Environment

Hudson Bay Mining and Smelting Co., Limited

Lalor Concentrator – Description of a Designated Project under CEAA, 2012

Prepared by:

AECOM
99 Commerce Drive
Winnipeg, MB, Canada R3P 0Y7
www.aecom.com

204 477 5381 tel
204 284 2040 fax

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Revision Log

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Report Prepared By:

Somia Sadiq, B.Env.Sc. (Honours), EP
Environmental Planner
Environment

Report Reviewed By:

Cliff Samoiloff, B.Sc., EP(CEA)
Manager, Health & Safety Consulting
Environment

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1. General Information and Contact(s)

1.1 Project Overview

Hudson Bay Mining and Smelting Co., Limited (HBMS) proposes to construct and operate a new ore concentrator ("Lalor Concentrator") within the site currently occupied by the Lalor Advanced Exploration Project ("Lalor AEP") and the future Lalor Mine (*Environment Act* Proposal filed in May, 2012) (the "Lalor site"), on which HBMS has been operating intensively since 2007. The Lalor Mine was not subject to an environmental assessment under the *Canadian Environmental Assessment Act*. This was confirmed by the Canadian Environmental Assessment Agency in their letters dated June 22, 2012 and July 5, 2012. The Lalor site is located in the Snow Lake mining district in Northern Manitoba.

The purpose of a concentrator (or mill) is to process ore into a product that can be further refined for market use. It uses a combination of mechanical (crushing and grinding) and chemical processes (flotation) to extract target metals from the ore. The Lalor Concentrator will process ore taken from Lalor Mine, producing zinc and copper/lead concentrates which will be trucked to HBMS facilities in Flin Flon, Manitoba.

A concentrator requires water to operate and it produces tailings as the waste by-product. The Lalor Concentrator will replace and upgrade the ore processing capacity of the existing Stall Lake Concentrator which is located about 16 km by road from the Lalor site (or 13.2 km from site to site). The new concentrator will use the same water sources and discharge to the same tailings impoundment area used today by the Stall Lake Concentrator. The only components of the proposed project, therefore, are the concentrator itself and pipelines to these existing facilities.

The Lalor Concentrator will have a design capacity of 4,500 tonnes per day (tpd). It is anticipated that it will operate 24 hours per day, 362 days per year, with scheduled downtime for maintenance as required.

Figure 1 displays the general location of the proposed project in Manitoba. **Figure 2** displays the proposed concentrator in context with the Lalor site and existing HBMS facilities in the Snow Lake region.

1.2 Proponent Contact Information

Table 1.1 – Proponent Contact Information

Name of Project	Lalor Concentrator
Name of Proponent	Hudson Bay Mining and Smelting Co., Limited (HBMS)
Address of Proponent	PO Box 1500, #1 Company Road, Flin Flon, Manitoba, R8A 1N9
Chief Executive Officer	**Brad Lantz** Vice-President of Hudbay Minerals Inc. for Manitoba Operations Ph: (204) 687-2331
Principal Contact Person(s) for Project Description	**Stephen West, P. Eng.** Superintendent Environment, Hudson Bay Mining and Smelting Co., Limited PO Box 1500, #1 Company Road, Flin Flon, Manitoba, R8A 1N9 Ph: (204) 687-2229 Email: steph.west@hudbayminerals.com **Jay Cooper** Assistant Superintendent Environment, Hudson Bay Mining and Smelting Co., Limited PO Box 1500, #1 Company Road, Flin Flon, Manitoba, R8A 1N9 Ph: (204) 687-2667 Email: jay.cooper@hudbayminerals.com

1.3 Consulted Parties

The Canadian Environmental Assessment Agency was consulted in preparing this project description. No other jurisdictions or parties were consulted specifically about this project description.

1.4 Other Relevant Information

The proposed Lalor Concentrator will be subject to environmental assessment and licensing under *The Environment Act* (Manitoba). Therefore an Environment Act Proposal is being submitted to Manitoba Conservation and Water Stewardship for environmental assessment and consideration under section 11 of the Act. It also requires development of a Closure Plan in accordance with Manitoba Mine Closure Regulation 67/99. As shown in Figure 3, a small portion of the Pipeline System will cross an existing transmission line Right of Way (ROW) owned by Manitoba Hydro. In a letter dated March 8, 2013, Manitoba Hydro approved HBMS use of their ROW for the Pipeline System.

No other approvals (Federal or Provincial) are required or will be sought.

The area in which the proposed project lies has not been the subject of a regional environmental study.

2. Project Information

2.1 Need and Objectives

A concentrator will be needed to process ore from the Lalor deposit, which was discovered in the spring of 2007 and has been under intensive development since the discovery. Further to approval by Manitoba Mines Branch dated April 9, 2010, HBMS is developing the Lalor AEP which consists primarily of underground shaft sinking. Following exploration activities, HBMS expects to convert the Lalor AEP into the Lalor Mine. In that regard, HBMS filed an application for an *Environment Act* license with Manitoba Conservation and Water Stewardship in May, 2012.

2.2 Project Planning Process

In its planning process, HBMS considered two options for processing ore from the Lalor deposit:

1. **Refurbishing** the existing Stall Lake Concentrator (approximately 16 km by road from the Lalor site); or
2. Constructing a **new concentrator** within the Lalor site.

Both options included continued use of the following licensed facilities which currently support the Stall Lake Concentrator:

- Neither option would require designation of a new tailings impoundment area. Tailings will continue to be discharged into the Anderson Tailings Impoundment Area ("Anderson TIA"), which has been permitted and operated since 1978-9 (listed as Item 1 on Schedule 2 to the Metal Mining Effluent Regulations (SOR/2002-222) (MMER)). The area described in Item 1 in Schedule 2 of the MMER has been studied to determine the ultimate capacity of the Anderson TIA (Anderson Tailings Impoundment Area Pre-Feasibility Study Report by BGC Engineering Inc., December 19, 2011). The BGC study concluded that, with construction of improvement structures, there will be sufficient capacity within the permitted area to accept the potential tailings output generated by Lalor Mine (to 2031).

- The primary source of process water will continue to be recycled water drawn from the Anderson TIA via the Anderson TIA Reclaim Pumphouse.

- The balance of process water will continue to be fresh water drawn from Snow Lake via the existing Snow Lake Pumphouse.

HBMS chose the **new concentrator** option, which has these economic and environmental advantages:

- It eliminates the 16 km ore haul from the Lalor Mine to the Stall Lake Concentrator and hence reduces:
    - traffic and associated greenhouse gas and other emissions;
    - potential for accidents along Provincial Roads (PR 395 and 392); and
    - the operating cost of hauling the ore itself.
- It provides an opportunity for an increased production rate. The maximum capacity of a refurbished Stall Lake Concentrator would be 3,500 tonnes per day, whereas the new concentrator will be designed for 4,500 tonnes per day.
- It reduces the maintenance costs associated with the Stall Lake Concentrator, given the age of the facility.

- It allows for production of paste backfill, thereby reducing the amount of tailings to be sent to Anderson TIA and improving ore recovery (paste backfill is pumped back underground, filling the spaces left by removal of ore from the mine and forming platforms for further mine development).
- Placement of tailings underground in the form of paste backfill delays the need for the construction of new structures in the Anderson TIA. Based on the BGC study (2011), without the paste backfill system, the new structures would be needed in 2017/18[1], but the paste backfill system will divert up to 25% of the tailings, thereby postponing the need for these structures. **Table 2.9** displays the expected tailings output of the proposed Lalor Concentrator into the Anderson TIA, taking account of the benefit achieved by substituting the new concentrator for the Stall Lake Concentrator. Further, if additional ore discoveries are made, there would still be capacity within the area described in Item 1 in Schedule 2 of the MMER for additional phases of improvement beyond 2031.
- It provides for implementation of newest technologies, including new mill drive systems, process control system and more efficient water use.
- It provides for a reduction in the proportion of freshwater to recycled water use: Stall Lake Concentrator uses 70% recycled and 30% freshwater, whereas the new concentrator will use 81% recycled and only 19% freshwater.

2.3 Context for the Proposed Project

The proposed Lalor Concentrator thus will be located within the site of the existing Lalor AEP/future Lalor Mine. This site has already been cleared and developed. **Photo 1** displays an aerial photo of this site, with an outline of the specific area to be occupied by the new concentrator.

Lalor Concentrator will be connected to the Anderson TIA, Anderson TIA Reclaim Pumphouse and Snow Lake Pumphouse by pipelines laid in or alongside rights of way that have been owned in fee simple by HBMS or occupied by HBMS for mining purposes or by the Province of Manitoba for public purposes for more than 30 years.

2.4 Federal Designated Activity

See ss. 15 (b) of the Regulations Designating Physical Activities (SOR/2012-147), which refers to the “construction, operation, decommissioning and abandonment of a metal mill with an ore input capacity of 4000 t/d or more.”

2.5 Components and Activities

The proposed concentrator has two components:

1. the concentrator itself, comprised of the concentrator building, a jaw crusher, a concentrate load-out shed and a paste backfill module (the “Concentrator”). The Concentrator component is located within the existing Lalor site; and
2. a pipeline system, comprised of three pipes laid along approximately 17 km between the Lalor site and the existing facilities (the “Pipeline System”).The Pipeline System will be laid in or alongside rights of way that have been owned in fee simple by HBMS or occupied by HBMS for mining purposes or by the Province of Manitoba for public purposes for more than 30 years.

The following boundaries are used in describing the Project Components and Activities:

[1] *Construction of the improvements to the Anderson TIA in the future (2017/18 or later) will require a Notice of Alteration to Manitoba Conservation and Water Stewardship with respect to the existing Manitoba environmental licence, pursuant to section 14 of The Environment Act (Manitoba), but no Federal approval.*

- **Project Site** – is comprised of Lalor site, the Lalor Access Road, and the proposed ROW for the Pipeline System.
- **Project Area** – is comprised of the an area that is 2 km beyond the Project Site, which is intended to take into account the effects of the project (such as noise, vehicle emissions and traffic).
- **Project Region** – is comprised of an area that is up to 10 km beyond the Project Site, which is intended to take into account the maximum spatial extent of any potential impacts of the Project.

Figure 4 shows the Project Site, Area and Region.

2.5.1 The Concentrator Component

This section discusses the sub-components of the Concentrator component, describing them in the order in which ore will flow through the various processes. **Figure 5** displays a plan of the Lalor site, showing the location of the Concentrator component and its sub-components within the Lalor site.

2.5.1.1 Jaw Crusher Building

- Crushing is the first step in the processing of ore. A jaw crusher building (13 m x 18 m x 22 m) will be constructed to the west of the concentrator building (see site plan in Figure 5). Coarse ore as large as 610 mm (24 inches) will be withdrawn from the Lalor Mine headframe by an apron feeder and transferred to this jaw crusher using a conveyer belt (shown in Figure 5).
- The conveyer belt will be covered with a half roof to protect the ore from wind and precipitation. A wet scrubber will be installed in the jaw crusher building to minimize dust and magnets will provide tramp metal protection. Sump pumps in the annex will collect dust and clean-up for transfer to the Semi Autogenous Grinding (SAG) mill feed chute (described in **Section 2.5.8.1**). Water collected in these pumps will be used as process water for concentrator processes.
- Ore coming out of the jaw crusher will be 100 mm to 150 mm (4 to 6 inches), and will be conveyed to an enclosed stockpile (described below in **Section 2.5.1.2**).

2.5.1.2 Concentrator Building

The total footprint of the concentrator building will be 115,000 m^2. Roof heights in the building will vary from 6m to 21 m. Conveyer belts will carry ore from the stockpile to the concentrator building.

Figure 6 illustrates the layout of the building.

The concentrator building will be comprised of the following:

- A 908 m^2 enclosed ore stockpile (see location of ore stockpile **Figure 5**), with a maximum storage capacity of 10,000 tonnes of ore. At any given time, it is expected that a minimum of 2,000 tonnes of ore will be stored in this stockpile before it is fed to the SAG mill. The ore stockpile will have a 1.5 m high concrete berm around it. The base of the ore stockpile will be lined with a synthetic liner to prevent penetration of leachate. The stockpile will be covered with a “cover-all” fabric, to minimize exposure to wind and precipitation. A belt scale located on the conveyer will measure the concentrator feed tonnage for accounting purposes.
- Modular offices, laboratories, control rooms, a warehouse, a compressor room, an analyzer room and maintenance shops (shown in **Figure 6**).

- A SAG mill feed chute, process and fresh water storage tanks, zinc rougher/scavenger flotation circuit, bulk copper/lead rougher/scavenger flotation circuit, and other miscellaneous equipment to process the ore. These are further described in **Section 2.5.8.**

Operation of the concentrator also will require augmentation of the facilities in the Lalor Mine change house/administration building from 300 to 440 lockers (including 40 lockers for contractors and visitors).

2.5.1.3 Concentrate Load-out Shed

Concentrate produced in the concentrator building will be transferred via a conveyer belt into a fully enclosed concentrate load-out shed, which will have separate areas for zinc and copper/lead concentrate. The load-out shed will be located immediately adjacent to the concentrator building (as shown in **Figure 6**). The shed will have a storage capacity of up to 2,500 tonnes of zinc concentrate (to accommodate an average production rate of 400 dry tonnes per day) and up to 1,000 tonnes of copper/lead (to accommodate an average production rate of 190 dry tonnes per day).

A front end loader will be used to load the filtered concentrate into trucks for transport to Flin Flon. The trucks will be loaded inside the load-out shed to minimize the exposure to wind and precipitation and release of concentrate dust. Before and after loading, each truck will be weighed on a truck scale located in the load-out shed. The trucks will be equipped with retractable covers to minimize dust generation when transporting.

Approximately 12 trucks per day will be required to ship zinc concentrate, and approximately 5 trucks to ship copper/lead concentrate.

2.5.1.4 Paste Backfill Module

A paste backfill module will be located north of the concentrator building (as shown in **Figure 6**). When the Lalor Mine requires backfill, tailings will be mixed with water and cement slurry and pumped underground (described in more detail in **Section 2.5.8.5**).

It is expected that up to 25% of the tailings produced at the Lalor Concentrator will be converted to backfill for the mine, thereby reducing the amount of tailings going to the Anderson TIA.

2.5.1.5 Electrical Yard

An electrical yard will be located east of the concentrator building (as shown in **Figure 6**).

The electrical yard will contain two enclosed 25 kV capacitor banks, each with two steps 1,000 kVAr each for a total of 2,000 kVAr each. Each capacitor bank will have approximate dimensions of 5 m x 2 m x 3 m. Each capacitor bank holds 108 L of liquid contained in individual 9 L capacitor cans. Drip-cans will be provided to contain any spills that may occur.

2.5.2 Pipeline System Component

The purpose of the pipeline system is to bring process water into the concentrator and take tailings away. The Pipeline System will be comprised of three pipes:

- **Pipe 1**: To transport recycled water ("reclaim water") to the concentrator from the Anderson TIA via the Anderson TIA Reclaim Pumphouse (primary source of process water).
- **Pipe 2**: To transport freshwater to the concentrator from Snow Lake via the Snow Lake Pumphouse (supplemental source of process water) ("freshwater pipe").
- **Pipe 3**: To transport tailings from the concentrator to the Anderson TIA ("tailings pipe").

2.5.3 Route of the Pipeline System

This section describes the route for the Pipeline System. The following general routing criteria were used:

- Following existing linear features to allow for gradual bends.
- Avoiding and/or minimizing water crossings, to the extent possible.
- Avoiding rock outcrops to minimize the need for levelling and the use of explosives.
- Using available cleared ROW, where available, to minimize clearing requirements.

An additional consideration was that the ROW containing the Pipeline System must be wide enough to accommodate vehicle access. This is needed because the pipes will be subject to daily inspection. Some clearing (or re-clearing) may be required, as described below.

For most of its length, the route will be the same for all three pipes. The only differences occur at the points of terminus/origin of the three pipes.

Figure 2 illustrates the whole of the route. It also shows the route in relation to the Anderson TIA Reclaim Pumphouse, the Anderson TIA and the Snow Lake Pumphouse.

2.5.4 Detailed Characteristics of Pipeline Route and Clearing Requirements

Figure 3 shows the route in six portions, with illustrations of their current use.

2.5.4.1 Portion 1 (all three Pipes)

Portion 1 lies between the concentrator building and PR 395. Portion 1 is inside the ROW which already contains the Lalor Access Road and the water lines which service the Lalor AEP. Please see **Figure 3** which displays a photograph of Portion 1 as it exists today. Portion 1 is gated at the intersection of the Lalor Access Road and PR 395. Access is restricted to HBMS and HBMS authorized persons.

The additional clearing requirements for this portion are about 1,750 m^2, including approximately 400 m^2 within the Lalor site. Given its proximity to industrial operations and traffic, it is highly unlikely that migratory birds are using the area to be cleared. Further, all clearing will be done in October/November outside of the nesting season.

2.5.4.2 Portion 2 (all three Pipes)

Portion 2 runs approximately one and a half kilometres along PR 395. Portion 2 is inside the ROW which already contains PR 395 and the waterlines which service the Lalor AEP.

Portion 2 will be linked to Portion 3 (described below) by crossing a distance of about 150 m. A Manitoba Hydro transmission line runs beside PR 395, within a cleared ROW. The link between Portions 2 and 3 transects the Manitoba Hydro ROW. Please see **Figure 3**, which illustrates this link.

The additional clearing requirements for Portion 2, including the link to Portion 3, are approximately 6,000 m^2. Given its proximity to PR 395 and exposure to industrial traffic, it is highly unlikely that migratory birds are using the area to be cleared. Further, all clearing will be done in October/November outside of the nesting season.

2.5.4.3 Portion 3 (all three Pipes)

Portion 3 lies within the ROW for a former rail bed. This ROW is owned by HBMS pursuant to Certificate of Title No. 1701932. Currently, HBMS maintains the rail bed as an access road. It is accessible to car and truck traffic for most of its length and to off-road vehicles for its full length. **Figure 3** contains a photo of the current condition of the rail bed. Access to the rail bed is restricted to HBMS and HBMS authorized persons.

Those portions of the rail bed which have become somewhat overgrown will have to be re-cleared to accommodate the Pipes and the inspection vehicle. As well, there will have to be turnaround bays (described below) to safely accommodate vehicles travelling in opposite directions. These turnarounds also will be within the rail bed ROW owned by HBMS.

2.5.4.4 Portion 4 (Pipe 3 – Terminus of the Tailings Pipe)

Portion 4 runs from the former rail bed into the Anderson TIA. This area is already occupied by HBMS infrastructure associated with the operation of the Anderson TIA. Portion 4 lies behind gates that restrict access to HBMS and HBMS authorized persons.

2.5.4.5 Portion 5 (Pipe 1 – Origin of the Reclaim Water Pipe)

Portion 5 runs from the former rail bed to the Anderson TIA Reclaim Pumphouse. Similarly, this area is already occupied by HBMS infrastructure associated with the operation of the Anderson TIA and lies behind gates that restrict access to HBMS and HBMS authorized persons. Currently, Portion 5 is occupied by an existing water line which delivers (recycle) process water from the Anderson TIA Reclaim Pumphouse to the existing Stall Lake Concentrator.

2.5.4.6 Portion 6 (Pipe 2 – Origin of the Freshwater Pipe)

Portion 6 runs from the former rail bed to the Snow Lake Pumphouse. Currently, this portion contains the water pipe which delivers freshwater from the Snow Lake Pumphouse to the Stall Lake Concentrator. Portion 6 also lies behind gates that restrict access to HBMS and HBMS authorized persons.

The total clearing requirements for Portions 3 through 6 will be approximately 35,700 m^2. The majority of the required clearing will consist of brush overgrowth. These areas can be classified as existing edge habitat, which would have the potential for use by migratory birds. However, the additional clearing that may be required will result in a relocation of edge habitat, rather than a net increase or loss in edge habitat, and thus will have no impact on potential use by migratory birds. Further, all clearing will be done in October/November outside of the nesting season.

2.5.5 Pipeline Construction and Materials

2.5.5.1 Pipe 1: Reclaim Water Pipe

The reclaim water pipe will deliver recycled water from the Anderson TIA Reclaim Pumphouse to the process water tank located inside the concentrator building (described above in **Section 2.5.1.2**). The pipeline will be composed of 305 mm (12 inch) insulated polyethylene pipe. It will transport approximately 1,299,000 m^3 of reclaim water annually. Its total length will be approximately 17 km.

The reclaim water pipe is shown in **Figure 3**.

2.5.5.2 Pipe 2: Freshwater Pipe

The freshwater pipe will deliver freshwater from the Snow Lake Pumphouse to the concentrator. The pipeline will be composed of 150 mm (6 inch) insulated polyethylene pipe. It will transport approximately 298,000 m^3 of freshwater annually. Its total length will be approximately 14.8 km.

2.5.5.3 Pipe 3: Tailings Line

The tailings line (total length of approximately 17 km) will be comprised of seven pipe segments designed to withstand different pressures encountered along various sections of the line. The first segment (approximately 0.275 km long), will be composed of 254 mm (10 inches) nominal diameter Schedule 40 steel pipe, with ceramic or basalt lining to prevent abrasion.

The next six segments will all be high density polyethylene pipe of varying wall thickness, the first two of which (approximately 7.2 km long) will have an outside diameter of 305 mm (12 inches), and the final four of which (approximately 9.9 km long) will have an outside diameter of 254 mm (10 inches).

Leak detection will be provided by monitoring flow rates using meters located near each end of the line. A rupture in the line would result in a difference between the two flow rates, which will be picked up through the concentrator process control system. In the event of an alarm, site personnel will be dispatched to visually inspect the length of the pipeline to determine if there is a problem.

The pumping system for the tailings line will be designed for the maximum possible pumping distance (approximately 17 km). Two 2-stage pumping systems (one operating and one standby) will be installed in the concentrator building, eliminating the requirement for booster pumps along the tailings line. It is anticipated that using pumping systems instead of booster pumps will significantly reduce the risk of spills.

2.5.5.4 Fill Requirements

Within Portion 3 of the route, design provides for intermittent 10 m wide points to allow for construction of the turnaround bays. These bays will occur at an average of approximately 250 m intervals. The exact location of the turnaround bays will be determined in the detailed design phase of the project, avoiding features such as bedrock outcrops, marsh/bogs, and water crossings.

Fill requirements will be met from non-acid generating (NAG) sources (limestone or quarry) available in the region. Once constructed, the pipes will be covered with a loosely placed cover material (*i.e.,* sand) along the entire route. Approximately 11,560 m^3 of cover material will be required, which will come from a local sand quarry.

2.5.5.5 Culvert Locations

In total, the route of the Pipeline System traverses 20 locations which contain existing culverts. The locations of these culverts are shown on **Figure 3** and their type, length, and diameter are displayed below on **Table 2.1**. No new culverts will be required. The culvert locations fall into two categories, as follows:

Culverts in Drainage Features (17)

These culverts were installed at the time the road or railway was constructed. They were placed in drainage features, either natural or engineered, that traversed that linear feature. Their purpose was and is to prevent surface runoff from ponding along the linear feature. These culverts are merely water control features of the particular linear feature. They are not connected to any potentially fish bearing habitat.

These culverts may be replaced as required in construction of the pipeline system. Even though these culverts are not connected to any potentially fish bearing habitat, culvert replacement will be carried out in accordance with Fisheries and Oceans Canada (DFO)'s Operational Statement on Culvert Maintenance.

Culverts in Streams and Off-take Ditches (3)

These culverts were also installed at the time the road or railway was constructed. They were installed for the purpose of directing the flow of a stream or off-take ditch through the road or railbed so that flow could continue, unimpeded by construction of that linear feature. These three locations consist of streams or off-take ditches which are or may lead to potentially fish bearing waterbodies.

These culverts will not be altered during construction of the pipeline system. However, any activities that occur near these culverts will be carried out in accordance with applicable DFO Operational Statement(s) or other applicable standards.

Table 2.1 – Culvert Features

ID	Number	Type (1)	Diameter (m)	Length (m) (2)	Location	Comment
LR01	2	HDPE	0.9	15	Stream or Off-take Ditch	
LR02	1	HDPE	0.6	15	Drainage Feature	
RB01	1	CSP	0.77	10	Drainage Feature	
RB02	2	CSP	1.63	25	Stream or Off-take Ditch	
RB03	2	CSP	1.95	25	Stream or Off-take Ditch	
RB04	1	CSP	-	10	Drainage Feature	Buried (3)
RB05	1	CSP	0.8	10	Drainage Feature	
RB06	1	CSP	0.7	10	Drainage Feature	
RB07	1	CSP	0.86	10	Drainage Feature	
RB08	1	CSP	0.75	10	Drainage Feature	
RB09	1	CSP	0.56	10	Drainage Feature	
RB10	1	CSP	0.6	10	Drainage Feature	
RB11	1	CSP	0.62	10	Drainage Feature	
RB12	1	CSP	0.8	10	Drainage Feature	

ID	Number	Type [1]	Diameter (m)	Length (m) [2]	Location	Comment
RB13	1	CSP	0.6	10	Drainage Feature	
RB14	1	CSP	0.55	10	Drainage Feature	
RB15	-	-	-	10	Drainage Feature	Buried [3]
RB16	1	CSP	0.95	10	Drainage Feature	
RB17	1	CSP	0.7	10	Drainage Feature	
AB03	1	CSP	0.9	10	Drainage Feature	

Notes:
1. CSP - Corrugated Steel Pipe; HDPE - High Density Polyethylene
2. Length is approximate
3. Diameter was not measured since the feature was buried.

2.5.6 Continued Use of Existing Approved Facilities

2.5.6.1 Sewage

The Lalor Concentrator will rely on existing and future sewage facilities built for Lalor AEP/future Lalor Mine. No separate sewage facility is planned.

2.5.6.2 Snow Lake Pumphouse

The existing Snow Lake Pumphouse is operated under Manitoba Water Rights Licence No. 2011-110. Under this licence, HBMS is permitted to withdraw 1150 dam^3/year of water from Snow Lake, not exceeding a withdrawal rate of 1300 L/s.

The only modification to the Snow Lake Pumphouse will take place at the pumphouse building. The existing pumps will be upgraded and a 15/0.6 kV, 0.2 MVA outdoor oil-filled transformer will be installed. The new pumps will be capable of maintaining a constant flow rate over a longer distance. The upgrade is required because the distance from Snow Lake to the Lalor Concentrator is greater than the distance from Snow Lake to the Stall Lake Concentrator.

This work will occur inside and immediately adjacent to the pumphouse building. It will not involve the water intake and it will not entail any physical activity at or below the Snow Lake high water mark.

When operation of the Lalor Concentrator replaces operation of the Stall Lake Concentrator, the amount of freshwater drawn from this pumphouse will decrease, even though the throughput of the new Lalor Concentrator will be greater than the throughput of the existing Stall Lake Concentrator.

2.5.6.3 Anderson TIA

The Anderson TIA has been used for sub-aqueous disposal of tailings since commissioning of the Stall Lake Concentrator in 1979. It is operated in accordance with the MMER and Manitoba CEC Order No. 766. The MMER-regulated final discharge point is a decant pipe passing through Anderson Dam into Anderson Creek. The tailings line from Lalor Concentrator will discharge into the Anderson TIA, which will continue to operate in accordance with these approvals.

2.5.6.4 Anderson TIA Reclaim Pumphouse (reclaim water source)

The current purpose of the Anderson TIA Reclaim Pumphouse is to recycle water from the Anderson TIA to the Stall Lake Concentrator. It pumps only reclaimed water drawn from the TIA. It does not relate to any freshwater source. Its purpose is to draw water from the Anderson TIA to be used as process water in the concentrator. Using water from the Anderson TIA in this manner allows for a reduction in freshwater use.

Eventually, the existing pumphouse will be decommissioned and a new pumphouse will be built at a location within 100 m of the existing location. The new Anderson TIA Reclaim Pumphouse will be equipped with larger units capable of maintaining the current maximum flow rate of 233 m^3/h (1200 USgpm). As with the Snow Lake Pumphouse, this upgrade is required because of the need to maintain a constant flow rate over a longer distance.

2.5.6.5 Use of Other Existing Facilities

- The existing access road from the Lalor site to PR 395 will be used for construction and operation of the proposed Lalor Concentrator.
- Lalor Concentrator will be connected to water distribution lines already on the Lalor site (for supply of water for domestic use).
- Equipment used in construction and operation of Lalor Concentrator will connect to fuel facilities constructed for the Lalor AEP/future Lalor Mine.
- The parking lot constructed for Lalor Mine also will be used by employees working at the proposed Lalor Concentrator.
- The communication tower on the Lalor Site currently provides wireless phone services and internet access. No separate communications facility will be required for Lalor Concentrator.
- An underground power line from the electrical room in the Concentrator building will tie into the electrical grid at the Lalor Mine.
- The new Chisel Electrical Substation will also supply power to the proposed Lalor Concentrator.

2.5.7 Production Capacity

The Lalor Concentrator will be designed to have a production capacity of 4,500 tonnes per day.

2.5.8 Production Processes

This section outlines the steps involved in the ore production process within the concentrator building after it has been crushed by the jaw crusher (described above in **Section 2.5.1.1**) and stockpiled (discussed in **Section 2.5.1.2**).

Figure 7 provides an illustration of these steps.

2.5.8.1 Grinding

Crushed ore will be withdrawn from the base of the stockpile by apron feeders and belt-conveyed to the Semi Autogenous Grinding (SAG) mill feed chute. Crushed ore will be slurried with process water and ground in the SAG mill, which will operate in closed circuit with a vibrating screen. Oversize from the vibrating screen will be circulated back to the SAG mill by gravity. Undersize from the screen will go to a pump box feeding a cluster of primary cyclones. Cyclone overflow at a target particle size of 80 microns (P_{80}) will flow to the flotation circuit. Cyclone

underflow will flow to a ball mill operating in closed circuit with the cyclones. A sump pump in the grinding area will collect clean-up and return it to the SAG mill screen feed pump box.

2.5.8.2 Bulk Copper/Lead Flotation

Flotation feed will be conditioned with reagents (including lime slurry for pH control, Methyl isobutyl carbinol (MIBC) frother, 3418A flotation collector and Carboxyl Methyl Cellulose (CMC) depressant solution) in an agitated tank and then fed by gravity to the bulk copper/lead rougher/scavenger flotation circuit consisting of six 30 m^3 tank cells in series. Scavenger concentrate will be recycled to the conditioning tank while scavenger tailings will be pumped to the zinc flotation circuit. Rougher flotation concentrate along with the flash flotation cell concentrate will be reground to a target particle size of 30 microns (P_{80}) in a regrind mill operating in closed circuit with cyclones. Additional lime slurry, 3418A and zinc sulphate solution will be added to the regrind mill to condition the feed for cleaner flotation. Reground bulk concentrate will be cleaned in a closed three-stage tank flotation circuit. The first cleaner tails will be pumped back to the conditioning tank. The third cleaner concentrate will be pumped to the copper/lead dewatering circuit. A sump pump in the area will collect clean-up and send it back to the regrind cyclones feed pump box.

2.5.8.3 Zinc Flotation

Zinc flotation feed will be conditioned with reagents (including lime slurry, MIBC frother, Sodium Isopropyl Xanthate (SIPX) zinc mineral flotation collector solution and copper sulphate mineral activator solution) in an agitated tank and then fed by gravity to the zinc rougher/scavenger flotation circuit consisting of six 30 m^3 tank cells in series. Scavenger concentrate will be recycled to the conditioning tank while scavenger tailings will be pumped to the flotation tailings thickening circuit. Zinc rougher concentrate will be cleaned in a closed two-stage tank cell flotation circuit. The first cleaner tails will be pumped back to the conditioning tank. The second cleaner concentrate will be pumped to the zinc dewatering circuit. A sump pump in the area will collect clean-up and send it back to the conditioning tank.

2.5.8.4 Concentrate Dewatering

This step of the process involves dewatering of two types of concentrate: Copper/Lead concentrate and Zinc concentrate.

Copper/Lead Concentrate

Flocculated bulk copper/lead concentrate will be pumped to a dedicated high-rate thickener. To reduce freshwater consumption, thickener overflow will be pumped to the process water storage tank for further use. Underflow, at a target density of 70% solids, will be pumped to an agitated stock tank capable of holding 12 hours of production capacity. Using a pressure filter, thickened copper/lead concentrate will be further dewatered to approximately 8% moisture, producing a filter cake. To prevent loss of fine solids and increase recycle water, filtrate will be recycled to the bulk copper/lead concentrate thickener. The filter cake will be gravity-fed to a storage bin in the concentrate load-out shed (described above in **Section 2.5.1.3**).

Zinc Concentrate

Flocculated zinc concentrate will be pumped to a dedicated high-rate thickener. Overflow will be recycled to the process water storage tank. Underflow, at a target density of 70% solids, will be pumped to an agitated stock tank capable of holding 12 hours of production capacity. Using a vacuum filter, thickened zinc concentrate will be further dewatered to approximately 8% moisture, producing a filter cake. To prevent loss of fine solids and increase recycle

water, filtrate will be recycled to the zinc concentrate thickener. The filter cake will be gravity-fed to a storage bin in the concentrate load-out shed (described above in **Section 2.5.1.3**).

A sump pump located near each thickener will collect any clean-up and send it back to the appropriate thickener feedwell.

2.5.8.5 Paste Backfill

Flocculated flotation tailings will be pumped to a high-rate thickener located in the paste backfill module (described in **Section 2.5.1.4**). Thickener overflow will be pumped to the process water storage tank for recycle in the milling process. Underflow, at a target density of 50% solids, will be pumped to a splitter box located in the paste backfill preparation area. A sump pump located near the tailings thickener will collect any clean-up and send it back to the thickener feedwell. When paste backfill is not required in the mine, the thickened tailings will be diverted at the splitter box to the tailings pump box and pumped to the Anderson TIA via the tailings line (described in **Section 2.5.4.4)**.

When the mine requires paste backfill, the thickened tailings will be pumped to a cyclone in the paste plant to remove fines. The fines in the cyclone overflow will gravity-flow via the splitter box overflow to the tailings pump box. The cyclone underflow stream containing the coarse tailings material will gravity-flow to a filter feed tank with one hour storage capacity. Coarse tailings will be vacuum filtered to a target density of 88% solids and belt conveyed to a twin screw mixer. Water (referred to as “trim water”) and cement slurry will next be added to achieve a target paste slump and final backfill strength. A positive displacement pump will be used to pump the paste underground via boreholes located adjacent to the paste backfill module. A sump pump located in the paste plant area will collect any clean-up and send it to the tailings pump box, from where this clean-up will be pumped along with the tailings to Anderson TIA.

2.5.8.6 Water Requirements

The water requirements for the Lalor Concentrator are provided in the water flow diagram presented in **Figure 8**.

2.5.8.6.1 Process Water

The process water system will be designed to minimize the use of fresh water to the extent possible by using water from Anderson TIA as the primary source (reclaim water) and by reusing this water internally within the concentrator building.

A small amount of fresh water will be required in the concentrator for certain applications (such as reagent mixing, fire suppression and seal water for pumps) for which the quality of reclaim water is not adequate. This freshwater will be supplied from the Snow Lake Pumphouse located at Snow Lake (described above in **Section 2.5.6.2**).

A freshwater tank will store freshwater for use in the concentrator and for fire suppression, should it be needed. The freshwater tank is designed in such a way that there will always be sufficient water in the tank to provide water for fire suppression. Both an electric and a backup diesel fire water pump will be provided.

2.5.8.6.2 Potable Water

Potable water, sourced from the water treatment system in the Town of Snow Lake, will be hauled to the Lalor site in portable jugs.

2.5.8.6.3 Domestic Water

Domestic water for sanitary usage in the concentrator building will be pumped from the freshwater treatment system at the Lalor Mine to a water distribution system in the concentrator facility.

2.5.8.7 Air

Two plant air compressors will supply dry compressed air throughout the concentrator building and associated annexes and modules, at a pressure of 700 kPa (100 psi). Air for the tank flotation cells will be provided by a pair of low pressure blowers.

2.5.8.8 Employees

The proposed Lalor Concentrator will engage 70 people during operation, with most of the workers employed at the existing Stall Lake Concentrator transferring over to the new facility. As the Lalor site is only 8 km away from the Town of Snow Lake, it is expected that workers will take up available accommodations in the Town of Snow Lake.

2.5.8.9 Materials

The Lalor Concentrator will utilize reagents that are commonly used throughout the mining industry, including HBMS existing base metal concentrators in Flin Flon and Snow Lake. Areas where reagents are handled will be equipped with containment berms and clean-up sump pumps to minimize the risk of spills and prevent the escape of fugitive dusts into the main concentrator building or the environment.

Table 2.2 provides a summary of consumption requirements, while specific functions of these materials, addition rates, and dispositions are provided in the sections that follow.

Table 2.2 - Summary of Reagents and Additives Required for the Proposed Lalor Concentrator

Reagent Material	Quantity Required (tonnes per year)
Flocculant	15
Methyl Isobutyl Carbinol (MIBC)	82
3418A	41
Carboxy Methyl Cellulose	164
Zinc Sulphate	99
Copper Sulphate	411
Sodium Isopropyl Xanthate	58
Lime	3,285
Cement and Flyash	13,150

Flocculant

Flocculant is used in the bulk copper/lead concentrate, zinc concentrate and final tailings thickeners to promote the settling of solid particles and produce a clear overflow suitable for recycling via the process water system.

Flocculant will be received in 25 kg bags, mixed to a 0.2% solution with fresh water and added to each thickener feed well as required. Flocculant will report preferentially with the solids in the thickener underflow stream. Sump pumps in each flocculant preparation area will collect any clean-up and send it to the tailings pumpbox.

Methyl Isobutyl Carbinol (MIBC)

MIBC will be used as a frother to promote the formation of a stable froth layer on the surface of the slurry in the flotation cells. It will be used in both the bulk copper/lead and the zinc flotation circuits. Consumption of MIBC will be approximately 0.05 kg per tonne of ore milled, or 82 tonnes per year. MIBC will be received in 859 kg returnable totes and added without dilution to various locations in the circuits. MIBC will report primarily to the concentrates, with residual quantities reporting to the tailings stream.

3418A

3418A is a proprietary flotation reagent for the collection of copper minerals into the bulk copper/lead flotation circuit concentrate. It will be received in returnable 1,000 kg totes and added without dilution to various locations in the grinding and flotation circuits. 3418A will report preferentially to the copper/lead concentrate, with residual quantities reporting to the tailings stream. The estimated total consumption of this reagent will be 0.025 kg per tonne of ore milled, or approximately 41 tonnes per year.

Gangue Depressant (Carboxy Methyl Cellulose)

Depressant will be used in the bulk copper/lead flotation circuit to inhibit the flotation of unwanted gangue minerals. The estimated consumption of depressant will be approximately 0.10 kg per tonne of ore milled or 164 tonnes per year. Depressant will be received in 25 kg bags, mixed with fresh water to a 1% solution and added to the copper flotation circuit in various locations as required. Depressant will report ideally to the tailings stream, with residual quantities recycling with process water. A sump pump in the area will collect any clean-up and send it to the tailings pumpbox.

Zinc Sulphate

Zinc sulphate will be used in the bulk copper/lead flotation circuit to inhibit the flotation of zinc minerals. Zinc sulphate will report primarily to the zinc concentrate, with residual quantities recycling with process water. Zinc sulphate will be received in bulk 1,000 kg bags, mixed to a 25% solution with process water and added to the copper flotation circuit in various locations as required. The estimated consumption will be approximately 0.06 kg per tonne of ore milled or 99 tonnes per year. A sump pump in the area will collect any clean-up and recycle it to the mixing tank.

Copper Sulphate

Copper sulphate is used in the zinc flotation circuit to activate the zinc minerals which had been depressed in the bulk copper/lead flotation circuit. Estimated consumption will be approximately 0.25 kg per tonne of ore milled or 411 tonnes per year. Copper sulphate will be received in bulk 1,000 kg bags, mixed to a 15% solution with process water and added to the zinc flotation circuit conditioning tank as required. Copper sulphate will report primarily to the zinc concentrate, with residual quantities recycling with process water. A sump pump in the area will collect any clean-up and recycle it to the mix tank.

Sodium Isopropyl Xanthate (SIPX)

SIPX is used in the zinc flotation circuit as a collector which adheres selectively to the surface of the zinc minerals, enabling them to float and be recovered into the froth product. SIPX consumption will be approximately 0.035 kg per tonne of ore milled or 58 tonnes per year. SIPX will report primarily to the zinc concentrate, with residual quantities reporting to the tailings stream. SIPX will be received in bulk 500 kg bags, mixed to a 10% solution with fresh water and added to the zinc flotation circuit in various locations as required. A sump pump in the area will collect any clean-up and recycle it to the holding tank.

Lime

Pebbled quicklime (CaO) will be trucked to the concentrator in trailers and unloaded pneumatically into a 100 tonne capacity silo located outdoors beside the main concentrator building. The silo will be equipped with a dust collector to minimize particulate emissions to the environment. The quicklime will be fed from the silo into a slaking mill, utilizing process water to produce milk-of-lime slurry at 15% solid, stored temporarily in a holding tank and metered into the process at various locations as required.

Slaked lime (calcium hydroxide) slurry will be used throughout the milling circuits to control the pH in the process to the levels required for optimum flotation performance. The estimated total lime consumption will be 2.0 kg per tonne of ore milled, or approximately 3,285 tonnes per year. Most of the used lime will report to either the tailings stream or the paste backfill stream.

A sump pump in the area will collect any clean-up and recycle it to the holding tank.

Grinding Balls

Steel grinding balls in various sizes will be received by truck and stored in bulk bins. An overhead crane and ball transporter will be used to charge the grinding balls as required for use in the SAG mill and ball mill.

Cement and Flyash

Portland cement and possibly flyash will be used in the production of the cemented paste backfill for use underground. Cement and flyash will be trucked separately to the concentrator by trailer and off-loaded pneumatically into dedicated silos located outdoors beside the main concentrator building. Each 250 tonne silo will be equipped with a dust collector to minimize particulate emissions to the environment.

The estimated total cement and flyash consumption will be 30 kg per tonne of paste produced, or approximately 13,150 tonnes per year. The cement and flyash will report to the paste backfill stream. The cement and flyash will be fed from the silos into a colloidal mixer, utilizing fresh water to produce a 69% solids slurry. This slurry will be stored temporarily in a holding tank and metered into the twin screw paste mixer as required. A sump pump in the area will collect any clean-up and forward it to the paste plant sump pump.

Lubricants and Fuel

Diesel fuel for the emergency power generator and the backup diesel fire water pump will be stored in double-walled tanks. These will be located on pads, adjacent to the main concentrator building.

Lubricating oils will generally be received in 20 L plastic containers or 200 L barrels. These will be placed in a dedicated storage area equipped with spill containment berms and fire suppression. Used oil will be temporarily stored in a double-walled tank, then removed from the site by a licensed contractor.

2.5.8.10 Equipment Use

Table 2.3 presents the equipment use expected during construction of the proposed Lalor Concentrator.

Table 2.3 – Equipment Use during Construction of the Proposed Lalor Concentrator

Equipment	Units	Duration of Use
Forklift	1	18 months
Zoom Boom	1	18 months
30t RT Crane	2	One for 18 months, one for 3 months
50t Crane	1	2 weeks
100t Crane	1	12 months
Air Compressors	2	Two for 18 months
JLG® Manlift	1	18 months
Welders	8	18 months
Light Stands	4	18 months
Construction Crew/Supervisor Trucks	6	18 months
Front End Loader	2	One dedicated to Lalor site for 18 months, and one specifically for winter snow removal for 8 months
Bobcat	2	18 months
Caterpillar dozer	2	One for 3 months, one for 2 weeks
Generator	1	3 months
Construction Heaters	8	8 months
Excavator	2	One for 3 months, one for 6 months
Dump Trucks	4	2 for 3 months, 2 for 6 months
Crushing Plant	1	2 months

2.5.8.11 Traffic

Table 2.4 presents the estimated daily traffic volumes expected during construction and operation of the proposed Lalor Concentrator.

Table 2.4 – Estimated Daily Traffic Volumes [1]

Vehicle	Construction							Operation				
	2013		2014				2015				2016	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Trucks – concrete	40	40	40	-	-	-	-	-	-	-	-	-
Trucks – equipment[2]	-	1	2	2	2	2	1	1	1	1	1	1
Trucks – delivery warehouse[3]	-	-	-	-	-	-	-	1	1	1	1	1
Trucks – delivery mill[4]	-	-	-	-	-	-	-	1	2	2	2	2

Vehicle	Construction							Operation				
	2013		2014				2015				2016	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Trucks - concentrate	-	-	-	-	-	-	-	17	17	17	17	17
Cars – pick-ups	10	20	20	20	20	20	20	12	12	12	12	12
Bus	4	4	4	4	4	4	4	4	2	2	2	2
Total Lalor Concentrator Traffic	54	65	66	26	26	26	25	36	35	35	35	35

Notes:
[1] Numbers are based on per day, one way.
[2] Trucks-equipment: includes steel, equipment components that would be an average per day during the quarter.
[3] Trucks-delivery warehouse: includes fuel, propane, deliveries to warehouse, sewage pump-out truck.
[4] Trucks – delivery-mill: reagents, grinding media, cement (paste fill)

2.5.9 Project Activities

See **Section 2.5**

2.6 Emissions, discharges and waste

2.6.1 Atmospheric Emissions

Atmospheric emissions associated with Lalor Concentrator will be greenhouse gases, dust and particular matter and exhaust emissions, which is typical of industrial activity.

2.6.1.1 Greenhouse Gas Emissions

Sources of greenhouse gas (GHG) emissions for the proposed project are: vehicles, exhausts from diesel construction equipment (general vehicle movement on site, using equipment for grading, placing materials etc.) and combustion of propane in propane heaters.

The GHG generating consumption expected for construction and operation of the proposed Lalor Concentrator is presented in **Table 2.5**.

Table 2.5 – GHG Generating Consumption

Fuel Type	**Construction** (Quantity/year)	**Operation** (Quantity/year)
Diesel (Stationary)	0	11.7 kL
Diesel (Mobile)	758.6 kL	20.1 kL
Propane	0	58.6 kL
Limestone [1]	0	3,258 t
Electricity [2]	0	77,378 MWh

Notes:
[1] The limestone may contain a small fraction of impurities that could contribute to the GHG emissions
[2] Electricity will be obtained from Manitoba Hydro's electrical grid, which is primarily produced from hydroelectric sources.

Using the emission factors referenced from the *National Inventory Report 1990-2010* (Environment Canada 2012) and based on the fuel consumption during construction phase provided in **Table 2.6**, the CO_2 emission projection is provided in **Table 2.7**.

Table 2.6 – CO_2 Emission Projection – Construction Phase

Fuel	Quantity		CO_2		CH_4		N_2O	
			Factor	Tonnage	Factor	Tonnage	Factor	Tonnage
Heavy Oil	0	kL	3.124	0	0.000120	0.000	0.000064	0.000
Gasoline	0	kL	2.289	0	0.000240	0.000	0.000580	0.000
Diesel (Stationary)	0.0	kL	2.663	0	0.000133	0.000	0.000400	0.000
Diesel (Mobile)	758.6	kL	2.663	2,020	0.000140	0.106	0.000082	0.062
Propane (Heating)	0.0	kL	1.510	0	0.000024	0.000	0.000108	0.000
Limestone	0	t	0.003	0	-	-	-	-
ODS (R-22)	0.000	t	1700	0	-	-	-	-
Electricity	0	MWh	0.003	0	0.0000001	0.000	0.0000001	0.000
CO2 Equivalency Factor			1	2,020	21	2	310	19
Total CO_2e Emission				2,042 tonnes				
Total CO_2e Emission (excluding Electricity)				2,042 tonnes				

Total CO_2 emission projection for the operation phase is provided in **Table 8.**

Table 2.7 – CO_2 Emission Projection – Operation Phase

Fuel Type	Quantity		CO_2		CH_4		N_2O	
			Factor	Tonnage	Factor	Tonnage	Factor	Tonnage
Heavy Oil	0	kL	3.124	0	0.000120	0.000	0.000064	0.000
Gasoline	0	kL	2.289	0	0.000240	0.000	0.000580	0.000
Diesel (Stationary)	11.7	kL	2.663	31	0.000133	0.002	0.000400	0.005
Diesel (Mobile)	20.1	kL	2.663	54	0.000140	0.003	0.000082	0.002
Propane (Heating)	58.6	kL	1.510	88	0.000024	0.001	0.000108	0.006
Limestone	3,258	t	0.003	11	-	-	-	-
ODS (R-22)	0.000	t	1700	0	-	-	-	-
Electricity	77,378	MWh	0.003	232	0.0000001	0.008	0.0000001	0.008
CO2 Equivalency Factor			1	416	21	0	310	6
Total CO_2e Emission				423 tonnes				
Total CO_2e Emission (excluding Electricity)				188 tonnes				

Using the 20,300,000 tonnes of GHG emissions reported in 2011 for the Province of Manitoba (Environment Canada, 2011), an addition of 2,042 tonnes in total (or approximately 764 tonnes/year) during construction represent a negligible increase of 0.004% in GHG emissions. Further, an addition of 423 tonnes per year during operation represents a negligible increase of 0.002% in GHG emissions.

However, operation of the Lalor Concentrator is intended to replace operation of the existing Stall Lake Concentrator. CO_2e emissions from the existing Stall Concentrator in 2012 amounted to 731 tonnes CO_2e per year. As shown above in **Table 2.7**, the proposed Lalor Concentrator will result in only 423 tonnes CO_2e. This represents a 42% decrease in CO_2e tonnes with the newer facility while significantly increasing the overall tonnes of ore processed.

2.6.1.2 Dust and Particulate Matter

Sources of dust include activities such as blasting, clearing, levelling, crushing, movement of traffic on roads, stockpiling materials, etc. Dust occurs primarily during summer and fall, with greater likelihood for an increase in dust during dry and windy conditions.

All clearing, levelling and blasting at the Lalor site will have been completed before construction of the Concentrator. The potential for generation of dust during construction of the Concentrator component therefore is limited to vehicular use and will be minimal. Dust may be produced along the Pipeline System ROW during construction (clearing, blasting, and laying down the pipes, stockpiling, and general use of construction equipment). Blasting is only anticipated to occur within a small portion of the ROW (area south of PR 395, and will occur between October and November of 2014). Therefore, dust from blasting during construction is expected to be minimal.

During operation, dust will be generated in the jaw crusher building (during operation of the jaw crusher) and by vehicle and equipment movement on site and along the Lalor Access Road and the Pipeline System ROW. **Section 2.5.8.11** outlines traffic volumes expected during the operation phase. The concentrate trucks will travel along the Lalor Access Road to PR 395 to PTH 39 to PTH 10. Since PTH 39 and PTH 10 are both paved roads, dust generation from concentrate haul trucks along these roads is expected to be minimal.

During closure, activities such as levelling, contouring, excavating and hauling materials and soils to the site will generate some dust.

To reduce dust generation at the Project Site and within the Project Area, the following mitigation measures will be implemented:

- All clearing is being undertaken in late fall/winter, which will reduce the amount of dust generated.
- The jaw crusher building is equipped with a wet scrubber (dust collection system) as described in **Section 2.5.1.1**.
- If required, dust suppression activities such as the use of approved dust control agents, will be undertaken for the Lalor Access Road and the Pipeline System ROW.
- The Lalor site has a speed limit of 20 km/hr, which will continue to be imposed.
- The Lalor Access Road has a speed limit of 40 km/hr, which will continue to be imposed. The same speed limit (or less) will apply to the Pipeline System ROW.
- Concentrate trucks going to Flin Flon will be covered to minimize dust coming off loads.

These planned mitigation measures are believed to be sufficient to reduce the dust generated to an amount that will produce negligible effects.

2.6.1.3 Exhaust Emissions

During construction, exhaust emissions will be generated during delivery of materials to the site, laying foundations, erecting buildings and other operation of vehicles. Emissions will also be generated during construction of the Pipeline System (using diesel-fuelled equipment, clearing, blasting, grubbing, laying pipes, etc.).

During closure, emissions will be generated during hauling, excavating, grading, and placing materials. Approximately five pieces of equipment (excavator, bulldozer, haul trucks, and miscellaneous equipment) are anticipated to be required for closure-related activities (some of these may be used in conjunction with closure activities at the Lalor Mine, depending on the timing of closure). Emissions from these are anticipated to be limited to the Project Site and the Project Area and mainly occur during summer months over the three years during which closure activities are being undertaken.

The following mitigation measures will be implemented:

- Vehicles and equipment will be well maintained
- Vehicle idling will be kept to a minimum

During operation, sources of exhaust emissions include: vehicle and equipment use and propane combustion (to heat the concentrator building). As indicated in **Section 2.5.8.11**, it is expected that, during construction, a maximum of 66 vehicles and, during operation, a maximum of 25 vehicles will access public roads in vicinity of the Lalor Concentrator. **Table 2.8** presents the percentage changes associated with these numbers.

Table 2.8 – Traffic Changes

	PR 395	PR 392	PTH 39	PTH 10
AADT (MIT, 2011)[1]	520	270 to 510	310 to 390	1180 to 2490
Maximum Vehicles - Construction Phase	66	66	26	26
Percentage Change	13%	13% to 24%	7% to 8%	1% to 2%
Maximum Vehicles - Operation Phase	25	25	25	25
Percentage Change	5%	5 to 9%	6% to 8%	1% to 2%

Notes:
[1] The numbers presented represent the range of AADT along the route between the Lalor Concentrator and the City of Flin Flon.

While the increase in traffic during construction along PR 395 and PR 392 is greater than 10%, this increase is temporary, and exhaust emissions as a result of this increase are negligible in relation to air quality in the Project Region. Also, any increases in traffic due to the Lalor Concentrator will be offset by traffic reductions due to ore from Lalor Mine being processed at Lalor Concentrator instead of the Stall Lake Concentrator (*i.e.,* 24 trucks). All vehicles used for the Lalor Concentrator will comply with Environment Canada's On-Road Vehicle and Engine Emission Regulations as required.

The second source of exhaust emissions is propane heaters that will be used to heat the Concentrator. The combustion process associated with these propane heaters will generate pollutants which may include nitrogen oxides (NOx), carbon monoxide, sulphur dioxide, particulate matter, or greenhouse gases (discussed above in **Sections 2.6.1.1**). However, in order to mitigate any adverse effects on air quality (and hence ensure good air quality), the following measures will be implemented:

- The heating system has been equipped with low NOx burners
- HBMS will maintain ongoing compliance with *The Workplace Safety and Health Act*.

These measures are believed to be sufficient to mitigate any adverse air quality effects during the construction, operation and closure phases of the proposed project. Following closure, air quality is expected to return to pre-project conditions. Therefore, potential effects are considered reversible and not significant.

2.6.2 Liquid Discharges

There is no liquid discharge associated with the proposed Lalor Concentrator, since sewage facilities will be provided by Lalor AEP/Lalor Mine.

2.6.3 Waste and Waste Disposal

2.6.3.1 Tailings

Table 2.9 outlines the total tailings that will be produced, tailings that will be used to generate paste for Lalor Mine backfill and tailings that will be deposited at the Anderson TIA**.**

Table 2.9 – Tailings Management

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Ore Milled - Total Tonnes	106,377	322,156	540,500	1,039,175	1,228,910	1,448,000	1,629,000	1,629,000	1,629,000	1,629,000	1,629,000	1,629,000	1,629,000	1,629,000	1,629,000	1,629,000	1,603,995	1,651,871	1,102,235	683,513	26,016,731
Au (g/tonne)	2.268	1.864	1.864	2.176	2.453	2.384	2.666	2.468	2.440	2.332	2.236	2.509	2.543	2.651	2.837	2.740	2.823	3.220	3.321	3.234	2.603
Ag (g/tonne)	22.428	19.483	19.902	22.397	24.512	23.846	23.699	23.944	24.985	22.785	22.374	24.239	22.092	22.343	20.677	19.051	21.041	20.607	22.435	20.390	22.380
Cu (%)	0.72	0.62	0.61	0.63	0.67	0.62	0.59	0.56	0.57	0.58	0.78	0.89	1.03	0.88	0.88	0.77	0.71	0.64	0.44	0.40	0.70
Zn (%)	6.16	7.14	7.33	6.52	6.30	6.09	5.07	5.20	5.53	5.03	5.60	5.48	5.95	5.13	4.59	4.22	3.58	2.82	2.74	2.08	4.98
Pb (%)	0.14	0.14	0.13	0.17	0.22	0.21	0.18	0.22	0.25	0.20	0.20	0.25	0.21	0.18	0.20	0.19	0.21	0.19	0.23	0.23	0.21
Cu Conc - Total Tonnes	3,691	9,293	15,531	30,934	39,328	42,652	45,571	42,742	44,059	44,730	61,065	70,501	82,153	70,069	70,283	61,149	55,357	51,756	22,926	13,110	876,901
Au (g/tonne)	42.6	40.7	40.8	47.2	50.6	53.2	64.0	62.2	59.5	55.6	38.7	38.5	33.5	41.4	44.8	49.3	55.6	72.0	112.8	118.3	51.6
Ag (g/tonne)	429.8	426.7	440.8	500.0	527.3	551.2	575.4	622.4	640.9	555.1	396.5	383.9	289.6	344.9	309.2	318.1	395.8	423.8	717.3	682.4	441.2
Cu (%)	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44
Zn (%)	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19
Pb (%)	3.53	4.19	4.13	5.27	6.33	6.62	6.06	7.71	8.69	6.83	5.02	5.33	3.86	3.80	4.31	4.77	5.67	5.48	10.36	11.10	5.64
Zn Conc - Total Tonnes	11,938	42,303	72,970	124,033	141,444	160,919	149,291	153,286	163,787	148,003	164,988	160,591	174,721	149,729	132,825	121,464	100,174	79,324	51,887	23,564	2,327,241
Au (g/tonne)	1.81	1.21	1.18	1.61	1.95	1.95	2.73	2.41	2.22	2.32	1.97	2.35	2.19	2.70	3.33	3.48	4.32	6.71	7.13	9.40	2.71
Ag (g/tonne)	15.8	10.6	10.7	14.8	17.9	17.7	21.2	21.1	21.2	20.0	17.4	20.5	16.1	19.2	18.9	18.1	25.5	32.0	37.7	43.8	19.7
Cu (%)	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.30	0.27	0.27	0.27	0.27	0.27	0.27
Zn (%)	52.15	52.15	52.15	52.15	52.15	52.15	52.15	52.15	52.15	52.15	52.15	52.15	52.15	52.15	52.15	52.15	52.15	52.15	52.15	52.15	52.15
Pb (%)	0.06	0.05	0.05	0.07	0.09	0.09	0.10	0.12	0.13	0.11	0.10	0.13	0.10	0.10	0.12	0.13	0.17	0.19	0.25	0.33	0.12
Tailings - Total Tonnes	90,748	270,560	451,999	884,208	1,048,138	1,244,429	1,434,137	1,432,972	1,421,153	1,436,267	1,402,946	1,397,908	1,372,125	1,409,201	1,425,892	1,446,386	1,448,465	1,520,791	1,027,422	646,839	22,812,589
Au (g/tonne)	0.69	0.63	0.64	0.68	0.71	0.70	0.71	0.69	0.70	0.68	0.68	0.71	0.73	0.72	0.72	0.71	0.70	0.70	0.69	0.68	0.71
Ag (g/tonne)	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75
Cu (%)	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
Zn (%)	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233
Pb (%)	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
Total Tailings - Tonnes	90,748	270,560	451,999	884,208	1,048,138	1,244,429	1,434,137	1,432,972	1,421,153	1,436,267	1,402,946	1,397,908	1,372,125	1,409,201	1,425,892	1,446,386	1,448,465	1,520,791	1,027,422	646,839	22,812,589
Tailings - Paste to U/G - Tonnes	0	0	0	221,052	262,035	311,107	358,534	358,243	355,288	359,067	350,736	349,477	343,031	352,300	356,473	361,597	362,116	380,198	256,856	161,710	5,499,820
Tailings - to TIA - Tonnes	90,748	270,560	451,999	663,156	786,104	933,322	1,075,603	1,074,729	1,065,865	1,077,200	1,052,209	1,048,431	1,029,094	1,056,901	1,069,419	1,084,790	1,086,348	1,140,593	770,567	485,129	17,312,768
Tailings to TIA (m3)	116,679	347,863	581,143	852,628	1,010,706	1,199,983	1,382,921	1,381,796	1,370,398	1,384,971	1,352,841	1,347,981	1,323,122	1,358,871	1,374,969	1,394,730	1,396,736	1,466,479	990,726	623,739	22,259,276

Notes:
Tonnages reported in years 2028 through 2031 are based on inferred mineral resources and as such do not meet NI 43-101 reporting requirements for mineral reserves.
These numbers are shown as potential production for the purpose of tailings storage planning only.
Assumes Lalor Mine start-up in Q3, 2014

As noted above, all tailings discharged as waste will be deposited in the existing licensed Anderson TIA.

2.6.3.2 Solid Wastes

All domestic and non-hazardous waste generated at the Lalor Concentrator will be disposed of at HBMS present and future licensed facilities. HBMS will make arrangements with a licensed hazardous waste handler with respect to any hazardous wastes produced (for example used oil, oily rags, chemical delivery containers, etc.).

2.7 Project Phases and Proposed Scheduling

Table 2.10 – Project Phases and Proposed Scheduling

Project Phases and Activity	Proposed Schedule (subject to the results of Regulatory review)
CONSTRUCTION	
Bringing Materials and Equipment to Site (excavating, hauling, stockpiling, storing fuels)	August 2013 – September 2013
Preparing Construction Site (Clearing vegetation, installing utilities)	October 2013 – November 2013
Constructing Concentrator Building and Associated Facilities (erecting buildings, installing equipment, grading, backfilling)	November 2013 – September 2014
Preparing Pipeline ROW (clearing vegetation, stripping topsoil, blasting, excavating)	October 2014 –November 2014
Installing Pipeline (laying pipes, grading, compacting, installing)	August 2015 – October 2015
Upgrading support infrastructure at Snow Lake	July 2015
OPERATION	
Processing Ore (crushing, stockpiling, chemical/mechanical processing, concentrate dewatering, pumping reclaim water)	October 2015 - 2027
Transporting, Storing and Handling Materials	October 2015 - 2027
Handling Process Wastes (treating sewage, recycling process water, removing sludge)	October 2015 - 2027
Maintaining Concentrator component & Pipeline	October 2015 – 2027 (as required)
CLOSURE	
Removing all buildings, foundations, storage tanks, site refuse	2027 - 2030
Scarifying Pipeline System ROW.	2027 - 2030
Testing, removing, and remediating any contaminated soils.	2027 - 2030
Re-grading and contouring	2027 - 2030
Re-vegetating disturbed areas	2027 - 2030

2.7.1 Concentrator Closure Plan

Following the closure and decommissioning of the Lalor Concentrator, the site will be returned to its natural state (to the extent possible). This will be accomplished through the implementation of the Lalor Concentrator Closure Plan, which will be completed and submitted for approval to the Director of Mines in accordance with Manitoba Mine Closure Regulation 67/99. The Lalor Concentrator Closure Plan, including the information required to calculate the

financial assurance to be paid to Manitoba, can be prepared as soon as construction has been completed. In accordance with the Manitoba Mine Closure Regulation 67/99, the Lalor Concentrator will not be commissioned until the closure plan has been accepted.

The Lalor Concentrator Closure Plan will include the following:

- Removing all buildings and foundations.
- Removing and appropriately disposing of any miscellaneous infrastructure such as power lines, generators, transformers, pipelines pumps, water storage tanks etc.
- Removing and appropriately disposing of site refuse.
- Scarifying Pipeline System ROW.
- Removing all fuel storage tanks.
- Testing, removing and/or remediating any contaminated soils.
- Re-grading and contouring stockpile pads, concentrator haul road and parking area.
- Re-vegetating disturbed areas in order to restore landscape to the extent possible to their native appearance.

It is anticipated that the end-use of the site will be a natural space with no planned residential, commercial or industrial development at the site. Based on HBMS closure experience in the Snow Lake region the growth of grasses and mosses is apparent within the first few years following closure, whereas trees and shrubs take longer to establish.

3. Project Location

3.1 Project Coordinates

Center of site for Concentrator Component
Latitude: 54°52'28.785080" NORTH
Longitude: 100°09'00.489356" WEST

Start of Pipeline
Latitude: 54°52'29.082190" NORTH
Longitude: 100°08'57.628008" WEST

End of Pipeline
Latitude: 54°51'15.411538" NORTH
Longitude: 99°57'58.207475" WEST

All coordinates are listed in the GRS80 (NAD83, WGS84) ellipsoid.

3.2 Site Maps and Plans – Project Components and Activities

Figure 1 displays the general location of the Lalor site in Manitoba.

Figure 2 displays the locations of the components of the proposed project in relation to existing HBMS licensed facilities.

3.3 Maps Showing Other Land Features

Figure 9 shows the watercourses and waterbodies in the Project Region. The Project Region is the geographical boundary for this figure because it takes into account the maximum spatial extent of potential impacts of the project.

Figure 10 shows the linear and other transportation components within the Project Region, including railways corridors, transmission lines, and highways.

Figure 11 shows known existing and past land uses within the Project Region, including heritage resources, mining and other development activities, and residential and recreational areas.

Figure 12 displays the location of the Federal lands (Indian Reserves) closest to the Project Region. There are no Federal lands in the Project Region. **Figure 12** also shows the Registered Trap Line (RTL) zones recognized by Manitoba, some of which are associated with First Nation/Aboriginal communities. Based on Government of Manitoba (Manitoba Conservation and Water Stewardship, 2002; Manitoba, 2012) and Federal sources (Government of Canada, 2009), there is no Indian Reserve, Registered Trap Line (RTL) zone associated with First Nation/Aboriginal community use or other Aboriginal interest located within the Project Region.

During the latter half of 2010, Mathias Colomb Cree Nation (MCCN) began to suggest that its traditional lands encompass a large portion of northwestern Manitoba, including the entire Snow Lake mining district, in which the Lalor projects, including the proposed Lalor Concentrator, are located. HBMS therefore entered into environmental information sharing with MCCN and Manitoba commenced a Crown consultation process in relation to HBMS' proposed Lalor Mine. Information sharing has included the proposed Lalor Concentrator. As well, HBMS and Manitoba funded a traditional use and knowledge study by an expert of MCCN's choice so that the information

sharing process could be completed on the basis of current information about MCCN traditional use. However, MCCN has instructed its expert to stop work before completing the report of the study.

The RTL Zone associated with MCCN is not in the Project Region.

The nearest community to the Project Region is the Town of Snow Lake. Other larger population centres in the general region include the City of Flin Flon, Cranberry Portage, Thompson and The Pas (See Figure 1).

Figure 13 shows permanent, seasonal and temporary residences in the Project Region.

Figure 14 shows fisheries and fishing areas in the Project Region.

There are no environmentally sensitive areas in the Project Region.

3.4 Photographs of Work Location

Appendix B provides the following photos:

Photo 1 shows an aerial view of the Lalor site, looking northwest, with an arrow indicating the location of the proposed Lalor Concentrator.

Photo 2 shows the location of the proposed Lalor Concentrator, looking north.

Photo 3 shows the corridor of the Pipeline System (along the Lalor Access Road from Lalor site to PR 395).

Photo 4 shows the corridor of the Pipeline System (along the former rail bed).

Photo 5 shows the Snow Lake Pumphouse.

Photo 6 shows the Anderson Tailings Impoundment Area.

3.5 Legal Description

The Lalor Concentrator Site is located within a portion of NW-9-68-18W1

The Pipeline System lies within portions of: Sections 31 and 32 of 67-17W1, Sections 35 and 36 of 67-18W1, Sections 3 through 5 of 68-17W1, Sections 1 through 3 and 9 through 11 of 68-18W1.

3.6 Proximity to Residences, Traditional Territories and Federal Lands

Figure 13 displays all the areas within the Project Region in which known permanent, seasonal or temporary residences are located, which are comprised of the Town of Snow Lake, five cabins on Cook Lake, and cottage subdivisions on Berry Bay, Taylor Bay, Anderson Bay and Bartlett's Landing, all on Wekusko Lake. Cabins on Cook Lake are seasonal, while the majority along Wekusko Lake are all season.

With respect to traditional territories, see **Section 3.3** above.

3.7 Land Ownership and Property Rights

All surface and sub-surface rights required for the development of the proposed project are held by the proponent as follows:

3.7.1 The Concentrator Component

The concentrator component will be constructed within the boundaries of Mineral Lease ML-334 obtained on March 29, 2012 from the Mines Branch, Government of Manitoba. This lease was converted from mineral claims which have been held since 1960 (see **Figure 15**).

3.7.2 Pipeline System

The greater extent of the Pipeline System will be laid in land that is held by the proponent in fee simple. **Figure 15** displays Portion 3 of the route of the Pipeline System, which is owned by HBMS pursuant to Certificate of Title No. 1701932.

The proponent holds the rights to the remainder of the land required for the Pipeline System by means of mineral and/or surface leases shown in **Table 3.1** and **Figure 15**. These leases were converted from claims which have been held since 1960. These leases permit use and occupation of the land for the purpose of prospecting, exploring for, developing, mining or production of minerals on, in, or under the land. Certain portions of the Pipeline System lie within areas for which HBMS has Surface Leases as well as Mineral Leases.

Table 3.1 – Mineral and/or Surface Leases Associated with Lalor Concentrator

M5779	M7238	M7359	M7493
M5780	M7239	M7360	M7494
M5730	M7240	M5808	M5719
M5731	M7241	M5809	M7298
M7307	M7242	M5741	M7297
M5732	M7243	M5740	M7299
M5726	M7286	M5739	M5745
M7276	M7285	M5810	M5744
M7266	M5784	M5812	M5749
M5725	M5789	M5813	M5751
M5724	M5803	M5721	M5750
M7309	M7333	M7491	M7383
M5776	M5806	M7515	M7374

3.8 Land and Water Use

There is no water user in or near the Project Site other than the proponent. The project site crosses three Registered Traplines. None of these trap lines is associated with an Aboriginal community.

The project does not require access to, use or occupation of, or the exploration, development and production of lands and resources currently used for traditional purposes by Aboriginal peoples. All elements of the proposed Lalor

Concentrator will be on land which HBMS holds under lease or in fee simple, and is occupied and used by HBMS for mining purposes as follows:

- The concentrator component lies within the Lalor site, which has been developed for the Lalor AEP/future Lalor Mine Project. It lies on land that has been under continuous use for mining purposes since at least 2007.

- Portion 1 of the Pipeline System, which follows the Lalor Access Road, lies on land which is controlled by gated access, and which has been under continuous use by HBMS for mining purposes since at least 2007.

- Portion 2 of the Pipeline System tracks PR 395, which is in daily use for industrial traffic. In addition, Provincial regulations prohibit hunting within 300 m of roadways.

- Portion 3 of the Pipeline System falls within the ROW for a former rail bed, which is owned by HBMS pursuant to Certificate of Title No. 1701932.This is private land to which Aboriginal peoples do not have a right of access.

- Portions 4, 5, and 6 of the Pipeline System are located on land which the proponent has used for mining purposes since the late 1970's. These portions lie behind the gates of existing HBMS projects, which excludes users other than the proponent, on land that has been taken up for mining purposes for over 30 years.

4. Federal Involvement

4.1 Financial Support

Funding for the project will be provided solely by HBMS.

4.2 Federal Lands

No Federal lands will be used for the purpose of carrying out the designated project. Environmental planning for the Lalor Concentrator Project has defined the broadest spatial boundary of potential impact to be an area of up to 10 km beyond the site of the concentrator component and the Pipeline System (the Project Region). No Federal lands lie within the Project Region.

4.3 Legislative Requirements

No Federal permits or approvals will be required or sought for the proposed Lalor Concentrator.

Federal regulatory requirements applicable to existing support facilities are:

- The Anderson TIA is operated in accordance with the MMER.

5. Environmental Effects

5.1 Approach

A detailed environmental assessment has been undertaken as a part of the licence application to be submitted to Manitoba Conservation and Water Stewardship for consideration under *The Environment Act* (Manitoba). This project description summarizes potential effects as they relate to Federal jurisdiction.

Potential environmental interactions between the proposed Lalor Concentrator and environmental components were identified within the following geographic boundaries:

- **Project Site** – is comprised of Lalor site, the Lalor Access Road, and the proposed ROW for the Pipeline System.
- **Project Area** – is comprised of the an area that is 2 km beyond the Project Site, which is intended to take into account the effects of the project (such as noise, vehicle emissions and traffic).
- **Project Region** – is comprised of an area that is up to 10 km beyond the Project Site, which is intended to take into account the maximum spatial extent of any potential impacts of the Project.

The Project Site, Project Area and Project Region are shown in **Figure 4**.

5.2 Environmental Setting

In 2007, baseline terrestrial and aquatic investigations were commenced in anticipation that discoveries in the region of the Lalor Mine could lead to future development. The investigations dealt broadly with aquatic and terrestrial resources that could be affected by future development, including local geology, soil, vegetation and wildlife, and fish and fish habitat. Aquatic investigations included bathymetry, water and sediment quality, aquatic invertebrates, fish community and testing for metals in fish.

These baseline investigations that were carried out in 2007, 2008, 2010, 2011 and 2012 are reported on in the *Proposed Lalor Mine Environmental Baseline Assessment* (AECOM, 2012), which was filed with the Lalor Mine EAP (AECOM, 2013a), and the *Proposed Lalor Concentrator Environmental Baseline Assessment* (AECOM, 2013). The baseline reports are the primary source for the physical, terrestrial and aquatic environment provided in this section.

5.2.1 Physical Setting

The Project Region is found within the Reed Lake Ecodistrict of the Churchill River Upland Ecoregion. It is characterized by broken, hilly to rolling bedrock, which controls relief of the area. The bedrock is partially covered by unconsolidated mineral and organic materials. Areas to the east of Lalor Lake contain extensive lacustrine deposits, while the remainder contains a mixture of; lacustrine sediments, till deposits, rock exposed areas, and peatlands.

Dystric Brunisols are the dominant soils in the Reed Lake Ecodistrict. These soils have developed over glacial till overlying the bedrock and consist of shallow, sandy, and stony veneers. Peat-filled depressions with very poorly drained Typic and Terric Fibrisolic and Mesisolic Organic soils can be found throughout this ecodistrict. These soils are overly loamy to clayey glaciolacustrine sediments. Eutric Brunisols and Gray Luvisols can be found on sandy bars, beaches, and exposed clayey deposits.

Specific measurements of air quality in the Project Region are not available. However, based on anecdotal observations, it can be expected that air quality in this area is considered very good compared with larger cities and commercial and industrial areas in Manitoba.

The regional shallow groundwater flow is likely controlled by the topography and bedrock surface in the region. There are 13 registered groundwater wells in use within the Project Region, but none within the Project Site. These wells are located within the property development around Wekusko Lake (Taylor Bay, Berry Bay and along PR 392), the Town of Snow Lake, and Wekusko Falls Provincial Park. Bedrock groundwater wells, when present, are likely connected to fractures or discontinuities that are connected to the local water table and are not likely regionally interconnected. Hydrogeological testing of the bedrock near the Lalor deposit has determined that hydraulic conductivity is low.

Because of varying topography created by hummocky bedrock surfaces, drainage conditions vary considerably over short distances. Regionally the terrain falls at about 0.6 m to 1.0 m per km. As found in much of the Boreal Shield Ecozone, contiguous and isolated bogs cover between 20% and 40% of the Project Region. Bogs are widespread and stagnant in the region.

5.2.2 Terrestrial Setting

The Project Region is characterized by naturally dense boreal forest, primarily Black Spruce interspersed with Jack Pine and hardwoods, with limited understory growth. Sphagnum forms the dominant ground cover. Baseline terrestrial surveys carried out in 2007, 2010, 2011 and 2012 included a review of local geology, soil, vegetation, wildlife, flowering plants, and migratory birds in the Project Area. No rare or endangered plant species were encountered and there are no indications that this area contains unique plant habitat. In general, the Project Site is typical for this region.

No specific critical wildlife habitat was observed on the Project Site (such as calving or over-wintering areas) and, based on site conditions and limited field observations, it is expected that there is no critical wildlife value in the Project Area. At both the site of the Concentrator component and along the route of the Pipeline System, the low diversity of plant communities and extremely dense Black Spruce stand offer a very restricted habitat for wildlife.

5.2.3 Aquatic Setting

Hydrology in the Project Area covers a number of localized and two regional watersheds. The Project Site is located within the Snow Lake local watershed. Snow Lake also receives water from the south via Tern Creek and Tern Lake. Tern Creek is the drainage for two medium sized lakes, Ghost Lake and Threehouse Lake. Most of the small lakes along the route of the Pipeline System have no defined drainage features and watershed mapping suggests they are contributing to Snow Lake.

Nutt Lake and the Anderson TIA are within the Wekusko Lake local watershed. Wekusko Lake is the downstream receptor for the Snow Lake watershed as well, but Anderson Creek and Stall Creek drain into Wekusko Lake directly. Lakes to the west of the site of the Concentrator component generally drain south through Tramping Lake before draining into Wekusko Lake.

During 2011 and 2012, investigations were carried out to establish baseline conditions in the Project Area with respect to: water quality; sediment quality; and fish and fish habitat. These investigations included all of the locations of existing culverts on the route of the Pipeline System and any waterbodies connected to those crossings, as well as the waterbody that is downstream of the final discharge point for the Anderson TIA.

The route of the Pipeline System lies entirely within areas that have been developed and/or are currently occupied for mining purposes. There are 20 locations which contain existing culverts along the route. Of these crossings, 17 are classified as **No Fish Habitat**, due to lack of connectivity to fish-bearing water ways and shallow water that will likely freeze to bottom in winter. Three sites are classified as **Marginal Fish Habitat** because they provide sufficient conditions to support forage fish but are unlikely to support large-bodied fish.

Habitat along the shoreline of Snow Lake in the area adjacent to the pumphouse is classified as **Important Fish Habitat**.

5.2.4 Socio-Economic Setting

The Project Site is located inside the municipal boundaries of the Town of Snow Lake. The Snow Lake Mining District has been developed for mining purposes for over 50 years. The Project Region lies within an area that is zoned as Limited Development, Unsurveyed Lands. There are no national or provincial parks in the Project Site or the Project Area. Wekusko Falls Provincial Park falls within the Project Region.

Information from the Historic Resources Branch of Manitoba Culture, Heritage and Tourism indicates that there are no known historic or heritage resources in the Project Site or the Project Area.

5.3 Environmental Effects

5.3.1 Fish and Fish Habitat (*Fisheries Act*)

5.3.1.1 At the site of the Concentrator Component

No fish or other aquatic species as defined in the *Species at Risk Act* (i.e., shellfish, crustaceans, marine animals and their eggs and juvenile stages; marine plants including benthic and detached algae, marine flowering plants, brown algae, red algae, green algae and phytoplankton) occur at the site of the Concentrator component.
No fish habitat is found at the site of the Concentrator component. The nearest water body to the site of the Concentrator component is Lalor Lake. Risks to this waterbody consist of dust and the potential for acid rock drainage (ARD) at the ore stockpile. However, the plan for operation of the Lalor Concentrator appropriately mitigates the potential to generate ARD. Any ARD that is generated at the ore stockpile will be collected and pumped back to the concentrator to be used as process water.

Potential impact from dust is expected to be insignificant because: the jaw crusher will be enclosed, confining any dust to the building itself; the wind direction is essentially away from Lalor Lake; and there is a vegetative buffer between the Lalor site and Lalor Lake.

Further, since Lalor Lake only provides marginal habitat which does not support large-bodied fish, the impact on fish, fish fabitat and aquatic species from the Concentrator component is expected to be insignificant.

5.3.1.2 Along the Route of the Pipeline System

As described above, the route of the Pipeline System traverses a total of 20 locations which contain existing culverts. Two of these locations are in Portion 1 (on Lalor Access Road). The other 18 locations are in Portion 3 of the route (in the railbed).

As described above, only three of the 20 culverts are in water crossings located in streams or off-take ditches which are or may lead to potentially fish bearing waterbodies. These three, which contain marginal fish habitat, will not be altered during construction of the project. However, any activities that occur near these culverts will be carried out in accordance with applicable DFO Operational Statement(s) or other applicable standards. As well, all rock used to widen the existing rail bed will be non-acid generating.

The other 17 culverts are merely water control features installed in the particular linear feature to keep surface run-off from ponding near that feature. These 17 locations are not connected to any potentially fish bearing habitat. Several of these 17 culverts may be subject to replacement. Even though there is no connection to fish habitat, such culvert replacement will be carried out in accordance with DFO's Operational Statement on Culvert Maintenance.

As well, the leak detection system built into the design of the Tailings Pipe will mitigate the risk of any spill from occurring. Any spill that does occur will be addressed with appropriate spill containment and management procedures in accordance with the HBMS ISO 14001 Environmental Management System.

Habitat along the shoreline of Snow Lake in the area adjacent to the pumphouse is classified as **Important Fish Habitat**. However, upgrades to the Snow Lake Pumphouse will not involve any physical activities along the Snow Lake shoreline at or below the high water mark. The pipe and water intake structure will not be affected by the upgrades. Fish, fish habitat and aquatic species therefore are not affected.

5.3.1.3 Downstream of Anderson TIA

Tailings from the Lalor Concentrator will be managed in the Anderson TIA, which has been in operation since 1979 and where tailings are deposited sub-aqueously to prevent the generation of ARD. Throughout its life, discharge at the final discharge point of the Anderson TIA has been in compliance with all provincial and Federal regulatory criteria. Discharge from the Anderson TIA enters into Anderson Creek, which then flows into Anderson Bay of Wekusko Lake. Studies of Anderson Bay have been carried out pursuant to regulatory requirements over 34 years of operation. These studies have confirmed that water quality downstream of the Anderson TIA continues to support high species diversity.

The proposed project does not entail any physical activity that could affect fish habitat downstream of the Anderson TIA. The phytoplankton community in Anderson Bay of Wekusko Lake is balanced, suggesting that the phytoplankton community is Anderson Bay is healthy. For zooplankton, while abundance of species is low, the species diversity is similar to other waterbodies in the Project Region, suggesting that effluent from Anderson TIA has not adversely impacted aquatic resources downstream.

Since any discharge from Anderson TIA will continue to be monitored and will be in compliance with MMER criteria, the potential effect of the project on fish and fish habitat downstream of the Anderson TIA, as defined in the *Fisheries Act,* and aquatic species as defined in the *Species at Risk Act* (i.e., shellfish, crustaceans, marine animals and their eggs and juvenile stages; marine plants including benthic and detached algae, marine flowering plants, brown algae, red algae, green algae and phytoplankton) is expected to be negligible.

5.3.2 Migratory Birds

5.3.2.1 At the site of the Concentrator Component

The concentrator component will lie within a cleared and developed site and does not provide any habitat suitable for migratory birds.

5.3.2.2 Along the Pipeline System

Physical activities that will be carried out during construction of the project are not expected to adversely impact migratory birds for the following reasons:

Nesting birds that may currently make use of the areas adjacent to existing edge habitat available along the route of the Pipeline System will be able to continue to do so. Despite clearing along the Pipeline System, there will be no net loss of edge habitat. In addition, any clearing and blasting will be done in October/November (that is outside of the nesting season, which is April 15 to July 31). Further, there is no spatial overlap between habitat that may be used by nesting birds and the blasting location.
As observed during field investigations conducted for the proposed project, water crossings along Portion 1 (at culvert location LR01), and Portion 3 (at culverts RB02 and RB03) of the Pipeline System offer potential nesting and brooding areas for waterfowl. Due to the proximity of these brooding areas to potential nesting areas (edge habitat) this is suitable waterfowl habitat. However, since construction is occurring in October/November (outside the nesting season), and the wet areas that provide suitable habitat will not be drained or otherwise destroyed, no impact to waterfowl will occur.

5.3.2.3 Downstream of Anderson TIA

Open water lakes such as Anderson Bay of Wekusko Lake provide some nesting habitat in shoreline areas and brood water along the shoreline of lakes. However, the proposed project does not involve any activities that would affect such habitat.

Therefore, the potential effect of the project on migratory birds is expected to be negligible.

5.3.3 Flora Species

Although the Lalor Concentrator will result in loss of vegetation in the Project Site, vegetation communities that will be lost are common throughout the Project Region. Further, a majority of the planned facilities will be utilizing areas that are already disturbed. During closure, the Project Site will be re-vegetated and returned to native conditions to the extent that is practical. Therefore, the loss of vegetation to the Lalor Concentrator footprint is not considered significant.

5.3.4 Fauna Species

No habitat of specific or critical value to wildlife was observed at the Project Site (such as calving or over-wintering areas), and based on site conditions and limited field observations during the terrestrial investigations, it is expected that there is no critical wildlife value in the Project Area. Although, the Lalor Concentrator will result in a loss of habitat due to clearing in the Project Site, the type of habitat that will be lost is common in the Project Region. There will be some noise disturbance during construction and operation, but it is anticipated that wildlife in the general area are accustomed to these noise levels, given other development activity in the region. During closure, the Project Site will be restored to native conditions to the extent practical. For these reasons, the potential effect on fauna is expected to be insignificant.

5.3.5 Land and Resource Use

Potential environmental effects on aquatic and terrestrial components are expected to be minor to negligible in magnitude. Therefore, the consequential effects on any natural resource harvesting, trapping, and fishing

(recreational, subsistence and commercial) are expected to be insignificant. HBMS will continue to work with the local trappers to ensure that access to their trap lines is not impacted by the proposed development.

5.3.6 Aesthetics

During construction, the Project Site will be kept tidy. The Project Site is accessed by a 3 km long access road and is surrounded by dense vegetation, minimizing the visual impact of the project in the Project Area and Project Region. During the closure phase, the Project Site will be re-vegetated and returned to native conditions to the extent that is practical. Therefore the aesthetics of the region are not expected to significantly change as a result of the proposed Lalor Concentrator.

5.4 Interprovincial or International Effects

The proposed project will not result in any environmental effects that would be measurable at the provincial level, and therefore no interprovincial or international effects are expected to occur.

5.5 Effects on Aboriginal Peoples

HBMS has operated in the Snow Lake district for over 50 years. It has been in continuous occupation of the site of the Concentrator component since 2007. The route of the proposed Pipeline system is adjacent to a highway used for industrial traffic or is on land that has been under use, occupation and control by HBMS for decades. Much of it is on land owned in fee simple by HBMS.

Based on Government of Manitoba (Manitoba Conservation and Water Stewardship, 2002; Manitoba 2012) and Federal sources (Government of Canada, 2009) and as shown on **Figure 12**, there is no Indian Reserve, Registered Trap Line (RTL) zone associated with First Nation/Aboriginal community use or other Aboriginal interest located within the Project Region.

The project does not require access to, use or occupation of, or the exploration, development and production of lands and resources currently used for traditional purposes by Aboriginal peoples. All elements of the proposed Lalor Concentrator will be on land which HBMS holds under lease or in fee simple, and is occupied and used by HBMS for mining purposes as follows:

- The concentrator component lies within the Lalor site, which has been developed for the Lalor AEP/future Lalor Mine Project. It lies on land that has been under continuous use for mining purposes since at least 2007.
- Portion 1 of the Pipeline System, which follows the Lalor Access Road, lies on land which is controlled by gated access, and which has been under continuous use by HBMS for mining purposes since at least 2007.
- Portion 2 of the Pipeline System tracks PR 395, which is in daily use for industrial traffic. In addition, Provincial regulations prohibit hunting within 300 m of roadways.
- Portion 3 of the Pipeline System falls within the ROW for a former rail bed, which is owned by HBMS pursuant to Certificate of Title No. 1701932. This is private land to which Aboriginal peoples do not have a right of access.
- Portions 4, 5, and 6 of the Pipeline System are located on land which the proponent has used for mining purposes since the late 1970's. These portions lie behind the gates of existing HBMS projects, which exclude users other than the proponent, on land that has been taken up for mining purposes for over 30 years

During the latter half of 2010, Mathias Colomb Cree Nation (MCCN) began to suggest that its traditional lands encompass a large portion of northwestern Manitoba, including the entire Snow Lake mining district, in which the Lalor projects, including the proposed Lalor Concentrator, are located. HBMS therefore entered into information sharing with MCCN and Manitoba commenced a Crown consultation process in relation to HBMS' proposed Lalor Mine. HBMS information sharing also has included Lalor Concentrator.

As well, HBMS and Manitoba funded a traditional use and knowledge study by an expert of MCCN's choice, but MCCN has instructed the expert to stop work on the report of the study. Therefore it is not known if there are any traditional uses by MCCN in the Project Region. However, any resource that currently is being used for trapping, fishing or hunting in the Project Region will be unaffected by construction or operation of the Lalor Concentrator project. As well, HBMS has committed to resume information sharing at any time that MCCN becomes willing, even once the various licences have been issued and the projects are underway (see **Section 6** below).

With respect to commercial trapping, although the potential effect on trapping activities is assessed to be insignificant, HBMS is committed to working with trappers in the area to ensure that access to their trap lines is not impacted by the proposed development. None of these trappers is associated with an Aboriginal community.

For all these reasons, the Lalor Concentrator is not expected to cause any environmental effects that would lead to consequential effects on Aboriginal peoples.

6. Proponent Engagement and Consultation with Aboriginal Groups

6.1 Interested Aboriginal Group(s)

Baseline environmental surveys in the general area of HBMS's Lalor projects began in 2007, when HBMS commenced intensive drilling on the Lalor site. The environmental impact assessments of HBMS's Lalor projects have taken into account all known Aboriginal lands and traditional territories. Based on Government of Manitoba sources, there are no Indian Reserves, Registered Trap Line (RTL) zones associated with First Nation use or any other Aboriginal interests located within the Project Region.

HBMS applied for approval of the Lalor AEP in March 2010. In the report submitted in support of that application, HBMS concluded that, based on HBMS long-term (more than 50 years) mining experience in the Snow Lake region, there was no First Nation or Aboriginal hunting, fishing, trapping or other traditional use that could be affected.

During the latter half of 2010, Mathias Colomb Cree Nation (MCCN) alleged that its traditional lands encompassed a large portion of northwestern Manitoba, including the entire Snow Lake mining district, in which the Lalor projects are located.

In 2011, HBMS began to share environmental information with MCCN concerning its projects. This information sharing process is described in the sections below.

The contact information for MCCN is as follows:

Chief Arlen Dumas
Mathias Colomb Cree Nation
PO Box 135
Pukatawagan, Manitoba
R0B 1G0

6.2 Summary of Discussions with MCCN

6.2.1 MCCN Meeting #1 – May 9-10, 2011

On May 9-10, 2011, HBMS met with Chief Dumas and 7 representatives of the MCCN (Sherman Lewis, Floyd North, Ken Bighetty, Hanson Dumas, Gordie Bear and Jimmy Colomb) regarding potential cooperation between HBMS and MCCN with respect to education and training, employment and business opportunities. In the course of these discussions, MCCN made the statement that Flin Flon and the Snow Lake mining district are in areas which MCCN considers to be traditional lands.

HBMS presented information about construction of the Lalor AEP; project descriptions for future HBMS projects, including the Lalor and Reed Mine Projects; and the trade-off study then underway to help HBMS decide whether to refurbish the existing Stall Lake Concentrator or build a new concentrator on the Lalor site.

MCCN were advised that the trade-off study then underway included consideration of whether a gold plant and use of cyanide will be required. MCCN expressed concerns about potential use of cyanide during ore concentrating. Since that discussion, the gold plant and use of cyanide have been eliminated from the Lalor Concentrator project description. Notes of the meeting are provided in **Appendix C**.

6.2.2 MCCN Meeting #2 – January 10-12, 2012

Following the May 2011 meeting, HBMS contacted Chief Dumas to schedule a meeting to share environmental information about HBMS Projects. A meeting was scheduled with MCCN for September 12, 2011 but was cancelled by MCCN on September 9, 2012.

The meeting was rescheduled and held in Flin Flon on January 10-12, 2012. The three-day visit included site tours of the Lalor project, including the Lalor site and some ancillary facilities.

Chief Arlen Dumas, Elder Marcel Caribou, Councilor Jimmy Colomb and legal counsel, Larry Sloan, represented MCCN. Topics of discussion included training and employment opportunities, Lalor project description, environmental impact assessment, and First Nation experience in the region.

HBMS advised that the trade-off study had been completed and a decision made to build a new concentrator at the site of the Lalor Mine. Information was provided about how the Lalor project would link to existing previously-licensed and operating facilities. There was some discussion about the technical aspects of planning for a new concentrator. HBMS explained that the decision to build the Lalor Concentrator at the same location as the mine allows the mine to use paste backfill, which will reduce the number of trucks on the highway from 60 trucks per day to approximately 16 trucks per day.

AECOM gave a presentation explaining the environmental assessment process and presenting their conclusions about expected environmental effects. They also outlined mitigation measures that they recommended be followed in constructing, operating and ultimately closing the Lalor project.

Most of MCCN's comments and questions were posed by MCCN legal counsel and related to regulatory process in Manitoba, waste rock management for Lalor Mine and the existing operation of the Anderson TIA.

Further questions dealt with Manitoba requirements for the archaeological, cultural and heritage assessment performed by AECOM, the continuing use of existing water rights licenses, and timing for application for *Environment Act* licenses for the Lalor Mine and Lalor Concentrator, which at that time were expected in the spring of 2012 summer/fall of 2012, respectively.

During the course of the meeting, MCCN elders shared experiences they had on similar sites. For example, Councilor Colomb shared memories of his work in the open pit mine in Leaf Rapids with HBMS's Tony Butt who also had worked at the Ruttan Mine, but at a time later than Councilor Colomb.

Chief Dumas stated that there are many trappers operating in the area directly north of Reed Lake. Elder Caribou remembered that when trap lines were first registered, not all individuals were included in the registration process. In reply, AECOM indicated that they had contacted registered trappers in the area that would be affected.

Mr. Samoiloff from AECOM was asked whether, during the terrestrial review, AECOM had sought input from First Nations, particularly with respect to plants that can be used for traditional medicines. He replied that baseline studies had commenced in September of 2007 and were carried out over multiple years during different growing seasons. Exploration drilling was carried on continuously during that time. HBMS and AECOM were not aware of any First Nation presence on and around the Lalor site. MCCN did not assert a traditional connection to the Snow Lake district until the latter part of 2010.

It also was explained that the Lalor site is a rocky knoll, with little soil cover, quite typical of many kilometers of terrain in the region. When there is soil cover, HBMS practice is to save it for use in reclamation. The team of AECOM scientists carried out a vegetation assessment in a one-kilometer buffer zone around the Lalor site and access road. This survey produced a catalogue of species observed, which was compared with Provincial records concerning vegetation in the region and information about plant species that are known to have been identified as potentially having medicinal or cultural importance. AECOM's work had not identified any plant or animal that would be unique to the area that has been or potentially will be affected by the Lalor developments.

AECOM was asked whether there is a way to verify that the environmental review includes plants that First Nations consider to be traditional medicines. In reply, AECOM and HBMS requested any comments that MCCN elders or resource harvesters might have about the vegetation on the AECOM list or any other knowledge they may have about the area. HBMS and AECOM invited MCCN elders and resource harvesters to return to the site with AECOM scientists and walk the area together, to determine if there are any environmental sensitivities that AECOM's assessment may need to include. For example, if a resource harvester or elder knows of any plant or animal special habitat that may have been affected by the Lalor development, this information should be factored into the assessment. HBMS committed to paying the costs association with such work on the site by as many elders or resource harvesters as, in the Chief's judgment, may have an interest in this work.

At the end of the meeting, HBMS also offered to attend in Pukatawagan with AECOM to facilitate participation by elders and resource harvesters. HBMS took the view that First Nation elders and resource harvester be retained to participate with HBMS's consultants in the collection of environmental information and share traditional knowledge about resources that could be affected by HBMS's projects. Mr. Sloan disagreed and took the position that the information sharing process would have to include a formal traditional knowledge study.

Detailed notes of the meeting were prepared and shared with MCCN and their counsel (included in **Appendix C**). HBMS sent a complete record of environmental and permitting documentation pertinent to current HBMS project planning to Mr. Sloan on January 20, 2012, with a view to facilitating further discussion. On February 10, 2012, HBMS wrote to follow up on the January meeting with further offers, both with respect to business cooperation and sharing information relevant to the potential for effects of the proposed project on traditional activities.

6.2.3 Correspondence and Meetings with MCCN Legal Counsel – January – September, 2012

On January 27, 2012, HBMS's environmental lawyer received a letter from MCCN's new lawyers, Robert Freedman and Mark Gustafson, of Janes Freedman Kyle (JFK). Over the next several months, correspondence was exchanged between counsel and further meetings were held to discuss how to facilitate further information sharing.

MCCN took the position that MCCN would require HBMS and/or Manitoba to fund: a study of traditional knowledge and use to be carried out by the consultant of their choice, who was identified as Dr. Craig Candler of the Firelight Group; and a third party review of HBMS's environmental impact assessments to be performed by an environmental expert of their choice, Dr. Ginger Gibson (also of the Firelight Group). MCCN provided a preliminary technical memorandum by Firelight on MCCN traditional uses and proposals for the two studies.

Meetings were held in Winnipeg on May 3, 2012 and July 5, 2012. At these meetings and in subsequent telephone conferences, HBMS, Manitoba and MCCN agreed on the terms of reference for the studies that had been proposed by MCCN. Firelight committed to share their report on traditional knowledge and use within six months. The work was to include interviews of First Nation members, followed by mapping and written reports on the First Nation's traditional uses.

MCCN, HBMS and Manitoba committed to return to the table to discuss the results of the studies and any comments prepared by Dr. Gibson. Dr. Gibson was to help the MCCN membership respond to the environmental information presented by HBMS.

The work on both studies began in October, 2012. AECOM worked with Drs. Candler and Gibson to assemble the materials they would need to carry out both pieces of work, including providing assistance with digital mapping of background information needed by Dr. Candler for his work in mapping traditional uses.

AECOM sent their environmental studies concerning the Lalor and Reed Projects directly to Dr. Gibson and reviewed them with her in telephone conferences.

6.2.4 MCCN Meeting #3 – November 23, 2012

On November 23, 2012, HBMS and AECOM held a meeting in Pukatawagan with members of MCCN to discuss the proposed Lalor Concentrator and other HBMS mining projects. The meeting was attended by Stephen West, Jay Cooper and Pam Marsden from HBMS; Clifton Samoiloff, Alison Weiss and Shawna Kjartanson from AECOM; and Dr. Ginger Gibson and Stephen DeRoy from the Firelight Group.

Fifteen (15) members of MCCN were in attendance, including Chief Arlen Dumas and various Council members and elders. AECOM prepared the presentations for that meeting based on direction provided by Dr. Gibson.

The presentation included the environmental assessment and description of the proposed Lalor Mine, Lalor Concentrator and Reed Copper Projects. The only issues raised by MCCN that relate to potential impacts of the Lalor Concentrator were the use of chemicals in the concentrator and spatial distribution of effects of those chemicals and the assessment of waterfowl in the area. HBMS explained that the reagents that will be used in the concentrator are standard chemicals that have been in use for 30 years. With respect to spatial distribution of chemicals, the concern related to their prior experience with the smelter. HBMS explained that a concentrator is very different from a smelter and chemicals from the concentrator will not be dispersed in the air. With respect to waterfowl, AECOM stated that flora and fauna were assessed as a part of the environmental assessment, and confirmed that waterfowl are included in that group.

HBMS answered all the concerns raised that day and promised to facilitate any follow-up requested by Dr. Gibson, including visits by First Nation elders or resource harvesters to the existing HBMS sites in the Snow Lake area.

Notes of the meeting are provided in **Appendix C**.

6.2.5 Completion of Information Sharing Process – December, 2012 – April, 2013

By end of March, 2013, Firelight's work should have concluded. During February, 2013, HBMS, through legal counsel, attempted to set dates for the three-party meetings to resume, in the expectation that information sharing could be continued with the benefit of the completed studies. To the best of HBMS's knowledge, Dr. Candler and his team completed the interviews needed to map MCCN traditional uses. HBMS paid Firelight's invoices, as had been agreed. However, MCCN's legal counsel was unable to obtain instructions to resume the three-party meetings. Subsequently, MCCN terminated its relationship with legal counsel.

On March 26, 2013, HBMS wrote to Dr. Candler to seek information on completion of Firelight's work. On April 4, 2013, Dr. Candler replied that Firelight's work was "on hold based on a request from MCCN received earlier this year." Dr. Candler further indicated that Firelight would require written authorization from MCCN before "picking up pens again."

6.2.6 Conclusion

None of the information provided by MCCN to date, including Dr. Candler's technical memo and the comments made by MCCN members at the meetings of May 2011, January 2012 and November 2012, demonstrates that there is traditional activity currently practiced in the areas which are or could be affected by the proposed Lalor Concentrator project.

By letters dated April 15 and 16, 2013, Manitoba and HBMS wrote to MCCN to inquire whether Firelight's work would be completed. HBMS advised that if, at any time, a link is demonstrated between adverse effects of proposed projects and activities practiced by a member(s) of MCCN, HBMS would do all that is necessary to avoid, mitigate or compensate for any loss so occasioned. Manitoba advised of the steps it intends to take to complete its consultation process. Copies of these letters are provided in **Appendix C**.

At the end of April, HBMS was advised that MCCN has retained new counsel. Through its counsel, HBMS reiterated that it stands by the various commitments made in in its letter of April 16, 2013, which include the following: should MCCN choose to provide instructions to Firelight to resume its work, HBMS would be pleased to meet with them to discuss the results; if Firelight's work and the three-party discussions are done in time, HBMS will provide the results to regulators for consideration in the licensing applications for its various projects; even once licenses have been issued, HBMS will honour its invitation to welcome the participation of elders and resource harvesters in environmental information collection and monitoring programs; and, if there is any link between adverse effects of HBMS projects and activities practiced by a member(s) of MCCN, HBMS will do all that is necessary to avoid, mitigate or compensate for any loss so occasioned. HBMS thus is committed to a further consultation process should MCCN decide to resume the information sharing relationship.

7. Consultation with the Public and Other Parties

Since 2007, HBMS has been involved in formal and informal discussions with other regional stakeholders on the Lalor Projects, including the Lalor Mine, the Lalor Concentrator, other support infrastructure, and potential expansion of the Anderson TIA. Some of these events include:

- Town Hall presentation on Lalor Mine – Snow Lake, April 13, 2011
- Open House for realignment of PR 392 (led by MIT) – Snow Lake, May 17, 2011
- Interview with local trapper – Snow Lake, June 6, 2011
- Interviews with Snow Lake area residents – Snow Lake, June 7, 2011
- Open House on Lalor Mine – Snow Lake, June 8, 2011
- Interview with local trapper – Snow Lake, October 25, 2011
- Meetings with local trappers – Snow Lake, May 7, 2012 and February 12, 2013
- Town Hall presentation on Lalor Concentrator – Snow Lake, June 26, 2012
- Open House on Lalor Concentrator – Snow Lake, August 8, 2012
- Meeting with Snow Lake Cabin Owners Association – Snow Lake, August 8, 2012
- Meeting with Snow Lake Sno-Drifters snowmobiling cub – Snow Lake, December 7, 2012

It was determined that the Town of Snow Lake would benefit from additional participation in the public involvement process as the project will occur near the Town of Snow Lake, will directly and indirectly employ residents, provide local economic benefits and will utilize existing infrastructure in the Snow Lake area.

Public engagement specific to the Lalor Concentrator project has included a Town Hall presentation, a public Open House event in the Town of Snow Lake, a formal meeting with members of Mathias Colomb Cree Nation in the community of Pukatawagan, and interviews with residents and resource users in the Town of Snow Lake. A summary of the public involvement that has been undertaken for the Lalor Concentrator Project is included in the following sections.

7.1 Proponent Lead Public Involvement

7.1.1 Town Hall Presentation in the Town of Snow Lake

On June 26, 2012, HBMS held a Town Hall presentation in the Town of Snow Lake, which was attended by 12 people. The presentation covered the proposed Lalor Concentrator Project in detail and the development plan for the Lalor Concentrator. HBMS representatives held a question and answer period following the presentation. Area residents had questions related to building size and orientation, Anderson TIA and tailings management, roads, and impact to water quality in Wekusko Lake. HBMS provided answers to questions and committed to holding a Public Open House in Snow Lake to provide additional information on the project and present the environmental studies conducted for the project. Overall, Town Hall attendees were interested in the project and were either neutral or positive towards the project.

7.1.2 Public Open House in the Town of Snow Lake

On August 8, 2012, a public Open House was held in the Town of Snow Lake by HBMS and AECOM to provide information about the Lalor Concentrator, including the findings of environmental baseline studies and the environmental assessment, and allow for the public to provide the project team with feedback regarding the project.

The Open House was held at the Snow Lake Community Hall and 15 attendees participated in the event. The Open House consisted of a formal presentation with a question and answer period followed by informal discussions with attendees and representatives from AECOM and HBMS.

A number of questions and comments were tabled at the conclusion of the presentation, with the majority focussing on management of tailings at Anderson TIA, roads and traffic, and impact to water quality in Wekusko Lake, access to trap lines and snowmobile trails, and fate of the existing concentrator.

7.2 Other Local Stakeholders

7.2.1 Trappers

The Manitoba Conservation office in Snow Lake has confirmed that there are three registered trap lines (RTLs) that overlap with the Project Region (in the area of Cook Lake, Lalor Lake, the Pipeline System ROW, Anderson TIA, and Anderson Creek). These lines are RTL 23, RTL 14 and RTL 13 that are held by individuals. Manitoba Conservation records indicate that RTL 23 has been held by this owner since at least 1968.

On June 6, 2011, AECOM conducted a telephone interview with the holder of RTL 23 to discuss the Lalor Project and identify his concerns with the project. The trapper indicated that his primary trapping area is currently located around Cook Lake, but indicated that he used to trap along the east bank of Lalor Lake. Trapping consists primarily of lynx, mink and marten.

The holder of RTL 23 indicated that he had no major concerns with the project, and realizes that any impacts that could potentially occur are expected to be temporary. He indicated that previous line cutting that occurred during exploration in the Lalor area had the most significant impact on his trap lines to date, and that his only concern with the construction and operation of the mine is the possibility of restricted access to his trap lines (due to fencing associated with the Lalor Mine). He also expressed an interest in speaking with HBMS to discuss issues associated with trap line access. The holder of RTL 23 was notified of the Open House, but indicated that he was unable to attend. HBMS is committed to working with the trapper to ensure access to trap lines is not impacted by the Lalor projects.

Manitoba Conservation has also confirmed that the area of Anderson Creek and Wekusko Bay is registered as RTL 13. On October 25, 2011, AECOM contacted the holder of RTL 13 to discuss any concerns he may have about HBMS developments that may affect his trap line. This trapper was on his trap line at the time and was not able to be interviewed at length. AECOM informed him that they were interested in his opinion and encouraged him to contact AECOM to discuss any concerns at his convenience. No further communication was initiated by the holder of RTL 13.

On May 7, 2012, HBMS contacted the holder of RTL 13 to discuss any concerns he may have about the Lalor Concentrator project. The discussion focused on access to trap lines, trails, and roadways, which are important to him. HBMS indicated to this trapper that they were committed to working with him to ensure that access to trap lines is not impacted by the Lalor Concentrator project. This included that ensuring that trails are left in good condition and access to them is not obstructed or hindered. HBMS also indicated that, once construction has been approved and scheduled, they intend to provide notice and details so that he can remove traps or snares located in the Project Area to prevent accidental damage.

HBMS had a follow-up meeting with the holder of RTL 13 in Snow Lake on February 12, 2013, with an update on the status of the Lalor Concentrator project and the realignment of PR 392. HBMS also provided this trapper with an opportunity to express any concerns he had with either project. This trapper indicated that he did not have any concerns, and expressed his appreciation for the additional information.

7.2.2 Cottages or Remote Residences

The closest cottages to the Lalor site are five cabins located on the west shore of Cook Lake, approximately 2 km from the Project Site. In a brief interview with one of the cabin owners during the September 2007 field study, it was indicated that these cabins have only been on the lake in the last 15 years and that five cabins is the maximum allotted to Cook Lake by Manitoba Conservation. Cabin subdivisions are also on Berry Bay, Taylor Bay, and Bartlett's Landing, approximately 13 km southeast of the Lalor Concentrator site.

On August 8, 2012, HBMS and AECOM met with Marcy Bast, President of the Snow Lake Cabin Owners Association, at the Wekusko Fall Lodge near Snow Lake to discuss any concerns the Association may have with the Lalor Concentrator project. The discussion was focussed primarily on the potential impact to water quality in Anderson Bay in Wekusko Lake, where most of the cottages are located, and Ms. Bast was interested in hearing about the results of any environmental studies conducted on Anderson Bay. HBMS discussed the ongoing EEM studies which have been taking place in Anderson Bay since 2004, and also discussed the environmental baseline assessments conducted for both the Lalor Mine and Lalor Concentrator which have been taking place since 2007. HBMS provided copies of the EEM studies and offered to provide copies of the environmental baseline assessments for review. A summary of these EEM reports has been posted on the Association's website at *http://www.slcoa.com/envmonitor.php*.

Ms. Bast was invited to attend the public Open House for the project taking place in Snow Lake that evening, but she indicated that she was unable to attend. At the conclusion of the meeting, Ms. Bast indicated that she did not have any concerns with the project, and expressed her appreciation for having an opportunity to meet.

7.2.3 Lodge Owners

There are five lodges located in the Snow Lake region. The Diamond Willow Inn & Willow House is located in the Town of Snow Lake at 200 Lakeshore Drive and is approximately 9 km east of the Concentrator site. Wekusko Falls Lodge and Tawow Lodge Ltd. (Herb Lake Landing) are located approximately 18 km and 35 km southeast of the Concentrator site, respectively. Burntwood Lodge is a fly in fishing lodge located on Burntwood Lake and is estimated to be approximately 60 km northwest of the Lalor Site. Grass River Lodge is located on Reed Lake and is approximately 23 km southwest of the Lalor Site with outpost cabins on Dolomite Lake (50 km southwest of the Lalor Site) and Moody Lake (40 km northwest of the proposed Lalor Site).

7.2.4 Snowmobilers

On December 7, 2012, HBMS met with two representatives of the Snow Lake Sno-Drifters club in Snow Lake to discuss any concerns the club may have with the Lalor Concentrator project. Although these representatives were in attendance at the August 8, 2012 Open House, they indicated that this was the first official meeting with HBMS to discuss how the project may impact the club. The discussion was focussed on the Pipeline System and construction activities and how their existing snowmobile routes will be affected at the Lalor Access Road, along the rail bed (Pipeline System ROW), portions of Anderson TIA, and the dams/ spillway locations at the east end of Anderson TIA. The club had also indicated that they are very interested in staying informed on construction activities in order to allow them time to update signage or develop new routes.

The process of developing new routes or modifying existing routes was discussed. The representatives indicated that the club is responsible for the condition of the trails, which are used by locals and visitors from southern Manitoba. These visitors may not be familiar with mining activities in the area and are using the maps provided by Manitoba Conservation and Water Stewardship. For this reason they indicated that it is important to provide enough lead time for the club to update maps. Visitors using the trails do not notify the local club or typically ask about changes or hazards that may be present.

Although exiting snowmobile trails use by the Snow Lake Sno-Drifters club may need to be closed and relocated, HBMS is committed to working with the club to ensure recreational snowmobiling in the Snow Lake area is not impacted by the Lalor Concentrator project.

7.2.5 Forestry

The Cormorant Provincial Forest is located approximately 80 km southwest of the proposed Lalor Mine site and covers an area of 1,479 km^2. Provincial forests are Crown Lands managed by Manitoba Natural Resources on a sustainable yield basis. A licence or permit allows harvesting of trees on Crown Lands and also indicates the quantity of each type of trees that can be harvested. Large companies must regenerate forest lands that they have harvested according to their Forest Management License. A forest renewal fee is paid by individuals or small companies for reforestations (Manitoba Conservation, 2011a).

Tolko Industries Ltd. (Manitoba Solid Wood Division, Woodlands), located in The Pas, Manitoba has three Forest Sections in Manitoba (Highrock, Nelson River and Saskatchewan River) where wood is harvested. These Forest Sections include areas surrounding Snow Lake, Flin Flon and Grass River Provincial Park (Tolko Industries Ltd., 2011a).

As part of the planning process and as documented in their *Annual Harvest and Renewal Plan*, public consultation has been undertaken with Pukatawagan (Mathias Colomb Cree Nation) and Snow Lake as well as other surrounding communities regarding the proposed harvest plan. According to Tolko Industries Ltd.'s record of the public consultation events in Pukatawagan and Snow Lake, no concerns regarding unique vegetation areas were identified to Tolko Industries Ltd. representatives. (Tolko Industries Ltd. 2011b)

7.3 Additional Public Notification and Information Sharing

In addition to formal public engagement as described above, the Lalor Concentrator Project has been covered extensively in various forms of media since 2011, and has been presented at industry events. The following listing includes a sampling of publications and industry events that have provided information regarding the Lalor Concentrator project:

Winnipeg Free Press

- Extra $144M for Manitoba Mine, July 6, 2011
- Province Mining Bright Future, November 19, 2011
- Snow Lake's Got it's Groove Back, December 1, 2011
- HudBay Boosts Capital Spending to Develop New Mines, December 20, 2011
- New Ventures on the Horizon, December 31, 2011
- Mining Hope in Northern Manitoba, March 1, 2012
- Lalor Mine Stealing Thunder of Other Site, August 3, 2012
- Mines are Gold for Province's North, August 15, 2012

- After the Gold Rush: Snow Lake Bursting at its Seams as Mining Activity Transforms Town, November 16, 2012
- HudBay to Spend $1.24 Billion on Projects in 2013, including Manitoba Mine, January 9, 2013

The Globe and Mail

- HudBay Minerals Announces Results of Lalor Optimization Study; Commitment to New 4,500 Tonne Per Day Concentrator, July 5, 2011
- HudBay Releases Third Quarter 2012 Results, November 1, 2012

Other Publications

- HudBay to Boost Investment in Lalor Project, Reuters, July 5, 2011
- HudBay's New Plan for Lalor, Mining Markets, July 5, 2011
- HudBay Minerals Announces Results of Lalor Optimization Study; Commitment to New 4,500 Tonne Per Day Concentrator, News Blaze, July 5, 2011
- Gold-Base Metal Development: HudBay Commits to New Concentrator at Lalor Project, Canadian Mining Journal, July 6, 2011
- HudBay to Build New concentrator at Lalor, Extends Mine Life, Mining Weekly, July 6, 2011.
- HudBay Plans New Concentrator at Lalor, Metal Bulletin, July 6, 2011
- HudBay Decides on New Manitoba Concentrator, Mining Weekly, July 8, 2011
- Thoughts From The Road: HudBay's Manitoba Site Tour, Canada Research, October 3, 2012

Conferences and Industry Events

- Lalor Project Update, Mines and Minerals Convention, November 18, 2011
- Lalor Zinc-Copper-Gold Development Project, Women in Mining Presentation, Winnipeg, January 26, 2011
- Lalor Project Update, Mines and Minerals Convention, November 16, 2012

7.4 Future Community Information Sharing

In addition to potential resumption of discussions with MCCN described above in **Section 6**, HBMS will maintain ongoing dialogue with local trappers, cottage owners, snowmobilers and other stakeholders described above and will continue its normal practice of keeping the local communities apprised of its progress on the Lalor Projects.

8. References

AECOM Canada Ltd. (AECOM). 2012. Proposed Lalor Mine Environmental Baseline Assessment. Report Number: 60157028.

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BGC Engineering Inc. 2011. Anderson Tailings Impoundment Area Pre-Feasibility Study Report.

Government of Canada, 2009. *Aboriginal Lands, Canada.* Retrieved 04 08, 2013, from Geobase: http://www.geobase.ca/geobase/en/data/admin/index.html

Manitoba Conservation. 2012. Manitoba's Provincial Forests. http://www.gov.mb.ca/conservation/forestry/pdf/woodlot/provincial_forests.pdf (accessed May 23, 2012).

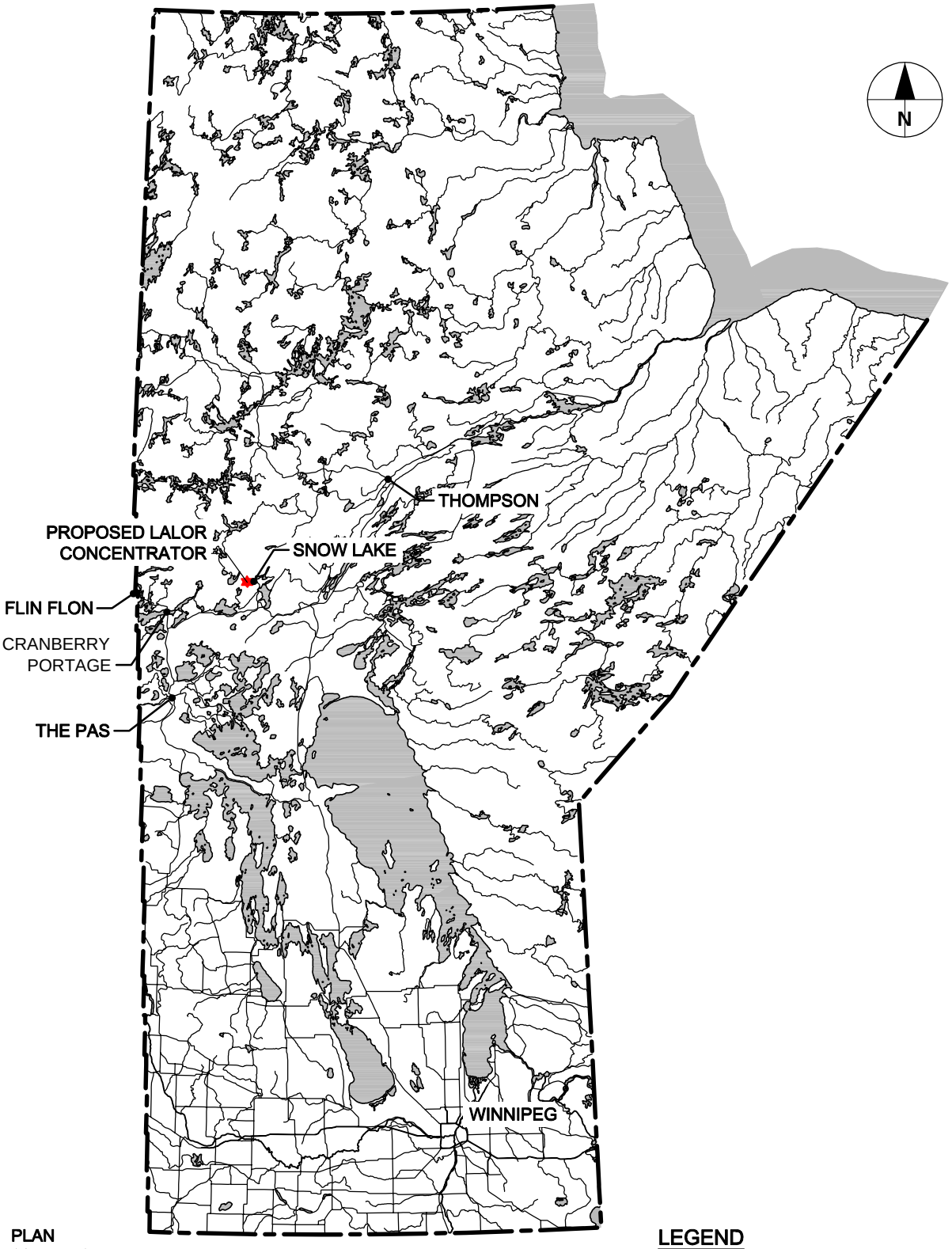
Manitoba, 2012. *Official Highway Map.* Retrieved from Infrastructure and Transportation: http://www.gov.mb.ca/mit/map/ (accessed May 24, 2013)

Smith, R.E., H. Veldhuis, G.F. Mills, R.G. Eilers, W.R. Fraser, and G.W. Lelyk. 1998. Terrestrial Ecozones, Ecoregions, and Ecodistricts, An Ecological Stratification of Manitoba's Natural Landscapes. Technical Bulletin 98-9E. Winnipeg: Land resource Unit, Brandon Research Centre, Research Branch, Agriculture and Agri-Food Canada.

Tolko Industries Ltd., Manitoba Solid Wood Division. May 31, 2011a. Woodlands. Tolko Industries Ltd. Website: http://www.tolkomanitoba.com/.

Tolko Industries Ltd., 2011b. 2011/2012 Annual Harvest and Renewal Plan. Available at http://www.tolkomanitoba.com/

Appendix A
Figures



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Lalor Concentrator **General Site Location**
Description of a Designated Project under CEAA, 2012
Hudson Bay Mining and Smelting Co., Limited

AECOM

Figure: 01

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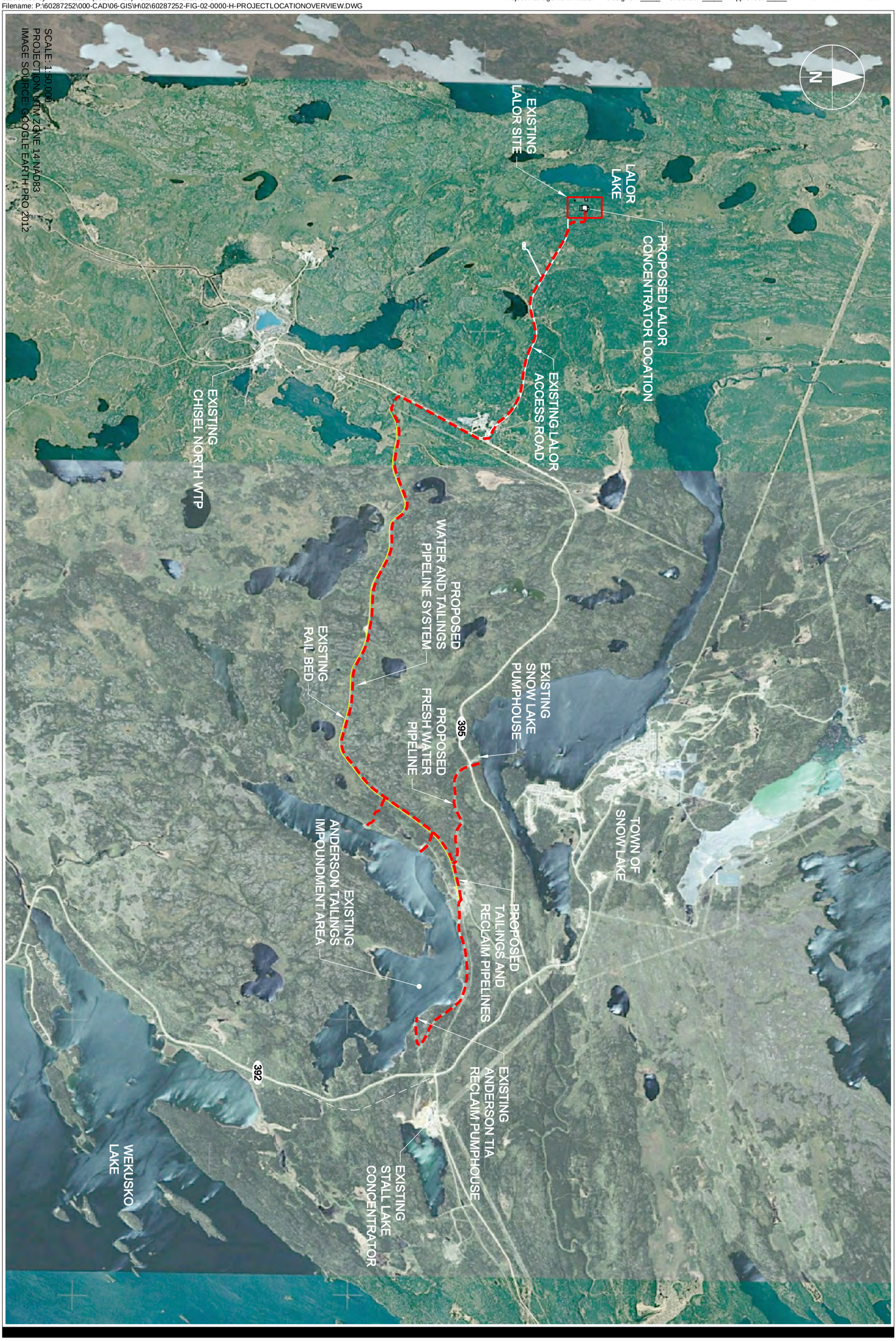

Lalor Concentrator
Description of a Designated Project under CEAA, 2012
Hudson Bay Mining and Smelting Co., Limited

Location of Project Components and Existing HBMS Facilities

AECOM

Figure: 02

Project Management Initials: Designer: Checked: Approved: ANSI B 279.4mm x 431.8mm

AECOM

Figure: 03

Route for Reclaim Water, Freshwater and Tailings Pipes

Lalor Concentrator
Description of a Designated Project under CEAA, 2012
Hudson Bay Mining and Smelting Co., Limited

N

PROPOSED LALOR CONCENTRATOR LOCATION

EXISTING LALOR SITE

LALOR LAKE

SNOW LAKE

TOWN OF SNOW LAKE

PORTION 1

LR01

LR02

EXISTING CHISEL NORTH MINE

PORTION 2

MB HYDRO ROW

EXISTING LALOR ACCESS ROAD WITH MINE WATER PIPES

RB01

RB02

RB03

RB04

RB05

RB06

RB07

RB08

RB09

RB10

RB11

RB12

RB13

RB14

RB15

RB16

RB17

PORTION 3

PORTION 5

PORTION 5

PROPOSED TAILINGS PIPE

EXISTING SNOW LAKE PUMPHOUSE

PORTION 6

FORMER ANDERSON MINE

PROPOSED RECLAIM PIPE

AB03

395

PROPOSED FRESHWATER PIPE

EXISTING ANDERSON TIA

PORTION 4

EXISTING STALL LAKE CONCENTRATOR

EXISTING ANDERSON TIA RECLAIM PUMPHOUSE

EXISTING CHISEL NORTH WTP

FORMER RAIL BED

392

EXISTING ANDERSON TIA WEIR

CULVERT LOCATION (RB13)
FRESHWATER PIPE
TAILINGS PIPE
RECLAIM PIPE

SCALE: 1:40,000
PROJECTION: UTM ZONE 14 NAD83
IMAGE SOURCE: GOOGLE EARTH PRO 2012

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Filename: P:\60287252\000-CAD\06-GIS\H02\60287252-FIG-03-0000-H-PIPES.DWG

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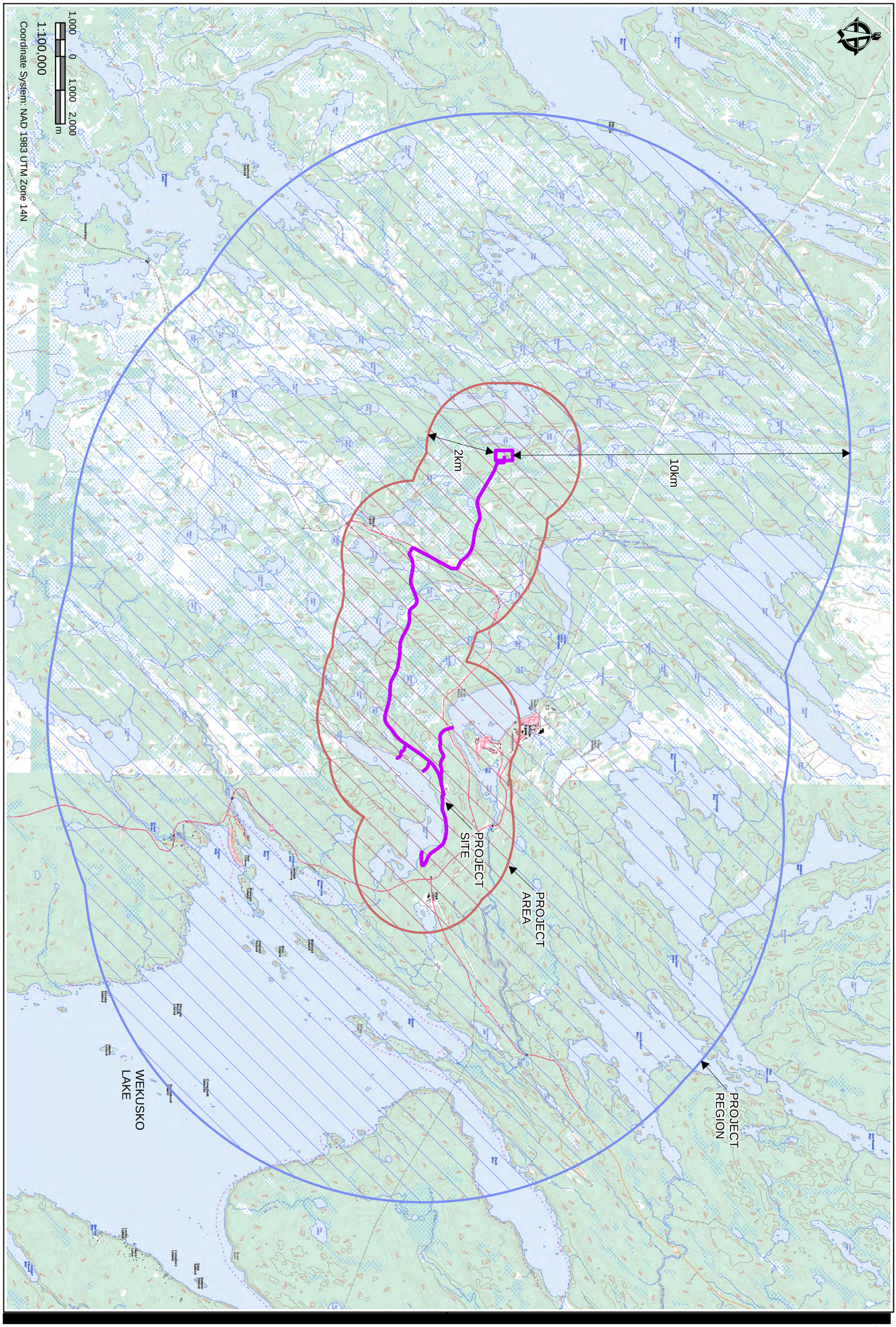

Lalor Concentrator
Description of a Designated Project under CEAA, 2012
Hudson Bay Mining and Smelting Co., Limited

Spatial Boundaries of the Assessment-
Project Site, Area and Region

AECOM

Figure: 04

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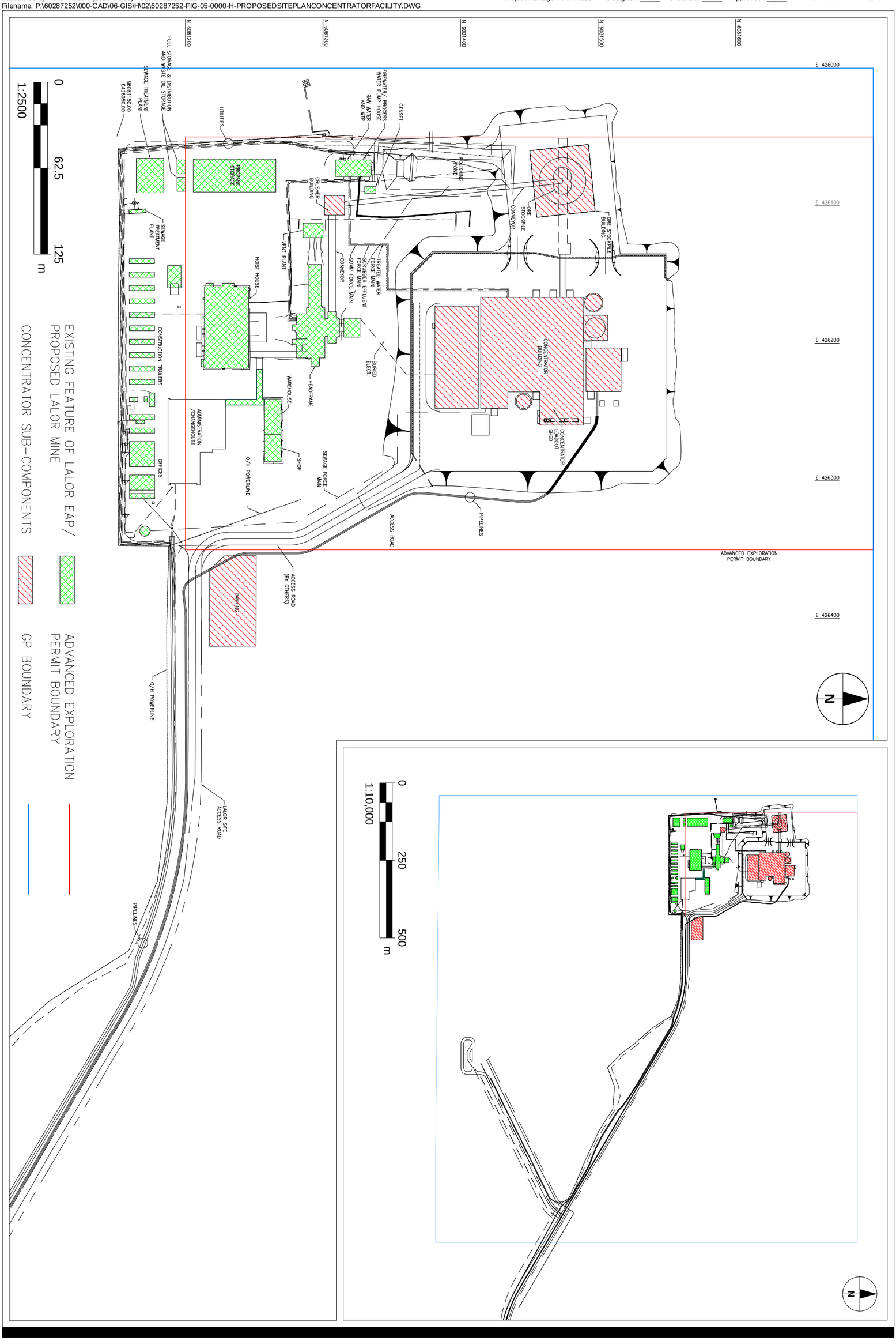
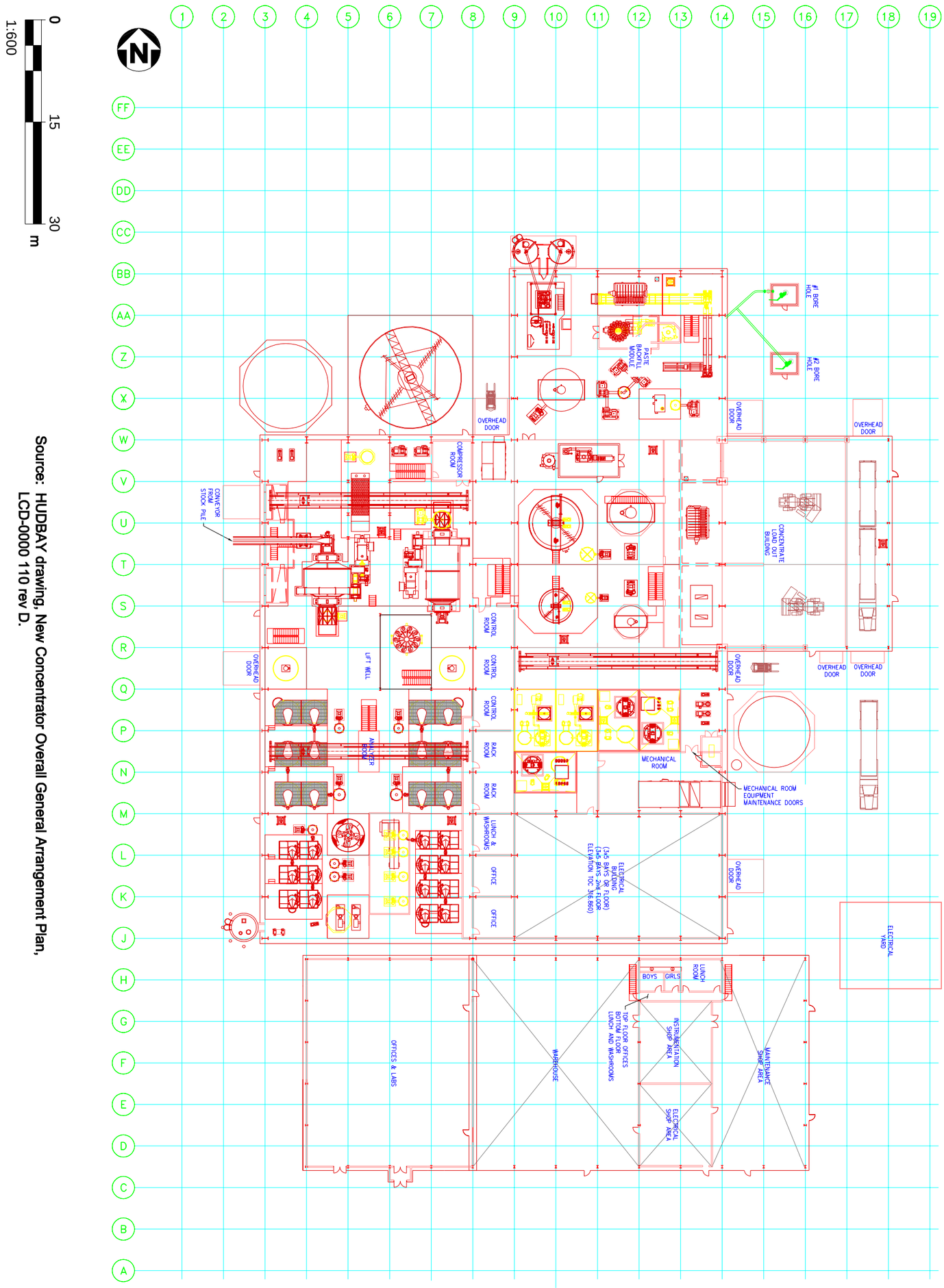


Lalor Concentrator
Description of a Designated Project under CEAA, 2012
Hudson Bay Mining and Smelting Co., Limited

Lalor Site with Proposed Concentrator & Sub-components

AECOM

Figure: 05



Source: HUDBAY drawing, New Concentrator Overall General Arrangement Plan, LCD-0000 110 rev D.

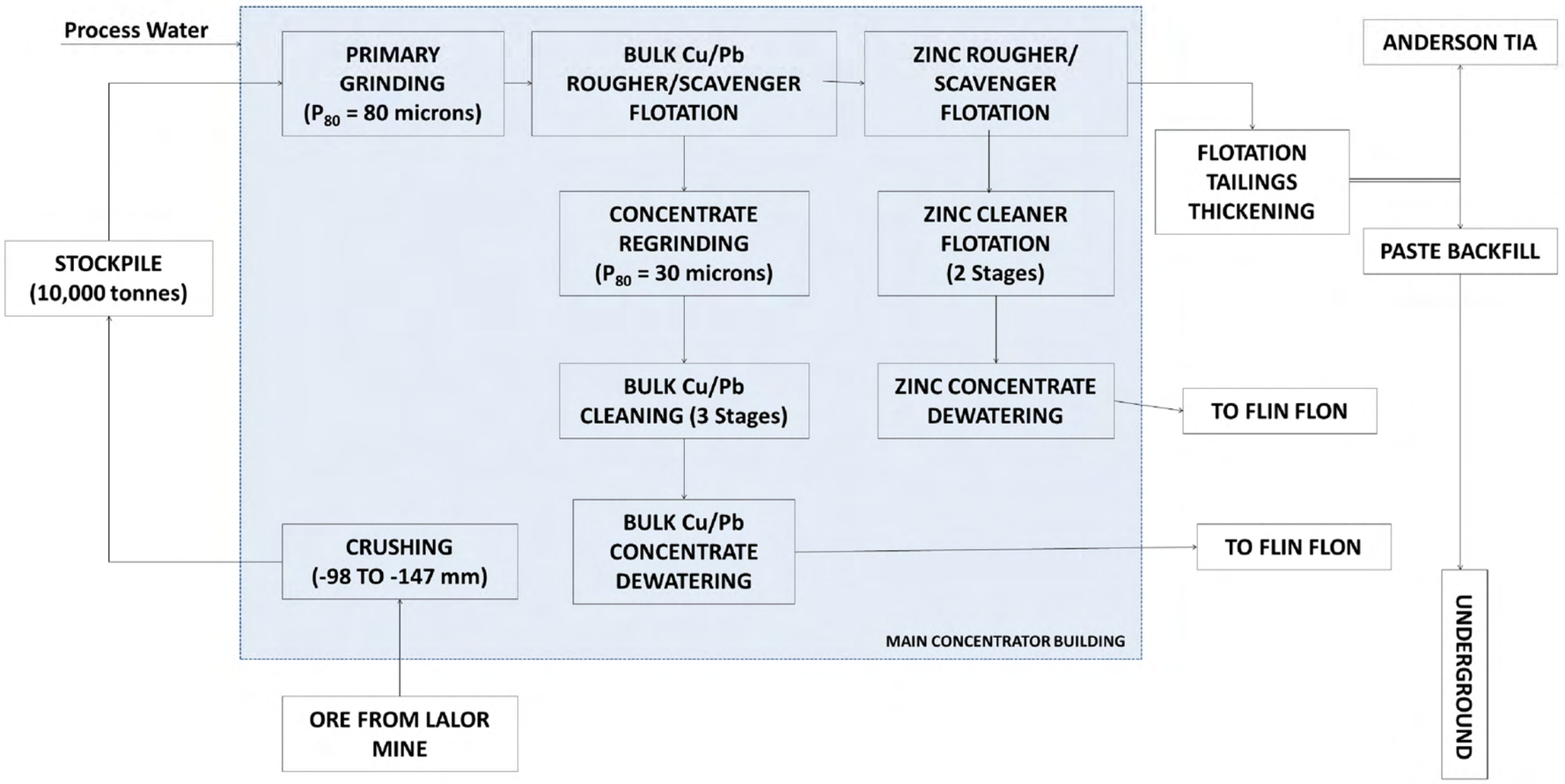
Lalor Concentrator
Description of a Designated Project under CEAA, 2012
Hudson Bay Mining and Smelting Co., Limited

Proposed Concentrator Building Layout

AECOM

Figure: 06

Process Overview



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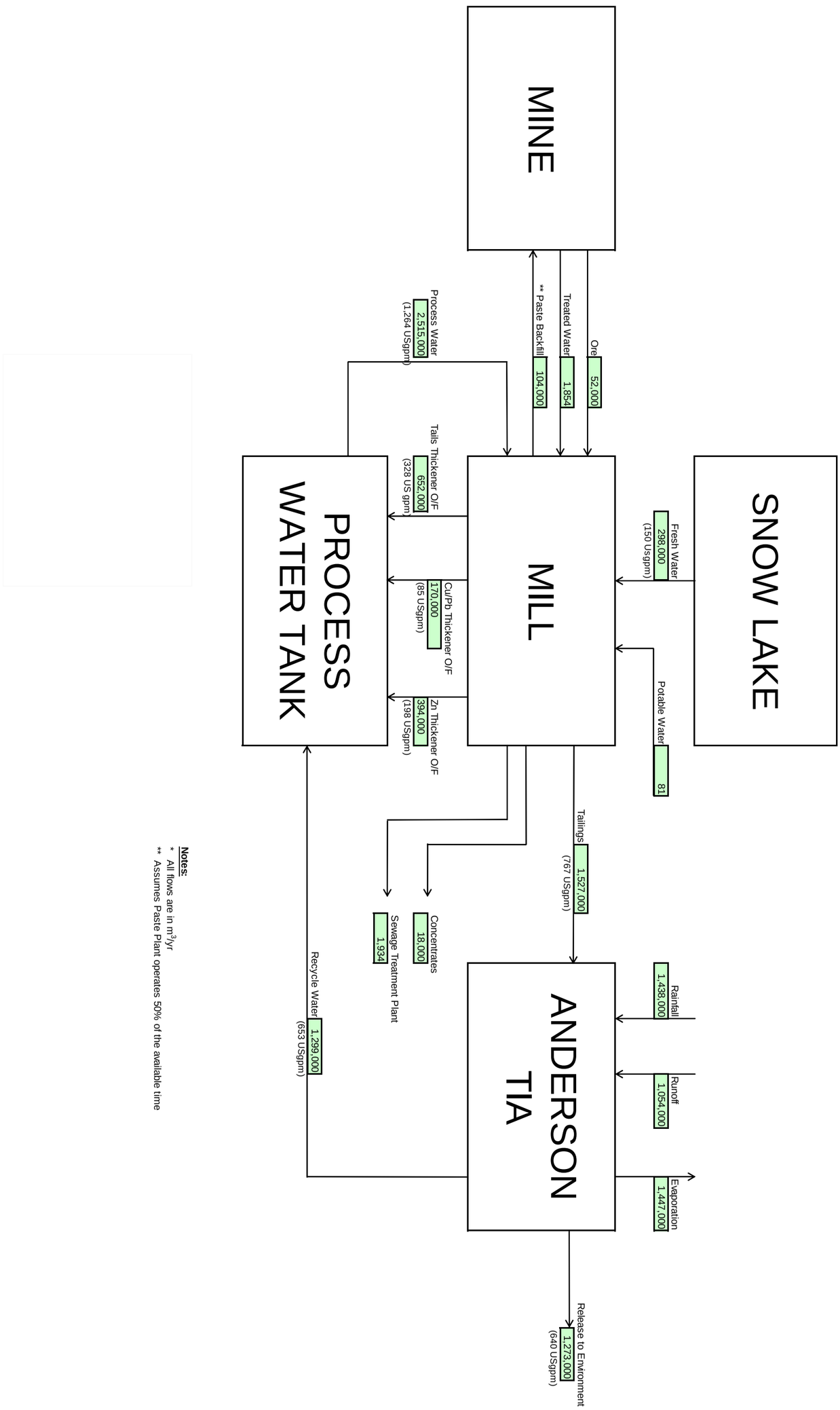
AECOM

Figure: 07

Proposed Lalor Concentrator
Process Overview

Lalor Concentrator
Description of a Designated Project under CEAA, 2012
Hudson Bay Mining and Smelting Co., Limited



Lalor Concentrator
Description of a Designated Project under CEAA, 2012
Hudson Bay Mining and Smelting Co., Limited

Water Flow Diagram

AECOM

Figure: 08

Figure: 09

Watercourses and Waterbodies

Lalor Concentrator
Description of a Designated Project under CEAA, 2012
Hudson Bay Mining and Smelting Co., Limited

AECOM

PROPOSED LALOR CONCENTRATOR
LALOR LAKE
LALOR SITE
EXISTING LALOR ACCESS ROAD
PR 395
EXISTING CHISEL NORTH MINE
EXISTING CHISEL NORTH MINE WTP
TOWN OF SNOW LAKE
EXISTING SNOW LAKE PUMPHOUSE
PROPOSED PIPELINE SYSTEM
FORMER RAIL BED
ANDERSON TIA
EXISTING ANDERSON TIA RECLAIM PUMPHOUSE
EXISTING STALL LAKE CONCENTRATOR
PR 392

500 0 500 1,000
Meters
1:50,000
NAD 1983 UTM Zone 14N

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ANSI B 279.4mm x 431.8mm

ANSI B 279.4mm x 431.8mm

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Filename: P:\60287252\000-CAD\06-GIS\H02\60287252-FIG-10-0000-H-LINEAR_TRANSPORTATION.MXD

Legend

- Power Transmission Line
- Former Railbed
- Runway
- Project Region

PROPOSED LALOR CONCENTRATOR

LALOR SITE

EXISTING LALOR ACCESS ROAD

TOWN OF SNOW LAKE

PR 395

FORMER RAIL BED

PROPOSED PIPELINE SYSTEM

PR 392

1,000 0 1,000 2,000 Meters

1:100,000

NAD 1983 UTM Zone 14N

AECOM

Figure: 10

Linear and Other Transportation Components

Lalor Concentrator
Description of a Designated Project under the CEAA, 2012
Hudson Bay Mining and Smelting Co., Limited

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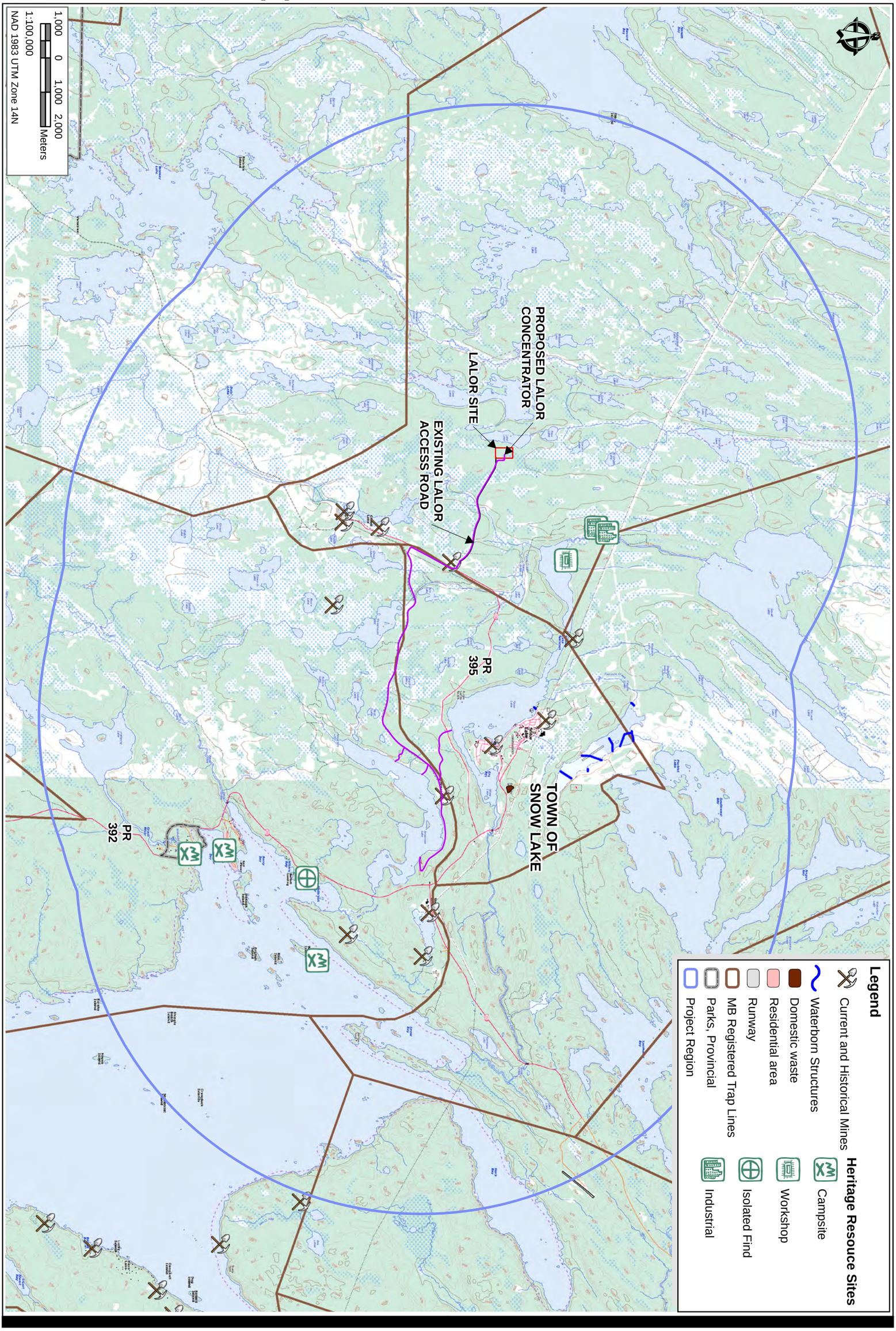

Lalor Concentrator
Description of a Designated Project under CEAA, 2012
Hudson Bay Mining and Smelting Co., Limited

Existing or Past Land Uses

AECOM

Figure: 11

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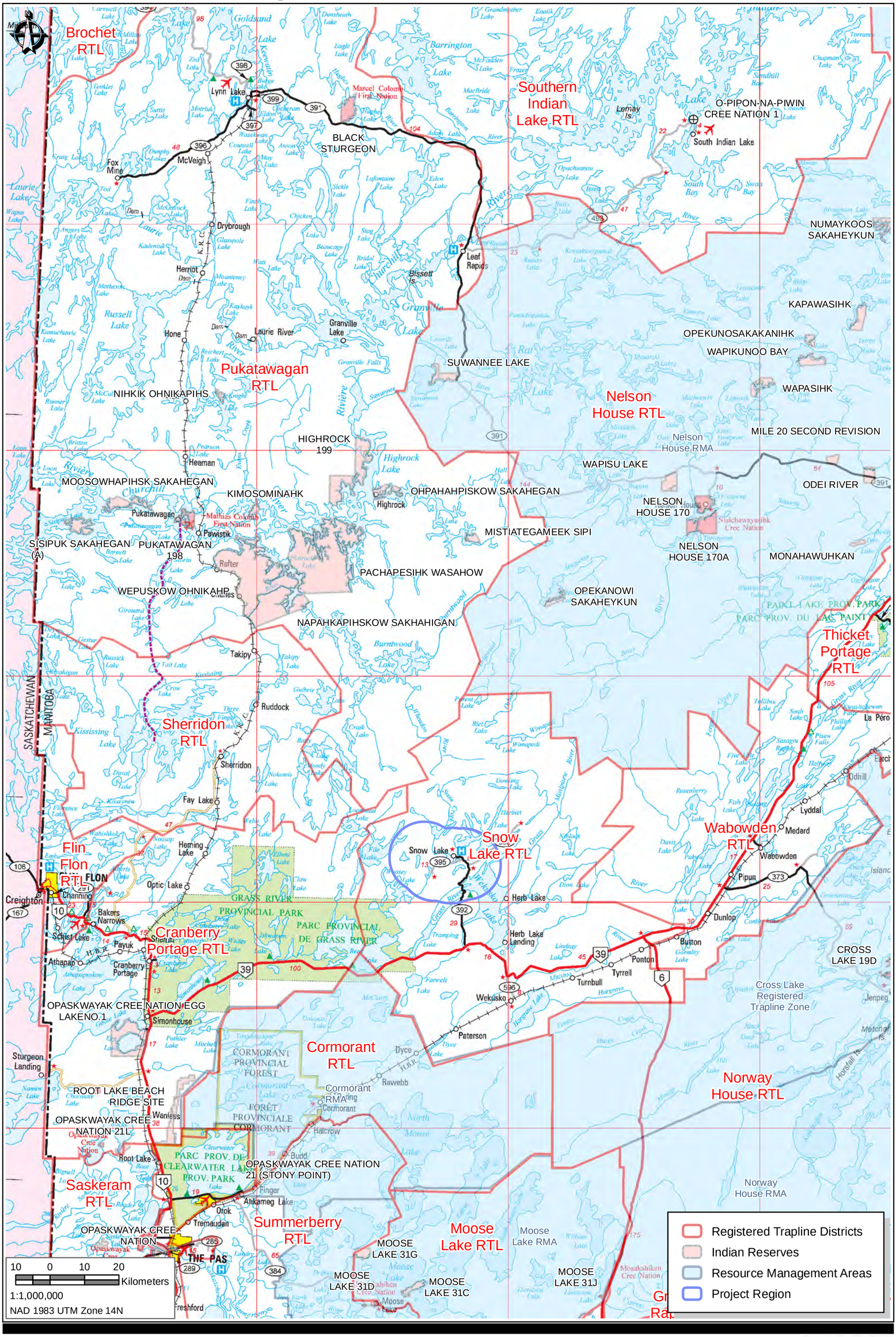

Lalor Concentrator
Description of a Designated Project under CEAA, 2012
Hudson Bay Mining and Smelting Co., Limited

Traditional Lands of MCCN and Other First Nations

AECOM

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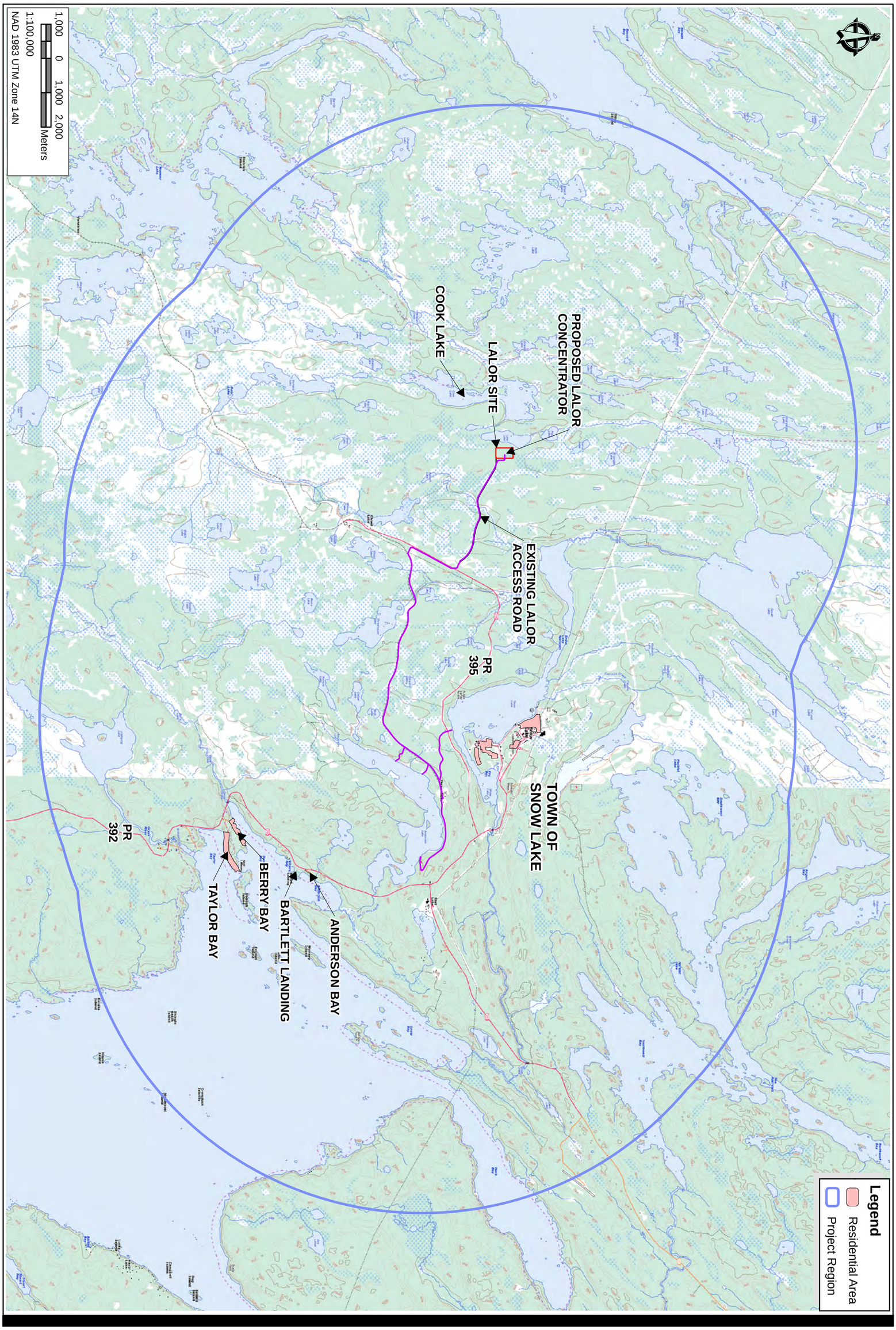

Lalor Concentrator
Description of a Designated Project under CEAA, 2012
Hudson Bay Mining and Smelting Co., Limited

Permanment, Seasonal, or Temporary Residences

AECOM

Figure: 13

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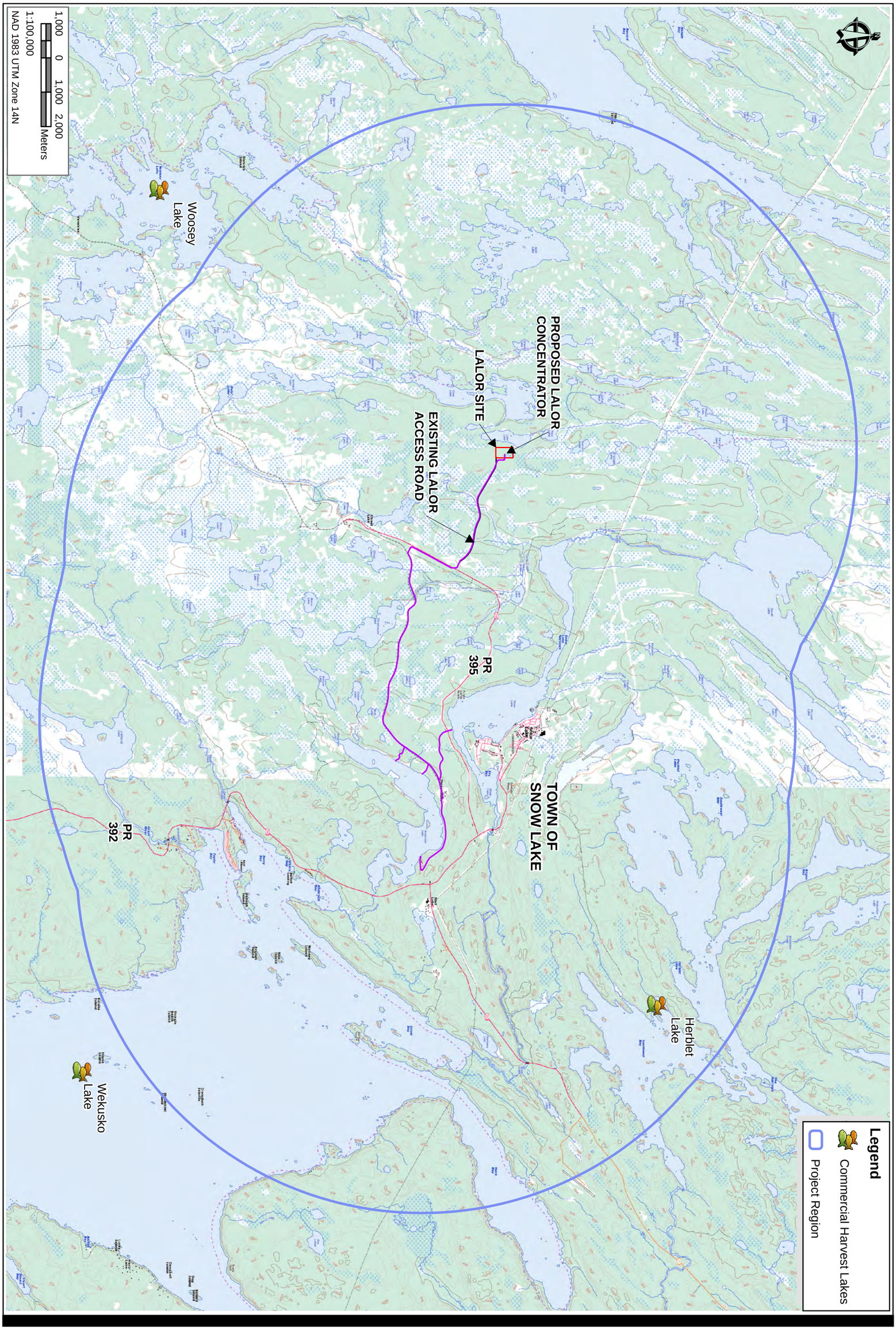

Lalor Concentrator
Description of a Designated Project under CEAA, 2012
Hudson Bay Mining and Smelting Co., Limited

Fisheries and Fishing Areas

AECOM

Figure: 14

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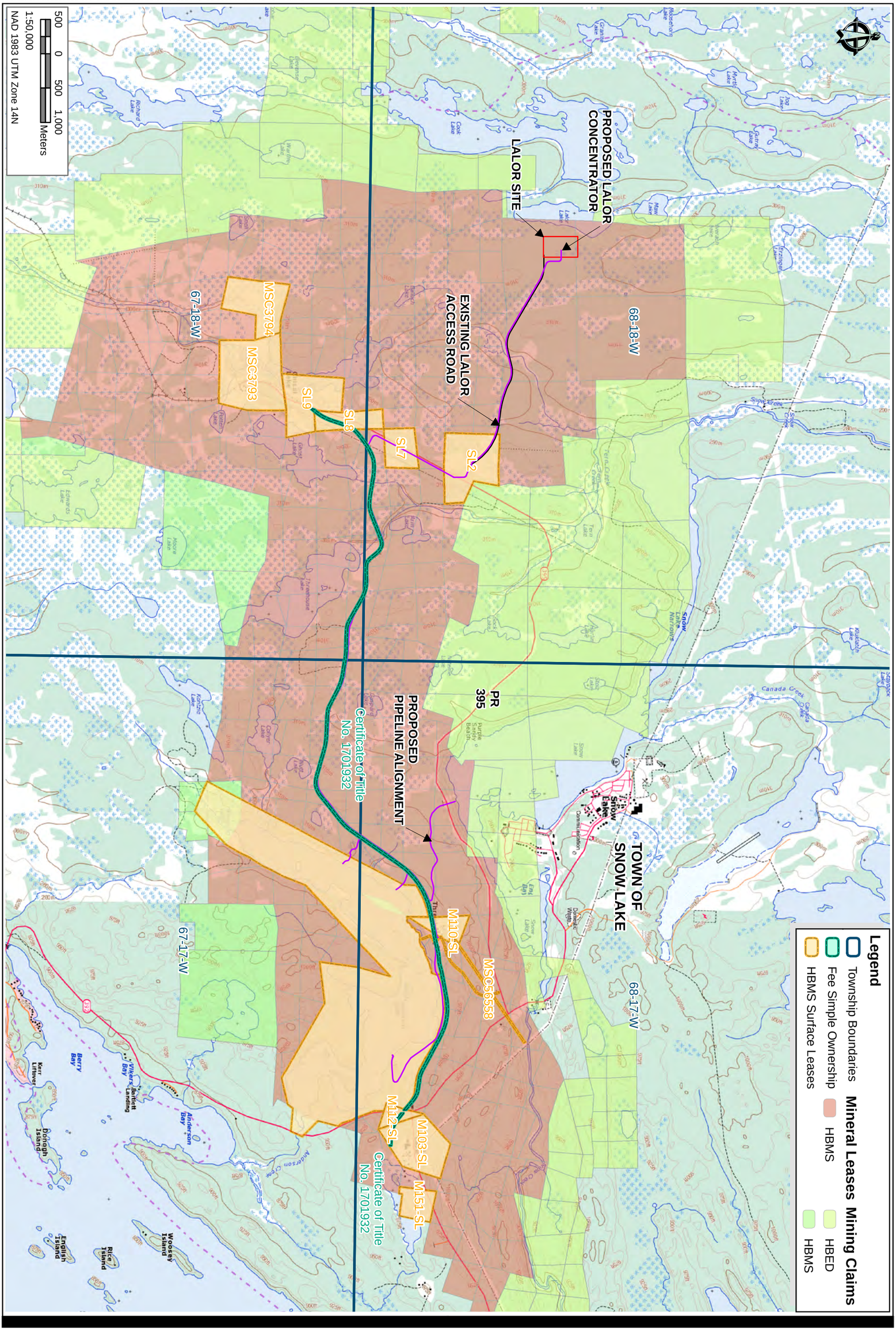


Lalor Concentrator
Description of a Designated Project under CEAA, 2012
Hudson Bay Mining and Smelting Co., Limited

Property Ownership

AECOM

Figure: 15

Appendix B
Photos

Photo 1 - Aerial view of the Lalor site, looking northwest and showing the location of the proposed Lalor Concentrator.

Photo 2 - Location of the proposed Lalor Concentrator, looking north.

Photo 3 - Corridor of the Pipeline System (along the Lalor Access Road from Lalor site to PR 395).

Photo 4: Corridor of the Pipeline System (along the former rail bed).

Photo 5: Snow Lake Pumphouse

Photo 6: Anderson Tailings Impoundment Area (TIA)

Appendix C

Letters Concerning Engagement and Manitoba Crown Consultation with MCCN

Hudbay Projects

Presentation to Mathias Colomb Cree Nation

November 23, 2012

HUDBAY

AECOM

Forward Looking Information

- This presentation contains “forward-looking statements” and “forward-looking information” (collectively, “forward-looking information”) within the meaning of applicable Canadian and United States securities legislation, including, but not limited to, Hudbay’s plans with respect to the development of its Lalor and Reed projects. All information contained in this presentation, other than statements of current and historical fact, is forward-looking information. Often, but not always, forward-looking information can be identified by the use of words such as “plans”, “expects”, “budget”, “guidance”, “scheduled”, “estimates”, “forecasts”, “strategy”, “target”, “intends”, “objective”, “goal”, “understands”, “anticipates” and “believes” (and variations of these or similar words) and statements that certain actions, events or results ‘‘may’’, ‘‘could’’, ‘‘would’’, ‘‘should’’, ‘‘might’’ ‘‘occur’’ or ‘‘be achieved’’ or ‘‘will be taken’’ (and variations of these or similar expressions). All of the forward-looking information in this presentation is qualified by this cautionary statement.
- Forward-looking information is not, and cannot be, a guarantee of future results or events. Forward-looking information is based on, among other things, opinions, assumptions, estimates and analyses that, while considered reasonable by Hudbay at the date the forward-looking information is provided, inherently are subject to significant risks, uncertainties, contingencies and other factors that may cause actual results and events to be materially different from those expressed or implied by the forward-looking information.
- The material factors or assumptions that were applied in drawing conclusions or making forecasts or projections set out in the forward looking information include, but are not limited to:
- the accuracy of geological, mining and metallurgical estimates;
- the costs of development;
- no significant unanticipated operational or technical difficulties;
- no significant unanticipated events relating to regulatory, environmental, health and safety matters; and
- no significant and continuing adverse changes in general economic conditions.
- The risks, uncertainties, contingencies and other factors that may cause actual results to differ materially from those expressed or implied by the forward-looking information may include, but are not limited to, risks generally associated with the mining industry, such as economic factors (including future commodity prices, currency fluctuations and energy prices), operational risks and hazards, including unanticipated environmental, industrial and geological events and developments and the inability to insure against all risks, failure of plant, equipment, processes, transportation and other infrastructure to operate as anticipated, compliance with government and environmental regulations, dependence on key personnel and employee relations, uncertainties related to the geology, continuity, grade and estimates of mineral reserves and resources and the potential for variations in grade and recovery rates, uncertain costs of reclamation activities, as well as the risks discussed under the heading “Risk Factors” in our most recent Annual Information Form, Form 40-F and Management’s Discussion and Analysis for the three and six months ended June 30, 2012.
- Should one or more risk, uncertainty, contingency or other factor materialize or should any factor or assumption prove incorrect, actual results could vary materially from those expressed or implied in the forward-looking information. Accordingly, you should not place undue reliance on forward-looking information. Hudbay does not assume any obligation to update or revise any forward-looking information after the date of this presentation or to explain any material difference between subsequent actual events and any forward-looking information, except as required by applicable law.

Purpose

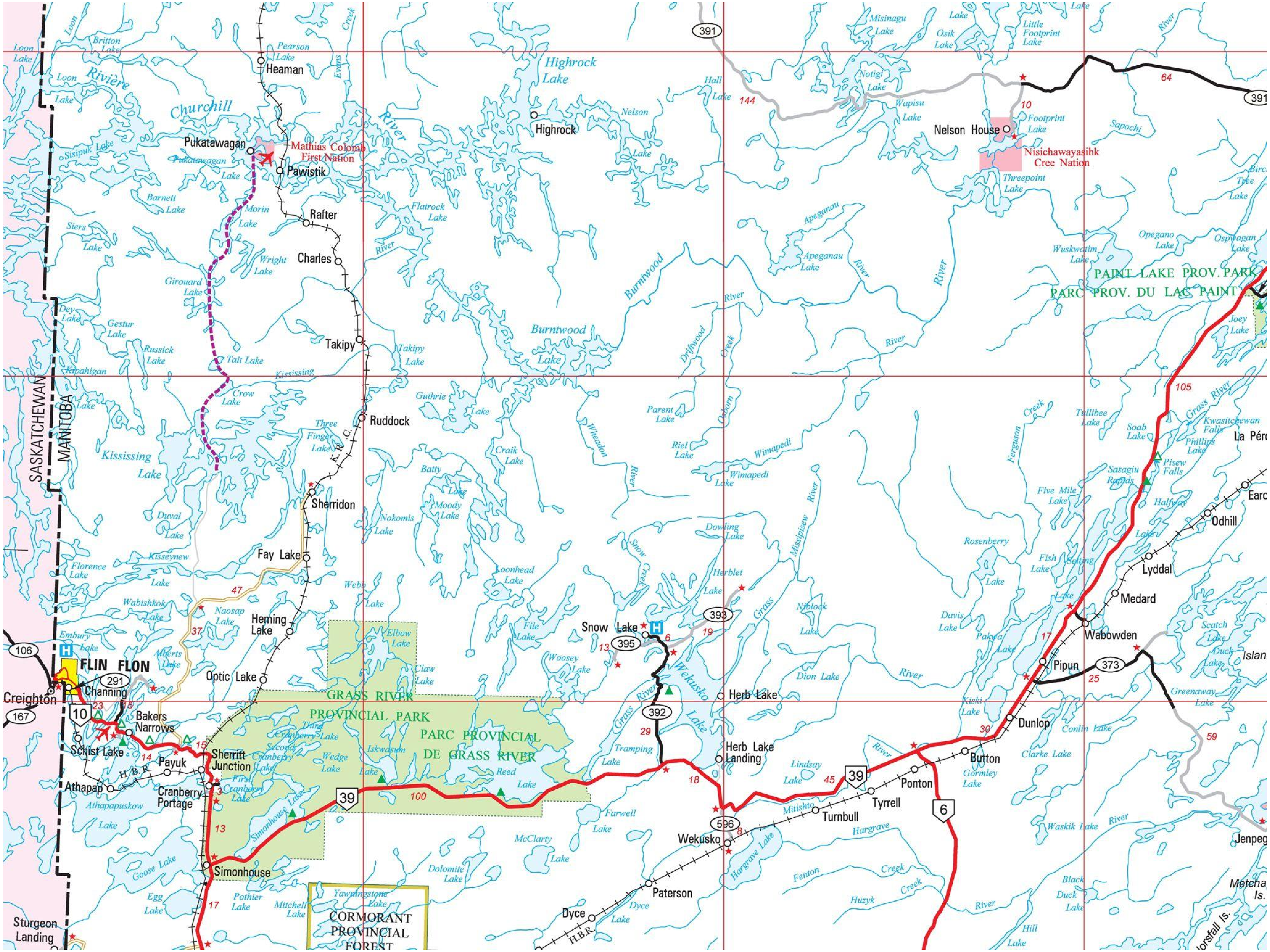
- Update information for Hudbay projects, including:
  - Lalor Mine
  - Lalor Concentrator and Anderson TIA
  - Reed Mine

Lalor

Reed

HUDBAY

AECOM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MANITOBA
FLIN FLON
Creighton
Channing
Bakers Narrows
Schist Lake
Athapap
Payuk
Sherritt Junction
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Simonhouse
Sturgeon Landing
Optic Lake
Heming Lake
Fay Lake
Sherridon
Ruddock
Takipy
Charles
Rafter
Pawistik
Pukatawagan
Heaman
Mathias Colomb First Nation
Highrock
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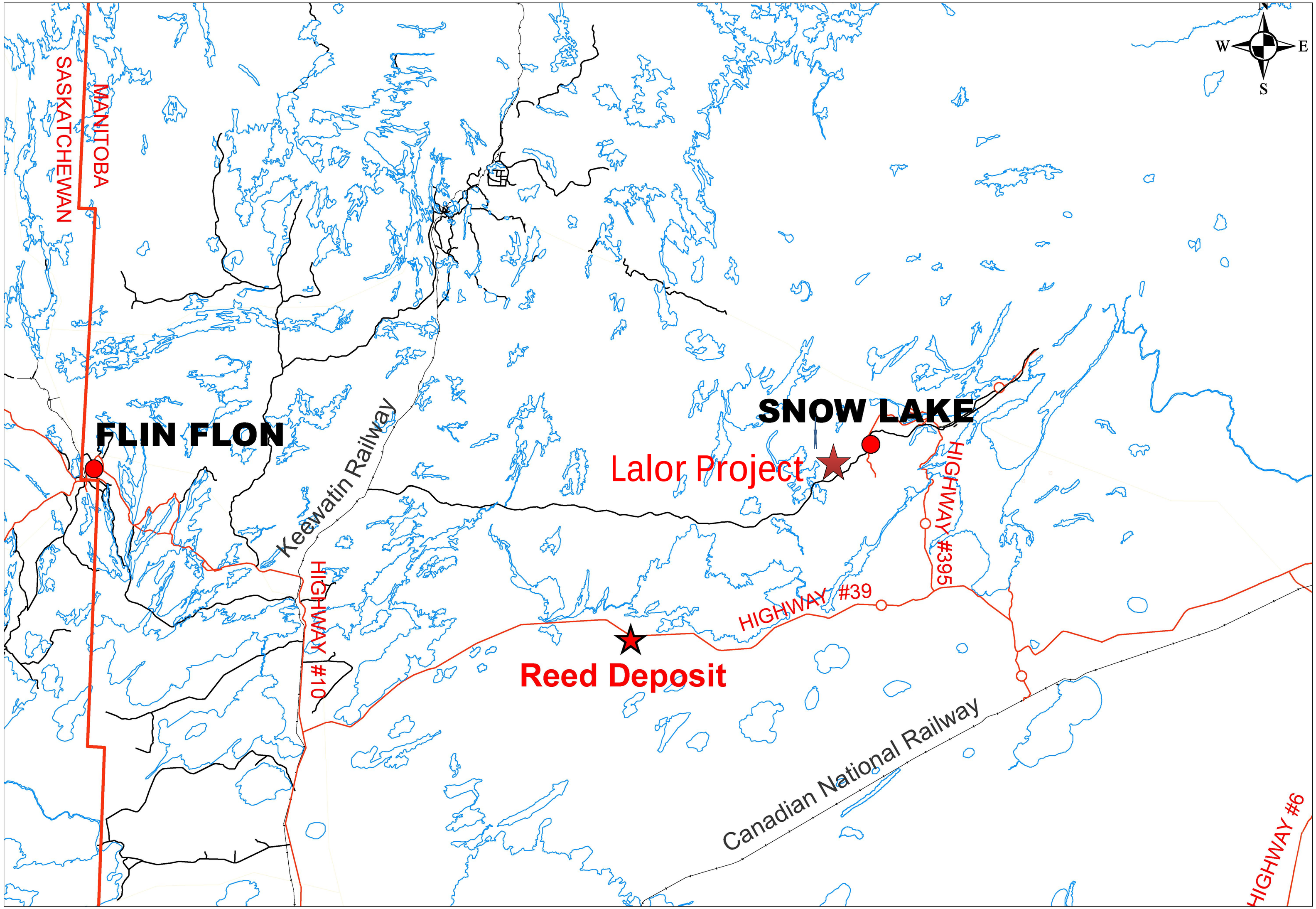
Kississing Lake
Churchill River
Rivière
Burntwood Lake
Burntwood
Snow Lake
Herb Lake
Herb Lake Landing
Wekusko Lake
Wekusko
Paterson
Dyce
Turnbull
Tyrrell
Ponton
Button
Dunlop
Pipun
Wabowden
Medard
Lyddal
Odhill
Nelson House
Nisichawayasihk Cree Nation
Jenpeg
La Pérouse
GRASS RIVER PROVINCIAL PARK
PARC PROVINCIAL DE GRASS RIVER
PAINT LAKE PROV. PARK
PARC PROV. DU LAC PAINT
CORMORANT PROVINCIAL FOREST
H.B.R.
K.R.C.



HUDBAY

AECOM

Brief History of Hudbay in Flin Flon Area

- Flin Flon mining camp started in 1915
- Hudbay has been operating in the Flin Flon area since the 1920's

Brief History of Hudbay in Snow Lake Area

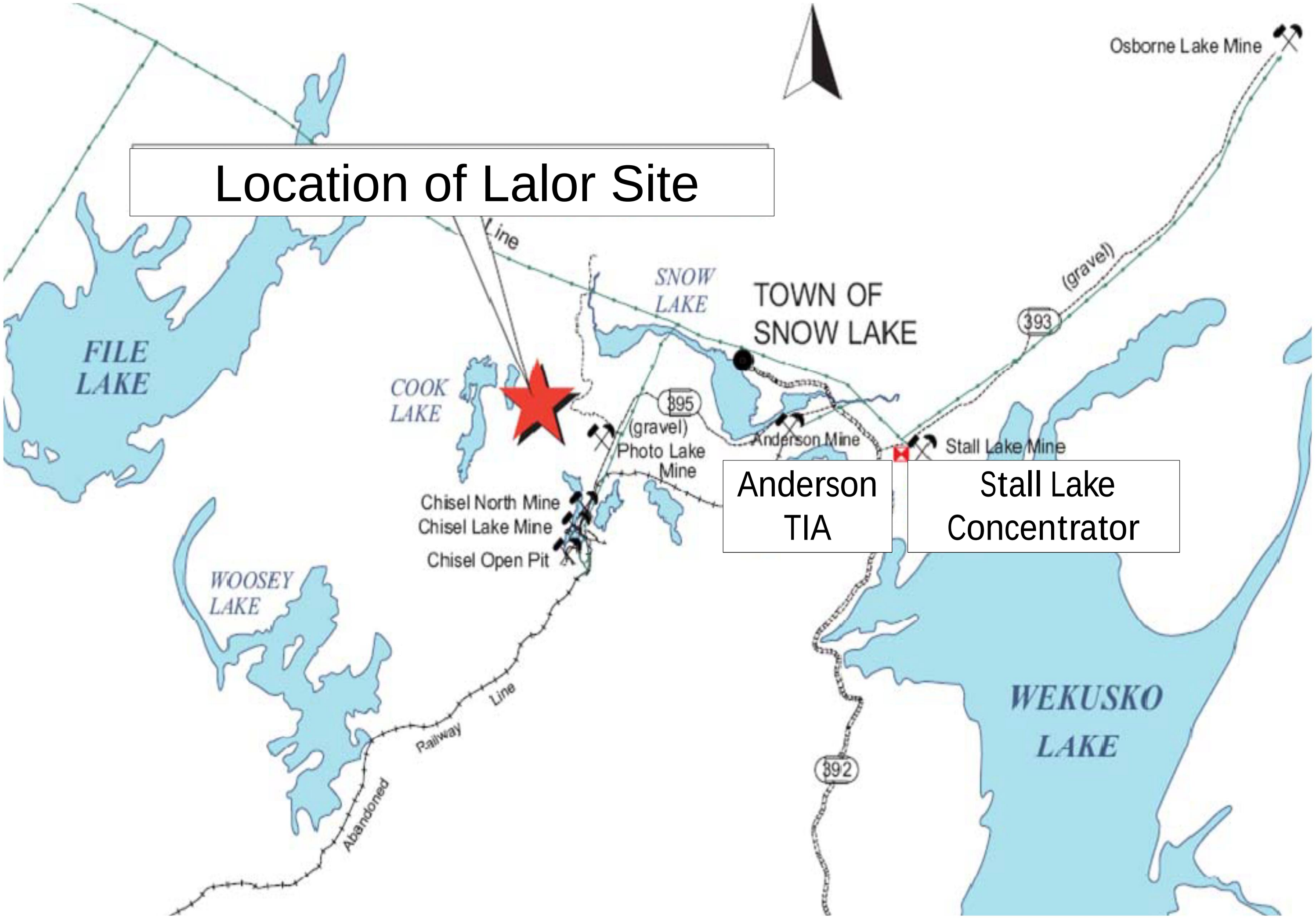
- HBMS has operated mines in the Snow Lake area since the late 1950’s
- Stall Lake Concentrator and Anderson Tailings Impoundment Area (TIA) opened in 1979.

Town of Snow Lake (Circa 1950’s)

Planning Mines for Closure

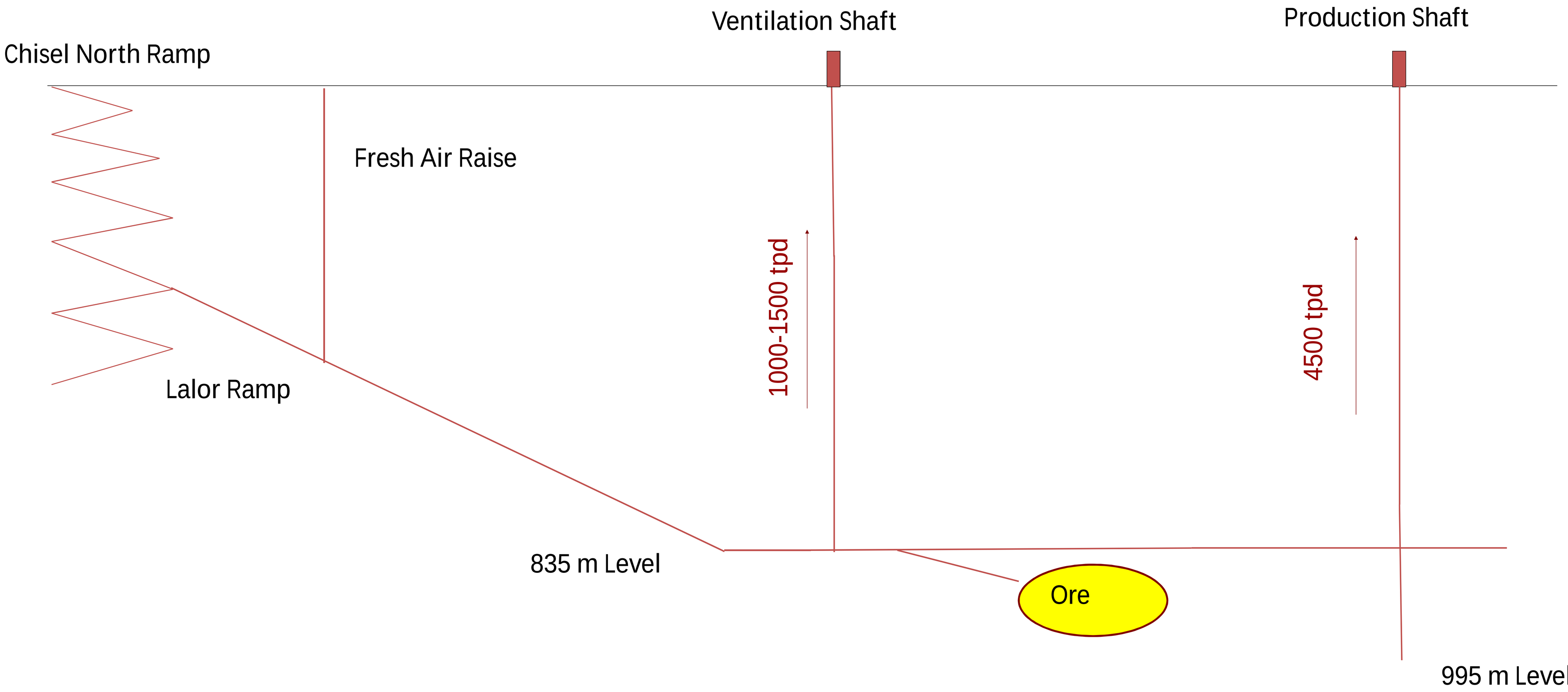
Lalor Mine

- Zinc/copper/gold mine
- Shafts and ramp to underground
- Ore extraction rate of 4,500 tonnes/day
- Operation until at least 2027


Location of Lalor Site
Osborne Lake Mine
FILE LAKE
SNOW LAKE
TOWN OF SNOW LAKE
COOK LAKE
395
(gravel)
393
(gravel)
Photo Lake Mine
Anderson Mine
Stall Lake Mine
Chisel North Mine
Chisel Lake Mine
Chisel Open Pit
Anderson TIA
Stall Lake Concentrator
WOOSEY LAKE
Railway Line
Abandoned
WEKUSKO LAKE
392


Lalor AEP Site
Lalor Vent Shaft
Lalor Access Road
Chisel North Mine
PR 395

Underground Development



Lalor Concentrator

Concentrator facility will be located in a cleared and partially leveled area north of Lalor AEP Headframe and Hoist House.

Lalor AEP Site, Looking NW

Future Concentrator Location, Looking North

- The concentrator will operate 24/7 for 362 days per year
- Planned daily throughput will be up to 4,500 tonnes
- Both copper and zinc concentrates will be trucked to Flin Flon

Project Components

1. Mine and Concentrator (New)
2. Snow Lake Pumphouse (Existing)
3. Tailings, Re-Cycle and Freshwater Pipelines (New)
4. Realignment of PR 392 (MIT Project)
5. Anderson TIA (Existing)

Location of Support Facilities

N

LALOR LAKE

LALOR MINE

ACCESS ROAD

VENTILATION SHAFT

CHISEL NORTH MINE

CHISEL LAKE

GHOST LAKE

CHISEL LAKE WTP

CHISEL LAKE OPEN PIT

SNOW LAKE

TOWN OF SNOW LAKE

395

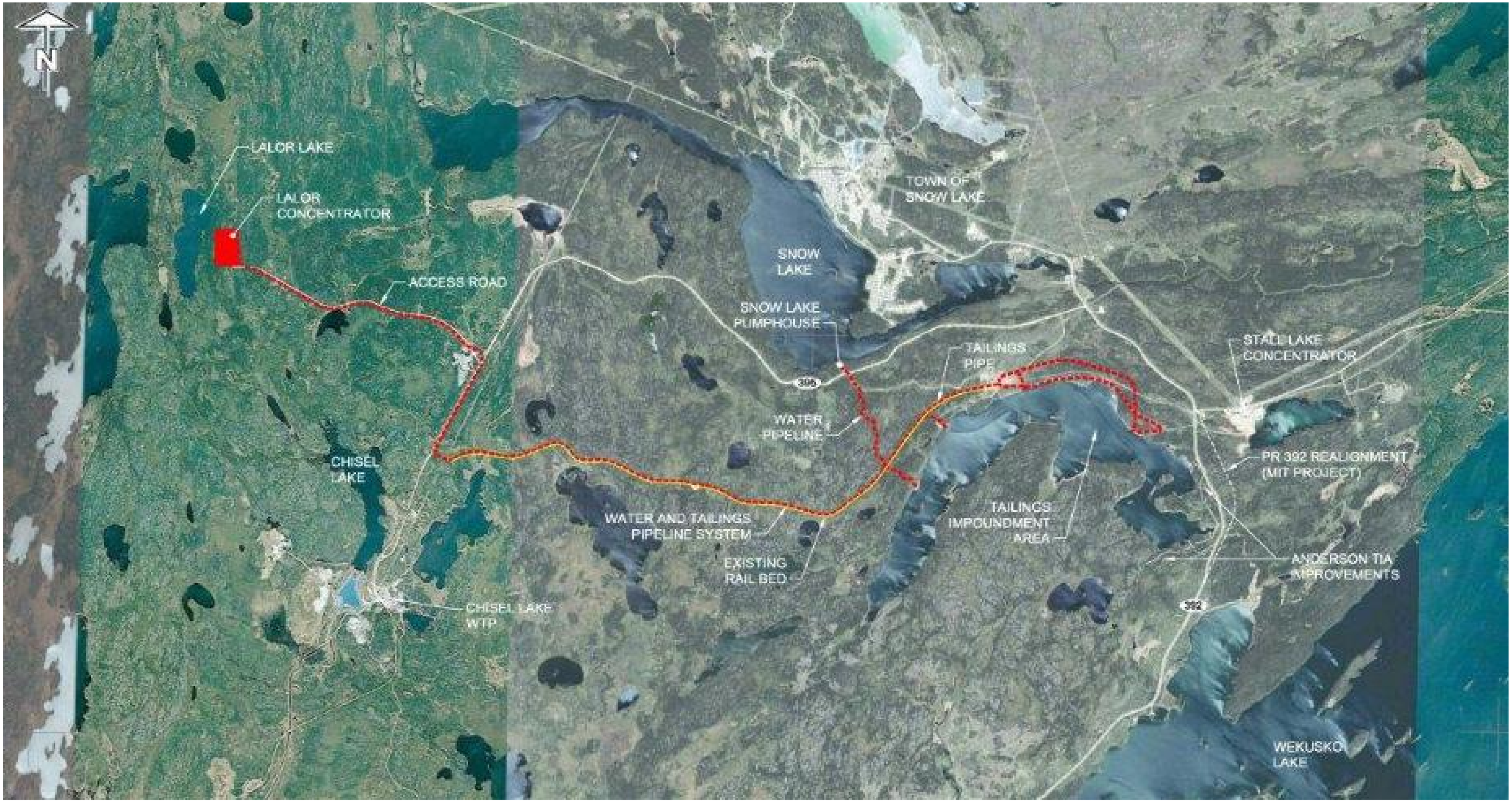
TAILINGS IMPOUNDMENT AREA

392

STALL LAKE CONCENTRATOR

WEKUSKO LAKE

Tailings / Freshwater Pipeline Route



HUDBAY

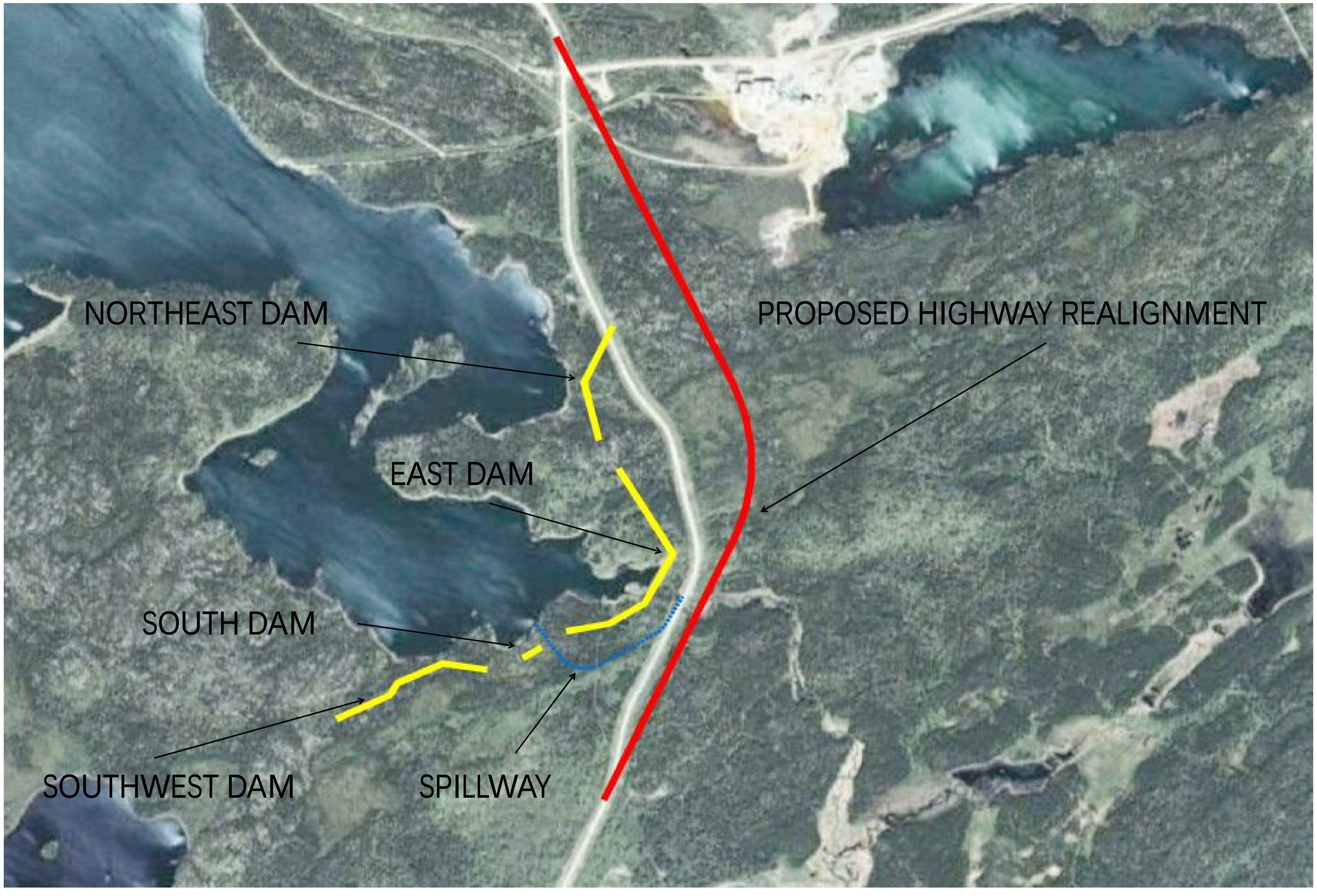
AECOM

Anderson TIA

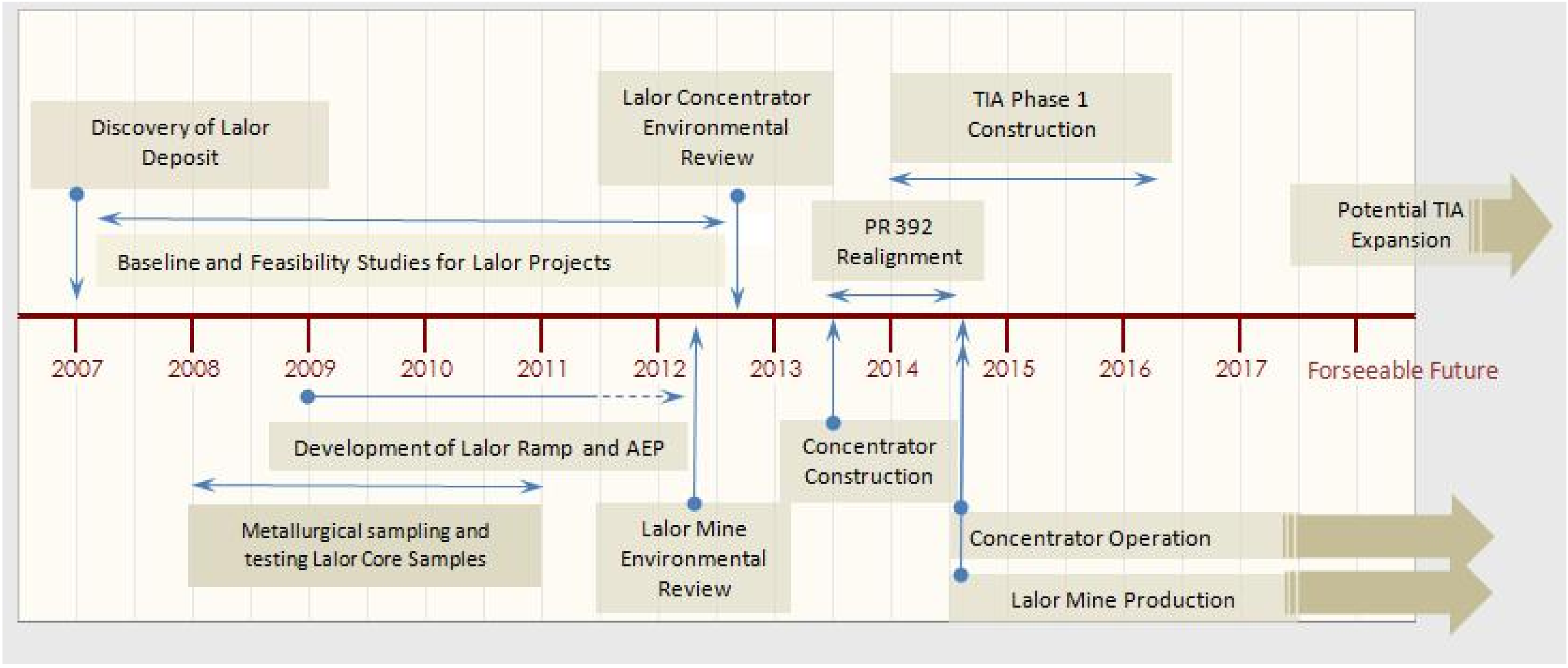
- Anderson Tailings Impoundment Area (TIA) has been used since 1979.

Anderson TIA

Anderson TIA – New Dam Alignments



Lalor Projects - History and Timeline



Reed Copper Project

HUDBAY

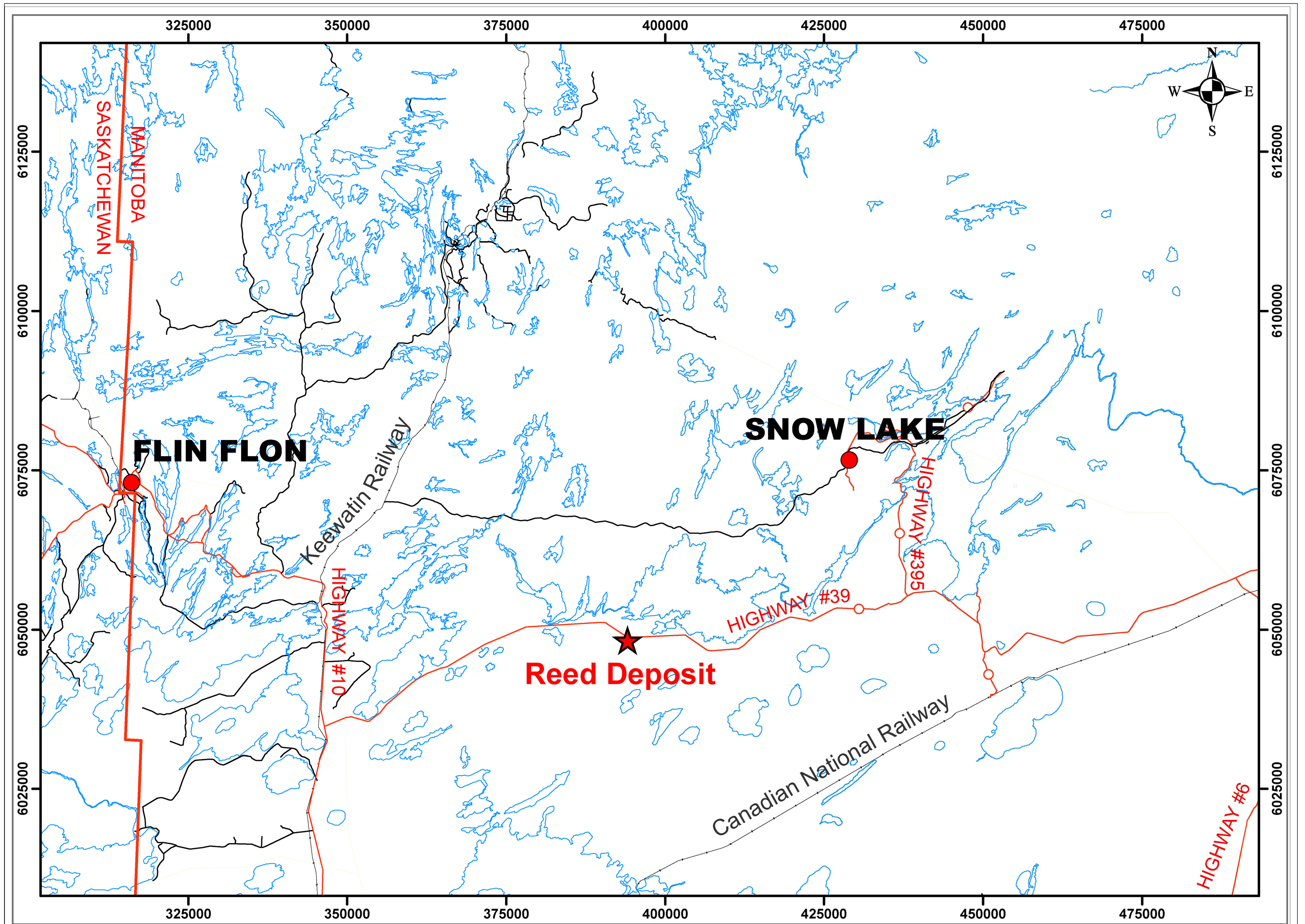
AECOM

Reed Mine

- 2.16 million tonnes of copper ore
- At full production mining rate is anticipated to be 1,300 tonnes/day
- All ore will be trucked and processed in Flin Flon
- Approximate 5 year mine life (starting in 2013)
- Will provide 88 jobs at full production

HUDBAY

AECOM



GENERAL LOCATION MAP
REED DEPOSIT

UTM - NAD83 ZONE14
SCALE: 1:750 000

HUDBAY

AECOM

Reed AEP Site, Looking East (2012)

Reed Mine Site Plan

HUDBAY

AECOM

Access Road and Main Gate

HUDBAY

AECOM

Existing Infrastructure at AEP Site

HUDBAY

AECOM

Polishing Pond and Waste Rock Storage Pad

HUDBAY

AECOM

Trench and Portal Face

HUDBAY

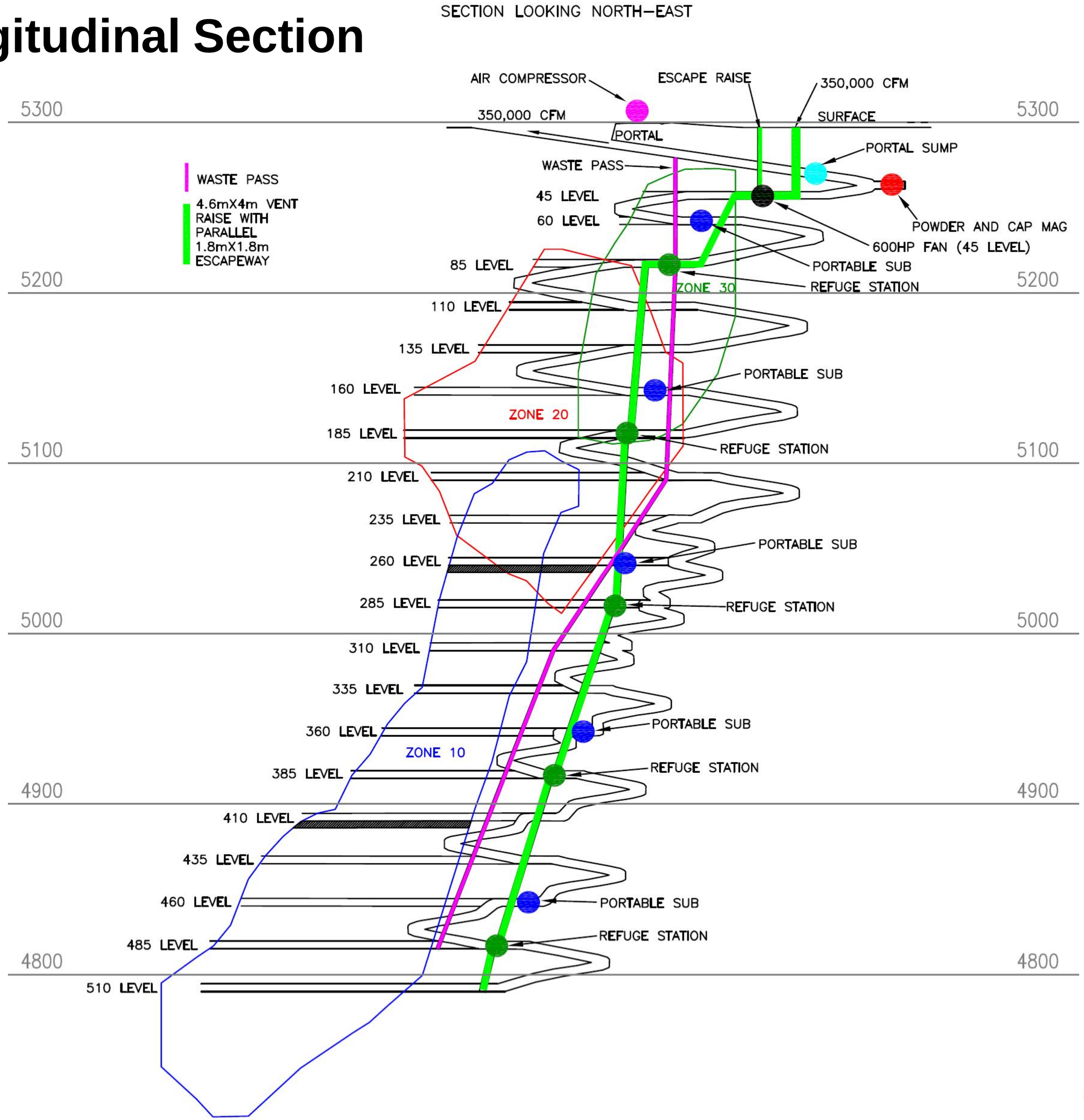
AECOM

Existing Infrastructure at Reed AEP Construction Camp

HUDBAY

AECOM

Reed AEP Longitudinal Section



Environmental Studies

Physical

- Topography
- Geology
- Soil
- Air
- Noise and Vibration
- Climate
- Groundwater

Aquatic

- Surface Water Hydrology
- Bathymetry
- Surface Water Quality
- Sediment Quality
- Aquatic Invertebrates
- Fish and Fish Habitat

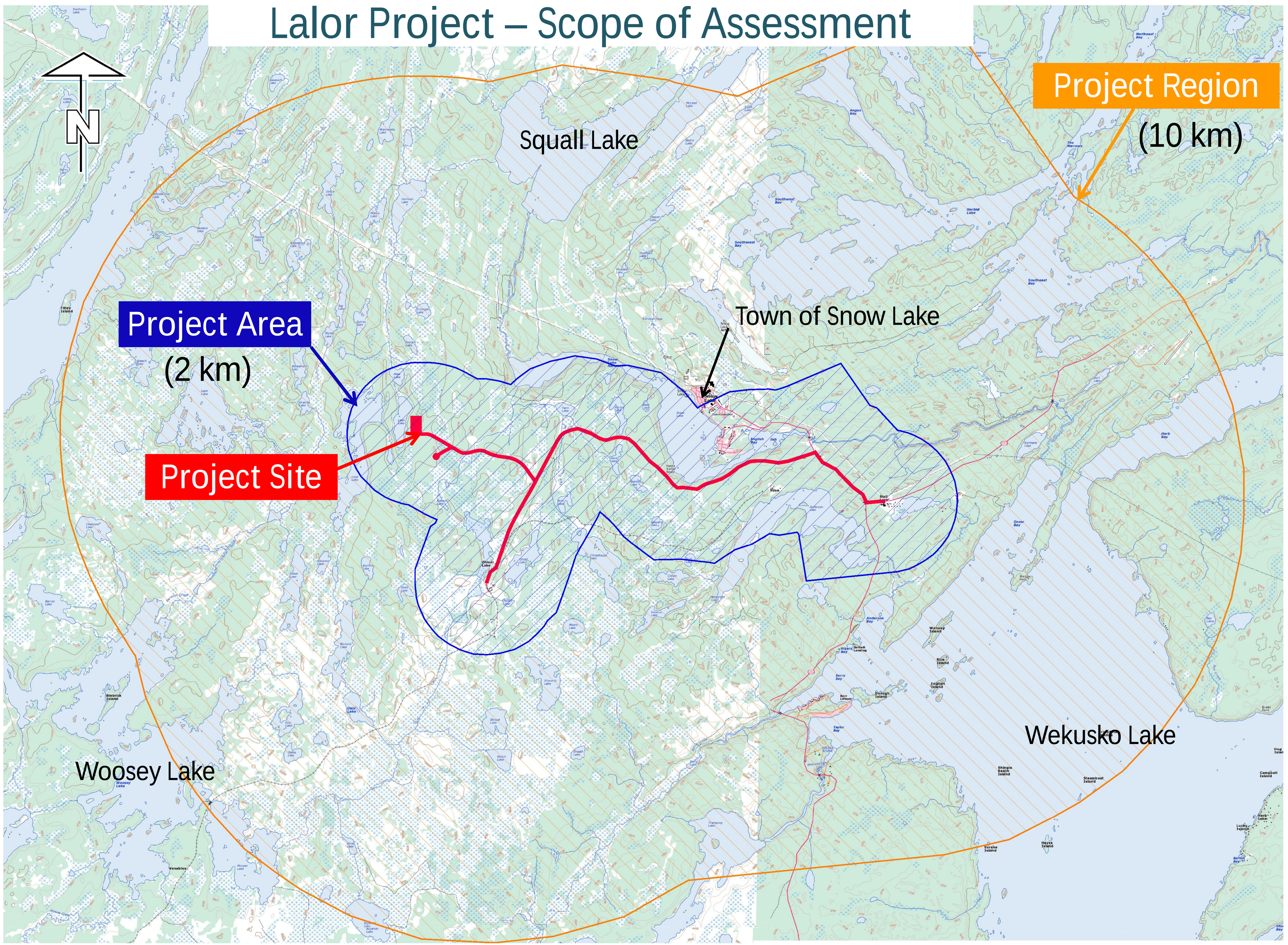
Terrestrial

- Flora and Fauna

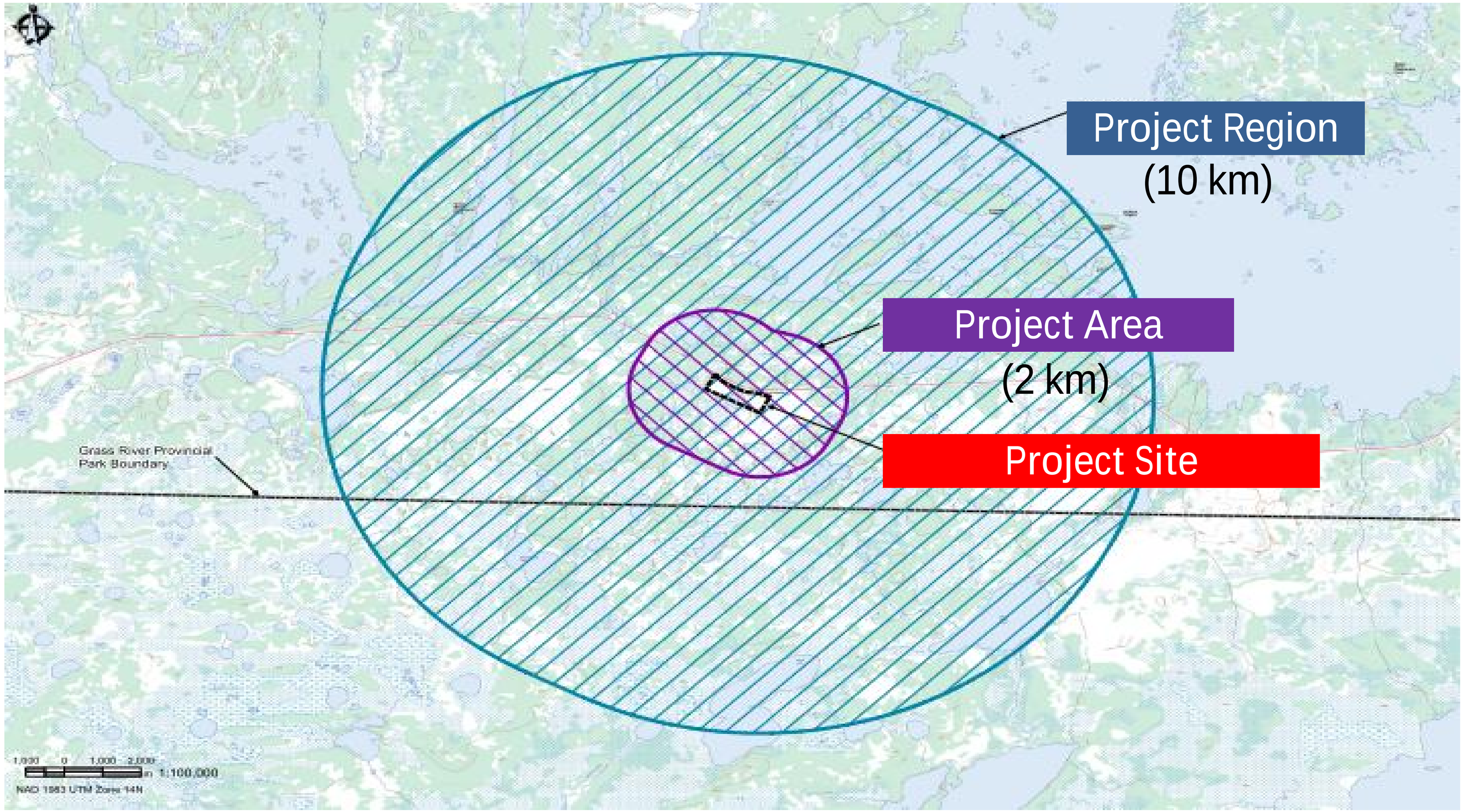
Socio-Economic

- Heritage Resources
- Economy
- Recreation
- Resource Use
- Aesthetics
- Health and Safety

Lalor Project – Scope of Assessment



Reed Copper Project – Scope of Assessment



Summary of Findings

Mines have been planned so there will be no impact to:

- Surface Water and Sediments
- Aquatic Resources
- Terrestrial Resources
- Groundwater
- Heritage Resources
- Resource Use

Economic Benefits

- Lalor Mine and concentrator will employ approximately 430 employees at full production.
- Reed Mine will employ 88 employees at full production.
- Concentrate produced at each mine will be processed in Flin Flon, providing additional economic benefit
- Northern contractors, supply services and other businesses will have opportunities.

Closure Planning

- Closure plans for Lalor and Reed will be updated
- Manitoba keeps Hudbay’s financial assurance to make sure closure will be paid for.
- Hudbay has successfully completed reclamation on many mining operations across Canada, with several of these sites located in the Snow Lake region
- The area will be returned, to the extent possible, to its natural state

Comments and Questions

AECOM - Clifton Samoiloff
Phone: 204-477-5381
email: Cliff.Samoiloff@aecom.com

Hudbay – Stephen West
Phone: 204-687-2229
email: steph.west@hudbayminerals.com

Hudbay – Jay Cooper
Phone: 204-687-2667
email: jay.cooper@hudbayminerals.com

AECOM
99 Commerce Drive
Winnipeg, MB, Canada R3P 0Y7
www.aecom.com

204 477 5381 tel
204 284 2040 fax

Meeting Notes

Date of Meeting	November 23, 2012	Start Time	10:00	Project Number	60267596
Project Name	First Nations Support Services				
Location	Pukatawagan, Manitoba				
Regarding	Lalor and Reed Projects				
Attendees	Cliff Samoiloff (AECOM), Alison Weiss (AECOM), Shawna Kjartanson (AECOM), Stephen West (Hudbay) Jay Cooper (Hudbay), Pam Marsden (Hudbay), Mathais Colomb Cree Nation (MCCN) Chief and Council and community members (list below), Ginger Gibson (Firelight), Stephen DeRoy (Firelight)				
Distribution	AECOM, Hudbay, MCCN, Firelight, Sheryl Rosenberg (TDS)				
Minutes Prepared By	S.Kjartanson				

PLEASE NOTE: If this report does not agree with your records of the meeting, or if there are any omissions, please advise, otherwise we will assume the contents to be correct.

AECOM and Hudbay prepared a presentation for Mathias Colomb Cree Nation (MCCN) regarding the environmental assessment and description of the proposed Lalor and Reed Projects near Snow Lake, Manitoba. The goal of the presentation was to provide the community with further information regarding the environmental work conducted as well as to describe the proposed Projects.

Overall, the presentation was well received and there was much good discussion. The main issues raised by MCCN members were:

1. Mine closure and/or historical mining impacts.
    a. Long-term effects of the tailings deposition.
    b. Scope of potential effects (duration or geographic extent).
2. Involvement in the early stages of planning of environmental assessment.
3. Employment, training and business opportunities for MCCN members.

Chief Dumas asked the attendees to introduce themselves, starting with AECOM, Hudbay and Firelight representatives. Following this introduction, the Chief, Council and community members individually introduced themselves. Several community members entered the room throughout the day and were not identified. The presentation was well attended and included the following individuals:

- Chief Arlen Dumas,
- Mathias Sinclair,
- Flora Jane Castel (elder and Councillor),
- Marlene Dumas (Councillor),

- Maryanne Dumas (Councillor),
- Angelique Dumas (Councillor, justice worker),
- Maria Colomb (elder),
- Angus (Last name not recorded) (fisherman, past president of local trappers),
- Gordie Bear (Councillor, construction operator)
- Rob Robinson (administrative assistant to MCCN Chief and Council),
- Floyd North (Business Development Officer, Sherridon),
- Glen Dumas (fire captain),
- Cree speaking elder (name not recorded), and
- Theresa Bigetty (elder),
- (First name not recorded) Baptiste (elder).

Following introductions, Councillor Maryanne Dumas led the group in an opening prayer.

Ginger Gibson (GG) began the presentation with a description of the intention and purpose of the meeting. Firelight's task is to review, with Chief and Council and the community, the environmental reports prepared by AECOM and Hudbay in order to develop an understanding of the work that has been done as well as an understanding of the proposed project components. Hudbay and AECOM will present this information at this and future meetings. Firelight and MCCN, through internal discussions, will work to identify additional knowledge that MCCN can provide to enhance the reports, identify the resources the community values and then, propose changes to the project that can protect the land or resources that are important to the community. Firelight and MCCN will build a common purpose before presenting the information to Hudbay.

GG asked the attendees if they had questions regarding the approach proposed by Firelight.

> *Comment*: Chief Dumas stated that yesterday, Chief and Council met to discuss their approach and what to expect through today's meeting. They had no questions and invited Hudbay and AECOM to proceed with their presentation.

Stephen West (SW) began the presentation. He emphasized that mines are built looking to the future and incorporate closure plans as early into the planning process as possible. His company has reclaimed the sites of many former operations and are proud of the work they do. They have learnt many lessons regarding mine closure, most importantly that it's better to plan the closure at the beginning. He stated that, during development of Lalor, they may discover additional resources at depth. He described the former operations in the Snow Lake region and how much of the infrastructure required for Lalor is already present due to these former operations (e.g., Chisel wastewater treatment plant). They have worked to minimize the area required for the concentrator and that, where possible, trailers are used for offices or dry so they can be easily removed later.

> *Comment:* GG asked if the new structures were allowing for more flooding.
>
> *Response:* SW indicated that yes approximately 100 ha would be flooded to raise the water levels in the Anderson Tailings Impoundment Area (TIA).
>
> Comment: GG asked if the plan was to continue to have tailings stored under water.

Response: SW indicated that yes the tailings storage under water will continue.

Comment: Councillor Gordie (MCCN) asked SW if there were plans to close off discharge to Anderson Creek.

Response: SW stated that the release from Anderson TIA is not continuous, that discharge is generally restricted to late May to November (i.e., no winter discharge). In the spring, we try to hold water in Anderson TIA until the ice is off to allow oxygen back into the water. One benefit of expanding the TIA is to be able to hold the water back with sufficient freeboard to allow this to happen. Otherwise an early discharge could smell (rotten egg) until water becomes more oxygenated.

Comment: Glen Dumas (MCCN) asked if there were plans to ever remove the tailings from Anderson TIA?

Response: SW responded that the Anderson TIA is the permanent storage for these tailings, there will be no plans to ever remove them. They are inert because they have a water cover preventing oxygen from reaching the deposited tailings.

Comment: Glen Dumas (MCCN) asked if there have been any studies done on Anderson TIA water to see if the water quality is OK? Will it be OK after you leave the area?

Response: SW responded saying that there have been many tests on Anderson TIA water and many examples of lakes across the country that are licenced as the Anderson TIA is. Tests have shown that Anderson TIA water is of high quality. The original Environment Act licence (in 1978) required HBMS to maintain a 5ft water column above the tailings. SW stated that the tailings may not really require that much water above them but areas near the shoreline would be subject to wave and wind action so maintaining the water depth is important.

Comment: Elder Mathias Sinclair (MCCN) asked if all studies conducted by government or AECOM in these areas could be provided to MCCN for review. He said he would be interested to see the results of the Anderson TIA water. He stated that MCCN have firsthand knowledge of the impacts of tailings, referring to Lynn Lake. He explained that, with respect to Lynn Lake, there were no measures for containing tailings at the site. Impacts on fish, wildlife species have been observed by locals (in Lynn Lake area). He remembered hearing about “red suckers” that were captured in the creek in Lynn Lake that the locals avoided and identified that as an impact to fish. He asked SW what kind of fish were in Anderson TIA.

Response: SW acknowledged that the land-based deposition of tailings, such as Lynn Lake or Sherridon can have impacts. He re-stated that Hudbay plans their mines thinking of closure. He also said that there are no fish in Anderson TIA. Anderson TIA has no in/out creeks for any fish to travel into the lake and it is isolated. He said that Anderson Creek is dry except when they are discharging (May to November).

Comment: Angus (last name unknown) (MCCN) stated that he was surprised to hear there were no fish. If there are no fish, there must be something wrong with the water. Angus (MCCN) also mentioned Lynn Lake as a place that fish have been impacted by tailings.

Response: SW agreed that Lynn Lake was bad and has personally seen other bad examples. Lynn Lake has land-based tailings deposition (i.e., no water cover) and the impacts have resulted from wind-blown tailings that entered the lake.

Comment: GG asked if SW could describe how Lynn Lake was different from Anderson TIA.

Response: SW explained that Lynn Lake had no treatment, that it was land-based tailings deposition. He clarified that there are Brook Stickleback and minnows in Anderson TIA, but there are no large-bodied fish (like suckers). He also stated that there had been studies on Anderson TIA before it was used as a tailings facility (whereas Lynn Lake had no such studies). There were limnology studies conducted in the Anderson area every 3 years from 1978 until about 2003. On-going Environmental Effects Monitoring (EEM) studies occur every 3 years on the receiving waterbody for the Anderson TIA discharge, Anderson Bay of Wekusko Lake. The EEM studies also compare Anderson Bay (receiving waterbody) to a reference lake; although no 2 lakes are the same, the comparison can tell us a lot about what impacts there might be. Hudbay can provide any of these studies to MCCN, if requested.

Comment: Angus (MCCN) mentioned that the Lynn Lake area needs cleanup. He said that they dumped rock wherever and has personally seen the dirty water run off from the rock into the surrounding waterbodies. What are the effects on fish or animals that are exposed to that water?

Response: SW stated that he couldn't speak to that mine; it was a different company that operated that mine. He suggested that the Manitoba government might have done an environmental or human health risk assessment but he wasn't sure.

Comment: Stephen DeRoy (SD) asked how Hudbay contains the tailings in the Anderson TIA without having them release down Anderson Creek.

Response: SW said the tailings deposit in the lake and settle to the bottom. They have deposited into the western portion of the Anderson TIA for tailings storage (the discharge from the Anderson TIA is on the eastern end). They have plans to use the rest of the Anderson TIA for tailings storage for the new Lalor Concentrator over the long term. The discharge from Anderson TIA is by a pipe which is controlled by a valve. Water monitoring is conducted on the discharge to make sure the water quality meets effluent limits.

Comment: SD asked what, if any, water quality monitoring is occurring of the water in Anderson TIA.

Response: SW replied that Hudbay analyzes samples in Anderson TIA (for metals) on a weekly basis, with samples collected for toxicity (rainbow trout and Daphnia assays) conducted monthly when the TIA is being discharged.

Comment: Glen Dumas (MCCN) asked if SW could define tailings for the elders and councillor members.

Response: SW explained that when ore is mined, it is taken to the mill to be crushed into sand-like grains. This sand goes through the mill, where the metals are extracted. What's left after metals are extracted is tailings. The tailings go to Anderson TIA.

Comment: Glen Dumas (MCCN) addressed the elders and councillors in Cree.

Comment: Councillor Gordie (MCCN) asked what chemicals are used in processing at the mill.

Response: SW explained that the reagents used have been used for 30 years. They are standard chemicals and mostly stay with the concentrate. There may be a small amount that stays with the tailings.

Comment: Councillor Gordie Bear (MCCN) asked what the depth of water cover was required in Anderson TIA.

Response: SW explained that the licence for Anderson TIA requires a minimum of 5 ft of water cover. He said that Hudbay conducts a bathymetric survey, where they make a bottom surface map, every 3 years. This allows them to plan where to put the tailings.

Comment: Councillor Gordie Bear (MCCN) suggested that on windy days, you could get 4ft waves on the lake [Anderson TIA], this could stir up the tailings. He suggested that it could take 4-5 days for the water to settle.

Response: SW said that they collect water samples at the discharge of the Anderson TIA and one of the things that is measured is suspended sediments or solids.

Comment: GG asked how Hudbay incorporates those types of observations (anecdotal or analytical) in order to guide how to make the decision to discharge the Anderson TIA.

Comment: Councillor Gordie Bear (MCCN) indicated that when you lift the stop logs to discharge the Anderson TIA that you can suck up the bottom sediments and that more than just water can go out in the discharge.

Response: SW said that the discharge point is far from where the tailings are deposited. The lake [Anderson TIA] is protected by high rock and bays, and that they don't see high wave events at the discharge end of the lake. Hudbay is looking at using a silt curtain for when they will use the rest of the lake for tailings storage to prevent release of sediments. However, monitoring for the last 30 years has never indicated the transport of solids out of Anderson TIA. There are no stop logs in the spillway. The spillway is for emergency overflow only and to maintain a metre of freeboard on the Anderson dam.

Comment: Councillor Gordie Bear (MCCN) suggested that bays can encourage "brewing", where contaminants are concentrated.

Response: SW suggested that settling agents could be added but have never been needed. Weekly sampling shows that the water released is of good quality. Bays are calm, promoting settling of solids.

Comment: Councillor Gordie Bear (MCCN) asked what additives are currently added before release. He suggested that these contaminants could travel far into Wekusko Lake.

Comment: Glen Dumas (MCCN) asked what environmental studies have been conducted on the muskeg surrounding the Anderson TIA. What tests have been done on muskegs? He said that much of this area is muskeg and suggested that muskeg could hold onto contaminants. He grew up 40 miles south of Lynn Lake, remembers seeing a grey film over muskeg, and asked how that got there from Lynn Lake, and where is the pathway? He also asked how far the water table is under Anderson TIA.

Response: SW said that there is mostly high rock that surrounds the Anderson TIA.

Comment: Glen Dumas (MCCN) suggested that water can travel through cracks in the rock.

Response: SW said that they have checked the drainage flow from/to Anderson TIA. He thanked Glen Dumas (MCCN) for his suggestion regarding the muskeg and groundwater impacts.

Comment: Glen Dumas (MCCN) said that all water leads down Nelson River to Hudson Bay.

Response: SW said that the water table is at the lake [Anderson TIA] surface. They have mapped the topographic relief in the area, know the snow melt and precipitation. The water from Anderson TIA naturally flows towards where the discharge point is. There is muskeg around the western portion of Anderson Lake [Anderson TIA].

Comment: Councillor Gordie Bear (MCCN) suggested that the muskeg is heavy and indicated that it can push water and create a flow in the reverse direction (backflow).

Response: SW said that the watershed is bound by elevation, not changing water table. It could not be forced to flow in any direction other than what it's doing now.

Comment: Councillor Gordie Bear (MCCN) suggested that future weather or climate change could force the water to move in a different direction and asked if these factors were considered in the design of the Anderson TIA.

Response: SW said that they have used the most extreme weather events to design the Anderson TIA and is confident in their design. The water level of Anderson Lake would have to rise much higher than the design elevation to change any flow patterns, regardless of any climate change.

Comment: Councillor Gordie Bear (MCCN) stated that he believes that the highway realignment is to create a levee and that he does not agree that there is a visibility issue. He is concerned that there is a hidden agenda with regards to the highway alignment.

Response: Jay Cooper (JC) stated that Hudbay is building dams and that these are indicated on the figure in the presentation. He said that there would be a culvert through the highway to keep Anderson Creek flowing and the highway would not act as a levee at all.

Comment: Councillor Gordie Bear (MCCN) said that they have not been successful with getting approvals from DFO to install culverts on their roads in Pukatawagan. He also asked if tailings would force the water out of Anderson TIA or if water would evaporate and cause a repeat of Sherridon.

Comment: GG thanked Councillor Gordie Bear for his comments and reminded the MCCN that they need to provide these types of good questions. She asked SW if Hudbay could provide details on what kinds of long-term modelling they have conducted to describe what the lake [Anderson TIA] will look like in 20-30 years.

Response: SW thanked GG and Councillor Gordie Bear (MCCN) for their questions and would be happy to provide information regarding the long-term design plans of Anderson TIA.

SW resumed the presentation. He described the timeline for the Lalor and Reed projects.

Comment: GG addressed the MCCN and stated that asking questions makes companies change their approach. She told them they could cause change just by asking public questions. She asked SW how long the environmental review period is.

Response: SW said that, although the initial public comment period for the Lalor mine has passed, the environmental review is ongoing until the Environment Act licence is issued. The concentrator application has not yet been submitted. MCCN members can participate at any time.

Comment: GG encouraged MCCN to always ask questions, saying that good companies will always listen. She said that even though they should always ask questions, now is the time to make an informed decision about your land.

Comment: Chief Dumas told SW that at the end of 2011, they'd received notice that there was environmental work conducted at the Lalor sewage treatment plant. He sent a letter to the government in response, asking for more information. The government did not respond to him about his request. He found online, a dismissive response. He understood that SW can't respond for the province, and only mentioned it to make note that MCCN needs to be a part of the decision making process.

Response: SW suggested that it might have been the Snow Lake sewage treatment plant, not the Lalor one that this is in reference to. He said that the Lalor sewage treatment plant discharges only treated effluent to the Snow Lake sewer system.

SW resumed the presentation and described the Reed project.

Comment: Councillor Gordie Bear (MCCN) pointed to the aerial photograph of the Reed site. He said that he had been invited to bid on clearing the area and that he had been told that every tree was to be removed. He said that he was surprised that many trees were left standing.

Response: SW stated that they had redesigned the site to leave as many trees standing as possible, in order to minimize the amount of disturbance.

Comment: Councillor Gordie Bear (MCCN) felt he was being lied to when he was invited to bid and that some information was hidden from him so that he would not be successful in the bid. He also said that the area has recovered from the harvesting that occurred nearby. Councillor Gordie Bear suggested that the aerial photos shown in the presentation were out of date.

Response: SW showed another aerial photo of the Reed area, showing the parts of the forest that had been harvested.

SW resumed the presentation and described the existing camp at the Reed site.

Comment: Floyd (MCCN) asked what company runs the camp at Reed? Are there any opportunities for employment for Aboriginals? Was this tendered out or does Hudbay have a preferred company?

Response: SW said that VMS was using their drilling camp during exploration and HBMS has basically continued with the facility that was in place. He was not sure if this will change once production starts.

Comment: GG asked if Hudbay could provide a list of business, procurement or employment opportunities at the Reed site. She also asked if there were Hudbay targets on the percent of the workforce that is Aboriginal.

Response: SW said that Hudbay's president has been eager to discuss these opportunities with the Chief and said he'd leave it with the Chief to discuss that with Hudbay's president.

Response: Pam Marsden (PM) said she has been trying to schedule those discussions with the Chief.

Comment: GG and Floyd (MCCN) requested that the information on opportunities be provided ahead of time for review.

Response: SW agreed to forward any requests for information to the appropriate people within the company.

Comment: Mathias (MCCN) asked if Reed was similar to Trout Lake Mine? He also asked what size the haulage trucks were.

Response: SW confirmed that Reed was similar to Trout Lake Mine in that there was a decline in the early operation of Trout Lake Mine. However, Trout also has a shaft which Reed will not. He also said that the underground haulage trucks will be Load Haul Dumps (LHD), which are specifically designed for underground. They haul ore and rock to the surface and return underground. They are not designed to travel on highways.

Comment: Mathias (MCCN) asked SW to describe the ore haul trucks that haul ore from Reed to Flin Flon. How many haul trucks will travel on the highway?

Response: SW said there will be 33 trucks per day, over 24 hrs that will travel to Flin Flon.

Comment: Mathias (MCCN) said that he would be nervous to meet one of those big haul trucks on the highway at night.

Response: SW stated that Hudbay conducts highway traffic studies to determine what impact additional traffic will potentially be. He said that they are similar to semi-trucks which regularly travel on this highway.

Comment: Floyd (MCCN) asked if there would be a tendering process for the haulage trucks, if the mine is operational.

Response: SW said he believes they will tender that out.

Comment: GG suggested that it would be beneficial to MCCN to see a comparable mine, in order to understand what they look like and how they operate.

Response: PM said that we've taken MCCN Chief and Council and other members on mine tours in Flin Flon and Snow Lake in 2011. If there is interest in other tours, Hudbay would be happy to accommodate that request.

Comment: GG stated that she has worked with other First Nations groups to obtain Impact Benefit Agreements (IBA) with other mining companies. These provide details of financial benefits, employment and business opportunities as well as cultural benefits (e.g., unexplained time off to observe a spiritually significant day/event).

Comment: Glen Dumas (MCCN) asked SW what benefits are available for MCCN.

Response: PM asked if MCCN could provide information regarding what services/equipment MCCN could provide.

Comment: Glen Dumas (MCCN) said they have already provided the land.

Comment: GG agreed with Glen Dumas, in that First Nations are the biggest investors in any development, as they provide the land.

Comment: Glen Dumas (MCCN) recalled that Manitoba Hydro had built a generating station within their territory and promised to compensate. They have received no compensation, only bills for the Hydro services. Glen Dumas asked Hudbay what they will pay MCCN as compensation.

Response: GG suggested that there are more internal discussion that are required before we can make a list of demands.

Chief Dumas requested that the Hudbay timeline schedule be displayed on the screen. He then addressed the attendees in Cree. Other MCCN members added to the discussion, including Glen Dumas and Floyd, also in Cree.

Comment: Mathias Sinclair (MCCN) asked the non-MCCN attendees if anyone understood the Cree discussion. He said that this has often been the problem with these types of discussions in the past; that the communication gap is always present. He recalled spending a summer (~1964) on the north shore of Reed Lake with his sister and Ernest Lavallee (brother of George Lavallee, a trapper). Ernest Lavallee was working on the rail line. He said that the Lavallees and MCCN members lived in Cormorant. He said that his people have been in the Reed area and that he himself has spent time there as a First Nations person. He asked SW why they mined out Chisel Lake.

Response: SW said that Chisel Lake was mined out and that Chisel open pit was the crown pillar of Chisel Lake mine that was mined down from the surface. He said other mines in the Snow Lake area are mined out.

Comment: Mathias Sinclair (MCCN) asked if Chisel was not mining enough ore to continue operation of the rail line.

Response: SW said that after Stall Concentrator came online, ore wasn't being railed to Flin Flon. It became too expensive to continue using the rail line and cheaper to use trucks.

Comment: Elder Flora Jane Castel (MCCN) commented that no one consulted MCCN on how to conduct the environmental studies and that all they get is the final report. She said that MCCN needs to be consulted and be involved in planning these studies as these projects affect their land, water, and medicine. It wasn't long ago when they were forced to sign an agreement and get nothing in return. Elder Flora Jane Castel (MCCN) believes that more mining opportunities will come up in their territory and they want to be involved and benefit.

Comment: Glen Dumas (MCCN) agreed with Elder Flora Jane Castel, that the environmental impact assessment should include the First Nations perspective. He recalls stories of medicines growing on the shores of Wekusko Lake and more recently went there himself to find almost none. He uses that as an example of a clear effect. He suggested that if the company was interested in what was in the land, they should ask the First Nations.

Comment: SD asked if there were traffic studies between Reed Lake and Flin Flon and any studies on wildlife.

Response: Cliff Samoiloff (CS) confirmed that there were traffic and wildlife studies conducted.

Comment: Councillor Gordie Bear (MCCN) asked what size the rocks are that come out of the mines? He also requested the specific model or type of haul truck required so he could buy it and successfully bid on the tender.

Response: JC said the ore rocks are usually up to 2ft long.

Response: SW said that he could provide that type of information but that he does not handle the tendering.

Comment: Angus (MCCN) said that he does not want to see any trapper be displaced from his trap line. He said that many trappers require more than monetary compensation; it's not just livelihood but lifestyle as well. He suggested that Hudbay talk with the local trappers.

Response: SW said that they have reached out and had discussions with local trappers.

Chief Dumas suggested that we break for lunch (approximately 1:30pm).

SW thanked the Chief and Council for lunch and invited CS to discuss the environmental components (approximately 2:00pm).

CS also thanked the Chief and Council for lunch and the invitation to speak. He acknowledged the comments received so far. He requested more information from the MCCN regarding these areas and ideas on how to improve. He invited questions not only today but throughout the Project, there is always room for more work to be done. He described the various environmental components examined and the scope of the assessment.

Comment: Councillor Gordie Bear (MCCN) asked for some details on features on the map, some of the labels were not readable. He asked CS to name the large lake in the top left-hand corner of the map.

Response: CS apologized for the low resolution of the NTS map and better maps can be provided. The labels that are larger are a selection of waterbodies to give the map meaning. The large lake is File Lake.

Comment: Councillor Gordie Bear (MCCN) asked if waterfowl were assessed.

Response: CS said that flora and fauna were assessed and waterfowl are included in that group.

Comment: Councillor Gordie Bear (MCCN) asked why seagull eggs are green. He said that we wouldn't know they were green because we don't eat them and they [MCCN] do.

Comment: GG suggested that, as part of their internal discussions, the MCCN members can list the species that are important. This list can be compared to the list of species studied by AECOM and Hudbay, perhaps MCCN can provide new information or direction to Hudbay and AECOM.

CS invited SW to resume the presentation. SW provided an overview of the regional economic benefit of the Lalor and Reed projects.

Comment: GG asked what percentage of the workforce is Aboriginal (at Chisel North)? Does Hudbay have a target percentage?

Response: SW stated that unless employees self-identify as Aboriginals, Hudbay cannot inquire. Hudbay must also abide by employment equity laws, where they can't discriminate to hire people of a certain religion (for example).

Comment: GG asked how many employees worked at Chisel North.

Response: SW said approximately 80 people were employed at Chisel North.

Comment: Glen Dumas (MCCN) asked if Hudbay conducts monitoring before and after a project.

Response: CS said that, in addition to the baseline, EEM programs are conducted every couple of years. These examine all the same environmental components we looked at in the baseline and compares them to see if there was any impact.

Comment: Glen Dumas (MCCN) suggested that the Project Region should be expanded to be larger than 10km. He recalls seeing dust deposited in Pukatawagan as a result of the Flin Flon smelter.

Response: CS explained that the Project Region is defined in the early part of the assessment but can be expanded or reduced.

Response: SW indicated that there is a difference between a smelter and a concentrator. There will not be a smelter in Snow Lake. The effects from the concentrator will not travel past 10km.

Comment: Glen Dumas (MCCN) asked how far the evaporated chemicals could travel in the air.

Response: SW said that the smelter stacks were high up but that the vent raise at Lalor is at surface, effects won't travel that far.

Comment: Glen Dumas (MCCN) stated that he did not believe that the effects wouldn't be felt in MCCN territory or, at the very least, only within 10km of the Project Site.

Response: SW acknowledged Glen Dumass' concern about potential effects and resumed the presentation.

Comment: SD asked where the Anderson TIA was on the Project Site and why it wasn't on the Project Site/Area/Region map.

Response: CS said that the map was for the Lalor mine, not the concentrator (which has the Anderson TIA associated with it). He has an image of the Project Site for the Lalor Concentrator on his computer and offered to show it on the screen after the presentation if it was requested. [The Lalor Concentrator and Anderson TIA expansion were covered before lunch].

Response: SW reminded the group that the concentrator report is not submitted and is not completed yet.

SW resumed the presentation and talked about site closure. He emphasized that Hudbay is committed to closing sites properly and incorporates this consideration early in the planning process.

Comment: Councillor Gordie Bear (MCCN) asked if there were Hudbay mines in the Snow Lake area that require closing.

Response: SW said that Stall Lake mine needs to be closed but Hudbay is waiting for the Stall Lake concentrator to close before closure activities are conducted. Chisel North finished operation in September 2012 and will also need to be closed however, it is part of the Lalor ramp and mine project.

Comment: Councillor Gordie Bear (MCCN) asked if there were other mines in the Flin Flon area that need closing and if so, if this work will be tendered out.

Response: SW said that Trout Lake mine needs to be closed and will provide information on tendering when it becomes available.

Comment: Chief Dumas stated that they will have a unique relationship with Hudbay moving forward to ensure that MCCN members receive the jobs first.

Response: SW repeated that Hudbay's president is eager to discuss opportunities for MCCN with the Chief.

Comment: Rob Robinson (MCCN) asked about what kinds of training Hudbay provides. He asked if there is on-the-job training, or classroom training that MCCN members could take advantage of.

Response: PM said that there are many training opportunities. Hudbay wants to engage with MCCN, to include the Mining Academy and the University College of the North. We want to encourage MCCN to take part in these opportunities.

Chief Dumas thanked Hudbay and AECOM for their presentation and information. He stated that there are internal discussions and more work needs to be done. He will send dates for another larger meeting. SW thanked the Chief for the opportunity and again, offered to provide any additional information they need.

Respectfully Submitted,

Shawna Kjartanson, M.Sc.
Environmental Scientist

HUDBAY MINERALS

Site Visit
May 9, 2011

Name	Boot Size	Coverall Size	Respirator Size
Chief Arlen Dumas	8	L	L
Sherman Lewis	12	XLT	M
Floyd North	10	XL	L
Ken Bighetty	12	XLT	M
Hanson Dumas	11	XLT	L
Gordie Bear	8.5	XLT	L
Jimmy Colomb	11	XXLT	M
Kelly Linklater	12		
Pam Marsden	7	L	S

Monday, May 9

	4:00 pm – 6:00 pm	Orientation & Fit Testing – Staffhouse Basement	W Ryan R Rebelo C Dewhirst
	6:30 pm	Dinner at Staffhouse Basement – Northern Manitoba Sector Council	B Lantz D Lauvstad D Nisbet C Taylor K Gilmore B. Niedermaier

Tuesday, May 10

	8:30 am – 11:00 am	Presentation & 777 Mine Tour	R Trudeau
	11:15 am	Transport to Staffhouse Basement	
	11:30 pm – 1:00 pm	Lunch – Lalor Presentation	B Lantz K Proctor
	1:00 pm	Transport to Mill	B Lantz K Hoover
	1:15 pm – 2:45 pm	Zinc Plant & Mill Tour	B Lantz R Winton K Hoover

Tuesday, May 10		
2:45 pm	Transport to Staffhouse Basement to change out of surface gear	B Lantz R Winton
3:00 pm	Transport to Logistics	
3:15 pm – 4:00 pm	Meeting with Contracts	T Goodman G Thompson C Huntley M Lippett

HBMS Contacts	
Antila, Dianne	Chief Financial Officer
Barth, Rick	Metallurgical Manager
Fulmore, Joyce	Timekeeper / Receptionist 777 Mine
Goodman, Tom	Senior Vice President & COO
Hoover, Karl	Flin Flon Mill Superintendent
Huntley, Cal	Contracts Administrator
Lantz, Brad	Vice President, Mining
Lippett, Miles	Contracts Administrator – Lalor Project
Proctor, Kim	Lalor Project Manager
Rebelo, Richard	Industrial Hygiene Technologist
Ryan, Walt	Safety & Health Coordinator
Thompson, Garth	Director of Supply Chain & Contracts Administration
Trudeau, Richard	777 Mine Manager

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Flin Flon Meetings, Tours and Presentations
Mathias Colomb Cree Nation

May 9-10, 2011

Meeting Notes

This two-day visit was planned to give the MCCN information about training, employment and business opportunities in relation to mining and exploration.

The visit began in the afternoon of Monday, May 9, 2011 with a safety orientation required to prepare MCCN for a tour of the underground workings of the 777 Mine, to be held the following day. The safety orientation was followed by dinner in the Staff House with representatives of the Northern Manitoba Sector Council. Doug Lauvstad, Executive Director, gave a presentation on the Mining Academy and its relationship with the satellite sites for the University College of the North (UCN). The Mining Academy and Flin Flon UCN site were both under construction. The presentation included some of the past history around the Sector Council's work with First Nation groups in all aspects of mining, forestry, exploration and related programs. Don Nisbet, Aboriginal Liaison Coordinator Northern Manitoba Sector Council, talked about the programs that have been undertaken at Wabowden with the training of First Nations workers and spoke to what worked and what didn't work. It worked for some, but not all. There was also discussion about the plans for the Mining Academy, including when it would be open, and how students could be enrolled.

The discussion focused on how MCCN could participate in future programs either through business opportunities or careers, and training options for band members. Hudson Bay Mining and Smelting Co., Limited (HBMS) representatives mentioned the Lalor growth and the likelihood of 300 to 350 jobs that would be created and positions to be filled, from laborers to mechanics, electricians, mining personal and professionals. It was also indicated that the concentrator, whether new or refurbished, could provide additional employment.

Exploration was discussed in general, including increased activity by HudBay Minerals in the region of Flin Flon and Snow Lake, which MCCN consider as traditional lands. HBMS mentioned the potential for the Reed Copper Project to generate additional employment opportunities, with the potential for approximately 80 positions.

MCCN discussed work that they were doing for the Manitoba government in Sherridon on the rehabilitation of mine site tailings. Chief Dumas emphasized that MCCN have people and equipment who could do more work. Given their experience, MCCN leaders feel strongly that their First Nation should be considered for potential construction opportunities associated with HBMS mine development projects.

On Tuesday morning, May 10, 2011, the MCCN visitors toured the underground 777 Mine. After lunch, tours continued with Zinc Plant and mill. The site tours were intended as an opportunity for MCCN to learn about HBMS operations and what potential job opportunities may exist.

During lunch, Kim Proctor, Lalor Project Manager, gave a presentation on the Lalor Advanced Exploration Project, including updates on the progress of construction and some background on its connection to older HBMS developments in the Snow Lake region. The same power point presentation was given in the Town of Snow Lake on April 13, 2011.

The Lalor presentation included a brief review of exploration and discoveries on the site, including continuous drilling since the spring of 2007, and updates on construction of the ramp from the Chisel deposits and shaft components of the Project. Kim also described plans for development into 2015, including environmental assessment and permitting for the mine itself. A tradeoff study was underway to help HBMS decide whether to refurbish the existing Snow Lake Concentrator or build a new concentrator on the Lalor site. Part of the study on a new concentrator was whether a gold plant and use of cyanide

would be required. Without the gold plant, the milling process would be the same whether it is at a new or old concentrator.

There were few questions on Kim's presentation, except for concerns expressed by MCNN about the potential use of cyanide during ore concentrating. Either method would discharge tailings to the using the existing Anderson Tailings Impoundment Area (TIA),with some expansion. Kim also discussed the possibility of having a portion of the tails go back underground as backfill.

The visit concluded with a meeting between MCCN visitors and HBMS Contracts personnel. This meeting was intended to inform MCCN on how to get on the Bidders List for various opportunities in areas where the First Nation believes they have capacity. HBMS requested that MCCN send information to HBMS about the personnel and equipment that they have available and also provided MCCN with a package to fill out and return for the Bidders List.

PARTICIPANTS

Chief Arlen Dumas	Mathias Colomb Cree Nation (MCCN)
Sherman Lewis Pukatawagan Development Corporation	Pukatawagan Development Corporation
Floyd North Pukatawagan Development Corporation	Pukatawagan Development Corporation
Ken Bighetty, Special Assistant to Chief	Mathias Colomb Cree Nation
Councillor Hanson Dumas	Mathias Colomb Cree Nation
Councillor Gordie Bear	Mathias Colomb Cree Nation
Councillor Jimmy Colomb	Mathias Colomb Cree Nation
Councillor Kelly Linklater sent regrets	Mathias Colomb Cree Nation
Pam Marsden Mining Association of Manitoba, Director of Communications and Aboriginal Relations	Mining Association of Manitoba
Walt Ryan Health & Safety Coordinator	HBMS
Richard Rebelo Industrial Hygiene Technologist	HBMS
Corey Dewhirst Industrial Hygiene Technologist	HBMS
Brad Lantz Vice President, Manitoba Division	HBMS
Craig Taylor Exploration Manager	HBMS
Kelly Gilmore Chief Exploration Geologist	HBMS
Brenda Niedermaier Executive Assistant	HBMS

Richard Trudeau Manager, Flin Flon & Snow Lake Mines	HBMS
Kim Proctor Lalor Project Manager	HBMS
Karl Hoover Lalor Concentrator Project Manager	HBMS
Rob Winton Metallurgical Manager	HBMS
Tom Goodman Senior Vice President & Chief Operating Officer	HBMS
Garth Thompson Director of Supply Chain and Contracts Administration	HBMS
Cal Huntley Contracts Administrator	HBMS
Miles Lippett Lalor Project Procurement Coordinator	HBMS

HUDBAY MINERALS

Lalor Site Visit
January 10 – 12, 2012

Name	Boot Size
Chief Arlen Dumas	8
Larry Sloan	11
Marcel Caribou	9
Jimmy Colomb	11
Kelly Linklater	12
Simeon Bighetty	
Pam Marsden	7
Louis Harper	10.5
Lisa Harper	8.5 (L)
Chris Beaumont-Smith	11
Cliff Samoiloff	10
Sheryl Rosenberg	8.5 (L)

Tuesday, January 10,			
	4:00 pm	Arrive at Staffhouse Basement	B Niedermaier
	4:30 pm – 5:30 pm	Tour of Mining Academy	R Penner
	6:00 pm – 7:30 pm	Dinner at Staffhouse Basement – Northern Manitoba Sector Council	T Goodman B Lantz D Nisbet B Niedermaier
		Victoria Inn – Reservations under HBMS 10 rooms - Confirmation # 105495 to 105505	

Wednesday, January 11			
[redacted]	7:30 am – 10:30 am	Bus to pick up at the Victoria Inn and transport to Snow Lake - S West - S Neault	Northern Bus Lines
	10:30 am	Tour Lalor Camp	K Proctor T Scheres
	11:15 am – 12:00 pm	Lunch Lalor Camp	K Proctor T Scheres

Wednesday, January 11			
	12:00 pm 12:30 pm	Transport to Chisel North Mine Site	Northern Bus Lines
	12:30 pm – 1:30 pm	Lalor Presentation & PPE	K Proctor T Scheres
	1:30 pm 2:00 pm	Transport to Lalor Site	Northern Bus Lines
	2:30 pm – 4:00 pm	Lalor Site Orientation & Tour	K Proctor T Butt
	4:00 pm – 6:30 pm	Transport to Victoria Inn	Northern Bus Lines

Thursday, January 12			
	8:00 am	Arrive at Staffhouse Basement	
	8:30 am	Environment Meetings and Other Business	S West J Cooper S Neault

HSMS Contacts	
Butt, Tony	Health, Safety & Environment, Lalor Project
Cooper, Jay	Assistant Superintendent, Environment
Goodman, Tom	Senior Vice President & COO
Hardy, Vania	Lalor Project Clerk
Lantz, Brad	Vice President, Mining
Neault, Shirley	Management Systems Coordinator
Ayotte, Jack	Mine Construction Manager - Lalor
Proctor, Kim	Lalor Project Manager
Scheres, Tony	Chisel North Mine Superintendent
West, Steph	Superintendent, Environment

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Mathias Colomb Lalor Site Visit and Presentations
Reed Project Presentation
January 10-12, 2012

Meeting Notes

Welcome and Introductions

Commencement of the visit by Mathias Colomb Cree Nation (MCCN) leadership and elders was delayed by weather. Chief Arlen Dumas, Elder Marcel Caribou and Councilor Jimmy Colomb arrived during the evening of January 10, 2012, in time for dinner and the planned tour of the Mining Academy and the new satellite campus of the University College of the North (UCN), both due to be opened soon and both of which are located next door to the Hudson Bay Mining and Smelting Co., Limited (HBMS) staff house. Pam Marsden of the Manitoba Mining Association also arrived later that evening. The other members of the MCCN delegation and Chris Beaumont-Smith did not arrive in time for the evening meeting. Louis and Lisa Harper of MCCN were unable to attend the meetings due to weather.

Tom Goodman opened the evening with a welcome and invitation to dinner. He explained that the main purpose of this visit was for HBMS to present the details of HBMS projects, and since MCCN had made the case that HBMS projects lie within MCCN traditional territory, to present environmental assessment information and get MCCN's comments and concerns about adverse impacts on traditional activities. Tom reviewed the intended agenda for the visit and described what MCCN could expect to see in their tours on the following day. Chief Dumas thanked Tom for the welcome and agreed that it was good to be having the meetings that had been planned for some time.

Education, Training and Employment Opportunities

The HBMS and MCCN groups were joined for dinner by Don Nisbet, Aboriginal Liaison Coordinator for the Northern Manitoba Sector Council, and Rob Penner, Chair of the Faculty of Arts and Sciences of UCN (the Pas) and Executive Director of the Northern Manitoba Mining Academy. Following dinner, Don and Rob gave the group a tour of the UCN and Mining Academy facilities, which are under development and nearly completed.

There was a very passionate discussion of the potential benefit of the education and training opportunities that these facilities might offer to Aboriginal residents of the North. The fundamental goal is to train northern people for northern jobs. HBMS has been instrumental in supporting these facilities, with a grant of land and cooperation with their facilities and programs. Tom Goodman made the point that HBMS hopes that First Nations will benefit from increased employment, while HBMS benefits from having a well-qualified workforce who are happy to remain in the north.

Chief Dumas explained that what most people want is to be able to work at good jobs in the northern environment that is their home. Chief Dumas and the elders told a number of stories which illustrate how jobs in mining and forestry have changed - more education is required and that makes it difficult for older members to keep work that they used to do - for example, one elder was employed in line clearing for mineral exploration and the railway until a requirement was made that workers be able to apply GPS skills. During a site tour on the following day, one elder expressed some sadness at seeing young people stop attending school before completing sufficient education to qualify for these jobs.

HBMS requires applicants to take its own basic skills test before qualifying for employment. The "Essential Skills" program offered by UCN will help potential workers catch up by closing gaps in the

areas (such as literacy and numeracy) where their skills are inadequate to get work and climb the employment ladder in a highly skilled environment. Chief Dumas also mentioned the UCN satellite facility being built in Pukatawagan; there was some discussion of the opportunity to link facilities through webcast technology.

During the first evening and during the site visits and meetings that occurred over the next two days, the elders and Councilor Colomb told a number of stories about work they had done in line cutting for exploration, jobs for the railway and in logging in the region and work in the open pit mine at Leaf Rapids. They had many experiences to share from a period of over 30 to 40 years in various jobs in northern mines, logging and railways.

Chief Dumas emphasized that getting and keeping high quality employment is very important in MCCN, where one third of the 1200 residents are under 18 years of age. Chief Dumas spoke of the mine tailings remediation jobs that his community was able to get in Sherridon and how they were able to leverage funding for training, ending up with 60 certified heavy equipment operators. The Chief emphasized that MCCN has capacity which needs to be matched with opportunity.

Tom Goodman responded with the comment that, in collaboration with UCN, Manitoba and other groups, HBMS was committed to finding training funding to help First Nation members upgrade skills needed to qualify for jobs in mineral exploration and mining. HBMS is committed to the region and to the education and training needed for Northern residents to get and maintain a well-qualified, sustainable workforce.

During the last afternoon of the visit, there was further discussion about jobs and Councilor Linklater offered information about MCCN experience in constructing water and sewer lines in their community. Chris Beaumont-Smith commented on potential support for training provided by Manitoba, as well as opportunities that may be afforded by construction of a new sewage treatment plant and 200 serviced lots in the Town of Snow Lake. HBMS can assist in connecting MCCN with Jeff Precourt, Administrator of the Town of Snow Lake.

Lalor Project Description and Site Visits

On Wednesday morning, January 11, 2012, the group boarded a bus for the Town of Snow Lake, for a day of site tours. Along the way, Steph West was able to point out the location of the Reed exploration site. Some of HBMS' supporting infrastructure in Snow Lake, including the Anderson Tailings Impoundment Area (TIA) and the access road to the Stall Lake Concentrator, were also pointed out to the group. Once in Snow Lake, the group toured the Lalor Camp, located on HBMS lots in town, including the dormitories and cafeteria. Lunch was served, after which the group proceeded on to the Chisel North Mine site, a distance of about 12 kilometers down the highway. On the way, Steph West pointed out some existing HBMS infrastructure supporting the Chisel North mine site which will continue in operation to support the Lalor Mine.

Once the group was settled in the Chisel North mine conference room, Kim Proctor began a power point presentation on the Lalor project description. (A hard copy of the presentation was provided.) Kim's presentation was intended to update the presentation given to MCCN leadership during their visit to Flin Flon on May 10 and 11, 2011. She described progress in construction of the Lalor AEP and Lalor Ramp projects, projected HBMS' plans to seekr environmental regulatory approval of the Lalor Mine and described plans for related future development (Lalor Concentrator).

However, counsel for MCCN, Larry Sloan, had not been involved in the May meetings and he had a number of specific questions which he wanted to have answered before the presentation could proceed. Larry inquired about permits required for mining and environmental approvals in Manitoba and for Lalor in particular, whether CEAA would apply to the project, the value of the gold resource discovered at Lalor, how such values are determined. He also had a number of questions about capital spending for the project. Additional questions related to the HBMS infrastructure supporting existing developments, such as the Stall Lake Concentrator and Anderson TIA. Before Kim Proctor proceeded with her update presentation, the group provided some background on the licensing and approval regime in Manitoba.

Having been advised of the requirement for licensing under the *Environment Act* for the operation of a mine, Larry inquired how HBMS was able to construct the Lalor project without an *Environment Act* license. There also was some confusion generated by the fact that Manitoba's ministry dealing with environmental matters is called "Manitoba Conservation," which was cleared up in the discussion. It was explained that: current operations on the site constitute an "advanced exploration project" in Manitoba; the Lalor deposit had been drilled continuously since early in 2007; the Lalor (underground) ramp and ventilation raise project are being carried out pursuant to minor alteration of *Environment Act* licensing for the Chisel North Mine; the Lalor shaft is being constructed pursuant to approval of the Lalor Advanced Exploration Project and other General Permits; and that mineral leases, claims and other rights have been held for a number of decades. The Advanced Exploration Project entails the development needed for the extraction of a 10,000 tonne metallurgical sample. The Mines Branch, as the lead government agency, circulated the application for advanced exploration to other provincial and federal government departments for review as part of the approval process.

HBMS offered to provide copies of the submissions filed with regulators in support of the Lalor Ramp and Advanced Exploration Projects and approvals received from Manitoba, and to respond to questions that Mr. Sloan might have after review of that material. Mr. Sloan requested a copy of the approvals in place for the development to date, and HBMS agreed.

Mr. Sloan was advised that environmental licensing of the Lalor Mine would entail a public review process, that these meetings with MCCN and other communities were intended to inform the public in advance of application for the license and gather information to help with identifying any environmental concerns that have not already been considered.

Mr. Sloan observed that the Lalor site already has been cleared and occupied. Chief Dumas made the point that the Lalor project is in MCCN ancestral lands and that public information about Lalor had not been provided in the manner that was most readily available in Pukatawagan - for example, stories in the Winnipeg Free Press. Chief Dumas also reiterated the point (made in a recent (undated) letter to Mr. Goodman) that he had written to the Premier on August 23, 2010 concerning consultation. Both Chief Dumas and Mr. Sloan made the point that MCCN expects to be consulted, and that they do not regard this meeting as "consultation." After some discussion about these points, both at the January 11 presentation in the Chisel North Mine site and the meetings held the following day in Flin Flon, it was agreed that we would refer to these meetings as "information sharing" meetings rather than "consultation." Mr. Sloan suggested that these meetings also could be termed "pre-consultation."

It was explained that HBMS has been operating in the region for more than 50 years, had been operating on the Lalor site continuously since 2007 and that information about its operations on the site had been publicly released since 2007. HBMS explained that its submission in support of approval of the Lalor AEP took note that HBMS had not encountered any First Nation or other Aboriginal use of the site. It also included a comprehensive closure plan and letter of credit to cover the full cost of rehabilitation of the site. HBMS made the commitment to provide further information directly to Chief Dumas as environmental and regulatory review of Lalor proceeds. HBMS also expressed appreciation that this information sharing meeting concerning environmental assessment of the impacts of the Lalor project [re-scheduled from the meeting scheduled for September 12, 2011] was taking place now.

Kim's presentation included updates on construction of the main shaft (on the Lalor site), ventilation shaft and underground ramp, and also plans to propose construction of a new concentrator on the Lalor site. In the course of Kim's presentation, there was some discussion about technical aspects of how mining wastes would be handled and technical aspects of planning for a new concentrator.

Mr. Sloan asked about the extent of surface clearing and development that would be required for the concentrator. HBMS indicated that the area for the concentrator has already been cleared for other purposes during the advanced exploration project and that additional leveling is all that would be required. In constructing the Lalor AEP, HBMS is not storing waste rock on site. Rather, a decision was made to transport all potentially acid generating waste rock to the Chisel Open Pit for disposal. The decision to

build a new concentrator at the same location as the mine allows the mine to use paste backfill and will reduce the number of trucks on the highway from 60 trucks per day to 16 trucks per day. Steph West indicated that paste fill has a similar consistency to toothpaste and is fairly stable for use as backfill. Tailings need water, heat and oxygen in order to oxidize and create potential acid rock drainage conditions. Some of the tailings would be mixed with cement, which acts as a neutralizing agent as they are placed underground.

Steph explained how infrastructure for the Lalor projects is linked to existing previously-licensed facilities. He also described how drainage from the underground workings is collected and pumped to the surface for treatment prior to discharge to the environment.

Mr. Sloan inquired what approval had been granted for the ventilation shaft. It was explained that the ventilation shaft was approved as part of the Lalor Ramp Project, as a minor alteration to the existing Chisel North *Environment Act* license. Mr. Sloan asked if authorizations for various aspects of the project came from both Mines Branch and Manitoba Conservation. Ms. Rosenberg indicated that this was correct. Mr. Sloan asked when the ramp authorization was approved. Mr. West indicated that the alteration to the existing Chisel North *Environment Act* license was granted in December 2009.

Mr. Sloan questioned what public notifications had been given for the Lalor projects. Ms. Rosenberg and Mr. West indicated that no formal public notification was required, and that the application for approval of the advanced exploration project had been circulated to government agencies as part of the approval process. No formal public notification is required under *The Environment Act* before approval of minor alterations to existing licenses and none was given for the minor alteration to the Chisel North Environment Act license. Public notification was provided for environmental licensing of the Sewage Treatment Plant (STP) that services the Lalor Camp in the Town of Snow Lake, including advertisements in the Snow Lake newspaper and the Winnipeg Free Press. Chief Dumas mentioned that he had written in opposition to approval of the STP, but that approval had been granted.

Two public meetings have been held in the Town of Snow Lake, one to describe the project and the other to present environmental assessment information regarding the project.

Mr. Sloan asked what contracting companies were currently working on the project and where were they from. Chief Dumas expressed concerns at the lack of First Nation contracting companies currently working on the project. Kim Proctor explained that some of the work currently being conducted at the site is highly specialized, with few contractors in Canada qualified to carry it out. HBMS indicated that the following contractors were currently working on the project: Dumas – shaft sinking (Ontario), Redpath – vent raise sinking (Ontario), PCL – foundations (Winnipeg), Derkson – mechanical/electrical (Winnipeg), Ocean Steel – steel erection and cladding (NB), Denare Beach Mechanical – piping (Flin Flon) and several local sub-contractors. Although some of these companies are headquartered outside of Manitoba, most hire local residents to work on these jobs.

Upon conclusion of the presentation, the group re-boarded the bus for the 3 kilometer ride to the Lalor project site. There, everyone received a site safety orientation and donned protective gear, prior to a tour of the hoist house, head frame, water treatment plant and warehouse. During the site tour, MCCN elders shared experiences they had had on similar sites. For example, Councilor Colomb shared memories of his work in the open pit mine in Leaf Rapids with HBMS' Tony Butt, who also had worked at the Ruttan Mine, but at a time later than Councilor Colomb. In the hoist house, an MCCN member asked what the minimum education requirement for employment at the Lalor Mine would be. HBMS requires applicants to take its own basic skills tests in areas such as literacy and numeracy, even if they have completed Grade 12. Chris Beamont-Smith indicated that there is an education grant program available to First Nations students to improve eligibility for such jobs by upgrading education levels.

The last stop of the tour was the ventilation raise location. HBMS explained that, once construction of the raise is complete, the existing head frame and other gear will be removed and replaced with an exhaust hood, which will be surrounded by a fence. The area surrounding the vent raise will be re-vegetated and returned to nature.

On the way back to Flin Flon, Steph again pointed out the site of the Reed exploration project. He also pointed out former access to the site of the closed Spruce Point Mine, where re-vegetation has made the site nearly indistinguishable from the surrounding landscape.

Environmental Impact Assessment

On the following morning, January 12, 2012, the group met in the HBMS Staff house Basement in Flin Flon office and were joined by two additional Environmental Control Department employees, Jay Cooper and Riley Little. Cliff Samoiloff gave a power point presentation on environmental impact assessment of the Lalor Mine and Reed projects, outlining the background on mining in the respective areas and the baseline environmental data collected to date. For the Reed project, the presentation outlined the content of the advanced exploration project and the closure plan that has been filed. For the Lalor project, the presentation included a review of public consultation undertaken to date, as well as the preliminary findings of the ongoing environmental assessment of the project. Hard copies of each of the presentations were provided.

Mr. Sloan had a number of further questions about permitting and environmental regulatory review for the Lalor projects. These were addressed during the course of the presentations. He also inquired whether the effects of clearing and blasting were taken into account in the environmental assessment. Cliff and Steph replied that the AEP plan covered environmental concerns. Cliff advised that potential residual effects of clearing and blasting are being included in the environmental impact assessment for the future Lalor Mine.

Environmental assessment information included a description of baseline studies that had been carried out in the area of potential influence. These studies had been commenced in response to the discovery first announced in early 2007. The presentation explained how AECOM had considered each of the aspects of the environment which could be affected by the development, stated their conclusions about expected environmental effects and outlined the mitigation measures that they recommended be followed in constructing, operating and ultimately closing the Lalor Mine. The presentation outlined the environmental approval process that would apply to the Lalor Mine and also discussed planning for a future application that may be made for approval of a new concentrator on the Lalor site.

Mr. Sloan inquired whether AECOM is responsible for design of the project. Stephen West explained that AECOM's experts gather environmental information and make recommendations, while the HBMS Environment Department and Lalor project manager are responsible for incorporating environmental concerns into project design. Steph described how environmental information collected in the baseline assessment has been used in planning the Lalor AEP and Lalor Mine. The development has been planned to use HBMS existing infrastructure to supply the necessary services to the site and accept the wastes generated by the development, minimizing the footprint of the Lalor AEP and future Lalor Mine. For example, when tailings are generated in the operation of future new concentrator, they will be routed to the existing, approved Anderson TIA, rather than to any new facility. Mine discharge water will be returned by pipeline to existing licensed HBMS treatment facilities.

Mr. Sloan had a number of questions on how tailings are managed in the Anderson TIA. Mr. Samoiloff and Mr. West provided clarification on the management of tailings at the Anderson TIA. They indicated that tailings are placed subaqueously, with a five foot water cover maintained over the tailings at all times. The cover is maintained by moving the pipeline around the lake for tailings deposition and controlling the water level at Anderson Dam. Depth surveys are conducted every three years which allows a deposition plan to be developed for the next three years of operation. Discharge from the Anderson TIA occurs intermittently over a four to six month period on an annual basis.

Cliff Samoiloff explained that tailings remain in the approved TIA, while discharge from the Anderson TIA is tested for compliance with Provincial approvals and the Metal Mines Effluent Regulation, before it flows downstream. Cliff also described the ongoing compliance monitoring required under Provincial and Federal licensing and regulation. Mr. Sloan inquired what capacity is available in the Anderson TIA.

HBMS indicated that there is sufficient capacity for the next 4-5 years, but further capacity would be required. HBMS indicated that improvement to the Anderson TIA is planned.

There was further discussion about the manner in which waste rock produced during shaft sinking is being managed. Steph explained the analytical procedures used to test the rock and reiterated that all potentially acid generating rock is being taken to the Chisel Open Pit in an existing licensed site.

Mr. Sloan asked a number of further questions about information in HudBay's press releases concerning the value of the gold resource and how the value is calculated. There was some general discussion about categories of resources, but it was pointed out that the specific contents of the press releases can be reviewed verbatim on HudBay Minerals Inc.'s website, to which Mr. Sloan was referred. He was advised that HBMS must be mindful of regulatory responsibilities in regards to statements of value of resources and was referred to the HudBay Minerals Inc. website for information of that nature.

Further questions dealt with requirements for the archaeological, cultural and heritage assessment performed by AECOM in accordance with Provincial standards, the continuing use of existing water rights licenses, and timing for application for *Environment Act* licenses for the Lalor Mine and concentrator (see "Next Steps" slide in the enclosed presentation). HBMS expects to apply for the Lalor Mine *Environment Act* license in the spring of 2012. Steph and Kim described the project description information that has to be finalized before the concentrator application can be prepared. The specific timing for proposal of the Lalor Concentrator has yet to be determined, with potential to submit a proposal by the summer/fall of 2012. Mine production can commence without construction of a new concentrator, but ultimately refurbishment of the existing Stall Lake Concentrator or construction of a new facility would be required.

Manitoba's regulatory requirements for approval of an advanced exploration project or mine include submission of a detailed closure plan and the filing of financial assurance covering the full cost of rehabilitation of affected sites. Manitoba has accepted a closure plan and a letter of credit in relation to the Lalor AEP which, before approval of the Lalor Mine, HBMS will have to replace with a closure plan and letter of credit covering the Lalor Mine. Mr. Sloan asked a number of questions about adoption of Manitoba legal requirements in regards to closure and Chris Beaumont-Smith advised that, in his recollection, the Act had been amended in 1999.

First Nation Experience in the Region

Cliff Samoiloff described AECOM's baseline studies in the region of the Lalor deposits, including plant and animal surveys and the lakes and waterways in the region. This work was started before any specifics were known about the nature and location of potential future development of the Lalor deposits. The studies, therefore, covered a wide area. More recent studies have focused on the actual area surrounding the project site. The baseline work included an aquatic assessment of a number of lakes and streams in and around the Lalor deposits. One elder asked about whether the water in the lakes AECOM had studied would be suitable for drinking. While Ghost and Chisel Lakes might be suitable drinking water sources, some of the other lakes that were surveyed likely would not meet drinking water standards due to naturally high metals from surrounding swamps, high organics reducing water clarity and other factors.

Chief Dumas emphasized that members of MCCN had personal experience in the region: referring to the elders with him, he stated that three had grown up near Lalor Lake and that one has a cabin located a 10 minute flight north of the Lalor site. Elders Simeon Bighetty and Marcel Caribou mentioned that riverbeds viewed from the bus along Highway #395 appeared to be dry, but had been flowing in the 1970's. Elder Caribou asked about what had happened to the water. Steph was not sure which waterways the elder was referring to, but his recollection was that CN had constructed many drainage ditches in the Snow Lake Region which may have changed the direction of some of the water flows. AECOM had brought along an enlarged map showing water drainage and topography in the region and Steph asked the elders to point out the dry waterways. The elders pointed to a drainage ditch, which drains Ghost Lake and Threehouse Lake into Tern Lake, and downstream to Snow Lake. There was

some discussion of the flows, and Steph mentioned that for the majority of the year, those drainage channels are stagnant.

Elder Caribou asked how long it had taken DFO to permit the drainage, since his experience with DFO was that he had been refused permission for a creek crossing, after waiting a year for DFO to reply to his application. He felt that big industry might be treated more favorably than he had been in getting DFO permits. Steph had no knowledge of CN's permitting process, and mentioned that he thought those ditches had been constructed during the 1950's. The elders wondered if the existence of mines in the area could have contributed to dewatering. Steph stated that there was no connection between mines in the area and waterways. Steph, Cliff and the elders also looked at the map and had some discussion about the various watersheds in the region.

The Lalor site is in a different watershed than existing operating HBMS properties. However, HBMS plans to use the existing infrastructure for water supply and wastewater treatment, so that there will not be an impact on the watershed where the Lalor site is located.

Cliff was asked whether, during the terrestrial review, AECOM had sought input from First Nations, particularly with respect to plants that can be used for traditional medicines. Cliff explained that when the baseline studies commenced, the Lalor site and access road had already undergone some clearing related to exploration on the site in the year(s) prior. Baseline studies commenced in September of 2007 and were carried out over multiple years during different growing seasons. Exploration drilling was carried on continuously during that time. HBMS and AECOM were not aware of any First Nation presence on and around the Lalor site. AECOM did contact trappers with registered trap lines in the area.

Steph and Cliff mentioned that the Lalor site is a rocky knoll, with little soil cover, quite typical of many kilometers of terrain in the region. When there is soil cover, HBMS practice is to save it for use in reclamation. The team of AECOM scientists carried out a vegetation assessment in a one-kilometer buffer zone around the Lalor site and access road. This survey produced a catalogue of species observed, which was compared with Provincial records concerning vegetation in the region and information about plant species that are known to have been identified as potentially having medicinal or cultural importance. Cliff was asked whether there is a way to verify that the environmental review includes plants that First Nations consider to be traditional medicines.

Cliff advised that AECOM's work to date has not identified any plant or animal that would be unique to the area that has been or potentially will be affected by the Lalor developments. AECOM and HBMS indicated during discussion that they would be grateful for any comments that MCCN elders or resource harvesters might have about the vegetation on the AECOM list (a copy of which is enclosed with these notes) or any other knowledge they may have about the area.

As well, HBMS and AECOM invited MCCN elders and resource harvesters to return to the site with AECOM scientists and walk the area together, to determine if there are any environmental sensitivities that AECOM's assessment may need to include. For example, if a resource harvester or elder knows of any plant or animal or special habitat that may have been affected by the Lalor development, this information should be factored into the assessment. HBMS will pay the costs associated with such work on the site by as many elders or resource harvesters as, in the Chief's judgment, may have an interest in this work. The environmental impact assessment report for Lalor Mine will consider both the information contained in AECOM's surveys and any comments that MCCN may be able to contribute.

Chief Dumas mentioned that there are many trappers operating in the area directly north of Reed Lake. Elder Caribou remembered that when trap lines were first registered, not all individuals were included in the registration process. Cliff advised that AECOM had contacted registered trappers in the area.

Conclusions and Commitments

At the close of the meetings, discussion returned to potential employment. Chief Dumas emphasized that tree-cutting is an activity that was completed for the project and that the First Nation should be given

opportunities in that regard. HBMS agreed but indicated that the representatives in the room that day could not address employment. HBMS promised that a follow-up contact would be made by other HBMS officials who would speak further about employment and contracting opportunities. HBMS was advised that the Councilor with the applicable portfolio is Gordie Bear.

Chief Dumas advised that MCCN was not in a position to respond at this meeting to the information presented by HBMS. HBMS invited MCCN to continue with another meeting at which there could be more discussion and information sharing by MCCN. HBMS also offered to bring the meeting to Pukatwagan to facilitate participation by elders and resource harvesters. Wherever the follow-up meeting(s) are held, HBMS will pay the costs.

AECOM also would like to return to the project areas with the elders who attended the meeting and any other MCCN members who might have additional knowledge that could contribute to the environmental assessment. Chief Dumas expressed appreciation for the offer and will be glad to consider it and let us know. Mr. Sloan suggested that HBMS consider funding a traditional knowledge study, to be carried out by a third party expert, incorporating matters of culture. He promised to prepare a more detailed proposal for such a study. This request was directed both at HBMS and the Crown. HBMS agreed to consider a proposal of that nature.

Mr. Sloan requested and HBMS agreed to provide copies of the presentations given to MCCN and copies of the applications it had filed and permits received for the Lalor project. It was agreed that we would have a follow up meeting to discuss MCCN's views on the environmental assessment information presented at this week's meetings.

Further discussion of business, education and employment are to be carried on through Councilors Gordie Bear, who attended the meeting in Flin Flon on May 9, 2011 and Kelly Linklater. Ms Rosenberg made a commitment that someone from HBMS would contact Councilor Bear in that regard.

As well, HBMS personnel will help connect the administrator of the Town of Snow Lake with Councilor Gordie Bear regarding potential opportunities for Missinippi Construction to work on development sites in the town. Chief Dumas will provide contact information for each of the MCCN councilors.

Chief Dumas was invited to submit receipts for any disbursements that MCCN may have incurred to participate in these meetings, including the cost of plane travel back to Winnipeg chartered on January 12, 2012, as HBMS fully intends to cover the costs related to information sharing.

The meetings ended with expressions of appreciation on both sides and a closing prayer delivered by Elder Simeon Bighetty.

PARTICIPANTS

Chief Arlen Dumas	Mathias Colomb Cree Nation
Larry Sloan (Legal Counsel)	
Elder Marcel Caribou	Mathias Colomb Cree Nation
Councillor Jimmy Colomb	Mathias Colomb Cree Nation
Councillor Kelly Linklater	Mathias Colomb Cree Nation
Elder Simeon Bighetty	Mathias Colomb Cree Nation
Tom Goodman Senior Vice President & Chief Operating Officer	HudBay Minerals Inc.
Stephen West Superintendent, Environmental Control Department	HBMS
Jay Cooper Assistant Superintendent, Environmental Control Department	HBMS
Riley Little Section Leader Tailings and Engineering Projects Environmental Control Department	HBMS
Kim Proctor Lalor Mine Project Manager	HBMS
Shirley Neault Management Systems Coordinator Environmental Control Department	HBMS
Brenda Niedermaier Executive Assistant	HBMS
Tony Scheres Chisel North Mine Superintendent	HBMS
Tony Butt Lalor Health, Safety and Environment	HBMS
Sheryl Rosenberg (Legal Counsel)	Thompson Dorfman Sweatman LLP
Cliff Samoiloff	AECOM
Pam Marsden Director of Communication & Aboriginal Relations	Mining Association of Manitoba
Chris Beaumont-Smith Manager, Minerals Policy & Business Development Manitoba	Manitoba Mines Branch

HUDSON BAY MINING AND SMELTING CO., LIMITED

February 10, 2012

Mathias Colomb Cree Nation
P.O. Box 135
Pukatawagan, MB R0B 1G0

Attention: Chief Arlen Dumas

RE: Follow-up to Mathias Colomb Cree Nation and HBMS Meetings of Jan. 9-12, 2012

Dear Chief Dumas,

Thank you for coming to Flin Flon to meet with Kim Proctor, myself and our environmental consultants on January 9 -11, 2012. Please find enclosed copies of the records that HBMS has prepared for our own use. We would be pleased to note any additional comments or corrections that you might wish to add to these notes.

I believe Tom Goodman is writing to you about issues relating to employment and business opportunities that are of concern to your First Nation. I write to follow up on the commitments I made to you in relation to traditional knowledge that might be relevant to completion of the environmental impact assessment which we have commissioned AECOM to perform. I was very interested to meet the elders who attended the meeting, Elders Marcel Caribou and Simeon Bighetty, and Councillor Jimmy Colomb and to hear of their many experiences working in the region.

As we explained at the meetings, HBMS has been working in the Chisel Basin for many decades. In planning and assessing the Lalor project, we have spoken with people who have local knowledge, such as Manitoba Conservation officers who work in the region, owners of registered trap lines, cottagers and lodge owners and other local residents. As well, we have made presentations in the nearby Town of Snow Lake. In keeping with HBMS practice, our intention is to plan our projects with a view to avoiding impacts on other people's uses of the region and to make any reasonable accommodation that might be required to mitigate any effects that our projects might cause.

We have planned the Lalor project, to the greatest extent possible, to reduce environmental impact by using existing support facilities at our Chisel operations and in the Town of Snow Lake and by designing the project to occupy as small a footprint as possible. These sites are the ones you toured on January 11, 2012.

HUDSON BAY MINING AND SMELTING CO., LIMITED

Environmental assessment of the Lalor Advanced Exploration Project (and the future Lalor Mine) takes into account the effects of surface clearing and leveling, including removal of trees and plants, and exclusion of animals and people (other than workers), from the road and cleared sites occupied by the project. As Cliff Samoiloff of AECOM explained at our meeting, the wildlife and vegetation identified by AECOM seem to be common to the broader environment generally found in the Snow Lake/Flin Flon region. This information, together with the nature of the physical environment, is important to us in understanding the effects of our project.

In light of the comments made by the elders at our meetings, we would like the opportunity for AECOM to work with them and other elders (and any other resource harvesters) who can add to the information that AECOM has collected about water resources, soil conditions, vegetation, wildlife and heritage features in the Snow Lake area and, more specifically, in the region that AECOM has identified as relevant to environmental assessment of the Lalor project. As noted at our meetings, the information collected to date, which is extensive, includes a catalogue of the plant species observed within a one-kilometer buffer of the Lalor site and access road. I enclose a copy of that catalogue for the review of your elders and resource harvesters. Our baseline information also includes a comprehensive list of animal species that likely have been present in the Lalor Region, a copy of which also is enclosed. We would appreciate the benefit of the elders' thoughts and experiences in that regard.

I would propose that we follow up on our January discussions in several different ways. Firstly, following up on the comments set out on page 7 of the meeting notes, I suggest that you help us get AECOM in direct contact with the elders and resource harvesters, so they can meet as soon as possible to review the information AECOM has collected, including the catalogues of plant and animal species. That could occur at whatever locations and times would be convenient for your members.

Then, as soon as weather permits, we also would like to invite the elders and resource harvesters to return to the sites for a renewal of field investigations, in order to make sure that AECOM's investigations have not missed anything of importance to your members. We look to you for advice on how to organize this work and whom to engage in addition to the elders who attended the January meetings with you.

We are mindful that the elders might have knowledge which is sensitive or confidential and we would want to provide assurances that their confidence will be respected, including in any report made to regulatory authorities. Please also be assured that HBMS will pay both the out-of-pocket expenses incurred for the meetings and honoraria to compensate for your members' time and expertise.

If these investigations result in any new information about impacts on traditional uses, we will do our best to plan additional mitigation or find other accommodation that is acceptable to the elders. As well, I think we should consider whether one or more of the elders might be able to make a longer term commitment to work with us on environmental monitoring that might be planned in the future, as we continue to work on the Lalor project.

I feel also that it is important to continue the environmental impact discussions of January 11, 2012, with any additional information that you would like us to provide and also with your responses to the information that has been provided to date. To that end, I would like to arrange a date for a further meeting, in Pukatawagan if that is what works for your community, or at whatever location you think best.

I would appreciate it if you could email me with your availability for the follow-up work with the elders and our next information sharing meeting. For myself, I would appreciate scheduling this meeting as soon as possible. Please be assured that, even once regulatory review has commenced, we will continue to work with you on these commitments.

Please let me know, as well, your thoughts on a process to involve the elders in further environmental investigations.

Sincerely,

Stephen P. West, P.Eng.
Superintendent – Environmental Control Department

Terrestrial Surveys

A list of confirmed vegetation (based on desktop review and supported by field observation in 2007 and 2010) is provided in **Table 1.1**. The spring 2011 survey did not reveal any species not previously observed in the previous work.

Table – 1.1: Vegetation Observed in the General Project Area (2007, 2010 and 2011)

Awned hair cap moss (*Polytrichum piliferum*)	Lily of the Valley (*Maianthemum canadense*)
Balsam Fir (*Abies balsamea*)	Marsh Cinquefoil (*Potentilla palustris*)
Bearberry (*Arctostaphylos uva-ursi*)	Mountain Cranberry (*Vaccinium visit-idaea*)
Black Spruce (*Picea mariana*)	Northern Reindeer Lichen (*Cladina stellaris*)
Bog Cranberry (*Vaccinium vitis-idaea*)	Paper Birch (*Betula papyrifera*)
Bunchberry (*Cornus canadensis*)	Perennial Sow Thistle (*Sonchus arvensis*)*
Canada Anemone (*Anemone canadensis*)	Reed Canary Grass (*Phalaris arundinacea*)
Canada Bluejoint (*Calamagrostis canadensis*)	Rough Cinquefoil (*Potentilla norvegica*)
Canada Buffaloberry (*Sheperdia canadensis*)	Sedge (*Carex sp.*)
Canada Thistle (*Cirsium arvense*)*	Shore-Growing Peat Moss (*Sphagnum riparium*)
Cladonia (*Cladonia sp.*)	Snowberry (*Symphoricarpos albus*)
Common Reed Grass (*Phragmites australis*)	Speckled Alder (*Alder rugosa*)
Common Cattail (*Typha latifolia*)	Sphagnum moss (*Sphagnum sp.*)
Drooping Wood-Reed (*Cinna latifolia*)	Squarrose Peat Moss (*Sphagnum squarrosum*)
Dwarf Billberry (*Vaccinium caespitosum*)	Stiff Club Moss (*Lycopodium annotinum*)
Early Blue Violet (*Viola adunca*)	Stinging Nettle (*Urtica dioica*)*
Fern (*Matteuccia sp.*)	Tall Cotton-Grass (*Eriophorum angustifolium*)
Finger Felt Lichen (*Peltigera neopolydactyla*)	Trembling Leaf Aspen (*Populus tremuloides*)
Girgensohn's Peat Moss (*Sphagnum girgensohnii*)	Tufted Moss (*Aulacomium palustre*)
Ground Cedar (*Lycopodium complanatum*)	Velvet Leaf Blueberry (*Vaccinium myrtilloides*)
Ground Pine (*Lycopodium obscurum*)	Wavy Dicranum (*Dicranum undulatum*)
Jack Pine (*Pinus banksiana*)	Wax Paper Lichen (*Parmelia sulcata*)
Labrador Tea (*Ledum groenlandicum*)	Wild Mint (*Mentha arvensis*)
Large Cranberry (*Vaccinium macrocarpon*)	Wintergreen (*Pyrola asarifolia*)
Leatherleaf (*Chamaedaphne calyculata*)	

* *Invasive species*

A list of observed and indirectly observed wildlife (based on field observations in 2007 and 2010) is provided in **Table 1.2**. No species were found in the spring 2011 survey that was not previously recorded.

Table – 1.2: Wildlife Directly or Indirectly Observed in the General Project Area (2007, 2010 and 2011)

North American Black Bear	*Ursus Americanus*
Moose	*Alces alces*
Coyote	*Canis latrans*
Red Fox	*Vulpes vulpes*
White Tailed Deer	*Odocoileus virginianus*
Timberwolf	*Canis lupis*
North American River Otter	*Lontra canadensis*
North American Beaver	*Castor canadensis*
Bald Eagle	*Haliaeetus leucocephalus*
American White Pelican	*Pelecanus erythrorhynchos*
Sandhill Crane	*Grus canadensis*
Great Northern Loon	*Gavia immer*
Northern Leopard Frog	*Rana pipiens*
Common Raven	*Corvus corax*

Manitoba

Innovation, Energy and Mines
Assistant Deputy Minister
360-1395 Ellice Ave, Winnipeg MB R3G 3P2
T 204-945-4317 F 204-945-1406
www.manitoba.ca

April 15, 2013

Chief Arlen Dumas and Council
Mathias Colomb Cree Nation
P.O. Box 135
Pukatawagan MB R0B 1G0

Dear Chief and Council:

Re: Lalor Mine and Reed Mine Projects – Consultation

Manitoba Innovation, Energy and Mines is interested in continuing with, and completing, the consultation process with Mathias Colomb Cree Nation for the Lalor Mine and Reed Mine Projects proposed Hudson Bay Mining and Smelting Co. Ltd.

In September 2012 Manitoba IEM, Hudbay and MCCN representatives, including Chief Dumas and MCCN lawyers from the firm of Janes Freedman Kyle, agreed on a plan for the consultation processes for the Lalor and Reed projects that involved the Firelight Group, consultants identified by MCCN and its lawyers, conducting both a third party review study of Hudbay's Environmental Assessment Report and a Traditional Land Use Study. These two studies were expected to be completed by the end of March 2013 and were to be made available to Manitoba IEM and Hudbay. As agreed, the studies have been funded by Manitoba and Hudbay.

The studies would then be available to assist MCCN in identifying any concerns about potential adverse effects of the Projects on the exercise of Aboriginal or treaty rights of MCCN and its members and expressing those concerns in the consultation processes for the Lalor and Reed projects.

I understand that Janes Freedman Kyles is no longer representing MCCN. I also understand that Dr. Craig Candler of the Firelight Group has advised Hudbay that the two studies are currently "on hold" at the request of MCCN.

We continue to be interested in consulting with MCCN about the Projects; however we expect to be able to complete the consultation process in a reasonable time period, which I believe would be by the end of June 2013 for the Lalor Project and would be in a similar time period for the Reed project.

I am therefore asking Chief and Council to respond to this letter advising of whether it intends to continue with the consultation processes, and, if so, whether it would direct Dr. Candler to complete the studies and to make the studies available to be considered in the consultation process.

We will require a response as soon as possible. If MCCN representatives do not participate in the consultation process we will nonetheless consider all available information we are aware of about potential effects of the Projects in making decisions about the proposal.

Please feel free to contact me by e-mail at john.fox@gov.mb.ca or by telephone at (204) 945-4317.

Yours truly,

John N. Fox, P.Eng.

cc: Stephen West, Hudbay Minerals Inc./Hudson Bay Mining and Smelting

HUDBAY

April 9, 2013

Mathias Colomb Cree Nation
P.O. Box 135
Pukatawagan, MB R0B 1G0

Attention: Chief Arlen Dumas

Re: Traditional Use Study and Information Sharing re Proposed Hudbay Projects

Dear Chief Dumas:

I write further to the commitments made by Mathias Colomb Cree Nation, Hudbay and Manitoba with respect to information sharing and consultation concerning Hudbay projects, a process which now has been underway in an organized fashion since Spring of 2011.

Hudbay's records contain detailed notes of a meeting held May 9-10, 2011 at Flin Flon with you and seven members of your Council/First Nation, at which you received updated project information on the Lalor Advanced Exploration Project, the planning for the Lalor Mine and Reed Copper Projects, and the tradeoff study then underway to help Hudbay decide whether to refurbish the Stall Lake Concentrator or build a new one on the Lalor site. Those meetings also included site tours in Flin Flon and discussions about training, contracting, business and educational opportunities.

Following that meeting, in response to your expression of MCCN interest in the Snow Lake area, I contacted you about getting together to share environmental information about the Lalor and Reed projects. We organized a visit to Pukatawagen to occur on September 12, 2011. My intention was to bring our environmental team to meet with you, your Council and elders and resource harvesters. On September 9, 2011, you cancelled that visit, indicating that you couldn't ensure participation by all necessary persons on that date.

After extended email correspondence, you and I were able to re-schedule the meeting for January 10-12, 2012, this time to be held in Flin Flon and Snow Lake. You indicated that you would bring with you the persons needed to participate in information sharing about the environmental effects of our projects. Hudbay committed to including a site tour of the Lalor project and additional meetings on education and job training, including tours of the new Mining Academy and UCN facilities in Flin Flon. These meeting occurred as planned. At the meetings it was agreed that information sharing should continue. We suggested inclusion of First Nation elders and resource harvesters in the collection of environmental information and the sharing of traditional knowledge with our environmental consultants. You were represented at the meeting by legal counsel, Larry Sloan, whom we met for the first time at the January 10, 2012 meeting. Mr. Sloan took the position that the information sharing process would have to include a formal traditional knowledge study. Detailed notes of the meeting were prepared and shared with you and your counsel. We sent a complete record of environmental and permitting documentation pertinent to current Hudbay project planning to Mr. Sloan on January 20, 2012, with a view to facilitating further discussion. On February 10, 2012, HudbayVice President Tom Goodman

P.O. Box 1500
1 Company Road
Flin Flon, Manitoba
Canada R8A 1N9
hudbayminerals.com

and I each wrote to follow up on the January meetings with further offers¸ Mr. Goodman with respect to business cooperation, and I with respect to sharing of information relevant to the potential for effects of the proposed projects on traditional activities.

On January 27, 2012, our lawyer, Sheryl Rosenberg of TDS, received a letter from your new lawyers, Robert Freedman and Mark Gustafson, of Janes Freedman Kyle (JFK). Our counsel replied, setting out Hudbay's position concerning the assertions made by JFK, and then our lawyers agreed that a meeting(s) should be held to discuss the nature and content of further information sharing. We met on … and … in TDS offices in Winnipeg. You and your counsel took the position that, in order to participate in meaningful sharing of information, MCCN would require a study of traditional knowledge and use to be carried out by the consultant of your choice, whom you identified as Dr. Craig Candler of the Firelight Group, and that Hudbay and/or Manitoba should pay the costs of such a study. In addition, you asked Hudbay to provide funding so that MCCN could engage an environmental expert of your choice, Dr. Ginger Gibson, to perform a third party review of the environmental impact assessment reports prepared for Hudbay and to help MCCN participate in meaningful information sharing.

After consideration of proposals submitted by Dr. Candler and Dr. Gibson and detailed discussion in meetings, telephone conferences and emails, Hudbay and Manitoba agreed to fund both requests. The agreement between us in that regard is summarized in emails exchanged during September of 2012 between JFK, TDS and Dr. Candler. Firelight committed to you and to us to share their report within six months, based on the amount of time required to complete the work in a conscientious fashion.

After we reached agreement on the terms set out in the above-noted emails, both you and we took the steps necessary to carry out both studies. You provided the authorization for the work to commence. Drs. Candler and Gibson worked with our consultants, AECOM, to assemble the materials needed to carry out both pieces of work, including mapping of traditional uses. AECOM sent their studies concerning the Lalor and Reed Projects to Dr. Gibson and spent time discussing them with her. My team and I, along with our environmental consultants, attended in Pukatawagen on November 23, 2012 to meet with Dr. Gibson, yourself and the members you selected. We covered the proposed Lalor Mine, Lalor Concentrator and Reed projects. We answered all the concerns raised that day and promised to facilitate any follow-up requested by Dr. Gibson.Dr. Candler and his team completed the interviews needed to map your First Nation's traditional uses and draft the report of the traditional knowledge and use study. And I have met Hudbay's commitment to pay Firelight's invoices. Those payments have been accepted.

In accordance with our agreement, Hudbay should by now have received feedback from Dr. Gibson's review. The traditional knowledge and use report should have been completed. By now, we should have resumed meeting or at least scheduled a date to return to the table to discuss the results of these studies and consider together whether any current First Nation traditional use will be affected by any aspect of any of Hudbay's proposed projects.

Instead, Ms Rosenberg was informed by Mr. Gustafson that he could not secure instructions from you to set a date for a meeting. Then she was advised that you and JFK have parted ways.

On March 26, 2013, I wrote to Dr. Candler to see where matters stood with respect to completion of Firelight's work. On April 4, 2013 I was informed that Firelight's work was "currently on hold based on a request from MCCN received earlier this year" and that "Firelight has been asked by MCCN to allow MCCN leadership to handle any questions from Hudbay or Province of Manitoba regarding status of the studies." Dr. Candler further indicated that they would require written authorization from you before "picking up pens again." I can't tell from this exchange when Firelight's work came to a stop. I do know that it was to be finished no later than

end of March, 2013 and that you did not consult or even inform us that you were providing instructions to Dr. Candler for the work to stop.

Chief, at this point, I believe that Hudbay has done all we can do to facilitate the exchange of information with MCCN. You have taken the position that there is a potential for impact of Hudbay's proposed projects on traditional activities practiced by MCCN. We have studied the environmental effects of our proposed projects and shared that information with you. You have received all the information that is relevant to potential impacts on natural resources that could potentially be subject to traditional use. We have funded studies so that you can determine for yourself what traditional activities are practiced in the vicinity of our projects and consider the environmental effects of our proposed projects.

Should you choose to provide instructions to Dr. Candler for Firelight to resume its work, we will be pleased to meet with you to discuss the results. If there is any link whatsoever between adverse effects of our proposed projects and activities practiced by a member(s) of MCCN, we will do all that is necessary to avoid, mitigate or compensate for any loss so occasioned. If the work and our discussions are done in time, we will provide the results to regulators for consideration in the licensing applications for the Lalor and Reed projects. Even if licenses have issued, we will continue to welcome the participation of your elders and resource harvesters in our environmental information collection and monitoring programs. At all times, Hudbay has been and will continue to be responsible for the effects of its projects.

Based on the information provided by MCCN to date, including Dr. Candler's technical memo dated xxxx and the comments made by your members at our meetings of May 2011, January 2012 and November 2012, together with the results of our environmental impact assessment, we must rely on the correctness of our initial assessment, which was that there is little or no traditional activity currently practiced in any area which could be affected by any of our proposed projects.

I am not responsible for but am aware of the many attempts made by Pam Marsden, Hudbay's Aboriginal Liaison Officer, to communicate with you in relation to employment, education and training opportunities. I know that, Brad Lantz, Vice President in charge of the Manitoba Business Unit, and Tom Goodman who preceded him, have made numerous attemtps to reach out to you with offers for cooperation on the development of opportunities in education, training, contracting and employment, including the offer to fund a position for an MCCN member to work with us in that regard.

I hope that you and your Council will re-consider your position in relation both to completion of the Firelight studies and to working with Hudbay management on such opportunities.

Please advise if I may expect Dr. Candler's work to resume.

Sincerely,

Stephen P. West, P.Eng.
Superintendent - Environmental Control Department

HUDSON BAY MINING AND SMELTING CO., LIMITED

February 10, 2012

Mathias Colomb Cree Nation
P.O. Box 135
Pukatawagan, MB R0B 1G0

Attention: Chief Arlen Dumas

RE: Follow-up to Mathias Colomb Cree Nation and HBMS Meetings of Jan. 9-12, 2012

Dear Chief Dumas:

Thank you for coming to Flin Flon in January to meet with us concerning the Lalor and Reed projects. It was much appreciated, particularly in light of the weather conditions that made travel so difficult. Our Superintendent of Environment, Stephen West, is writing to you about further work on the environmental assessment matters that were discussed in January.

I am writing to follow up on our discussions about contracting, employment and education and training opportunities. I would like to see what more could be done in each of these areas that would be of benefit both to MCCN and HBMS.

I very much appreciate the point you made about needing to match up existing MCCN capacity with opportunity. I know that in May, 2011, your visit included a meeting with our Contracting department, intended to give your leadership information on how HBMS contracts are awarded and what businesses need to do to qualify for work of this nature.

I am told, though, that we don't seem to have received any subsequent contacts from MCCN businesses about qualifying for these opportunities. This tells me that more needs to be done to help MCCN businesses prepare to submit bids for future opportunities. We would like to explore with you what more HBMS might be able to

offer that would be effective in preparing MCCN businesses to enter into competition for opportunities as they arise.

I would suggest that we plan a further meeting between yourself, Councilors Gordie Bear and Kelly Linklater and any other First Nation leaders who should be involved, and HBMS contracting staff and other leadership. At that meeting we could talk about what concrete steps would be useful for us to take. Perhaps one idea would be for our contracting staff to participate in a facilitated workshop(s) with MCCN business leaders?

Also, we have been thinking about the comments you, Councilor LInklater and the elders offered about the need for young people to take advantage of training and job opportunities in the North. I was particularly interested in seeing if we could follow up on some concerns expressed by the elders about the need to encourage older high school students to consider potential future opportunities when making decisions about staying in school and furthering their education.

If our Lalor exploration is successful, we may be looking forward to two decades of mining in the Snow Lake region. Many of our skilled workers will retire in that time and need to be replaced. As I said at our meetings, HBMS needs a well-qualified work force who are committed to living in the North. It is in the company's best interest to do what we can to help encourage youth to remain in school and get the education they need to seek good employment and business opportunities.

One idea that has been suggested to me is to work out a plan for groups of high school students and their teachers to come for visits such as the ones your leadership have experienced. We could dedicate some staff time to showing the students potential work opportunities that will exist in mining and we could demonstrate to them some of the skills tests that they would have to pass in order to qualify for employment.

I'm sure that this is just one of many ideas that could be generated. I suggest that we put together a MCCN and HBMS team to plan and execute practical steps that could help over the long term. It seems to me that this team should include your educators, as well as MCCN Councilors and business leaders. The team also could think about how to maximize the benefit that could be realized though links between the new Mining Academy and UCN satellite campuses in Flin Flon and Pukatawagan.

In summary, it seems to me that a more direct and ongoing relationship between MCCN and HBMS is needed to encourage business, employment, education and training opportunities that could be of benefit to us both. As you know, HBMS has been a presence in Flin Flon and Snow Lake for many decades and we are committed to the future of the region. I hope that together we can put together a combined MCCN/HBMS task group to think about these issues and generate ideas. The task group could create an action plan and meet from time to time to monitor progress.

We have decided that it would be in HBMS best interests to dedicate some reasonable funding that is budgeted towards facilitating these meetings and also to carrying out practical plans that could make a difference over the long term. If you are in agreement, I would like to get together to discuss with you how to get started. If it would not be convenient to meet, I'm sure that we could do some planning by phone.

Either way, I look forward to further productive discussions.

Regards,

Tom Goodman
Senior Vice President
& Chief Operating Officer

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