

**Project Update for Joyce Lake  
Direct Shipping Iron Ore Project:  
Additional Information  
Requirements**



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December 8, 2014

# PROJECT UPDATE FOR JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT: ADDITIONAL INFORMATION REQUIREMENTS

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# PROJECT UPDATE FOR JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT: ADDITIONAL INFORMATION REQUIREMENTS

INTRODUCTION / OVERVIEW

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## 1.0 INTRODUCTION / OVERVIEW

Labec Century (the Proponent) is proposing modifications to its Joyce Lake Direct Shipping Iron Ore Project (the Project) as a result of ongoing studies. The proposed modifications affect the following previous submissions to the Canadian Environmental Assessment Agency (CEA Agency) and the Newfoundland and Labrador Department of Environment and Conservation, Environmental Assessment Division (NLDOEC):

- Joyce Lake Direct Shipping Iron Ore Project – Project Description and Provincial Registration (November 5, 2012)
- Joyce Lake Direct Shipping Iron Ore Project – Supplemental Information Package (February 21, 2013)

The current site plan as compared to the site plan presented in the Supplemental Information Package is presented in Figure 1-1.

The main proposed Project modifications include:

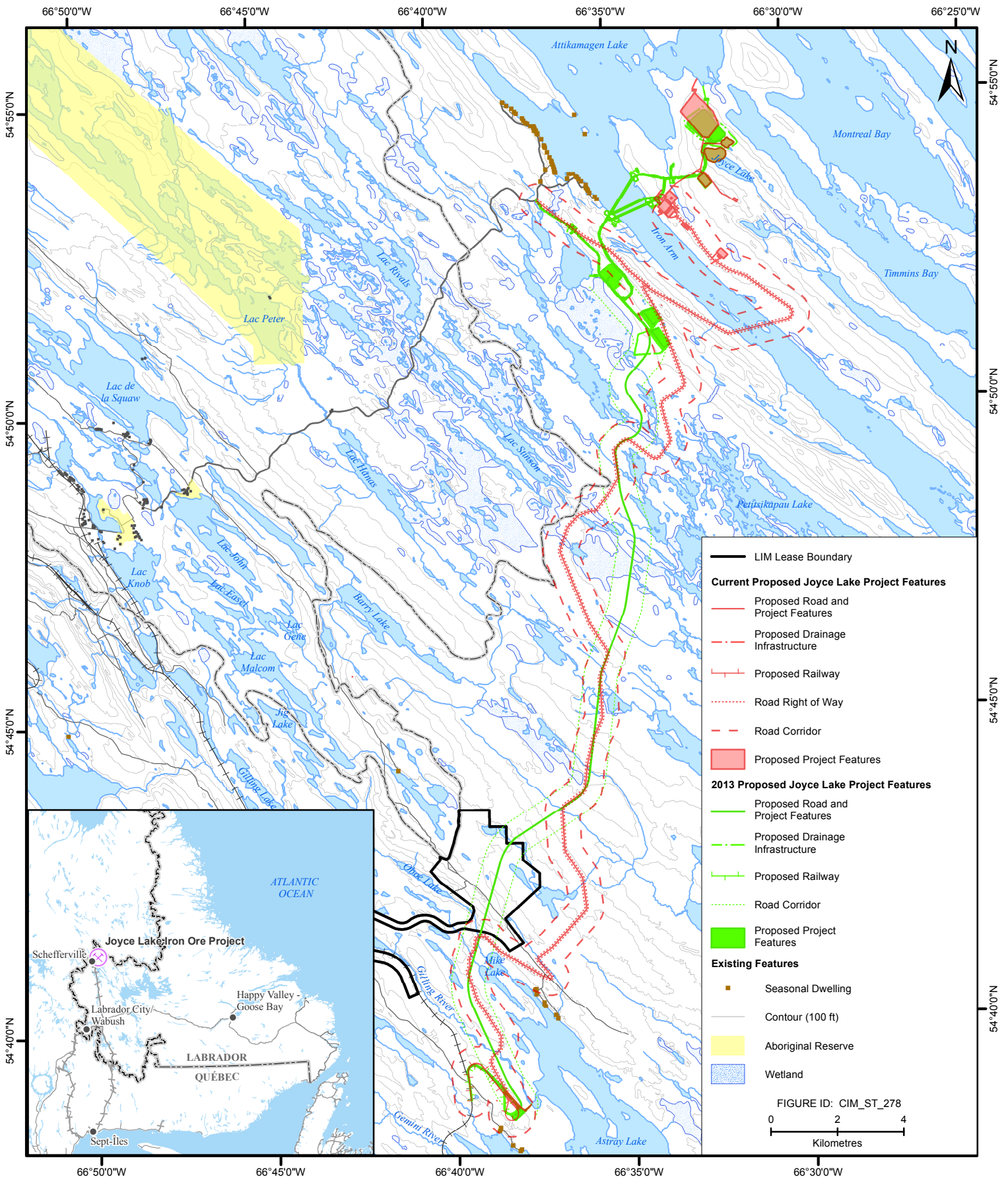
- Construction and operation of a rock causeway across Iron Arm for personnel and equipment access and for haulage of final product (lump and fine ore) across Iron Arm. This would replace the previously proposed ice bridges and barge landings;
- Use of only dry processing with anticipated 100% recovery (instead of both wet and dry processes) for iron ore processing. As a result, a tailings management facility will no longer be required; and
- Relocation of Project infrastructure to the north side (mine pit side) of Iron Arm.



The Project activities continue to meet the threshold for environmental assessment as per Section 15(a) of the Regulations Designating Physical Activities (*CEAA, 2012*) and the *Newfoundland and Labrador Environmental Assessment Regulation, 2003*.

The Project changes represent a likely reduction in the potential environmental effects and physical footprint of the Project. The existing environmental assessment guidelines developed for the Project by the CEA Agency and NLDOEC are broad enough in scope to address the proposed changes. As a result, revisions to guidelines issued for the Project are not likely to be required to address proposed modifications to the Project. A description of the Project modifications and a detailed concordance between new Project elements and the existing guidelines is presented below (Section 3.0).

There have been no changes to the operational duration, labour force requirements, production rate, size of waste rock stockpiles, or transportation method. The accommodations facility will remain on site. As is typical, some refinements to infrastructure location will continue throughout the detailed design phase.





	<b>FIGURE TITLE:</b> <b>Proposed Joyce Lake Project: Site Plan Comparison</b>			
	<b>CLIENT:</b> <b>LABEC CENTURY IRON ORE INC.</b>			
<b>CHECKED BY:</b> <b>DF/CL</b>	<b>FIGURE ID:</b> <b>FIGURE 1-1</b>	<b>PROJECT NUMBER:</b> <b>121511139</b>	<b>FIGURE SOURCES:</b> Project features provided by BBA version 1 received 2014/10/15. Base map information from NRCan CanVec database and Newfoundland and Labrador Department of Natural Resources.	

# PROJECT UPDATE FOR JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT: ADDITIONAL INFORMATION REQUIREMENTS

PROPOSED PROJECT MODIFICATIONS

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## 2.0 PROPOSED PROJECT MODIFICATIONS

The proposed modifications have been identified as a result of detailed alternatives analysis conducted throughout 2014. This alternatives analysis was conducted through a series of detailed studies on the Project components in question. Factors considered in the analysis included:

- Risks to both people and the environment;
- Community benefits and concerns;
- Project economics;
- Project schedule; and
- Long-term development potential of the area.

### 2.1 Construction and Operation of a Causeway across Iron Arm

A rock causeway (Figure 2-1) linking the open pit area to the mainland will be constructed across Iron Arm. This causeway will replace the previously proposed ice bridges, and will provide more flexibility in Project execution. The rock causeway will be approximately 1 km long, and will include two bridges, and likely culverts, to facilitate navigation and fish passage. Rock from the causeway will be sourced from borrow pits on the south side of Iron arm and will be sized to meet engineering and fish habitat requirements. The causeway will be used from April to November each year (approximately 240 days) for the haulage of product.

There are several potential benefits of using a causeway to cross Iron Arm rather than the previously proposed ice bridges:

- Safety improvements;
- Greater operational flexibility;
- Better Project economics;
- The causeway can remain as an asset to the area if desired;
- Local employees can be transported to work on a daily basis rather than live in the site camp; and
- Smaller stockpile footprints, with the previous requirement for substantial product stockpiles practically eliminated.



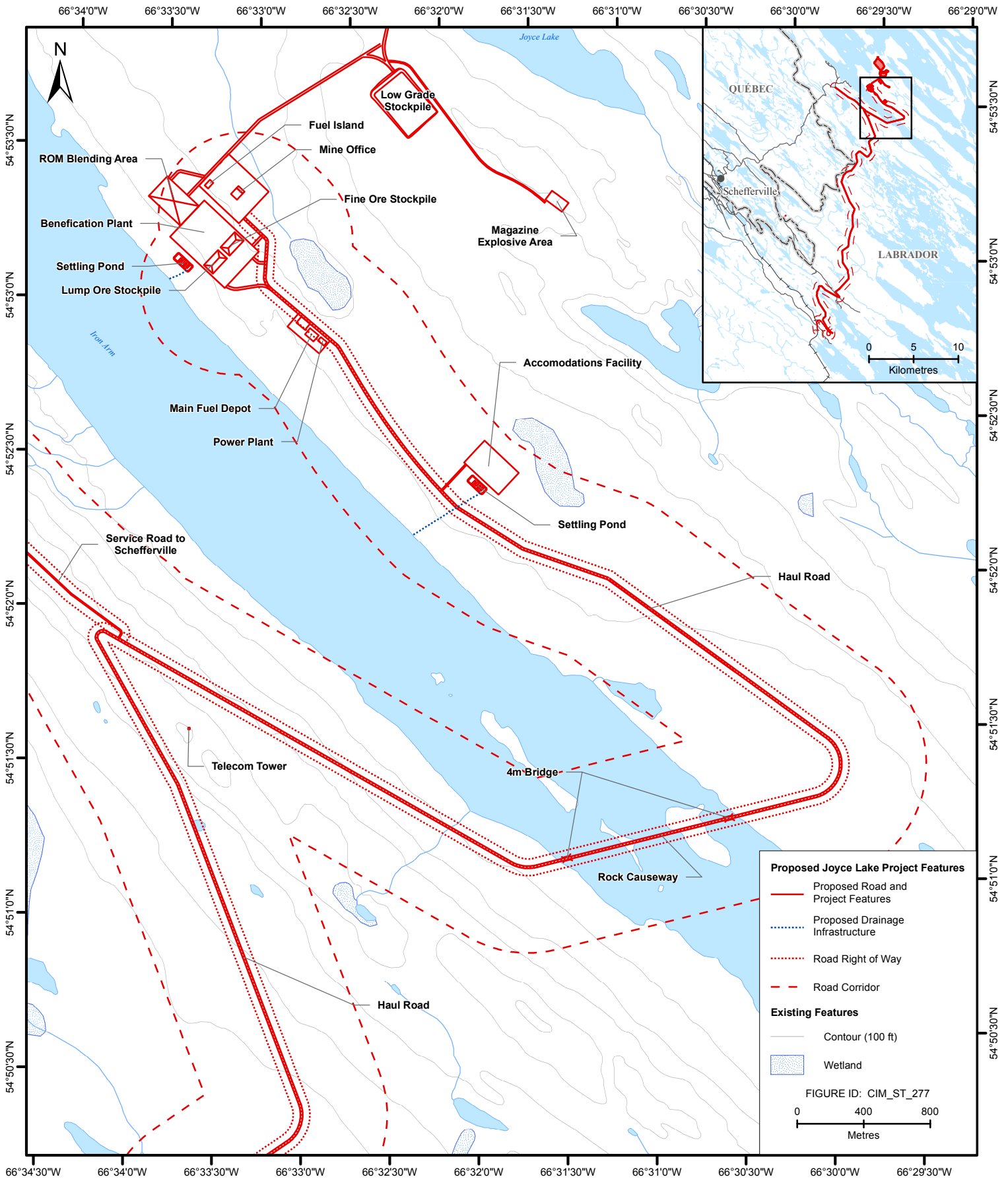


FIGURE TITLE: <b>Beneficiation Plant Area and Causeway</b>			
CLIENT: <b>LABEC CENTURY IRON ORE INC.</b>			
CHECKED BY: <b>DF/CL</b>	FIGURE ID: <b>FIGURE 2-1</b>	PROJECT NUMBER: <b>121511139</b>	FIGURE SOURCES: Project features provided by BBA version 1 received 2014/10/15. Basemap information from NRCan CanVec database and Newfoundland and Labrador Department of Natural Resources.



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PROPOSED PROJECT MODIFICATIONS

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## 2.2 Conducting only Dry Process for Iron Ore Processing and Removal of the Requirement for a Tailings Management Facility

The iron ore processing option to be implemented (Dry Process) will involve crushing and screening of run-of-mine ore to produce two iron ore "products":

- An **iron ore lump** product, between 6.3 mm and 31.5 mm in diameter (~ golf ball size); and
- An **iron ore sinter fines** product, less than 6.3 mm in diameter (~pea size).

Tailings will not be generated from the dry process and as a result a tailings management facility will no longer be required for the Project.

The benefits of using a dry process include:

- The footprint of the dry plant will be much smaller than that of the wet and dry plants;
- Modular assembly of the dry plant, i.e. quick assembly and take down after the end of life-of-mine;
- The plant will be mobile, i.e. on wheels;
- Much lower power requirements, i.e. in the order of 600 to 800 percent, for the dry process compared to wet;
- Less noise and reduced SOx and NOx release; and
- Elimination of risks of spills and potential contamination related to the wet plant.

The processing plant will consist of mobile, self-contained, primary (jaw) and secondary (cone) crushing units and a mobile screening unit will be used for ore crushing and screening on site to produce the lump and sinter fines ore products. Other processing plant equipment will include a mobile surge bin and various modular conveyors. The processing plant will have a nominal throughput ranging from 10, 500 to 12, 500 tonnes per day on a 240 day per year schedule (April to November).

No tailings will be generated as the process recovery will be 100% and water will not be used for iron ore processing on site. The only requirement for water on site is to control dust and for potable water requirements at the accommodations facility. The block flow diagram for the Dry Process is illustrated in Figure 2-2.



# PROJECT UPDATE FOR JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT: ADDITIONAL INFORMATION REQUIREMENTS

PROPOSED PROJECT MODIFICATIONS  
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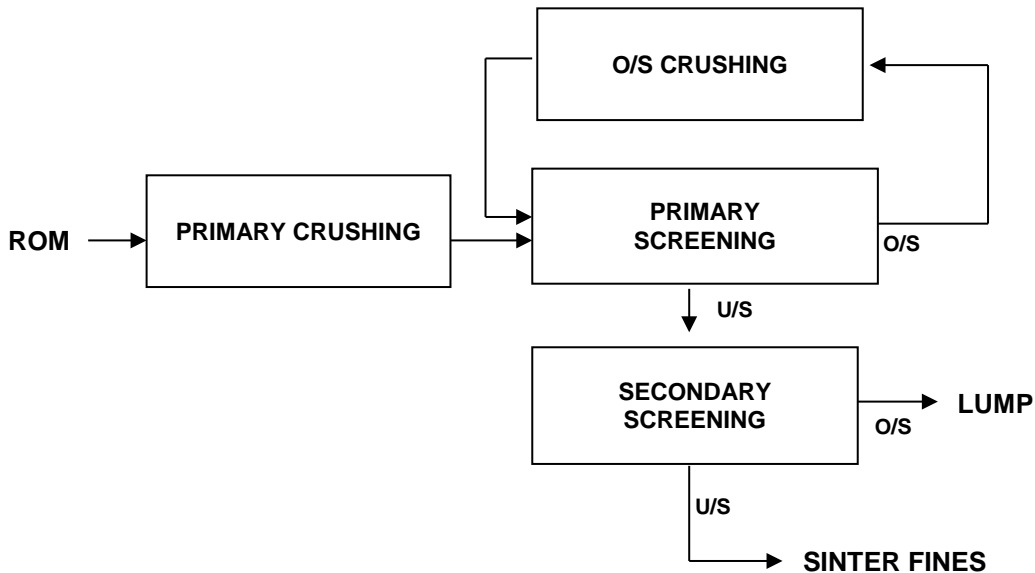


Figure 2-2 Block Flow Diagram

## 2.3 Relocation of Project Infrastructure to the North Side of Iron Arm

The proposed Project modifications include the relocation of the following Project components to the north side (mine pit side) of Iron Arm:

- run of mine ore stockpile;
- iron ore processing plant (dry processing unit);
- fines and lump ore stockpiles for surplus capacity;
- accommodations facility; and
- mine office, maintenance shop, main fuel depot, and associated mine support facilities.

The purpose of this modification is to have mine infrastructure in a reduced footprint (approximately 90, 000 square metres).

The proposed mine infrastructure is shown on Figure 2-3 and the proposed rail infrastructure is shown on Figure 2-4. There is no new Project infrastructure.



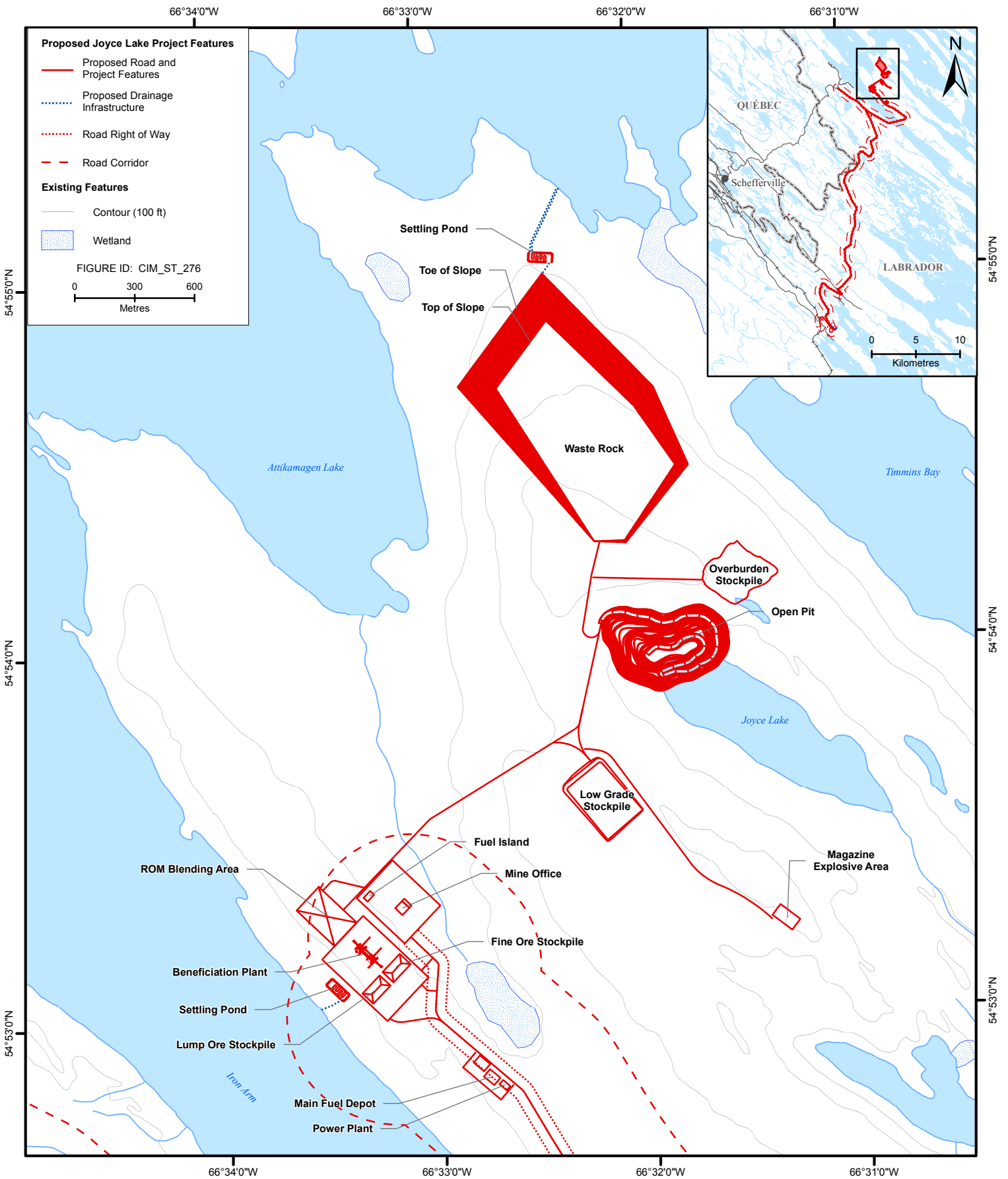
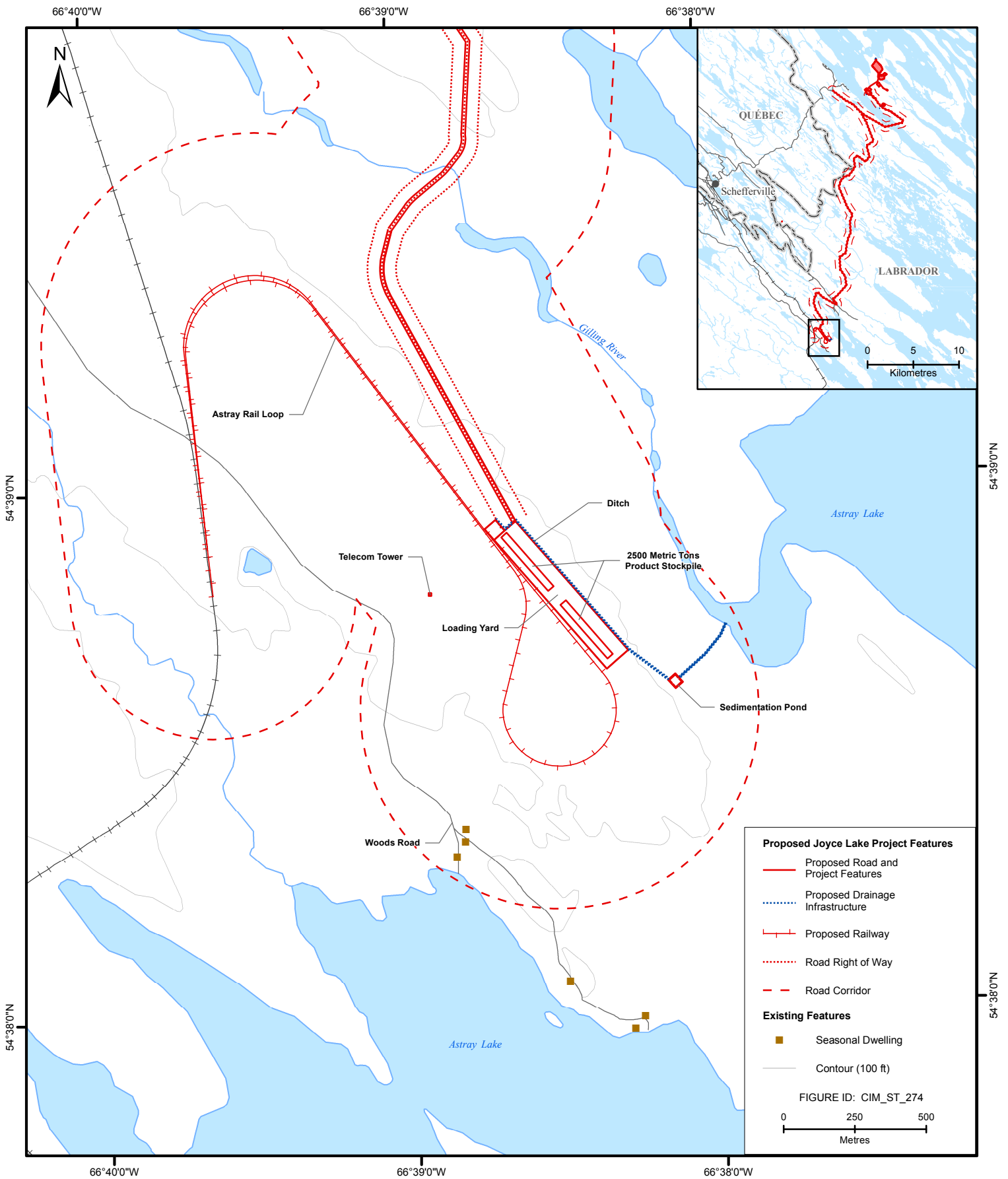


FIGURE TITLE:			
<b>Mine Site and Associated Infrastructure</b>			
CLIENT:			
<b>LABEC CENTURY IRON ORE INC.</b>			
CHECKED BY:	FIGURE ID:	PROJECT NUMBER:	FIGURE SOURCES:
<b>DF/CL</b>	<b>FIGURE 2-3</b>	<b>121511139</b>	Project features provided by BBA version 1 received 2014/10/15. Basemap information from NRCan CanVec database and Newfoundland and Labrador Department of Natural Resources.





**Proposed Joyce Lake Project Features**

- Proposed Road and Project Features
- - - - Proposed Drainage Infrastructure
- |—|—| Proposed Railway
- - - - - Road Right of Way
- - - - - Road Corridor

**Existing Features**

- Seasonal Dwelling
- Contour (100 ft)

FIGURE ID: CIM\_ST\_274

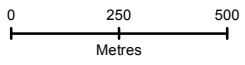


FIGURE TITLE: <b>Rail Infrastructure</b>			
CLIENT: <b>LABEC CENTURY IRON ORE INC.</b>			
CHECKED BY: <b>DF/CL</b>	FIGURE ID: <b>FIGURE 2-4</b>	PROJECT NUMBER: <b>121511139</b>	FIGURE SOURCES: Project features provided by BBA version 1 received 2014/10/15. Basemap information from NRCan CanVec database and Newfoundland and Labrador Department of Natural Resources.



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PROPOSED PROJECT MODIFICATIONS  
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## 2.4 Summary of Project Infrastructure and Tonnage

Table 2.1 details the changes between the Project as outlined in the Registration (November 5, 2012), the Supplemental Project Information Package (February 21, 2013) and the current site plan. Table 2.2 shows the revised production schedule for the Project



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PROPOSED PROJECT MODIFICATIONS

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**Table 2.1 Summary of Project Infrastructure Footprint and Tonnage**

Project Element	Registration Site Plan	Registration Update Site Plan	Current Site Plan
	(November 5, 2012)	(February 21, 2013)	(October 29, 2014)
Haulage Road (Beneficiation Plant to Rail Yard)	~26.6 km	~27.6 km	~40 km
Open Pit Area (m <sup>2</sup> )	~164,716 m <sup>2</sup>	~181,425m <sup>2</sup>	~181,425m <sup>2</sup>
Phase I DSO Tonnage	5,000,000 tonnes	6,000,000 tonnes	17,000,000 tonnes
Waste Rock Tonnage	5,050,000 tonnes	56,000,000 tonnes	47,600,000
Overburden Tonnage	2,900,000 tonnes	3,500,000 tonnes	4,500,000 tonnes
Tailings Management Facility (m <sup>2</sup> )	500,000 m <sup>2</sup>	250,000 m <sup>2</sup>	0 m <sup>2</sup>

**Table 2.2 Estimated Production (By Year) of Iron Ore for the Joyce Lake Project**

Product	Unit	Estimated Production by Year						
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Phase I Ore (DSO; 62% Fe)	tonne	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,000,000
Waste Rock	tonne	10,800,000	9,700,000	9,500,000	3,600,000	7,000,000	7,000,000	
Overburden	tonne	500,000	1,000,000	1,000,000	1,000,000	1,000,000		
<b>Notes:</b> TBD - To be determined.								



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## 3.0 REGULATORY AND ENVIRONMENTAL IMPLICATIONS

The proposed Project modifications described above are addressed in the Project-specific environmental assessment guidelines developed for the Project by the CEA Agency (March 2013) and NLDOEC (November 2013); hence, revisions to the guidelines are not anticipated for the proposed Project modifications. The environmental impact statement (EIS) being prepared for the Project will include a summary of changes that have been made to the Project since originally proposed, including the benefits of these changes to the environment, Aboriginal peoples, and other stakeholders.

Table 3.1 highlights sections in the CEA Agency and NLDOEC Guidelines that address the proposed changes/components.

**Table 3.1 Summary CEA Agency and NLDOEC Guideline Provisions that Address Proposed Project Modifications**

Project Component/ Activity	Description of proposed changed to project component/activity	Section(s) of CEA Agency Guidelines that address this component/activity	Section(s) of NLDOEC Guidelines that address this component/activity	Comments
Causeway and Haulage/Access Roads	Use of a causeway across Iron Arm (instead of ice bridges)	Sections 5.6, 6.0, 8.0, 9.0, 10.0, 11.0, 12.0, 13.0, 15.1, 16.0	Sections 3.1.1, 4.4.4.1	The effects assessment will be conducted and mitigation measures will be developed as part of the EIS for the Project
Iron Ore Processing	Implementing Dry Process for iron ore processing (instead of both wet and dry processes)	Sections 6.0, 8.0, 9.0, 10.0, 11.0, 12.0, 13.0, 15.1, 16.0	Sections 3.1.1, 4.4.4.1	The effects assessment will be conducted and mitigation measures will be developed as part of the EIS for the Project
Process Waste Management	Removal of the tailings management facility	Sections 6.0, 8.1, 15.1	Sections 3.1.1, 4.4.4.1	The tailings management facilities component will not be included in the effects assessment process in the EIS for the project



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Labec Century will communicate the Project modifications to local communities and Aboriginal groups prior to the submission of the EIS. A summary of this consultation and any resulting modifications to the Project will be included in the EIS.

### 3.1 Additional Effects Resulting From Project Changes

As noted in Section 1.0, the proposed Project changes represent a reduction in the physical footprint and a likely reduction in potential environmental effects. The latter is primarily related to the removal of the wet process and subsequent requirement for tailings management. This will reduce the volume of water required by the Project and will also avoid potential effects to the receiving environment from tailings management and associated effluent. There will also be reduced effects on cabin owners resulting from the relocation of Project infrastructure away from the cabins on Iron Arm.

While the proposed changes are within the scope of the Project, as described in the Project Description (November 5, 2012) and the Supplemental Information Package (February 21, 2013), and no new adverse effects are anticipated, the nature and location of some anticipated interactions have changed as follows:

- A Project-resource interaction with an identified archaeological site on the Joyce Lake side of the proposed causeway has been identified. This interaction will be appropriately mitigated in consultation with the Newfoundland and Labrador Provincial Archaeology Office (PAO).
- As a result of the construction of the proposed causeway and the associated footprint, the location of interaction with fish and fish habitat will be revised.
- As a result of the construction of the proposed causeway, the location of interaction with navigation will be revised.

These effects will be addressed in the EIS, in accordance with the federal and provincial guidelines. Other effects and potential interactions remain consistent with Table 3.2, which was presented in the Project Description as Table 5-6.



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Table 3.2 Potential Valued Environmental Components to be Assessed in the Joyce Lake Iron Ore Project Environmental Assessment

VEC	Definition	Basis for Selection	Information Source(s) Boundaries	Potential Interactions (Before Mitigation)			
				Construction	Operation and Maintenance	Decommissioning	Malfunctions and Accidental Events
Atmospheric Environment	<ul style="list-style-type: none"> <li>Ambient air quality.</li> <li>Acoustic environment (noise).</li> </ul>	<ul style="list-style-type: none"> <li>Protection of human health and safety, as well as ecological health and aesthetics.</li> <li>Potentially sensitive human and wildlife receptors.</li> <li>Provisions of federal <i>Canadian Environmental Protection Act</i> and <i>Air Quality Regulations</i> under the NL EPA.</li> <li>Concerns with greenhouse gas emissions.</li> </ul>	<ul style="list-style-type: none"> <li>Ambient noise monitoring to assess baseline conditions.</li> <li>Air pollutant and noise dispersion modeling to determine zone of influence for operating emissions.</li> <li>Spatial boundaries limited to within areas that can reasonably be affected by the Project (<i>i.e.</i>, sensitive receptors).</li> <li>Scope of assessment limited to air and noise emissions from Project activities at the mine site, including access roads and all related infrastructure (<i>i.e.</i> beneficiation, ice bridge, rail spur, and conveyor option).</li> <li>Project scope does not include any potential emissions that may be associated with end-use of products from the Project.</li> </ul>	<ul style="list-style-type: none"> <li>Effects on ambient air quality from dust and construction vehicle emissions.</li> <li>Effects of noise from Construction.</li> </ul>	<ul style="list-style-type: none"> <li>Effects on ambient air quality (including air pollutants and greenhouse gases) due to mining operations and transportation of concentrate from the site.</li> <li>Effect on ambient sound levels due to mining and concentrating operations and transportation of concentrate from the site.</li> <li>Air / noise emissions associated with rail transportation.</li> </ul>	<ul style="list-style-type: none"> <li>Effects on ambient air quality from dust and vehicle emissions.</li> <li>Effects of noise from decommissioning activities.</li> </ul>	<ul style="list-style-type: none"> <li>Effects on ambient air quality (including air pollutants and greenhouse gases).</li> <li>Fugitive emissions (<i>i.e.</i>, dust, smoke).</li> </ul>
Water Resources	<ul style="list-style-type: none"> <li>Quality and quantity of groundwater and surface water resources in the vicinity of the Project.</li> </ul>	<ul style="list-style-type: none"> <li>Concerns regarding potential for release of hazardous materials on-site and potential contamination associated with mine and process water management.</li> <li>Possible lowering of water table and effects on surface water / groundwater interactions (<i>e.g.</i>, wetlands).</li> <li>Possible de-watering of Joyce Lake.</li> </ul>	<ul style="list-style-type: none"> <li>Assessment based on site-specific information.</li> <li>Spatial boundaries include the Project property boundary and relevant watersheds.</li> </ul>	<ul style="list-style-type: none"> <li>Potential effects related to erosion and sedimentation associated with on-site construction and modification of the hydrologic regime.</li> </ul>	<ul style="list-style-type: none"> <li>Potential effects related to mine water management as well as effects on water quality from discharges.</li> <li>Potential effects related to water use (demand).</li> </ul>	<ul style="list-style-type: none"> <li>Potential effects related to erosion and sedimentation associated with on-site decommissioning activities.</li> </ul>	<ul style="list-style-type: none"> <li>Potential for accidental releases of hazardous materials related to construction or operation (petroleum, oils, lubricants).</li> <li>Malfunction of water treatment and erosion and sediment controls.</li> </ul>
Wetlands	<ul style="list-style-type: none"> <li>Wetlands are commonly referred to as marshes, swamps, fens, bogs, and shallow water areas that are saturated with water long enough to promote wetland or aquatic processes.</li> </ul>	<ul style="list-style-type: none"> <li>Wetlands represent a sensitive habitat type that often supports a diversity of species.</li> </ul>	<ul style="list-style-type: none"> <li>Assessment based on existing information and field survey.</li> <li>Spatial boundaries include footprint of the Labrador project components and areas that could reasonably be affected by the Project.</li> <li>Efforts will be made to avoid effects on wetlands during detailed design phase of the Project.</li> </ul>	<ul style="list-style-type: none"> <li>Site grading and filling and/or alteration of hydrology can affect wetland habitat directly or indirectly.</li> </ul>	<ul style="list-style-type: none"> <li>Indirect habitat degradation or alteration with alteration of local hydrology.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Habitat degradation or alteration from hazardous materials releases and uncontrolled surface runoff.</li> </ul>
Rare Plants	<ul style="list-style-type: none"> <li>Rare vascular plants and uncommon species assemblages</li> </ul>	<ul style="list-style-type: none"> <li>Protection of species biodiversity and critical habitat.</li> <li>SARA.</li> <li>NL ESA.</li> </ul>	<ul style="list-style-type: none"> <li>Assessment based on existing information and field survey</li> <li>Spatial boundaries include footprint of the Labrador Project components and areas that could reasonably be affected by the Project.</li> </ul>	<ul style="list-style-type: none"> <li>Site grading and filling and/or alteration of hydrology can cause the loss of rare plants and/or uncommon species assemblages</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Habitat degradation or alteration and direct mortality of plants from hazardous materials releases and uncontrolled surface runoff.</li> </ul>

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VEC	Definition	Basis for Selection	Information Source(s) Boundaries	Potential Interactions (Before Mitigation)			
				Construction	Operation and Maintenance	Decommissioning	Malfunctions and Accidental Events
Freshwater Fish and Fish Habitat	<ul style="list-style-type: none"> <li>Effects on habitat quality and species in freshwater bodies.</li> </ul>	<ul style="list-style-type: none"> <li>Protection of aquatic species diversity.</li> <li><i>Fisheries Act</i>.</li> <li>SARA.</li> <li>NL ESA.</li> </ul>	<ul style="list-style-type: none"> <li>Assessment based on existing information and field survey.</li> <li>Spatial boundaries limited to areas that could reasonably be affected (<i>i.e.</i>, hydrological impacts) by the Project.</li> <li>Efforts will be made to avoid effects on freshwater bodies and watercourses and habitats.</li> </ul>	<ul style="list-style-type: none"> <li>Habitat degradation or alteration and direct mortality associated with construction (<i>e.g.</i>, siltation of watercourses).</li> <li>Indirect habitat degradation or alteration of local hydrology.</li> </ul>	<ul style="list-style-type: none"> <li>Potential for turbidity, siltation and contamination from surface runoff.</li> <li>Indirect habitat degradation or alteration of local hydrology.</li> </ul>	<ul style="list-style-type: none"> <li>Habitat degradation or alteration and direct mortality associated with decommissioning (<i>e.g.</i>, siltation of watercourses).</li> </ul>	<ul style="list-style-type: none"> <li>Habitat degradation or alteration and direct mortality of freshwater aquatic species</li> <li>from uncontrolled site runoff or hazardous materials spills.</li> </ul>
Birds and Wildlife	<ul style="list-style-type: none"> <li>Migratory and non- migratory birds with a focus on species with special status (see below) potentially feeding, breeding, moving and/or migrating through the Project Area, and their habitat.</li> <li>Includes critical habitats such as waterfowl gathering areas.</li> </ul>	<ul style="list-style-type: none"> <li>Concern with protection of species biodiversity and critical habitat.</li> <li><i>Migratory Birds Convention Act</i>.</li> <li>SARA.</li> <li>NL ESA.</li> </ul>	<ul style="list-style-type: none"> <li>Assessment based on existing information and field surveys.</li> <li>Spatial boundaries limited to footprint of the facility (<i>i.e.</i>, cleared areas) and areas that could reasonably be affected by the mine (<i>e.g.</i>, through noise and visual stimulus or hazardous materials spills).</li> </ul>	<ul style="list-style-type: none"> <li>Habitat loss, degradation or alteration and direct mortality associated with facility construction (<i>e.g.</i>, clearing construction).</li> <li>Disruption of feeding, breeding, movement and/or migratory patterns due to noise and presence of construction activity and fencing.</li> </ul>	<ul style="list-style-type: none"> <li>Loss of habitat</li> <li>Disruption of feeding, breeding, movement and/or migratory patterns due to presence of facility (<i>e.g.</i>, lights, noise).</li> </ul>	<ul style="list-style-type: none"> <li>Potential hazardous materials spills (<i>e.g.</i>, fuel) or non-authorized ship discharges.</li> <li>Habitat degradation or alteration and direct mortality from hazardous materials releases and uncontrolled surface runoff.</li> </ul>	<ul style="list-style-type: none"> <li>Potential hazardous materials spills (<i>e.g.</i>, fuel) or non-authorized ship discharges.</li> <li>Habitat degradation or alteration and direct mortality from hazardous materials releases and uncontrolled surface runoff.</li> </ul>
Species at Risk	<ul style="list-style-type: none"> <li>includes species and their critical habitats (where defined) listed as extirpated, endangered, threatened or special concern under the <i>Federal Species At Risk Act</i>, or listed as endangered, threatened or vulnerable in the <i>Newfoundland and Labrador Endangered Species Act</i>.</li> </ul>	<ul style="list-style-type: none"> <li>Concern with protection of species biodiversity and critical habitat.</li> <li>SARA.</li> <li>NL ESA</li> </ul>	<ul style="list-style-type: none"> <li>Assessment based on existing information and field surveys.</li> <li>Spatial boundaries limited to footprint of the facility (<i>i.e.</i>, cleared areas) and areas that could reasonably be affected by the mine (<i>e.g.</i>, through noise and visual stimulus or hazardous materials spills).</li> </ul>	<ul style="list-style-type: none"> <li>Habitat loss, degradation or alteration and direct mortality associated with facility construction (<i>e.g.</i>, clearing construction).</li> <li>Disruption of feeding, breeding, movement and/or migratory patterns due to noise and presence of construction activity and fencing.</li> </ul>	<ul style="list-style-type: none"> <li>Loss of habitat</li> <li>Disruption of feeding, breeding, movement and/or migratory patterns due to presence of facility (<i>e.g.</i>, lights, noise).</li> </ul>	<ul style="list-style-type: none"> <li>Potential hazardous materials spills (<i>e.g.</i> fuel) or non-authorized ship discharges.</li> <li>Habitat degradation or alteration and direct mortality from hazardous materials releases and uncontrolled surface runoff.</li> </ul>	<ul style="list-style-type: none"> <li>Potential hazardous materials spills (<i>e.g.</i> fuel) or non-authorized ship discharges.</li> <li>Habitat degradation or alteration and direct mortality from hazardous materials releases and uncontrolled surface runoff.</li> </ul>
Historic and Heritage sources	<ul style="list-style-type: none"> <li>Per the <i>NL Historic Resources Act</i>, a historic resource refers to a work of nature or of humans that is primarily of value for its archaeological, prehistoric, historic, cultural, natural, scientific or aesthetic interest, including an archaeological, prehistoric, historic or natural site, structure or object.</li> </ul>	<ul style="list-style-type: none"> <li>Concern with effective management and preservation of archaeological and heritage resources.</li> <li><i>NL Historic Resources Act</i>.</li> </ul>	<ul style="list-style-type: none"> <li>Based on existing information (<i>e.g.</i>, previous assessment and site records) and field survey.</li> <li>Spatial boundaries limited to footprint of area to be disturbed by Labrador Project activities.</li> </ul>	<ul style="list-style-type: none"> <li>Disturbance to and loss of archaeological and heritage sites from site clearing, grubbing and grading.</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable.</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Land and Resource Use by Aboriginal Persons for Traditional Purposes	<ul style="list-style-type: none"> <li>Lands and resources of specific social, cultural or spiritual value to Aboriginal communities of Labrador and Québec with documented use of Project area.</li> </ul>	<ul style="list-style-type: none"> <li>Concerns for Aboriginal interests (<i>i.e.</i>, current use of lands for traditional purposes).</li> <li><i>Canadian Environmental Assessment Act</i>.</li> </ul>	<ul style="list-style-type: none"> <li>Based on existing information and information that Aboriginal groups may provide, the spatial boundary is the Property within Labrador.</li> </ul>	<ul style="list-style-type: none"> <li>Effects on land and resource use from construction activities.</li> </ul>	<ul style="list-style-type: none"> <li>Effects on land and resource use from presence of facility.</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable.</li> </ul>	<ul style="list-style-type: none"> <li>Effects on land and resource use from accidental releases of hazardous materials.</li> </ul>





**PROJECT UPDATE FOR JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT: ADDITIONAL INFORMATION REQUIREMENTS**

REGULATORY AND ENVIRONMENTAL IMPLICATIONS

December 8, 2014

VEC	Definition	Basis for Selection	Information Source(s) Boundaries	Potential Interactions (Before Mitigation)			
				Construction	Operation and Maintenance	Decommissioning	Malfunctions and Accidental Events
Current Land and Resource Use by Other Users	<ul style="list-style-type: none"> <li>Existing land development (industrial, commercial, residential), recreation, and areas of special community or social value. Includes discussion of land ownership.</li> </ul>	<ul style="list-style-type: none"> <li>Important socio-economic component.</li> <li>Municipal land use plans.</li> <li>Concerns of local cabin owners.</li> <li><i>Navigable Waters Protection Act.</i></li> </ul>	<ul style="list-style-type: none"> <li>Based on existing information and on-going consultation with land and resource users, including cabin owners.</li> </ul>	<ul style="list-style-type: none"> <li>Exclusion / promotion of development (industrial, commercial, residential).</li> <li>Exclusion of recreation sites (e.g., recreational fishing areas) or elimination of areas of special community or social value.</li> </ul>	<ul style="list-style-type: none"> <li>On site waste disposal (e.g., waste piles and water treatment systems) could affect future development of site after decommissioning.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Spills or accidents could affect land use or recreation.</li> </ul>
Communities	<ul style="list-style-type: none"> <li>Physical and social infrastructure of communities in close proximity to the Project.</li> </ul>	<ul style="list-style-type: none"> <li>Important socio-economic component for Aboriginal Peoples and others.</li> </ul>	<ul style="list-style-type: none"> <li>Assessment based on existing information supplemented by interviews with physical and social service providers (e.g., healthcare professionals, educational institutions).</li> <li>Spatial boundaries limited to the communities in western Labrador and in the Schefferville area of Québec due to proximity to the Project.</li> </ul>	<ul style="list-style-type: none"> <li>Work force in-migration could result in increased pressure on physical and social infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>Work force in-migration could result in increased pressure on physical and social infrastructure.</li> <li>Potential changes to community health, including Aboriginal peoples.</li> </ul>	<ul style="list-style-type: none"> <li>Pressure on physical and social infrastructure will be reduced with the reduction of the work force.</li> <li>Potential changes to community health, including Aboriginal peoples.</li> </ul>	<ul style="list-style-type: none"> <li>Spills or accidents could affect physical and/or social infrastructure.</li> </ul>
Economy, Employment and Business	<ul style="list-style-type: none"> <li>Employment levels and the supply and service business community of western and central Labrador including analysis of local (Newfoundland and Labrador) financial benefits from the Project.</li> </ul>	<ul style="list-style-type: none"> <li>Important socio-economic component for Aboriginal Peoples and others.</li> </ul>	<ul style="list-style-type: none"> <li>Assessment based on existing information (e.g., census data), interviews with employment and economic development professionals, and Project requirements.</li> <li>Spatial boundaries limited to the Western and Central Labrador Regional Development Zones as the Project has the potential to affect the business community and employment in western and central Labrador.</li> </ul>	<ul style="list-style-type: none"> <li>Exclusion / promotion of development (industrial, commercial, residential).</li> <li>Increased opportunities for employment and contracting.</li> </ul>	<ul style="list-style-type: none"> <li>Exclusion / promotion of development (industrial, commercial, residential).</li> <li>Increased opportunities for employment and contracting.</li> </ul>	<ul style="list-style-type: none"> <li>Opportunities for employment and contracting will return to baseline levels.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

# PROJECT UPDATE FOR JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT: ADDITIONAL INFORMATION REQUIREMENTS

REGULATORY AND ENVIRONMENTAL IMPLICATIONS  
December 8, 2014

## 3.2 Federal Permitting Requirements

A preliminary list of federal regulatory authorizations for Project activities (including dewatering of Joyce Lake and construction of a rock causeway across Iron Arm) is provided in Table 3.3. A final list will be developed in consultation with federal authorities, as changes to the federal permitting process are implemented in response to the *Jobs, Growth and Long-term Prosperity Act, 2012* and as design and construction planning progresses for the Project.

**Table 3.3 Federal Permitting Requirements for the Project**

Permitting	Legislation/Act	Project Activity
<b>Fisheries and Oceans Canada</b>		
Section 35 Authorization	Fisheries Act	Authorization for permanent harmful alteration, destruction, or disturbance to fish habitat (HADD) or for serious harm to fish by means other than fishing (e.g., dewatering of Joyce Lake and construction of a rock causeway in across Iron Arm) and appropriate compensation
Letters of Advice for Best Management Practices	Fisheries Act	various activities in or near water bodies that do not involve a HADD (example, fording, temporary bridges and some other water crossing activities)
<b>Industry Canada</b>		
Section 5: Radio Communication Licence	Radiocommunication Act	Project communication infrastructure installation and operation
<b>Transport Canada</b>		
Navigable Waters Approvals	Navigation Protection Act	May be required if mine footprint or associated roads interfere with navigation (e.g., installation of bridges and culverts, the construction of a rock causeway across Iron Arm)
Section 23 Exemption – Order in Council	Navigation Protection Act	May be required for the dewatering of Joyce Lake if Transport Canada confirms that Joyce Lake is “navigable water”
<b>Canada Transportation Agency</b>		
Certificate of Fitness Section 98 Approval	Canada Transportation Act	Construction of railway loop to connect with existing Quebec North Shore and Labrador Railway and the operation of a railway

