to Unnamed Tributary (UT) via overland flow	R	S	8		
		Asset Integrity	R	M	4		
6. Breach, Failure or Overtopping at Ruth Pit Control / Conveyance Structure	Effluent Release (increased TSS to environment)	Discharge to James Creek	R	I to S	6 to 8	Preventative measures - Scheduled monitoring and maintenance of Ruth Pit control / conveyance structures. In case of release - Assess corrective and preventative actions; and divert flow away from undisturbed land, vegetation, James Creek, and LIM infrastructure.	Environmental Manager Plant/Crushing Superintendent
		Land Disturbance and Damage to Vegetation	R	I	6		
		Asset Integrity	R	I	6		
7. Breach, Failure or overtopping at James Settling Pond 3	Effluent Release (increased TSS)	Discharge to James Creek	R	M	4	Preventative measures - Scheduled monitoring and maintenance of JSP and control / conveyance structures. In case of release - Assess corrective and preventative actions; and divert flow away from undisturbed land, vegetation, James Creek, and LIM infrastructure.	Environmental Manager Plant/Crushing Superintendent
		Land Disturbance and Damage to Vegetation	R	N	2		
		Asset Integrity	R	M	4		
8. Breach, Failure or overtopping at James	Effluent Release (increased TSS)	Discharge to James Creek or Unnamed Tributary	R	S	8	Preventative measures - Scheduled monitoring and maintenance of JSP and control / conveyance structures. In case of release - Assess corrective	Environmental Manager Plant/Crushing

TABLE E-1

Activity or Situation	Environmental Aspect (Indicate people, environment, or process)	Environmental Impact	Risk Ranking			Recommended Controls	Responsibility for Controls
			P	C	Score		
Settling Ponds 1 and 2		Land Disturbance and Damage to Vegetation	R	I	6	and preventative actions; and divert flow away from undisturbed land, vegetation, Unnamed Tributary, James Creek, and LIM infrastructure.	Superintendent
		Asset Integrity	R	I	6		
9. Breach, Failure or overtopping at Camp Biodisk Discharge Containment Area	Untreated Effluent Release	Discharge to ditch to Bean Lake	R	N	2	Preventative measures - Scheduled monitoring and maintenance of Containment Area. In case of potential overtopping – contact IM to arrange vacuum truck pump trucks In case of non-compliant release - Assess corrective and preventative actions; and divert flow away from undisturbed land, vegetation, Bean Lake, and LIM infrastructure.	General/Mine Manager
		Land Disturbance and Damage to Vegetation	R	N	2		
		Asset Integrity	R	N	2		

Notes:

P = Probability

- F – Frequent
- P – Probable
- O – Occasional
- R – Remote
- I – Improbable

C = Consequence

- C – Critical
- S – Significant
- I – Intermediate
- M – Minor
- N – Negligible

N/A = Not Applicable
TSS = Total Suspended Solids
SY Ditch = Silver Yard Ditch
UT = Unnamed Tributary
SYSP = Silver Yard Settling Pond
JSP = James Settling Pond
CBDCA = Camp Biodisk Discharge Containment Area

APPENDIX F

Labrador Iron Mines Ltd.

Emergency Phone Numbers

LABRADOR IRON MINES LTD. EMERGENCY PHONE NUMBERS

Location of Nearest Land-Based Telephone: Schefferville Tuktu House. Other Available Phones: Site Radio and / or Satellite Phones at Individual Work Sites.	
EMERGENCY TELEPHONE NUMBERS	
LOCAL EMERGENCY CONTACTS	**TELEPHONE NUMBERS**
LIM Schefferville Office:	Office: **418-585-2166.** Fax: **418-585-2277**
Schefferville Police:	**418-585-2626**
Schefferville Nursing Station:	**418-585-2644**
Kawawachikamach Nursing Station:	**418-585-2110**
Matimekosh Nursing Station:	**418-585-3664**
Schefferville Ground Ambulance:	**418-585-2055**
Air Ambulance:	**Called by the Nursing Station**
Schefferville Fire Department:	**418-585-2863**
Surête du Québec (Police) – **for Quebec :**	**418-585-2626**
Royal Canadian Mounted Police (RCMP) – **for Newfoundland and Labrador:**	**418-585-2225**
Municipality of Schefferville:	**418-585-2471**
Band Council Offices: Kawawachikamach	**418-585-2687**
Band Council Offices: Matimekosh	**418-585-2601**
LIM CONTACTS	**TO BE INFORMED OF ANY EMERGENCY SITUATION**
LIM Vice President, Technical Support	Daniel Dufort: Office: **647-728-4132.** Cell: **416-389-6437**
LIM Vice President, Environment and Permitting	Linda Wrong: Office: **647-728-4115**. Cell: **416-660-2979**
LIM Manager of Health and Safety	Don Hindy: Office: **780-433-2112** Cell: **780-850-2026**
LIM General/Mine Manager	Rowan Maule: Office: **418-585-2666**
LIM Environmental Manager	Corey McLister: Office: **418-585-2166** Cell: **418-585-1959**
LIM Environmental Scientist	Shawn Duquet: Office (Lab): **647-776-7873**
LIM Corporate Office	General Office: **647-728-4125** Fax: **416-368-5344**
INNU MUNICIPAL (IM) CONTACTS	**TO BE INFORMED OF ANY EMERGENCY SITUATION**
IM Site Manager	Brian Chisolm: Office: **418-585-2665** Cell: **709-280-4493**
IM General Superintendent of Operation	John Young: **709-280-4703**
IM Plant/Crushing Superintendent	Al Wagner: **709-282-8635**
IM Mine Superintendent	Kevin Taylor: **709-280-3569**
IM Health and Safety Coordinator	Mark Dunne/Terry Hawco: Office: **418- 585-2666**
REPORTING TO HEALTH AND SAFETY AUTHORITIES	
Québec: Commission de la santé et de la sécurité du travail (CSST)	Sept Iles Office: **418-964-3900 or 1-800-668-5214**
N&L: Occupational Health and Safety Office	**1-709-729-4444** (24-hour emergency service)
REPORTING TO ENVIRONMENTAL AUTHORITIES	
Quebec: Urgence Environment	**1-866-694-5454**
N&L: Environmental Emergencies 24 Hour Report Line	**1-800-563-9089**
Revised June 30, 2011	

APPENDIX G

Environmental Incident Report Form

Labrador Iron Mines Limited
Suite 700-220 Bay Street
Toronto, Ontario
M5J 2W4

SCHEFFERVILLE AREA IRON ORE MINE

Environmental Incident Report

Incident Date (Month, Day, Year)	
Incident Time (24 Hour)	
Type of Incident	
Product / Chemical	
Quantity	
Location (General)	
Location (Coordinates)	
Witnesses	
Supervisor	
Department, Department Head	
Cause / Description of Incident	
Totally Contained (Yes / No) Explain	
Clean-up Procedures	
Weather Conditions (wind velocity, direction, temperature, etc)	
Preventative Actions	
Reportable Event (Yes/No)	
Reported to Government by	
Date / Time Reported	

Potential Environmental Effects	
Follow-up required (Yes / No) Explain	
Incident Complete (Yes / No) If No - Explain	
Attachments	

Report Completed by:

Date (Month, Day, Year)	
Name	
Signature	

APPENDIX C

Regional Groundwater Quality

Site Data

EXOVA ACCUTEST

REPORT OF ANALYSIS

Exova Accutest

Client: **WESA - Kingston**
The Tower, The Woolen Mill, 4 Cataraqui St.

Kingston, ON
K7K 1Z7
Attention: **Mr. Byron O'Connor**

INVOICE: Water & Earth Science Associates-Carp
Chain of Custody Number: **147961**

Kingston Report: K11-3409
Report Number: 1123838
Date: 2011-10-18
Date Submitted: 2011-10-11

Project: KB6836 - Houston

P.O. Number:
Matrix: Water

		LAB ID:	916927
		Sample Date:	2011-10-10
		Sample ID:	Houston - TW 3
PARAMETER	**UNITS**	**MRL**	
Alkalinity as CaCO3	mg/L	5	<5
Bromide	mg/L	0.25	<0.25
Chloride	mg/L	1	<1
Colour	TCU	2	<2
Conductivity	uS/cm	5	40
Dissolved Organic Carbon	mg/L	0.5	<0.5
Fluoride	mg/L	0.1	<0.10
N-NH3 (Ammonia)	mg/L	0.02	<0.02
N-NO2 (Nitrite)	mg/L	0.1	<0.10
N-NO3 (Nitrate)	mg/L	0.1	0.10
pH			6.09
Sulphate	mg/L	1	12
Total Dissolved Solids (COND - CALC)	mg/L	1	26
Total Kjeldahl Nitrogen	mg/L	0.1	0.10
Total Phosphorus	mg/L	0.01	0.03
Turbidity	NTU	0.1	1.3
Hardness as CaCO3	mg/L	1	13
Calcium	mg/L	1	2
Magnesium	mg/L	1	2
Potassium	mg/L	1	<1
Sodium	mg/L	2	<2
Aluminum	mg/L	0.01	0.05
Antimony	mg/L	0.0005	<0.0005
Arsenic	mg/L	0.001	<0.001
Barium	mg/L	0.01	<0.01
Beryllium	mg/L	0.0005	<0.0005
Boron	mg/L	0.01	<0.01
Cadmium	mg/L	0.0001	<0.0001
Chromium	mg/L	0.001	<0.001
Cobalt	mg/L	0.0002	<0.0002

MRL = Method Reporting Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:
Holding time for turbidity analysis was exceeded.

APPROVAL: _____
Lorna Wilson
Inorganic Lab Supervisor

Methods references and/or additional QA/QC information available on request.

REPORT OF ANALYSIS

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INVOICE: Water & Earth Science Associates-Carp
Chain of Custody Number: **147961**

P.O. Number:
Matrix: Water

		LAB ID:	916927
		Sample Date:	2011-10-10
		Sample ID:	Houston - TW 3
PARAMETER	**UNITS**	**MRL**	
Copper	mg/L	0.001	<0.001
Iron	mg/L	0.03	<0.03
Lead	mg/L	0.001	<0.001
Manganese	mg/L	0.01	0.38
Mercury	mg/L	0.0001	<0.0001
Molybdenum	mg/L	0.005	<0.005
Nickel	mg/L	0.005	<0.005
Selenium	mg/L	0.001	<0.001
Silicon	mg/L	0.1	3.4
Silver	mg/L	0.0001	<0.0001
Strontium	mg/L	0.001	0.003
Thallium	mg/L	0.0001	<0.0001
Titanium	mg/L	0.01	<0.01
Uranium	mg/L	0.001	<0.001
Vanadium	mg/L	0.001	<0.001
Zinc	mg/L	0.01	<0.01

MRL = Method Reporting Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL: _____
Lorna Wilson
Inorganic Lab Supervisor

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Attention: **Mr. Byron O'Connor**

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Project: KB6836 - Houston

INVOICE: Water & Earth Science Associates-Carp
Chain of Custody Number: **147961**

P.O. Number:
Matrix: Water

			LAB ID:			
			Sample Date:			
			Sample ID:	LAB BLANK	LAB QC % RECOVERY	QC RECOVERY RANGE	DATE ANALYSED
PARAMETER	**UNITS**	**MRL**				
Alkalinity as CaCO3	mg/L	5	<5	103	95-105	2011-10-13
Bromide	mg/L	0.25	<0.25	103	90-110	2011-10-14
Chloride	mg/L	1	<1	103	90-112	2011-10-14
Colour	TCU	2	<2	100	80-120	2011-10-13
Conductivity	uS/cm	5	<5	99	95-105	2011-10-13
Dissolved Organic Carbon	mg/L	0.5	<0.5	92	84-116	2011-10-17
Fluoride	mg/L	0.1	<0.10	99	90-110	2011-10-13
N-NH3 (Ammonia)	mg/L	0.02	<0.02	99	85-115	2011-10-13
N-NO2 (Nitrite)	mg/L	0.1	<0.10	100	80-120	2011-10-13
N-NO3 (Nitrate)	mg/L	0.1	<0.10	93	80-120	2011-10-14
pH			5.90	99	90-110	2011-10-13
Sulphate	mg/L	1	<1	103	90-110	2011-10-14
Total Dissolved Solids (COND - CALC)	mg/L	1	<1		-	2011-10-17
Total Kjeldahl Nitrogen	mg/L	0.1	<0.10	102	77-123	2011-10-14
Total Phosphorus	mg/L	0.01	<0.01	100	85-115	2011-10-13
Turbidity	NTU	0.1	<0.1	98	73-127	2011-10-13
Hardness as CaCO3	mg/L	1	<1		-	2011-10-17
Calcium	mg/L	1	<1	113	80-120	2011-10-13
Magnesium	mg/L	1	<1	113	80-120	2011-10-13
Potassium	mg/L	1	<1	113	80-120	2011-10-13
Sodium	mg/L	2	<2	113	80-120	2011-10-13
Aluminum	mg/L	0.01	<0.01	100	90-110	2011-10-13
Antimony	mg/L	0.0005	<0.0005	101	77-123	2011-10-13
Arsenic	mg/L	0.001	<0.001	103	81-119	2011-10-13
Barium	mg/L	0.01	<0.01	100	91-109	2011-10-13
Beryllium	mg/L	0.0005	<0.0005	98	82-118	2011-10-13
Boron	mg/L	0.01	<0.01	105	81-119	2011-10-13
Cadmium	mg/L	0.0001	<0.0001	95	86-114	2011-10-13
Chromium	mg/L	0.001	<0.001	98	89-111	2011-10-13
Cobalt	mg/L	0.0002	<0.0002	98	88-112	2011-10-13

MRL = Method Reporting Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL: _____
Lorna Wilson
Inorganic Lab Supervisor

Methods references and/or additional QA/QC information available on request.

EXOVA ACCUTEST

REPORT OF ANALYSIS

Exova Accutest

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Kingston, ON
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Report Number: 1123838
Date: 2011-10-18
Date Submitted: 2011-10-11

Project: KB6836 - Houston

P.O. Number:
Matrix: Water

			LAB ID:			
			Sample Date:			
			Sample ID:	LAB BLANK	LAB QC % RECOVERY	QC RECOVERY RANGE	DATE ANALYSED
PARAMETER	**UNITS**	**MRL**				
Copper	mg/L	0.001	<0.001	94	86-114	2011-10-13
Iron	mg/L	0.03	<0.03	101	88-112	2011-10-13
Lead	mg/L	0.001	<0.001	101	89-111	2011-10-13
Manganese	mg/L	0.01	<0.01	95	91-109	2011-10-13
Mercury	mg/L	0.0001	<0.0001	89	70-130	2011-10-13
Molybdenum	mg/L	0.005	<0.005	97	84-116	2011-10-13
Nickel	mg/L	0.005	<0.005	98	92-108	2011-10-13
Selenium	mg/L	0.001	<0.001	97	77-123	2011-10-13
Silicon	mg/L	0.1	<0.1		-	2011-10-13
Silver	mg/L	0.0001	<0.0001	100	89-111	2011-10-13
Strontium	mg/L	0.001	<0.001	98	91-109	2011-10-13
Thallium	mg/L	0.0001	<0.0001	99	88-112	2011-10-13
Titanium	mg/L	0.01	<0.01	95	88-112	2011-10-13
Uranium	mg/L	0.001	<0.001	97	87-113	2011-10-13
Vanadium	mg/L	0.001	<0.001	98	88-112	2011-10-13
Zinc	mg/L	0.01	<0.01	93	89-111	2011-10-13

MRL = Method Reporting Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL: _____
Lorna Wilson
Inorganic Lab Supervisor

Methods references and/or additional QA/QC information available on request.

EXOVA ACCUTEST

REPORT OF ANALYSIS

Exova Accutest

Client: **WESA - Kingston**
The Tower, The Woolen Mill, 4 Cataraqui St.

Kingston, ON
K7K 1Z7
Attention: **Mr. Byron O'Connor**

INVOICE: Water & Earth Science Associates-Carp
Chain of Custody Number: **147961**

Kingston Report: K11-3409
Report Number: 1123839
Date: 2011-10-17
Date Submitted: 2011-10-11

Project: KB6836 - Houston

P.O. Number:
Matrix: Water

			LAB ID:	916928
			Sample Date:	2011-10-10
			Sample ID:	Housta - TW3 - Total
PARAMETER	**UNITS**	**MRL**		
Calcium	mg/L	1	2	
Magnesium	mg/L	1	2	
Potassium	mg/L	1	<1	
Sodium	mg/L	2	<2	
Aluminum	mg/L	0.01	0.13	
Antimony	mg/L	0.0005	<0.0005	
Arsenic	mg/L	0.001	<0.001	
Barium	mg/L	0.01	<0.01	
Beryllium	mg/L	0.0005	<0.0005	
Boron	mg/L	0.01	<0.01	
Cadmium	mg/L	0.0001	<0.0001	
Chromium	mg/L	0.001	<0.001	
Cobalt	mg/L	0.0002	<0.0002	
Copper	mg/L	0.001	<0.001	
Iron	mg/L	0.03	0.09	
Lead	mg/L	0.001	<0.001	
Manganese	mg/L	0.01	0.38	
Mercury	mg/L	0.0001	<0.0001	
Molybdenum	mg/L	0.005	<0.005	
Nickel	mg/L	0.005	<0.005	
Selenium	mg/L	0.001	<0.001	
Silicon	mg/L	0.1	3.6	
Silver	mg/L	0.0001	<0.0001	
Strontium	mg/L	0.001	0.004	
Thallium	mg/L	0.0001	<0.0001	
Titanium	mg/L	0.01	<0.01	
Uranium	mg/L	0.001	<0.001	
Vanadium	mg/L	0.001	<0.001	
Zinc	mg/L	0.01	<0.01	

MRL = Method Reporting Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

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Lorna Wilson
Inorganic Lab Supervisor

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EXOVA ACCUTEST

REPORT OF ANALYSIS

Exova Accutest

Client: **WESA - Kingston**
The Tower, The Woolen Mill, 4 Cataraqui St.

Kingston, ON
K7K 1Z7
Attention: **Mr. Byron O'Connor**

INVOICE: Water & Earth Science Associates-Carp
Chain of Custody Number: **147961**

Kingston Report: K11-3409
Report Number: 1123839
Date: 2011-10-17
Date Submitted: 2011-10-11

Project: KB6836 - Houston

P.O. Number:
Matrix: Water

		LAB ID:					
		Sample Date:					
		Sample ID:	LAB BLANK	LAB QC % RECOVERY	QC RECOVERY RANGE	DATE ANALYSED	
PARAMETER	**UNITS**	**MRL**					
Calcium	mg/L	1	<1	113	80-120	2011-10-13	
Magnesium	mg/L	1	<1	113	80-120	2011-10-13	
Potassium	mg/L	1	<1	113	80-120	2011-10-13	
Sodium	mg/L	2	<2	113	80-120	2011-10-13	
Aluminum	mg/L	0.01	<0.01	100	90-110	2011-10-13	
Antimony	mg/L	0.0005	<0.0005	101	77-123	2011-10-13	
Arsenic	mg/L	0.001	<0.001	103	81-119	2011-10-13	
Barium	mg/L	0.01	<0.01	100	91-109	2011-10-13	
Beryllium	mg/L	0.0005	<0.0005	98	82-118	2011-10-13	
Boron	mg/L	0.01	<0.01	105	81-119	2011-10-13	
Cadmium	mg/L	0.0001	<0.0001	95	86-114	2011-10-13	
Chromium	mg/L	0.001	<0.001	98	89-111	2011-10-13	
Cobalt	mg/L	0.0002	<0.0002	98	88-112	2011-10-13	
Copper	mg/L	0.001	<0.001	94	86-114	2011-10-13	
Iron	mg/L	0.03	<0.03	101	88-112	2011-10-13	
Lead	mg/L	0.001	<0.001	101	89-111	2011-10-13	
Manganese	mg/L	0.01	<0.01	95	91-109	2011-10-13	
Mercury	mg/L	0.0001	<0.0001	89	70-130	2011-10-13	
Molybdenum	mg/L	0.005	<0.005	97	84-116	2011-10-13	
Nickel	mg/L	0.005	<0.005	98	92-108	2011-10-13	
Selenium	mg/L	0.001	<0.001	97	77-123	2011-10-13	
Silicon	mg/L	0.1	<0.1		-	2011-10-13	
Silver	mg/L	0.0001	<0.0001	100	89-111	2011-10-13	
Strontium	mg/L	0.001	<0.001	98	91-109	2011-10-13	
Thallium	mg/L	0.0001	<0.0001	99	88-112	2011-10-13	
Titanium	mg/L	0.01	<0.01	95	88-112	2011-10-13	
Uranium	mg/L	0.001	<0.001	97	87-113	2011-10-13	
Vanadium	mg/L	0.001	<0.001	98	88-112	2011-10-13	
Zinc	mg/L	0.01	<0.01	93	89-111	2011-10-13	

MRL = Method Reporting Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL: _____
Lorna Wilson
Inorganic Lab Supervisor

Methods references and/or additional QA/QC information available on request.

Regional Data

Groundwater Chemistry for Labrador Iron Mines - General Chemistry
WESA File #K-B6836

Sample ID			JA-MW1-A1	JA-MW1-A2	JA-MW1-B	JA-MW1-C	JA-MW2-A	JA-MW2-B	JA-MW2-C	JA-MW2-D	JA-MW4-A	JA-MW4-B	JA-MW5-A	JA-MW5-B	JA-MW5-C		JA-MW7-A	JA-MW7-B	JA-MW7-C	JA-MW7D	JA-MW8-A
Date Sampled			11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	24-Sep-08	23-Sep-08	24-Sep-08	10-OCT-08	23-Sep-08	23-SEP_08	23-Sep-08	23-Sep-08	11-OCT-08
ALS Sample ID			L696839-1	L696839-2	L696839-3	L696839-5	L696839-4	L696839-6	L696839-7	L696839-8	L696839-9	L696839-10				L696839-13					L696839-17
Matrix	UNITS	LOR	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																					
Color, Apparent	C.U.	1	21	18	430	90	21	260	39	120	16	33	11	130	540	-		43	59	32	17
Conductivity	umhos/cm	0.4	56.8	57.0	252	157	53.9	49.1	39.1	39.8	140	117	34.2	61.6	136	-	55.5	58.6	96.1	71.1	58.4
pH	pH units	0.01	6.82	6.83	7.38	6.56	7.12	6.90	6.75	6.64	7.04	6.95	6.76	8.97	9.28	8.70	6.78	6.96	6.73	6.61	7.15
Total Suspended Solids	mg/L	3	980	1000	14000	3900	350	9200	6200	15000	25000	2700	-	-	-	-	1300	1900	11000	6100	67000
Total Dissolved Solids	mg/L	20	30	30	1800	230	30	280	60	600	70	60	-	-	-	-	40	<20	60	40	30
Turbidity	NTU	0.1	8.3	6.9	>200	>200	8.9	>200	194	>200	130	52.0	77	100	>200	-	>200	59	>200	>200	9.7
Anions and Nutrients																					
Alkalinity, Bicarbonate (as CaCO3)	mg/L	10	29	29	65	35	21	23	21	21	73	62	19	26	44	-	23	26	41	40	29
Alkalinity, Carbonate (as CaCO3)	mg/L	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10
Alkalinity, Total (as CaCO3)	mg/L	10	29	29	65	35	21	23	21	21	73	62	19	29	53	-		26	41	40	29
Ammonia as N	mg/L	0.05	<0.05	<0.05	0.51	0.53	<0.05	0.50	<0.05	<0.50	<0.05	<0.05	<0.05	<0.5	0.58	-	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
Chloride	mg/L	2	6	7	8	7	5	7	7	7	6	6	7	2	7	-	6	<2	<2	6	6
Computed Conductivity	uS/cm		81.2	72.6	238	155	60.9	61.5	57.9	58.5	148	127	-	-	-	-	92.6	66.3	124	103	76.7
Conductivity % Difference	%		35.4	24.0	-5.6	-1.1	12.3	22.3	38.8	38.1	5.5	8.3	-	-	-	-	50.1	12.3	25.6	36.5	27.1
Fluoride	mg/L	0.1	0.1	<0.1	0.2	<0.1	<0.1	0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.1	0.2	-	<0.1	<0.1	<0.1	<0.1	0.1
Hardness (as CaCO3)	mg/L		43	33	8	23	30	17	25	16	78	69	-	-	-	-	41	36	58	51	33
Ion Balance	%		Low EC	Low EC	85.0	115	Low EC	Low EC	Low EC	Low EC	115	120	-	-	-	-	Low EC	Low EC	Low EC		Low EC
Langelier Index			-2.0	-2.2	-1.9	-2.6	-2.1	-2.5	-2.5	-2.8	-1.2	-1.4	-	-	-	-	-2.1	-1.9	-1.8	Low EC	-1.9
Nitrate and Nitrite as N	mg/L	0.2	0.3	0.2	0.7	0.3	0.2	0.3	0.2	0.2	0.4	0.2	0.2	0.3	0.2	-	0.2	0.2	0.3	0.5	0.2
Nitrate-N	mg/L	0.1	0.3	0.2	0.7	0.3	0.2	0.3	0.2	0.2	0.4	0.2	0.2	0.3	0.2	-	0.2	0.2	0.3	0.5	0.2
Nitrite-N	mg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
Saturation pH	pH		8.83	9.01	9.24	9.14	9.22	9.40	9.22	9.42	8.28	8.37	-	-	-	-	8.89	8.91	8.54	8.59	9.06
Phosphate-P (ortho)	mg/L	0.003	0.003	0.003	0.075	0.019	0.008	0.006	0.004	0.004	0.010	0.004	0.004	0.041	0.11	-		0.009	0.004	0.003	0.004
Phosphorus, Total	mg/L	0.03	0.06	0.05	0.60	0.07	0.05	0.09	0.05	0.28	0.05	0.05	<0.05	<1	0.13	-	<0.5	<0.05	<0.05	<0.05	0.05
TDS (Calculated)	mg/L		41	38	152	90	30	32	30	32	81	68	-	-	-	-	41	34	65	54	40
Sulphate	mg/L	2	2	2	55	28	2	<2	<2	2	2	<2	<2	4	14	-	5	3	6	<2	4
Anion Sum	me/L		0.7	0.7	2.5	1.4	0.5	0.6	0.6	0.6	1.4	1.2	-	-	-	-	0.7	0.5	0.8	0.9	0.7
Cation Sum	me/L		0.9	0.7	2.1	1.6	0.6	0.6	0.5	0.5	1.7	1.4	-	-	-	-	1.1	0.8	1.7	1.2	0.7
Cation - Anion Balance	%		Low EC	Low EC	-8.1	6.8	Low EC	Low EC	Low EC	Low EC	7.1	9.1	-	-	-	-	Low EC	Low EC	Low EC	Low EC	Low EC
Cyanides																					
Cyanide, Total	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.002	<0.004	-	<0.002	<0.002	<0.002	<0.002	-
Organic / Inorganic Carbon																					
Dissolved Organic Carbon	mg/L	1	<1	<1	2.7	<1	<1	<1	<1	1	<1	<1	-	<1	-	-	<1	<1	<1	<1	<1
Total Organic Carbon	mg/L	1	<1	<1	3	<1	<1	<1	<1	1	<1	<1	-	<1	-	-	<1	<1	<1	<1	<1
Inorganic Parameters																					
Silica	mg/L	0.2	7.3	7.9	6.3	6.3	6.3	5.7	5.5	4.7	9.2	9.2	6.5	6.7	23.4	-	6.1	6.4	6.1		7.2

Groundwater Chemistry for Labrador Iron Mines - General Chemistry
WESA File #K-B6836

Sample ID			JA-MW8-B	JA-MW8-C	JA-MW9-B		JA-MW9-C		RED-MW3-A	RED-MW3-B	RED-MW4	RED-MW5-A	RED-MW5-B	JA-PW2-1	JA-PW2-2	JA-PW2-3	JA-JA-N
Date Sampled			09-OCT-08	09-OCT-08	23-Sep-08	09-OCT-08	23-Sep-08	09-OCT-08	24-Sep-08	24-Sep-08	11-OCT-08	11-OCT-08	11-OCT-08	23-Oct-08			
ALS Sample ID			L696839-18	L696839-19		L696839-20		L696839-21			L696839-24	L696839-25	L696839-26	L701621-1	L701621-2	L701621-3	L701621-4
Matrix	UNITS	LOR	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																	
Color, Apparent	C.U.	1	40	32	1	3	4	23	13		8	46	230				
Conductivity	umhos/cm	0.4	61.6	33.4	98.4	95.7	132	118	18		129	25.5	70.0				
pH	pH units	0.01	7.19	7.07	6.74	7.14	6.74	7.18	6.97		8.10	7.07	7.11	7.33	7.15	7.08	7.02
Total Suspended Solids	mg/L	3	1800	23000	-	810	-	270	-		17000	11000	27000				
Total Dissolved Solids	mg/L	20	50	<20	-	40	-	60	-		70	30	450				
Turbidity	NTU	0.1	34.0	160	2	1.3	18.1	19.2	140		168	>200	>200				
Anions and Nutrients																	
Alkalinity, Bicarbonate (as CaCO3)	mg/L	10	26	15	41	38	56	51	11		65	<10	23				
Alkalinity, Carbonate (as CaCO3)	mg/L	10	<10	<10	<10	<10	56	<10	<10		<10	<10	<10				
Alkalinity, Total (as CaCO3)	mg/L	10	26	15	41	38	<10	51	11		66	<10	23				
Ammonia as N	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05		<0.05	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chloride	mg/L	2	7	6	6	6	9	7	7		7	6	7	<2	<2	<2	<2
Computed Conductivity	uS/cm		85.4	46.5	-	116	-	143	-		137	30.9	96.1				
Conductivity % Difference	%		32.4	32.9	-	19.4	-	19.3	-		6.4	19.1	31.4				
Fluoride	mg/L	0.1	0.1	<0.1	<0.1	0.1	<0.1	0.1	<0.1		0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Hardness (as CaCO3)	mg/L		40	18	-	59	-	73	-		65	14	27				
Ion Balance	%		Low EC	Low EC	-	Low EC	-	107	-		103	Low EC	Low EC				
Langelier Index			-1.8	-2.5	-	-1.6	-	-1.4	-		-0.2	-7.3	-2.0				
Nitrate and Nitrite as N	mg/L	0.2	0.3	0.5	0.3	0.4	0.3	0.4	<0.2		0.3	0.2	0.5				
Nitrate-N	mg/L	0.1	0.3	0.5	0.3	0.4	0.3	0.4	0.1		0.3	0.2	0.5	0.2	0.2	0.2	0.3
Nitrite-N	mg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Saturation pH	pH		8.97	9.55	-	8.69	-	8.53	-		8.32	14.4	9.16				
Phosphate-P (ortho)	mg/L	0.003	0.006	0.003	<0.003	0.003	<0.003	<0.003	0.006		0.100	0.009	0.009				
Phosphorus, Total	mg/L	0.03	0.05	0.05	<0.05	0.07	<0.05	0.09	<0.5		0.31	0.26	0.60	<0.03	<0.3	<0.03	<0.03
TDS (Calculated)	mg/L		43	24	-	60	-	76	-		76	13	53				
Sulphate	mg/L	2	4	<2	11	11	15	14	<2		3	<2	13	3	2	2	<2
Anion Sum	me/L		0.7	0.5	-	1.1	-	1.4	-		1.4	0.2	0.9				
Cation Sum	me/L		0.9	0.4	-	1.2	-	1.5	-		1.4	0.3	0.9				
Cation - Anion Balance	%		Low EC	Low EC	-	Low EC	-	3.5	-		1.6	Low EC	Low EC				
Cyanides																	
Cyanide, Total	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.004	-	-	-				
Organic / Inorganic Carbon																	
Dissolved Organic Carbon	mg/L	1	<1	<1	-	<1	<0.01	<1	-		<1	<1	<1	<1	<1	<1	<1
Total Organic Carbon	mg/L	1	<1	<1	-	<1	-	<1	-		<1	<1	<1	<1	<1	<1	<1
Inorganic Parameters																	
Silica	mg/L	0.2	6.0	4.1	5.7	4.7	5.7	4.8	8.2		7.7	5.6	7.0				

Groundwater Chemistry for Labrador Iron Mines - Metals
WESA File #K-B6836

Sample ID			JA-MW1-A1	JA-MW1-A2	JA-MW1-B	JA-MW1-C	JA-MW2-A	JA-MW2-B	JA-MW2-C	JA-MW2-D	JA-MW4-A	JA-MW4-B	JA-MW5-A		JA-MW5-B		JA-MW5-C		JA-MW7-A	
Date Sampled			11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	24-Sep-08	10-OCT-08	23-Sep-08	10-OCT-08	24-Sep-08	10-OCT-08	23-Sep-08	09-OCT-08
ALS Sample ID			L696839-1	L696839-2	L696839-3	L696839-5	L696839-4	L696839-6	L696839-7	L696839-8	L696839-9	L696839-10		L696839-11		L696839-12		L696839-13		L696839-14
Matrix	UNITS	LOR	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Total Metals																				
Aluminum (Al)-Total	mg/L	0.01	0.88	1.08	32.5	7.4	0.52	37.6	6.3	14.1	6.5	2.9	0.02	2.6	0.06	3.6	3.5	61.9	0.02	0.01
Antimony (Sb)-Total	mg/L	0.005	<0.005	<0.005	<0.05	<0.05	<0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.005	<0.05	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005
Arsenic (As)-Total	mg/L	0.001	<0.001	<0.001	<0.01	<0.01	<0.001	0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01	0.002	<0.01	0.004	0.01	<0.001	<0.001
Barium (Ba)-Total	mg/L	0.01	0.01	0.01	1.8	0.5	<0.01	2.3	<0.1	0.4	0.2	0.5	<0.01	<0.1	<0.01	0.2	0.09	3.6	<0.01	<0.01
Beryllium (Be)-Total	mg/L	0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01	<0.001	<0.01	<0.001	0.01	<0.001	<0.001
Bismuth (Bi)-Total	mg/L	0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01	<0.001	<0.01	<0.001	0.01	<0.001	<0.001
Boron (B)-Total	mg/L	0.05	<0.05	<0.05	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.05	<0.5	<0.05	<0.5	<0.05	<0.05
Cadmium (Cd)-Total	mg/L	0.0001	<0.0001	<0.0001	0.002	<0.001	<0.0001	0.001	<0.001	<0.001	<0.001	0.007	<0.0001	<0.001	<0.0001	<0.001	<0.0001	0.002	<0.0001	<0.0001
Calcium (Ca)-Total	mg/L	0.5	10.4	6.7	32	14	5.7	49	25	21	17	14	9.6	<5	5.3	8	9.4	83	11.4	1.7
Chromium (Cr)-Total	mg/L	0.001	0.002	0.002	0.02	0.01	0.001	<0.01	<0.01	0.02	0.03	<0.01	0.001	<0.01	0.001	<0.01	0.001	0.02	0.001	<0.001
Cobalt (Co)-Total	mg/L	0.0005	0.0014	0.0014	0.019	<0.005	0.0006	0.012	<0.005	0.009	0.050	0.080	<0.0005	0.011	<0.0005	0.009	0.0021	0.077	<0.0005	<0.0005
Copper (Cu)-Total	mg/L	0.001	0.004	0.003	0.05	0.02	0.002	0.05	0.03	0.06	0.01	0.02	<0.001	0.03	0.009	<0.01	0.01	0.08	0.006	0.003
Iron (Fe)-Total	mg/L	0.05	1.86	2.18	42.3	10.1	1.50	28.0	9.2	19.3	78.3	11.5	<0.05	26.4	<0.05	9.6	6.4	130	<0.05	<0.05
Lead (Pb)-Total	mg/L	0.001	0.003	0.003	0.13	0.04	0.001	0.25	0.02	0.08	<0.01	<0.01	<0.001	<0.01	<0.001	0.02	0.013	0.52	<0.001	<0.001
Magnesium (Mg)-Total	mg/L	0.5	4.1	4.0	28	8	3.8	30	6	11	11	8	2.4	<5	<0.5	<5	1.7	49	3	<0.5
Manganese (Mn)-Total	mg/L	0.001	0.189	0.201	0.96	0.25	0.037	0.63	0.37	0.95	4.77	8.27	0.01	2.38	0.004	3.72	0.898	37.4	0.011	0.005
Mercury (Hg)			0.0001	0.0001	0.0004	<0.0001	<0.0001	0.0003	0.0002	0.0004	0.0035	0.0023		0.0003		<0.0001		0.0006		<0.0001
Molybdenum (Mo)-Total	mg/L	0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01	0.005	<0.01	0.002	<0.01	<0.001	<0.001
Nickel (Ni)-Total	mg/L	0.002	<0.002	<0.002	0.04	<0.02	<0.002	<0.02	<0.02	<0.02	0.03	0.02	<0.002	<0.02	<0.002	<0.02	<0.002	0.04	<0.002	<0.002
Phosphorus (P)-Total	mg/L	0.05	0.07	0.07	1.9	<0.5	0.12	1.2	<0.5	<0.5	1.4	<0.5	<0.05	<0.5	<0.05	<0.5	0.13	1.8	<0.05	<0.05
Potassium (K)-Total	mg/L	1	<1	<1	10	<10	<1	20	<10	<10	<10	<10	<1	<10	<1	<10	2	30	<1	<1
Selenium (Se)-Total	mg/L	0.005	<0.005	<0.005	<0.05	<0.05	<0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.005	<0.05	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005
Silicon (Si)-Total	mg/L	0.1	3.4	3.7	62	17	2.9	43	11	19	11	8	3.1	5	3.1	8	11	66	2.9	2.6
Silver (Ag)-Total	mg/L	0.0001	0.0001	0.0002	<0.001	<0.001	<0.0001	0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.0001	<0.001	0.0001	0.003	<0.0001	<0.0001
Sodium (Na)-Total	mg/L	0.5	<0.5	<0.5	69	27	0.5	56	<5	15	<5	<5	<0.5	<5	15.3	5	29.4	119	6.6	19.3
Strontium (Sr)-Total	mg/L	0.001	0.007	0.005	0.36	0.11	0.004	0.84	0.05	0.23	0.06	0.03	0.009	<0.01	0.011	0.08	0.07	1.69	0.024	0.004
Thallium (Tl)-Total	mg/L	0.0003	<0.0003	0.0003	<0.003	<0.003	<0.0003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0003	<0.003	<0.0003	<0.003	<0.0003	0.003	<0.0003	<0.0003
Tin (Sn)-Total	mg/L	0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001
Titanium (Ti)-Total	mg/L	0.002	0.012	0.016	0.25	0.12	0.007	0.17	0.03	0.05	0.30	0.03	<0.002	<0.02	<0.002	0.03	0.029	0.08	<0.002	<0.002
Tungsten (W)-Total	mg/L	0.01	<0.01	<0.01	<0.1	<0.1	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.1	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01
Uranium (U)-Total	mg/L	0.005	<0.005	<0.005	<0.05	<0.05	<0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.005	<0.05	<0.005	<0.05	<0.005	0.08	<0.005	<0.005
Vanadium (V)-Total	mg/L	0.001	0.008	0.009	0.07	0.03	0.006	0.07	0.05	0.03	<0.01	<0.01	<0.001	<0.01	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001
Zinc (Zn)-Total	mg/L	0.003	0.040	0.017	0.36	0.12	0.007	0.27	0.28	0.19	0.07	0.07	0.064	0.08	0.046	0.05	0.104	0.77	0.1	0.015
Zirconium (Zr)-Total	mg/L	0.004	<0.004	<0.004	<0.04	<0.04	<0.004	<0.04	<0.04	<0.04	<0.04	<0.04	<0.004	<0.04	<0.004	<0.04	<0.004	<0.04	<0.004	<0.004
Dissolved Metals																				
Aluminum (Al)-Dissolved	mg/L	0.01	0.03	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	0.02	0.02	0.84	0.03	<0.01	0.20
Antimony (Sb)-Dissolved	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic (As)-Dissolved	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.001	0.006	<0.001	<0.001	0.001
Barium (Ba)-Dissolved	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Beryllium (Be)-Dissolved	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bismuth (Bi)-Dissolved	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron (B)-Dissolved	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05
Cadmium (Cd)-Dissolved	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium (Ca)-Dissolved	mg/L	0.5	13.5	6.8	2.0	4.4	10.9	3.4	5.7	3.5	15.8	14.8	3.9	7.2	1.1	5.6	1.9	0.9	3.3	0.8
Chromium (Cr)-Dissolved	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.001	0.001	0.002	<0.001	<0.001	0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001
Cobalt (Co)-Dissolved	mg/L	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Copper (Cu)-Dissolved	mg/L	0.001	0.001	0.001	0.002	0.004	0.003	0.003	0.002	0.003	0.004	0.003	<0.001	0.003	0.001	0.004	<0.001	0.004	<0.001	<0.001
Iron (Fe)-Dissolved	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.48	<0.05	<0.05	<0.05
Lead (Pb)-Dissolved	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Magnesium (Mg)-Dissolved	mg/L	0.5	3.6	3.5	0.8	2.8	3.5	2.1	2.6	1.8	9.3	7.8	2.1	2.5	<0.5	1.4	0.7	<0.5	2.6	1.0
Manganese (Mn)-Dissolved	mg/L	0.001	0.017	0.008	0.004	0.018	0.008	0.008	0.004	0.011	0.004	0.016	0.002	0.007	0.003	0.011	0.005	0.001	0.003	0.005
Mercury (Hg)-Dissolved			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001		<0.0001		<0.0001		<0.0001
Molybdenum (Mo)-Dissolved	mg/L	0.001	<0.001	<0.001	0.004	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.001	0.005	0.003	<0.001	0.001
Nickel (Ni)-Dissolved	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Phosphorus (P)-Dissolved	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	<0.05	0.23	<0.05	<0.05	0.05
Potassium (K)-Dissolved	mg/L	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Selenium (Se)-Dissolved	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silicon (Si)-Dissolved	mg/L	0.1	2.6	2.5	2.9	2.9	2.5	2.7	2.6	2.2	4.3	4.3	3.2	2.7	3.4	2.3	6.7	2.5	3	4.3
Silver (Ag)-Dissolved	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium (Na)-Dissolved	mg/L	0.5	<0.5	<0.5	44	25.0	0.8	4.6	0.9	4.2	2.4	1.4	<0.5	<0.5	13.5	2.3	26.3	19.5	3.7	21.2
Strontium (Sr)-Dissolved	mg/L	0.001	0.009	0.005	0.009	0.025	0.008	0.013	0.005	0.012	0.026	0.017	0.005	0.007	0.005	0.009	0.01	0.004	0.011	0.007
Thallium (Tl)-Dissolved	mg/L	0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Tin (Sn)-Dissolved	mg/L	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Titanium (Ti)-Dissolved	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.004	<0.002	0.004	<0.002	<0.002	<0.002
Tungsten (W)-Dissolved	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium (U)-Dissolved	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Vanadium (V)-Dissolved	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
Zinc (Zn)-Dissolved	mg/L	0.003	0.123	0.009	0.012	0.011	0.083	0.008	0.017	0.016	0.027	0.035	0.006	0.056	0.009	0.056	0.004	0.008	0.064	0.003
Zirconium (Zr)-Dissolved	mg/L	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004

Groundwater Chemistry for Labrador Iron Mines - Metals
WESA File #K-B6836

Sample ID			JA-MW7-B		JA-MW7-C		JA-MW7D	JA-MW8-A	JA-MW8-B	JA-MW8-C	JA-MW9-B		JA-MW9-C		RED-MW3-A		RED-MW3-B	RED-MW4	RED-MW5-A	RED-MW5-B	JA-PW2-1	JA-PW2-2	JA-PW2-3	JA-JA-N
Date Sampled			23-SEP_08	09-OCT-08	23-Sep-08	09-OCT-08	23-Sep-08	11-OCT-08	09-OCT-08	09-OCT-08	23-Sep-08	09-OCT-08	23-Sep-08	09-OCT-08	24-Sep-08	11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	11-OCT-08	23-Oct-08			
ALS Sample ID				L696839-15		L696839-16		L696839-17	L696839-18	L696839-19		L696839-20		L696839-21		L696839-22	L696839-23	L696839-24	L696839-25	L696839-26	L701621-1	L701621-2	L701621-3	L701621-4
Matrix	UNITS	LOR	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Total Metals																								
Aluminum (Al)-Total	mg/L	0.01	0.02	0.01	0.02	0.01	0.01	0.62	0.07	<0.01	0.05	0.02	0.02	<0.01	<0.01	22.1	3.5	33.7	15.9	43.8	0.45	0.52	0.55	<0.01
Antimony (Sb)-Total	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.005	<0.005	<0.005	<0.005
Arsenic (As)-Total	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	0.001	0.001	<0.001	<0.001
Barium (Ba)-Total	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.2	0.2	1.4	1.5	3.2	0.03	0.04	0.05	<0.01
Beryllium (Be)-Total	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	0.02	<0.01	0.01	<0.001	<0.001	<0.001	<0.001
Bismuth (Bi)-Total	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001
Boron (B)-Total	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05
Cadmium (Cd)-Total	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.001	<0.0001	0.0027	0.001	0.002	<0.0001	<0.0001	<0.0001	<0.0001
Calcium (Ca)-Total	mg/L	0.5	9.6	4.3	15.1	6.7	13.4	6.0	8.4	3.6	12.1	11.4	9.6	12.6	3.9	20	7	821	7	41	7.3	7.6	5.4	3.5
Chromium (Cr)-Total	mg/L	0.001	0.001	<0.001	0.001	<0.001	0.001	0.005	<0.001	<0.001	0.001	<0.001	0.001	<0.001	<0.001	0.06	<0.01	0.09	<0.01	0.07	0.002	0.001	0.001	0.001
Cobalt (Co)-Total	mg/L	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	0.0082	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0056	<0.0005	0.019	0.012	0.121	0.115	0.232	0.002	0.0028	0.0042	<0.0005
Copper (Cu)-Total	mg/L	0.001	0.001	0.002	0.004	0.003	0.007	0.002	0.002	0.003	0.006	0.003	<0.001	0.004	0.002	0.03	0.01	0.38	0.03	0.09	0.012	0.017	0.008	<0.001
Iron (Fe)-Total	mg/L	0.05	<0.05	<0.05	<0.05	0.05	<0.05	3.27	0.26	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	33.7	12.9	156	79.1	212	1.5	1.8	1.1	<0.05
Lead (Pb)-Total	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.14	<0.01	0.05	0.01	0.19	<0.001	<0.001	<0.001	<0.001
Magnesium (Mg)-Total	mg/L	0.5	3	3.2	5	4.8	4.3	4.3	4.7	2.3	6.9	7.5	2.4	10.0	0.9	12	<5	276	<5	29	3.2	3.1	3.1	1.7
Manganese (Mn)-Total	mg/L	0.001	0.012	0.005	0.03	0.044	0.08	0.672	0.111	0.003	0.002	0.004	0.01	0.025	0.005	6.12	2.83	45.7	10.9	34.1	0.888	0.943	0.996	0.006
Mercury (Hg)				<0.0001		<0.0001		<0.0001	<0.0001	<0.0001		<0.0001		<0.0001		0.0006	0.0009	0.0035	0.0017	0.0024				
Molybdenum (Mo)-Total	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	0.001	<0.001	<0.001	<0.001
Nickel (Ni)-Total	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	0.01	0.008	<0.002	<0.002	<0.002	<0.002	<0.002	0.021	<0.002	0.04	<0.02	0.39	0.04	0.13	<0.002	0.002	0.002	<0.002
Phosphorus (P)-Total	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.5	<0.5	184	0.8	2.5	<0.05	0.06	0.05	<0.05
Potassium (K)-Total	mg/L	1	<1	<1	1	<1	1	<1	<1	<1	1	<1	<1	<1	<1	<10	<10	<10	<10	10	<1	<1	<1	<1
Selenium (Se)-Total	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.005	<0.005	<0.005	<0.005
Silicon (Si)-Total	mg/L	0.1	3	2.5	2.9	2.4	2.6	3.4	2.8	1.9	2.7	2.2	3.1	2.3	3.9	33	7	64	16	49	3.1	3	3	2.5
Silver (Ag)-Total	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.002	<0.001	<0.001	<0.001	<0.001	0.0005	0.0004	0.0003	0.0002
Sodium (Na)-Total	mg/L	0.5	2.1	1.5	12.3	5.5	3.2	1.9	2.1	0.9	3	<0.5	<0.5	<0.5	<0.5	45	<5	<5	<5	25	<0.5	<0.5	<0.5	<0.5
Strontium (Sr)-Total	mg/L	0.001	0.016	0.006	0.029	0.020	0.021	0.005	0.017	0.006	0.01	0.004	0.009	0.003	0.005	0.52	0.01	0.44	0.05	0.51	0.008	0.008	0.006	0.003
Thallium (Tl)-Total	mg/L	0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.003	<0.003	<0.003	<0.003	0.003	<0.0003	<0.0003	<0.0003	<0.0003
Tin (Sn)-Total	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001
Titanium (Ti)-Total	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.05	0.02	0.18	0.10	0.22	0.002	<0.002	<0.002	<0.002
Tungsten (W)-Total	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01
Uranium (U)-Total	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05	0.13	<0.05	0.05	<0.005	<0.005	<0.005	<0.005
Vanadium (V)-Total	mg/L	0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.01	<0.01	0.04	<0.01	0.03	<0.001	<0.001	<0.001	<0.001
Zinc (Zn)-Total	mg/L	0.003	0.086	0.005	0.14	0.010	0.082	0.007	0.025	0.008	0.03	0.040	0.064	0.066	0.018	0.85	0.10	0.82	0.14	1.14	0.039	0.036	0.01	0.013
Zirconium (Zr)-Total	mg/L	0.004	<0.004	<0.004	<0.004	0.006	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.04	<0.04	0.05	<0.04	<0.04	<0.004	<0.004	<0.004	<0.004
Dissolved Metals																								
Aluminum (Al)-Dissolved	mg/L	0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.07	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony (Sb)-Dissolved	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic (As)-Dissolved	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Barium (Ba)-Dissolved	mg/L	0.01	<0.01	<0.01	<0.01	0.001	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Beryllium (Be)-Dissolved	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bismuth (Bi)-Dissolved	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron (B)-Dissolved	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium (Cd)-Dissolved	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium (Ca)-Dissolved	mg/L	0.5	3.7	4.6	8.7	5.8	8	7.7	4.8	3.1	8.5	9.2	3.9	11.2	2.1	6.1	4.5	15.8	3.3	6.2	6	5.1	4.5	2.4
Chromium (Cr)-Dissolved	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.002	0.001	0.001
Cobalt (Co)-Dissolved	mg/L	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0035	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0065	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Copper (Cu)-Dissolved	mg/L	0.001	<0.001	<0.001	0.003	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.001	0.002	0.003	0.001	0.002	0.002	<0.001	<0.001	<0.001	<0.001
Iron (Fe)-Dissolved	mg/L	0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead (Pb)-Dissolved	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Magnesium (Mg)-Dissolved	mg/L	0.5	2.7	3.3	4.5	4.4	3.7	4.1	4.2	2.3	6.9	7.5	2.1	9.1	0.9	1.1	<0.5	6.2	1.5	2.7	3	2.8	3	1.6
Manganese (Mn)-Dissolved	mg/L	0.001	0.012	0.008	0.079	0.101	0.026	0.021	0.042	0.006	<0.001	0.001	0.002	0.026	0.002	0.007	0.008	0.003	<0.001	0.017	<0.001	<0.001	<0.001	0.003
Mercury (Hg)-Dissolved				<0.0001		<0.0001		<0.0001	<0.0001	<0.0001		<0.0001		<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001				
Molybdenum (Mo)-Dissolved	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel (Ni)-Dissolved	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	0.007	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	0.023	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Phosphorus (P)-Dissolved	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Potassium (K)-Dissolved	mg/L	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Selenium (Se)-Dissolved	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silicon (Si)-Dissolved	mg/L	0.1	3.2	3.5	3.1	2.9	2.8	2.8	2.9	2.0	2.9	2.5	3.2	2.6	4	3.6	3.9	3.6	2.6	3.3	2.9	2.9	2.9	2.5
Silver (Ag)-Dissolved	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium (Na)-Dissolved	mg/L	0.5	2.6	2.0	14.7	13.2	<0.5	1.9	2.4	1.0	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	8.4	2.9	0.9	8.1	<0.5	<0.5	<0.5	<0.5
Strontium (Sr)-Dissolved	mg/L	0.001	0.009	0.007	0.016	0.024	0.01	0.006	0.015	0.005	0.002	0.002	0.005	0.003	0.003	0.007	0.005	0.011	0.005	0.014	0.006	0.004	0.003	0.002
Thallium (Tl)-Dissolved	mg/L	0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Tin (Sn)-Dissolved	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Titanium (Ti)-Dissolved	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Tungsten (W)-Dissolved	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium (U)-Dissolved	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Vanadium (V)-Dissolved	mg/L	0.001	<0.001	<0.001	0.001	0.001	0.001	<0.001	<0.001	<0.001	0.001	0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc (Zn)-Dissolved	mg/L	0.003	0.01	0.010	0.039	0.007	0.027	0.015	0.007	0.006	0.005	0.006	0.006	0.073	0.007	0.083	0.078	0.042	0.007	0.029	0.007	0.005	0.004	0.004
Zirconium (Zr)-Dissolved	mg/L	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004

APPENDIX D

Regional and Site Surface Water Quality

Table 2 Water Analytical Results – Inorganics

Parameter	Units	CWQG FWAL	GCDWQ	RDL+	HP3								HP-M					Gilling River			Mike Tributary		
Sampling Date					27-Apr-07	6-Jun-08	13-Sep-08	27-May-09	4-Jul-09	15-Sep-09	14-Sep-10	10-Aug-11	6-Jun-08	13-Sep-08	14-Apr-10	14-Sep-10	10-Aug-11	1-Apr-09	4-Jul-09	16-Sep-09	1-Apr-09	5-Jul-09	15-Sep-09
INORGANICS																							
Total Alkalinity (Total as CaCO3)	mg/L	NG	NG	5	11	<10	13	<10	<10	<10	13	13	<10	20	11	<10	11	51	42	40	70	48	54
Chloride	mg/L	NG	NG	1	ND	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2	6	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Colour	TCU	NG	≤15*	5	ND	5	6	**15.3**	10.0	4.2	10.6	5.7	**17**	**28**	3.1	**20.1**	7.2	4.4	3.9	2.8	4.1	4.1	4.3
Total Dissolved Solids	mg/L	NG	NG	10	43	30	70	26	26	40	32	44	20	90	40	48	54	66	50	58	94	54	82
Hardness (CaCO3)	mg/L	NG	NG	1	21	17	18	16.9	17.2	24.7	30.8	18.9	12	20	20.8	13.6	18.8	60.0	49.7	67.5	90.6	59.1	124
Nitrate + Nitrite	mg/L	NG	NG	0.05	0.08	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.26	<0.2	<0.2	<0.2	<0.2
Nitrite (N)	mg/L	0.06	NG	0.01	ND	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrogen (Ammonia Nitrogen)	mg/L	NG	NG	0.05	ND	0.10	0.05	<0.050	<0.050	<0.050	<0.050	0.145	0.06	0.07	<0.050	<0.050	<0.050	0.064	<0.050	<0.050	0.067	<0.050	<0.050
Dissolved Organic Carbon (C)	mg/L	NG	NG	0.5	0.9	1	1	2.6	2.3	1.0	1.9	<1.0	3	5	<1.0	3.3	<1.0	1.2	1.5	<1.0	2.3	2.1	3.4
Total Organic Carbon (C)	mg/L	NG	NG	0.5	0.8	3	<1		2.4	2.3	1.9	<1.0	5	5	<1.0	3.8	1.4	1.5	1.5	4.3	2.6	2.2	4.8
Orthophosphate (P)	mg/L	NG	NG	0.01	ND	0.003	0.003	0.0031	<0.0030	<0.0030	<0.0030	<0.0030	<0.003	<0.003	<0.0030	0.0032	0.0038	0.0039	<0.0030	<0.0030	0.0037	<0.0030	<0.0030
pH	pH	6.5 - 9	6.5 - 8.5	N/A	6.88	7.05	7.28	7.04	7.29	7.24	7.14	6.82	6.87	7.28	7.34	6.73	6.89	7.76	7.93	7.85	7.89	7.99	8.01
Reactive Silica (SiO2)	mg/L	NG	NG	0.5	6.1	4.4	5.2	7.30	5.22	5.78	5.0	4.3	2.8	5.3	7.5	4.6	4.5	5.5	4.71	5.10	4.3	3.52	3.94
Dissolved Sulphate (SO4)	mg/L	NG	NG	2	10	8	9	6.8	6.6	9.0	6.5	6.1	5	5	11.0	3.2	6.9	5.8	4.4	4.8	8.8	5.1	6.8
Turbidity	NTU	NG	NG	0.1	ND	0.20	0.20	0.27	0.27	0.14	0.18	0.15	0.22	0.40	0.15	0.20	0.20	0.36	0.26	0.19	0.15	0.18	0.16
Conductivity	uS/cm	NG	NG	1	49	34.0	42.6	35.0	36.0	38.8	38.0	42.9	22.5	42.3	49.8	25.0	44.5	119	92.0	93.8	159	105	123
Bromine	mg/L	NG	NG	0.1	NA	<0.1	<0.1	<0.10	<0.10	<0.10	<0.11	<0.12	<0.19	<0.20	<0.21	<0.22	<0.23	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Fluoride	mg/L	NG	1.5	0.1	NA	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
RCAP CALCULATIONS																							
Nitrate (N)	mg/L	NG	45	N/A	9.92	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.26	<0.10	<0.10	<0.10	<0.10
Anion Sum	me/L	NG	NG	N/A	0.44	0.2	0.4	0.14	0.14	0.19	0.35	0.34	0.1	0.6	0.41	<0.10	0.33	0.96	0.81	0.76	1.34	0.90	1.04
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	NG	NG	1	11	<10	13	<10	<10	<10	13	13	<10	20	11	<10	11	51	42	40	70	48	53
Calculated TDS	mg/L	NG	≤500*	1	31	14	23	12.4	12.3	17.6	25.5	19.6	9	29	24.6	7.6	19.6	55.6	46.2	51.3	80.8	52.5	82.8
Carb. Alkalinity (calc. as CaCO3)	mg/L	NG	NG	1	ND	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Cation - Anion Balance	%	NG	NG	N/A	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	11.1	Low EC	Low EC	15.1	13.4	41.1
Cation Sum	me/L	NG	NG	N/A	0.47	0.4	0.4	0.36	0.37	0.52	0.64	0.39	0.2	0.4	0.44	0.27	0.38	1.20	0.99	1.35	1.82	1.18	2.48
Conductivity % Difference	%	NG	NG	N/A	3.3																		
Computed Conductivity	uS/cm	NG	NG	N/A	-2.79	32.3	43.7	29.8	29.8	41.7	53.3	39.2	21.2	55.6	47.9	19.8	38.6	105	88.0	104	152	101	173
Ion Balance (% Difference)	%	NG	NG	N/A	-3.04	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	125	Low EC	Low EC	135	131	239
Langelier Index (@ 20C)	N/A	NG	NG	N/A	9.67	-7.0	-2.4	-6.9	Low Bicarb	Low Bicarb	-2.1	-2.8	-6.4	-2.2	-2.4	-6.2	-2.8	-0.8	-0.8	-0.7	-0.3	-0.6	-0.1
Saturation pH (@ 20C)	N/A	NG	NG	N/A	9.92	14.0	9.71	13.96	Low Bicarb	Low Bicarb	9.28	9.66	13.3	9.46	9.72	12.93	9.71	8.55	8.76	8.53	8.20	8.61	8.09

RDL+ - Analytical Reportable Detection Limit

CWQG, FWAL = CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (2006 Update)

GCDWQ = CCME Canadian Water Quality Guidelines for Drinking Water Quality

334 Exceeds CCME FWAL Standards

334 Exceeds GCDWQ Standards

ND = Not detected

N/A = Not Applicable

NA = Not Analyzed

* Aesthetic Objective

** Interim Maximum Acceptable Concentration

Table 2 Water Analytical Results Tom Pond – Inorganics (continued)

Parameter	Units	CWQG FWAL	GCDWQ	RDL+	HP6 (Tom Pond)						
Sampling Date					27-Apr-07	6-Jun-08	13-Sep-08	4-Jul-09	15-Sep-09	10-Aug-11	14-Sep-10
INORGANICS											
Total Alkalinity (Total as CaCO3)	mg/L	NG	NG	5	ND	<10	<10	<10	<10	<10	<10
Chloride	mg/L	NG	NG	1	ND	<2	<2	<2.0	<2.0	<2.0	<2.0
Colour	TCU	NG	≤15*	5	ND	11	10	10.8	12.4	11.5	**17.3**
Total Dissolved Solids	mg/L	NG	NG	10	11	<20	70	<20	32	22	22
Hardness (CaCO3)	mg/L	NG	NG	1	4	6	4	4.7	16.6	5	14.3
Nitrate + Nitrite	mg/L	NG	NG	0.05	0.07	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nitrite (N)	mg/L	0.06	NG	0.01	ND	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrogen (Ammonia Nitrogen)	mg/L	NG	NG	0.05	0.08	0.07	0.07	<0.050	<0.050	<0.050	<0.050
Dissolved Organic Carbon (C)	mg/L	NG	NG	0.5	0.9	2	4	3.0	3.4	3.2	3.5
Total Organic Carbon (C)	mg/L	NG	NG	0.5	ND	3	3	3.5	4.5	4.4	4.4
Orthophosphate (P)	mg/L	NG	NG	0.01	ND	<0.003	<0.003	<0.0030	<0.0030	<0.0030	0.0032
pH	pH	6.5 - 9	6.5 - 8.5	N/A	**6.24**	6.47	6.83	6.91	6.84	6.76	6.80
Reactive Silica (SiO2)	mg/L	NG	NG	0.5	ND	1.8	0.9	1.69	1.76	<2.1	2.3
Dissolved Sulphate (SO4)	mg/L	NG	NG	2	ND	<2	<2	<2.0	<2.0	<2.0	<2.0
Turbidity	NTU	NG	NG	0.1	24	0.35	0.53	0.37	0.53	0.43	0.52
Conductivity	uS/cm	NG	NG	1	13	9.1	11.0	11.0	13.4	11.4	17.0
Bromine	mg/L	NG	NG	0.1	NA	<0.13	<0.14	<0.15	<0.16	<0.17	<0.18
Fluoride	mg/L	NG	1.5	0.1	NA	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
RCAP CALCULATIONS											
Nitrate (N)	mg/L	NG	45	N/A	NC	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Anion Sum	me/L	NG	NG	N/A	0	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	NG	NG	1	ND	<10	<10	<10	<10	<10	<10
Calculated TDS	mg/L	NG	≤500*	1	3	2	1	1.5	6.0	1.6	5.1
Carb. Alkalinity (calc. as CaCO3)	mg/L	NG	NG	1	ND	<10	<10	<10	<10	<10	<10
Cation - Anion Balance	%	NG	NG	N/A	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC
Cation Sum	me/L	NG	NG	N/A	0.13	0.1	<0.1	<0.10	0.33	<1.0	0.29
Conductivity % Difference	%	NG	NG	N/A	100						
Computed Conductivity	uS/cm	NG	NG	N/A	NC	7.3	5.0	5.16	18.5	5.49	15.9
Ion Balance (% Difference)	%	NG	NG	N/A	NC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC
Langelier Index (@ 20C)	N/A	NG	NG	N/A	NC	-6.4	-6.9	-6.9	-6.0	-6.7	-6.1
Saturation pH (@ 20C)	N/A	NG	NG	N/A	NC	12.9	13.7	13.82	12.87	13.45	12.87

RDL+ - Analytical Reportable Detection Limit

CWQG, FWAL = CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (2006 Update)

GCDWQ = CCME Canadian Water Quality Guidelines for Drinking Water Quality

334 Exceeds CCME FWAL Standards

334 Exceeds GCDWQ Standards

ND = Not detected N/A = Not Applicable

NA = Not Analyzed

* Aesthetic Objective ** Interim Maximum Acceptable Concentration

Table 3 Surface Water Analytical Results – Metals

Parameter	Units	Criteria 1	Criteria 2	RDL+	HP3							
		CWQG FWAL	GCDWQ									
Sampling Date					*27-Apr-07*	6-Jun-08	13-Sep-08	27-May-09	4-Jul-09	15-Sep-09	14-Sep-10	10-Aug-11
Total Metals												
Total Aluminum (Al)	mg/L	0.005-.1	0.1	0.01	ND	0.01	<0.01	0.026	0.021	0.026	0.035	0.01
Total Antimony (Sb)	mg/L	NG	0.006**	0.005	ND	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Arsenic (As)	mg/L	0.005	0.01	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Barium (Ba)	mg/L	NG	10	0.01	ND	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010
Total Beryllium (Be)	mg/L	NG	NG	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Bismuth (Bi)	mg/L	NG	NG	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Boron (B)	mg/L	NG	50**	0.05	ND	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Total Cadmium (Cd)	mg/L	0.017	0.005	0.0001	ND	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Total Calcium (Ca)	mg/L	NG	NG	0.1	3.7	2.8	3.4	2.49	5.54	4.91	7.97	3.83
Total Chromium (Cr)	mg/L	NG	50	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Cobalt (Co)	mg/L	NG	NG	0.0005	ND	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Copper (Cu)	mg/L	0.002-0.004	≤10*	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Iron (Fe)	mg/L	0.3	≤0.3*	0.005	0.096	0.13	0.12	0.149	0.148	0.102	0.072	0.08
Total Lead (Pb)	mg/L	0.001-0.007	0.01	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Magnesium (Mg)	mg/L	NG	NG	100	3.5	2.4	3.0	2.60	2.40	3.01	2.64	2.95
Total Manganese (Mn)	mg/L	NG	≤0.05	0.001	**0.072**	0.016	0.009	0.0274	0.0297	0.0217	0.0226	0.022
Total Mercury (Hg)	mg/L	NG	0.001	0.0001	ND	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Total Molybdenum (Mo)	mg/L	0.073	NG	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nickel (Ni)	mg/L	0.025-0.150	NG	0.002	ND	<0.002	<0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Phosphorus (P)	mg/L	NG	NG	0.03	ND	<0.03	<0.03	<0.030	<0.030	<0.030	<0.030	0.089
Total Potassium (K)	mg/L	NG	NG	0.001	0.6	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0
Total Selenium (Se)	mg/L	0.001	0.01	0.005	ND	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Silicon (Si)	mg/L	NG	NG	0.001		2.1	2.4	3.41	2.16	2.70	2.3	2.4
Total Silver (Ag)	mg/L	NG	NG	0.0001	ND	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Total Sodium (Na)	mg/L	NG	≤0.2*	0.1	0.8	0.6	0.6	0.55	<0.50	0.65	0.59	0.62
Total Strontium (Sr)	mg/L	NG	NG	0.004	0.007	0.006	0.007	0.0047	0.0070	0.0074	0.0088	0.0067
Total Thallium (Tl)	mg/L	0.0008	NG	0.0003	ND	<0.0003	<0.0003	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Total Tin (Sn)	mg/L	NG	NG	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Titanium (Ti)	mg/L	NG	NG	0.002	ND	<0.002	<0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Vanadium (V)	mg/L	NG	NG	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Zinc (Zn)	mg/L	0.03	≤5*	0.003	0.005	<0.003	<0.003	<0.0030	**0.0316**	0.0261	**0.0313**	0.0032
Dissolved Metals												
Dissolved Aluminum (Al)	mg/L	0.005-.1	0.1	0.01	ND	<0.01	<0.01	0.013	<0.010	<0.010	<0.010	<0.010
Dissolved Antimony (Sb)	mg/L	NG	0.006**	0.005	ND	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Arsenic (As)	mg/L	0.005	0.01	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Barium (Ba)	mg/L	NG	10	0.01	ND	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010
Dissolved Beryllium (Be)	mg/L	NG	NG	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Bismuth (Bi)	mg/L	NG	NG	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Boron (B)	mg/L	NG	50**	0.05	ND	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Dissolved Cadmium (Cd)	mg/L	0.017	0.005	0.0001	ND	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Calcium (Ca)	mg/L	NG	NG	0.1	NA	2.6	2.9	2.44	2.55	3.00	2.75	3.33
Dissolved Chromium (Cr)	mg/L	NG	50	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Cobalt (Co)	mg/L	NG	NG	0.0005	ND	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Copper (Cu)	mg/L	0.002-0.004	≤10*	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Iron (Fe)	mg/L	0.3	≤0.3*	0.005	ND	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Dissolved Lead (Pb)	mg/L	0.001-0.007	0.01	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Magnesium (Mg)	mg/L	NG	NG	100	NA	2.3	2.7	2.48	2.62	2.86	2.32	2.58
Dissolved Manganese (Mn)	mg/L	NG	≤0.05	0.001	0.064	0.006	<0.001	0.0099	0.0033	0.0074	0.0038	<0.0010
Mercury Dissolved (Hg)	mg/L	NG	0.001	0.0001	NA	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Molybdenum (Mo)	mg/L	0.073	NG	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Nickel (Ni)	mg/L	0.025-0.150	NG	0.002	ND	<0.002	<0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Dissolved Potassium (K)	mg/L	NG	NG	0.03	NA	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0
Dissolved Selenium (Se)	mg/L	NG	NG	0.001	ND	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Silicon (Si)	mg/L	0.001	0.01	0.005	NA	2.1	2.6	3.39	2.44	2.53	2.2	2
Dissolved Silver (Ag)	mg/L	NG	NG	0.001	ND	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sodium (Na)	mg/L	NG	NG	0.0001	NA	0.5	0.5	0.59	0.51	0.65	0.53	<0.5
Dissolved Strontium (Sr)	mg/L	NG	≤0.2*	0.1	0.006	0.006	0.007	0.0048	0.0051	0.0058	0.0053	0.0055
Dissolved Thallium (Tl)	mg/L	NG	NG	0.004	ND	<0.0003	<0.0003	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Dissolved Tin (Sn)	mg/L	0.0008	NG	0.0003	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Titanium (Ti)	mg/L	NG	NG	0.001	ND	<0.002	<0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Dissolved Tungsten (W)	mg/L	NG	NG	0.002	NA	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Uranium (U)	mg/L	NG	NG	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Zinc (Zn)	mg/L	NG	NG	0.003	ND	0.005	0.003	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

All results expressed as indicated

RDL+ - Analytical Reportable Detection Limit

CWQG, FWAL = CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (2006 Update)

GCDWQ = CCME Canadian Water Quality Guidelines for Drinking Water Quality

334 Exceeds CCME FWAL Standards

334 Exceeds GCDWQ Standards

ND = Not detected N/A = Not Applicable

NA = Not Analyzed

* Aesthetic Objective ** Interim Maximum Acceptable Concentration

Table 3 Surface Water Analytical Results – Metals (continued)

Parameter	Units	Criteria 1	Criteria 2	RDL+	HP-6 (Tom Pond)						
Sampling Date		CWQG FWAL	GCDWQ		*27-Apr-07*	6-Jun-08	13-Sep-08	4-Jul-09	15-Sep-09	10-Aug-11	14-Sep-10
Total Metals											
Total Aluminum (Al)	mg/L	0.005-.1	0.1	0.01	**3.4**	0.04	0.03	0.023	0.053	0.036	0.047
Total Antimony (Sb)	mg/L	NG	0.006**	0.005	ND	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050
Total Arsenic (As)	mg/L	0.005	0.01	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
Total Barium (Ba)	mg/L	NG	10	0.01	0.026	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010
Total Beryllium (Be)	mg/L	NG	NG	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
Total Bismuth (Bi)	mg/L	NG	NG	0.001	ND	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
Total Boron (B)	mg/L	NG	50**	0.05	ND	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Cadmium (Cd)	mg/L	0.017	0.005	0.0001	ND	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Total Calcium (Ca)	mg/L	NG	NG	0.1	1.8	1.5	0.8	1.20	5.07	1.36	4.24
Total Chromium (Cr)	mg/L	NG	50	0.001	0.007	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Cobalt (Co)	mg/L	NG	NG	0.0005	0.001	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Copper (Cu)	mg/L	0.002-0.004	≤10*	0.001	**0.009**	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Iron (Fe)	mg/L	0.3	≤0.3*	0.005	**3.9**	0.12	0.12	0.076	0.106	<0.050	0.065
Total Lead (Pb)	mg/L	0.001-0.007	0.01	0.001	0.0056	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Magnesium (Mg)	mg/L	NG	NG	100	1.5	0.6	0.7	0.59	0.96	0.65	0.90
Total Manganese (Mn)	mg/L	NG	≤0.05	0.001	**0.079**	0.003	0.003	0.0070	0.0068	0.004	0.0079
Total Mercury (Hg)	mg/L	NG	0.001	0.0001	0.04	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Total Molybdenum (Mo)	mg/L	0.073	NG	0.001	ND	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nickel (Ni)	mg/L	0.025-0.150	NG	0.002	**0.008**	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Phosphorus (P)	mg/L	NG	NG	0.03	0.3	<0.03	<0.03	<0.030	<0.030	<0.050	<0.030
Total Potassium (K)	mg/L	NG	NG	0.001	0.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Selenium (Se)	mg/L	0.001	0.01	0.005	ND	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Silicon (Si)	mg/L	NG	NG	0.001	NA	1.0	0.4	0.67	0.82	<1.0	1.1
Total Silver (Ag)	mg/L	NG	NG	0.0001	ND	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Total Sodium (Na)	mg/L	NG	≤0.2*	0.1	0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
Total Strontium (Sr)	mg/L	NG	NG	0.004	0.006	0.004	0.003	0.0030	0.0068	0.0033	0.0057
Total Thallium (Tl)	mg/L	0.0008	NG	0.0003	ND	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Total Tin (Sn)	mg/L	NG	NG	0.001	ND	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Titanium (Ti)	mg/L	NG	NG	0.002	0.054	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Vanadium (V)	mg/L	NG	NG	0.001	0.007	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Zinc (Zn)	mg/L	0.03	≤5*	0.003	**0.035**	0.004	<0.003	0.0056	0.0194	0.0033	0.0196
Dissolved Metals											
Dissolved Aluminum (Al)	mg/L	0.005-.1	0.1	0.01	ND	0.02	<0.01	0.023	0.017	0.038	0.021
Dissolved Antimony (Sb)	mg/L	NG	0.006**	0.005	ND	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Arsenic (As)	mg/L	0.005	0.01	0.001	ND	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Barium (Ba)	mg/L	NG	10	0.01	ND	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Dissolved Beryllium (Be)	mg/L	NG	NG	0.001	ND	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Bismuth (Bi)	mg/L	NG	NG	0.001	ND	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Boron (B)	mg/L	NG	50**	0.05	ND	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dissolved Cadmium (Cd)	mg/L	0.017	0.005	0.0001	ND	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Calcium (Ca)	mg/L	NG	NG	0.1	NA	0.8	0.7	0.79	0.95	0.92	1.05
Dissolved Chromium (Cr)	mg/L	NG	50	0.001	ND	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Cobalt (Co)	mg/L	NG	NG	0.0005	ND	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Copper (Cu)	mg/L	0.002-0.004	≤10*	0.001	ND	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Iron (Fe)	mg/L	0.3	≤0.3*	0.005	ND	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dissolved Lead (Pb)	mg/L	0.001-0.007	0.01	0.001	ND	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Magnesium (Mg)	mg/L	NG	NG	100	NA	0.6	0.6	0.66	0.78	0.65	0.74
Dissolved Manganese (Mn)	mg/L	NG	≤0.05	0.001	0.011	0.002	0.001	0.0038	0.0016	0.0016	0.0039
Mercury Dissolved (Hg)	mg/L	NG	0.001	0.0001	NA	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Molybdenum (Mo)	mg/L	0.073	NG	0.001	ND	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Nickel (Ni)	mg/L	0.025-0.150	NG	0.002	ND	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Dissolved Potassium (K)	mg/L	NG	NG	0.03	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dissolved Selenium (Se)	mg/L	NG	NG	0.001	ND	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Silicon (Si)	mg/L	0.001	0.01	0.005	NA	0.9	0.3	0.79	0.62	<1.0	<1.0
Dissolved Silver (Ag)	mg/L	NG	NG	0.001	ND	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sodium (Na)	mg/L	NG	NG	0.0001	NA	<0.5	<0.5	<0.50	<0.50	<0.5	<0.50
Dissolved Strontium (Sr)	mg/L	NG	≤0.2*	0.1	ND	0.003	0.003	0.0027	0.0034	0.0028	0.0036
Dissolved Thallium (Tl)	mg/L	NG	NG	0.004	ND	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Dissolved Tin (Sn)	mg/L	0.0008	NG	0.0003	ND	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Titanium (Ti)	mg/L	NG	NG	0.001	ND	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Dissolved Tungsten (W)	mg/L	NG	NG	0.002	ND	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Uranium (U)	mg/L	NG	NG	0.001	ND	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Zinc (Zn)	mg/L	NG	NG	0.003	ND	0.008	<0.003	<0.0030	<0.0030	<0.0030	<0.0030

All results expressed as indicated

RDL+ - Analytical Reportable Detection Limit

CWQG, FWAL = CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (2006 Update)

GCDWQ = CCME Canadian Water Quality Guidelines for Drinking Water Quality

334 Exceeds CCME FWAL Standards

334 Exceeds GCDWQ Standards

ND = Not detected

N/A = Not Applicable

NA = Not Analyzed

* Aesthetic Objective

** Interim Maximum Acceptable Concentration

Table 3 Surface Water Analytical Results – Metals (continued)

Parameter	Units	Criteria 1	Criteria 2	RDL+	HP-M				
		CWQG FWAL	GCDWQ						
Sampling Date					6-Jun-08	13-Sep-08	14-Apr-10	14-Sep-10	10-Aug-11
Total Metals									
Total Aluminum (Al)	mg/L	0.005-.1	0.1	0.01	0.03	0.02	<0.010	0.027	0.011
Total Antimony (Sb)	mg/L	NG	0.006**	0.005	<0.005	<0.005	<0.0050	<0.0050	<0.0050
Total Arsenic (As)	mg/L	0.005	0.01	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Total Barium (Ba)	mg/L	NG	10	0.01	<0.01	<0.01	<0.010	<0.010	<0.010
Total Beryllium (Be)	mg/L	NG	NG	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Total Bismuth (Bi)	mg/L	NG	NG	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Total Boron (B)	mg/L	NG	50**	0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Total Cadmium (Cd)	mg/L	0.017	0.005	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Total Calcium (Ca)	mg/L	NG	NG	0.1	2.3	4.4	3.65	2.87	3.61
Total Chromium (Cr)	mg/L	NG	50	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Cobalt (Co)	mg/L	NG	NG	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Copper (Cu)	mg/L	0.002-0.004	≤10*	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Iron (Fe)	mg/L	0.3	≤0.3*	0.005	0.16	0.52	0.059	0.102	0.1
Total Lead (Pb)	mg/L	0.001-0.007	0.01	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Magnesium (Mg)	mg/L	NG	NG	100	1.5	3.4	2.94	1.56	2.82
Total Manganese (Mn)	mg/L	NG	≤0.05	0.001	0.017	0.032	0.111	0.0459	0.0598
Total Mercury (Hg)	mg/L	NG	0.001	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Total Molybdenum (Mo)	mg/L	0.073	NG	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nickel (Ni)	mg/L	0.025-0.150	NG	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Phosphorus (P)	mg/L	NG	NG	0.03	<0.03	<0.03	<0.030	<0.030	<0.050
Total Potassium (K)	mg/L	NG	NG	0.001	<1.0	<1.0	<1.0	<1.0	<1.0
Total Selenium (Se)	mg/L	0.001	0.01	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Silicon (Si)	mg/L	NG	NG	0.001	1.4	2.5	3.4	2.1	2.5
Total Silver (Ag)	mg/L	NG	NG	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Total Sodium (Na)	mg/L	NG	≤0.2*	0.1	<0.5	0.5	0.56	<0.50	0.59
Total Strontium (Sr)	mg/L	NG	NG	0.004	0.005	0.009	0.0052	0.0047	0.0059
Total Thallium (Tl)	mg/L	0.0008	NG	0.0003	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Total Tin (Sn)	mg/L	NG	NG	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Titanium (Ti)	mg/L	NG	NG	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Vanadium (V)	mg/L	NG	NG	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Zinc (Zn)	mg/L	0.03	≤5*	0.003	0.005	0.005	<0.0030	0.0048	<0.0030
Dissolved Metals									
Dissolved Aluminum (Al)	mg/L	0.005-.1	0.1	0.01	0.01	<0.01	<0.010	0.019	0.01
Dissolved Antimony (Sb)	mg/L	NG	0.006**	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Arsenic (As)	mg/L	0.005	0.01	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Barium (Ba)	mg/L	NG	10	0.01	<0.010	<0.010	<0.010	<0.010	<0.010
Dissolved Beryllium (Be)	mg/L	NG	NG	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Bismuth (Bi)	mg/L	NG	NG	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Dissolved Boron (B)	mg/L	NG	50**	0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Dissolved Cadmium (Cd)	mg/L	0.017	0.005	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Calcium (Ca)	mg/L	NG	NG	0.1	1.8	3.4	3.42	2.26	3.31
Dissolved Chromium (Cr)	mg/L	NG	50	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Cobalt (Co)	mg/L	NG	NG	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Copper (Cu)	mg/L	0.002-0.004	≤10*	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Iron (Fe)	mg/L	0.3	≤0.3*	0.005	<0.050	<0.050	<0.050	<0.050	<0.050
Dissolved Lead (Pb)	mg/L	0.001-0.007	0.01	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Magnesium (Mg)	mg/L	NG	NG	100	1.4	2.9	2.98	1.46	2.55
Dissolved Manganese (Mn)	mg/L	NG	≤0.05	0.001	0.014	0.019	0.0804	0.0110	0.0286
Mercury Dissolved (Hg)	mg/L	NG	0.001	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Molybdenum (Mo)	mg/L	0.073	NG	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Nickel (Ni)	mg/L	0.025-0.150	NG	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Dissolved Potassium (K)	mg/L	NG	NG	0.03	<1.0	<1.0	<1.0	<1.0	<1.0
Dissolved Selenium (Se)	mg/L	NG	NG	0.001	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Silicon (Si)	mg/L	0.001	0.01	0.005	1.3	2.6	3.5	2.1	2.1
Dissolved Silver (Ag)	mg/L	NG	NG	0.001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sodium (Na)	mg/L	NG	NG	0.0001	<0.5	<0.5	0.57	<0.50	<0.5
Dissolved Strontium (Sr)	mg/L	NG	≤0.2*	0.1	0.004	0.009	0.0052	0.0044	0.0051
Dissolved Thallium (Tl)	mg/L	NG	NG	0.004	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Dissolved Tin (Sn)	mg/L	0.0008	NG	0.0003	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Titanium (Ti)	mg/L	NG	NG	0.001	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Dissolved Tungsten (W)	mg/L	NG	NG	0.002	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Uranium (U)	mg/L	NG	NG	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Zinc (Zn)	mg/L	NG	NG	0.003	0.005	0.004	<0.0030	<0.0030	<0.0030

All results expressed as indicated

RDL+ - Analytical Reportable Detection Limit

CWQG, FWAL = CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (2006 Update)

GCDWQ = CCME Canadian Water Quality Guidelines for Drinking Water Quality

334 Exceeds CCME FWAL Standards

334 Exceeds GCDWQ Standards

ND = Not detected N/A = Not Applicable

NA = Not Analyzed

* Aesthetic Objective ** Interim Maximum Acceptable Concentration

Table 3 Surface Water Analytical Results – Metals (continued)

Parameter	Units	Criteria 1	Criteria 2	RDL+	Gilling River			Mike Tributary		
		CWQG FWAL	GCDWQ							
Sampling Date					1-Apr-09	4-Jul-09	16-Sep-09	1-Apr-09	5-Jul-09	15-Sep-09
Total Metals										
Total Aluminum (Al)	mg/L	0.005-.1	0.1	0.01	<0.010	0.014	0.033	0.011	<0.010	0.084
Total Antimony (Sb)	mg/L	NG	0.006**	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Arsenic (As)	mg/L	0.005	0.01	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Barium (Ba)	mg/L	NG	10	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Total Beryllium (Be)	mg/L	NG	NG	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Bismuth (Bi)	mg/L	NG	NG	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Boron (B)	mg/L	NG	50**	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Cadmium (Cd)	mg/L	0.017	0.005	0.0001	<0.00010	<0.00010	<0.00010	0.00014	<0.00010	0.00036
Total Calcium (Ca)	mg/L	NG	NG	0.1	11.8	9.81	15.5	20.2	10.7	34.1
Total Chromium (Cr)	mg/L	NG	50	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Cobalt (Co)	mg/L	NG	NG	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Copper (Cu)	mg/L	0.002-0.004	≤10*	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Iron (Fe)	mg/L	0.3	≤0.3*	0.005	0.127	0.147	0.115	0.071	0.081	0.082
Total Lead (Pb)	mg/L	0.001-0.007	0.01	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Magnesium (Mg)	mg/L	NG	NG	100	7.41	5.75	6.99	9.76	6.35	9.50
Total Manganese (Mn)	mg/L	NG	≤0.05	0.001	0.0462	0.0528	0.0159	0.0056	0.0051	0.0223
Total Mercury (Hg)	mg/L	NG	0.001	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Total Molybdenum (Mo)	mg/L	0.073	NG	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nickel (Ni)	mg/L	0.025-0.150	NG	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Phosphorus (P)	mg/L	NG	NG	0.03	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Total Potassium (K)	mg/L	NG	NG	0.001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Selenium (Se)	mg/L	0.001	0.01	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Silicon (Si)	mg/L	NG	NG	0.001	2.56	1.88	2.39	1.99	1.11	1.84
Total Silver (Ag)	mg/L	NG	NG	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Total Sodium (Na)	mg/L	NG	≤0.2*	0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Total Strontium (Sr)	mg/L	NG	NG	0.004	0.0079	0.0064	0.0110	0.0156	0.0079	0.0262
Total Thallium (Tl)	mg/L	0.0008	NG	0.0003	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Total Tin (Sn)	mg/L	NG	NG	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Titanium (Ti)	mg/L	NG	NG	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Vanadium (V)	mg/L	NG	NG	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Zinc (Zn)	mg/L	0.03	≤5*	0.003	0.0078	0.0099	**0.0622**	0.0325	0.0034	**0.214**
Dissolved Metals										
Dissolved Aluminum (Al)	mg/L	0.005-.1	0.1	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Dissolved Antimony (Sb)	mg/L	NG	0.006**	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Arsenic (As)	mg/L	0.005	0.01	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Barium (Ba)	mg/L	NG	10	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Dissolved Beryllium (Be)	mg/L	NG	NG	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Bismuth (Bi)	mg/L	NG	NG	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Boron (B)	mg/L	NG	50**	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dissolved Cadmium (Cd)	mg/L	0.017	0.005	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Calcium (Ca)	mg/L	NG	NG	0.1	11.2	8.58	9.30	15.4	10.7	13.6
Dissolved Chromium (Cr)	mg/L	NG	50	0.001	<0.0010	<0.0010	<0.0010	0.0020	<0.0010	<0.0010
Dissolved Cobalt (Co)	mg/L	NG	NG	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Copper (Cu)	mg/L	0.002-0.004	≤10*	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Iron (Fe)	mg/L	0.3	≤0.3*	0.005	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dissolved Lead (Pb)	mg/L	0.001-0.007	0.01	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Magnesium (Mg)	mg/L	NG	NG	100	7.24	6.86	6.59	9.41	6.65	8.55
Dissolved Manganese (Mn)	mg/L	NG	≤0.05	0.001	0.0205	<0.0010	0.0035	<0.0010	<0.0010	<0.0010
Mercury Dissolved (Hg)	mg/L	NG	0.001	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Molybdenum (Mo)	mg/L	0.073	NG	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Nickel (Ni)	mg/L	0.025-0.150	NG	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Dissolved Potassium (K)	mg/L	NG	NG	0.03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dissolved Selenium (Se)	mg/L	NG	NG	0.001	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Silicon (Si)	mg/L	0.001	0.01	0.005	2.59	2.20	2.14	2.10	1.65	1.58
Dissolved Silver (Ag)	mg/L	NG	NG	0.001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sodium (Na)	mg/L	NG	NG	0.0001	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Strontium (Sr)	mg/L	NG	≤0.2*	0.1	0.0071	0.0054	0.0065	0.0121	0.0082	0.0106
Dissolved Thallium (Tl)	mg/L	NG	NG	0.004	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Dissolved Tin (Sn)	mg/L	0.0008	NG	0.0003	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Titanium (Ti)	mg/L	NG	NG	0.001	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Dissolved Tungsten (W)	mg/L	NG	NG	0.002	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Uranium (U)	mg/L	NG	NG	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Zinc (Zn)	mg/L	NG	NG	0.003	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

All results expressed as indicated

RDL+ - Analytical Reportable Detection Limit

CWQG, FWAL = CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (2006 Update)

GCDWQ = CCME Canadian Water Quality Guidelines for Drinking Water Quality

334	Exceeds CCME FWAL Standards
334	Exceeds GCDWQ Standards

ND = Not detected N/A = Not Applicable

NA = Not Analyzed

* Aesthetic Objective ** Interim Maximum Acceptable Concentration

APPENDIX E

Schefferville Area Iron Ore Mine
Waste Management Plan

WASTE MANAGEMENT PLAN

FOR

SCHEFFERVILLE AREA IRON ORE PROJECT

WESTERN LABRADOR

Date Issued: October 22, 2010
Version 1.0

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Appendix A

- Diesel Generating Units for Schefferville Area Iron Ore Project Construction and Operation Activities Certificate of Approval
- Schefferville Area Iron Ore Project Construction Activities Certificate of Approval
- Schefferville Area Iron Ore Project Operations Certificate of Approval

Appendix B

- Part IV and V of the Environmental Protection Act

1.0 INTRODUCTION

1.1 Purpose and Goals

This Waste Management Plan (WMP) provides direction on waste handling, storage, transport, treatment and disposal of the various wastes produced at the Schefferville Area Iron Ore Mine. The Plan provides a waste management system to deal with waste streams and allow for the implementation of reduction and diversion opportunities. The Plan will also serve as an internal quality control document that provides clear and concise direction for company staff and contractors regarding waste management policies and procedures that must be followed.

The goals of this Plan are to:

- Minimize adverse effects on the environment.
- Incorporate and optimize the basic principles of waste management including reduce, reuse, recycle, recovery and residual waste disposal.
- Meet all regulatory requirements for waste management.

1.2 Scope

This WMP covers Labrador Iron Mines Ltd.'s (LIM) Schefferville Area Iron Ore Mine Operation only. The Plan will address both the mine, plant and camp operations, and provide direction on waste handling, storage, transport, treatment and disposal. The WMP will address the industrial wastes produced at the site; however, will not cover mining wastes such as mine effluent (reject fines) or waste rock.

1.3 Plan Organization

Section 1 of this Plan provides the purpose, goals and scope of the Plan. The regulatory framework which provides the basis for the Plan is summarized in Section 2.

Sections 3 to 6 detail the basic elements of the waste management system including waste characterization, management structure, operational procedures, handling practices and monitoring, reporting and auditing systems.

Much of the information is presented in tabular format which will provide simple, concise listings that can be easily reviewed and updated as part of the annual review of the Plan.

1.4 Document History

Table 1-1 Document History

Date	Version	Notes
September 10, 2010	0.0	Review by Labrador Iron Mines Ltd.
October 22, 2010	1.0	Submission to Dept. of Environment and Conservation, Pollution Prevention Division

2.0 REGULATORY FRAMEWORK

The foundation of the Waste Management Plan is based on the regulatory framework for industrial waste management in Newfoundland and Labrador including legislation, regulations and guidelines at the federal, provincial and municipal levels.

The principle legislation guiding and governing waste management in Newfoundland and Labrador is the Environmental Protection Act (EPA), assented in 2002, and amended in 2006, which consolidates the previous Environment Act, Environmental Assessment Act, Pesticides Act, Waste Management Act and Waste Material Disposal Act. The EPA covers the technical aspects of waste disposal, including handling, diverting, recovering, recycling, reducing and reusing waste materials. Under the provisions of this legislation, waste materials may be designated for recycling, composting or reuse and bans may be placed on the disposal of certain wastes.

The following table provides a list of the current, applicable requirements that affect this WMP.

Table 2-1 Regulatory Requirements for Solid Waste Management

Legislation, Guideline, etc.	Section or Reference	Requirements/Comments
Diesel Generating Units for Schefferville Area Iron Ore Project Construction and Operation Activities Certificate of Approval (No. AA10-075530)	Conditions 9 – 10 and 11 – 13.	Covers spill prevention and containment, and used oil.
Schefferville Area Iron Ore Project Construction Activities Certificate of Approval (No. AA10-075531)	Conditions 18 – 19, 20, 24 – 27, and 32.	Covers waste management, open burning, spill prevention and containment, and used oil.
Schefferville Area Iron Ore Project Operations Certificate of Approval (No. AA10-095537)	Conditions 18 – 19, 20, 25 – 28, and 33.	Covers waste management, open burning, spill prevention and containment, and used oil.
Environmental Protection Act (EPA)	Parts IV and V.	Covers all aspects of waste disposal, handling, etc. and provides for the requirement of this plan

Note: Copies of the Certificate of Approvals issued by the Department of Environment and Conservation and relevant sections of the EPA are located in Appendices A and B of this plan.

3.0 WASTE CHARACTERIZATION

Typically, in order to assess the current and future requirements of a WMP, a qualitative and quantitative assessment or characterization of the waste materials being generated is required. This characterization establishes the baseline conditions and serves as a guide for monitoring and auditing.

In order to ensure that the WMP will remain flexible and responsive to the needs of the waste management systems, reporting, auditing and monitoring procedures will be established. These procedures will:

- Ensure review, as required, of waste quantities and composition for specific waste streams.
- Ensure appropriate infrastructure and equipment are provided for handling waste materials.
- Ensure that the collection frequency of waste materials is appropriate.
- Assist in assessing the feasibility of new waste reduction, diversion and disposal options.

A list of the various waste types, origins, and disposal categories based on anticipated waste streams are provided in Table 3-1 below. The waste data presented below will be reviewed and updated once operations commence.

Table 3-1 Waste Type, Origin and Disposal Categories

Category	Waste Type	Waste Origin	Waste Disposal Category
General	Domestic Waste (all materials that cannot be recycled or reused)	All Areas	Off-site Landfill
	Phones, Computers, Monitors, Printers and Related Hardware	Plant Offices and Camp	Recycled/Reused
	Printer and Copier Ink Cartridges	Plant Offices and Camp	Recycled
Sewage	Biological (Sewage) Waste	Toilets at Camp and Plant	Biodisk Plants and Off-site Disposal of Solids
Plastics and Rubber	Plastic Pails, Containers, or Parts etc.	Maintenance Workshop, Storage Area, Plant, Laboratory, and Kitchen/Dining/Recreation Area	Reused or Off-site Landfill (Note – not all plastics can be recycled in NL)
	Conveyor Belts	Plant	Reused, Sold, or Off-site Landfill
	Used Tires	Maintenance Workshop	Reconditioned/Recycled - Reused

Category	Waste Type	Waste Origin	Waste Disposal Category
Recyclable Food and Drink Product Packaging	• Aluminum cans • Plastic drink and food containers • Glass bottles • Drink boxes • Steel cans • Gable top containers • Alcoholic containers • Other plastics - (yogurt drinks, flavoured drink pouches, foil-topped juice, white juice jugs, etc.)	Plant Offices, Camp and Kitchen/Dining/Recreation Area	Recycled/Reused – Returned for Refund
Compostable Food Waste	Personnel Lunches and Kitchen Scraps	Plant Offices, Camp and Kitchen/Dining/Recreation Area	Composted
Glass	Windows	Plant and Maintenance Workshop	Reused or Off-site Landfill
Wood and Paper	Pallets	Plant and Maintenance Workshop	Reused, or Off-site Landfill
	Wire Spools	Plant	Recycled/Reused – Returned for Refund, or Off-site Landfill
	Scrap Wood	Plant and Maintenance Workshop	Reused, Burned (with permit), or Off-site Landfill
	Cardboard and Paper	Mine, Maintenance Workshop and Offices	Recycled, Burned (with permit) or Off-site Landfill
Metals	Large Pieces of Machinery and Mobile Equipment	Across Entire Mine site	Recycled or Off-site Landfill
	Scrap Metal, Piping, Small Parts and Machinery, Non-recyclable Aluminum Cans	Mine, Plant and Maintenance Workshop	
	Coated Wire and Electrical Cable	Mine, Plant and Maintenance Workshop	
Hazardous Materials	Aerosol Cans	Maintenance Workshop and Kitchen/Dining/ Recreation Area	Off-Site Disposal (Recycled, Reused, Treated or Incinerated) in accordance with applicable provincial and federal regulations.
	Lithium/NiCad Batteries	All Areas	
	Bulbs (fluorescent, halogen, etc.)	All Areas	
	Plastic Drums Containing Contaminant Residues	Plant and Maintenance Workshop	
	Paint and Other Toxic Products Containers	Plant, Laboratory, Maintenance Workshop and Other Areas	
	Lab Chemicals	Laboratory	

Category	Waste Type	Waste Origin	Waste Disposal Category
	Bio-medical Waste • diabetic needles • materials such as bandages, gloves, dressings etc. that have been in contact with blood	First Aid Room in Safety/Training Trailer at Silver Yard	
Hydrocarbon Materials	Fuel and Oil Filters	Maintenance Workshop	Off-Site Disposal (Recycled, Reused, Treated or Incinerated) in accordance with applicable provincial federal regulations
	Sweepings from Maintenance Workshop	Maintenance Workshop	
	Solvent/Oil Contaminated Rags, Workwear, and Absorbent Pads	Plant, Maintenance Workshop and Mobile Equipment	
	Petroleum Contaminated Soils	All Areas	
	Paint Filters	Maintenance Workshop	
	Grease Tubes	Maintenance Workshop and Mobile Equipment	
	Hydraulic Hoses	Maintenance Workshop	
	Waste Grease	Maintenance Workshop	
	Solvents and Oils	Maintenance Workshop	
	Glycol	Maintenance Workshop	
	Used Oil	Plant, Maintenance Workshop and Mobile Equipment	

4.0 MANAGEMENT STRUCTURE

4.1 Management Commitment

LIM is committed to the preservation and protection of our environment. As such, LIM commits to the implementation, maintenance and upgrading of this WMP which incorporates existing waste management strategies and new initiatives.

The Schefferville Area Iron Ore Mine management recognizes that staff time and resources are required to implement and maintain this Plan. All employees must understand the importance of the Plan and of following procedures. The roles and responsibilities of the on-site Mine Manager, and LIM's Vice President (VP) of Environment and Permitting, as well as other staff, are defined below.

4.2 Mine Manager

The Mine Manager will aid in the management of contractors managing the waste and review of the WMP initiatives and procedures with the VP of Environment and Permitting and ensure that this plan is carried out with a full understanding of the applicable regulations and requirements.

4.3 Roles and Responsibilities

The effectiveness of this WMP depends on the commitment and actions of all employees. Therefore, all personnel must be fully aware of their individual duties and responsibilities, as outlined below.

<u>Vice President of Environment and Permitting</u>

- Provide guidance and expertise to the Mine Manager and Mine Contractor on all aspects of waste management activities.
- Support waste management orientation and awareness training for all LIM employees and contractors, as required.
- Review results of routine monitoring and/or audits with respect to waste handling, infrastructure and equipment, and contractors as part of the continual approval process.
- Interface with regulators with regards to waste management and recycling programs, as required.

Mine Manager

- Review onsite waste management needs and contract requirements with the Mine Contractor.
- Report any health and safety issues with respect to the WMP to the Health and Safety Coordinator.
- Respond to any urgent onsite waste management issues.
- Report on any issues relating to the implementation of the WMP to the Vice President of Environment and Permitting.
- Forward results of routine monitoring and/or audits with respect to waste handling, infrastructure and equipment and contractors to the Vice President of Environment and Permitting.

Mine Contractor

- Responsible for the coordination of the WMP with the Mine Manager.
- Set up contracts with the waste management contractors and review practices at all sites for appropriateness and compliance.
- Collect and maintain all records pertaining to waste management activities for compliance monitoring.
- Provide to the Mine Manager and Vice President of Environment and Permitting all necessary documentation pertaining to the transportation, final disposal location and disposal process for all waste removed from the Schefferville Area Iron Ore Mine Property.
- Conduct routine monitoring and/or audits with respect to waste handling, infrastructure and equipment and contractors and provide results to LIM Mine Manager.
- Conduct waste management orientation and awareness training for all LIM employees and subcontractors.
- Report any health and safety issues with respect to the WMP to the Mine Manager and the Health and Safety Coordinator.

Environmental Technician

- Provide onsite implementation support and plan compliance during operations.
- Assist the Mine Contractor with routine monitoring and/or audits with respect to waste handling, infrastructure and equipment, and contractors, if required.
- Report any non-compliance issues to the Mine Manager and Vice President of Environment and Permitting.

Waste Management Contractors

- Are to be fully licensed to conduct waste management activities in the province of Newfoundland and Labrador.
- Must adhere to all federal, provincial and municipal waste management regulations.
- Provide to the Mine Contractor all necessary documentation pertaining to the transportation, final disposal location and disposal process for all waste removed from the Schefferville Area Iron Ore Mine Property.
- Adhere to all Schefferville Area Iron Ore Mine and LIM's Environmental Protection Plan (EPP) and health and safety guidelines.

Employees

- Must be aware of the waste management requirements specific to their area or type of work.
- Must attend and sign off on WMP orientation program.

4.4 Orientation, Awareness and Training

Employee education and awareness about the WMP, and continual communication are important to ensure the success of the Plan. All company staff and contractors/sub-consultants should be informed about the Plan and should know and understand their responsibilities under the Plan. On-going communication about plan implementation, changes and results will ensure a high level of awareness about the Plan.

Information on waste management and the WMP at the Schefferville Area Iron Ore Mine will be provided to all new employees and contractors/sub-consultants during standard site orientation training. Additional information and training will be provided on an individual basis, specific to the work area of the employee or contractor/sub-consultant. All contractors/sub-consultants will be provided with specific instructions on how to deal with waste disposal on the Schefferville Area Iron Ore Mine Property by the Mine Contractor.

A list of employees, staff and contractors/sub-consultants will be kept by the Mine Contractor, and provided to the Mine Manager, and will include the type of WMP training each individual received, the date of the training and any updates or additional training.

5.0 OPERATIONAL PROCEDURES

5.1 On-Site Waste Disposal

There will be no on-site waste disposal at the Schefferville Area Iron Ore Mine.

5.2 Off-Site Waste Disposal

Off-site waste disposal includes any waste that is disposed of outside of the Schefferville Area Iron Ore Mine site. This would include waste materials taken off-site to be recycled, reused, incinerated, stored or sent to an off-site landfill.

All waste products that must be disposed of off-site will be handled for shipping by trained mine staff. The material will be placed on suitable rail cars and moved over the section of rail line leading from Silver Yard to Tshiuetin main line, and then on Tshiuetin rail line to Emeril Siding.

Off-site waste disposal will be conducted by licensed waste management contractors as listed in Table 5-1 below.

Table 5-1 Waste Management Contracts/Contractors

Waste Management Contracts/Contractors	Contract or Reference No.	Types of Waste Handled
Capital Environmental Services		Used hydrocarbon disposal
City Tire (Labrador City)		Used tire repair, recycle and disposal
College of the North		Collects computers and printers and ink cartridges from the general public and in turn send all to a recycler
GSC/Environmental Friends		• Used hydrocarbon recycling and disposal • Metal recycling • Battery recycling • Sewage disposal (vacuum trucks) • General waste (bin rentals and sales, and waste haulage) • Hazardous materials
Hodge Brothers (Wabush, NL)		• General waste (bin rentals and sales, and waste haulage) • Bio-medical waste

Waste Management Contracts/Contractors	Contract or Reference No.	Types of Waste Handled
Hounsel Enterprises		Metal recycling
Innu-Municipal		• Bio-medical waste • Hazardous materials
Ken Tech Computers		Used computers and printers recycling
Mobile 01 Metal Press		Metal recycler
MMSB Green Depot		Beverage containers recycling
Newalta		Bio-medical waste
Town of Labrador City		Operates local landfill

5.3 Waste Diversion and Reduction Programs

Waste diversion and reduction programs are necessary to optimize the reduction of waste materials, the cost of purchased materials and the return, rebate and sale of recyclable or reusable materials. Schefferville Area Iron Ore Mine management will review all aspects of waste reduction and diversion practices on a continual basis or as required. This review will, at a minimum cover the following aspects:

- Purchasing practices;
- Packaging materials;
- Supplier rebates;
- Recycling or reuse returns and rebates;
- New Labrador West regional, government and commercial waste management initiatives, operations and services; and
- Examine potential partnerships with Labrador West regional municipalities and businesses to manage waste.

Table 5-2 provides a list of waste reduction and diversion options and considerations. This list will be updated as required and all past considerations and options will remain listed with details on implementation or why an option was not implemented.

Table 5-2 Waste Reduction and Diversion Options and Initiatives

Initiative	Date	Options and Issues	Implementation Plan
Reduce amount of drink containers	TBD	• Supply refillable thermos bottles for personnel • Procure large water and juice coolers/containers • Procure an ice machine	Evaluate options and issues.

5.4 Waste Handling

Waste handling covers all aspects of waste sorting, transportation and storage of common waste as well as special wastes at the Schefferville Area Iron Ore Mine. A summary of the general waste handling procedures including collection, storage and transportation practices are provided in Table 5-3.

A storage area will be developed near the Maintenance Workshop at Silver Yard. Appropriate and clearly marked containers and bins will be placed here to receive, separate and temporarily store the various waste streams.

There will be no open burning of the materials listed in Table 1 of the Certificate of Approvals (Construction Activities and Operations) located in Appendix A, and permission of the Department of Environment and Conservation will be obtained prior to open fires for burning of other materials.

Table 5-3 Waste Handling Procedures

Category	Waste Type	Collection/ Transportation	Initial Storage Location	Final Collection/ Transportation
General	Domestic Waste (all materials that cannot be recycled or reused)	Collected by site personnel and placed in temporary garbage cans at the Camp, Kitchen/Dining/ Recreation Area and lunchroom at the Plant offices.	Covered steel containers located near the Camp Kitchen/Dining/ Recreation Area.	Covered containers to be transported to and loaded onto railcars, unloaded at Emeril Siding and transported to the municipal landfill in Labrador City.

Category	Waste Type	Collection/ Transportation	Initial Storage Location	Final Collection/ Transportation
	Phones, Computers, Monitors, Printers and Related Hardware	In the Plant offices and at the Camp.	Designated location in the storage area at Silver Yard.	Reused or shipped via rail and truck to the College of the North in Labrador City, who as a community service, accumulates this material and in turn sends it to a recycler. A supplier Ken Tech Computers will accept used computers and add them to their recycling program.
	Printer and Copier Ink Cartridges	In the Plant offices and at the Camp.	Designated location in the storage area at Silver Yard.	Reused or shipped via rail and truck to the College of the North in Labrador City, who as a community service, accumulates this material and in turn sends it to a recycler. A supplier Ken Tech Computers will accept used printer and copier ink cartridges and add them to their recycling program.
Sewage	Biological (sewage) Waste	All sewage is directed to the Biodisk units for treatment.	The Biodisk units provide treatment and initial storage.	The discharge from the Biodisk units will flow to designated tanks and/or settling ponds. The solids will be periodically (once per season) pumped out by vacuum truck, transported by rail to Emeril Siding, by truck to Labrador City and disposed of at an approved facility.

Category	Waste Type	Collection/ Transportation	Initial Storage Location	Final Collection/ Transportation
Plastics and Rubber	Plastic Pails, Containers, or Parts etc.	Site personnel assigned to the Maintenance Workshop, Plant, assay laboratory, or the Kitchen/Dining/ Recreation Area will gather the empty pails.	Potential hydrocarbon or hazardous materials present in the containers will be cleaned out and the containers will be bundled or stacked at a designated storage area.	Transported and loaded onto railcars, unloaded at Emeril Siding and transported to the municipal landfill in Labrador City.
	Conveyor Belts	Personnel working in the Plant will gather conveyor belts when they need to be replaced.	They will be rolled and stored by unused conveyor belts in a designated location near the Plant.	Sections that are salvageable will be reused. Unusable sections will be transported to and loaded onto railcars, unloaded at Emeril Siding and transported to the municipal landfill in Labrador City.
	Used Tires	The maintenance personnel working in the vehicle repair facility will gather used tires as they need to be replaced.	They will be stored at a designated location near the vehicle repair facility.	All used tires will be transported to and loaded onto railcars, unloaded at Emeril Siding and transported to repair shops such as City Tire in Labrador City to be repaired and then shipped back to the site to be reused. City Tire has a disposal program for those that cannot be repaired for reuse.

Category	Waste Type	Collection/ Transportation	Initial Storage Location	Final Collection/ Transportation
Recyclable Food and Drink Product Packaging	• Aluminum cans • Plastic drink and food containers • Glass bottles • Drink boxes • Steel cans • Gable top containers • Alcoholic containers • Other plastics - (yogurt drinks, flavoured drink pouches, foil-topped juice, white jus jugs, etc.)	Marked collection containers will be placed at various locations at the Camp and in the lunchrooms.	A collection bin will be located at the storage area.	Once the bin is filled with recyclables it will be transported to and loaded onto railcars, unloaded at Emeril Siding and transported to MMSB Green Depot, a recycling depot in Labrador City.
Compostable Food Waste	Personnel Lunches and Kitchen Scraps	Personnel producing waste will place in containers provided.	Container will be set up in the cafeteria.	The kitchen staff will separate compostable material and place it in a composter set up in a fenced area away from the camp. Should the composter become a wildlife attractant, other options will be considered.
Glass	Windows	Scrap glass will be collected by site personnel.	Broken glass will be placed in a bin located near the storage area marked for broken glass.	Once the bin is filled with glass, it will be transported to and loaded onto railcars, unloaded at Emeril Siding and transported to the municipal landfill in Labrador City.
Wood and Paper	Pallets	Collected by receiving personnel in the storage area.	Reusable pallets will be stacked near the storage area for reuse. Damaged pallets will be placed in a bin with other scrap wood.	An application to burn combustible material will be submitted. If the permits are not issued or if it is a time of year when burning is not permitted, when the scrap wood bin is full it will be transported to and loaded onto TSH railcars, unloaded at Emeril Siding and transported to the municipal landfill in Labrador City.

Category	Waste Type	Collection/ Transportation	Initial Storage Location	Final Collection/ Transportation
	Wire Spools	Empty spools will be collected by electrical personnel.	The reusable empty spools will be stored near the storage area. Damaged spools will be added to the scrap wood bin.	Reusable spools will be transported to and loaded onto TSH railcars, unloaded at Emeril Siding and transported to the supplier for reuse. See the scrap wood final collection/transportation details below.
	Scrap Wood	Scrap wood will be collected by site personnel.	Scrap wood will be placed in a bin located near the storage area marked for scrap wood.	An application to burn combustible material will be submitted. If the permits are not issued or if it is a time of year when burning is not permitted, when the scrap wood bin is full, it will be transported to and loaded onto TSH railcars, unloaded at Emeril Siding and transported to the municipal landfill in Labrador City.
	Cardboard and Paper	Cardboard and paper will be collected in containers located at various locations around the site.	A bin marked for cardboard and paper will be placed near the kitchen and a second near the storage area.	An application to burn combustible material will be submitted. If the permits are not issued or if it is a time of year when burning is not permitted, when the bins filled with cardboard and paper are full, they will be transported to and loaded onto railcars , unloaded at Emeril Siding and transported to the municipal landfill in Labrador City.
Metals	Large Pieces of Machinery and Mobile Equipment	This will be collected by Maintenance Workshop personnel.	The pieces will be stored at a location near the Maintenance Workshop.	Machinery, scrap metal and electrical wire will be transported to and loaded onto railcars, unloaded at Emeril

Category	Waste Type	Collection/ Transportation	Initial Storage Location	Final Collection/ Transportation
	Scrap Metal, Piping, Small Parts and Machinery, Non-recyclable Aluminum Cans	This will be collected by Maintenance Workshop personnel.	A bin designated for scrap metal will be placed near the storage area.	Siding and transported to a scrap metal recycler in Labrador City or to the municipal landfill if not considered recyclable.
	Coated Wire and Electrical Cable	This will be collected by electrical personnel.	A bin designated for electrical wire will be placed near the storage area.	
Hazardous Materials	Aerosol Cans	Collected by site personnel.	This type of material will be placed in designated containers located at the storage area.	Innu-Municipal will transport and load drums, and bins containing hazardous materials onto railcars, unload them at Emeril Siding and haul them to GSC Environmental Friends, where they will be disposed of as per the proper disposal methods for each type of hazardous material.
	Lithium/NiCad Batteries	Collected by site personnel.		
	Bulbs (fluorescent, halogen, etc.)	Collected by site personnel.		
	Plastic Drums Containing Contaminant Residues	Collected by site personnel.	These drums will have sealed lids and be placed at a designated location near the storage area.	
	Paint and Other Toxic Products Containers	Collected by site personnel.	Collection bins and drums will be placed at a designated location near the storage area.	
	Lab Chemicals	Collected by lab personnel.	Collection bins and drums will be placed at a designated location near the storage area.	

Category	Waste Type	Collection/ Transportation	Initial Storage Location	Final Collection/ Transportation
	Bio-medical Waste • diabetic needles • materials such as bandages, gloves, dressings etc. that have been in contact with blood	• Needles will be deposited by the user in "Sharps Containers". • Materials that have been in contact with blood will be deposited by the user in "Yellow Bags" provided by Newfoundland Poly Bag.	First Aid Room in Safety/Training Trailer at Silver Yard	TDG certified personnel with Innu-Municipal will transport and load "Sharps Containers" and "Yellow Bags" onto railcars, unload them at Emeril Siding and transport them to the Captain William Jackman Memorial Hospital in Labrador City. The bio-medical waste will then be moved by a licensed transporter (Hodge Brothers) to Newalta in Goose Bay where it will be disposed of as per the proper disposal methods.
Hydrocarbon Materials	Fuel and Oil Filters	Collected by site maintenance personnel.	Placed in appropriately labelled drums or containers, located near the storage area, and stored in a location designated for waste oil storage.	These drums and containers will be transported to and loaded onto railcars, unloaded at Emeril Siding and hauled by a licensed transporter to be disposed of as per the proper disposal methods for each type of material.
	Sweepings from Maintenance Workshop			
	Solvent/Oil Contaminated Rags, Workwear, and Absorbent Pads			
	Petroleum Contaminated Soils			
	Paint Filters			
	Grease Tubes			
	Hydraulic Hoses			
	Waste Grease			
	Solvents and Oils			
	Glycol			
	Used Oil	Collected by site personnel.	Stored in used oil storage tank located at Plant.	Trash pump from service truck to plastic cube container, then transported via rail for final disposal in Labrador City by a licensed contractor.

Waste handling procedures shall conform to all existing or new internal and external regulations and policies as identified in this WMP or that come into affect prior to revision of this Plan.

Handling of waste related to an employee's specific line of work should be conducted by the employee as required within his/her normal duties. Depending on the waste type and method of storage, proper

training and/or instruction and orientation may be required to ensure that the procedures as outlined in this Plan are followed.

Handling of special, hazardous or hydrocarbon waste should only be conducted by personnel trained in all aspects of handling, transportation and storage of the material or materials.

5.4.1 Special Waste Handling

Special waste handling procedures are as follows:

- Special wastes are wastes that must be handled to ensure that the material does not cause contamination, fire or affect the health of personnel. Special wastes may include hydrocarbon, sewage, bio-medical, hazardous or any other waste that, when not handled properly, induce additional risk to personnel or property.
- Special wastes must be handled by employees trained to complete this work or a licensed waste disposal contractor.
- Solid waste to be recycled/incinerated should be separately binned and/or stored in temporary containers until final storage. These wastes include:

    - Aerosol cans
    - Lithium/NiCad batteries
    - Bulbs (fluorescent, halogen, etc.)
    - Plastic drums (totes and bags) containing contaminant residues

- Liquid and liquid contaminated wastes to be recycled/incinerated should be drummed or put in approved containers **ensuring no mixing** of materials. These wastes include:

    - Fuel and oil filters
    - Sweepings from shops
    - Solvent/oil contaminated rags, workwear, and absorbent pads
    - Paint filters
    - Paint and other toxic products containers
    - Grease tubes
    - Hydraulic hoses
    - Waste grease
    - Solvents/oils
    - Laboratory Chemicals
    - Glycol

- For drum storage of waste the following practices must be followed. Drummed waste is stored in a properly dyked and protected storage area. The Mine Contractor will be responsible for ensuring that there are proper interim storage areas for these materials. The drums must be clearly labelled indicating their contents and that materials are not mixed. See comments below regarding handling and storage requirements:

    - Full Drums

      Labelling - Drums must have proper labelling (MSDS available where applicable)
      Storage - On pallets and in designated areas protected from damage and properly ventilated
      Movement - Verify that drums are tightly closed to prevent spills
      - For multiple drums, ensure drums are secured on pallet before moving
      - For single drums, use proper slings or secure drum to cart before moving

    - In-use Drums

      Labelling - Drums must have proper labelling (MSDS available where applicable)
      Storage - In designated areas protected from damage and properly ventilated
      Movement - Verify that drums are tightly closed to prevent spills
      Decanting - Ensure that decanting nozzle does not leak when installed
      - Use with a drip pan to prevent spills, keep clean-up material nearby
      - Use only properly labelled decanting containers (do not mix products)

- Biosolids removal will be done by a pump truck. See comments below regarding removal procedures:

    - The scum blanket should be removed first, then the sludge.
    - Sludge is distributed over the primary clarified tank bottom. More solids will be near the inlet and under the first stage.
    - The nozzle of the hose must be moved around the tank bottom at different points to access all areas of the tank. Sludge can funnel at 60 degrees if the suction hose is stationary.
    - The biological growth (biomass) on the disks should not be washed off.
    - It is not necessary to remove all the tank contents or all the sludge and scum.
    - The sludge blanket and the biological activity on the disk are both a source of heat. Removal of biosolids should be done in the spring if possible. Winter removal of all biosolids will reduce the heat generated from biological activity. If required, partial removal of biosolids in the winter is recommended.

- Bio-medical waste removal from site will only be handled by employees or contractors trained and certified in the Transportation of Dangerous Goods (TDG).

5.4.2 Waste Transportation

The following procedures apply to waste transportation:

- Transportation of waste may include:
  - Movement of waste from a work area to the appropriate disposal or storage area.
  - Movement of waste from a temporary disposal or storage area to a bulk storage area or off-site (via TSH railcars).
  - Movement of waste from a bulk storage area or laydown area located near the Workshop storage area to off-site (via railcars).
- Movement of common or routine waste from a work area to the appropriate disposal or storage area should be completed by the employee. The employee should be aware of the type of waste and the proper handling and transportation procedures specific to that type of waste.
- Movement from a temporary disposal or storage area to a bulk storage area or off-site (via railcars) should be completed by waste handling personnel (unless additional employees or contractors are designated). Movement of such materials should be conducted using appropriate equipment while utilizing appropriate personal protective equipment (PPE) at all times.

5.4.3 Waste Storage

Waste storage applies to on-site temporary pallets, bins, laydown areas and bulk storage areas:

- All waste should be stored at the designated location in/on approved containers, pallets or laydown areas, and be dyked if applicable.
- Storage areas/containers are to be clearly marked and located at approved locations around the site based on the waste requirements of each area.
- Waste placed at laydown areas or stored in containers will be collected at appropriate intervals to avoid spillage, overflow or congestion.
- Bulk storage areas will be maintained to ensure safety, maximization of available space and access for waste haulers to all adjacent areas.
- Storage areas will be inspected and reviewed based on space, necessity, access, etc. as required or at a minimum, annually.
- The hydrocarbon and hazardous waste containment area must be properly maintained and inspected to ensure full access, proper storage procedures and early leak or spill detection.
- Used oil storage containers must be inspected and maintained on a monthly basis.
- All records of inspections must be submitted to the Mine Contractor and, from there, to the Mine Manager and VP of Environment and Permitting.

5.4.4 Infrastructure and Equipment Maintenance

Waste management infrastructure and equipment includes any or all infrastructure and equipment related to handling, transportation, storage or removal of wastes from the site. All waste management infrastructure and equipment must be maintained to ensure the health and safety of employees and avoid contamination or degradation of waste during storage or transportation.

LIM will not have equipment specifically dedicated to waste management. There will be several loaders, boom trucks, flatbed tractor trailer trucks, and pickup trucks that will be involved in waste management. An inspection and maintenance schedule will be developed and implemented for all mobile equipment. Inspections will include review of the condition, necessity, location and cleaning/repair/maintenance requirements for each piece of equipment or infrastructure.

6.0 MONITORING, REPORTING AND AUDITS

Continual review and enhancement of the WMP will be conducted with a goal of continuous improvement. The purpose of monitoring and auditing the waste management system is to identify any problems or aspects of the plan that can be improved, and to determine appropriate actions to address these issues.

6.1 Reporting of Problems or Concerns

All Schefferville Area Iron Ore Mine employees and contractors/sub-consultants are responsible and encouraged to report problems or concerns related to any aspect of this WMP.

Issues pertaining to training, waste handling, transportation, storage, infrastructure and equipment should be reported to the Mine Contractor and Mine Manager. Any appropriate issues will be reviewed and forwarded to the VP of Environment and Permitting for action. A record will be kept of all problems or concerns that are identified.

6.2 Record Keeping

Records related to the Schefferville Area Iron Ore Mine waste management system will be kept by the Mine Contractor and copies are to be provided to the Mine Manager and VP of Environment and Permitting.

Records may include documents and information related to:

- orientation and waste management training;
- waste characterization;
- waste management legislation, regulations and guidelines;
- waste management contractors;
- off-site waste disposal;
- Waste Management Committee meetings;
- inspections of waste storage facilities; and
- any other aspects or issues related to the waste management system.

6.3 Routine Monitoring

Routine monitoring of waste management activities will be conducted to ensure that the guidelines and procedures outlined in this plan are being followed. Routine monitoring may consist of informal or formal checks on personnel, equipment and contractors and review of records related to waste management activities.

Monitoring may include:

- location and condition of on-site waste and recycling collection bins;
- condition and organization of waste laydown and storage areas;
- waste collection, transportation and handling operations for Schefferville Area Iron Ore Mine employees and waste management contractors;
- waste volumes from mine areas; and
- any other aspects or issues related to the waste management system.

6.4 Annual Monitoring, Reporting and WMP Revision

This plan will be reviewed annually or as necessary to ensure that all components of the plan are current and operating properly. The review of the plan will be conducted by the Mine Manager and the Vice President of Environment and Permitting in coordination with the Mine Contractor.

The review of the plan should include the following:

- existing, new and upcoming changes in legislation, regulations and guidelines;
- existing and potential waste diversion and reduction programs; and
- operational procedures, equipment and infrastructure.

Monitoring of some components of the waste management system may be required prior to or as a result of the formal review process. If monitoring is required as a result of the review, an additional formal review may be required where changes to the WMP are necessary.

Revision of the WMP may only be completed with the approval of the Vice President of Environment and Permitting. Personnel affected by any revisions or changes should be notified by the Mine Contractor and their training updated if necessary. Revisions or changes in the WMP will also be updated in the waste management orientation and operations training by the Mine Contractor.

APPENDIX A

Diesel Generating Units for Schefferville Area Iron Ore Project Construction and Operation Activities Certificate of Approval

Schefferville Area Iron Ore Project Construction Activities Certificate of Approval

Schefferville Area Iron Ore Project Operations Certificate of Approval

Newfoundland Labrador

GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR
Department of Environment and Conservation

CERTIFICATE OF APPROVAL

Pursuant to the Environmental Protection Act, SNL 2002 c E-14.2 Section 83

Issue Date: ***July 21, 2010*** Approval No AA10-075530

Expiration: ***July 21, 2015*** File No. 731.400

Proponent: **Labrador Iron Mines**
220 Bay Street
Suite 700, Toronto, ON
M5J 2W4

Attention: Linda Wrong - Vice President, Environment and Permitting

Re: **Diesel Generating Units for Schefferville Area Iron Ore Project Construction and Operation Activities**

Approval is hereby given for: the operation of: (i) two 750kW diesel generators at the Silver Yard (primary beneficiation area); (ii) one 450 kW diesel generator at the James Claim; and (iii) two 450 kW diesel generators at the worker's camp at the Labrador Iron Mines sites works in Labrador, near Schefferville, Quebec.

This certificate of approval does not release the proponent from the obligation to obtain appropriate approvals from other concerned provincial, federal and municipal agencies. Nothing in this certificate of approval negates any regulatory requirement placed on the proponent. Where there is a conflict between conditions in this certificate of approval and a regulation, the condition in the regulation shall take precedence. Approval from the Department of Environment and Conservation shall be obtained prior to any significant change in the design, construction, installation, or operation of the facility, including any future expansion of the works. This certificate of approval shall not be sold, assigned, transferred, leased, mortgaged, sublet or otherwise alienated by the proponent without obtaining prior approval from the Minister.

This certificate of approval is subject to the terms and conditions as contained in Appendix 'A' attached hereto, as may be revised from time to time by the Department. Failure to comply with any of the terms and conditions may render this certificate of approval null and void, may require the proponent to cease all activities associated with this certificate of approval, may place the proponent and its agent(s) in violation of the *Environmental Protection Act*, and will make the proponent responsible for taking such remedial measures as may be prescribed by the Department. The Department reserves the right to add, delete or modify conditions to correct errors in the certificate of approval or to address significant environmental or health concerns.

FOR **MINISTER**

APPENDIX "A"

TERMS AND CONDITIONS FOR APPROVAL No. AA10-075530
July 21, 2010

General

1. Approval is hereby given for: the operation of five (5) diesel generating units as outlined in Table 1 at the Labrador Iron Mines in Labrador, near Schefferville, Quebec.

Table 1 – Summary of Planned Diesel Generators on LIM Properties

Location	Number of Units	Power Rating	Manufacturer	Model Number(s)
Silver Yard (primary beneficiation area)	2	750 kW	Cummins	QST30-G1
James Claim	1	450 kW	Cummins	KTA19-G4
Worker's Camp	2	450 kW	Cummins	QSX15-G9

2. Any inquires concerning this approval shall be directed to the St. John's office of the Pollution Prevention Division (telephone: (709) 729-2555; or facsimile: (709) 729-6969).

3. In this Certificate of Approval:

- **CO** means carbon monoxide;
- **CO_2** means carbon dioxide;
- **Department** means the Department of Environment and Conservation and its successors;
- **Director** means the Director of the Pollution Prevention Division of the Department;
- **GSC** means the Government Service Centre;
- **licensed** means has a Certificate of Approval issued by the Minister to conduct an activity;
- **LIM** means Labrador Iron Mines;
- **Minister** means the Minister of the Department;
- **NO_x** means oxides of nitrogen;

- **register(ed)**, in the context of storage tanks, means that information regarding the storage tank system has been submitted to a GSC office and a registration number has been assigned to the storage tank system.

- **SO_2** means sulphur dioxide;

- **spill or spillage** means a loss of gasoline or associated product in excess of 70 litres from a storage tank system, pipeline, tank vessel or vehicle, or of any volume of a regulated substance onto or into soil or a body of water;

- **storage tank system** means a tank and all vent, fill and withdrawal piping associated with it installed in a fixed location and includes a temporary arrangement;

- **used lubricating oil** means lubricating oil that as a result of its use, storage or handling, is altered so that it is no longer suitable for its intended purpose but is suitable for refining or other permitted uses;

- **used oil** means a used lubricating oil or waste oil; and

- **waste oil** means an oil that as a result of contamination by any means or by its use, is altered so that it is no longer suitable for its intended purpose.

4. All necessary measures shall be taken to ensure compliance with all applicable acts, regulations, policies and guidelines, including the following, or their successors:

   - *Environmental Protection Act*;
   - *Water Resources Act;*
   - *Air Pollution Control Regulations, 2004;*
   - *Environmental Control Water and Sewage Regulations, 2003;*
   - *Storage and Handling of Gasoline and Associated Products Regulations, 2003; and*
   - *Used Oil Control Regulations.*

   This Approval provides terms and conditions to satisfy various requirements of the above listed acts, regulations, Departmental policies and guidelines. If it appears that all of the pertinent requirements of these acts, regulations, policies and guidelines are not being met, then a further review of the works shall be conducted, and suitable pollution control measures may be required by the Minister.

5. All reasonable efforts shall be taken to minimize the impact of the diesel generating units on the environment. Such efforts include minimizing the area disturbed by the station, minimizing air or water pollution, finding alternative uses, acceptable to the Director, for waste or rejected materials, and considering the requirement for the eventual rehabilitation of disturbed areas when planning the development of any area on the facility property.

6. LIM shall provide to the Department, within a reasonable time, any information, records, reports or access to data requested or specified by the Department.

7. LIM shall keep all records or other documents required by this Approval for a period of not less than three (3) years, beginning the day they were made. These records

shall be made available for review by officials of the Department or the GSC when requested.

8. Should LIM wish to deviate in any way from the terms and conditions of this Certificate of Approval, a written request detailing the proposed deviation shall be made to the Minister. LIM shall comply with the most current terms and conditions until the Minister has authorized otherwise. In the case of meeting a deadline requirement, the request shall be made at least 60 days ahead of the applicable date as specified in this Approval or elsewhere by the Department

Spill Prevention and Containment

9. All on site storage of petroleum shall comply with the ***Storage and Handling of Gasoline and Associated Products Regulations, 2003***, or its successor. Storage tank systems shall be registered with the GSC. All aboveground storage tanks shall be clearly and visibly labelled with their GAP registration numbers.

10. Where applicable, all tanks and fuel delivery systems shall be inspected to appropriate American Petroleum Institute or Underwriters' Laboratories of Canada standards, or any other standards acceptable to this Department. The required frequency of inspections may be changed at the discretion of the Director.

Used Oil

11. Used oil shall be retained in an approved tank or closed container, and disposed of by a company licensed for handling and disposal of used oil products.

12. Information on used oil that is generated by the diesel generating units shall be submitted to the Director for review within thirty (30) days of the beginning of each calendar year. This shall include a description of:

- the type(s) of oil used;
- the method of disposal for the used oil; and
- the approximate total volume of used oil generated during the previous year.

13. In the event that off-site used oil is stored in the on-site storage tank(s), the information listed above shall also be required for the off-site systems.

Ambient Air

14. Pending the results of any ambient air monitoring, stack emission testing, and/or dispersion modelling, the Director may require that LIM take measures deemed necessary to ensure that the requirements of the ***Air Pollution Control Regulations, 2004*** are being met.

Annual Air Emissions Reporting

15. LIM shall submit an annual Air Emission Report to the Director by ***February 28*** of the subsequent year. This report shall include:

- the estimated annual emissions of the following flue gas constituents: SO_2, NO_X, CO_2, CO and particulate; and

- the actual calculations including factors, formulae and/or assumptions used.

Monitoring Alteration

16. Although a monitoring program is not part of this approval, the Department may require a monitoring program when it is the judgement of the Director that:

- pollutants might be released to the surrounding environment without being detected; or

- an adverse environmental effect may occur.

Reporting

17. All incidents of:

- emergency response activities for oil or hazardous materials spills associated with the operation of the diesel generating units; or

- non-conformance of any condition within this approval; or

- verbal/written complaints of an environmental nature from the public received by LIM related to the diesel generating station, whether or not they are received anonymously;

shall be reported immediately where possible and no later than three (3) working days after the incident, to a person or message manager or facsimile machine as follows:

- contact this Department (St. John's office) by phoning (709) 729-2556, or faxing (709) 729-6969.

A written report including a detailed description of the incident, summary of contributing factors, and an action plan to prevent future incidents of a similar nature, shall be submitted to the Director. The action plan shall include a description of actions already taken and future actions to be implemented, and shall be submitted within thirty days of the date of the initial incident. The address for written report submission is:

Director, Pollution Prevention Division
Department of Environment and Conservation
P.O. Box 8700
St, John's, NL
A1B 4J6
Telephone: (709) 729-2556
Facsimile: (709) 729-6969

18. Any spillage or leakage of gasoline or associated product shall be reported

immediately through the Canadian Coast Guard at 1-(709)-772-2083.

Expiration

19. This Certificate of Approval expires ***July 21, 2015.***

20. Should LIM wish to continue to operate diesel generating units at the Schefferville Area Iron Ore Project beyond this expiry date, a written request shall be submitted to the Director for the renewal of this approval. Such request shall be made prior to ***January 21, 2015.***

cc: Mr. Kevin Power, P.Eng. - Head
Environmental Protection Section
Environment Canada
6 Bruce Street
Donovans Industrial Park
Mount Pearl, NL
A1N 4T3

Mr. Ken Russell - Manager
Government Service Centre (GSC)
13 Churchill Street
Happy Valley Goose Bay, NL
P. O. Box 3014 - Stn. B
A0P 1E0

Mr. Rick Curran – Director
Program and Support Services
Department of Government Services
P.O. Box 8700
St. John's, NL
A1B 4J6

Mr. Alex Smith, P. Eng. – Director
Mineral Development Division
Department of Natural Resources
P.O. Box 8700
St. John's, NL
A1B 4J6

Newfoundland Labrador

GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR
Department of Environment and Conservation

CERTIFICATE OF APPROVAL

Pursuant to the Environmental Protection Act, SNL 2002 c E-14.2 Section 83

Issue Date: ***July 21, 2010*** Approval No. AA10-075531

Expiration: ***July 21, 2012*** File No. 731.400

Proponent: **Labrador Iron Mines**
220 Bay Street
Suite 700, Toronto, ON
M5J 2W4

Attention: Linda Wrong - Vice President, Environment and Permitting

Re: **Schefferville Area Iron Ore Project**
Construction Activities

Approval is hereby given for the construction for open pit mining at James North, James South, Richmond 2B and Redmond 5 deposits; a beneficiation facility; ore, waste rock and overburden stockpiles; settling ponds; access roads; worker's camp and other associated works in Labrador, near Schefferville, Quebec.

This certificate of approval does not release the proponent from the obligation to obtain appropriate approvals from other concerned provincial, federal and municipal agencies. Nothing in this certificate of approval negates any regulatory requirement placed on the proponent. Where there is a conflict between conditions in this certificate of approval and a regulation, the condition in the regulation shall take precedence. Approval from the Department of Environment and Conservation shall be obtained prior to any significant change in the design, construction, installation, or operation of the facility, including any future expansion of the works. This certificate of approval shall not be sold, assigned, transferred, leased, mortgaged, sublet or otherwise alienated by the proponent without obtaining prior approval from the Minister.

This certificate of approval is subject to the terms and conditions as contained in Appendix 'A' attached hereto, as may be revised from time to time by the Department. Failure to comply with any of the terms and conditions may render this certificate of approval null and void, may require the proponent to cease all activities associated with this certificate of approval, may place the proponent and its agent(s) in violation of the *Environmental Protection Act*, and will make the proponent responsible for taking such remedial measures as may be prescribed by the Department. The Department reserves the right to add, delete or modify conditions to correct errors in the certificate of approval or to address significant environmental or health concerns.

Dustin Pottle

For **MINISTER**

TERMS AND CONDITIONS FOR APPROVAL No. AA10-075531
July 21, 2010

General

1. Approval is hereby given for the construction for open pit mining at James North, James South, Richmond 2B and Redmond 5 deposits; a beneficiation facility; ore, waste rock and overburden stockpiles; settling ponds; access roads; worker's camp and other associated works in Labrador, near Schefferville, Quebec.

2. Any inquires concerning this approval shall be directed to the St. John's office of the Pollution Prevention Division (telephone: (709) 729-2555; or facsimile: (709) 729-6969).

3. In this Certificate of Approval:

- **accredited** means the formal recognition of the competence of a laboratory to carry out specific functions;
- **acutely lethal** means that the effluent at 100% concentration kills more than 50% of the rainbow trout subjected to it during a 96-hour period, when tested in accordance with the Rainbow Trout test;
- **Department** means the Department of Environment and Conservation and its successors;
- **Director** means the Director of the Pollution Prevention Division of the Department;
- **discharge criteria** means the maximum allowable levels for the parameters listed in Table 3B;
- **GSC** means the Government Service Centre - Goose Bay;
- **grab sample** means a quantity of undiluted sample collected at any given time. In this approval it refers to waste oil and effluent;
- **licensed** means has a Certificate of Approval issued by the Minister to conduct an activity;
- **LIM** means Labrador Iron Mines Limited;
- **malfunction** means any sudden, infrequent and not reasonably preventable failure of air pollution control equipment, wastewater treatment equipment, process equipment, or a process to operate in a normal or usual manner. Failures caused in part by poor maintenance or careless operation are not malfunctions;
- **Minister** means the Minister of the Department;
- **proficiency testing** means the use of inter-laboratory comparisons to determine the performance of individual laboratories for specific tests or

measurements;

- **QA/QC** means Quality Assurance/Quality Control;
- **register(ed)**, in the context of storage tanks, means that information regarding the storage tank system has been submitted to a Government Service Centre office and a registration number has been assigned to the storage tank system.
- **regulated substance** means a substance subject to discharge limit(s) under the *Environmental Control Water and Sewage Regulations, 2003*;
- **spill or spillage** means a loss of gasoline or associated product in excess of 70 litres from a storage tank system, pipeline, tank vessel or vehicle, or of any volume of a regulated substance onto or into soil or a body of water;
- **storage tank system** means a tank and all vent, fill and withdrawal piping associated with it installed in a fixed location and includes a temporary arrangement;
- **TDS** means total dissolved solids;
- **TPH** means total petroleum hydrocarbons;
- **TSS** means total suspended solids;
- **used lubricating oil** means lubricating oil that as a result of its use, storage or handling, is altered so that it is no longer suitable for its intended purpose but is suitable for refining or other permitted uses;
- **used oil** means a used lubricating oil or waste oil; and
- **waste oil** means an oil that as a result of contamination by any means or by its use, is altered so that it is no longer suitable for its intended purpose.

4. All necessary measures shall be taken to ensure compliance with all applicable acts, regulations, policies and guidelines, including the following, or their successors:

- *Environmental Protection Act*;
- *Water Resources Act;*
- *Air Pollution Control Regulations, 2004;*
- *Environmental Control Water and Sewage Regulations, 2003;*
- *Halocarbon Regulations*
- *Storage and Handling of Gasoline and Associated Products Regulations, 2003;*
- *Used Oil Control Regulations; and*
- *Accredited and Credited Laboratory Policy*

This Approval provides terms and conditions to satisfy various requirements of the above listed acts, regulations, Departmental policies and guidelines. If it appears that all of the pertinent requirements of these acts, regulations, policies and guidelines are not being met, then a further review of the works shall be conducted, and suitable pollution control measures may be required by the Minister.

5. All reasonable efforts shall be taken to minimize the impact of the Schefferville area iron ore project on the environment. Such efforts include minimizing the area disturbed by the operation, minimizing air or water pollution, finding alternative uses, acceptable to the Director, for waste or rejected materials, and considering the requirement for the eventual rehabilitation of disturbed areas when planning the development of any area on the facility property.

6. LIM shall provide to the Department, within a reasonable time, any information, records, reports or access to data requested or specified by the Department.

7. LIM shall keep all records or other documents required by this Approval for a period of not less than three (3) years, beginning the day they were made. These records shall be made available for review by officials of the Department or the GSC when requested.

8. Should LIM wish to deviate in any way from the terms and conditions of this Certificate of Approval, a written request detailing the proposed deviation shall be made to the Minister. LIM shall comply with the most current terms and conditions until the Minister has authorized otherwise. In the case of meeting a deadline requirement, the request shall be made at least 60 days ahead of the applicable date as specified in this Approval or elsewhere by the Department.

Construction

9. All construction activities shall be subject to the requirements of the Environmental Protection Plan (May 4, 2010 – as revised) for construction and operation activities. All proposed revisions to the plan shall be submitted to the director for review.

10. Any work that must be performed in a body of water below the high water mark shall be carried out during a period of low water levels.

11. All construction operations shall be carried out in a manner that minimizes damage to land, vegetation, and watercourses, and which prevents pollution of bodies of water.

12. The use of heavy equipment in streams or bodies of water is not permitted. The operation of heavy equipment shall be confined to dry stable areas.

13. All vehicles and equipment shall be clean and in good repair, free of mud and oil, or other harmful substances that could impair water quality.

14. During the construction of concrete components, formwork shall be properly constructed to prevent any fresh concrete from entering a body of water. Dumping of concrete or washing of tools and equipment in any body of water is prohibited.

15. All areas affected by this project shall be restored to a state that resembles local natural conditions. Further remedial measures to mitigate environmental impacts on water resources can and will be specified, if necessary in the opinion of this Department.

16. Any alteration of a water body or work within 15 m of a water body shall be approved by the Water Resources Management Division of this Department. Alteration of a water body may include culvert installations, stream crossings,

outfalls, infilling; or bridge, dam, and wharf construction.

17. All culvert installations, stream crossings and alterations of water bodies are to be approved by the Water Resources Management Division of this Department.

Waste Management

18. LIM shall submit a Waste Management Plan for their Schefferville project. With the goal of minimizing adverse effects on the environment, the Waste Management Plan shall: be comprehensive, including all operations within the Schefferville project; identify the types of waste materials (i.e. boiler ash, sewage, empty chemical packaging, etc.); provide general direction in dealing with the handling, storage, transport, treatment and disposal of waste materials; and incorporate the basic waste management principles of reduce, reuse, recycle, recover and residual disposal. An outline of the Plan shall be submitted to the Director for review by ***October 31, 2010***. The outline shall include a schedule of dates for preparation and implementation for each section of the Plan. The completed Plan shall then be submitted to the Director for review by ***January21, 2011***. Every year the Waste Management Plan shall be reviewed and revised as necessary, accounting for expanding or alteration of activities. All proposed revisions shall be submitted to the Director for review. The Department will acknowledge receipt of the Plan and/or revisions, and shall provide any review comments within a reasonable time frame.

19. Disposal of hazardous waste in a municipal or regional waste disposal site in this Province is prohibited. Transporters of hazardous waste shall have an approval issued by the Minister. Those generating hazardous waste shall have a waste generators number issued by the Director and shall also complete the required information outlined in the Waste Manifest Form.

Open Burning

20. Open burning of the materials listed in Table 1 is not permitted. Other materials shall not be burnt in open fires without the written permission from this Department.

Table 1 - Material Not Approved for Open Burning	
Tires	Manure
Plastics	Rubber
treated lumber	tar paper
asphalt and asphalt products	railway ties
Drywall	paint and paint products
demolition waste	fuel and lubricant containers
hazardous waste	used oil
biomedical waste	animal cadavers
domestic waste	hazardous substances

trash, garbage, or other waste from commercial, industrial or municipal operations	materials disposed of as part of the removal or decontamination of equipment, buildings or other structures

Noise

21. All efforts shall be made to minimize and control noise resulting from the construction activities. All vehicles hauling materials in the area shall have exhaust and muffling devices in good working order.

Dust Suppression

22. LIM shall control dusting resulting from construction activities at the site. Use of dust suppressants other than water or calcium chloride shall require approval of the Director. Operators are encouraged to use best management practices when applying calcium chloride or any other approved dust suppressant.

Pollution Control Equipment

23. All pollution control equipment shall be maintained and operated per the manufacturer's specifications for best performance.

Spill Prevention and Containment

24. Areas in which chemicals are used or stored shall have impermeable floors and dykes or curbs and shall not have a floor drain system, nor shall it discharge to the environment. Areas inside the dykes or curbs shall have an effective secondary containment capacity of at least ***110%*** of the chemical storage tank capacity, in the case of a single storage container. If there is more than one storage container, the dyked area shall be able to retain no less than ***110% of the capacity of the largest container or 100 %*** **of the capacity of the largest container plus 10% of the aggregate capacity of all additional containers, whichever is greater**. These dyked areas shall be kept clear of material that may compromise the capacity of the dyke system. Once a year, the dykes shall be visually inspected for their liquid containing integrity, and repairs shall be made when required. Once every ten years, the dykes shall be inspected, by a means other than visual inspection, for their liquid containing integrity, and repairs shall be made when required.

25. All on site storage of petroleum shall comply with the ***Storage and Handling of Gasoline and Associated Products Regulations, 2003***, or its successor. Storage tank systems shall be registered with the Government Service Centre. All aboveground storage tanks shall be clearly and visibly labelled with their GAP registration numbers.

26. Where applicable, all tanks and fuel delivery systems shall be inspected to appropriate American Petroleum Institute or Underwriters' Laboratories of Canada standards, or any other standards acceptable to this Department. The required frequency of inspections may be changed at the discretion of the Director.

27. Refuelling and maintenance of vehicles and equipment shall, whenever possible, be undertaken on a prepared impermeable surface with an oil containment or collection system. When this is not possible, due care shall be taken to prevent spillage on the ground and to the surrounding environment, particularly streams and other water

bodies. The Contingency Plan for fuel storage shall detail the specific response actions in the event of a spill from refuelling or maintenance activities.

Contingency Plans

28. A contingency plan for the construction activities of this project shall be submitted to the Director for review by ***November 21, 2010***. The contingency plan shall clearly describe the actions to be taken in the event of a spill of a toxic or hazardous material. It shall include, as a minimum: notification and alerting procedures; duties and responsibilities of the "on-scene commander" and other involved staff; spill control and clean-up procedures; restoration of the spill site; information on disposal of contaminants; and resource inventory. Copies of the plan shall be placed in convenient areas throughout the facility so that employees can easily refer to it when needed. LIM shall ensure that all employees are aware of the plan and understand the procedures and the reporting protocol to be followed in the event of an emergency. An annual response exercise is recommended for response personnel. Every year, as a minimum, the plan shall be reviewed and revised as necessary. Any proposed significant revisions shall be submitted to the Director for review. Changes which are not considered significant include minor variations in equipment or personnel characteristics which do not effect implementation of the plan.

29. Every time LIM implements the *Contingency Plans* information shall be recorded for future reference. This will assist in reviewing and updating the plan. The record is to consist of all incidents with environmental implications, and include such details as: date; time of day; type of incident (i.e. liquid spill, gas leak, granular chemical spill, equipment malfunction, etc.); actions taken; problems encountered; and other relevant information that would aid in later review of the plan performance. Each incident report shall be submitted to the Director as per the ***Reporting*** section.

Rehabilitation & Closure Plan

30. LIM shall satisfy all rehabilitation and closure planning and financial assurance requirements of the Mining Act.

31. The Rehabilitation and Closure Plan (May 12, 2010 – as amended) shall be reviewed annually by LIM and revised as necessary. All proposed revisions to the plan shall be submitted to the Director for review.

Used Oil

32. Used oil shall be retained in an approved tank or closed container, and disposed of by a company licensed for handling and disposal of used oil products.

Effluent Monitoring and Discharge

33. Not less than once per week and at least 24 hours apart, LIM shall collect grab samples at the outlet of Ruth Pit, the outlet of James Settling Pond into the Unnamed Tributary and the outlet of James Settling Pond into James Creek, and have them analysed for pH and TSS concentrations as required in Table 2. Analysis results shall be submitted as per the ***Reporting*** section.

34. Once per month and not less than 15 days apart, LIM shall collect grab samples at the outlet of Ruth Pit, the outlet of James Settling Pond into the Unnamed Tributary and the outlet of James Settling Pond into James Creek, and have them analysed for acute lethality and concentrations of the Effluent Discharge Criteria parameters listed in Table 3A. Analysis results shall be submitted as per the ***Reporting*** section.

35. LIM may reduce the frequency of testing for a parameter that is set out in the Effluent Discharge Criteria, with the exception of pH and TSS, to not less than once in each calendar quarter if that parameter's monthly mean concentration in the effluent is less than 10 percent of the applicable allowable limit for the 12 consecutive tests prior to the most recent test.

36. The frequency of testing shall return to the originally prescribed frequency for a parameter that is set out in Effluent Discharge Criteria if that parameter's monthly mean concentration is equal to or greater than 10 percent of applicable allowable limit.

37. LIM may reduce the frequency of conducting ALT's to once in each calendar quarter if the effluent is determined not to be acutely lethal over a period of 12 consecutive samples. If a grab sample is determined to be acutely lethal, the frequency returns to monthly.

38. If a sample is determined to be acutely lethal, another sample shall be collected as soon as possible and tested, using Section 6 of the Reference Method, to determine an LC_{50}. Grab samples shall be collected bi-weekly, not less than 7 days apart, and an ALT (Section 6 of the Reference Method) shall be conducted on each sample, until it is determined that the effluent is not acutely lethal for three consecutive tests.

39. If effluent is determined to be acutely lethal for three consecutive ALTs, a toxicity identification evaluation (TIE) shall be implemented to identify the toxin, and from this develop measures to prevent or reduce the toxin.

40. LIM shall perform an Effluent Monitoring Program as per Table 2. Refer to Table 3A for the Effluent Discharge Criteria (EDC) parameters. Refer to Table 3B for EDC limits. Analytical results shall be submitted as per the ***Reporting*** section.

Table 2 - Effluent Monitoring Program			
Ref.	**Location**	**Parameters**	**Frequency**
	Outlet of Ruth Pit	pH and TSS	Weekly
		ALT	Monthly
		EDC (Table 3A)	Monthly
	Outlet of James Settling Pond into the Unnamed Tributary	pH and TSS	Weekly
		ALT	Monthly
		EDC (Table 3A)	Monthly
		Flow	Continuously
	Outlet of James Settling Pond	pH and TSS	Weekly
		ALT	Monthly
		EDC	Monthly

Table 3A – Effluent Discharge Criteria Parameters	
As	Cu
Pb	Ni
Zn	pH
TSS	Hardness as $CaCO_3$
Alkalinity	Al
Cd	Fe
Hg	Mo
NH_3	TPH
TDS	NO_3

Table 3B – Effluent Discharge Criteria			
Parameter	**Maximum Authorized Monthly Mean Concentration**	**Maximum Authorized Concentration in a Composite Sample**	**Maximum Authorized Concentration in a Grab Sample**
Arsenic	0.50 mg/L	0.75 mg/L	1.00 mg/L
Copper	0.30 mg/L	0.45 mg/L	0.60 mg/L
Cyanide	1.00 mg/L	1.50 mg/L	2.00 mg/L
Lead	0.20 mg/L	0.30 mg/L	0.40 mg/L
Nickel	0.50 mg/L	0.75 mg/L	1.00 mg/L
Zinc	0.50 mg/L	0.75 mg/L	1.00 mg/L
Total Suspended Solids	15.00 mg/L	22.50 mg/L	30.00 mg/L
Radium 226	0.37 Bq/L	0.74 Bq/L	1.11 Bq/L
Acute Lethality	Toxic Pass		
pH	5.5 to 9		

Water Chemistry Analysis

41. LIM shall perform a Water Chemistry Analysis Program as per Table 4, four times per calendar year and not less than thirty (30) days apart. All results shall be submitted to the Director as per the ***Reporting*** section.

Table 4 - Water Chemistry Analysis Program

Ref.	Location	Parameters
	Ruth Pit	**General Parameters:** temperature, dissolved oxygen (DO), nitrate + nitrite, nitrate, nitrite, pH, TSS, colour, sodium, potassium, calcium, sulphide, magnesium, ammonia, alkalinity, sulphate, chloride, turbidity, reactive silica, orthophosphate, phosphorous, DOC, conductance, TDS (calculated), phenolics, carbonate ($CaCO_3$), hardness ($CaCO_3$), bicarbonate ($CaCO_3$)
	Slimy Lake	
	Bean Lake	
	James Creek	
	Redmond Lake	
	James Creek @RT1	
	Unnamed Tributary @ RT2	
	JP1-6	**Metals Scan:** aluminium, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, mercury, nickel, selenium, silver, strontium, thallium, tin, titanium, uranium, vanadium,
	RP1-5	
	Monitoring Wells[1]: MW11A,B,C JA-MW1 B,C JA-MW4B Well 1(Silver Yard) Red-MW4 Red-MW5B	

1. TSS analysis is not required for groundwater samples.

Environmental Effects Monitoring

42. Study designs and subsequent reports for Environmental Effects Monitoring shall be developed by LIM and a copy of the study designs and reports shall be submitted to the Department.

Analysis and QA/QC

43. Unless otherwise stated herein, all solids and liquids analysis performed pursuant to this Approval shall be done by either a contracted commercial laboratory or an in-house laboratory. Contracted commercial laboratories shall have a recognized form of accreditation. In-house laboratories have the option of either obtaining accreditation or submitting to an annual inspection by a representative of the Department, for which LIM shall be billed for each laboratory inspection in accordance with Schedule 1 of the ***Accredited and Certified Laboratory Policy (PD:PP2001-01.01)***. Recommendations of the Director stemming from the annual inspections shall be addressed within 6 months; otherwise further analytical results shall not be accepted by the Director.

44. If LIM wishes to perform in-house laboratory testing and submit to an annual

inspection by the Department then a recognized form of proficiency testing recognition shall be obtained for compliance parameters for which this recognition exists. The compliance parameters are listed in the ***Effluent Discharge and Monitoring*** section. If using a commercial laboratory, LIM shall contact that commercial laboratory to determine and to implement the sampling and transportation QA/QC requirements for those activities.

45. The exact location of each sampling point shall remain consistent over the life of the monitoring programs. Using a GPS or similar device, the northing and easting of each sampling location shall be recorded and made available when requested.

46. LIM shall bear all expenses incurred in carrying out the environmental monitoring and analysis required under conditions of this Approval.

Monitoring Alteration

47. The Director has the authority to alter monitoring programs or require additional testing at any time when:

- pollutants might be released to the surrounding environment without being detected;
- an adverse environmental effect may occur; or
- it is no longer necessary to maintain the current frequency of sampling and/or the monitoring of parameters.

48. LIM may, at any time, request that monitoring program or requirements of this Approval be altered by:

- requesting the change in writing to the Director; and
- providing sufficient justification, as determined by the Director.

The requirements of this Approval shall remain in effect until altered, in writing, by the Director.

Reporting

49. Monthly reports containing the environmental compliance monitoring and sampling information required in this Approval shall be received by the Director, in digital format (e-mail or CD), within 30 calendar days of the reporting month. All related laboratory reports shall be submitted with the monthly report, in spreadsheet format (Microsoft Excel or a format easily transferable to Excel), and either Adobe Portable Document Format (PDF) or hardcopy format. Digital report submissions, if e-mailed, shall be sent to the following address: <<statenv@gov.nl.ca>>

50. All incidents of:

- *Contingency Plan* implementation; or
- non-conformance of any condition within this approval; or

- spillage or leakage of a regulated substance; or
- whenever discharge criteria is, or is suspected to be, exceeded; or
- verbal/written complaints of an environmental nature from the public received by LIM related to the Schefferville project, whether or not they are received anonymously;

shall be immediately reported, within one working day, to a person or message manager by contacting this Department (St. John's office) by phoning (709) 729-2556, or faxing (709) 729-6969.

A written report including a detailed description of the incident, summary of contributing factors, and an action plan to prevent future incidents of a similar nature, shall be submitted to the Director. The action plan shall include a description of actions already taken and future actions to be implemented, and shall be submitted within thirty days of the date of the initial incident. The address for written report submission is:

Department of Environment and Conservation
P.O. Box 8700
St, John's, NL
A1B 4J6
Telephone: (709) 729-2556
Facsimile: (709) 729-6969

51. Any spillage or leakage of gasoline or associated product shall be reported immediately through the Canadian Coast Guard at 1-(709)-772-2083.

Expiration

52. This Certificate of Approval expires ***July 21, 2010,***.

53. Should LIM wish to continue to construct the Schefferville Area Iron Ore project beyond this date, a written request shall be submitted to the Director for the renewal of this approval. Such request shall be made prior to ***January 21, 2012***.

cc: Mr. Kevin Power, P.Eng. - Head
Environmental Protection Section
Environment Canada
6 Bruce Street
Donovans Industrial Park
Mount Pearl, NL
A1N 4T3

Mr. Ken Russell - Manager
Government Service Centre (GSC)
13 Churchill Street
Happy Valley Goose Bay, NL
P. O. Box 3014 - Stn. B
A0P 1E0

Mr. Rick Curran – Director
Program and Support Services
Department of Government Services
P.O. Box 8700
St. John's, NL
A1B 4J6

Mr. Alex Smith, P. Eng. – Director
Mineral Development Division
Department of Natural Resources
P.O. Box 8700
St. John's, NL
A1B 4J6

Newfoundland Labrador

GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR
Department of Environment and Conservation

CERTIFICATE OF APPROVAL

Pursuant to the Environmental Protection Act, SNL 2002 c E-14.2 Section 83

Issue Date: ***September 8, 2010*** Approval No. AA10-095537

Expiration: ***September 8, 2015*** File No. 731.400

Proponent: **Labrador Iron Mines**
220 Bay Street
Suite 700, Toronto, ON
M5J 2W4

Attention: Linda Wrong - Vice President, Environment and Permitting

Re: **Schefferville Area Iron Ore Project Operations**

Approval is hereby given for operations for open pit mining at James North, James South, Redmond 2B and Redmond 5 deposits; a beneficiation facility; ore, waste rock and overburden stockpiles; settling ponds; access roads; worker's camp and other associated works in Labrador, near Schefferville, Quebec.

This certificate of approval does not release the proponent from the obligation to obtain appropriate approvals from other concerned provincial, federal and municipal agencies. Nothing in this certificate of approval negates any regulatory requirement placed on the proponent. Where there is a conflict between conditions in this certificate of approval and a regulation, the condition in the regulation shall take precedence. Approval from the Department of Environment and Conservation shall be obtained prior to any significant change in the design, construction, installation, or operation of the facility, including any future expansion of the works. This certificate of approval shall not be sold, assigned, transferred, leased, mortgaged, sublet or otherwise alienated by the proponent without obtaining prior approval from the Minister.

This certificate of approval is subject to the terms and conditions as contained in Appendix 'A' attached hereto, as may be revised from time to time by the Department. Failure to comply with any of the terms and conditions may render this certificate of approval null and void, may require the proponent to cease all activities associated with this certificate of approval, may place the proponent and its agent(s) in violation of the *Environmental Protection Act*, and will make the proponent responsible for taking such remedial measures as may be prescribed by the Department. The Department reserves the right to add, delete or modify conditions to correct errors in the certificate of approval or to address significant environmental or health concerns.

For **MINISTER**

APPENDIX "A"

TERMS AND CONDITIONS FOR APPROVAL No. AA10-095537
September 8, 2010

General

1. Approval is hereby given for operations for open pit mining at James North, James South, Redmond 2B and Redmond 5 deposits; a beneficiation facility; ore, waste rock and overburden stockpiles; settling ponds; access roads; worker's camp and other associated works in Labrador, near Schefferville, Quebec.

2. Any inquires concerning this approval shall be directed to the St. John's office of the Pollution Prevention Division (telephone: (709) 729-2555; or facsimile: (709) 729-6969).

3. In this Certificate of Approval:

- **accredited** means the formal recognition of the competence of a laboratory to carry out specific functions;
- **acutely lethal** means that the effluent at 100% concentration kills more than 50% of the rainbow trout subjected to it during a 96-hour period, when tested in accordance with the Rainbow Trout test;
- **Department** means the Department of Environment and Conservation and its successors;
- **Director** means the Director of the Pollution Prevention Division of the Department;
- **discharge criteria** means the maximum allowable levels for the parameters listed in Table 3B;
- **GSC** means the Government Service Centre - Goose Bay;
- **grab sample** means a quantity of undiluted sample collected at any given time. In this approval it refers to waste oil and effluent;
- **licensed** means has a Certificate of Approval issued by the Minister to conduct an activity;
- **LIM** means Labrador Iron Mines Limited;
- **malfunction** means any sudden, infrequent and not reasonably preventable failure of air pollution control equipment, wastewater treatment equipment, process equipment, or a process to operate in a normal or usual manner. Failures caused in part by poor maintenance or careless operation are not malfunctions;
- **Minister** means the Minister of the Department;

- **proficiency testing** means the use of inter-laboratory comparisons to determine the performance of individual laboratories for specific tests or measurements;

- **QA/QC** means Quality Assurance/Quality Control;

- **register(ed)**, in the context of storage tanks, means that information regarding the storage tank system has been submitted to a Government Service Centre office and a registration number has been assigned to the storage tank system.

- **regulated substance** means a substance subject to discharge limit(s) under the *Environmental Control Water and Sewage Regulations, 2003*;

- **Schefferville Area Iron Ore Project** means the area in western Labrador in which LIM is conducting mining and beneficiation operations and includes pit mines at James North, James South, Redmond 2B and Redmond 5;

- **spill or spillage** means a loss of gasoline or associated product in excess of 70 litres from a storage tank system, pipeline, tank vessel or vehicle, or of any volume of a regulated substance onto or into soil or a body of water;

- **storage tank system** means a tank and all vent, fill and withdrawal piping associated with it installed in a fixed location and includes a temporary arrangement;

- **TDS** means total dissolved solids;

- **TPH** means total petroleum hydrocarbons as measured by the Atlantic PIRI Method;

- **TSS** means total suspended solids;

- **used lubricating oil** means lubricating oil that as a result of its use, storage or handling, is altered so that it is no longer suitable for its intended purpose but is suitable for refining or other permitted uses;

- **used oil** means a used lubricating oil or waste oil; and

- **waste oil** means an oil that as a result of contamination by any means or by its use, is altered so that it is no longer suitable for its intended purpose.

4. All necessary measures shall be taken to ensure compliance with all applicable acts, regulations, policies and guidelines, including the following, or their successors:

- *Environmental Protection Act*;
- *Water Resources Act;*
- *Air Pollution Control Regulations, 2004;*
- *Environmental Control Water and Sewage Regulations, 2003;*
- *Halocarbon Regulations*
- *Storage and Handling of Gasoline and Associated Products Regulations, 2003;*
- *Used Oil Control Regulations; and*

- *Accredited and Credited Laboratory Policy*

This Approval provides terms and conditions to satisfy various requirements of the above listed acts, regulations, Departmental policies and guidelines. If it appears that all of the pertinent requirements of these acts, regulations, policies and guidelines are not being met, then a further review of the works shall be conducted, and suitable pollution control measures may be required by the Minister.

5. All reasonable efforts shall be taken to minimize the impact of the Schefferville area iron ore project on the environment. Such efforts include minimizing the area disturbed by the operation, minimizing air or water pollution, finding alternative uses, acceptable to the Director, for waste or rejected materials, and considering the requirement for the eventual rehabilitation of disturbed areas when planning the development of any area on the facility property.

6. LIM shall provide to the Department, within a reasonable time, any information, records, reports or access to data requested or specified by the Department.

7. LIM shall keep all records or other documents required by this Approval for a period of not less than three (3) years, beginning the day they were made. These records shall be made available for review by officials of the Department or the GSC when requested.

8. Should LIM wish to deviate in any way from the terms and conditions of this Certificate of Approval, a written request detailing the proposed deviation shall be made to the Minister. LIM shall comply with the most current terms and conditions until the Minister has authorized otherwise. In the case of meeting a deadline requirement, the request shall be made at least 60 days ahead of the applicable date as specified in this Approval or elsewhere by the Department.

Environmental Protection Plan

9. All construction and operation activities shall be subject to the requirements of the Environmental Protection Plan (May 4, 2010 – as revised) for construction and operation activities. All proposed revisions to the plan shall be submitted to the director for review.

Construction

10. Any work that must be performed in a body of water below the high water mark shall be carried out during a period of low water levels.

11. All construction operations shall be carried out in a manner that minimizes damage to land, vegetation, and watercourses, and which prevents pollution of bodies of water.

12. The use of heavy equipment in streams or bodies of water is not permitted. The operation of heavy equipment shall be confined to dry stable areas.

13. All vehicles and equipment shall be clean and in good repair, free of mud and oil, or other harmful substances that could impair water quality.

14. During the construction of concrete components, formwork shall be properly

constructed to prevent any fresh concrete from entering a body of water. Dumping of concrete or washing of tools and equipment in any body of water is prohibited.

15. All areas affected by this project shall be restored to a state that resembles local natural conditions. Further remedial measures to mitigate environmental impacts on water resources can and will be specified, if necessary in the opinion of this Department.

16. Any alteration of a water body or work within 15 m of a water body shall be approved by the Water Resources Management Division of this Department. Alteration of a water body may include culvert installations, stream crossings, outfalls, infilling; or bridge, dam, and wharf construction.

17. All culvert installations, stream crossings and alterations of water bodies are to be approved by the Water Resources Management Division of this Department.

Waste Management

18. LIM shall submit a Waste Management Plan for their Schefferville project. With the goal of minimizing adverse effects on the environment, the Waste Management Plan shall: be comprehensive, including all operations within the Schefferville project; identify the types of waste materials (i.e. boiler ash, sewage, empty chemical packaging, etc.); provide general direction in dealing with the handling, storage, transport, treatment and disposal of waste materials; and incorporate the basic waste management principles of reduce, reuse, recycle, recover and residual disposal. An outline of the Plan shall be submitted to the Director for review by ***October 31, 2010***. The outline shall include a schedule of dates for preparation and implementation for each section of the Plan. The completed Plan shall then be submitted to the Director for review by ***January21, 2011***. Every year the Waste Management Plan shall be reviewed and revised as necessary, accounting for expanding or alteration of activities. All proposed revisions shall be submitted to the Director for review. The Department will acknowledge receipt of the Plan and/or revisions, and shall provide any review comments within a reasonable time frame.

19. Disposal of hazardous waste in a municipal or regional waste disposal site in this Province is prohibited. Transporters of hazardous waste shall have an approval issued by the Minister. Those generating hazardous waste shall have a waste generators number issued by the Director and shall also complete the required information outlined in the Waste Manifest Form.

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biomedical waste	animal cadavers
domestic waste	hazardous substances
trash, garbage, or other waste from commercial, industrial or municipal operations	materials disposed of as part of the removal or decontamination of equipment, buildings or other structures

Noise

21. All efforts shall be made to minimize and control noise resulting from the construction activities. All vehicles hauling materials in the area shall have exhaust and muffling devices in good working order.

Dust Suppression

22. LIM shall control dusting resulting from operational activities at the site. Use of dust suppressants other than water or calcium chloride shall require approval of the Director. Operators are encouraged to use best management practices when applying calcium chloride or any other approved dust suppressant.

Pollution Control Equipment

23. All installed pollution control equipment shall be maintained and operated per the manufacturer's specifications for best performance.

24. The secondary crusher shall not operate unless the material reporting to the secondary crusher is wetted and washed in the scrubbers and the silica washed out and sent to rejects. This wet iron ore oversize is then crushed to the correct product size in the secondary crusher.

Spill Prevention and Containment

25. Areas in which chemicals are used or stored shall have impermeable floors and dykes or curbs and shall not have a floor drain system, nor shall it discharge to the environment. Areas inside the dykes or curbs shall have an effective secondary containment capacity of at least ***110%*** of the chemical storage tank capacity, in the case of a single storage container. If there is more than one storage container, the dyked area shall be able to retain no less than ***110% of the capacity of the largest container or 100 %*** **of the capacity of the largest container plus 10% of the aggregate capacity of all additional containers, whichever is greater**. These dyked areas shall be kept clear of material that may compromise the capacity of the dyke system. Once a year, the dykes shall be visually inspected for their liquid containing integrity, and repairs shall be made when required. Once every ten years, the dykes shall be inspected, by a means other than visual inspection, for their liquid containing integrity, and repairs shall be made when required.

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27. Where applicable, all tanks and fuel delivery systems shall be inspected to appropriate American Petroleum Institute or Underwriters' Laboratories of Canada standards, or any other standards acceptable to this Department. The required frequency of inspections may be changed at the discretion of the Director.

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32. The Rehabilitation and Closure Plan (May 12, 2010 – as amended) shall be reviewed annually by LIM and revised as necessary. All proposed revisions to the plan shall be submitted to the Director for review.

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Effluent Monitoring and Discharge

34. Not less than once per week and at least 24 hours apart, LIM shall collect grab samples at the outlet of Ruth Pit, the outlet of James Settling Pond into the Unnamed Tributary and the outlet of James Settling Pond into James Creek, and have them analysed for pH and TSS concentrations as required in Table 2. Analysis results shall be submitted as per the ***Reporting*** section.

35. Once per month and not less than 15 days apart, LIM shall collect grab samples at the outlet of Ruth Pit, the outlet of James Settling Pond into the Unnamed Tributary and the outlet of James Settling Pond into James Creek, and have them analysed for acute lethality and concentrations of the Effluent Discharge Criteria parameters listed in Table 3A. Analysis results shall be submitted as per the ***Reporting*** section.

36. LIM may reduce the frequency of testing for a parameter that is set out in the Effluent Discharge Criteria, with the exception of pH and TSS, to not less than once in each calendar quarter if that parameter's monthly mean concentration in the effluent is less than 10 percent of the applicable allowable limit for the 12 consecutive tests prior to the most recent test.

37. The frequency of testing shall return to the originally prescribed frequency for a parameter that is set out in Effluent Discharge Criteria if that parameter's monthly mean concentration is equal to or greater than 10 percent of applicable allowable limit.

38. LIM may reduce the frequency of conducting ALT's to once in each calendar quarter if the effluent is determined not to be acutely lethal over a period of 12 consecutive samples. If a grab sample is determined to be acutely lethal, the frequency returns to monthly.

39. If a sample is determined to be acutely lethal, another sample shall be collected as soon as possible and tested, using Section 6 of the Reference Method, to determine an LC_{50}. Grab samples shall be collected bi-weekly, not less than 7 days apart, and an ALT (Section 6 of the Reference Method) shall be conducted on each sample, until it is determined that the effluent is not acutely lethal for three consecutive tests.

40. If effluent is determined to be acutely lethal for three consecutive ALTs, a toxicity identification evaluation (TIE) shall be implemented to identify the toxin, and from this develop measures to prevent or reduce the toxin.

41. LIM shall perform an Effluent Monitoring Program as per Table 2. Refer to Table 3A for the Effluent Discharge Criteria (EDC) parameters. Refer to Table 3B for EDC limits. Analytical results shall be submitted as per the ***Reporting*** section.

Table 2 - Effluent Monitoring Program			
Ref.	**Location**	**Parameters**	**Frequency**
	Outlet of Ruth Pit	pH and TSS	Weekly
		ALT	Monthly
		EDC (Table 3A)	Monthly
	Outlet of James Settling Pond into the Unnamed Tributary	pH and TSS	Weekly
		ALT	Monthly
		EDC (Table 3A)	Monthly
		Flow	Continuously
	Outlet of James Settling Pond	pH and TSS	Weekly
		ALT	Monthly
		EDC	Monthly

Table 3A – Effluent Discharge Criteria Parameters	
As	Cu
Pb	Ni
Zn	pH
TSS	Hardness as $CaCO_3$
Alkalinity	Al
Cd	Fe
Hg	Mo
NH_3	TPH
TDS	NO_3

Table 3B – Effluent Discharge Criteria			
Parameter	**Maximum Authorized Monthly Mean Concentration**	**Maximum Authorized Concentration in a Composite Sample**	**Maximum Authorized Concentration in a Grab Sample**
Arsenic	0.50 mg/L	0.75 mg/L	1.00 mg/L
Copper	0.30 mg/L	0.45 mg/L	0.60 mg/L
Cyanide	1.00 mg/L	1.50 mg/L	2.00 mg/L
Lead	0.20 mg/L	0.30 mg/L	0.40 mg/L
Nickel	0.50 mg/L	0.75 mg/L	1.00 mg/L
Zinc	0.50 mg/L	0.75 mg/L	1.00 mg/L
Total Suspended Solids	15.00 mg/L	22.50 mg/L	30.00 mg/L
Radium 226	0.37 Bq/L	0.74 Bq/L	1.11 Bq/L
Acute Lethality	Toxic Pass		
pH	5.5 to 9		

Water Chemistry Analysis

42. LIM shall perform a Water Chemistry Analysis Program as per Table 4, four times per calendar year and not less than thirty (30) days apart. All results shall be submitted to the Director as per the ***Reporting*** section.

Table 4 - Water Chemistry Analysis Program

Ref.	Location	Parameters
	Ruth Pit	**General Parameters:** temperature, dissolved oxygen (DO), nitrate + nitrite, nitrate, nitrite, pH, TSS, colour, sodium, potassium, calcium, sulphide, magnesium, ammonia, alkalinity, sulphate, chloride, turbidity, reactive silica, orthophosphate, phosphorous, DOC, conductance, TDS (calculated), phenolics, carbonate ($CaCO_3$), hardness ($CaCO_3$), bicarbonate ($CaCO_3$) **Metals Scan:** aluminium, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, mercury, nickel, selenium, silver, strontium, thallium, tin, titanium, uranium, vanadium,
	Slimy Lake	
	Bean Lake	
	James Creek	
	Redmond Lake	
	James Creek @RT1	
	Unnamed Tributary @ RT2	
	JP1-6	
	RP1-5	
	Monitoring Wells[1]: MW11A,B,C JA-MW1 B,C JA-MW4B Well 1(Silver Yard) Red-MW4 Red-MW5B	
1. TSS analysis is not required for groundwater samples.		

Environmental Effects Monitoring

43. Study designs and subsequent reports for Environmental Effects Monitoring shall be developed by LIM and a copy of the study designs and reports shall be submitted to the Department.

Analysis and QA/QC

44. Unless otherwise stated herein, all solids and liquids analysis performed pursuant to this Approval shall be done by either a contracted commercial laboratory or an in-house laboratory. Contracted commercial laboratories shall have a recognized form of accreditation. In-house laboratories have the option of either obtaining accreditation or submitting to an annual inspection by a representative of the Department, for which LIM shall be billed for each laboratory inspection in accordance with Schedule 1 of the ***Accredited and Certified Laboratory Policy (PD:PP2001-01.01)***. Recommendations of the Director stemming from the annual inspections shall be addressed within 6 months; otherwise further analytical results shall not be accepted by the Director.

45. If LIM wishes to perform in-house laboratory testing and submit to an annual

inspection by the Department then a recognized form of proficiency testing recognition shall be obtained for compliance parameters for which this recognition exists. The compliance parameters are listed in the ***Effluent Discharge and Monitoring*** section. If using a commercial laboratory, LIM shall contact that commercial laboratory to determine and to implement the sampling and transportation QA/QC requirements for those activities.

46. The exact location of each sampling point shall remain consistent over the life of the monitoring programs. Using a GPS or similar device, the northing and easting of each sampling location shall be recorded and made available when requested. The coordinate system reference is to be WGS84, UTM Zone 19.

47. LIM shall bear all expenses incurred in carrying out the environmental monitoring and analysis required under conditions of this Approval.

Monitoring Alteration

48. The Director has the authority to alter monitoring programs or require additional testing at any time when:

- pollutants might be released to the surrounding environment without being detected;
- an adverse environmental effect may occur; or
- it is no longer necessary to maintain the current frequency of sampling and/or the monitoring of parameters.

49. LIM may, at any time, request that monitoring program or requirements of this Approval be altered by:

- requesting the change in writing to the Director; and
- providing sufficient justification, as determined by the Director.

The requirements of this Approval shall remain in effect until altered, in writing, by the Director.

Reporting

50. Monthly reports containing the environmental compliance monitoring and sampling information required in this Approval shall be received by the Director, in digital format (e-mail or CD), within 30 calendar days of the reporting month. All related laboratory reports shall be submitted with the monthly report, in spreadsheet format (Microsoft Excel or a format easily transferable to Excel), and either Adobe Portable Document Format (PDF) or hardcopy format. Digital report submissions, if e-mailed, shall be sent to the following address: <<statenv@gov.nl.ca>>

51. All incidents of:

- *Contingency Plan* implementation; or

- non-conformance of any condition within this approval; or
- spillage or leakage of a regulated substance; or
- whenever discharge criteria is, or is suspected to be, exceeded; or
- verbal/written complaints of an environmental nature from the public received by LIM related to the Schefferville project, whether or not they are received anonymously;

shall be immediately reported, within one working day, to a person or message manager by contacting this Department (St. John's office) by phoning (709) 729-2556, or faxing (709) 729-6969.

A written report including a detailed description of the incident, summary of contributing factors, and an action plan to prevent future incidents of a similar nature, shall be submitted to the Director. The action plan shall include a description of actions already taken and future actions to be implemented, and shall be submitted within thirty days of the date of the initial incident. The address for written report submission is:

Department of Environment and Conservation
P.O. Box 8700
St, John's, NL
A1B 4J6
Telephone: (709) 729-2556
Facsimile: (709) 729-6969

52. Any spillage or leakage of gasoline or associated product shall be reported immediately through the Canadian Coast Guard at 1-(709)-772-2083.

Expiration

53. This Certificate of Approval expires ***September 8, 2015***.

54. Should LIM wish to continue to operate the Schefferville Area Iron Ore project beyond this date, a written request shall be submitted to the Director for the renewal of this approval. Such request shall be made prior to ***March 8, 2015***.

cc: Mr. Kevin Power, P.Eng. - Head
Environmental Protection Section
Environment Canada
6 Bruce Street
Donovans Industrial Park
Mount Pearl, NL
A1N 4T3

Mr. Ken Russell - Manager
Government Service Centre (GSC)
13 Churchill Street
Happy Valley Goose Bay, NL
P. O. Box 3014 - Stn. B
A0P 1E0

Mr. Rick Curran – Director
Program and Support Services
Department of Government Services
P.O. Box 8700
St. John's, NL
A1B 4J6

Mr. Alex Smith, P. Eng. – Director
Mineral Development Division
Department of Natural Resources
P.O. Box 8700
St. John's, NL
A1B 4J6

APPENDIX B

Part IV and V of the Environmental Protection Act

(c) determine the manner in which a report of a release of a substance is to be made and the contents of the report.

2002 cE-14.2 s12

PART IV
WASTE DISPOSAL AND LITTER

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Restrictions, guidelines and recyclable content

13. The minister may

(a) establish restrictions and prohibitions on waste management systems;

(b) determine minimum content requirements for recycled and recyclable materials in specific substances or products and establish restrictions on the production or sale of products that cannot be reused or recycled;

(c) develop codes and guidelines for the use and content of recyclable materials in the manufacture of new substances or products; and

(d) require that waste management plans be submitted to the department.

2002 cE-14.2 s13

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Litter and waste

14. (1) The minister shall, in accordance with the regulations, encourage the prevention and reduction of litter with respect to

(a) waste disposal practices at construction sites, commercial and service outlets and other places where litter is or may accumulate;

(b) requiring organizers of public and private events to have available and maintain at the sites of the events an adequate number of receptacles for recyclable materials, litter and waste disposal;

(c) regulating or prohibiting activities that result or may result in the unlawful disposal of litter or waste including the placement of flyers on utility poles, vehicles, buildings, structures or other things;

(d) regulating the disposal of waste on land and on, in or under water and ice; and

(e) generally providing for matters that will prevent or reduce litter.

(2) The minister may designate a material that is to be banned, reduced, composted, recycled or restricted in use.

(3) A person shall not sell or use a material designated under subsection (2) except as permitted by the minister.

2002 cE-14.2 s14

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Waste disposal sites

15. The minister may establish standards and requirements for waste disposal sites and waste management systems in the province.

2002 cE-14.2 s15

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Prohibition

16. A person shall not

(a) release waste upon land whether or not that land is developed or covered by water or release waste in a building or structure unless that waste is disposed of in a receptacle or container placed or located specifically for the purposes of collection of that waste and in accordance with this or another Act of the province; or

(b) use facilities or equipment for the collection, handling, treatment, transportation, storing, processing, use and disposal of waste that is not part of a waste disposal site or a waste management system for which an approval is issued.

2002 cE-14.2 s16

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Prohibition

17. (1) A person who is the owner of a motor vehicle in the province and any other person shall not abandon that motor vehicle in the province.

(2) For the purpose of this section, a motor vehicle shall be considered to be abandoned where that vehicle has been left unattended without lawful authority and appears to be abandoned by reason of its age, appearance, mechanical condition or lack of identification plates.

(3) For the purpose of this section, in the absence of evidence to the contrary, a person who is the last registered owner of an abandoned motor vehicle shall be considered to have been the owner of that motor vehicle at the time of its abandonment.

(4) For the purpose of subsection (3), a certificate issued by the Registrar of Motor Vehicles appointed under section 4 of the*Highway Traffic Act* , signed by him or her and stating that a person is the last registered owner of a motor vehicle is, in the absence of evidence to the contrary, proof of the fact so certified without proof of the signature or official character of the person appearing to have signed the certificate.

(5) A person who contravenes this section commits an offence and is liable on summary conviction to a fine of not less than $1,000 and not more than $5,000, or to a term of imprisonment of not more than 6 months or to both a fine and imprisonment.

(6) Where a person has been convicted under subsection (5), the court shall order that

(a) the person remove the abandoned motor vehicle as directed by the minister; or

(b) the person pay to the minister, the cost of the removal of the abandoned motor vehicle,

and the court shall order that

(c) the person's driver's licence is suspended for 6 months or until the abandoned motor vehicle has been removed or until payment has been made under paragraph (b), whichever is lesser.

(7) Where an order to suspend a person's driver's licence is made under paragraph (6)(c), sections 60 and 61 of the *Highway Traffic Act* apply, with the necessary changes, to the court which made that order.

(8) Section 7 of the *Provincial Offences Act* shall not apply in relation to an offence under this section.

(9) An information or complaint under subsection (1) may be made on or before a date 10 years from the date when the matter of the information or complaint arose or 10 years after September 1, 1993, whichever date is later.

2002 cE-14.2 s17

PART V
WASTE MANAGEMENT

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Definitions

18. In this Part

(a) "board" means the Multi-Materials Stewardship Board continued under section 19;

(b) "reduction" means the elimination of packaging or reduction of the weight, volume or toxicity of packaging or an item;

(c) "waste management" means the collection, transportation, handling, storage, treatment, utilization, diversion, recycling, reuse, recovery, reduction and disposal of waste material;

(d) "waste management program" means a program containing provisions or requirements for waste management, and includes related research; and

(e) "waste material" means

(i) refuse, garbage, rubbish, litter, scrap and discarded material, including tailings, effluent, sludge, sewage, offal, and machinery, and a product, vehicle or other item that is dumped, discarded, abandoned or otherwise disposed of,

(ii) a material or thing that may be a danger to the health of human beings, animals, wildlife or fish, or is of unsightly appearance, and

(iii) a substance designated as waste material in the regulations.

2002 cE-14.2 s18

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Board continued

19. (1) The Multi-Materials Stewardship Board continued under section 4 of the *Waste Management Act* is continued as a corporation.

(2) The board is an agent of the Crown.

(3) The board shall support and promote the protection, enhancement and wise use of the environment through waste management programs.

2002 cE-14.2 s19

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Waste management program

20. (1) The board may submit a proposal for a waste management program to the minister.

(2) In accordance with a written request by the minister, the board shall submit a proposal for a waste management program to the minister.

(3) Subject to the approval of the Lieutenant-Governor in Council, the minister may

(a) approve all or part of a waste management program;

(b) approve an amendment to a waste management program;

(c) impose conditions on a waste management program;

(d) direct the board to implement and operate a waste management program;

(e) direct the board to include a provision or requirement in a waste management program; and

(f) cancel a waste management program.

(4) The minister may reject all or part of a waste management program.

(5) The board shall not implement or operate a waste management program except in accordance with the approval of the minister.

(6) The minister may implement and operate a waste management program approved by the Lieutenant-Governor in Council.

(7) A program for waste management operated under the authority of the board at the time this Act comes into force is considered to be a waste management program approved under this section.

2002 cE-14.2 s20

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Authority of minister

21. The minister may

(a) undertake or support and encourage research into waste management; and

(b) require the board, a corporation, institution or government department or agency to collect and record data or other information on waste management, and to provide a report as required by the minister.

2002 cE-14.2 s21

APPENDIX F

Sustainet Consultation Database

Report Parameters:

Stakeholder Group: **Innu of Labrador**
Start Date: 1 May 2005
End Date: 21 Jun 2011
Action Type: all actions

Meeting 1 Dec 2005	**Merged Event**
Participants: Ben Michel Labrador Innu **Team Members:** Joseph Lanzon Dan O'Rourke	**Summary:** Meeting with Grand Chief - Innu of Labrador. Discussion on project and benefits for Labrador. **Issues Raised:** - Social: Aboriginal Involvement

Meeting 4 May 2006 Sept-Iles	**Merged Event**
Participants: Daniel Ashini Labrador Innu Ben Michel Labrador Innu Dave Nuke Labrador Innu **Team Members:** Bill Hooley John Kearney Veikko Koskella Joseph Lanzon Terence McKillen Dan O'Rourke	**Summary:** LIM meets jointly with Labrador Innu Association and Uashat Innu Council. Review of project proposal. Aboriginal issues revolve around ensuring economic benefit accrues to their communities as they all felt they were abandoned by former IOC operations. Ben Michel outlined a vision for pan-provincial cooperation among the aboriginal groups and thought it should be possible to have a single negotiating table when it came time to negotiate the economic benefits from the project. Separate presentation made to the Uashat community. Issues raised related to jobs and protection of the environment with respect to ensuring that the communities can continue to "live off the land". **Issues Raised:** - Transportation: Aboriginal - Economic: Impact Benefits Agreement (IBA) - Economic: Memorandum of Understanding

Meeting 10 May 2006 Wabush	**Merged Event**
Participants: Daniel Ashini Labrador Innu Ben Michel Labrador Innu **Team Members:** John Kearney Joseph Lanzon Terence McKillen	**Summary:** Meeting with Labrador Innu Association. Review of project development and issues for LIA. Mr. Michel spoke of his vision for development of Labrador and the extension of a rail link from Labrador City to Goose Bay and further north to open up the country for development. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA) - Economic: Memorandum of Understanding

Meeting 18 May 2006 Montreal	**Merged Event**
Participants: Daniel Ashini	**Summary:** Meeting to discuss project and Labrador based and Innu connected contractors. Uashat community anxious that LIM allow consultants

Meeting 18 May 2006 Montreal	**Merged Event**
Labrador Innu Dave Nuke Labrador Innu **Team Members:** Joseph Lanzon Terence McKillen Dan O'Rourke	and contractor with whom their Development Corporation has entered into partnerships to have opportunity to bid on any contracts. LIM discussed the necessity of securing a qualified diamond drill company for a summer drill program. Mr. Nuke (LIA) was not in favour of LIM using Goose Bay-based Cartwright Diamond Drilling Company. **Issues Raised:** - Economic: Economic Development - Economic: Impact Benefits Agreement (IBA) - Economic: Memorandum of Understanding

Phone Call 19 May 2006	**Merged Event**
Participants: Dave Nuke Labrador Innu **Team Members:** Terence McKillen	**Summary:** Gave advice on potential Drill Contractors and other Labrador contractors. **Issues Raised:** - Economic: Economic Development

Meeting 30 Aug 2006 Montreal	**Merged Event**
Participants: Daniel Ashini Labrador Innu Leo F Dillon Advisor - Labrador Innu Ben Michel Labrador Innu Dave Nuke Labrador Innu **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Discussion on possibility of having single negotiating table. Mr. Michel reiterated his belief and desire to have a single negotiating table, however, it was still necessary for him to consult with the Naskapi and the Innu of Matimekush. No specific issues emerged other than economic development and jobs for the communities. **Issues Raised:** - Economic: Economic Development - Economic: Employment Opportunities

Email 3 Apr 2007	**Merged Event**
Participants: Daniel Ashini Labrador Innu **Team Members:** Bill Hooley Joseph Lanzon Terence McKillen	**Summary:** Set up meeting with Daniel Ashini. **Issues Raised:** - Economic: Memorandum of Understanding **Attachments:** - sustainet5-26.2lim_daniel_a_presentationnotes_march_30_07-1.doc - sustainet5-3.doc

Email 6 Apr 2007	**Merged Event**
Participants: Labrador Innu **Team Members:**	**Summary:** Project update. **Issues Raised:** - Economic: General Project Updates

Email 6 Apr 2007	Merged Event
Terence McKillen Dan O'Rourke	**Attachments:** - sustainet5-5.doc

Email 8 Apr 2007	Merged Event
Participants: Labrador Innu **Team Members:** Joseph Lanzon Dan O'Rourke	**Summary:** Band meeting April 11. **Issues Raised:** - Social: Aboriginal Involvement - Economic: General Project Updates **Attachments:** - sustainet5-6.doc

Email 24 Jul 2007	Merged Event
Participants: Daniel Ashini Labrador Innu Leo F Dillon Advisor - Labrador Innu Labrador Innu **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** MOU draft changes. No new issues. LIA is unlikely to participate in direct jobs on site but would participate through LIA businesses and through partnerships with contractors, etc. **Issues Raised:** - Social: Aboriginal Involvement - Economic: Impact Benefits Agreement (IBA) **Attachments:** - sustainet5-15.doc

Email 14 Sep 2007	Merged Event
Participants: Daniel Ashini Labrador Innu Labrador Innu **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Revised MOU. **Issues Raised:** - Economic: Memorandum of Understanding **Attachments:** - sustainet5-20.1lim_innudraft_mou_september_11_ldi.doc - sustainet5-20.doc

Email 22 Sep 2007	Merged Event
Participants: Leo F Dillon Advisor - Labrador Innu Mark Nui Grand Chief - Labrador Innu Peter Penashue Deputy Grand Chief - Labrador Innu **Team Members:** Terence McKillen	**Summary:** Election results. **Issues Raised:** - Social: Aboriginal Involvement **Attachments:** - sustainet5-22.doc

Email 19 Nov 2007	Merged Event
Participants: Labrador Innu **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Schefferville and Naskapi draft MOU and December 4th to 5th meeting. **Issues Raised:** - Social: Aboriginal Involvement - Economic: Memorandum of Understanding **Attachments:** - sustainet5-23.doc

Email 23 Nov 2007	Merged Event
Participants: Labrador Innu **Team Members:** Erick Chavez John Kearney Joseph Lanzon Terence McKillen	**Summary:** December 6th to 7th Schefferville travel arrangements and meeting with Labrador Innu. **Issues Raised:** - Social: Aboriginal Involvement **Attachments:** - sustainet5-25.doc

Email 28 Nov 2007	Merged Event
Participants: Peter Penashue Deputy Grand Chief - Labrador Innu **Team Members:** Matthew Coon Come Joseph Lanzon Terence McKillen	**Summary:** December meeting in Goose Bay. **Issues Raised:** - Social: Aboriginal Involvement **Attachments:** - sustainet5-24.doc

Meeting 7 Dec 2007 Goose Bay	Merged Event
Participants: Mark Nui Grand Chief - Labrador Innu Peter Penashue Deputy Grand Chief - Labrador Innu Chief Anastasia Quepee Labrador Innu **Team Members:** Erick Chavez Matthew Coon Come John Kearney Joseph Lanzon Terence McKillen	**Summary:** Introduction to new Council and Innu Leadership. LIA introduced economic development corporation and the businesses associated with their community. They feel that it is unrealistic to assume that very many of their community would seek jobs in Schefferville area operations but their businesses would very definitely wish to bid on provision of goods and services. It was noted that the LIA partnership with SNC Lavalin for engineering work in the Province was nearing completion and that LIM had already engaged SNC to prepare a Technical Report and to continue with engineering design work. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA) - Economic: Memorandum of Understanding

Meeting 11 Dec 2007 Ottawa	Merged Event
Participants: Innu of Labrador **Team Members:** Joseph Lanzon	**Summary:** Labrador Innu business opportunities IBA discussion. Partnership on procurement. **Issues Raised:** - Economic: Economic Development - Economic: Impact Benefits Agreement (IBA)

Meeting 9 Jan 2008 St. Johns	Merged Event
Participants: Grand Chief Marc Innu Labrador Innu Peter Penashue Deputy Grand Chief - Labrador Innu Chief Anastasia Quepee Labrador Innu Paul Rich Innu Development Corp **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** IBA process and final MOU negotiations. MOU provides for community support for the project and focuses on economic participation, opportunity for Innu businesses, community consultation on issues such as training, environmental, heritage and cultural protection, etc. MOU executed. **Team Response:** Committee's structure and percentage benefit distribution. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 4 Feb 2008 St. John's	Merged Event
Participants: Innu of Labrador **Team Members:** Matthew Coon Come Joseph Lanzon	**Summary:** Negotiating IBA. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 17 Apr 2008 Toronto	Merged Event
Participants: Mark Nui Grand Chief - Labrador Innu Peter Penashue Deputy Grand Chief - Labrador Innu Chief Anastasia Quepee Labrador Innu **Team Members:** Matthew Coon Come Joseph Lanzon Terence McKillen	**Summary:** IBA schedule preparation. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 8 May 2008 Halifax	Merged Event
Participants: Gerry Kerr Advisor - Labrador Innu Mark Nui Grand Chief - Labrador Innu Peter Penashue Deputy Grand Chief - Labrador Innu **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Negotiation table for IBA. No new issues. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Phone Call 13 May 2008	Merged Event
Participants: Paul Rich Innu Development Corp **Team Members:** Terence McKillen	**Summary:** Update on Innu-SNC JV **Issues Raised:** - Economic: Economic Development - Economic: Impact Benefits Agreement (IBA)

Meeting 4 Jun 2008 Happy Valley-Goose Bay	Merged Event
Participants: Wayne Kelsie Innu Development Ltd. Partnership Paula Reid Innu Nation **Team Members:** Linda Wrong	**Summary:** Project overview and discussion of environmental program. **Stakeholder Comments:** Keen interest in project and to support education, training and other apprentice programs. **Issues Raised:** - Social: Education - Economic: General Project Updates - Social: Training **Attachments:** - meeting_with_paula_reid_and_idlp-_june_4_2008.doc

Email 25 Jun 2008	Merged Event
Participants: Labrador Innu **Team Members:** Joseph Lanzon Linda Wrong	**Summary:** Update on IBA discussions with Labrador Innu. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA) **Attachments:** - sustainet0-7.txt

Meeting 4 Jul 2008	Merged Event
Participants: Peter Penashue Deputy Grand Chief - Labrador Innu **Team Members:**	**Summary:** Project overview. **Issues Raised:** - Economic: General Project Updates

Meeting 4 Jul 2008	Merged Event
Joseph Lanzon	

Meeting 8 Jul 2008	Merged Event
Participants: Gerry Kerr Advisor - Labrador Innu **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Final amendments to IBA document. Ready for signature.

Commitment 17 Jul 2008 Quebec City	Merged Event
Participants: Innu of Labrador **Team Members:** John Kearney Joseph Lanzon Terence McKillen	**Summary:** Signing of Impact Benefit Agreement (IBA). **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 13 Oct 2008 Sept-Iles	Merged Event
Participants: Innu of Labrador **Team Members:** Marc Duclos Joseph Lanzon	**Summary:** Business opportunities **Issues Raised:** - Economic: Employment Opportunities

Meeting 30 Oct 2008 St. John	Merged Event
Participants: Peter Penashue Deputy Grand Chief - Labrador Innu **Team Members:** John Kearney Joseph Lanzon Terence McKillen Linda Wrong	**Summary:** Discussion of the entire project, job and commercial opportunities and the impact for the province as a whole, for Labrador and specifically for the Central and Northern part of Labrador. **Stakeholder Comments:** Minister Pottle pointed out the significant job losses in Northern Labrador due to the uranium moratorium. Minister Hickey recommended that focus should be on Central labrador rather than Western Labrador. **Issues Raised:** - Economic: Economic Development - Economic: Employment Opportunities

Phone Call 31 Oct 2008 Schefferville	Merged Event
Participants: Joseph Dominique	**Summary:** Survey Calls for Hunting Camps in Schefferville **Stakeholder Comments:** Called up the following 'hunting camps' that were

Phone Call 31 Oct 2008 Schefferville	**Merged Event**
Caribou Hunter - Innu Nation **Team Members:** Paul Thibaudeau	revealed by Internet search. All were either disconnected numbers or were no longer in business: 1. Club Campeau Inc (418) 585-3720 2. Jack Hume Adventures Inc. (418) 585-2417 3. Labrador Hunting Safari (418) 585-3145 (208 Gagnon) 4. Pavillion Riviere de la Baleine (418) 585-3145 5. Pourvoirie Labrador 153 AP Low (418) 585-2749 6. Ungava Caribou Expeditions 150 Lac Chantal (418) 585-3890

Meeting 21 Nov 2008 Goose-Bay	**Merged Event**
Participants: Brian King Manager, Business Development - Innu Business development Centre Mark Nui Grand Chief - Labrador Innu Peter Penashue Deputy Grand Chief - Labrador Innu Chief Anastasia Quepee Labrador Innu **Team Members:** John Kearney Joseph Lanzon	**Summary:** Meeting with Innu Development Corp. Aboriginal procurement discussion. **Issues Raised:** - Transportation: Aboriginal - Transportation: LabRail

Email 17 Feb 2009	**Merged Event**
Participants: Paul Rich Innu Development Corp **Team Members:** Marc Duclos	**Summary:** Pursuant to the IBA, preliminary tender document for 2.5 miles track at Silver Yards were sent to the Innu Development Corporation along with two other companies. Full document to be available in Mid-March 2009 when follow-up meeting is planned. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA) **Attachments:** - bid_document-silver_yard.pdf - email_to_paul_rich_-tender_document-project_silver_yard.htm - email_to_pnr_rail_works_-tender_document-project_silver_yard-feb_17_2009.htm - email_to_rail_cantech-tender_document-project_silver_yard-feb_2009.htm

Meeting 13 Mar 2009 Montreal	Merged Event
Participants: Paul Rich Innu Development Corp **Team Members:** Marc Duclos	**Summary:** Bid review process for the 2.5 mile track at Silver Yard. **Issues Raised:** - Transportation: Economic

Email 23 Apr 2009	Merged Event
Participants: Paula Reid Innu Nation **Team Members:** Linda Wrong	**Summary:** Email to Paula Reid to arrange phone call to give project update. **Issues Raised:** - Economic: General Project Updates

Meeting 16 Jun 2009	Merged Event
Participants: Peter Penashue Deputy Grand Chief - Labrador Innu **Team Members:** Bill Hooley Joseph Lanzon	**Summary:** Meeting with LIM and Innu on TRT railway infrastructure improvement. **Stakeholder Comments:** Following scenarios discussed: 1. The Innu be the sole contractor for the up-grade. 2. Financial alternatives are not the only motivator to the Innu 3. Innu involvement with TRT and for LIM to ask management if they can accept that the Innu of Labrador be partners beyond the completion of the rail up-grade. **Team Response:** To set up a partnership with the Innu and LIM to seek Federal funding to up-grade 211 km of rail line that go through Labrador. Bill Hooley to ask TRT Management if the Innu can be a good fit for TRT. **Issues Raised:** - Transportation: TRT

Meeting 22 Jul 2009 Calgary	Merged Event
Participants: Peter Penashue Deputy Grand Chief - Labrador Innu Chief Anastasia Quepee Labrador Innu **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Preliminary IBA implementation meeting with aboriginal leaders. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 22 Jul 2009 Calgary	Merged Event
Participants:	**Summary:** Meeting with Labrador Innu in preparation for later lunch meeting

Meeting 22 Jul 2009 Calgary	Merged Event
Peter Penashue Deputy Grand Chief - Labrador Innu Chief Anastasia Quepee Labrador Innu **Team Members:** Joseph Lanzon Terence McKillen	with other aboriginal groups from Quebec. **Issues Raised:** - Social: Aboriginal Involvement

Letter 25 Aug 2009	Merged Event
Participants: Mark Nui Grand Chief - Labrador Innu Peter Penashue Deputy Grand Chief - Labrador Innu **Team Members:** Terence McKillen	**Summary:** Copy of LIM's revised EIS sent to Grand Chief and Deputy Grand Chief of Innu Nation of Labrador. **Issues Raised:** - Economic: General Project Updates **Attachments:** - eis_letter_lia_20090824.pdf

Meeting 17 Sep 2009 Montreal	Merged Event
Participants: Gerry Kerr Advisor - Labrador Innu Peter Penashue Deputy Grand Chief - Labrador Innu **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Discussion with Innu of Labrador. Infrastructure and IBA committee. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 2 Nov 2009 LIM Toronto Office	Merged Event
Participants: Chief Anastasia Gerry Kerr Advisor - Labrador Innu Mark Nui Grand Chief - Labrador Innu Peter Penashue Deputy Grand Chief - Labrador Innu Luke Rich Co-CEO - Innu	**Summary:** Open-book contracting and IBA review process. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 2 Nov 2009 LIM Toronto Office	Merged Event
Development Partnership **Team Members:** Marc Duclos Daniel Dufort Bill Hooley Joseph Lanzon Terence McKillen Linda Wrong	

Meeting 5 Nov 2009	Merged Event
Participants: Mark Nui Grand Chief - Labrador Innu Peter Penashue Deputy Grand Chief - Labrador Innu **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Contracting avenues and IBA contracting changes. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 9 Dec 2009	Merged Event
Participants: Mark Nui Grand Chief - Labrador Innu Peter Penashue Deputy Grand Chief - Labrador Innu **Team Members:** Joseph Lanzon	**Summary:** Meeting with Innu of Labrador. **Stakeholder Comments:** - Innu should start considering other contractors and to be flexible. - Jobs to Matimekush and Naskapi be a priority for Innu companies and contractors that comply with NFL. - There will be no contract announcements and awards before Christmas if no early Cabinet release. **Team Response:** Peter Penashue and Mark Nui will follow up with NFL Government contacts. **Issues Raised:** - Economic: Employment Opportunities

Meeting 29 Jan 2010	Merged Event
Participants: Luke Rich Co-CEO - Innu Development Partnership **Team Members:** Joseph Lanzon	**Summary:** Joseph Lanzon explained the sensitivity about the cell and technology contract issue and asked Luke Rich to speak to the Naskapi and assure them that no such contract was issued and that it was only a capability document. **Issues Raised:** - Economic: Economic Development

Meeting 24 Mar 2010	Merged Event
Participants: Paul Rich	**Summary:** Discussion regarding Innu of Labrador's participation in the Land Claim Overlap Commission.

Meeting 24 Mar 2010	Merged Event
Innu Development Corp **Team Members:** Joseph Lanzon	**Issues Raised:** - Social: Land Claims/Political

Phone Call 22 Apr 2010	Merged Event
Participants: Mark Nui Grand Chief - Labrador Innu Peter Penashue Deputy Grand Chief - Labrador Innu **Team Members:** Joseph Lanzon	**Summary:** Election postponed to September. Both Chief and Grand Chief were reconfirmed in their position for now. **Issues Raised:** - Social: Aboriginal Involvement

Meeting 12 May 2010	Merged Event
Participants: Mark Nui Grand Chief - Labrador Innu Peter Penashue Deputy Grand Chief - Labrador Innu **Team Members:** Joseph Lanzon	**Summary:** Discussing Land Overlap Commission and positive confirmation of participation by Innu of Labrador. **Issues Raised:** - Social: Land Claims/Political

Dinner Meeting 23 Nov 2010 Ottawa	Merged Event
Participants: Jeremy Andrew Sebastien Benuen Chief - Sheshatshui Innu First Nation Simon Peter Gregoire Councillor - Sheshatshui Innu First Nation Bart Jack Innu of Labrador Mashini Innu of Labrador Yvette Michel Innu of Labrador Andrew Penashue Councillor - Sheshatshui Innu First Nation Joseph Riche Grand Chief - Innu of	**Summary:** Meeting with Innu of Labrador. IBA implementation. **Issues Raised:** - Economic: General Project Updates - Economic: Impact Benefits Agreement (IBA)

Dinner Meeting 23 Nov 2010 Ottawa	**Merged Event**
Labrador **Team Members:** John Kearney Joseph Lanzon	

Letter 13 May 2011	**Merged Event**
Participants: Joseph Riche Grand Chief - Innu of Labrador **Team Members:** Joseph Lanzon	**Summary:** Letter to Innu of Labrador on LIM's 2011 exploration program update. **Issues Raised:** - Economic: IBA Implementation **Attachments:** - letter_grand_chief_riche_expl_update_2011.pdf

Report Parameters:

Stakeholder Group: **Conseil Nation Innu de Matemikush-Lac John**
Start Date: 1 May 2005
End Date: 21 Jun 2011
Action Type: all actions

Meeting 28 Jun 2006 Ottawa	**Merged Event**
Participants: Chief Andre Chief - Matimekush Innu **Team Members:** John Kearney Joseph Lanzon Dan O'Rourke	**Summary:** Project update. Issues for Matimekush community are jobs, sustainable economic development and ensuring that the community benefits from mine development this time. Discussion on the economic benefit for TSH railway. **Issues Raised:** - Economic: General Project Updates

Meeting 12 Feb 2007 Schefferville	**Merged Event**
Participants: Rodrigue McKenzie Matimekush **Team Members:** Joseph Lanzon Dan O'Rourke	**Summary:** MOU negotiations. **Issues Raised:** - Economic: Memorandum of Understanding

Email 6 Apr 2007	**Merged Event**
Participants: Schefferville Community **Team Members:** Terence McKillen Dan O'Rourke	**Summary:** Project update. **Issues Raised:** - Economic: General Project Updates **Attachments:** - sustainet5-5.doc

Meeting 5 Aug 2007 Schefferville	**Merged Event**
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Joseph Lanzon	**Summary:** Initial meeting sessions with newly elect Chief Real McKenzie. Review project proposal and importance of TSH railway. Chief recognised that jobs and sustainable economic development are important for his community. Young community with high unemployment. Despite importance of jobs and economy, the land must also be protected. They have to live with IOC's legacy. **Team Response:** LIM mining briefing and economic opportunities in partnership with Innu of Labrador. **Issues Raised:** - Economic: Economic Development - Economic: Employment Opportunities

Email 22 Aug 2007	**Merged Event**
Participants: Schefferville Community **Team Members:** Joseph Lanzon Terence McKillen Dan O'Rourke	**Summary:** Meeting planning to Scheffervile. **Issues Raised:** - Economic: General Project Updates **Attachments:** - sustainet5-14.doc

Meeting 9 Sep 2007 Quebec City	**Merged Event**
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Joseph Lanzon	**Summary:** Meeting with Chief Real McKenzie and other Band Council members. **Team Response:** Seasonal jobs and contracts and business negotiations with Gestion Innu. In September 2007, LIM opens Schefferville negotiating office. To also start receiving resumes and training planning. Rodrigue McKenzie becomes Senior Officer for relations with Aboriginal communities. **Issues Raised:** - Economic: Economic Development - Economic: Employment Opportunities

Email 19 Nov 2007	**Merged Event**
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Schefferville and Naskapi draft MOU and December 4th to 5th meeting. **Issues Raised:** - Social: Aboriginal Involvement - Economic: Memorandum of Understanding **Attachments:** - sustainet5-23.doc

Email 23 Nov 2007	**Merged Event**
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Erick Chavez John Kearney Joseph Lanzon Terence McKillen	**Summary:** December 6th to 7th Schefferville travel arrangements and meeting with Labrador Innu. **Issues Raised:** - Social: Aboriginal Involvement **Attachments:** - sustainet5-25.doc

Meeting 6 Dec 2007 Schefferville	**Merged Event**
Participants: Council Matimekush	**Summary:** Meeting with Matimekush - Council and Community. Review project update and use of TSH railway. Council members indicated support for LIM proposal and reiterated need to participate in economic benefit this

Meeting 6 Dec 2007 Schefferville	Merged Event
Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Erick Chavez Matthew Coon Come John Kearney Joseph Lanzon Terence McKillen	time. **Issues Raised:** - Social: Aboriginal Involvement - Economic: Economic Development

Meeting 25 Feb 2008 Quebec City	Merged Event
Participants: Chief Matimekush Council Matimekush **Team Members:** John Kearney Joseph Lanzon Terence McKillen	**Summary:** Project update. Discussion on TSH Railway. **Issues Raised:** - Economic: General Project Updates - Transportation: TRT

Meeting 3 Mar 2008 PDAC Toronto	Merged Event
Participants: Chief - Montagnais-Schefferville **Team Members:** Marc Duclos Joseph Lanzon	**Summary:** Chief of Montagnais - Sept-Iles and Chief of Montagnais - Schefferville. Rail discussion. **Issues Raised:** - Economic: Memorandum of Understanding

Commitment 13 Mar 2008 Youth Centre	Merged Event
Participants: Council Matimekush **Team Members:** Matthew Coon Come John Kearney Joseph Lanzon Terence McKillen Linda Wrong	**Summary:** Signing of MOU - with Matimekush. MOU provides for community support for the project and emphasizes job opportunities, business participation, development of the TSH railway, economic participation, and training as well as consultation with the community over environmental, cultural and heritage issues. **Issues Raised:** - Economic: Memorandum of Understanding

Email 4 Apr 2008	Merged Event
Participants:	**Summary:** Resource/machinery and helpers discussions.

Email 4 Apr 2008	**Merged Event**
Daniel Andre Helper - Schefferville Community **Team Members:** Rodrigue Mckenzie Derek Parks Linda Wrong	**Issues Raised:** - Social: Aboriginal Involvement **Attachments:** - sustainet1-30.txt

Email 4 Apr 2008	**Merged Event**
Participants: Schefferville Community **Team Members:** Rodrigue Mckenzie Linda Wrong	**Summary:** Plans to attend conference and plans to meet with community elders. **Issues Raised:** - Social: Aboriginal Involvement - Economic: Economic Development - Economic: General Project Updates **Attachments:** - sustainet1-29.txt

Email 21 Apr 2008	**Merged Event**
Participants: Schefferville Community **Team Members:** Rodrigue Mckenzie Terence McKillen Derek Parks Linda Wrong	**Summary:** Request for program helpers. **Issues Raised:** - Economic: Employment Opportunities - Economic: General Project Updates **Attachments:** - sustainet5-8.doc

Email 14 May 2008	**Merged Event**
Participants: Schefferville Community **Team Members:** Rodrigue Mckenzie Linda Wrong	**Summary:** Community meeting reminder and details. **Issues Raised:** - Economic: General Project Updates **Attachments:** - sustainet1-19.txt

Meeting 26 May 2008 Montreal	**Merged Event**
Participants: Council Matimekush Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Marc Duclos Joseph Lanzon	**Summary:** Review of LIM Project. **Issues Raised:** - Transportation: Aboriginal - Economic: Economic Development

Email 26 May 2008	**Merged Event**
Participants: Schefferville Community **Team Members:** Rodrigue Mckenzie Linda Wrong	**Summary:** Clarification of LIM Schefferville visit and LIM's offer to provide graduation robes. **Issues Raised:** - Social: Education - Economic: General Project Updates **Attachments:** - sustainet1-16.txt

Meeting 4 Jun 2008 Toronto	**Merged Event**
Participants: Nadir Andre Lawyer - BCF **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Discussion on commercial agreement arising from MOU. **Issues Raised:** - Economic: Economic Development

Email 14 Jun 2008	**Merged Event**
Participants: Schefferville Community **Team Members:** Erick Chavez Rodrigue Mckenzie Terence McKillen Linda Wrong	**Summary:** Schefferville visit by Linda Wrong. **Issues Raised:** - Social: Education - Economic: General Project Updates **Attachments:** - sustainet3-23.txt

Email 18 Jun 2008	**Merged Event**
Participants: Schefferville Community **Team Members:** Rodrigue Mckenzie Linda Wrong	**Summary:** Program update. **Issues Raised:** - Economic: Employment Opportunities - Economic: General Project Updates **Attachments:** - sustainet1-10.txt

Meeting 28 Jun 2008 Schefferville	**Merged Event**
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Marc Duclos Bill Hooley Joseph Lanzon	**Summary:** Meeting with Chief Real McKenzie. **Issues Raised:** - Transportation: Aboriginal - Economic: Employment Opportunities - Economic: Impact Benefits Agreement (IBA) - Economic: Memorandum of Understanding

Meeting 4 Jul 2008	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Joseph Lanzon	**Summary:** Project overview. **Issues Raised:** - Economic: General Project Updates

Email 9 Jul 2008	Merged Event
Participants: Schefferville Community **Team Members:** Joseph Lanzon Rodrigue Mckenzie Linda Wrong	**Summary:** Update on laptops; guidelines for community support next year. LIM waiting to organize meeting with trappers/traditional knowledge. **Issues Raised:** - Social: Education - Economic: General Project Updates **Attachments:** - sustainet3-5.txt

Email 16 Jul 2008	Merged Event
Participants: Schefferville Community **Team Members:** Erick Chavez Joseph Lanzon Rodrigue Mckenzie Terence McKillen Linda Wrong	**Summary:** Newsletters and appearances on local radio station to provide project updates. **Issues Raised:** - Social: Aboriginal Involvement - Economic: General Project Updates - Social: Social Problems in Relation to Mine Development **Attachments:** - sustainet1-1.txt

Email 18 Jul 2008	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Joseph Lanzon Linda Wrong	**Summary:** Project development. **Issues Raised:** - Economic: General Project Updates

Email 18 Jul 2008	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Joseph Lanzon Linda Wrong	**Summary:** Update to Chief Real. **Attachments:** - sustainet3-0.txt

Email 21 Jul 2008	**Merged Event**
Participants: Schefferville Community **Team Members:** Marc Duclos Bill Hooley John Kearney Joseph Lanzon Terence McKillen Linda Wrong	**Summary:** Information on Aboriginal-owned cell phone provider. **Attachments:** - sustainet2-5.txt

Email 21 Jul 2008	**Merged Event**
Participants: Schefferville Community **Team Members:** Marc Duclos Joseph Lanzon Rodrigue Mckenzie Terence McKillen Linda Wrong	**Summary:** Project update. **Stakeholder Comments:** Community members' concerns about fishing on Houston property, strategies to enhance community knowledge on the project, elders meeting moved to Aug. 11, put reference names on invoices, directions for gas receipts, revised drill schedule, environmental monitoring forms, summer students, part-time helper in Schefferville, air monitoring help Aug-Oct. **Issues Raised:** - Social: Aboriginal Involvement - Environment: Air Quality - Economic: Employment Opportunities - Environment: Fish/Habitat - Environment: General Environment - Economic: General Project Updates **Attachments:** - geostat_interviewing_workers.htm - sustainet2-2.txt

Public Communication 31 Jul 2008	**Merged Event**
Participants: Schefferville Community **Team Members:** Linda Wrong	**Summary:** First Nations Yearbook advertisement: plans in Schefferville. **Issues Raised:** - Social: Aboriginal Involvement **Attachments:** - sustainet5-13.1lim_first_nation_yearbook_pg_43-45_.pdf

Public Meeting 11 Aug 2008 Schefferville, Quebec	**Merged Event**
Participants: Schefferville Community **Team Members:** Joseph Lanzon Rodrigue Mckenzie Derek Parks Linda Wrong	**Summary:** Project Overview, traditional knowledge information review and sharing with Elders, discussion of all project issues particularly environmental and including presentation of baseline information, confirmation of wildlife, avifauna presence, caribou, etc. **Stakeholder Comments:** - community concerned about work opportunities - many are out of work - two members discussed the recent signing of the Labrador Innu IBA and if this means that they will miss out on economic opportunities - two members mentioned Sept-Iles families beaver lot rights - at end of day-long meeting, Elders rose and stated their support for the LIM

Public Meeting 11 Aug 2008 Schefferville, Quebec	Merged Event
	team and confirmed that they had confidence in the environmental work conducted and LIM's committment to environmental and social responsiblity **Team Response:** - team explained the EA process and the procedures for permitting a mine in Labrador - Joseph discussed the beaver lot issues and Labrador IBA **Issues Raised:** - Social: Aboriginal Involvement - Environment: Beaver Lots - Economic: Economic Development - Economic: General Project Updates - Economic: Impact Benefits Agreement (IBA)

Meeting 20 Aug 2008 Innu Band Office	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Rodrigue Mckenzie John Rogers Paul Thibaudeau	**Summary:** Project update. **Stakeholder Comments:** We were delayed until 1PM meeting with Chief McKenzie, but he was very supportive of the project and pointed out the need to understand the sensitivity of political issues. There were several issues raised by Chief McKenzie: 1. He noted that the Innu currently have profit sharing with SNC Lavellin and Air Inuit, and wanted to know if this would be the case with Labrador Iron Mines? 2. Naskapi have the Hydro-Quebec (HQ) agreement and Maniheck on the Labrador side will provide the power, but HQ will distribute it – the arrangement is, in Chief McKenzie's words, "complicated". HQ is still providing the electricity to the Innu for 2.3 cents per kilowatt but they want to bump it up to 6.8 cents per kilowatt. There is a two year wait to sit down with HQ to figure out how to resolve the power issue, since the dam was IOC construction and they had a prior agreement with the Innu. 3. Real issue, beyond talking to people about the LIM project is are the land claims issues. The Innu nation has 11 communities, 9 in Quebec, 2 in Labrador and they don't all necessarily agree on how the mining arrangements and power arrangements will work for everyone. The disagreements are as follows: 3a. Some of the Innu communities are ready to extinguish their rights – they may not consult with other Innu communities first . Lower North Shore and Sept-Iles communities are upset about how things are going and may do an injunction against mining 3c. Not sure how much the Innu nation will get as a cut for the dam exploitation with Labrador (5 to 10% was the figure I heard from you). There is some concern about how Premier Danny Williams is approaching the situation. 3d. The key issue is mistrust among these communities, the need for transparency with Labrador Iron Mines and solid commitments. As a final comment, Chief McKenzie stated that it was good that there could

Meeting 20 Aug 2008 Innu Band Office	Merged Event
	be development in the region; Innu nation has 90% welfare usage – jobs are desperately needed in the region. He agreed to respond to any email requests for further detailed information. **Issues Raised:** - Social: Aboriginal Involvement - Economic: Economic Development - Economic: Employment Opportunities - Economic: Impact Benefits Agreement (IBA) - Social: Land Claims/Political **Attachments:** - chief_real_mckenzie_information.doc
	Action Set By: Paul Thibaudeau **Assigned To:** Paul Thibaudeau **Deadline:** 5 Sep 2008 12:10 PM **Date Resolved:** 5 Sep 2008 12:10 PM **Action Requested:** Email with transcription of notes asking for clarification of issues. **Action Taken:** Email sent with notes. No reply.

Meeting 20 Aug 2008 Conseil de la Nation Innu Matimekush-Lac John	Merged Event
Participants: Marc Jean Pierre Employment Officer - Conseil de la Nation Innu Matimekush-Lac John **Team Members:** Paul Thibaudeau	**Summary:** Discussions with Marc Jean Pierre. **Stakeholder Comments:** Mr. Jean Pierre raised several issues surrounding mining development in the region: 1. Problem with the IOC – most Innut who worked for them got base labour jobs doing the mopping and shovelling – they had 200 to 300 whites working and only 30 to 50 native people 2. Current the Innu nation itself can provide only a bit of work to the community (services, including electrician, cleaning and administrative work) but there just are not enough jobs to go around. 3. Innu Nation would need help for training costs and to set up the skill programs so that Innu people can learn and work for LIM. They have engineers, surveyors, heavy equipment operation – ready to learn, ready to work. Key problem is the high expense to train people, particularly in heavy machinery operation (costs 500,000$ to train 12 people). Need to get women involved as well in all aspects of training 4. He is worried that LIM and the relationship to Labrador might affect what can come to the Innu of Schefferville. There are also the ongoing political issues that could get in way of successful economic development (he did not specify what those issues were). Mr. Jean Pierre indicated that he could provide full Labour Force Information about the numbers of skilled workers, capacities and concerns, but not before September 15. **Issues Raised:** - Social: Aboriginal Involvement - Historical: Concerns about Past Development - Economic: Economic Development

Meeting 20 Aug 2008 Conseil de la Nation Innu Matimekush-Lac John	Merged Event
	- Economic: Employment Opportunities - Social: Infrastructure Request - Social: Land Claims/Political - Social: Training **Attachments:** - marc_jean_pierre_information.doc
	Action Set By: Paul Thibaudeau **Assigned To:** Paul Thibaudeau **Deadline:** 5 Sep 2008 1:08 PM **Date Resolved:** 5 Sep 2008 1:08 PM **Action Requested:** Send email to stakeholder and ask for further information about number of workers in Innu nation and training requirements. **Action Taken:** Sent email. Followed up with phone calls and faxes. Finally received information November 4, 2008.

Meeting 21 Aug 2008 Schefferville Airport	Merged Event
Participants: Sylvain Vollant Recreation Director - Nation Innu Matimekush-Lac John **Team Members:** Paul Thibaudeau	**Summary:** Policing service and recreation facilities for youth. **Stakeholder Comments:** Mr. Vollant also works with policing services for Schefferville. He stated that there are four effective police officers as handled by the Surete du Quebec; the town is watched over effectively – key problems observed are drugs and some mischief/vandalism. As recreation director he notes the key problem is getting enough funding to keep the arena going - their budget is $30,000 per year which shortens the amount of time they can be open. In the winter of 2007-2008, for example, they were only able to open the arena in January. The arena is very old and not well insulated – an inspector stated that it would last, at most, five years. A new arena would cost about $7 million to build. Key problems observed in community: a. Lack of things for kids to do, particularly if arena is closed. This may explain the higher vandalism rates in the community. b. Parents don't come to the arena with their kids, treating it as a babysitting service Mr. Vollant estimated that a proper arena budget would require a new arena and then a budget of about 500,000$ per year to allow for 20 staff to be employed full-time year round. While he does not expect LIM to do this, he does think that any economic development in the region would help provide provide jobs and other opportunities for youth, and that would be very good for the community as a whole. **Issues Raised:** - Economic: Economic Development - Economic: Employment Opportunities - Social: Social Problems in Relation to Mine Development **Attachments:** - sylvain_vollant_information.doc
	Action Set By: Paul Thibaudeau **Assigned To:** Paul Thibaudeau **Deadline:** 5 Sep 2008 2:50 PM **Date Resolved:** 5 Sep 2008 2:50 PM **Action Requested:** Sent email with interview notes to request confirmation that information is correct.

Meeting 21 Aug 2008 Schefferville Airport	Merged Event
	Action Taken: Sent notes to Mr. Vollant. No reply.

Meeting 10 Oct 2008	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Marc Duclos Joseph Lanzon	**Summary:** Project update **Issues Raised:** - Economic: General Project Updates

Meeting 13 Oct 2008 Sept-Iles	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Marc Duclos Joseph Lanzon	**Summary:** Business opportunities **Issues Raised:** - Economic: Employment Opportunities

Meeting 13 Oct 2008	Merged Event
Participants: Council Matimekush **Team Members:** Joseph Lanzon	**Summary:** AGM Band members meeting in Matimekush. Project update. **Issues Raised:** - Economic: Economic Development - Economic: Impact Benefits Agreement (IBA)

Phone Call 3 Nov 2008 Schefferville	Merged Event
Participants: Marc Jean Pierre Employment Officer - Conseil de la Nation Innu Matimekush-Lac John **Team Members:** Paul Thibaudeau	**Summary:** Occupation discussions **Stakeholder Comments:** Spoke on the phone to make a final plea for follow-up information promised in early September. I faxed to him a list of potential job types that might be used by LIM and asked him to fill in the numbers of Innu persons trained or needing training (but would be interested) in fulling positions like those. He responded the next day with a faxed copy of the information requested (as attached). **Issues Raised:** - Economic: Employment Opportunities **Attachments:** - innu_occupation_information.doc

Public Meeting 28 Nov 2008 Salle du Court Municipal - Schefferville	**Merged Event**
Participants: Schefferville Community **Team Members:** Joseph Lanzon Rodrigue Mckenzie Terence McKillen Linda Wrong	**Summary:** Public Meeting pursuant to the EIS process in Schefferville. Community seemed to be very supportive. The Administrator of Schefferville asked that she be consulted as far ahead of time as possible with respect to demands that might be placed on municipal services. **Stakeholder Comments:** Meeting attended by about 12 - 14 people including the Town Administrator. All present were supportive of the development. The Administrator requested that reference to the town should properly be the "Municipality of Schefferville". **Issues Raised:** - Economic: General Project Updates

Letter 14 Jan 2009	**Merged Event**
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Terence McKillen	**Summary:** Formal request to proceed with negotiations for IBA **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 31 Mar 2009 Schefferville	**Merged Event**
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Bill Hooley Joseph Lanzon Linda Wrong	**Summary:** Discussion on IBA and appointing an IBA Matimekush Committee/team. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 9 Jun 2009	**Merged Event**
Participants: Band Manager - Innu-Matimekush **Team Members:** Glen Coyne Josee Lafreniere	**Summary:** Discussion on hiring of women and issues of resumes and favouritism. **Team Response:** 1. LIM agreed to give Band a list of all resumes on file. 2. Any hiring would first be discussed with Band Officials and then they will go through list. **Issues Raised:** - Economic: Employment Opportunities
	Action Set By: Glen Coyne **Assigned To:** Glen Coyne **Deadline:** 10 Jun 2009 11:42 AM **Date Resolved:** **Action Requested:** Send list of resumes to Band Office. **Action Taken:**

Meeting 18 Jun 2009	Merged Event
Participants: Andre Binette Legal Council to Matimekush - **Team Members:** Marc Duclos Joseph Lanzon	**Summary:** Starting IBA negotiations with the Matimekush Community. **Team Response:** Overall briefing to Andre Binette about mining project and rail upgrade. Negotiations scheduled to begin mid July. **Issues Raised:** - Economic: General Project Updates - Economic: Impact Benefits Agreement (IBA)

Meeting 21 Jul 2009 Calgary	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John Sylvain Vollant Recreation Director - Nation Innu Matimekush-Lac John **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Joint meeting with ITUM and Matimekush on following: - Preliminary discussions for IBA consultation meeting - EIS submission - Community benefit discussions. **Issues Raised:** - Social: Aboriginal Involvement

Meeting 22 Jul 2009 Calgary	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John Sylvain Vollant Recreation Director - Nation Innu Matimekush-Lac John **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Preliminary IBA implementation meeting with aboriginal leaders. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 22 Jul 2009 Calgary	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John Sylvain Vollant Recreation Director - Nation Innu Matimekush-Lac John **Team Members:**	**Summary:** Meeting with Matimekush on following: - Overview of LIM project and cooperation among all aboriginal groups (Labrador Innu, Matimekush, ITUM and Naskapi). - Free trade zone discussion on the New Dawn Agreement. - Not using LIM as a leverage for land claims against the Newfoundland Government. **Issues Raised:** - Social: Aboriginal Involvement - Economic: General Project Updates - Social: Land Claims/Political

Meeting 22 Jul 2009 Calgary	Merged Event
Joseph Lanzon Terence McKillen	

Letter 25 Aug 2009	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Terence McKillen	**Summary:** Copy of LIM's revised EIS sent to Chief Real McKenzie of Innu Matimekush. **Issues Raised:** - Economic: General Project Updates **Attachments:** - eis_letter_matimekush_20090824.pdf

Meeting 26 Aug 2009	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John Francois Moffette Band Member-Matimekush/ QC Dep't of Indian Affairs - Matimekush/Gov't of QC **Team Members:** Marc Duclos Daniel Dufort Bill Hooley	**Summary:** Updating Chief Real and Matimekush Band Council members on LIM's revised EIS. Explanation of the percentage of jobs/business agreed between the NFL Government and LIM that will be allocated to residents of NFL. **Issues Raised:** - Economic: Employment Opportunities - Economic: General Project Updates

Meeting 7 Dec 2009	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Joseph Lanzon	**Summary:** Discussing issue of LIM House transfer - details on signature on deed. Conference call was organized with Francois Moffett. However, Mr. Moffett never called in. **Issues Raised:** - Economic: Economic Development

Meeting 8 Dec 2009	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Joseph Lanzon	**Summary:** Meeting with Chief Real to request resuming IBA negotiations. He said that he had to deal with land claims first and will let us know if in the new year. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 10 Feb 2010	Merged Event
Participants: Nadir Andre Lawyer - BCF **Team Members:** Joseph Lanzon	**Summary:** Nadir informed Joseph Lanzon that former Legal Consul Andre Binnett is no longer working on the IBA file for Matimekush and Nadir will get a new mandate in the next few weeks to represent the Matimekush in the IBA negotiations. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 17 Mar 2010	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Joseph Lanzon	**Summary:** Follow-up discussion with Indian and Northern Affairs Ministerial Office for Matimekush land claim issues - Commission to deal with overlapping land claims. **Issues Raised:** - Social: Land Claims/Political

Meeting 25 Mar 2010	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Joseph Lanzon	**Summary:** Matimekush land claim overlap commission - support from all participating aboriginal partners. **Issues Raised:** - Social: Land Claims/Political

Meeting 30 Mar 2010	Merged Event
Participants: Nadir Andre Lawyer - BCF **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Discussing IBA demands email from Matimekush to Marc Duclos. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 7 Apr 2010	Merged Event
Participants: Nadir Andre Lawyer - BCF **Team Members:** Marc Duclos Bill Hooley John Kearney Joseph Lanzon	**Summary:** Matimekush IBA negotiations meeting in Toronto. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 29 Apr 2010 Quebec City	Merged Event
Participants:	**Summary:** IBA negotiations for LIM and Schefferville Mines.

Meeting 29 Apr 2010 Quebec City	Merged Event
Nadir Andre Lawyer - BCF **Team Members:** Daniel Dufort John Kearney Joseph Lanzon	**Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 12 May 2010	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John Francois Moffette Band Member-Matimekush/ QC Dep't of Indian Affairs - Matimekush/Gov't of QC **Team Members:** Glen Coyne Rodrigue Mckenzie	**Summary:** Discussing heavy equipment needs for season. Aboriginal labour also discussed. **Stakeholder Comments:** They would like to know in advance what LIM's needs would be. **Team Response:** LIM team invited the Chief to visit the spur line construction site. Visit arranged for May 13th 2010. **Issues Raised:** - Economic: Economic Development

Site Tour 13 May 2010	Merged Event
Participants: Alexandre McKenzie Councillor - Matimekush Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Glen Coyne Rodrigue Mckenzie	**Summary:** Chief Real McKenzie and Councillor Alexandre McKenzie of the Innu Matimekush were taken on a site tour of the spur line construction. **Stakeholder Comments:** Visitors were impressed with the speed of the construction. **Team Response:** Glen Coyne and Rodrigue McKenzie from the LIM Schefferville team conducted the tour. **Issues Raised:** - Economic: General Project Updates

Meeting 1 Jun 2010 Quebec City	Merged Event
Participants: Nadir Andre Lawyer - BCF Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Marc Duclos John Kearney Joseph Lanzon	**Summary:** Negotiating meeting with Matimekush. (Dinner) **Issues Raised:** - More Information: Community Consultation

Phone Call 8 Jul 2010	**Merged Event**
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** John Kearney	**Summary:** Telephone discussion with Chief Real. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 9 Jul 2010 Fairmont Hotel - La Malbaie, QC	**Merged Event**
Participants: Chief Betsiamites Betsiamites Paul Vollant Band Member - Betsiamites **Team Members:** John Kearney	**Summary:** Informal discussion - Innu Strategic Alliance. **Issues Raised:** - More Information: Community Consultation

Phone Call 19 Jul 2010	**Merged Event**
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Marc Duclos John Kearney	**Summary:** Telephone discussions with Chief Real McKenzie **Issues Raised:** - More Information: Community Consultation

Joint Meeting 7 Aug 2010 Sept-Iles	**Merged Event**
Participants: Council Innu Matimekush-Lac John Innu Matimekush-Lac John **Team Members:** Marc Duclos John Kearney	**Summary:** Joint meeting with Matimekush and Uashat Band Councils. **Issues Raised:** - More Information: Community Consultation

Meeting 26 Aug 2010 Montreal	**Merged Event**
Participants: Mario Charpentier Lawyer - BCF Chief Real McKenzie Chief - Innu Matimekush-Lac John	**Summary:** Negotiation meeting. **Stakeholder Comments:** Mr. Rosario Pinette Joined meeting by phone. **Issues Raised:** - More Information: Community Consultation

Meeting 26 Aug 2010 Montreal	**Merged Event**
Team Members: Marc Duclos John Kearney	

Meeting 1 Sep 2010 Schefferville	**Merged Event**
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Marc Duclos Frank Johnson John Kearney	**Summary:** Meeting with Chief Real McKenzie - Matimekush. **Issues Raised:** - More Information: Community Consultation

Public Meeting 2 Sep 2010 Schefferville	**Merged Event**
Participants: Council Innu Matimekush-Lac John Innu Matimekush-Lac John **Team Members:** Marc Duclos John Kearney	**Summary:** Public Meeting with Matimekush Band Council. **Stakeholder Comments:** Matimekush agreed to lift barricade. **Issues Raised:** - More Information: Community Consultation

Meeting 20 Oct 2010 Montreal	**Merged Event**
Participants: Nadir Andre Lawyer - BCF Mario Charpentier Lawyer - BCF Pierre Dozois Lawyer - BCF **Team Members:** Marc Duclos John Kearney Joseph Lanzon	**Summary:** Meeting with Matimekush Lawyers.

Meeting 28 Oct 2010 Band Council Office - Schefferville	**Merged Event**
Participants: David Andre Negotiator - Matimekush	**Summary:** IBA Negotiations with Matimekush. Discussing LIM's proposed contribution towards repairs and upgrade of Arena. **Stakeholder Comments:** Minutes of meeting attached.

Meeting 28 Oct 2010 Band Council Office - Schefferville	Merged Event
Pierre Dozois Lawyer - BCF Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** John Kearney Joseph Lanzon Terence McKillen	**Issues Raised:** - Economic: Impact Benefits Agreement (IBA) **Attachments:** - iba_notes_20101027-matimekush.docx

Meeting 17 Nov 2010 Schefferville	Merged Event
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Bill Hooley Rodrigue Mckenzie	**Summary:** Discussing progress with IBA and jobs. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 25 Nov 2010 Quebec City	Merged Event
Participants: David Andre Negotiator - Matimekush **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** IBA negotiations with Matimekush. LIM met with David Andre and BCF Lawyers on November 25th and 26th. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 7 Dec 2010 Montreal	Merged Event
Participants: David Andre Negotiator - Matimekush **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** IBA negotiations with Matimekush. LIM met with David Andre and BCF Lawyers on December 7th and 8th. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 15 Dec 2010 LIM Toronto Office	Merged Event
Participants: Michel Landry Deloitte & Touche **Team Members:** Bill Hooley	**Summary:** LIM meeting with Michel Landry, Financial Advisor for Matimekush IBA negotiating team. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 15 Dec 2010 LIM Toronto Office	**Merged Event**
Joseph Lanzon Richard Pinkerton	

Meeting 20 Jan 2011 Schefferville	**Merged Event**
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Glen Coyne Rowan Maule Rodrigue Mckenzie	**Summary:** An impromptu meeting with Chief Real to try to resolve issue between Francois McKenzie and Glen Coyne. **Issues Raised:** - General: Employment Issue **Attachments:** - meeting_schefferville_20_01_11.doc

Meeting 28 Jan 2011 Montreal	**Merged Event**
Participants: David Andre Negotiator - Matimekush Nadir Andre Lawyer - BCF Pierre Dozois Lawyer - BCF **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** IBA negotiating meeting with Matimekush. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 28 Feb 2011 Montreal	**Merged Event**
Participants: Nadir Andre Lawyer - BCF Pierre Dozois Lawyer - BCF **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** IBA negotiating meeting with Matimekush. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Letter 13 May 2011	**Merged Event**
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Joseph Lanzon	**Summary:** Letter to Matimekush - Lac John on LIM's 2011 exploration program update. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA) **Attachments:** - letter_chief_real_expl_update_2011.pdf

Conference 16 May 2011	**Merged Event**
Participants: Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** John Kearney	**Summary:** Conference call with Matimekush and New Millenium.

Meeting 24 May 2011 Montreal	**Merged Event**
Participants: Pierre Dozois Lawyer - BCF Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Marc Duclos John Kearney	**Summary:** Meeting with Matimekush.

Joint Meeting 6 Jun 2011 Schefferville	**Merged Event**
Participants: Council Matimekush Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** Marc Duclos John Kearney Joseph Lanzon Linda Wrong	**Summary:** Joint meeting with LIM, Matimekush Band Council and New Millenium/Tata Steel. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Public Meeting 6 Jun 2011 Schefferville Community Arena	**Merged Event**
Participants: Community Innu Matimekush-Lac John Innu Matimekush-Lac John Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** John Kearney	**Summary:** LIM signing IBA with Innu Matimekush-Lac John. Tour of Arena Repairs. **Issues Raised:** - Social: Discrimination - Social: Relationships - Social: Respect - General: The Future

Site Tour 7 Jun 2011 LIM Bean Lake Camp	**Merged Event**
Participants: Council Innu Matimekush-Lac John Innu Matimekush-Lac John Chief Real McKenzie Chief - Innu Matimekush-Lac John **Team Members:** John Kearney	**Summary:** 1. Chief Real Mckenzie and Band Members visited LIM camp. 2. LIM project update by John Kearney. 3. Speech by Chief Real Mckenzie. **Issues Raised:** - General: Working Together with Respect

Report Parameters:

Stakeholder Group: **Naskapi Nation of Kawawachikamach**
Start Date: 1 May 2005
End Date: 21 Jun 2011
Action Type: all actions

Community Visit 30 May 2005 Kawawachikamach	**Merged Event**
Participants: Chief Philip Einish John Mameamskum Naskapi **Team Members:** Erick Chavez Gerry Gauthier John Kearney Terence McKillen	**Summary:** Introductory visit to Schefferville. Reviewed project proposal. No major issues raised. Do not want to see any new mining resulting in the visual "eyesore" left behind by IOC. Aboriginals effectively shut out by IOC operations. **Issues Raised:** - Economic: General Project Updates

Meeting 28 Jun 2006 Ottawa	**Merged Event**
Participants: John Mameamskum Naskapi **Team Members:** John Kearney Joseph Lanzon Dan O'Rourke	**Summary:** Project update. Discussion on TSH railway. **Issues Raised:** - Economic: General Project Updates

Meeting 13 Feb 2007 Kawa	**Merged Event**
Participants: John Mameamskum Naskapi **Team Members:** Joseph Lanzon Dan O'Rourke	**Summary:** Review project development with Naskapi Leadership and Band Members. Discussed economic stimulus from TSH railway. **Issues Raised:** - Economic: Economic Development

Email 6 Apr 2007	**Merged Event**
Participants: John Mameamskum Naskapi **Team Members:** Joseph Lanzon Terence McKillen Dan O'Rourke	**Summary:** Possible letter from John M. dated April 4 **Issues Raised:** - Economic: General Project Updates **Attachments:** - sustainet5-4.doc

Email 20 Jun 2007	**Merged Event**
Participants: John Mameamskum Naskapi **Team Members:** Bill Hooley John Kearney Joseph Lanzon Terence McKillen	**Summary:** TRT MOU. **Issues Raised:** - Economic: General Project Updates **Attachments:** - sustainet5-11.1.pdf - sustainet5-11.doc

Meeting 12 Oct 2007 Toronto	**Merged Event**
Participants: Chief Philip Einish **Team Members:** John Kearney Terence McKillen	**Summary:** Overview of project. Chief Einish indicated community need for jobs and development. Need to protect the environment. **Issues Raised:** - Economic: Employment Opportunities - Environment: General Environment - Economic: General Project Updates

Meeting 29 Oct 2007 Montreal	**Merged Event**
Participants: Robert Pratt Legal Counsel - **Team Members:** John Kearney Joseph Lanzon	**Summary:** Naskapi MOU discussion. **Issues Raised:** - Economic: Memorandum of Understanding

Meeting 7 Dec 2007 Kawawachikamach	**Merged Event**
Participants: Chief Philip Einish **Team Members:** Erick Chavez Matthew Coon Come John Kearney Joseph Lanzon Terence McKillen	**Summary:** Community visit and presentation to Chief and Administrators. MOU discussion. **Issues Raised:** - Economic: General Project Updates - Economic: Impact Benefits Agreement (IBA) - Economic: Memorandum of Understanding

Meeting 14 Mar 2008 Kawa	**Merged Event**
Participants: Chief Philip Einish **Team Members:** John Kearney Joseph Lanzon Terence McKillen	**Summary:** Project update and presentation of final MOU for signature. MOU provides for community support for the project and emphasizes job opportunities, business participation, development of the TSH railway, economic participation, and training as well as consultation with the community over environmental, cultural and heritage issues. **Issues Raised:**

Meeting 14 Mar 2008 Kawa	Merged Event
	- Economic: General Project Updates - Economic: Memorandum of Understanding

Commitment 22 Apr 2008	Merged Event
Participants: Chief Philip Einish **Team Members:** John Kearney Terence McKillen	**Summary:** Sign MOU **Issues Raised:** - Economic: Memorandum of Understanding

Email 27 Apr 2008	Merged Event
Participants: John Mameamskum Naskapi **Team Members:** Terence McKillen Derek Parks Linda Wrong	**Summary:** Reimbursement and rental rates. Community helpers. **Issues Raised:** - Social: Aboriginal Involvement **Attachments:** - sustainet5-9.doc

Email 30 May 2008	Merged Event
Participants: John Mameamskum Naskapi **Team Members:** John Kearney Linda Wrong	**Summary:** Discussion of education and dates of Schefferville vist. **Issues Raised:** - Social: Education - Economic: General Project Updates **Attachments:** - sustainet0-10.txt

Email 2 Jun 2008	Merged Event
Participants: John Mameamskum Naskapi **Team Members:** John Kearney	**Summary:** Discussion of educational support from LIM for Kawa schools. **Issues Raised:** - Social: Education **Attachments:** - sustainet0-9.txt

Email 11 Jun 2008	Merged Event
Participants: Linda Poitras Naskapi Development Corporation **Team Members:** Bill Hooley John Kearney Joseph Lanzon	**Summary:** Schefferville Graduation. Linda Wrong attends and provides awards to graduates. **Issues Raised:** - Social: Education **Attachments:** - sustainet3-24.txt

Email 11 Jun 2008	**Merged Event**
Terence McKillen John Rogers Linda Wrong	

Email 14 Jun 2008	**Merged Event**
Participants: Linda Poitras Naskapi Development Corporation **Team Members:** Erick Chavez Rodrigue Mckenzie Terence McKillen Linda Wrong	**Summary:** Schefferville visit by Linda Wrong. **Issues Raised:** - Social: Education - Economic: General Project Updates **Attachments:** - sustainet3-23.txt

Meeting 18 Aug 2008 Kawawachikamach	**Merged Event**
Participants: Ruby Sandy Robinson Administrative Director - Naskapi Development Corporation **Team Members:** Rodrigue Mckenzie Paul Thibaudeau	**Summary:** Discussion with Ruby Sandy Robinson of Naskapi Development Corporation. **Stakeholder Comments:** Few key comments from Ruby Robinson: 1. There has been a noticeable decrease in the number of caribou in the region. She further indicated that the Mistinibi camp had been rented out to mining companies and that there are two uranium mining camps in operation. 2. The land was historically disrupted by pit mines - so she would like to make sure that LIM is careful to do the appropriate clean-up afterwards, unlike the IOC. 3. There are potentially more social problems when there are booming economic conditions. 4. There should be a priority to hire Innus and Naskapi for the operations as they live here and will always be here. 5. She feels the order for work in the Naskapi region should be as follows: - First see if there are Naskapi who are qualified - If not, take Innu next - If not, take non-Aboriginals as the last choice. 6. She stated that the Naskapi Development Corporation (NDC) has a few companies and services that they offer, including a construction company, the Maniken store, Radio services, Tshiuetin Transport services. 7. Issue of language and cultural protection is central to the NDC and they are very concerned about the impacts development may have on this. 8. Need solid impact benefit agreements because the Naskapi did not have that with the IOC and suffered because of it. Wants job opportunities for youth. **Issues Raised:** - Social: Aboriginal Involvement - Historical: Concerns about Past Development - Economic: Economic Development

Meeting 18 Aug 2008 Kawawachikamach	Merged Event
	- Economic: Employment Opportunities - Social: Social Problems in Relation to Mine Development - Economic: Use of External Contractors - Environment: Wildlife/Habitat

Meeting 19 Aug 2008 Kawawachikamach	Merged Event
Participants: Chief Philip Einish **Team Members:** Rodrigue Mckenzie Paul Thibaudeau	**Summary:** Met with Chief Phillip Einish. **Stakeholder Comments:** Rodrigue and I met with Chief Einish at Kawa first and asked for his approval of the list and his recommendations. He was pleased that we were doing this study and involving an Innu/Naskapi person in the process. He said the following: 1. When we meet other groups we should be aware of the territory issue and how NEQA is to be respected. These issues will need to be addressed with regards to the mining developments as well. 2. He and the council would like to visit the sites to see what Labrador Iron Mines is doing and how the work is proceeding. The reasons for this are as follows: 2a. Back in the days of the IOC there were many Elders who had never seen an open-pit mine and when they were given a show in the mid-1970s they were shocked by the amount of environmental devastation . Chief Einish stated that he went to the LabMag DSO Project in Spring 2007 and was aware of the stringent environmental regulations 2c. There are mostly native people working at LabMag and there is a good relationship. 2d. Chief Einish sees mining as very important, stating, “There’s no potential here [for other types of economic development]– mining is the only open door”, and that people here are eager for other work; the council would like to get Kawachikamach up to an 80% employment rate. 3. Need to preserve the territory and secure a future for the Naskapi youth 3c. Suggested talking to children about mining ocupations. 3d. Protecting heritage is also important. Chief Einish noted that LIM arrange to fly two Elders and himself to an old fort from the 1850s to mark it on the GPS and take pictures of the site. Chief Einish concluded the meeting by suggesting that we speak with Ruby Sandy Robinson and George Guanish. **Team Response:** 3a. Chief Einish would like the information that is collected in this report (once fully written) to be translated into Naskapi so that the Elders can know this (Rodrigue McKenzie, LIM's Community Liaison, stated that he would take responsibility for this). Chief Einish noted that there was a real need for economic developmet. Rodrigue agreed with him and stated that the Innu also had the same problem for the Innu, as there are 90 people on the Innu reserve who want jobs and call him on a frequent basis to get that information. **Issues Raised:** - Cultural: Traditional Language Use **Attachments:**

Meeting 19 Aug 2008 Kawawachikamach	Merged Event
	- chief_philip_einish_information.doc

Meeting 19 Aug 2008 Kawawachikamach	Merged Event
Participants: Ruby Sandy Robinson Administrative Director - Naskapi Development Corporation **Team Members:** Rodrigue Mckenzie Paul Thibaudeau	**Summary:** Meeting with Ruby Sandy Robinson and Rodrigue McKenzie about community. **Stakeholder Comments:** Mrs. Sandy-Robinson had several comments regarding the proposed LIM project, as follows: 1. Since mining exploration has begun the number of caribou in the region have dropped; migration patterns are changing. 2. Land was badly disrupted by the IOC pit mines and she would like LIM to take care to clean up the mine after they are done. 3. Concerned about the rise of drug use during 'booming economic times'. She notes that when the train starting coming up to Schefferville twice per week there were more problems with drugs. 4. It is very important to hire local Native peoples, because the Innu and Naskapi will always be here and they would like the opportunity to work. She said that Naskapi Management Services would help with selecting appropriate workers for LIM - first qualified Naskapis, then Innu and finally non-natives. 5. When the Naskapi signed the 1978 NEQA there was no impact and benefits agreement with the IOC. With LIM she would like to see some benefits for the community including language and culture protection as well as training programs for youth to ehance local skills and opportunities. She recalls how some young people in the 1970s would quit school to work for the IOC in low end jobs and she would like that situation to be avoided. She recommended that we speak to Samson Einish and Theresa Chemaganish. She agreed to provide documentation and lists of businesses and services by early September, 2008 once emailed by Paul Thibaudeau. Mrs. Sandy-Robinson listed the organizations that are owned and/or operated by the NDC: -A construction company -Several hunting camps that could be rented out to companies for accomodations. -Manikin general store -Radio Station -Tshiuetien Rail **Team Response:** Rodrigue agreed with Mrs. Sandy Robinson about the need to enhance local skills and involve the local Aboriginal communities in the development process. **Issues Raised:** - Social: Aboriginal Involvement - Economic: Employment Opportunities

Meeting 19 Aug 2008 Kawawachikamach	Merged Event
	- Economic: Impact Benefits Agreement (IBA) - Social: Social Problems in Relation to Mine Development - Cultural: Traditional Language Use - Social: Training
	Action Set By: Paul Thibaudeau **Assigned To:** Paul Thibaudeau **Deadline:** 15 Sep 2008 11:26 AM **Date Resolved:** 15 Sep 2008 11:27 AM **Action Requested:** I stated that I would phone up Mrs. Sandy-Robinson on September 15 2008 to ask for a list of businesses and services. **Action Taken:** I phoned up Mrs. Sandy-Robinson and was told to call up the Administration Office in Sept-Iles. I did so a few times, left messages - no one replied.

Meeting 19 Aug 2008 Kawawachikamach	Merged Event
Participants: Theresa Chemaganish Training and Management Facilitator - Management Board, NDC **Team Members:** Rodrigue Mckenzie Paul Thibaudeau	**Summary:** Training and education **Stakeholder Comments:** Ms. Chemaganish is part of several groups: - Member of Local Management Board - Nation Representative - Works with NDC and NAC School in training - Social Assistance Committee Member - Member of outreach with Sampson She works with local people to help them take local training and arrange for outside people to come in and provide training for gaining certificates. There are several problems facing the local working population: 1. Low education levels and the need for practical skills training. You need to have your Secondary 5 or pass the GED exam; without those things done you have a much harder time to pass. 2. Hard for heavy equipment operators to get their provincial license because while it takes six weeks to get the basic license it can take one year out of town courses to get the provincial license To enhance heavy equipment training her organization helped to arrange the bringing in an outside person to train 20 students in theory - these students had to go to Sept-Iles for the practical tests. Some challenges with bringing in trainers are: a. Need at least twenty students to be able to hold a course in a community, so you tend to be limited in course offerings. As Ms. Chemagamish noted, you can get 20 people who want to be heavy equipment operators but not 20 hairdressers. b. Need translation from English/French into Naskapi for some terms used in machinery operation - there can be a language barrier at times. The Managment Board has helped with several training and development initiatives in Kawa including: - Enhancing carpentry, communications and computer skills (was not elaborated upon) -The Management Board put the money into the labour to build the recreation

Meeting 19 Aug 2008 Kawawachikamach	Merged Event
	centre – they have input in funding for most of things that are running at Kawa (was not elaborated upon) -The board provides the training for the life guards for the pool and for the recreation staff -Biggest achievement of the Board was the setting up of the daycare – they did all the training and then expanded and renovated the Daycare space and had staff ready to run it. Ms. Chemaganish noted that the First Nations Human Development Commission of Quebec (French/English) at a summit in 2006 stated that it would set up a centre at Pointe Bleue for all the First Nations of Quebec. She would like to know if this centre could have an outreach program to Kawa or if it would have a residence so that students could take their families with them when they undergo training. She indicated that she could provide more detailed information about what programs the Management Board funds and what kinds of skills are provided for in training. **Issues Raised:** - Economic: Economic Development - Social: Education - Economic: Employment Opportunities - Social: Training
	Action Set By: Paul Thibaudeau **Assigned To:** Paul Thibaudeau **Deadline:** 4 Sep 2008 5:10 PM **Date Resolved:** 4 Sep 2008 5:10 PM **Action Requested:** Paul Thibaudeau to send an email to Ms. Chemaganish requesting more detailed information about what programs the Management Board funds and what kinds of skills are provided for in training. **Action Taken:** Email and telephone followup performed - no responses.

Meeting 19 Aug 2008 Band Office, Kawawachikamach	Merged Event
Participants: Sampson Einish **Team Members:** Rodrigue Mckenzie Paul Thibaudeau	**Summary:** Naskapi Nation employment **Stakeholder Comments:** Mr. Einish works as the employment liaison officer for the Naskapi Nation. He has dealings with the Commission Construction du Quebec and the Naskapi Department of Public Works. He also has extensive experience working with Emploi Quebec. Mr. Einish has a few concerns and questions about LIM's operations: 1.He states that he had trouble finding out information about Bloom Lake; apparently the Naskapi can not get into work there because of the Innu. 2. Mr. Einish would like LIM to have a resource person that he could contact that would provide information about how many jobs they have and what other types of jobs are required by LIM. 3. What kinds of financial guarantees (such as royalties and job opportunities)

Meeting 19 Aug 2008 Band Office, Kawawachikamach	Merged Event
	would the Naskapi get from LIM? 4. Could the Naskapi invest in LIM like they can in New Millenium? **Issues Raised:** - Social: Access - Roads - Economic: Economic Development - Economic: Employment Opportunities **Attachments:** - sampson_einish_information.doc
	Action Set By: Paul Thibaudeau **Assigned To:** Paul Thibaudeau **Deadline:** 4 Sep 2008 4:00 PM **Date Resolved:** 4 Sep 2008 10:00 AM **Action Requested:** Send an email asking for more concrete information about human resources and job skills that the community has. **Action Taken:** Email was sent on September 4, 2008 with phone follow-up and message left. No reply.

Meeting 19 Aug 2008 Kawawachikamach	Merged Event
Participants: Barry Einish Computer Technician - Naskapi Imuun Inc. **Team Members:** Rodrigue Mckenzie Paul Thibaudeau	**Summary:** Discussion with Barry Einish. **Stakeholder Comments:** Works for Imuun to provide computer services to the community. They have the following projects developing: 1. They want to provide cell phone service in addition to high speed internet access, but the problem with that process is that cell-phone would eat up bandwidth. 2. There is currently a limit of bandwidth that could be addressed by the following possible solutions: a. Can use a 'gateway system' to allow for packet switching (essentially a software solution) b. Can run fibre optic cable up here – would cost $15 million? c. Hydro-Quebec might have an internet over powerline system Naskapi Imuun to provide internet service as well as repair and assembling computers, but they are having difficulty keeping up with demand because of the following limitations: 1. You need shelving and additional desk space to work 2. Need a cooling room for server stationing 3. Need more personnel and more training – but you can't get the funding for an additional person Mr. Einish stated that this business could have a similar counterpart in the Innu nation, and resources could be shared between the two nations to help everyone in the region. **Attachments:** - barry_einish_information.doc
	Action Set By: Paul Thibaudeau **Assigned To:** Paul Thibaudeau

Meeting 19 Aug 2008 Kawawachikamach	Merged Event
	Deadline: 4 Sep 2008 1:00 PM **Date Resolved:** 4 Sep 2008 1:00 PM **Action Requested:** Sending an email to ask for clarification about details of computer support business. **Action Taken:** Email was sent with a copy of what was said by Mr. Einish. I asked for clarification of Internet service details. No reply.

Meeting 21 Aug 2008 Kawawachikamach	Merged Event
Participants: Jimmy James Einish Deputy Chief and Director of Recreation - Band Council of Naskapi Nation of Kawawachikamach **Team Members:** Rodrigue Mckenzie Paul Thibaudeau	**Summary:** Meeting with Deputy Chief/Recreation Director. **Stakeholder Comments:** Mr. Einish noted that need for funds to enhance recreation delivery by the hiring of additional animators. He was hopeful that economic development in partnership with LIM could help accomplish this, stating that the IOC had provided lots of facilities and activities for people. He also stated that local parents were irresponsible and did not watch after their children, leaving them in activities for other people to raise. He would like LIM to sponsor equipment for recreation. He would also like to see some more jobs for Aboriginal people within any mining development. He stated that no follow-up was required. **Issues Raised:** - Social: Aboriginal Involvement - Economic: Donation Requests - Economic: Employment Opportunities - Social: Infrastructure Request

Meeting 21 Aug 2008 Kawawachikamach	Merged Event
Participants: Samuel Pien Director - Naskapi Police Force **Team Members:** Rodrigue Mckenzie Paul Thibaudeau	**Summary:** Discussion re: Naskapi Police Force. **Stakeholder Comments:** Mr. Pien says that the Naskapi Police Force is short-staffed - they have to share jurisdictional duties with the Surete du Quebec from Kawawachikamach to Matimekush (and the SQ handles Matimekush to Schefferville). He stated that if LIM were to invest in local facilities (such as additional recreational facilities for children) that would be great for reducing crime and vandalism, but it should be done evenly between Kawa and Schefferville, so that youth stay in their communities for fun. He had nothing further to add and stated that no follow-up would be necessary. **Issues Raised:** - Economic: Donation Requests - Social: Infrastructure Request - Social: Social Problems in Relation to Mine Development

Meeting 21 Aug 2008 Kawawachikamach	Merged Event
Participants: Paul Mameamskum Councillor and Director - Naskapi Nation Band Council and Department of Public Works **Team Members:** Rodrigue Mckenzie Paul Thibaudeau	**Summary:** Description of some Public Works equipment and functional characteristics. **Stakeholder Comments:** Mr. Mameanskum stated that he has lots of skilled labour and can provide a full breakdown. This was a very brief discussion while he was at a construction site. He wanted Paul Thibaudeau to email him a request for more information. **Team Response:** Paul Thibaudeau said he would email a request for more information. **Issues Raised:** - Social: Aboriginal Involvement - Economic: Employment Opportunities
	Action Set By: Paul Thibaudeau **Assigned To:** Paul Thibaudeau **Deadline:** 4 Sep 2008 5:27 PM **Date Resolved:** 4 Sep 2008 5:27 PM **Action Requested:** Email follow-up request for more information. **Action Taken:** Sent email for further information. Had phone calls and eventually received information by November 4, 2008 for equipment rental. Remaining information was gathered by private research.

Meeting 10 Feb 2009 SNC Lavalin Office, Montreal	Merged Event
Participants: Chief Philip Einish Paul Mameamskum Councillor and Director - Naskapi Nation Band Council and Department of Public Works Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Meeting with Naskapi to negotiate IBA agreement based on existing MoU. Introductory meeting to review status of Project and cover general issues of mutual concern. Mr. Renzoni undertook to provide Minutes of the meeting and a list of actions for each party.

Meeting 30 Mar 2009 Band Council Office, Kawa	Merged Event
Participants: Naskapi Nation of Kawawachikamach Chief Philip Einish Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Bill Hooley Joseph Lanzon Linda Wrong	**Summary:** Meeting to discuss February 11 letter from Naskapi to Province of NL and to see what their concerns are and provide project update. **Stakeholder Comments:** 1) LIM expressed concern about the fact that the Nation did not express any concerns or issues to LIM before preparing and sending the letter to the Province of NL despite all the communication that has taken place. 2) Nation did not really know full extent of letter contents and did not fully understand implications on project or community associated with taking this action. 3) After brief discussion, Nation does not have any environmental concerns with respect to project and will prepare a letter of support for project and send to Province of NL. **Team Response:** 1) LIM explained again all environmental baseline work

Meeting 30 Mar 2009 Band Council Office, Kawa	**Merged Event**
	including caribou studies and committed to providing caribou information to the Nations in area. 2) Now that any concerns are satisfied, LIM is awaiting the new letter to Province, due April 8th from Nation. **Issues Raised:** - Environment: General Environment - Social: Land Claims/Political

Email 16 Apr 2009	**Merged Event**
Participants: Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Linda Wrong	**Summary:** Emailed Mr. Renzoni to follow up on appointing a representative for the Naskapi Nation to act as a contact for LIM for traditional knowledge liaison, etc. which was discussed at a previous meeting. **Issues Raised:** - Cultural: Traditional Knowledge **Attachments:** - environmental_contact_in_the_naskapi_nation_of_kawawachikamach-_april_16_2009.htm

Email 27 Apr 2009	**Merged Event**
Participants: Paul Mameamskum Councillor and Director - Naskapi Nation Band Council and Department of Public Works Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Bill Hooley John Kearney Joseph Lanzon Terence McKillen Linda Wrong	**Summary:** Job posting for Naskapi Environmental Liaison Officer. **Issues Raised:** - Environment: General Environment **Attachments:** - email-paul_renzoni-re_naskapi_environmental_contact-090427.htm - naskapi_job_posting_-lim-environmentalliaison_-law(rev090427).pdf

Email 12 May 2009	**Merged Event**
Participants: Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Terence McKillen	**Summary:** Draft copy of Cooperation Agreement (IBA) sent to Paul Renzoni, Negotiator for Naskapi Nation. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Phone Call 4 Jun 2009	**Merged Event**
Participants:	**Summary:** Discussion with Paul Renzoni (Naskapi Advisor).

Phone Call 4 Jun 2009	**Merged Event**
Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Joseph Lanzon Terence McKillen	**Stakeholder Comments:** 1. Mr. Renzoni requested a word version of the draft Cooperation Agreement. 2. A meeting was requested. **Team Response:** 1. Draft Agreement sent by email on June 4th by Terence McKillen. 2. It was agreed to meet in Montreal on Thursday, June 18th at 10:00 am. Paul Renzoni to arrange location for meeting. **Issues Raised:** - Social: Aboriginal Involvement

Meeting 18 Jun 2009	**Merged Event**
Participants: Chief Philip Einish Robert Pratt Legal Counsel - Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Marc Duclos Joseph Lanzon	**Summary:** IBA negotiation meeting with Naskapi. Reviewing IBA draft presented by Terence McKillen to the Naskapi negotiating team. **Stakeholder Comments:** The Naskapi team submitted a new IBA draft review of terms and conditions. Parties to meet again in three weeks' time. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Presentations 20 Jun 2009	**Merged Event**
Participants: John Mameamskum Naskapi **Team Members:** Glen Coyne Tara Schrama	**Summary:** LIM team members Tara Schrama and Glen Coyne attended the Kawa High School graduation. Gifts (watches) and congratulatory letters were presented to graduates. **Stakeholder Comments:** Watches were well received. **Team Response:** Tara Schrama presented the watches and made a short speech congratulating the graduates. **Issues Raised:** - Social: Education

Meeting 21 Jul 2009 Calgary	**Merged Event**
Participants: Councilor Naskapi Chief Philip Einish Jimmy James Einish Deputy Chief and Director of Recreation - Band Council of Naskapi Nation of Kawawachikamach **Team Members:** Joseph Lanzon	**Summary:** Meeting with Naskapi on following: - Preliminary discussion for IBA consultation meeting - EIS submission - Community benefit discussion **Issues Raised:** - Social: Aboriginal Involvement

Meeting 21 Jul 2009 Calgary	**Merged Event**
Terence McKillen	

Meeting 22 Jul 2009 Calgary	**Merged Event**
Participants: Chief Philip Einish Jimmy James Einish Deputy Chief and Director of Recreation - Band Council of Naskapi Nation of Kawawachikamach **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Preliminary IBA implementation meeting with aboriginal leaders. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 22 Jul 2009 Calgary	**Merged Event**
Participants: Councilor Naskapi Chief Philip Einish Jimmy James Einish Deputy Chief and Director of Recreation - Band Council of Naskapi Nation of Kawawachikamach **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Meeting with Naskapi on the following: - Overview of LIM project and cooperation among all aboriginal groups (Labrador Innu, Matimekush, ITUM and Naskapi). - Free trade zone discussion on the New Dawn Agreement. - Not using LIM as a leverage for land claims against the Newfoundland Government. **Issues Raised:** - Social: Aboriginal Involvement - Economic: General Project Updates - Social: Land Claims/Political

Email 7 Aug 2009	**Merged Event**
Participants: Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Linda Wrong	**Summary:** Email to Paul Renzoni and Stella Pien regarding Naskapi Environmental Contact applicants. **Issues Raised:** - Economic: Employment Opportunities **Attachments:** - fw_naskapi_environmental_contact-_aug_07_2009.htm

Letter 25 Aug 2009	**Merged Event**
Participants: Chief Louis Einish Chief - Naskapi Nation of Kawawachikamach **Team Members:** Terence McKillen	**Summary:** Copy of LIM's revised EIS sent to Chief Louis Einish of the Naskapi Nation. Also congratulating him on recent election as Chief. **Issues Raised:** - Economic: General Project Updates **Attachments:** - eis_letter_kawa_20090824.pdf

Meeting 10 Sep 2009	Merged Event
Participants: Paul Mameamskum Councillor and Director - Naskapi Nation Band Council and Department of Public Works **Team Members:** Richard Daigle Joanne Robinson	**Summary:** Met with Kawa Department of Public Works to enquire about hiring a loader operator for the hydrogeological test program (water management portion/pipeline installation). **Stakeholder Comments:** An operator was available. **Issues Raised:** - Economic: Employment Opportunities

Meeting 16 Sep 2009 Montreal	Merged Event
Participants: John Mameamskum Naskapi Robert Pratt Legal Counsel - Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** IBA draft negotiations with Naskapi. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 7 Oct 2009 Montreal	Merged Event
Participants: Chief Phil Einish Chief - Naskapi John Mameamskum Naskapi Robert Pratt Legal Counsel - Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** IBA draft negotiations with Naskapi. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Phone Call 16 Oct 2009	Merged Event
Participants: Chief Louis Einish Chief - Naskapi Nation of Kawawachikamach **Team Members:**	**Summary:** Chief requested $1000 support for junior hockey tournament **Team Response:** Agreed to request and cheque was issued. **Issues Raised:** - Economic: Donation Requests

Phone Call 16 Oct 2009	**Merged Event**
Terence McKillen	

Meeting 28 Oct 2009 Montreal	**Merged Event**
Participants: Abraham Chemaganish Councillor - Naskapi Chief Phil Einish Chief - Naskapi John Mameamskum Naskapi Robert Pratt Legal Counsel - **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** IBA meeting with Naskapi. Draft 3 discussions. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 8 Dec 2009	**Merged Event**
Participants: Chief Louis Einish Chief - Naskapi Nation of Kawawachikamach **Team Members:** Joseph Lanzon	**Summary:** Meeting with Naskapi Chief to have update on IBA negotiations. They like our first draft and we are hoping to further discuss issues with their lawyers on the next week. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 29 Jan 2010	**Merged Event**
Participants: Chief Louis Einish Chief - Naskapi Nation of Kawawachikamach John Mameamskum Naskapi **Team Members:** Joseph Lanzon	**Summary:** Meeting with Naskapi Consul members at the Northern Lights Conference. **Stakeholder Comments:** The Naskapi are concerned that Innu of Labrador have been awarded the technology and cell phones contract. **Team Response:** Joseph Lanzon confirmed that no such contract was awarded and that the Innu of Labrador were presenting their capability on technology and cell phones and not a contract. **Issues Raised:** - Economic: Economic Development

Meeting 12 Feb 2010	**Merged Event**
Participants: Robert Pratt Legal Counsel - Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Joseph Lanzon	**Summary:** Naskapi IBA negotiations. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 12 Feb 2010	Merged Event
Terence McKillen	

Phone Call 22 Mar 2010	Merged Event
Participants: Chief Louis Einish Chief - Naskapi Nation of Kawawachikamach **Team Members:** Joseph Lanzon	**Summary:** Donation request from Naskapi for Carnival. **Team Response:** Follow-up: LIM made donation of $1000 to Naskapi Recreation Committee for Carnival. **Issues Raised:** - Economic: Donation Requests **Attachments:** - letter-naskapi_carnival_donation-apr_23-2010.pdf

Meeting 26 Mar 2010	Merged Event
Participants: Robert Pratt Legal Counsel - Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Naskapi IBA meeting in Montreal. Final clause by clause review. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 30 Mar 2010	Merged Event
Participants: John Mameamskum Naskapi Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Joseph Lanzon Terence McKillen Neil Steenberg	**Summary:** IBA document exchange. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 31 Mar 2010	Merged Event
Participants: John Mameamskum Naskapi Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** IBA document exchange. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 21 Apr 2010	Merged Event
Participants: Robert Pratt Legal Counsel - Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Naskapi IBA negotiations **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 4 May 2010	Merged Event
Participants: John Mameamskum Naskapi Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** IBA document exchange with Naskapi. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 9 Sep 2010 Sept-Iles	Merged Event
Participants: Naskapi Band Council Naskapi Chief Louis Einish Chief - Naskapi Nation of Kawawachikamach John Mameamskum Naskapi **Team Members:** Marc Duclos John Kearney Joseph Lanzon Terence McKillen	**Summary:** Signing of IBA with Naskapi. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Donation 4 Nov 2010	Merged Event
Participants: Annie Chescappio President, Women Suicide Workshop - Naskapi Louise Mameanskum Naskapi **Team Members:** Terence McKillen	**Summary:** Sponsorship for Naskapi women to attend workshop on Suicide Prevention in Montreal. LIM agreed to donate $1000. **Issues Raised:** - Economic: Donation Requests **Attachments:** - suicide_prevention_20101021_(2).pdf - suicide_prevention_20101021_(in).pdf - suicide_prevention_20101027_(in).pdf

Donation 4 Nov 2010	Merged Event
	- suicide_prevention_20101027_1_(in).pdf - suicide_prevention_20101104.pdf

Letter 21 Dec 2010	Merged Event
Participants: Chief Louis Einish Chief - Naskapi Nation of Kawawachikamach **Team Members:** Joseph Lanzon	**Summary:** Letter to Chief Louis Einish of Naskapi Nation confirming LIM's contribution of $199,528 (monetary and in-kind) towards project proposal "Development of work skills for the mining industry in the Schefferville Region". (letter attached). **Issues Raised:** - Economic: Donation Requests - Social: Training **Attachments:** - lim_naskapi_skills_development_dec_21-2010.pdf

Letter 13 May 2011	Merged Event
Participants: Chief Louis Einish Chief - Naskapi Nation of Kawawachikamach **Team Members:** Joseph Lanzon	**Summary:** Letter to Naskapi Nation on LIM's 2011 exploration program update. **Issues Raised:** - Economic: General Project Updates - Economic: Impact Benefits Agreement (IBA) **Attachments:** - letter_chief_einish_expl_update_2011.pdf

Meeting/Presentation/Site Tour 7 Jun 2011 LIM Schefferville Site	Merged Event
Participants: Naskapi Band Council Naskapi Chief Louis Einish Chief - Naskapi Nation of Kawawachikamach John Mameamskum Naskapi Paul Renzoni General Advisor - Atmacinta Consultants **Team Members:** John Kearney Joseph Lanzon Linda Wrong	**Summary:** Visit from Naskapi Nation. Lunch at camp and mine site tour. PowerPoint presentation on future projects by LIM. **Issues Raised:** - Economic: General Project Updates

Report Parameters:

Stakeholder Group: **Conseil Nation Innu Takuaikan Uashat Mak Mani-Utenam**
Start Date: 1 May 2005
End Date: 21 Jun 2011
Action Type: all actions

Meeting 23 Sep 2005	Merged Event
Participants: Uashat Band Council Gilbert Pilot Uashat **Team Members:** Joseph Lanzon Dan O'Rourke	**Summary:** Initial MOU discussion and project introduction. No significant issues other than jobs and economic benefits. **Issues Raised:** - Social: Aboriginal Involvement - Economic: General Project Updates

Phone Call 2 Dec 2005	Merged Event
Participants: Gilbert Pilot Uashat **Team Members:** Terence McKillen	**Summary:** Reviewed Anglesey press release and discussed scope of project. Asked to set up a meeting with Development Corporation and Band Council. **Issues Raised:** - Social: Aboriginal Involvement - Economic: General Project Updates

Meeting 4 May 2006 Sept-Iles	Merged Event
Participants: Chief Andree Chief - Uashat Gilbert Pilot Uashat **Team Members:** Bill Hooley John Kearney Veikko Koskella Joseph Lanzon Terence McKillen Dan O'Rourke	**Summary:** LIM meets jointly with Labrador Innu Association and Uashat Innu Council. Review of project proposal. Aboriginal issues revolve around ensuring economic benefit accrues to their communities as they all felt they were abandoned by former IOC operations. Ben Michel outlined a vision for pan-provincial cooperation among the aboriginal groups and thought it should be possible to have a single negotiating table when it came time to negotiate the economic benefits from the project. Separate presentation made to the Uashat community. Issues raised related to jobs and protection of the environment with respect to ensuring that the communities can continue to "live off the land". **Issues Raised:** - Transportation: Aboriginal - Economic: Impact Benefits Agreement (IBA) - Economic: Memorandum of Understanding

Phone Call 8 May 2006	Merged Event
Participants: Gilbert Pilot Uashat **Team Members:** Terence McKillen	**Summary:** To set up Wabush meeting with Ben Michel and Uashat Chief. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA) - Economic: Memorandum of Understanding

Meeting 18 May 2006 Montreal	Merged Event
Participants: Gilbert Pilot Uashat **Team Members:**	**Summary:** Meeting to discuss project and Labrador based and Innu connected contractors. Uashat community anxious that LIM allow consultants and contractor with whom their Development Corporation has entered into partnerships to have opportunity to bid on any contracts. LIM discussed the

Meeting 18 May 2006 Montreal	Merged Event
Joseph Lanzon Terence McKillen Dan O'Rourke	necessity of securing a qualified diamond drill company for a summer drill program. Mr. Nuke (LIA) was not in favour of LIM using Goose Bay-based Cartwright Diamond Drilling Company. **Issues Raised:** - Economic: Economic Development - Economic: Impact Benefits Agreement (IBA) - Economic: Memorandum of Understanding

Phone Call 23 Jun 2006	Merged Event
Participants: Gilbert Pilot Uashat **Team Members:** Terence McKillen	**Summary:** Contractor for rail study. **Issues Raised:** - Economic: Economic Development

Meeting 28 Jun 2006 Ottawa	Merged Event
Participants: Gilbert Pilot Uashat **Team Members:** John Kearney Joseph Lanzon Dan O'Rourke	**Summary:** Project update. Issues for Matimekush community are jobs, sustainable economic development and ensuring that the community benefits from mine development this time. Discussion on the economic benefit for TSH railway. **Issues Raised:** - Economic: General Project Updates

Meeting 30 Aug 2006 Montreal	Merged Event
Participants: Gilbert Pilot Uashat **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Discussion on possibility of having single negotiating table. Mr. Michel reiterated his belief and desire to have a single negotiating table, however, it was still necessary for him to consult with the Naskapi and the Innu of Matimekush. No specific issues emerged other than economic development and jobs for the communities. **Issues Raised:** - Economic: Economic Development - Economic: Employment Opportunities

Meeting 5 Nov 2006 Montreal	Merged Event
Participants: Chief Andree Chief - Uashat Gilbert Pilot Uashat **Team Members:** Joseph Lanzon	**Summary:** Meetings with Band Members and Councilors. Project update. **Issues Raised:** - Social: Aboriginal Involvement

Meeting 5 Nov 2006 Montreal	**Merged Event**
Dan O'Rourke	

Meeting 4 Jan 2007 Quebec City	**Merged Event**
Participants: Gilbert Pilot Uashat **Team Members:** Joseph Lanzon Dan O'Rourke	**Summary:** Economic development initiatives to help Schefferville. Mining project update. **Issues Raised:** - Economic: Economic Development

Presentations 16 Jan 2007 Sept-Iles	**Merged Event**
Participants: Uashat Band Council **Team Members:** Joseph Lanzon Terence McKillen Dan O'Rourke	**Summary:** Public presentation to new Council of Uashat. LIM reviewed proposed project development and took the new council through the substantive consultation process already initiated with the former Chief and Council. **Issues Raised:** - Economic: General Project Updates

Meeting 12 Feb 2007 Schefferville	**Merged Event**
Participants: Chief Andree Chief - Uashat **Team Members:** Joseph Lanzon Dan O'Rourke	**Summary:** MOU negotiations. **Issues Raised:** - Economic: Memorandum of Understanding

Email 3 Apr 2007	**Merged Event**
Participants: Chief Andree Chief - Uashat **Team Members:** Bill Hooley Joseph Lanzon Terence McKillen	**Summary:** Set up meeting with Daniel Ashini. **Issues Raised:** - Economic: Memorandum of Understanding **Attachments:** - sustainet5-26.2lim_daniel_a_presentationnotes_march_30_07-1.doc - sustainet5-3.doc

Email 8 Apr 2007	**Merged Event**
Participants: Chief Andree Chief - Uashat **Team Members:**	**Summary:** Band meeting April 11. **Issues Raised:** - Social: Aboriginal Involvement - Economic: General Project Updates

Email 8 Apr 2007	**Merged Event**
Joseph Lanzon Dan O'Rourke	**Attachments:** - sustainet5-6.doc

Meeting 11 Apr 2007 Schefferville	**Merged Event**
Participants: Chief Andree Chief - Uashat **Team Members:** Matthew Coon Come Joseph Lanzon Rodrigue Mckenzie Dan O'Rourke	**Summary:** Schefferville negotiation meeting. **Stakeholder Comments:** Band's request for funds. Possible strategy to have Sept-Iles and Schefferville as single negotiating table. The Band will always inform Band members through public meetings. **Team Response:** LIM to help Band access federal funding and to have their involvement in the environmental process. **Issues Raised:** - Social: Aboriginal Involvement - Economic: Impact Benefits Agreement (IBA)

Meeting 16 May 2007 Montreal	**Merged Event**
Participants: Gilbert Pilot Uashat **Team Members:** Joseph Lanzon	**Summary:** Preparations for LIM's corporate presentations in Sept-Iles. **Issues Raised:** - Economic: General Project Updates

Meeting 6 Aug 2007	**Merged Event**
Participants: George Ernest Chief - Uashat **Team Members:** Joseph Lanzon	**Summary:** Meeting with newly elected Band Council members and Chief George Ernest. **Issues Raised:** - Economic: Memorandum of Understanding

Other 28 Sep 2007	**Merged Event**
Participants: Chief Andree Chief - Uashat **Team Members:** Joseph Lanzon Dan O'Rourke	**Summary:** Participated in Youth Retreat organized by Band Councils for Uashat and Matimekush. Presentation of project. **Issues Raised:** - Economic: Employment Opportunities

Meeting 25 Feb 2008 Quebec City	**Merged Event**
Participants: Chief Uashat Council	**Summary:** Project update. Discussion on TSH Railway. **Issues Raised:** - Economic: General Project Updates - Transportation: TRT

Meeting 25 Feb 2008 Quebec City	Merged Event
Uashat **Team Members:** John Kearney Joseph Lanzon Terence McKillen	

Meeting 3 Mar 2008 PDAC Toronto	Merged Event
Participants: Chief - Montagnais - Sept-Iles **Team Members:** Marc Duclos Joseph Lanzon	**Summary:** Chief of Montagnais - Sept-Iles and Chief of Montagnais - Schefferville. Rail discussion. **Issues Raised:** - Economic: Memorandum of Understanding

Meeting 22 Apr 2008	Merged Event
Participants: Chief Georges Ernest Gregoire Uashat **Team Members:** Joseph Lanzon	**Summary:** MOU schedule preparation. **Issues Raised:** - Economic: Memorandum of Understanding

Meeting 2 Jun 2008 Sept-Iles	Merged Event
Participants: Uashat Band Council **Team Members:** Matthew Coon Come Marc Duclos Joseph Lanzon Terence McKillen	**Summary:** MOU Negotiation. The community is interested in jobs and business development. Families that hold trap line lots may need to be compensated. **Issues Raised:** - Transportation: Aboriginal

Meeting 4 Jul 2008	Merged Event
Participants: Chief Georges Ernest Gregoire Uashat **Team Members:** Joseph Lanzon	**Summary:** Project overview. **Issues Raised:** - Economic: General Project Updates

Meeting 8 Jan 2009 SNC Lavalin Office, Montreal	Merged Event
Participants: Michel Hudon Advisor - Colby, Monet, Demers, delage & Crevier Patricia Ochman O'Reilly & Associates Rosario Pinette Negotiator - ITUM **Team Members:** Marc Duclos Joseph Lanzon Terence McKillen	**Summary:** First meeting to negotiate MoU/IBA agreement. LIM reviewed the Project and the agreements entered into with the Labrador Innu Association, the Innu of Matimekush, the Naskapi, TSH Railway, etc. LIM outlined the pocess whereby the Project is reviewed by the Province of Newfoundland and Labrador and other Federal agencies under EIS. It was agreed that the parties would execute a Confidientiality Agreement to enable exchange of documentation not in the public domain. **Stakeholder Comments:** Uashaunnuat are the owners of the land and there will be no Project without their consent. The ancestral rights predate the formation of Newfoundland. ITUM wanted to know if LIM had signed an agreement with TSH Railway. Raised the requirement for $105M over 5 years for upgrade and improvements (UMA Report). ITUM requested 43-101 resource report **Team Response:** LIM has to follow Federal and Provincial laws, regulations and guidelines. Uashaunnuat claims of ancestral ownership are not for LIM to determine. LIM indicated that the Hatch Mott McDonald Report came to a different conclusion with respect to required capital. The TSH railway can carry ore trains today. LIM indicated that SGS-Geostat are working on such a report. **Issues Raised:** - Economic: General Project Updates - Social: Land Claims/Political - Transportation: TRT

Meeting 30 Jan 2009 LIM	Merged Event
Participants: Michel Hudon Advisor - Colby, Monet, Demers, delage & Crevier Patricia Ochman O'Reilly & Associates Rosario Pinette Negotiator - ITUM **Team Members:** Marc Duclos Joseph Lanzon Terence McKillen	**Summary:** Meeting to discuss MoU and IBA issues. The parties executed a Confidentiality Agreement. **Stakeholder Comments:** Rosario Pinette asked for details of te IBA Agreement with the Innu of Labrador. Mr. Hudon presented a draft MoU document for consideration. **Team Response:** Mr. McKillen indicated the terms of the IBA were confidential. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA) - Economic: Memorandum of Understanding

Meeting 11 Feb 2009 O	Merged Event
Participants: Michel Hudon	**Summary:** Additional discussion on MoU and IBA issues. Reviewed second or third draft of MoU document presented by ITUM. Agreed on all terms except

Meeting 11 Feb 2009 O	Merged Event
Advisor - Colby, Monet, Demers, delage & Crevier Patricia Ochman O'Reilly & Associates Rosario Pinette Negotiator - ITUM **Team Members:** Joseph Lanzon Terence McKillen	for compensation. ITUM to turn around a final draft.

Meeting 19 Mar 2009 By telephone	Merged Event
Participants: Michel Hudon Advisor - Colby, Monet, Demers, delage & Crevier Patricia Ochman O'Reilly & Associates Rosario Pinette Negotiator - ITUM **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Meeing to review Pro-Forma Cash Flow data sent to ITUM by LIM. LIM pointed out that ITUM keeps changing the MoU between drafts. Mr. Hudon suggesed that perhaps LIM should circulate draft IBA document rather than proceed with the MoU.

Email 22 Apr 2009	Merged Event
Participants: Patricia Ochman O'Reilly & Associates **Team Members:** Terence McKillen	**Summary:** Draft copy of Cooperation & Benefit Agreement (IBA) sent to Patrica Ochman, Negotiator for Innu ITUM. **Stakeholder Comments:** Requested French translation on April 29th. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 14 May 2009 Sept-Iles	Merged Event
Participants: Mike McKenzie Deputy Chief - Uashat Patricia Ochman O'Reilly & Associates Jean-Guy Pinette Councilor - Uashat Rosario Pinette Negotiator - ITUM **Team Members:** Marc Duclos Joseph Lanzon	**Summary:** LIM briefing for Uashat on the rail strategy. **Issues Raised:** - Economic: General Project Updates - Transportation: General Rail

Meeting 14 May 2009	Merged Event
Participants: Mike McKenzie Deputy Chief - Uashat Patricia Ochman O'Reilly & Associates Rosario Pinette Negotiator - ITUM **Team Members:** Marc Duclos Joseph Lanzon	**Summary:** Discussions on the railway infrastructure and the vision LIM has vis-a-vis TSH and the Spur line connecting to TSH. **Stakeholder Comments:** The recent changes at the head of TSH have left both the band council and the President of TSH with alot of unanswered questions. Tommy Volant stated that there is no money to be made with the signature of a document and a cash bonus for it (MOU or IBA). He said that the real money is in the railway. Tommy Volant openly expressed his desire to acquire the Centre Ferro to turn this into a station and a maintenance centre for the railway. **Team Response:** Meeting lasted 2 hours and Marc Duclos spoke exclusively about the railway use, Silver Yard spur line and the role of TSH. There were no mention about rates or the IBA. Marc explained that he had an excellent meeting with Bob Jackson. The discussions on haulage rate initiated with Richard Bell following LIM's letter of February 9th, 2009 were back to square one. Marc informed Tommy Volant that LIM was not interested to sell the Centre Ferro. (Centre Ferro is a strategic acquisiton and will serve LIM in the future). However, Marc spoke with Bob Jackson about an extended lease for the Centre Ferro. **Issues Raised:** - Transportation: General Rail

Meeting 21 Jul 2009 Calgary	Merged Event
Participants: Chief Georges Ernest Gregoire Uashat Jonathan McKenzie Band Councilor - Uashat Mike McKenzie Deputy Chief - Uashat **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Joint meeting with ITUM and Matimekush on following: - Preliminary discussions for IBA consultation meeting - EIS submission - Community benefit discussions. **Issues Raised:** - Social: Aboriginal Involvement

Meeting 22 Jul 2009 Calgary	Merged Event
Participants: Chief Georges Ernest Gregoire Uashat Jonathan McKenzie Band Councilor - Uashat Mike McKenzie	**Summary:** Preliminary IBA implementation meeting with aboriginal leaders. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 22 Jul 2009 Calgary	Merged Event
Deputy Chief - Uashat **Team Members:** Joseph Lanzon Terence McKillen	

Meeting 22 Jul 2009 Calgary	Merged Event
Participants: Chief Georges Ernest Gregoire Uashat **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Meeting with ITUM on IBA specific negotiation issues and budget requests. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 22 Jul 2009 Calgary	Merged Event
Participants: Chief Georges Ernest Gregoire Uashat Jonathan McKenzie Band Councilor - Uashat Mike McKenzie Deputy Chief - Uashat **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Meeting with ITUM on following: - Overview of LIM project and cooperation among all aboriginal groups (Labrador Innu, Matimekush, ITUM and Naskapi). - Free trade zone discussion on the New Dawn Agreement. - Not using LIM as a leverage for land claims against the Newfoundland Government. **Stakeholder Comments:** Also in attendance were two elder women. **Issues Raised:** - Social: Aboriginal Involvement - Economic: General Project Updates - Social: Land Claims/Political

Letter 25 Aug 2009	Merged Event
Participants: Chief Georges Ernest Gregoire Uashat **Team Members:** Terence McKillen	**Summary:** Copy of LIM's revised EIS sent to Chief Gregoire of ITUM. **Issues Raised:** - Economic: General Project Updates **Attachments:** - eis_letter_itum_20090824.pdf

Meeting 15 Sep 2009	Merged Event
Participants: Patricia Ochman O'Reilly & Associates Rosario Pinette Negotiator - ITUM **Team Members:** Joseph Lanzon	**Summary:** IBA negotiations with ITUM. Ongoing IBA review. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 15 Sep 2009	Merged Event
Terence McKillen	

Meeting 29 Jun 2010 Quebec City	Merged Event
Participants: Mike McKenzie Deputy Chief - Uashat Patricia Ochman O'Reilly & Associates Rosario Pinette Negotiator - ITUM Yves Rock Band Council Member - ITUM **Team Members:** Marc Duclos John Kearney	**Summary:** ITUM negotiations meeting. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 8 Jul 2010 Sept-Iles	Merged Event
Participants: Chief Georges Ernest Gregoire Uashat Mike McKenzie Deputy Chief - Uashat Patricia Ochman O'Reilly & Associates Rosario Pinette Negotiator - ITUM Yves Rock Band Council Member - ITUM **Team Members:** Marc Duclos John Kearney	**Summary:** ITUM negotiation meeting. **Team Response:** (Mike McKenzie; Yves Rock; Chief Gregoire were only present part time for the meeting.) **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 9 Jul 2010 Fairmont Hotel - La Malbaie, QC	Merged Event
Participants: Chief Betsiamites Betsiamites Paul Vollant Band Member - Betsiamites **Team Members:** John Kearney	**Summary:** Informal discussion - Innu Strategic Alliance. **Issues Raised:** - More Information: Community Consultation

Meeting 10 Jul 2010 Fairmont Hotel - La Malbaie, QC	Merged Event
Participants: Andre Joseph Band Council Member - ITUM Jonathan McKenzie Band Councilor - Uashat Yves Rock Band Council Member - ITUM **Team Members:** John Kearney Joseph Lanzon	**Summary:** Meeting ITUM Band Council. **Issues Raised:** - More Information: Community Consultation

Meeting 21 Jul 2010 Quebec City	Merged Event
Participants: Maria Morrisete Assistant Negotiator - Uashat Patricia Ochman O'Reilly & Associates Rosario Pinette Negotiator - ITUM **Team Members:** Marc Duclos John Kearney	**Summary:** Meeting with Uashat. **Issues Raised:** - More Information: Community Consultation

Meeting 5 Aug 2010 Sept-Iles	Merged Event
Participants: Rosario Pinette Negotiator - ITUM **Team Members:** Marc Duclos John Kearney	**Summary:** Meeting with Chief Negotiator of ITUM. **Issues Raised:** - More Information: Community Consultation

Joint Meeting 7 Aug 2010 Sept-Iles	Merged Event
Participants: Uashat Band Council **Team Members:** Marc Duclos John Kearney	**Summary:** Joint meeting with Matimekush and Uashat Band Councils. **Issues Raised:** - More Information: Community Consultation

Meeting 26 Aug 2010 Montreal	Merged Event
Participants: Chief Georges Ernest Gregoire Uashat Patricia Ochman O'Reilly & Associates Rosario Pinette Negotiator - ITUM **Team Members:** Marc Duclos John Kearney	**Summary:** Negotiation meeting. **Stakeholder Comments:** Mr. Rosario Pinette Joined meeting by phone. **Issues Raised:** - More Information: Community Consultation

Meeting 9 Sep 2010 Sept-Iles	Merged Event
Participants: Chief Georges Ernest Gregoire Uashat Yves Rock Band Council Member - ITUM **Team Members:** Marc Duclos John Kearney Joseph Lanzon Terence McKillen	**Summary:** Meeting with Uashat. **Issues Raised:** - More Information: Community Consultation

Dinner Meeting 15 Sep 2010 Montreal	Merged Event
Participants: Armand McKenzie Band Member - Uashat James O'Reilly Lawyer - O'Reilly & Associates Patricia Ochman O'Reilly & Associates Rosario Pinette Negotiator - ITUM Yves Rock Band Council Member - ITUM **Team Members:** Marc Duclos John Kearney	**Summary:** Dinner meeting with Uashat in Montreal

Meeting 16 Sep 2010 Montreal	Merged Event
Participants: Armand McKenzie Band Member - Uashat James O'Reilly Lawyer - O'Reilly & Associates Patricia Ochman O'Reilly & Associates Rosario Pinette Negotiator - ITUM Yves Rock Band Council Member - ITUM **Team Members:** Marc Duclos John Kearney	**Summary:** Meeting with LIM, ITUM and NL Government delegation.

Meeting 17 Sep 2010 Montreal	Merged Event
Participants: James O'Reilly Lawyer - O'Reilly & Associates Patricia Ochman O'Reilly & Associates **Team Members:** Marc Duclos John Kearney	**Summary:** Meeting with Uashat

Meeting 20 Oct 2010 Montreal - O'Reilly's Office	Merged Event
Participants: Joanne Staff - O'Reilly & Associates Lynne Fontainne Negotiator - Rosario's Office Jonathan McKenzie Band Councilor - Uashat James O'Reilly Lawyer - O'Reilly & Associates Patricia Ochman O'Reilly & Associates Rosario Pinette Negotiator - ITUM Ken Rock	**Summary:** Meeting and dinner with Uashat.

Meeting 20 Oct 2010 Montreal - O'Reilly's Office	**Merged Event**
Lawyer - Uashat Band Roland St. Onge Band Councillor - Uashat **Team Members:** Marc Duclos John Kearney Joseph Lanzon	

Phone Call 3 Dec 2010	**Merged Event**
Participants: James O'Reilly Lawyer - O'Reilly & Associates **Team Members:** John Kearney	**Summary:** Telephone discussions with ITUM.

Conference 6 Dec 2010	**Merged Event**
Participants: James O'Reilly Lawyer - O'Reilly & Associates Patricia Ochman O'Reilly & Associates **Team Members:** Marc Duclos John Kearney	**Summary:** Conference call with ITUM Representatives. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Phone Call 13 Dec 2010	**Merged Event**
Participants: James O'Reilly Lawyer - O'Reilly & Associates **Team Members:** John Kearney	**Summary:** Telephone discussion with James O'Riley, representing the Uashat. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Phone Call 15 Dec 2010	**Merged Event**
Participants: James O'Reilly Lawyer - O'Reilly & Associates **Team Members:** John Kearney	**Summary:** Lengthy phone discussions with James O'Riley, Representative for the Uashat. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Commitment 17 Dec 2010	**Merged Event**
Participants: Chief Georges Ernest Gregoire Uashat **Team Members:** John Kearney	**Summary:** Agreement-in-Principle between LIM and ITUM. (Press releases of both parties attached) **Issues Raised:** - Economic: Impact Benefits Agreement (IBA) **Attachments:** - itum_press_release_a_i_p_dec20_2010.pdf - lim-itum_revis-fran_ais.pdf - lim-itum_revised_dec_20_2010.pdf

Meeting 14 Jan 2011 Montreal	**Merged Event**
Participants: Lynne Fontainne Negotiator - Rosario's Office Morgan Kendall Lawyer - Uashat Armand McKenzie Band Member - Uashat Mike McKenzie Deputy Chief - Uashat James O'Reilly Lawyer - O'Reilly & Associates Patricia Ochman O'Reilly & Associates Rosario Pinette Negotiator - ITUM Ken Rock Lawyer - Uashat Band **Team Members:** John Kearney	**Summary:** John Kearney meeting with ITUM - Teleconference at O'Reilly's office. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 27 Jan 2011 Montreal - O'Reillys Office	**Merged Event**
Participants: Morgan Kendall Lawyer - Uashat Armand McKenzie Band Member - Uashat Patricia Ochman O'Reilly & Associates Ken Rock Lawyer - Uashat Band **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** IBA meeting with Uashat in Montreal. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 10 Feb 2011 Montreal	Merged Event
Participants: Morgan Kendall Lawyer - Uashat Armand McKenzie Band Member - Uashat Patricia Ochman O'Reilly & Associates Ken Rock Lawyer - Uashat Band **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** IBA negotiating meeting with ITUM. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 15 Feb 2011 LIM Toronto Office	Merged Event
Participants: Armand McKenzie Band Member - Uashat Mike McKenzie Deputy Chief - Uashat **Team Members:** John Kearney Terence McKillen	**Summary:** Meeting with ITUM **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 18 Feb 2011 Montreal	Merged Event
Participants: Morgan Kendall Lawyer - Uashat Armand McKenzie Band Member - Uashat Patricia Ochman O'Reilly & Associates Ken Rock Lawyer - Uashat Band **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** IBA negotiating meeting with ITUM. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 28 Feb 2011 Montreal	Merged Event
Participants: Morgan Kendall Lawyer - Uashat Armand McKenzie Band Member - Uashat	**Summary:** IBA negotiating meeting with ITUM. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 28 Feb 2011 Montreal	**Merged Event**
Patricia Ochman O'Reilly & Associates Ken Rock Lawyer - Uashat Band **Team Members:** Joseph Lanzon Terence McKillen	

Reception 6 Mar 2011 Intercontinental Hotel, Toronto	**Merged Event**
Participants: Ronald Fontaine Councillor - Uashat Chief Georges Ernest Gregoire Uashat Armand McKenzie Band Member - Uashat **Team Members:** Bill Hooley John Kearney Joseph Lanzon	**Summary:** Chief of Uashat and two other representatives attended LIM's Reception during PDAC. **Issues Raised:** - Economic: General Project Updates

Conference 6 Mar 2011 Toronto	**Merged Event**
Participants: Ronald Fontaine Councillor - Uashat Chief Georges Ernest Gregoire Uashat Armand McKenzie Band Member - Uashat **Team Members:** Bill Hooley John Kearney Joseph Lanzon	**Summary:** Chief of Uashat and two other Representatives visited LIM booth at PDAC (March 6th - 9th). **Issues Raised:** - Economic: General Project Updates

Meeting 8 Mar 2011 LIM Toronto Office	**Merged Event**
Participants: Ronald Fontaine Councillor - Uashat Chief Georges Ernest Gregoire Uashat	**Summary:** Meeting with Uashat. Presence at PDAC. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Meeting 8 Mar 2011 LIM Toronto Office	**Merged Event**
Armand McKenzie Band Member - Uashat **Team Members:** John Kearney	

Commitment 14 Mar 2011 LIM Toronto Office	**Merged Event**
Participants: Morgan Kendall Lawyer - Uashat Armand McKenzie Band Member - Uashat Jonathan McKenzie Band Councilor - Uashat Mike McKenzie Deputy Chief - Uashat Ken Rock Lawyer - Uashat Band **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** IBA negotiating meeting with ITUM. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Conference 8 Apr 2011 Teleconference	**Merged Event**
Participants: Morgan Kendall Lawyer - Uashat Armand McKenzie Band Member - Uashat Patricia Ochman O'Reilly & Associates Ken Rock Lawyer - Uashat Band **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** IBA discussions with ITUM. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA)

Letter 13 May 2011	**Merged Event**
Participants: Chief Georges Ernest Gregoire Uashat **Team Members:** Joseph Lanzon	**Summary:** Letter to Uashat on LIM's 2011 exploration program update. **Issues Raised:** - Economic: Impact Benefits Agreement (IBA) **Attachments:** - letter_chief_gregoire_expl_update_2011.pdf

Dinner Meeting 24 May 2011 Montreal	**Merged Event**
Participants: Arthur Uashat Armand McKenzie Band Member - Uashat Mike McKenzie Deputy Chief - Uashat **Team Members:** John Kearney	**Summary:** Meeting with Uashat.

Phone Call 9 Jun 2011	**Merged Event**
Participants: Armand McKenzie Band Member - Uashat Ken Rock Lawyer - Uashat Band **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Telephone conversation with Ken Rock and Armand Mackenzie of ITUM. Discussed issue of lay-off of three ITUM members at Centre Ferro (Johnny Mackenzie, Arthur and Mike Mackenzie's brother) LIM undertook to investigate and report back (file attached June 13 email from TNMcK to Ken Rock) **Issues Raised:** - General: Employment Issue **Attachments:** - 13_june-2011-_e-mail_to_ken_rock.pdf

Phone Call 15 Jun 2011	**Merged Event**
Participants: Ken Rock Lawyer - Uashat Band **Team Members:** Joseph Lanzon Terence McKillen	**Summary:** Telephone conversation with Ken Rock of ITUM. Follow-up on issue of employment of three individuals. **Stakeholder Comments:** The individuals are members of the Mackenzie "family" and some of the community, Deputy Chief and some counsellors are getting heated over this issue which could affect ratification of the IBA. Ken Rock undertook to speak with the individuals regarding work practice and attitude if LIM can provide specific documentation. **Team Response:** LIM advised Ken Rock that these individuals are trouble makers using their position as "family members" to demand work without any interest in doing a good job. LIM undertook to find a solution within a matter of days and revert to Ken Rock next Wednesday (June 22). Joseph Lanzon will visit Sept-Iles within the next two weeks. Frank Johnson can create jobs at Centre Ferro under close supervision and will ensure documentation of any issues arising. **Issues Raised:** - General: Employment Issue

Report Parameters:

Stakeholder Group: **Metis of Labrador (NunatuKavut)**
Start Date: 1 May 2005
End Date: 21 Jun 2011
Action Type: all actions

Meeting 14 Jun 2011 LIM Toronto Office	**Merged Event**
Participants: Kevin Aylward CEO - NDC Inc. Chris Montague Chief - Metis of Labrador **Team Members:** Terence McKillen	**Summary:** Meeting with Chris Montague, Chief – Metis of Labrador and Kevin Aylward, CEO NDC Inc. **Stakeholder Comments:** The Labrador Metis (NunatuKavut) see themselves as the Southern Inuit people. They have submitted formal land claims to Provincial and Federal governments. They base the claim on a purported August 21, 1765 treaty entered in to by the Inuit and Capt. James Cook of HMS Niger and HMS Gurnsey and represented by a chart of Chateau Bay showing Inuit kayaks meeting the British naval ships. They want to share in the wealth and development of the resources of Labrador and to have employment and business opportunities in LIM's projects. **Team Response:** LIM agreed to stay in touch and possibly meet in Goose Bay at the Mining Convention. **Issues Raised:** - Economic: Economic Development

LABRADOR IRON MINES LIMITED

Appendix 3.

Implementation Committee Meeting
Schefferville – October 22, 2012

Meeting Minutes

Labrador Iron Mines

Impact Benefits Agreement Implementation Meeting

October 23, 2012

Purpose of IBA Implementation Meetings

Demonstrate that Labrador Iron Mines is in keeping with our commitments under all our IBA's.

Update all our IBA partners of our progress to date with our current and future projects.

Provide senior community leaders with an opportunity to interface with senior company management

Provide senior company management with an opportunity to learn about items important to the communities

Be the primary formal communications methodology between the communities and Labrador Iron Mines

LIM Proposed Activities

Houston Processing Plant

Silver Yard Track Extension

Reclamation of Quebec Stockpiles

Houston Processing Plant

Rationale

- Process iron ore from Houston property
- Reduce trucking distance of unprocessed iron ore
- Trade-off study concluded that a processing plant located at Houston is the most acceptable alternative from a technical, economic and environmental perspective.

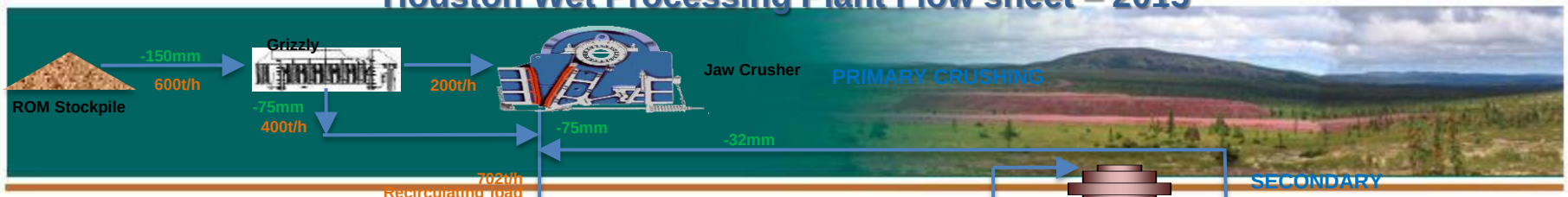
Project Description

- Construction
  - Site is approximately 1.5 km from Houston pit
  - Approximate dimensions 200 m x 150 m
  - Construction
    - Clearing
    - Grubbing and site preparation
    - Installation and erection of plant infrastructure
  - Construction period:
    - 4 -5 months
  - Construction labour requirements:
    - 45 – 50 workers approximately, to be determined

Project Description

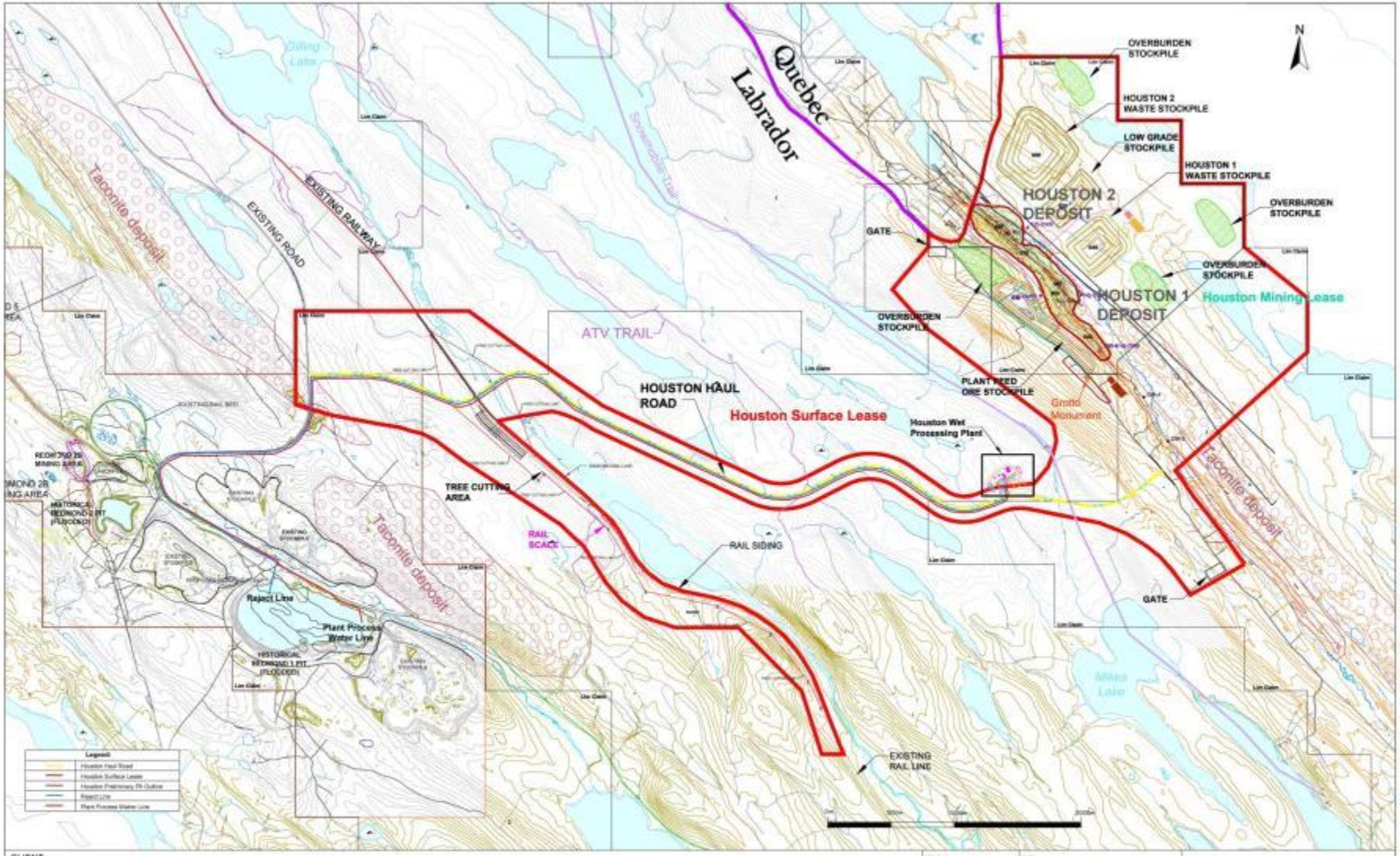
- Operation
  - Process approximately 12,000 t / day:
    - Crushing
    - Scrubbing (wash water)
    - Screening and magnetic separation
    - Dewatering
  - Process Water:
    - Above ground pipe from Redmond Pit
  - Reject Water (fines)
    - above ground pipe to Redmond Pit (no discharge)
- Operation Period:
  - April to November (8 months per year)
- Operation Labour requirements:
  - 30 – 40 (10 per shift)

Houston Wet Processing Plant Flow sheet – 2015

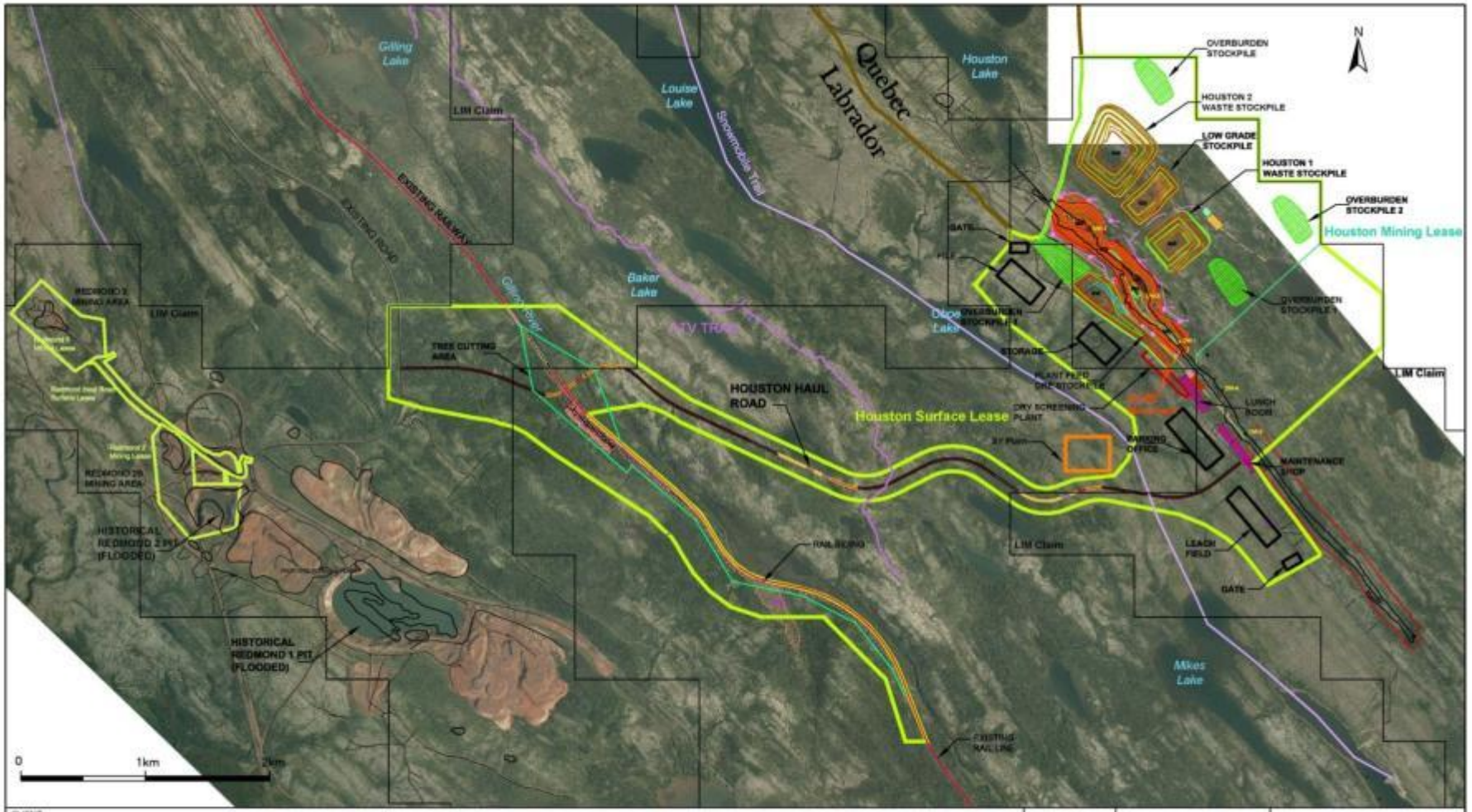


Products	Tonnes	Rec.,%
Lump	246 t/h	41.0%
Coarse Sinter	150 t/h	25.0%
Fines	42 t/h	7.0%
Ultra Fines	23 t/h	3.8%
Overall Recovery	461 t/h	76.8%

LIMITED



CLIENT:	LABRADOR IRON MINES LTD.
PROJECT TITLE:	HOUSTON 1 AND 2 PROJECT
DRAWING TITLE:	Houston Proposed Wet Plant Location
SCALE BAR	September 27, 2012
GS	
GS	3
HOUSTON_Sep27_2012.dwg	



CLIENT:	LABRADOR IRON MINES LTD.
PROJECT TITLE:	HOUSTON 1 AND 2 PROJECT
DRAWING TITLE:	Houston Roads and Rail Siding
SCALE BAR	Sep19,2012
	GS
SS	
HOUSTON_Sep11_2012.dwg	

Environmental Assessment

- Environmental Registration
  - Registration required pursuant to Part III of the NL *Environmental Assessment Regulations,* 2003
  - Project Description required pursuant to the *Canadian Environmental Assessment Act 2012*

Attendees

LIM Representatives:
Aiden Carey, Senior Vice President of Operations
Joseph Lanzon, Vice President Government and Corporate Affairs
Larry LeDrew, Vice President Sustainable Development
Stephen McGinn, Vice President Human Resources & Health and Safety
Guy Moores, General Manager of the Mine
Michel Cormier, Vice President Exploration
Yves Pelletier, Human Resources and Community Relations Manager
Nancy Rose, Human Resources, Training and Community Relations Coordinator

Naskapi Representatives:
Maxime Hémond, Atmacinta

Uashat Representatives (On the Phone):
André Michel, Environmental Coordinator

Innu of Labrador Representatives (On the Phone):
Deputy Grand Chief Jeremy Andrew
Francis Clark, Manager Business Development Innu of Labrador
Josie Dubberke, Executive Assistant Grand Chief of Innu of Labrador Chief Poker

Matimekush Lac John
Chief Real McKenzie

Additional Discussion & Comments

The Power Point makes up the Minutes of the Meeting. The power point presentation was updated throughout the meeting to reflect the flowing nature of discussions that occurred. Other discussions that required further clarification are below:

- Questions were raised again about the concern of LIM's procurement processes, that opportunities or information are not readily available for the IBA partners to act upon. Aiden indicated that all large jobs do go through the procurement process and IBA partners have been given notification. Some jobs have been awarded to IBA partners, such as the current tree cutting contract. Aiden reminded that the company will do a better job in providing greater lead time and also that the contracts need to be competitive to be considered.

Additional Discussion & Comments

- A long discussion occurred between LIM hiring local MLJ members and the need to increase the Innu Nation Member employment numbers. MLJ member numbers are currently over represented and Innu Nation Members are underrepresented. This is due to MLJ proximity to the mine site and to LIM's inability to house any fly-in employees until the camp was built. The company will increase Innu membership numbers as the company now has over 130 rooms. The company will also be increasing the Newfoundland/Labrador residency count in order to meet the requirements of the company's operating permits. The company is required to have 78% of the workforce from Newfoundland/Labrador and in October the company only had 56%. Hiring more Innu Nation people increases LIM's Newfoundland/Labrador residency count.

Additional Discussion & Comments

- Further discussion surrounding business opportunities and training was discussed. The Naskapi wanted to know how they could configure training programs to best obtain employment. Naskapi would like do training, like welding, and they would like to know the needs of the companies.

- This discussion was carried over to a secondary meeting that was held in Toronto in November 2012 at the Canadian Aboriginal Mineral Association conference. Attending this meeting was Municipal Group of Companies VPHR Paul MacDonald, VPHR Stephen McGinn, Human Resources and Community Relations Manager Yves Pelletier, Naskapi Consultant Maxime Hémond, Naskapi Band Council Training & Economic Development Officer Theresa Chemaganish, and Aboriginal Consultant Ann Baptise. Also invited but did not attend was Matimekush Lac John Chief Real McKenzie and Innu Nation of Labrador Deputy Chief Jeremy Andrew.

Additional Discussion & Comments

- During the conference we met as a group and discussed the needs of both Innu Municipal and LIM, how the IBA partners could assist the two companies, as well as obtain input from the consultant on a selection and initial aboriginal training processes that worked well in the northern Ontario mining sector. Ann Baptise continues to be in discussions with Innu Municipal, LIM's HR Manager is in discussions with Naskapi regarding Security Service for the region, and Ann Baptise will be advising LIM's VPHR in January 2013 of service she could provide that would help LIM meet its aboriginal and Newfoundland residency personnel numbers.

Other Topics

- Next meeting:

- Late January, 2013
- Location: TBD, likely Sept Iles, QC

LABRADOR IRON MINES LIMITED

Appendix 4

LIM Community Newsletter
(English version)

December 2012

LABRADOR IRON MINES LIMITED

December 2012 Community Newsletter

Issue 1.2

Aerial view of the Silver Yards Processing Facility

LIMited Edition

Canada's newest iron ore producer

TSX: LIM

OUR COMMITMENT

Our commitment is to be a responsible partner in the communities in which we operate, conducting operations in an environmentally and socially responsible manner. We are also committed to the maximization of benefits from our operations, including employment, training, business opportunities, financial participation and economic development in accordance with provincial regulations and requirements.

Message from the President: 'Staying the course'

On the operational front, LIM had a successful 2012 operating season. We surpassed a number of key milestones: by August, we railed our one millionth tonne of iron ore for the year to the Port of Sept-Îles; by November, we completed our largest ever exploration program with 14,000 m drilled; and, most recently, we sold our 10th shipment of iron ore for a total of 1.6 million tonnes sold in 2012 – a fourfold increase over 2011.

Despite our achievements during the season, operational performance was overshadowed by very challenging market conditions, and, in particular, weakness and volatility in iron ore prices. In the summer, spot prices came under great pressure dropping over 30% to below $90 per tonne by early September.

LIM was quick to respond, undertaking a critical review of operations and implemented a number of immediate and decisive measures in ensuring we 'stay the course' to complete the season in a sustainable position.

Looking forward, we believe the underlying fundamentals of the iron ore market have not changed and, recently, are pleased to see prices recover to above $115 per tonne. Higher iron ore prices will help to facilitate the resumption of operations in 2013.

As our season has come to a close, we want to thank our employees, contractors and all stakeholders for their outstanding efforts in achieving a successful 2012 operating season. And, as winter is fast approaching, we also would like to take this opportunity to wish everyone a safe and happy holiday season. We look forward to reporting to you in the New Year!

Rod Cooper

Signed Impact & Benefit Agreements (IBA) with First Nations

July 2008 – Innu Nation of Labrador

Sep 2010 – Naskapi Nation of Kawawachikamach

Jun 2011 – La Nation Innu Matimekush-Lac John

Feb 2012 – Innu of Uashat

- employment
- education and training
- contract opportunities
- social and financial benefits
- environment and cultural protection measures

IBA Implementation Meetings held four times per year

We are committed to establishing open communications to serve as a foundation in building cooperative and mutually beneficial positive relationships. The purpose of our IBA meetings is to:

- ✓ Demonstrate our commitments under all IBA's
- ✓ Provide progress reports on LIM's current/future projects
- ✓ Provide opportunity for senior community leaders / LIM's management to interact with one another and to learn about important community issues

IBA Implementation Meeting October 2012: Chief Réal McKenzie, la Nation Innu Matimekush-Lac John (left)

Deputy Grand Chief Jeremy Andrew, Innu Nation of Labrador (left) and Aiden Carey, SVP, Operations of LIM. IBA Meeting in Schefferville, October 2012

Agenda and Discussion Items: October 22 – 23 IBA Implementation Meeting

- ✓ Operations Safety: 'Safety First' committed to best practices and compliance with safe operation procedures
- ✓ Environmental Update:
  - » Site visits conducted by Newfoundland and Labrador government officials; positive feedback received
  - » Air and water quality control initiatives
  - » Land use studies in Schefferville area
  - » Permitting + consultation requirements for LIM's projects
- ✓ LIM's proposed activities:
  - » Houston processing plant
  - » Silver Yards track extension
  - » Reclamation of Québec stockpiles
- ✓ Operations, Projects and Exploration Update
- ✓ Contracts Update
- ✓ Human Resources, Employment & Training Update

Members of IBA Implementation Committee:

First Nations:
- Innu Nation of Labrador
- Naskapi Nation of Kawawachikamach
- La Nation Innu Matimekush-Lac John
- Innu of Uashat

LIM Representatives:
- Aiden Carey, SVP, Operations
- Joseph Lanzon, VP, Government and Corporate Affairs
- Michel Cormier, VP, Exploration
- Stephen McGinn, VP, HR and Health & Safety
- Larry LeDrew, VP, Sustainable Development
- Guy Moores, General Manager
- Yves Pelletier, HR & Community Relations Manager
- Nancy Larose, HR, Training and Community Relations Coordinator

LABRADOR IRON MINES LIMITED

Q2 Operations

(July 1 – September 30, 2012)


Triple Deck Screen


Wet Processing Facility


Aerial view of Houston Deposits

James Mine and Silver Yards Processing Plant

In our 2012 operating season, LIM demonstrated its operational ability to produce, rail and sell up to 250,000 tonnes of iron ore product per month. In Q2, operations were also highlighted by excellent mine performance, as the James mine consistently achieved its planned operating rate of 28,000 tonnes per day (ore + waste).

LIM's Silver Yards Processing Facility was enhanced in Q2 with the installation of a new screener classification system to produce lump and sinter products. This system has a design capacity of 1,000 tonnes per hour (20,000 tpd), supplementing the mine sequence and enhancing product yield.

At the end of August, the Phase 3 wet plant expansion was largely complete, with the remaining items being the installation of electrical equipment and instrumentation work.

Q2 and Six Months 2012 Production

(dry metric tonnes; figures rounded)

	Q2	Six Mths
Total Ore Mined	962,000	1,630,000
Direct Rail Ore portion	570,000	1,053,000
Waste Mined	1,533,000	2,903,000
Ore Processed	644,000	771,000
Total Product Railed	706,000	1,239,000
Total Product Sold	648,000	1,134,000

Completion and commissioning of Phase 3 is now planned for the 2013 season. The expansion is intended to increase plant throughput to 12,000 tpd and improve weight recovery to above 75%.

2012 Sales

1.6 million tonnes

In 2012, LIM sold 10 shipments totalling 1.6 million dry tonnes, quadrupling the total tonnes sold in 2011.

Rail Operations

One million tonnes

LIM's railing operations got off to a quick start this year, as the first train departed Silver Yards in the beginning of April. Monthly rail volumes increased almost threefold (Apr to Aug) and by mid-August, LIM railed its one millionth tonne of iron ore to the Port of Sept-Îles in 2012.

In its first full season of operation, LIM railed 137 trains to the Port of Sept-Îles for a total of 1.6 million tonnes railed in 2012. At the peak of rail operations, LIM achieved its 'train-a-day' objective. The image to left shows the final train departing Silver Yards in November.

Proud member of the St. John's Business Community

New Office Opening in St. John's: 33 Pippy Place

We are pleased to announce the official grand opening of our St. John's Office. In celebration, an Open House and Ribbon Cutting Ceremony was held on Nov. 2, attended by government officials, dignitaries, business representatives and LIM employees.

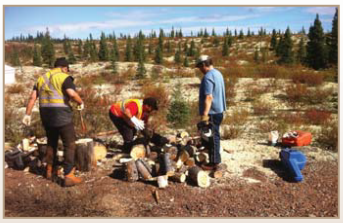
(From left to right): Joseph Lanzon, VP, Government & Corporate Affairs; Rod Cooper, President & COO; Minister Nick McGrath, Service Newfoundland and Labrador; Larry LeDrew, VP, Sustainable Development; and, Aiden Carey, SVP, Operations

Beyond the mining culture

LIM has implemented a number of programs to support a healthy culture for its employees and the local communities. While mining skill sets and training in areas such as health and safety will always remain a top priority, LIM also actively empowers its employees through team building and leadership training, culture immersion, including language classes, and career advancement programs.

LIM's operations are located in a remote area, bordering on the provinces of Newfoundland and Labrador and Québec. The area is home to different cultures, traditions and four distinct languages: English, French, Innu-aimun and Cree Naskapi. While these may pose a challenge to some, LIM has embraced this as an opportunity.

This year, LIM has implemented various Innu Culture Immersion Training programs for its leadership team to enable a greater understanding of working and dealing with intercultural relationships. Innu and French language classes are provided to enable successful communication, as well as cultural classes for greater understanding of the Innu culture. Recently, members of the leadership team were given a hands-on opportunity to experience the Innu customs and lifestyle through a two-day program, taking place in the wilds of Labrador.



Images: LIM employees and the local Aboriginal Community participate in the Innu Culture Immersion Training program

Next IBA Implementation Meeting: **end of January**

Newsletter will be mailed at the end of February.

Contact Information

For inquiries or comments, contact us at 1-877-728-4125 to be connected to one of our offices in St. John's, Schefferville, Labrador City, Sept-Îles or Toronto.

You can also email us at info@labradorironmines.ca.

More information about LIM can be found at our website at www.labradorironmines.ca.