CAPE RAY GOLD
PARTNERSHIP PROJECT
PORT aux BASQUES & ISLE aux MORTS
NEWFOUNDLAND

Environmental Assessment Registration
Pursuant to the Newfoundland & Labrador Environmental Protection Act
PROJECT DESCRIPTION/REGISTRATION REPORT

Submitted to:

Government of Newfoundland and Labrador
Environment and Conservation
Environmental Assessment Division
St. John's, Newfoundland
A1B 4J6

Submitted by:

Nordmin Resource and Industrial Engineering Ltd.
160 Logan Ave
Thunder Bay, Ontario
P7A 6R1

June 2016

Nordmin Project No.: 14200 - 01

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June, 2016

Nordmin Project No.: 14200 - 01
Government of Newfoundland and Labrador
Environment and Conservation
Environmental Assessment Division
P.O. Box 8700
St. John's, Newfoundland
A1B 4J6

Attention: Mr. Bas Cleary, Director
Dear Mr. Cleary,
Re: **Cape Ray Gold Partnership Project Description/Registration**
Port aux Basque, Newfoundland

Nordmin Engineering Ltd. (Nordmin), in Thunder Bay Ontario, is pleased to submit this Project Description/Registration Report for the Cape Ray Gold Partnership Project near Isle aux Morts and Port aux Basque Newfoundland. Nordmin is currently advancing the Project site as part of a Joint-Venture Agreement with Benton Resources Inc. (Benton), also in Thunder Bay.

We trust that we have included all the pertinent project information required.

Please call should you have any questions regarding the report.

Yours sincerely,

Nordmin Resource and Industrial Engineering Ltd

Giovanni (John) Sferrazza
Director-Environmental Services

Encl

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Executive Summary

Nordmin Resource and Industrial Engineering Ltd. (Nordmin) is currently in a Joint Venture agreement with Benton Resources Inc. (Benton) for the purposes of developing the Cape Ray Property near Port aux Basques, Newfoundland.

Nordmin and Benton propose to develop, operate, decommission and reclaim a gold and silver mine, mill and processing operation at the Cape Ray site. The Project includes the extraction and processing of gold and silver bearing ore from the Cape Ray Deposits to produce gold and silver dore bars for commercial sale.

A Preliminary Economic Assessment (PEA) was prepared for this project in April 2016, which indicated a potential minable resource estimated at 1,701,487 tonne averaging a combined grade of 4.6 g/t gold and 4.8 g/t silver. Open pit potential minable resource made up 836,014 tonnes with anticipated dilution of 10% and mine losses of 5%. The remaining 865,473 potential minable resource tonnes from underground methods include dilution of 20% in longhole stoping and 10% in cut and fill with mine losses of 5% applied.

Mill recovery rates based on preliminary test are estimated to be 97% resulting in 250,000 ounces recoverable gold and 45% resulting in 260,000 ounces recoverable silver.

The project would bring much needed economic benefits to the region. The recent downturn in the economy reinforces the need for resource development projects of this nature and economic development in Port aux Basque area. Based on preliminary community discussions and past history, there is a strong community support for the Project. The proposed Project would directly create approximately 100 - 150 jobs (at peak) during construction and approximately 30 full-time jobs during operations. The proposed Project presents an opportunity for substantive economic benefits to the region, local communities, and the province.

The project area is located on the southern slopes of the Long Range Mountains and is characterized by broad wooded valleys (tuckamoor), gently sloping organic deposits and rugged bedrock dominated uplands. The dominant surficial characteristics are bedrock concealed by vegetation, barren outcrops or lichen covered rock, thin bog cover; minor thin till deposits and the occasional drumlinoid feature. The deeply incised river valleys contain glaciofluvial deposits and alluvial deposits derived from postglacial erosional and sedimentary processes.

The rugged and often strongly sloping topography varies in elevation from approximately 140 m along the valley bottom of the Isle aux Morts River to nearly 480 m along the eastern boundary of the project area. The Isle aux Morts River is a Scheduled Salmon River and as such is subject to special management procedures and protection by the Newfoundland and Labrador Department of Natural Resources.

In the province of Newfoundland and Labrador, proposed resource development projects may be subject to provincial and/or federal environmental assessment legislation.

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List of Units and Abbreviations

Abbreviation	Meaning
°C	Degrees Celsius
$ and CAD$	currency of Canada
AA	atomic absorption (assay method to measure metal content)
Ag	silver
Au	gold
BP	Big Pond
BRI	Benton Resources Inc.
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
CRFZ	Cape Ray Fault Zone
CRGD	Cape Ray Gold Deposit
CRIC	Cape Ray Igneous Complex
Cu	copper
CPUE	Catch-per-unit-effort
DDH or ddh	diamond drill hole
DFO	Department of Fisheries and Oceans
DMS	Dense Media Separation
EA	Environmental Assessment
EIS	Environmental Impact Statement
el	elevation
EM	electromagnetic
EPR	Environmental Permitting Regulations
g	gram
g/t	grams per tonne
GBC	Grand Bay Complex
GRG	Gravity Recoverable Gold
ha	hectare
HMY	High Mass Yield
IaM	Isle aux Morts
ICP	Inductively coupled plasma (geochemical test method)
IK	Indicator Kriging (block model type)
IP	induced polarization (geological survey method)
JV	joint venture
km	kilometre
kg	kilogram
kg/t	Kilograms per tonne
L	Litre
LCS	Local Coordinate System
LOI	Letter of Intent
LCM	Loose Cubic Metre

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Abbreviation	Meaning
m	metre
mm	millimetre
µm	micrometre
Ma	millions of years
Mt	millions of tonnes
N	north
NN	Nearest neighbour (block model type)
NLL	Newfoundland and Labrador
NPAG	Non Potentially Acid Generating
NSR	net smelter return
NTS	national topographic system
NW	northwest
oz.	Troy Ounces (1 troy oz. = 31.1034 g)
P. Eng.	professional engineer
P. Geo.	professional geoscientist
PABG	Port aux Basques Gneiss
PAG	Potentially Acid Generating
PEA	Preliminary Economic Assessment
Pb	lead
PMA	Particle Mineral Analysis
PMR	Potential Minable Resource
Ppm	parts per million
RSF	Rock Storage Facilities
QP	Qualified Person
S	south
S	sulphur
SE	southeast
SG	Specific Gravity
SMU	Smallest mining unit
SW	southwest
t	tonne (metric)
t/d	Tonnes per day
t/yr	Tonnes per year
TMF	Tailings Management Facility
UTM	Universal Transverse Mercator
VLF-EM	very low frequency electromagnetic survey
W	west
WCS	World Coordinate System
WDH	Windowglass Hill
WGHD	Windowglass Hill Deposit
WGHG	Windowglass Hill Granite

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Abbreviation	Meaning
WPG	Windsor Point Group
Zn	zinc

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1. Introduction

Nordmin Engineering Ltd., (Nordmin) in a joint venture agreement with Benton Resources Inc. (Benton) is proposing to develop a gold mine and milling complex – the Cape Ray Gold Partnership Project (Project) at the Cape Ray exploration site in southwestern Newfoundland. The site is located southeast of the Isle aux Morts River and approximately 20 kilometres north of the village of Isle aux Morts and 30 km north of the town of Port aux Basque.

The Cape Ray Project represents the construction and operation of a proposed 500 to 600 tonne per day gold mine and mill along with the construction/upgrading of an existing 22 km access road to the site from highway 470.

This Project Description/Registration report serves to register the Project under the Government of Newfoundland and Labrador (NLL) *Environmental Protection Act* (2002) and *Environmental Assessment Regulations* (2003). It provides the required Project details to the Newfoundland Department of Environment and Conservation in order that a decision and guidance can be given on this undertaking with respect to the Environmental Assessment (EA) processes necessary to allow the project to proceed subject to terms and conditions and applicable permits or if further EA obligations must be met.

It is also understood that this Project Description document will be forwarded to the Canadian Environmental Assessment Agency (CEAA) for review and comment so that harmonization can be achieved early in the EA process should the Project be subject to *the Canadian Environmental Assessment Act* (*CEAA* 2012) and the *Regulations Designating Physical Activities* (2014).

This Report is based, in part, on site visits by Nordmin and Benton personnel, internal company technical reports and maps, published government reports, company letters and memoranda, public information, documented results concerning the project and discussions held with technical personnel from the company regarding all pertinent aspects of the project as listed in Section 8.0 References of this report. Several sections from reports authored by other consultants have been directly quoted in this report, and are so indicated in the appropriate sections.

1.1 Project Name

Cape Ray Gold Partnership Project

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1.2 Proponent Information

Nordmin Resource and Industrial Engineering Ltd. was founded in 2005 with a corporate office at:
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Thunder Bay, ON, Canada
P7A 6R1
Tel: (807) 683 – 1730 Fax: (807) 683 – 1744
www.nordmin.com

The company has grown from a single office to three. Thunder Bay ON is the main office with branch offices in Sudbury ON and Kamloops BC included in the business unit. Nordmin employs more than 120 personnel and continues to expand.

The mining sector has been the main focus of the company, but we hold expertise in Pulp and Paper, Energy, Electrical Power Distribution, and other Industrial Sectors. The company is multi-disciplinary and includes experts practicing in all the major disciplines including Mining, Metallurgy, Civil/Structural, Mechanical/Piping, Chemical, Electrical/Power, Electrical/Controls and Automation, Environmental Management and Geology.

Most recently, Nordmin undertook a merger with NordPro, its former subsidiary Company that is focused on Construction and Operational Management. This has allowed us to offer a full EPCM package to Clients worldwide.

Benton and Nordmin have formed a joint venture pursuant to which Nordmin will have the right to earn up to a 50% interest in the Project through a series of expenditures and services to be provided.

Nordmin will provide the procurement, project and construction management for the Project, including commissioning and start-up. The costs and fees associated with this effort will be part of the Project financing.

Nordmin must spend a minimum of $4.5 million of expenditures and equivalent services, with any excess going towards Project development.

The intent is that the work proposed within the agreement will be completed in a minimum of three (3) years and a maximum of five (5) years, dependent upon market conditions or other outside and uncontrollable situations.

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1.3 Co-Proponent Information

Benton Resources Inc. ("Benton" or the "Company") was incorporated on November 8, 2011 as 0924698 B.C. Ltd. (renamed Benton Resources Inc. on July 25, 2012) under the laws of British Columbia and is a development stage public company whose shares began trading on the TSX Venture Exchange on August 1, 2012 under the symbol "BEX". Its principal business activities are the acquisition, exploration and development of mineral properties. On July 27, 2012, the Company received certain assets by way of a court-approved plan of arrangement (the "Arrangement") with Benton Capital Corp. (formerly Benton Resources Corp.).

As of the date of this Report, Benton is a Canadian junior exploration company and is listed on the Canadian TSX Venture stock exchange (BEX) with a corporate office at:

3250 Hwy 130
Rosslyn, Ontario,
P7K 0B1
Tel: 807-475-7474
Fax: 807-475-7200
www.bentonresources.ca

1.4 Nordmin Benton Joint Venture Agreement

On January 20, 2015, Benton Resources entered into a joint venture agreement with Nordmin, pursuant to which Nordmin will earn a 50% interest in the Project through a series of expenditures and services to be provided. Summarized below are the highlights of the Agreement.

Under the terms of the Agreement, Benton will form a 100% wholly owned subsidiary, ("SubCo B" for illustrative purposes) and transfer 100% of Benton's property rights in the Project to SubCo B. Nordmin may then earn up to 50% of the Project held by SubCo B by completing a series of work commitments and project milestones which is well underway advancing the Project towards production as follows:

i. Benton will lead the exploration effort for the Project, which will be funded by Nordmin up to the completion of the Feasibility Study. This includes any infill drilling to allow the Projects to be brought up to National Instrument 43-101 status ("NI 43-101"). The necessity for further exploration will be determined and approved by the management committee;
ii. Nordmin will, earn a 5% interest, make a $250,000 cash payment in two tranches to SubCo B which will go towards the current exploration program;
iii. Nordmin will, earn a further 15% interest, fund and provide the services required to complete NI 43-101 resource estimates for the 04, 41, 51, and Windowglass Hill deposits, produce a resource model, a PEA, complete a detailed assessment of the Geology, Mining, Metallurgy, Environmental, Engineering, Construction, Economics and Schedule for the Project;

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iv. Nordmin will, earn a further 10% interest, complete the Environmental Assessment and Impact reviews, and secure the necessary permits for a mine, mill and related plant in order for the Project to move forward;
v. Nordmin will, earn a further 10%, complete a feasibility study for the Project (detailing and advancing all of the same issues within the PEA);
vi. Nordmin will, earn a further 10% interest, complete detailed design of the mine, mill and related plant and work to arrange a minimum of 50% of the Project financing;
vii. Nordmin will assume operatorship of the Project upon signing.

1.5 Rationale for the Project

The Cape Ray Fault Zone north of Port aux Basque is a small undeveloped mineralized zone containing gold, silver, lead, zinc and copper.

The proposed mineable area includes the deposits of 04, 41, 51 and Windowglass Hill (WGH) more details are given in Section 2. The Isles aux Morts River flows through the property and separates WGH deposit from the others. The Isles aux Morts River flows south from the Cape Ray Fault Zone into the ocean. The footprint of the possible mineable area claims is approximately 18 km^2 and would include infrastructure such as mine stockpiles, processing facilities, tailings facilities, mining areas and office facilities.

A PEA was prepared for this project in April of 2016, which indicated a potential minable resource estimated at 1,701,487 tonnes averaging a combined grade of 4.6 g/t gold and 4.8 g/t silver. Open pit potential minable resource made up 836,014 tonnes with anticipated dilution of 10% and mine losses of 5%. The remaining 865,473 potential minable resource tonnes from underground methods include dilution of 20% in longhole stoping and 10% in cut and fill with mine losses of 5% applied.

Mill recovery rates based on preliminary test are estimated to be 97% resulting in 250,000 ounces recoverable gold and 45% resulting in 260,000 ounces recoverable silver.

Nordmin and Benton in a Joint Venture Agreement propose to develop, operate, decommission and reclaim a gold and silver mine, mill and processing operation at the Cape Ray site. The project includes the extraction and processing of gold and silver bearing ore from the Cape Ray Deposits to produce gold and silver dore bars for commercial sale.

The project would bring much needed economic benefits to the region. The recent downturn in the economy reinforces the need for resource development projects of this nature and economic development in Port aux Basque area. Based on preliminary community discussions and past history, there is a strong community support for the Project. The proposed Project would directly create approximately 100-150 jobs (at peak) during construction and approximately 30 full-time jobs during operations. The Project presents an opportunity for significant economic benefits to the region, local communities, and the province.

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The alternatives to the Project are the no-go scenario and termination of the project. The no-go scenario is an alternative that would be evaluated upon completion of the prefeasibility and feasibility studies in 2017. Project viability would be assessed based on a number of factors, including economic and technical feasibility, and predicted environmental and socio-economic effects. A no-go decision would therefore mean that potential environmental impacts cannot be mitigated, or that the economic benefits to the community, region, and province, may not be realized.

1.6 Environmental Assessment Processes and Requirements

In the province of Newfoundland and Labrador, proposed resource development projects may be subject to provincial and/or environmental assessment legislation.

Under the provincial *Environmental Protection Act* (*EPA*, 2002), the proponent of a project that could have significant effects on the natural, social or economic environment is required to register this project or undertaking for examination under the provincial EA process. Under the *EPA* the project or undertaking is subject to Part 10 of the *EPA* and pursuant to Section 33(2) of the associated *Environmental Assessment Regulations* (*EAR*, 2013) which states:

> *33(2) "An undertaking that will be engaged in the mining, beneficiating and preparing of a mineral as defined in the Mineral Act whether or not these operations are to be performed in conjunction with a mine or at mills that will be operated separately shall be registered."*

Following a 45 day public and governmental review of this EA Registration, the Minister of Environment and Conservation will make a determination whether the project may proceed, subject to terms and conditions or if further EA review and obligations are warranted.

Based on the Ministerial review, there are four possible outcomes following the 45 day review period. These are:

1. The Project may be released – subject to terms and conditions set by the Minister;
2. The Project will require an Environmental Preview Report (EPR) – in which additional information is required that is not contained in the Project Registration;
3. The Project will require an Environmental Impact Statement (EIS) – will be required where significant potential negative environmental effects are anticipated or there is significant public concern regarding the undertaking; or,
4. The Project may be rejected – this may occur if unacceptable environmental effects are indicated or the undertaking is not in the public interest.

All decisions will be announced in the EA Bulletin within ten days of notification to the proponent.

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Under *CEAA* 2012, if the project or undertaking is captured by the Regulations Designating Physical Activities, a project description must be submitted which then undergoes a 45 day screening process to determine if a federal EA is required.

1.7 Purpose of the Registration

This project description document serves to satisfy both the provincial and federal requirements for the registration of resource development projects and is intended to formally initiate the review process for both levels of government.

It has been prepared and submitted by Nordmin pursuant to the requirements of the Newfoundland and Labrador *EPA* and *CEAA* 2012.

In addition to EA approvals, the project may also require other federal, provincial or municipal authorizations and permits. These are outlined in subsequent sections of this document.

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2. Project Description

The following sections briefly describe the project location, geographic setting and land tenure status.

2.1 Property Description and Location

The Cape Ray Property is located approximately 25 km northeast of the town of Channel-Port aux Basques Newfoundland, as shown in Figure 2.1 below.

The property covers portions of 1:50,000 NTS map sheets 11O/10, 11O/11, and 11O/15.

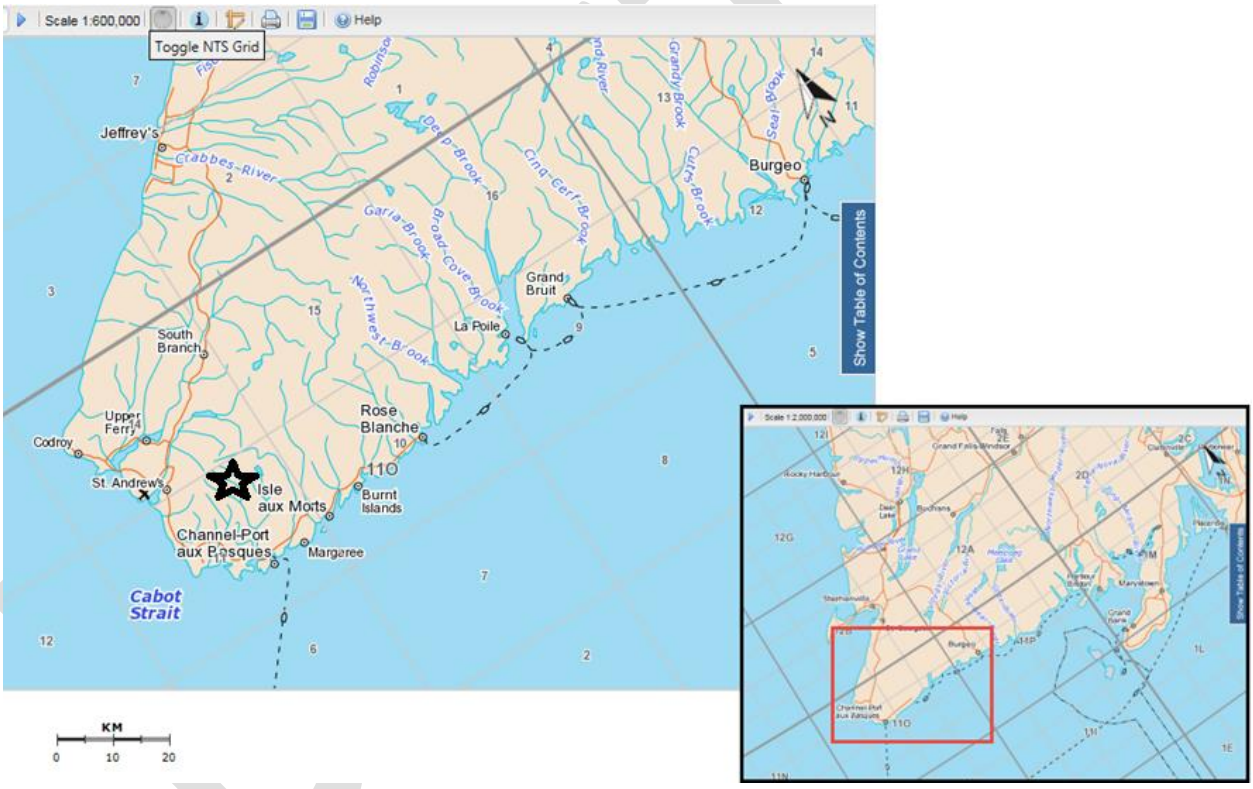

Figure 2.1 Cape Ray Project Location

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The proposed mineable area includes the deposits of 04, 41, 51 and Windowglass Hill (WGH) shown in Figure 2.2 has the centroid of -58.9° Longitude and 47.8° Latitude. The Isles aux Morts River flows through the property and separates WGH deposit from the others. The Isles aux Morts River flows south from the deposits into the ocean and is a Scheduled Salmon River. The footprint of the possible mineable area claims as shown in Figure 2.2 would be the area potentially affected by mining operations. Mine stockpiles, processing facilities, tailings facilities, mining areas, and office facilities would be contained within this area of approximately 18 km^2.

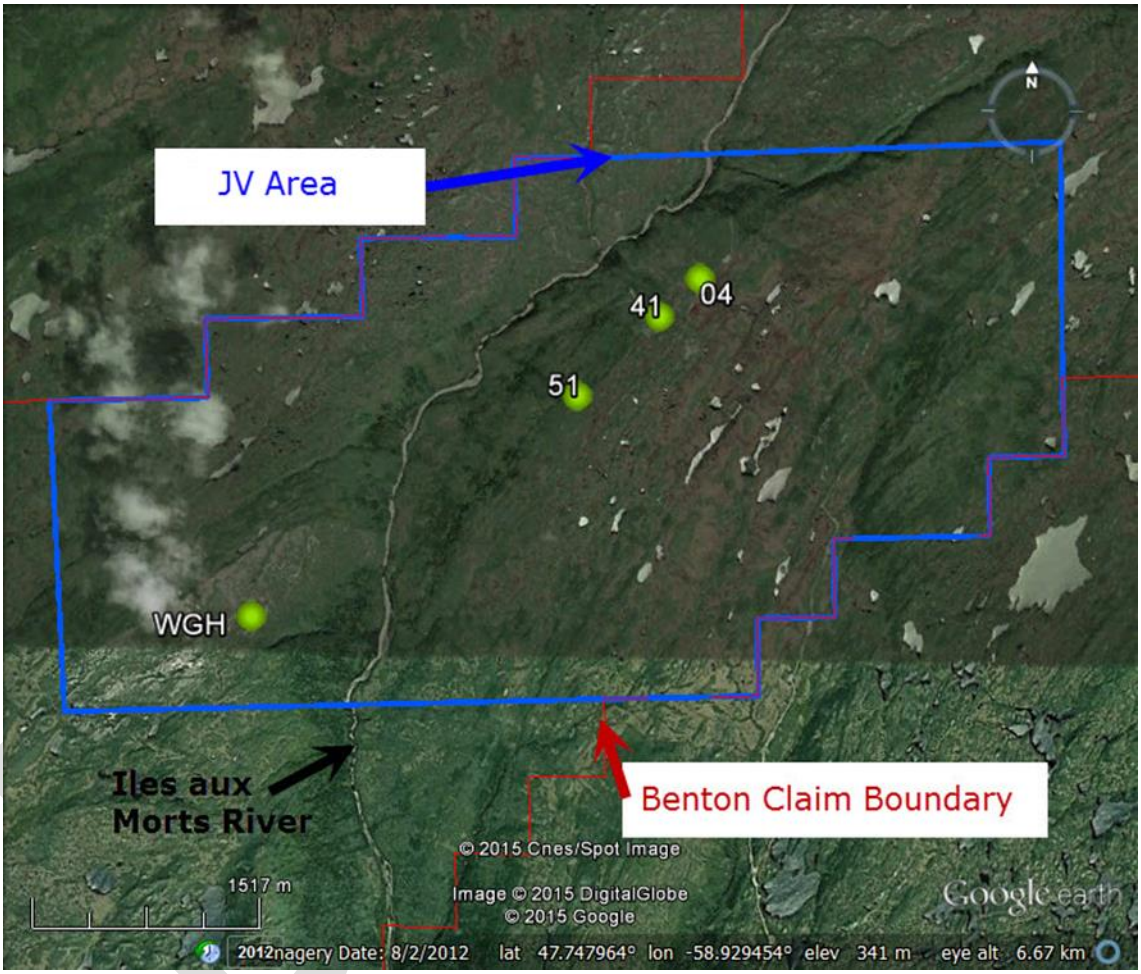

Figure 2.2 Deposit Locations within Claim Boundary

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2.1.1 Proximity to Municipalities

The closest municipality to the Cape Ray deposits is Isles aux Morts, which is approximately 16 km away as shown in Figure 2.3.

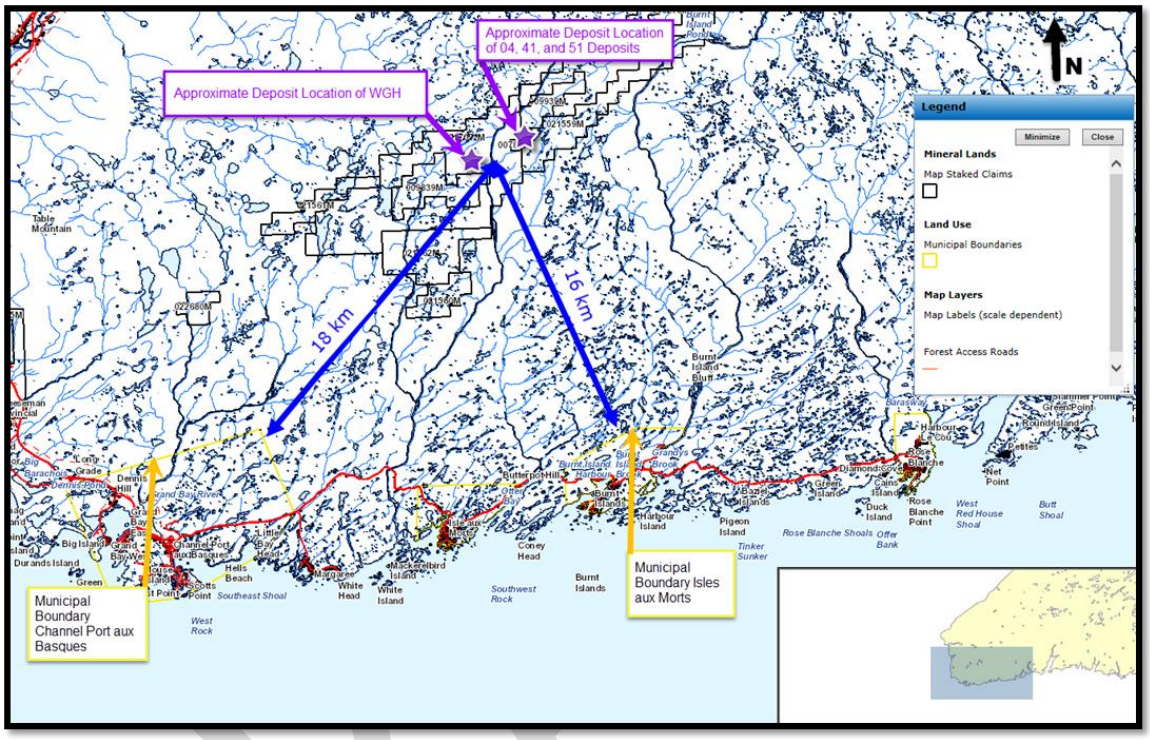

Figure 2.3 Nearest Municipalities

Access to the Cape Ray site is by gravel road, which is off highway 470 just outside of the town of Isle aux Morts and is around 22 km long as shown in Figure 2.4

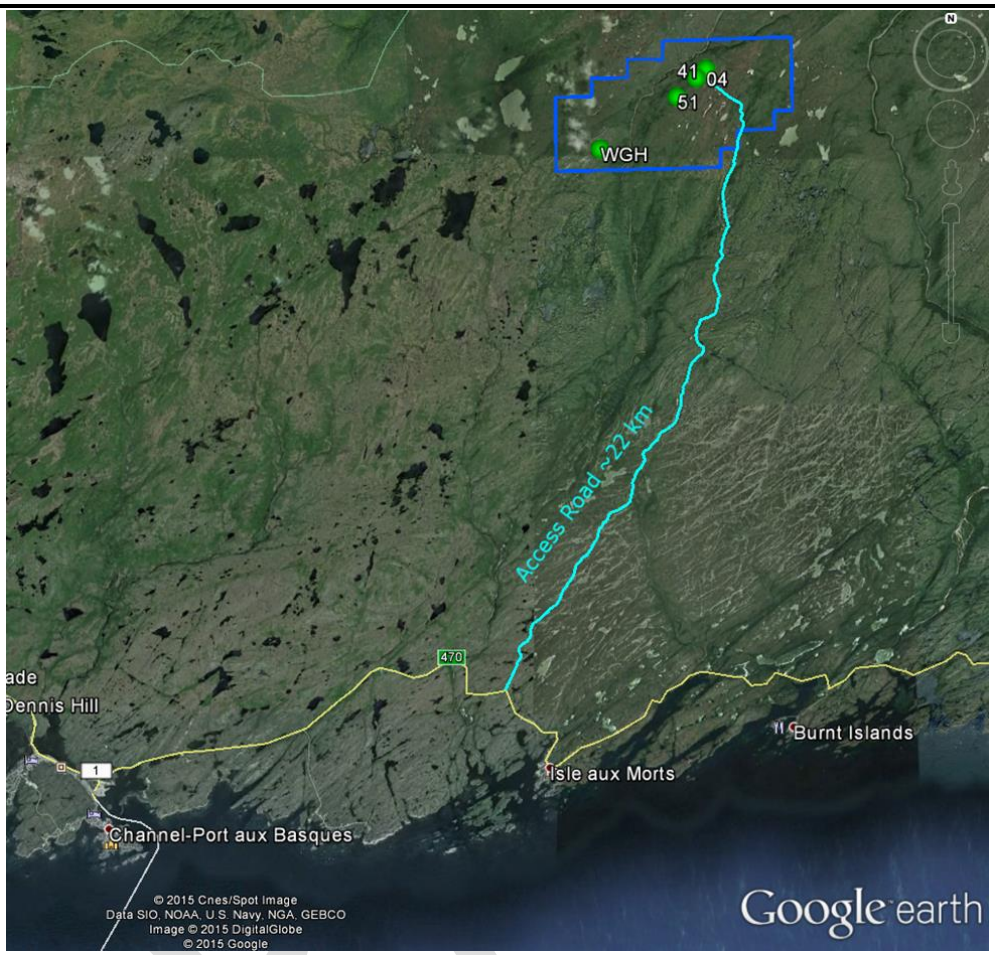

Figure 2.4 Site Access

2.1.2 Proximity to Surface Waters

The main watershed of the site area is the Isles aux Morts River watershed, which has provincial monitoring stations recording watershed data. All of the deposits, which are being considered for mining, fall in this watershed shown in Figure 2.5.

The Isle aux Morts River is a Scheduled Salmon River and as such is subject to special management procedures and protection by the Newfoundland and Labrador Department of Natural Resources.

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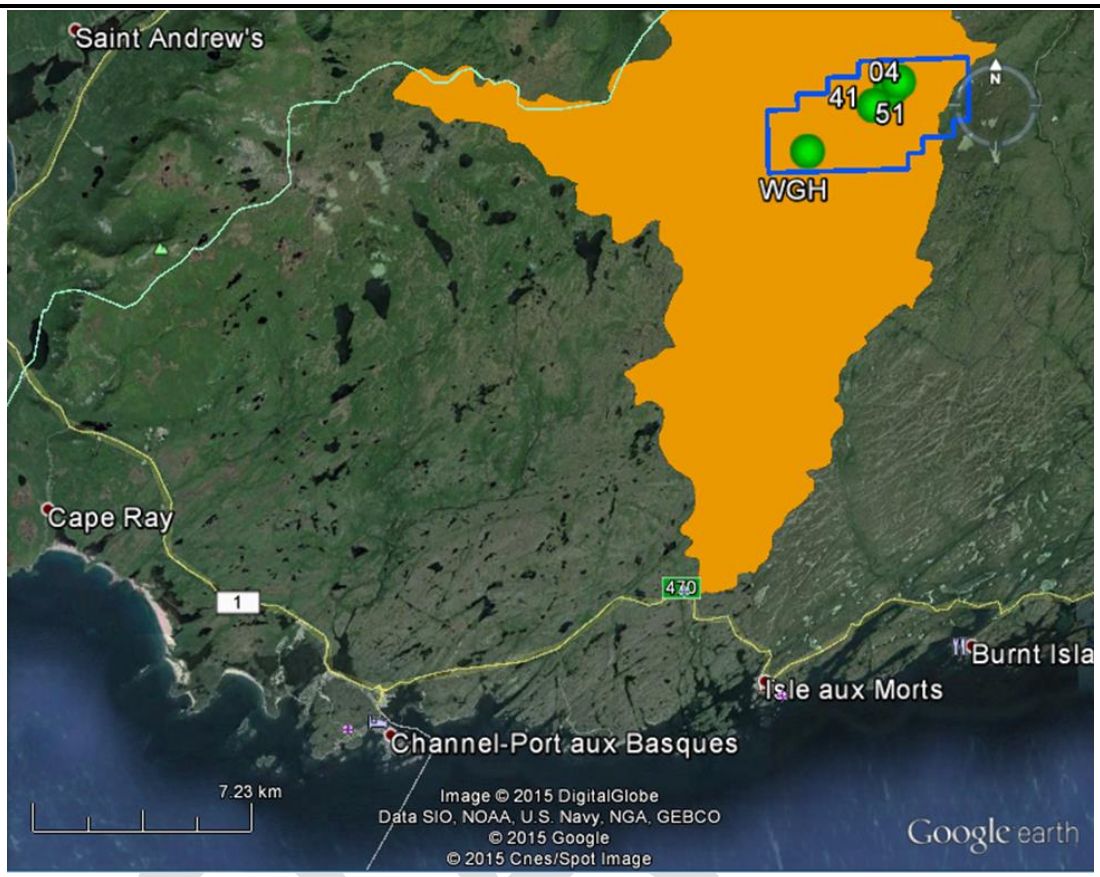

Figure 2.5 Deposits Location within Isles Aux Morts River Watershed

2.2 Alternatives to the Project

Benton Resources is actively exploring and evaluating other mineral deposit targets in the immediate area surrounding the Cape Ray deposits.

Should the PEA show that the project is not economically viable to mine, extract and process the minerals, particularly gold, the alternative is to do nothing until such time as market conditions change.

Other alternatives include continued exploration activities to further solidify resource, reserve estimates and continue with the PEA and feasibility studies.

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2.3 Land Tenure

As of December 11, 2015, Benton is the holder of 1169 claims in Newfoundland and Labrador. In the Cape Ray area, Benton holds approximately 355 claims.

Benton acquired 100% interest in the Cape Ray Property on October 3, 2014 and entered into a joint venture agreement covering a portion of the property with Nordmin Engineering on January 20, 2015. The claims in the Cape Ray area cover the deposits which are a part of the Nordmin joint venture (JV) as shown in Figure 2.6 below.

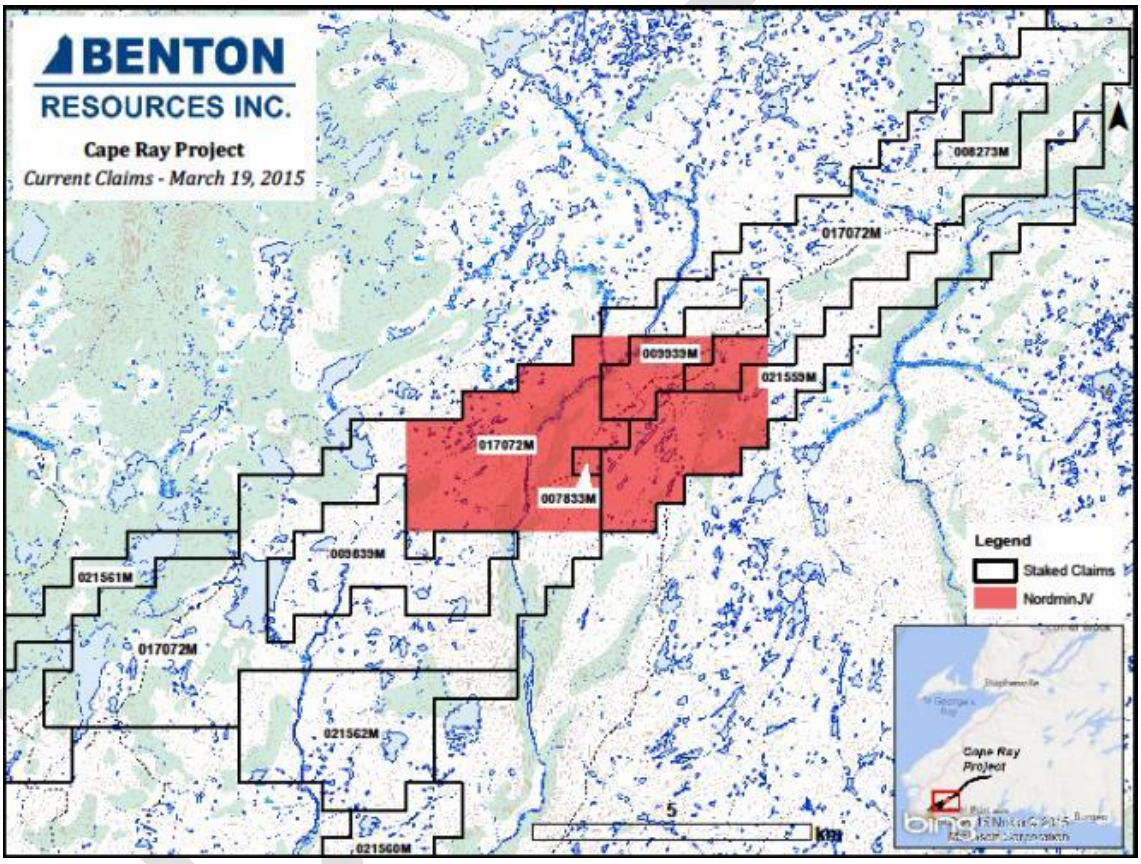

Figure 2.6 Nordmin-Benton JV Zone within Cape Ray Claims

A listing of the Cape Ray claims and their associated royalties are below in Table 2.1.

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Table 2.1 Cape Ray Claims held by Benton Resources Inc. as of December 11, 2015

Licence #	Known Deposit	# of Claims	Area (km^2)	Royalty
017072M	Windowglass Hill (WGH) and 51	183	45.70	(a) & (b)
021560M	-	14	3.50	none
020641M	-	10	2.50	none
021561M	-	16	4.00	none
021559M	-	44	10.99	none
007833M	-	1	0.25	none
021562M	-	34	8.49	none
008273M	Isle aux Morts (IaM)	7	1.75	(c)
009839M	Big Pond (BP)	26	6.49	(c)
009939M	04 and 41	12	3.00	(c)
022680M	-	8	2.00	none

The Crown holds all surface rights in the Project area. None of the property or adjacent areas are encumbered in any way. The area is not in an environmentally or archeologically sensitive zone and there are no aboriginal land claims or entitlements in this region of the province.

There has been no commercial production from the property as of the time of this report.

2.4 Mineral Resource Estimates

2.4.1 Cape Ray Fault

The Cape Ray Gold Property (CRGP) consists of electrum-sulphide mineralization that occurs in boudinaged quartz veins within an auxiliary shear zone (the “Main Shear”) of the Cape Ray Fault Zone (CRFZ). The boudinaged veins and associated mineralisation are hosted by chlorite-sericite and interlayered graphitic schists of the Windsor Point Group (WPG), with sulphides and associated electrum occurring as stringers, disseminations and locally discrete massive layers within the quartz bodies.

The 04, 41 and 51 Zones occur along a northeast-trending fault within the CRFZ system, which dips moderately (50-60°) to the southeast. These zones consist of complex tabular zones of quartz veins, fault gouge and wall rock fragments, range from several cm to a few m in width, and correlate laterally for up to 700 m along strike. In section, the 04 and 41 Zones show east-southeast to southeast plunges and locally show down-dip extension of up to 300 m (Dubé & Lauzière, 1997). The 51 Zone is not as consistently defined but both sub-horizontal and steeply plunging grade trends are present.

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Within the CRGD, the A vein typically consists of milky white breccia veins with various proportions of angular clasts of wall rock (chlorite and graphitic schist) set in a matrix of quartz, and containing up to 40% sulphides (averaging 5-10%). The vein is typically up to 2 m wide with local wider pods. Fault gouge commonly borders mineralized veins and is superimposed on already highly strained rocks. The nature of the host rocks and superimposed deformation make this mineralized zone complex and variable in terms of vein continuity, width and grade.

Underground investigations by Dolphin Resources (Arnold, 1988) within the 41 Zone noted that the A vein pinches and swells, and commonly branches out into smaller discrete veins or lenses. Similar observations were made by Wilton and Strong (1986) in a trench that exposed the A vein within the 51 Zone for over 61 m. They observed numerous quartz veins (up to 2.4 m thick and 21 m long) sub-parallel to the main fabric that show well developed pinch and swell structures. Wilton and Strong (1986) suggested that the podiform nature of the veins resulted from boudinage of a formally more continuous quartz vein. Outside of the main mineralized zone (30-50 m laterally), the A vein structure consists of either uneconomic quartz veining or fault gouge with little to no veining with traces of disseminated pyrite. Brittle deformation is superimposed on the veins as cataclastic features.

The C vein is typically located up to 30 m down-dip on the footwall of the A vein and is generally less deformed. Historical drill hole data indicate that the C vein is up to 15 m thick, and gold values are not as consistent or as high grade as those within the A vein (Dubé & Lauzière, 1997). Underground investigations of the 41 Zone showed the C vein to consist of a series of fault-fill mineralized quartz breccia intervals measuring up to 1.5 m in thickness. The transition between mineralized and barren quartz breccia veins is locally gradual, with the barren veins located in the central part of the mineralized quartz breccia. Fragments within the quartz breccia veins are typically angular and composed of graphitic schist and sericite-chlorite schist set in a matrix of hydrothermal quartz.

In the 51 Zone, the mineralized quartz is at the top of the graphitic schist unit within a gouge zone. The A vein is broken up into large lenses and breccia fragments of varying size. The graphitic schist in this zone varies from less than 15 m thick in the west to nearly 61 m thick in the east. Locally mineralized quartz veins and/or quartz stockwork intervals are found within the footwall schists. High grade mineralisation of good continuity is commonly restricted to the top of the graphitic unit (Ford, 1985).

Minerals of economic interest in the CRGP consist of varying amounts of galena, chalcopyrite, sphalerite and pyrite with associated electrum and free Au. Pyrrhotite occurs as minor inclusions in other sulphide grains and the primary iron oxide is magnetite, mainly found in wall rock fragments rather than veins. In places, deformation has recrystallized galena and chalcopyrite, shattered the pyrite and removed sphalerite. All sulphides contain complex intergrowths of euhedral pyrite crystals, and sphalerite typically contains rounded chalcopyrite inclusions. Electrum occurs as minute grains generally less than 0.02 mm in size, but up to 0.8 mm and dominantly inter-grown with pyrite, and to a lesser extent with chalcopyrite, galena and sphalerite or some combination of these sulphides. Electrum also occurs as solitary grains within the quartz veins in regions of high sulphide concentrations.

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Paragenetic features indicate that pyrite formed first followed by simultaneous deposition of the other sulphide minerals (Wilton, 1983).

Electron microprobe analyses indicate an average FeS content of 5.14% in the sphalerite. Electrum contains 15-64 mole% Ag and Au:Ag ratios range from 0.55 to 5.83 in contrast to 0.61 to 0.76 for the WGHD (Wilton, 1983). Electrum grains with the highest Au:Ag ratios are generally isolated and not in contact with the sulphides. According to Wilton (1983), wall rocks to the electrum-bearing quartz veins experienced potassic alteration with light rare earth element depletion and minor elevation in chalcophile element concentrations. On the basis of sulphide mineral intergrowth, Wilton (1983) also estimated approximately 300°C to be the temperature of vein formation and concluded that sulphur isotope ratios indicate that sulphides are of magmatic origin and that Pb isotope ratios in galena have an oceanic crust/mantle isotopic signature. Based on field observations and detailed geochemical analyses, he also concluded that the electrum sulphide-bearing quartz veins were deposited by hydrothermal fluids evolved as a vapour phase from the Windowglass Hill Granite.

2.4.2 Estimated Mineral Resources

Updated mineral resource estimates were completed for the Cape Ray 04, 41, 51, and Windowglass Hill gold-silver deposits belonging to Benton Resources Inc. With the exception of the Windowglass Hill deposit for which Inverse Distance was used, estimation was done using Multiple Indicator Kriging.

2.4.2.1 Cape Ray 04 Deposit

Resources that potentially could be mined by underground methods and using a 4.0 grams per tonne (g/t) cut-off, consist of a total of 0.46 million tonnes at a grade of 6.97 g/t Au, 16.93 g/t Ag, 0.11% Cu, 0.59% Pb and 0.54% Zn of Indicated Resources and 0.08 million tonnes at a grade of 6.41 g/t Au, 12.11 g/t Ag, 0.03% Cu, 0.24% Pb and 0.16% Zn of Inferred Resources.

Resources that potentially could be mined by open pit methods and using a 1.0 g/t cut-off, consist of a total of 1.58 million tonnes at a grade of 3.45 g/t Au, 11.07 g/t Ag, 0.06% Cu, 0.34% Pb and 0.31% Zn of Indicated Resources and 1.10 million tonnes at a grade of 2.29 g/t Au, 4.00 g/t Ag, 0.07% Cu, 0.42% Pb and 0.35% Zn of Inferred Resources.

All of the resources should be upgradable through gravity separation and possibly flotation. These resources are blocks above cut-off and have had no mineability criteria applied to them.

There is moderate confidence in the lateral continuity of the mineralisation and so those resources classified as Indicated and/or Measured resources can be used for a pre-feasibility or feasibility mining study.

Table 2.2 presents tonnes and grade for each Resource Classification using a range Au cut-offs for the Cape Ray 04 deposit.

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Table 2.2 Classification of In-Situ Resources for the Cape Ray 04 Deposit, using a range of Au cut-offs

Cut-off	Classification	TONNES	AU_GPT	AG_GPT	CU%	PB%	ZN%
0.5	Measured Resources						
0.5	Indicated Resources	2.23	2.66	9.57	0.06	0.28	0.25
0.5	Meas. & Ind. Resources	2.23	2.66	9.57	0.06	0.28	0.25
0.5	Inferred Resources	1.40	1.96	3.71	0.03	0.21	0.14
1.0	Measured Resources						
1.0	Indicated Resources	1.58	3.45	11.07	0.06	0.34	0.31
1.0	Meas. & Ind. Resources	1.58	3.45	11.07	0.06	0.34	0.31
1.0	Inferred Resources	1.10	2.29	4.00	0.03	0.24	0.16
1.5	Measured Resources						
1.5	Indicated Resources	1.22	4.11	12.12	0.07	0.39	0.35
1.5	Meas. & Ind. Resources	1.22	4.11	12.12	0.07	0.39	0.35
1.5	Inferred Resources	0.76	2.74	4.61	0.03	0.29	0.19
2.0	Measured Resources						
2.0	Indicated Resources	0.93	4.85	13.71	0.08	0.45	0.41
2.0	Meas. & Ind. Resources	0.93	4.85	13.71	0.08	0.45	0.41
2.0	Inferred Resources	0.49	3.30	5.47	0.03	0.33	0.22
2.5	Measured Resources						
2.5	Indicated Resources	0.73	5.58	15.03	0.09	0.50	0.46
2.5	Meas. & Ind. Resources	0.73	5.58	15.03	0.09	0.50	0.46
2.5	Inferred Resources	0.30	3.94	6.78	0.04	0.37	0.26
3.0	Measured Resources						
3.0	Indicated Resources	0.61	6.15	15.80	0.10	0.54	0.49
3.0	Meas. & Ind. Resources	0.61	6.15	15.80	0.10	0.54	0.49
3.0	Inferred Resources	0.17	4.90	8.98	0.05	0.40	0.31
3.5	Measured Resources						
3.5	Indicated Resources	0.53	6.58	16.34	0.10	0.57	0.52
3.5	Meas. & Ind. Resources	0.53	6.58	16.34	0.10	0.57	0.52
3.5	Inferred Resources	0.12	5.69	10.70	0.06	0.41	0.32
4.0	Measured Resources						
4.0	Indicated Resources	0.46	6.97	16.93	0.11	0.59	0.54
4.0	Meas. & Ind. Resources	0.46	6.97	16.93	0.11	0.59	0.54
4.0	Inferred Resources	0.08	6.41	12.11	0.07	0.42	0.35
4.5	Measured Resources						
4.5	Indicated Resources	0.40	7.43	17.51	0.11	0.61	0.57
4.5	Meas. & Ind. Resources	0.40	7.43	17.51	0.11	0.61	0.57
4.5	Inferred Resources	0.06	7.13	13.59	0.08	0.44	0.38

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The mining and processing methods chosen would determine what proportion could be converted to reserves, as these do not take into consideration mineability and dilution.

While resource estimation has been done for Au, Ag, Cu, Pb and Zn the poly-metallic nature of the mineralisation may require that a Net Smelter Returns (NSR) evaluation be done to properly evaluate the economics of recovering any of the identified resources.

2.4.2.2 Cape Ray 41 Deposit

Resources that potentially could be mined by underground methods and using a 4.0 grams per tonne (g/t) cut-off, consist of a total of 0.13 million tonnes (Mt) at a grade of 6.34 g/t Au, 20.05 g/t Ag, 0.17% Cu, 0.56% Pb and 0.32% Zn of Indicated Resources and 0.04 Mt at a grade of 5.83 g/t Au, 15.02 g/t Ag, 0.13% Cu, 0.56% Pb and 0.38% Zn of Inferred Resources.

Resources that potentially could be mined by open pit methods and using a 1.0 g/t cut-off, consist of a total of 0.60 Mt at a grade of 2.85 g/t Au, 9.58 g/t Ag, 0.08% Cu, 0.27% Pb and 0.16% Zn of Indicated Resources and 0.13 Mt at a grade of 3.18 g/t Au, 9.49 g/t Ag, 0.07% Cu, 0.32% Pb and 0.22% Zn of Inferred Resources.

All of the resources should be upgradable through gravity separation and possibly flotation. These resources are blocks above cut-off and have had no mineability criteria applied to them.

There is moderate confidence in the lateral continuity of the mineralisation and those resources classified as Indicated and/or Measured resources can be used for a pre-feasibility or feasibility mining study.

The mining and processing methods chosen would determine what proportion could be converted to reserves, as these do not take into consideration mineability and dilution.

While resource estimation has been done for Au, Ag, Cu, Pb and Zn the poly-metallic nature of the mineralisation may require that a Net Smelter Returns (NSR) evaluation be done to properly evaluate the economics of recovering any of the identified resources.

Table 2.3 presents tonnes and grade for each Resource Classification using a range Au cut-offs for the Cape Ray 41 deposit.

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Table 2.3 Classification of In-Situ Resources for the Cape Ray 41 Deposit, using a range of Au cut-offs

Cut-off	Classification	TONNES	AU_GPT	AG_GPT	CU%	PB%	ZN%
0.5	Measured Resources						
0.5	Indicated Resources	1.00	2.00	6.88	0.06	0.19	0.12
0.5	Meas. & Ind. Resources	1.00	2.00	6.88	0.06	0.19	0.12
0.5	Inferred Resources	0.27	1.92	6.02	0.06	0.19	0.13
1.0	Measured Resources						
1.0	Indicated Resources	0.60	2.85	9.58	0.08	0.27	0.16
1.0	Meas. & Ind. Resources	0.60	2.85	9.58	0.08	0.27	0.16
1.0	Inferred Resources	0.13	3.18	9.49	0.07	0.32	0.22
1.5	Measured Resources						
1.5	Indicated Resources	0.40	3.68	12.20	0.10	0.34	0.20
1.5	Meas. & Ind. Resources	0.40	3.68	12.20	0.10	0.34	0.20
1.5	Inferred Resources	0.10	3.81	11.02	0.09	0.38	0.26
2.0	Measured Resources						
2.0	Indicated Resources	0.30	4.29	13.98	0.12	0.39	0.23
2.0	Meas. & Ind. Resources	0.30	4.29	13.98	0.12	0.39	0.23
2.0	Inferred Resources	0.08	4.35	12.07	0.10	0.43	0.29
2.5	Measured Resources						
2.5	Indicated Resources	0.24	4.84	15.50	0.13	0.44	0.25
2.5	Meas. & Ind. Resources	0.24	4.84	15.50	0.13	0.44	0.25
2.5	Inferred Resources	0.07	4.74	12.89	0.11	0.47	0.31
3.0	Measured Resources						
3.0	Indicated Resources	0.19	5.35	17.05	0.14	0.48	0.28
3.0	Meas. & Ind. Resources	0.19	5.35	17.05	0.14	0.48	0.28
3.0	Inferred Resources	0.06	5.14	13.70	0.12	0.51	0.34
3.5	Measured Resources						
3.5	Indicated Resources	0.16	5.84	18.52	0.16	0.52	0.30
3.5	Meas. & Ind. Resources	0.16	5.84	18.52	0.16	0.52	0.30
3.5	Inferred Resources	0.05	5.53	14.46	0.13	0.54	0.36
4.0	Measured Resources						
4.0	Indicated Resources	0.13	6.34	20.05	0.17	0.56	0.32
4.0	Meas. & Ind. Resources	0.13	6.34	20.05	0.17	0.56	0.32
4.0	Inferred Resources	0.04	5.83	15.02	0.13	0.56	0.38
4.5	Measured Resources						
4.5	Indicated Resources	0.10	6.91	21.80	0.19	0.61	0.35
4.5	Meas. & Ind. Resources	0.10	6.91	21.80	0.19	0.61	0.35
4.5	Inferred Resources	0.03	6.39	16.51	0.15	0.60	0.38

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2.4.2.3 Cape Ray 51 Deposit

Resources that potentially could be mined by underground methods and using a 4.0 g/t cut-off, consist of a total of 0.40 Mt at a grade of 8.39 g/t Au, 16.34 g/t Ag, 0.04% Cu, 0.14% Pb and 0.07% Zn of Inferred Resources.

Resources that potentially could be mined by open pit methods and using a 1.0 g/t cut-off, consist of a total of 0.88 Mt at a grade of 5.08 g/t Au, 11.82 g/t Ag, 0.04% Cu, 0.12% Pb and 0.06% Zn of Inferred Resources.

All of the resources should be upgradable through gravity separation and possibly flotation. These resources are blocks above cut-off and have had no mineability criteria applied to them.

There is a low confidence in the lateral continuity of the mineralisation and so these resources cannot be used for a pre-feasibility or feasibility mining study.

Table 2.4 presents tonnes and grade for each Resource Classification using a range Au cut-offs for the Cape Ray 51 deposit.

At this time, there is too low a confidence in these resources that none can be converted to reserves.

While resource estimation has been done for Au, Ag, Cu, Pb and Zn the poly-metallic nature of the mineralisation may require that a Net Smelter Returns (NSR) evaluation be done to properly evaluate the economics of recovering any of the identified resources.

Table 2.4 Classification of In-Situ Resources for the Cape Ray 51 Deposit, using a range of Au cut-offs

`	Classification	TONNES	AU_GPT	AG_GPT	CU%	PB%	ZN%
0.5	Inferred Resources	1.01	4.52	10.82	0.04	0.11	0.06
1	Inferred Resources	0.88	5.08	11.82	0.04	0.12	0.06
1.5	Inferred Resources	0.78	5.57	12.64	0.04	0.12	0.06
2	Inferred Resources	0.69	6.07	13.42	0.04	0.12	0.06
2.5	Inferred Resources	0.61	6.61	14.13	0.04	0.12	0.06
3	Inferred Resources	0.53	7.16	14.86	0.04	0.13	0.07
3.5	Inferred Resources	0.46	7.76	15.57	0.04	0.13	0.07
4	Inferred Resources	0.40	8.39	16.34	0.04	0.14	0.07
4.5	Inferred Resources	0.34	9.02	17.07	0.04	0.15	0.08

2.4.2.4 Cape Ray Windowglass Hill Deposit

Resources that potentially could be mined by underground methods and using a 4.0 g/t cut-off, consist of a total of 0.07 Mt at a grade of 5.63 g/t Au and 22.22 g/t Ag of Inferred Resources.

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Resources that potentially could be mined by open pit methods and using a 1.0 g/t cut-off, consist of a total of 1.80 Mt at a grade of 1.38 g/t Au and 8.49 g/t Ag of Inferred Resources.

All of the resources should be upgradable through gravity separation and possibly flotation. These resources are blocks above cut-off and have had no mineability criteria applied to them.

Table 2.5 presents tonnes and grade for each Resource Classification using a range Au cut-offs for the Cape Ray WGH deposit.

Table 2.5 Classification of In-Situ Resources for the Cape Ray Windowglass Hill Deposit, using a range of Au cut-offs

Cut-off	Classification	TONNES	AU_GPT	AG_GPT
0.5	Inferred Resources	1.80	1.38	8.49
1	Inferred Resources	0.88	2.09	10.14
1.5	Inferred Resources	0.50	2.76	12.06
2.0	Inferred Resources	0.31	3.41	14.08
2.5	Inferred Resources	0.21	3.98	16.09
3.0	Inferred Resources	0.14	4.51	17.97
3.5	Inferred Resources	0.10	5.05	19.91
4	Inferred Resources	0.07	5.63	22.22
4.5	Inferred Resources	0.05	6.14	24.05

2.5 Mining Methods and Production

Current evaluations and exploration targets focus on developing the Project by open pit and underground mining methods. Current conceptual studies target a mill production rate between 500 – 600 tonnes per day (t/d), with the goal of liberating gold and silver.

The relative location and geometry of the 41 and WGH deposit to surface warrant an open pit mine scenario. The bottom of the 41 zone below the pit would be mine using a longhole stope method with cemented and un-cemented rock fill.

The 51 deposit proposed plan incorporates a small surface trench with the remainder of the deposit mined underground using a longhole stope method with cemented and un-cemented rock fill. Due to the geotechnical constraints and dips of the 04 deposit two mining methods are considered:

- In the shallow dipping area (45^0) a cut and fill drift method is proposed; and,
- In the steeply dipping area (60^0) sub levels shrink (SLS) technique is proposed. The SLS method applies to only 7% of the 04 deposit's resources.

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Each underground deposit would be accessed by a ramp from surface, with ore transported to surface in underground haul trucks.

Operations for the Cape Ray project is planned to have combined open pit and underground mining. Each deposit will be campaigned separately with use of contractors. The initial estimated mill feed will be 502,902 tonnes from 41 Deposit open pit operations. The underground mining operation at the 04 Deposit will produce 479,299 tonnes.

Once the 41 Deposit is completed, there would be a small underground resource below the pit containing the remaining potentially economic ore. The second open pit operation will produce 328,288 tonnes from the Windowglass Hill deposit. The 51 underground deposit will commence after the 04 Deposit is completed and will produce 347,144 tonnes. Section 16 includes a schedule of the mined and processed tonnes.

The process plant includes conventional crushing, grinding, gravity, and whole ore cyanide leach. A gold and silver dore would be produced on site. Process reagents would be removed from the plant tailings prior to placement in a tailings management facility.

2.5.1 Overall Project Development and Production Schedule

The proposed Project schedule would begin with the open pit mining of the 41 deposit. The 41 open pit would take approximately 2 years to complete and generate approximately 500,000 tonnes of mill feed and 6.4 Mt of waste that would be made available for underground backfill. The 41 pit would supply initial feed to the mill and surface stockpile. The 04 underground deposit ramp would start shortly after mill feed from the 41 open pit is established. The 04 underground capital development would take one year to complete with production from the 04 SLS and cut & fill beginning in year 2. Production from the 04 underground would take 2.5 years producing approximately 480,000 tonnes of mill feed.

Once the 41 open pit is complete, towards the end of year 2, the 41 pit crew and equipment would move to the WGH deposit. The WGH open pit would take approximately 3 years to mine producing approximately 325,000 tonnes of mill feed and generating 1.9 MT of waste rock. The WGH open pit mining would be complete early in year 6 and the contractor pit crews and equipment would demobilize at this time.

With the 04 underground deposit mined out in year 4, the underground crews and equipment would move to the small area under the 41 open pit. Once the 41 underground development is completed, the crews and equipment would move to the 51 deposit. The 41 underground would start production and generate mill feed in year 5. The 51 underground deposit would be complete in year 6. The 51 and 41 underground deposit would generate approximately 350,000 tonnes and 45,000 tonnes of mill feed respectively over a 2 year period. A 6 year life of mine is envisaged.

The proposed plan is to operate the open pits for 6 months of the year, from May to November producing approximately 1,500 t/d of mill feed with the surplus stockpiled by the mill. The

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annual open pit production is anticipated to be 285,000 tonnes per year.

The underground deposits would be mined year round with an anticipated production rate of 600 t/d for an annual production rate of 174,000 tonnes.

The total feed to the mill over the 6 year mine life would be 1.7 Mt and would be processed by the mill at a rate of 850 t/d or 285,000 tonnes per year (see Table 2.6).

Table 2.6 Production schedule (Potential Mineable Resources, in thousands)

Production Schedule	Yr. -2	Yr. -1	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6	Recovered Diluted Tonnes Total	Au Avg (g/t)	Ag Avg (g/t)
Pit 41	-	-	288	215	-	-	-	-	503	3.12	10.31
U.G 04	-	-	-	33	227	219	-	-	479	5.99	14.07
Windowglass	-	-	-	10	59	90	134	35	328	2.24	2.68
U.G. 51	-	-	-	-	-	-	128	219	347	7.29	14.21
Other (41 U.G. / 51 Trench)	-	-	-	-	-	-	44	-	44	6.89	5.24
Total	**-**	**-**	**288**	**258**	**286**	**309**	**306**	**254**	**1,701**		

2.5.1.1 Pit Conceptual Plans

The 41, WGH and 51 trenches would be mined by open pit. Based on the limited geotechnical data available the pit walls would be at a maximum of 48 degrees. The 41 deposit is less than 1km from the proposed mill site and would be mined first for mill feed. The 51 trench and the WGH pit would follow the 41 pit. Approximately 3.5km of haul road would be constructed to access the pits. A free span steel bridge would also be required to cross the Isle Aux Morts River to access the WGH pit.

Figure 2.7 shows the envisaged mill site and pit locations. The proposed open pits are conventional operations that use demonstrated technology and equipment for drilling, blasting, loading and haulage. A mine contractor would supply the needed labour and equipment for the open pit operation. The pit contractor would also manage and supply all explosives and blasting accessories. The pit contract crews and equipment would also construct the haul road.

Due to the extreme snowfall, in this area it is envisaged that open pit mining operations would be limited to 6 months of the year. The anticipated open pit production rate would be in the 1,500 t/d range with mineralized ore transported to the mill and surface stockpile. During the winter months, mill feed would come from underground and the surface stockpile of pit ore.

Conceptual pit and Rock Storage Facility (RSF) layouts were created for each deposit. It should be noted that these layouts are based on high-level design studies and are subject to change when more data becomes available.

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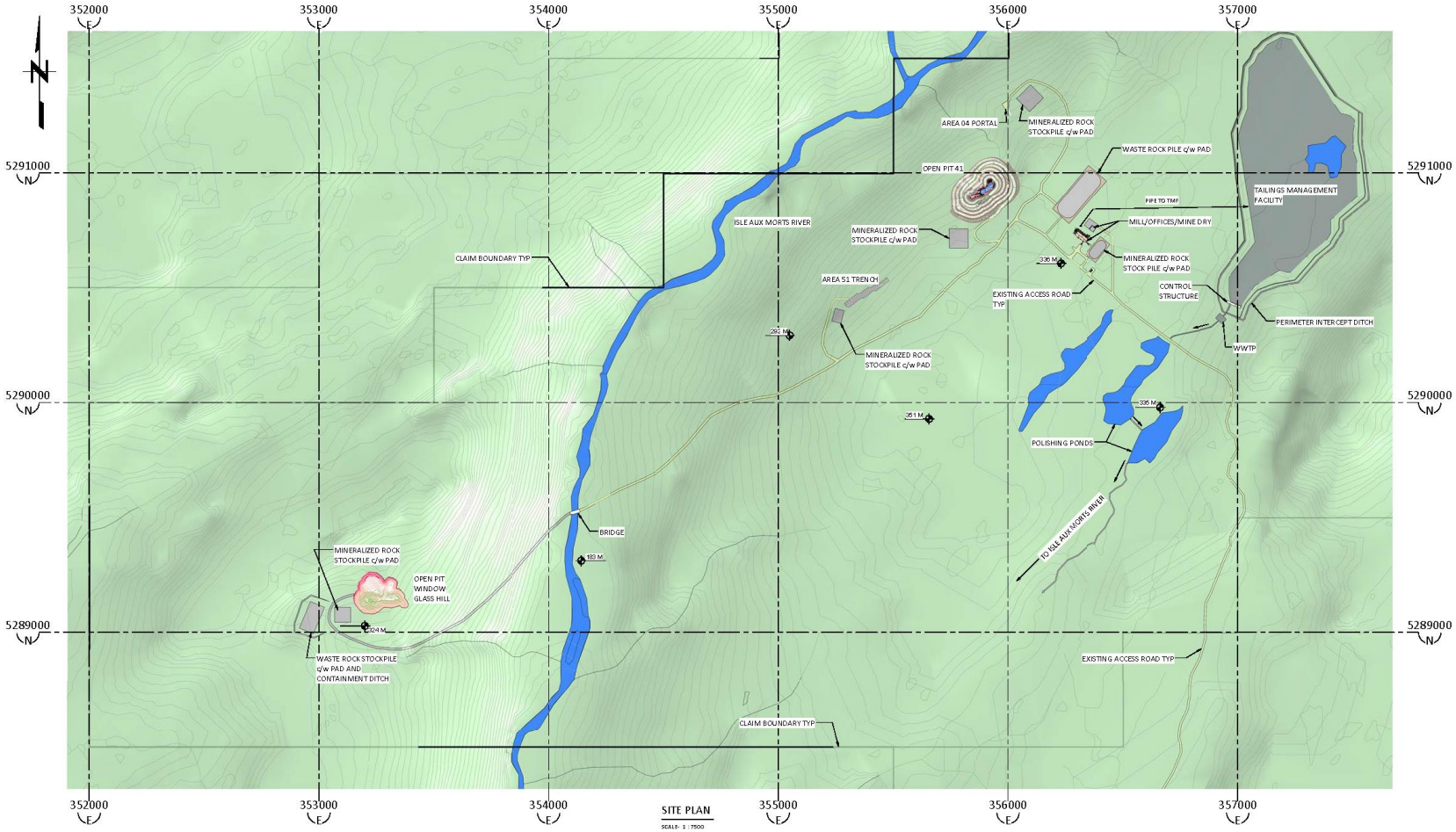

Figure 2.7 04, 41, 51 and WGH Conceptual Site Layouts

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2.5.1.2 Mine Production Schedule

Before production can begin, site preparation must be completed. This includes improving the current access road, building mill and power generation facilities and expanding on administrative amenities. During this time, pre stripping for the first deposit will take place, as well as construction of the Tailings Management Facility (TMF). It is estimated that preproduction construction would take approximately 1.6 years.

Pre-production mine development and construction for underground requires approximately 1.6 years that would be performed by a mining contractor. Initially, one crew would drive the main ramp for the 04 deposit from surface with the second crew starting as soon as the first access level is reached. The two development crews would drive the ramp system, SLS haulage and the cut and fill drifts. The 51 underground would follow in sequence as labour and equipment could be released from the 04 deposit. The anticipated life of mine for underground mining is 4 years operating 350 days per year at the following mining rates.

Table 2.7 Expected Production Rates

Single Headings	**Rate**
Ramp and lateral development	5.2m/d
Multiple Headings	
Cut and Fill development (2 crews D/S, 2 crews N/S)	14.4m/d (Production)
Cut and Fill backfilling	600t/d

The 41 underground potential mineable resources would be mined once the 41 open pit is complete. The 41 deposit would be mined in conjunction with the 51 underground deposit. The 41 underground is only 39,000 tonnes of resource.

It is anticipated that each deposit would be developed and mined individually with a maximum of two pits being mined at once. However, to accommodate the processing requirements blending of feed from different pits may be required. Stockpiling of feed materials would be minimal.

Due to the proximity to the suggested mill site, the main deposits (04, 41, & 51) will be developed first as they are all less than 1 km from the mill site. It should be noted that haul road construction for WGH would need a longer time frame, due to the distance from the milling facilities.

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3. Project Phases

Development of the Project falls into three major phases,

1. Construction and Development
2. Production and Operation Maintenance
3. Closure and Reclamation

Construction consists of pre- production development of the Project. The first target will be to improve the current access road from Highway 470 to site, to allow for increased traffic. In addition, mill and power generation facilities will have to be constructed and administration buildings will require expansion. During this time site clearing of vegetation and overburden will take place for the initial pit.

Production activities include extracting ore from the pit and hauling it to the mill to be processed. Waste rock will also be hauled from the pits, and placed in the pit side RSF. As each pit nears completion, prestripping and road construction for the next scheduled pit will take place.

Reclamation activities will follow the mining sequence. Once environmental studies are completed, exact requirements and methods required for reclamation will be determined, but in general, each RSF with either be reclaimed by sloping and seeding, or by rehandling waste rock back into the pit.

Before closure, the mill, administration and power generation site will have to be reclaimed and the TMF prepared for care and maintenance.

3.1 Construction and Development

As outlined in Section 1, the first project phase 2 would be construction development to prepare the site for production.

The 22 km access road from Highway 470 to site will be upgraded to facilitate transport passage. The road will be widened, leveled where grades exceed 10% and capped. Improved access will allow staff, goods and materials to be transported efficiently and safely. Road improvements will be the first priority. The road, in its current state, would be a costly bottleneck for other construction activities.

Temporary mobile trailers would be used for the office, shop, warehouse and dry facilities. The trailers will be brought to site by truck and assembled in place. There will be no camp facilities on site as the work force would commute from local towns.

Other site services include a power generation plant, with its associate fuel farm and a sanitation system. The power generation facility will require a coverall building with concrete foundation.

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The milling complex will consist of a steel frame building with a concreate foundation and it will house the assay lab.

It is estimated that the mill complex and administrative buildings will occupy approximately 450 m^2.

A TMF will be required to impound rejects from the process stream. As described in Section 3.2.3, previous studies for design are being reviewed and will be updated for final process design and production rate. The impoundment will be a rock fill dam, with Non Potentially Acid Generating (NPAG) construction material coming from the pits.

As mentioned previously, overburden clearing would be performed as each pit is developed. To the extent possible overburden amounts will be stockpiled for use during reclamation to restore disturbed areas. Details on overburden handling can be found in Section 3.2.1.2

The site complex would have one week of provisions for workers in the event of a road closure.

3.1.1 Mine Infrastructure

Various infrastructure would be required to bring the Project into production.

Currently there is no permanent infrastructure at the Cape Ray Property. There is evidence of previous exploration work including drilling, trenching, and bulk sampling via a portal and drift at the 41 Deposit. Electrical and telephone lines do not extend to the Cape Ray Property and the nearest high voltage electrical substation is located about 25 km to the southwest in the community of Channel-Port aux Basques.

Presently mobile portable camp trailers on the Cape Ray Property require the use of gas generators and propane for heat and cooking. Fuel is brought in portable tanks via the access road since the quantities used are small. To support activity on the property a sewage system and water supply system is required along with the appropriate certificate of approvals.

All areas covered by the PEA occur on crown lands owned by the Province of NLL. The development of any future mining operations in this area must follow provincial permitting requirements.

The project area is surrounded by an abundance of barren land that is not populated except for a few seasonal cottages within the claim boundary. Considering the local economy, and the ideal location, it is anticipated that the NLL government would be favorable to the development of a new mining project, provided all of the environmental, socio-economic, and permitting issues were addressed properly.

The abundance of surface water resources from lakes on the Cape Ray Property is a positive factor for future development, as is the presence of deep water wharf facilities and commercial shipping infrastructure at nearby Channel - Port aux Basques (<50 km driving distance) (Ténière & Hilchey, 2012).

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The main infrastructure required for the Cape Ray project includes:

- Admin buildings and dry
- Processing Plant (Mill)
- Tailing Management Facility (TMF) with Treatment plant and CN Destruction plant.
- Road and culvert upgrades
- Free span bridge, C200 bridge x 5.25m width, c/w epoxy aggregate steel decks.
- Electrical and Communications systems
- Support Services
- Waste and Ore pad

3.1.2 Processing Plant (Mill)

The Mill would process ore at a rate of 850 tonne per day (t/d) with an anticipated annual capacity of 285,000 tonnes. During the winter months underground would supply feed to the mill with supplemental feed drawn from the stockpile, outside the mill. The mill would house the assay lab, dry, office, first aid station and a lunch room.

Run of mine PMR would be delivered to the mill feed stockpile at a rate of 1000 t/d for six to seven months of the year from the open pit while underground production would continue throughout the year. The proposed processing rate is 36 t/h or 850 t/d with the mill operating at 92 % availability 365 days per year. ROM (Run of Mine), at 203.2 mm, is first reduced to –25.4mm in a single jaw crusher. Further size reduction to 12.7mm is achieved in a series of two gyratory cone crushers operating in closed circuit with a double deck screen. The crushed product is stockpiled ahead of the grinding circuit and is then fed to grinding via a primary grinding mill feed conveyor.

Size reduction from – 10 mm to 80 % passing 100 microns is achieved in the grinding circuit. Crushed product is fed to two parallel primary ball mills at 36 t/h. Primary mill discharge is directed by a screen and the screen underflow reports to a pair of gravity concentrators for recovery of any coarse free gold. The screen oversize reports back to the primary mill feed. The gravity concentrator tailing reports to the secondary grinding circuit for further size reduction before reporting to the CIL circuit thickener.

Prior to cyanide leaching of the contained gold in the PMR, the pulp is thickened to 45 % solids by weight using the CIL pre-leach thickener. The thickened pulp is advanced in the CIL circuit at the full process flow rate of 36 t/h solids. In the CIL circuit, gold is recovered from the solids using whole cyanidation and the gold is transferred to the surface of the activated carbon. The activated carbon is separated from the main pulp flow by a combination of pumping and screening. The loaded carbon is washed with hydrochloric acid solution to remove the carbonates. Gold is then removed from the loaded carbon using pressure stripping. The gold is transferred from the surface of the loaded carbon to solution and from there is recovered to marketable form using the electro winning process.

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The stripped carbon is regenerated in a reactivation kiln before being reintroduced to the process. Fine carbon is constantly eliminated (and recovered) from the process to avoid gold loss, with fresh carbon being continuously added to the process.

The cyanide contained in the tailings from the CIL circuit is eliminated in a cyanide destruction tank with SO_2-air process. Once the cyanide is destroyed, the tailings are transported to the tailings pond for disposal.

3.1.3 Tailings Management Facility (TMF)

The TMF and effluent treatment plant will be designed to withstand a 100 year rain or snow event. The TMF would cover an area of approximately 3.8 ha and provides adequate storage capacity for the approximately 1.2M m^3 of tailings anticipated to be produced over the projected mine life. The average rate of deposition of tails is 285k t/yr. at a density of 1.5 t/m^3. The TMF construction of the dams and buttresses will utilize mine waste rock or quarried rock from a nearby location. Tailings would be deposited from spigots located along the ridge of the TMF. Process water would be draw from the TMF area. If required to control water levels in the TMF, effluent water would be treated and discharged to the polishing pond, refer Figure 2.7 for the TMF location.

3.1.4 Site Access Road and Haulage Road Network

The existing 22km road to the Project site would require upgrades to enable site construction and year round mill access. This includes widening some of the road, replacement of some of the existing culverts, and cutting and filling in some of the steeper sections of road.

The final 22km road would be a single lane gravel road with pullovers. The road would be maintained to supply year round access to the mill site. Based on the heavy snowfall in this area open pit mining would only occur from Mid-May to Early November. The haul trucks would transport ore from the open pit to the mill site pad at an approximate rate of 1,500 t/d or 285,000 tonnes per year. Figure 3.1 shows the location of the existing road into the Cape Ray site.

Additional haulage networks will need to be established between deposits, their associated RSF and the mill. The 04, 41 and 51 deposits are approximately 1 km away from the proposed mill site and the WGH deposit is approximately 3.5 km away, located across the Isle Aux Morts River

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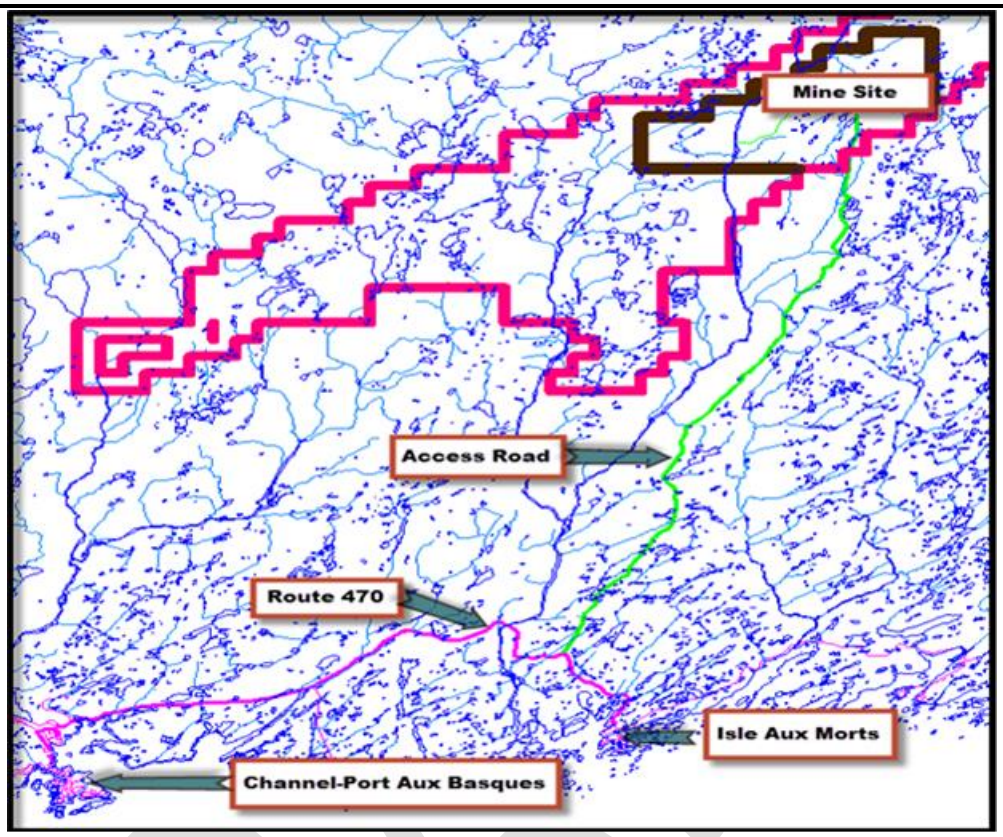

Figure 3.1 Cape Ray Access Road off Route 470 to the proposed Mine Site.

Haul roads are used by the mine haul trucks to move excavated rock from one place to another. Usually the roads are used to move feed material from pits to the mill. Haul roads will be made with mine waste rock and capped with crushed waste rock to provide a smooth driving surface. Haul roads will be large enough to accommodate haul traffic in both directions with sufficient berm heights as required by the *Mineral Act.* The exact road width is dependent on the size of haul truck working in the mine.

For the main deposit (04, 41, & 51), no water crossings are required for the haul roads. For the WGH deposit, a haul road water crossing is required across Isle aux Morts River.

Haul roads around the mine will need to be maintained to ensure safe operation of the equipment driving on them. A grader, or similar machine, could be used to resurface the driving surface as required. Dust suppression on dry windy days would be done using water as required. Conceptual haul roads for the site are shown below in Figure 3.2 and amount to approximately 5.1 km of haul road.

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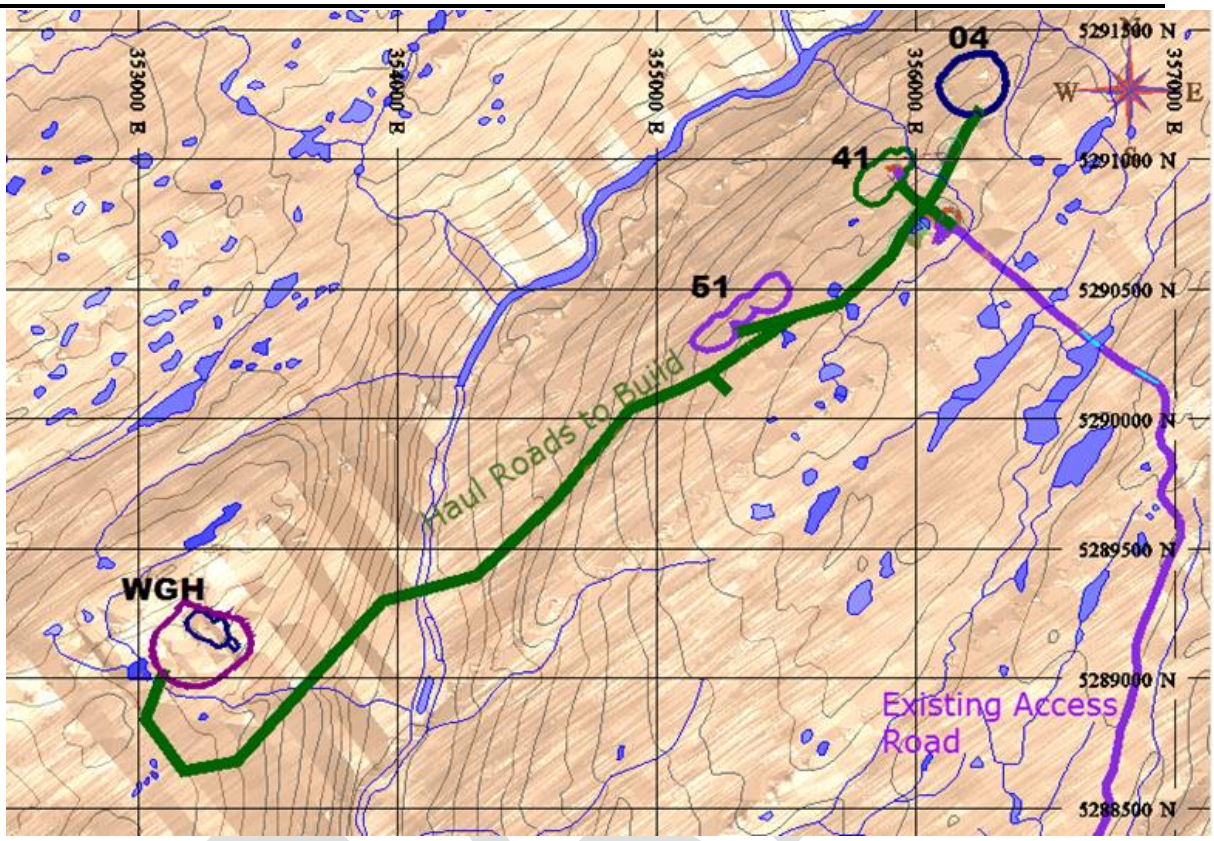

Figure 3.2 Conceptual Haul Road Configuration

3.1.5 Administrative and Dry Buildings

The mine site would have an office, first aid station, security, mine rescue room, mine dry and process plant. A parking area for employee vehicles and service vehicles would be located near the office.

A warehouse and cold storage would be attached to the process plant. A 20m x 30m dome style shop would service the open pit and underground mine equipment.

An explosive and detonator storage would be located a safe distance from buildings and mine operations.

3.1.6 Power Generation and Communications

Access to the Newfoundland Power electrical transmission grid is available along Route 470 near Isle aux Morts, and the installation of a three-phase 66kV electrical t transformer station at a transmission line tap would need to be installed. A medium voltage 13.8 kV overhead power line to the proposed 5MW substation at the mine site would supply the needed power for the milling and mining operations. A 1MW generator will supply emergency power to the site during a power outage.

Communication lines would be run in conjunction with the electrical pole line to the mine site. A radio system would be installed to establish mine site surface and underground communication.

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3.1.7 Rock Storage Facilities (RSF)

Each deposit location will have a near pit RSF, where waste rock is placed after is extraction.

3.1.8 Collection Ponds

Hydrology and Hydrogeological studies will need to be done to determine the size and if collection ponds are required for the pits. If required, these ponds will be located near the pit to reduce pumping efforts.

3.1.9 Associated Project Infrastructure

3.1.9.1 Fuel Supply and Storage

Propane storage tanks of a suitable size would be located close to the area it serves. Propane units would be used for mine and building heat and hot water.

A 20,000 L double wall above ground fuel tanks would store and dispense fuel as required. The pit haul trucks would fuel at the fuel storage site along with underground haul trucks. A service fuel truck would also deliver fuel to underground and open pit drill equipment.

3.1.9.2 Domestic Sewage

Grey water will generally be segregated and directed to the TMF. Black water will be treated in a certified turn-key sewage treatment system (i.e. Waterloo Biofilter, Ecoflo system, Septic tank and field bed) and then this treated system will be directed to the TMF if necessary.

3.1.9.3 Process and Potable Water

Process water in the mill and water accumulating in the TMF would be recirculated back into the mill process water supply system, thereby minimizing the amount of fresh water pumped from surface water sources.

An insulated pump house would draw fresh water from a groundwater source at a volume of 1,150 m^3 per day (800 L/min) to distribute as process make up water to the mill and to supply raw water for treatment to serve as potable water.

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3.2 Production and Operation Maintenance

3.2.1 Open Pit

Typical open pit drilling and blasting techniques will be used to break the rock mass and allow movement of the rock materials. The loading and hauling equipment will be diesel hydraulic loaders, excavators or shovels with trucks. Equipment will be maintained as required in the sprung building on site.

Waste and feed material will be separated at the dig face by the loader. Waste material will be moved to pit side RSFs, and feed will be hauled to the mill for process

Small sized feed stockpiles may be required for blending purposes. If required, the stockpile would be located near the primary crusher (mill building).

There is currently a 3,000 tonne feed stockpile on surface near the 41 deposit. During operation, this stockpile will be processed.

3.2.1.1 Waste Rock Storage

Waste rock will be stockpiled near the pit it was extracted from. If there is potentially acid generating material, it will be handled appropriately to reduce the chance for acid to form. This includes engineered NPAG pads for stockpiles, collection and treatment of run-off water and rehandling material back into the pit or other long-term solutions.

3.2.1.2 Overburden Handling

Before overburden removal takes place, the site must be cleared of any brush, shrubs, trees or foliage. Any trees will be cut, skidded and piled and, if salvageable, sold. Non-saleable items may be disposed of by chipping, piling or burning. Trees are expected to be minimal in the tundra environment of this project. Any large stumps or roots will be removed with a bulldozer or other machinery. When possible, stumps and roots will be stockpiled and used as biomass to restore disturbed areas.

To avoid contamination of the rock products, overburden must be removed before rock excavation. Where it is required, overburden will be removed by larger machinery such as a dozer or excavator. Some gravel products which lie above the bedrock surface may be used in road or pad construction. Whenever possible, overburden materials will be stockpiled to reclaim disturbed areas. Depending on the final size of the pits, the overburden could amount to approximately 1.0 $Mm^{3,}$ the majority of which is overlying the 04 deposit. The approximate overburden thickness by deposit is listed below in Table 3.1.

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Table 3.1 Approximate Average Overburden Thickness by Deposit

Within Conceptual Pit Shell Limit with 10 m Offset	Average Overburden Thickness (m)
04	12.0
41	2.4
51	1.9
WGH	5.5
TOTAL	**5.9**

3.2.1.3 Waste Rock Management

The volume of waste rock produced is highly dependent upon the final pit design, project economics, and deposit geology. Waste rock material will be stockpiled near the pit it was excavated from. The potential for acid generation for waste rock materials is currently being assessed and a geochemistry testing program currently underway so that a waste rock management plan can be developed for the Project. The RSF for any potentially acid generating (PAG) materials will require an engineered pad where run off water can be collected and sent to the TMF for treatment and discharge. Any non-potentially acid generating material (NPAG) would either be relocated back to the pit once it is complete, or used as a construction material for the site such as to build roads, pads for buildings, and laydown areas.

3.2.2 Underground Mine Design

The 04 deposit would be developed from the ramp at approximately 20 m vertical intervals. In the steep dipping area (60^0) a sub levels shrink (SLS) technique is envisaged. The SLS method applies to only 7% of the 04 deposit's resources. This sub level shrink (SLS) method developed at Mt. Wright in Queensland is still being used today. The SLS method eliminates the need for cemented rock fill.

The majority (93%) of the 04 zone is shallow dipping (45^0). It is envisioned that a cut and fill drift mine method would be used in that area. Development in the mineralized zone would incorporate shotcrete with swellex bolts and screen over the shotcrete for support. The developed sill cut would be backfilled tight to the drift back with unconsolidated waste rock prior to taking the sill cut above. With the zone dipping at 45^0 the cut and fill mining could commence on multiple horizons. All ore would be loaded on to underground 30 tonne haul trucks and hauled-up the ramp, to surface. With the SLS stopes mined out waste rock fill would be drawn from the SLS stopes for fill in the cut and fill drifts. Pit waste rock would be introduced from surface to the fill raise to keep the SLS stopes full. Figure 3.3 represents the 04 underground SLS stopes and the cut & fill drifts.

The 51 deposit would have levels developed from the ramp at approximately 18 m vertical intervals. This small sub level interval will reduce the stopes hydraulic radius (HR) to control hanging wall failure. Each level could be developed from the ramp to the mineralized zone. All

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ore would be loaded on to underground haul trucks and hauled-up the ramp to surface.

The mining method proposed would be longhole open stoping with placement of consolidated rock fill (CRF) in the primary stopes and unconsolidated waste fill in the secondary stopes. Figure 3.4 represents the proposed 51 underground development and longhole stopes.

The 41 open pit would be mined first to generate early resource tonnes to the mill and supply waste rock for underground fill. On completion of the 41 open pit, the 41 underground mining would commence. The 41 underground deposit could be mined using longhole stopes with cemented and un-cemented rock fill. Figure 3.5 represents the proposed 41 underground mine.

The mine access ramps for each deposit would facilitate movement of equipment, rock, labour and materials to and from the underground mine.

Most underground support facilities would be located on surface including the maintenance shop, main washrooms and the fuel farm. A push-pull ventilation arrangement would utilize raises at each extremity of the mineralized zones for fresh or return air. The ramp system would also be used to ventilate the mine.

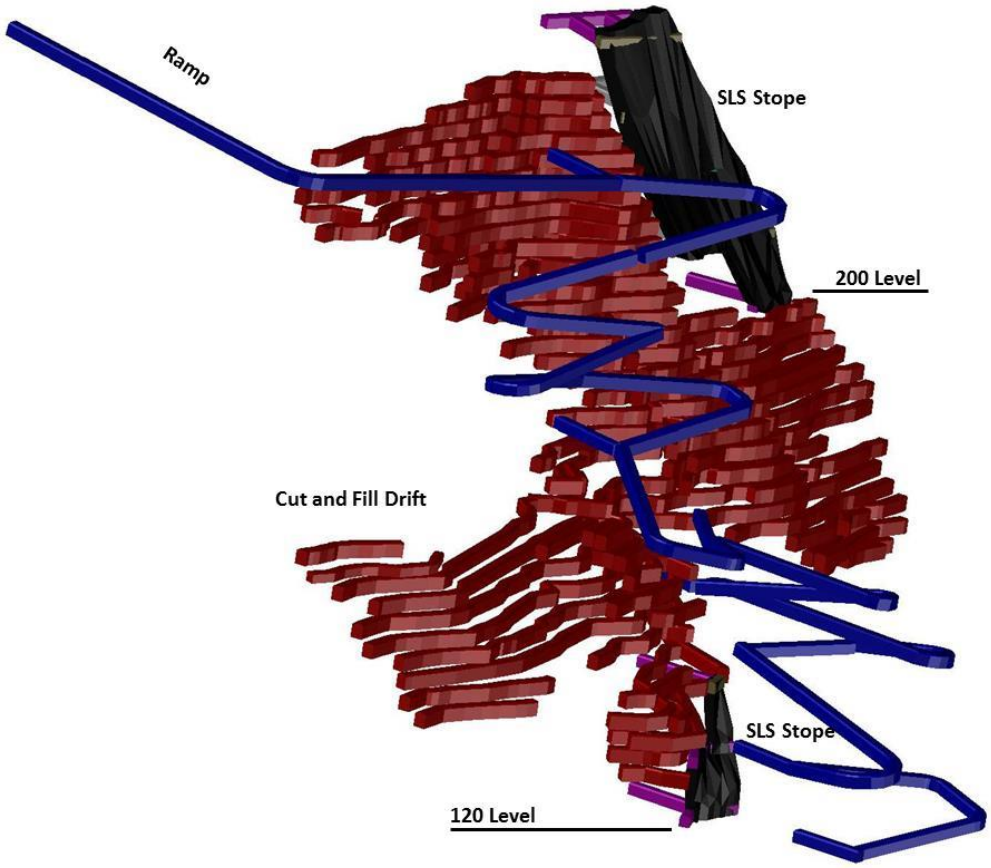

Figure 3.3 Representation of the 04 SLS stopes and Cut & Fill Drifts.

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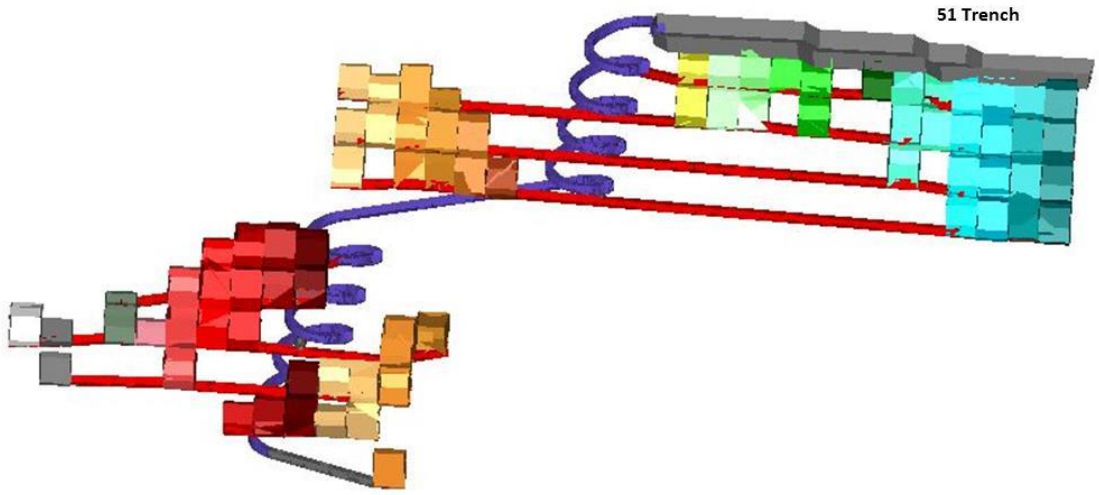

Figure 3.4 Representation of the 51 underground LH Stopes.

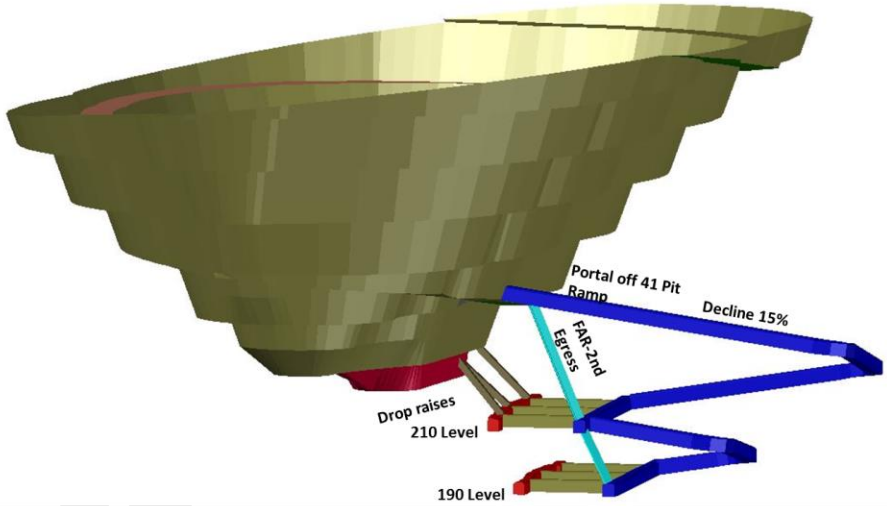

Figure 3.5 Representation of the 41 Underground Stopes below the 41 Pit.

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3.2.3 Tailings Management

Tailings from mill operations (after CN destruction process) will be handled by conventional methods and disposed of in an engineered Tailings Management Facility (TMF). The tailings and wastewater will be pumped to the TMF via a slurry pipeline.

Tailings will normally be thickened to around 35-40 % solids via the thickener and disc filter prior to discharge within the TMF. This practice will reduce the size of the TMF supernatant pond, reduce seepage, minimize or eliminate liquid-solids separation, improve the physical stability of the TMF and reduce both the risk and consequences associated with a potential failure. During thickened tailings deposition, discharge points will be frequently re-located to maximize the size of the wetted surface, thereby minimizing fugitive dust. In addition, tackifier and/or binder may be added to discharge tailings to bind particles together and minimize entrainment by wind and a flocculent will be added to the tailings stream to promote settling of solids.

Late in the life of the mine, tailings solids may be dewatered in the mill to <15 % moisture content and mechanically placed within the TMF footprint using conventional heavy equipment.

The TMF supernatant pond and wastewater treatment plant will be designed to withstand a 30 day duration, 1 in 100 year rain on snow event. The TMF will be equipped with an engineered spillway to prevent a potential dam failure due to overtopping during a Probable Maximum Precipitation (“PMP”) event.

The preliminary TMF design has storage capacity of 1.2M m^3 of tailings solids, with the possibility to increase in the future by raising the height, concurrent with any requirements for amendments to necessary approvals. The TMF surface footprint is not anticipated to be materially changed as a result of any future raises. The TMF will be constructed, operated, maintained and monitored in accordance with Guide to the Management of Tailings Facilities (MAC, 2011) and Environment Canada (2009).

Decanted water from the TMF will then pass through the Wastewater Treatment Plant (WWTP), which will treat to provincial and federal effluent criteria (process described in Section 20.8). Treated effluent will then report to a series of polishing ponds before discharging to the environment via a natural flow path that eventually discharges to the Isle aux Morts River. The approximate linear distance of stream between the polishing pond discharge point to the river is four kilometres. Water quality monitoring stations will be established at fixed points along this stream and sampled on a monthly basis.

Run off from the watershed surrounding the TMF will be collected in a perimeter intercept ditch, which will be constructed around the base of the TMF. The interception ditches will be excavated in bedrock or glacial till lined with rock to mitigate erosion. All runoff water from these intercept ditches will report to the polishing ponds (Figure 3.6).

At closure, the TMF and plant sites will be covered with an engineered, low-permeability dry cover that will minimize infiltration of water. Seepage collection around the TMF will continue post closure until the seepage decreases and no longer poses a risk to the environment.

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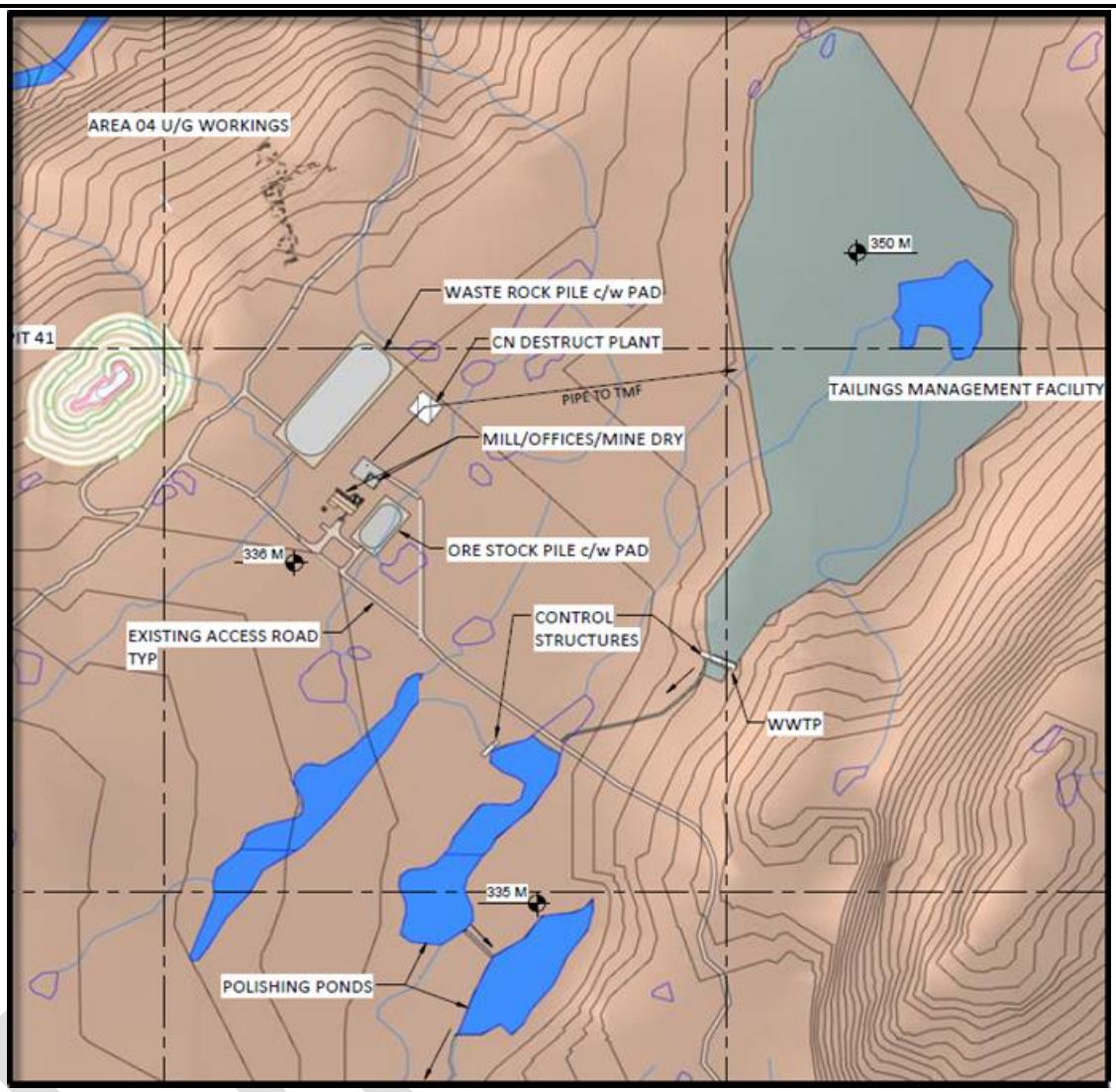

Figure 3.6 Tailings Management Facility

3.2.4 Mine Water Management

The thin (<2m) layers of overburden that have been observed at the Project site are interpreted to be permeable compared to the underlying competent bedrock and the hydrogeology of the Project site is predominantly bedrock controlled. Groundwater flow is currently assumed to be primarily through the overburden units and similar to surface drainage within the Project area; primarily originating at the heights of land and flowing radially downslope.

The Company will gather additional field data (i.e. slug testing and/or packer testing to determine bulk conductivity of bedrock mass; similar testing to determine bulk conductivity, sustained yield and drawdown from any potentially affected overburden units) to develop a

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hydrogeological model to predict the zone of influence that is created by the mine dewatering and estimate dewatering volumes. It is not anticipated that there will be any significant effects to the water table of the Property and therefore no effects to existing groundwater users. There are no users of groundwater in the vicinity of the Property and the primary function of groundwater is to provide base flow in surrounding watercourse features. The baseline work completed to date does not indicate the presence of upwellings or other groundwater discharges that support significant fish habitat, but additional work is planned in this regard, so that any potential impacts can be identified and mitigated. Due to the tight bedrock conditions observed to date and the absence of deep, continuous overburden deposits to connect the pit shell with surrounding watercourses, the potential for mine dewatering to affect potential groundwater upwellings in surface watercourses is interpreted to be low.

3.2.4.1.1 Open Pit Dewatering

During the life of the open pit, a sump (that is founded in bedrock) will be carried in the floor of the pit to contain runoff, direct precipitation and the groundwater seepage that will enter the pit because much of the excavation will be done below the water table. The sump will serve as a primary treatment pond to achieve the treatment listed below, if required.

i. Settling of suspended solids and potential chemical conditioning (coagulant and/or flocculant addition). Metals will not be precipitated in the sump.
ii. Potential addition of commercially available ammonia oxidizing bacteria to reduce the concentration of ammonia that would be present due to the use of explosives.
iii. Potential attenuation of hydrocarbons using sorbent materials and/or the use of hydrocarbon degrading enzymes.

The sump will also serve as a surge pond to equalize the flows of water being pumped from the pit to the treatment system and/or process water tanks (for recycling) and/or release to the environment.

The potential for the pit shell to have a strong hydraulic connection (i.e. through overburden) to proximal surface watercourses or aquifers is interpreted as low. However, additional field investigations will be conducted to determine the potential for seepage from these features to enter the pit so that adaptive management plans can be developed and implemented as may be required during the life of the Project. The adaptive management plan may include, but not necessarily be limited to the measures listed in the bullets listed below.

i. Low-permeability cut-off walls installed in overburden to reduce the hydraulic connectivity between the pit and the water feature.
ii. Targeted grouting program to install a grout curtain in bedrock to reduce groundwater seepage entering the pit.
iii. Groundwater interception wells to intercept overburden and/or bedrock groundwater before it enters the pit.
iv. Groundwater and/or surface water interception trenches to intercept overburden groundwater and surface water before it enters the pit.

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As the development of open pit(s) is not anticipated to create a strong hydraulic connection with any surface water features or aquifers, no dewatering wells surrounding the pit are planned. Sometimes this strategy is employed at "wet pits" to create a drawdown cone surrounding open pit developments to intercept groundwater before it enters the pit and typically allow direct discharge of this water to the environment.

A hydrogeological model will be developed to predict the volume of groundwater that will enter the workings as part of the environmental assessment and permitting process.

3.2.4.1.2 Underground Mine Dewatering

Sump(s) will be carried with the underground workings to collect process water and groundwater seepage so it can be efficiently pumped to surface.

The potential for the underground workings to have a strong hydraulic connection (i.e. through overburden) to proximal surface watercourses or aquifers is low. However, additional field investigations will be conducted to determine the potential for seepage from these features to enter the underground workings so that adaptive management plans can be developed and implemented as may be required during the life of the Project. The adaptive management plan may include, but not necessarily be limited to the measures listed in the bullets listed below.

i. Installation of a grout curtain in bedrock to reduce groundwater seepage entering the underground workings (i.e. grouting over a stope or in the crown pillar; grouting around a shaft collar or a raise collar).
ii. Collars for mine openings that are watertight and sealed to bedrock to prevent inflows of overburden groundwater.
iii. Equipment, consumables and trained staff to perform grouting in the mine workings on an as-needed basis based on regular observations during the life of the mine.

A hydrogeological model will be developed to predict the volume of groundwater that will enter the workings as part of the environmental assessment and permitting process. Based on a benchmarking of similar projects carried out in bedrock environments that are interpreted to be similar (i.e. Canadian Shield, competent bedrock), it is reasonable to expect groundwater inflows that are on the order of ~250m^{3}/day.

3.2.4.1.3 Other Groundwater Extraction

A groundwater well(s) may be established to provide potable water to the office, dry and service building. Wells would be established in accordance with provincial requirements. Groundwater would provide a superior raw water source for drinking water purposes compared to surface water. The volume of any water well withdrawals would likely be less than ~50,000 L/day.

3.2.4.1.4 Water Treatment

Wastewater (i.e. mine water, grey water, treated sewage from domestic sewage systems, backwash water from potable water treatment plants, collected runoff that has contacted

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process materials, wash water, etc.) will be consolidated in the TMF. This water will be recycled for use in the mine and the mill. Surplus water in the TMF will be treated to meet provincial effluent criteria as well as federal requirements pursuant to the *Metal Mining Effluent Regulations* and either recycled to the mill or discharged to the environment. Treatment steps and water treatment strategies that are currently anticipated are summarized in the bullets below.

i. Control of contaminants at the source through good housekeeping practices that minimize hydrocarbon.
ii. Implementation of an ammonia control program to reduce ammonia in mine water. Components of the ammonia control program would include, but not necessarily be limited to, low solubility product selection, minimization of spillage, promote efficient blasting practices.
iii. Deployment of hydrocarbon degrading enzymes in sumps and in the TMF as needed.
iv. Use of ammonia oxidizing bacteria in sumps and in the TMF as needed.
v. Use of coagulants and/or flocculants (i.e. chemical conditioning) to remove total suspended solids either in a pond or in a clarifier. Sludge from this treatment step would be placed in the TMF.
vi. Additional chemical conditioning (i.e. metal precipitants that work at neutral pH) and/or pH adjustment to precipitate metals as low solubility hydroxides. Sludge from this treatment step would be consolidated and managed to minimize any environmental risk from potential metal leaching.
vii. Filtration, following the chemical conditioning step, to remove suspended solids and metal precipitates.
viii. Final pH adjustment through the addition of carbon dioxide or acid (i.e. citric, hydrochloric or sulphuric) to within regulatory limits.
ix. Aeration and biological treatment of residual ammonia to oxidize any nitrites or other contaminants that could be present.
x. Any treatment steps that are deemed unnecessary, based on operating experience and empirical evidence, would be by-passed.

Cyanide would be destroyed in tailings slurry before it leaves the mill building envelope. Although additional engineering is required, this would likely be achieved using the well-established S02-air process. The by-product of this process of most concern would be ammonia, which would be produced through the hydrolysis of cyanate.

3.2.4.1.5 Site Run off Water

Water collecting on the site in the form of precipitation or seepages will be collected by perimeter intercept ditches that will be installed around the site including waste rock and over burden piles. Water collected in the ditches will be pumped to the TMF for treatment and discharge.

3.2.4.1.6 Discharge Point to Surface Water

Treated mine water from the TMF will pass through two polishing ponds which discharge to a

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small brook that eventually reports to the Isle aux Morts River approximately 4kms downstream. At the time of the preparation of this report a site wide water balance had not yet been completed, however, it is anticipated that this would be a seasonal discharge, releasing effluent only during the ice-free periods of the year (May to November).

An assimilative capacity assessment of the receiver will be undertaken during the permitting phase of the project to determine effluent limits that will not impact the ambient water quality in the Isle aux Morts River.

3.3 Closure and Reclamation

The rehabilitation measures that are being developed are intended for walk-away closure. Rehabilitation activities will be completed within approximately 36 months from the commencement of closure and the major activities are summarized below in general chronological order.

i. Buildings, trailers, intermodal shipping containers, storage tanks, equipment and any chemicals/consumables will be removed and salvaged, recycled or disposed of in accordance with applicable legislation. Concrete foundations will be demolished to grade as is necessary and used to backfill local depressions.
ii. Hydrocarbon contaminated soil will be identified and remediated in accordance with applicable legislation.
iii. Equipment in the underground workings will be purged of all operating fluids and salvaged to the maximum extent practical. Consumables will be removed from the underground workings and salvaged.
iv. The ramp portal will be filled and barricaded to prevent access. Based on the observed static water level in the underground workings from 2002 to 2009, there is the potential for overflow from the ramp so the barricade will be designed and constructed as a concrete bulkhead to prevent water outflow.
v. The shaft and ventilation raise will be partially backfilled and sealed with an engineered concrete cap to prevent access.
vi. Pipelines (water, compressed air) on the site will be flushed with fresh water or air, plugged and left in place. Fuel pipelines (propane, diesel) will be decommissioned with legislative requirements and good engineering standards as applicable.
vii. The domestic sewage disposal system components will be salvaged. The septic tank will be purged of its contents by a licensed hauler and backfilled with locally available soil and/or rock.
viii. Remaining liquid and solid waste at the Project site will be removed for recycling or disposal with licensed contractors in accordance legislative requirements.
ix. Rock, sludge and tailings that pose a risk of acid generation and/or metal leaching will be consolidated during the life of the mine and managed in accordance with best industry practice.
x. Areas of the Project site that are overlain with (clean) development rock will be scarified and any modest embankments will be sloped to a minimum of 3H:1V for long-term physical stability. Accumulations of soil sized particles in the crevasses of rock

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embankments will be planted with native tree seedlings in accordance with established silvicultural practices. Native soil from the established stockpiles on the site will be placed over these prepared areas and the area will be re-vegetated.

xi. The power line, electrical distribution infrastructure and substation will be removed and re-used to the extent practical.

xii. Site roads will be rehabilitated in general accordance with standard road abandonment practices as removed from use. This will include, but not necessarily be limited to removing and replacing culverts with erosion proof channels, and scarifying road surfaces to encourage re-vegetation.

xiii. The long-term chemical and physical stability monitoring program will be continued to completion, in accordance with the regulatory requirements.

The access road beyond the first stream crossing is owned by the Crown and is outside the scope of the Project site closure.

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4. Overall Project Schedule

4.1 Life of Mine Development Plan and Schedules

The 41 underground potential mineable resources would be mined once the 41 open pit is complete. The 41 deposit would be mined in conjunction with the 51 underground deposit. The 41 underground is only 39,000 tonnes of resource. The underground development schedule is shown in Table 4.1.

Table 4.1 Mine Development Schedule

Development Schedule	Yr. -2	Yr. -1	Yr. 1	Yr. 2	Y3	Yr. 4	Yr. 5	Yr. 6	Total
04 Underground									
Ramp Development (m)	-	-	1,582	-	-	-	-	-	1,582
Level Development Waste and SLS sill (m)	-	-	238	134	-	-	-	-	372
Raise Development (m)	-	-	65	200	-	-	-	-	265
C&F Access Development waste (m)	-	-	-	1,686	569	-	-	-	2,255
Deposit Development with Shotcrete (m)		-	-	-	5,040	2,328	-	-	7,368
Total (m)									**11,842**
41 Underground (m)									
Ramp Development (m)	-	-	-	-	-	446	-	-	446
Level Development waste (m)	-	-	-	-	-	201	-	-	201
Level Development Sill (m)	-	-	-	-	-	160	-	-	160
Raise Development	-	-	-	-	-	143	-	-	143
Total (m)									950
51 Underground (m)									
Ramp Development (m)	-	-	-	-	-	800	319	-	1,119
Level Development waste (m)	-	-	-	-	-	-	-	-	
Level Development Sill (m)	-	-	-	-	-	-	-	-	
Raise Development(m)	-	-	-	-	-	-	-	-	
Total									**1,119**
Grand Total									**13,911**

4.1.1 Life of Mine Production Plan and Schedule

The mill production schedule is based on processing 850 t/d for 335 days per year, or 285,000 t/yr. The mill would have a capacity of 950 t/d based on 85% availability providing some flexibility to the operation.

The open pit mine would operate 183 d/yr. or 6 months of the year at a rate of approximately 1,500 t/d PMR. This mineralized ore would feed the mill and surface stockpile.

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The underground mine would operate 350 d/yr. at a rate of approximately 600 t/d.

The production schedule by deposit for the underground and open pits is presented in Table 4.2. A total production of 1,7Mt of resource material would be mined over the 6 years.

Table 4.2 Production Schedule Underground and Open Pit by Deposit (in thousands)

Production Schedule	Yr. -2	Yr. -1	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6	Recovered Diluted Tonnes
Resources									
Pit 41	-	-	288	215	-	-	-	-	503
U.G 04	-	-	-	33	227	219	-	-	479
Windowglass	-	-	-	10	59	90	134	35	328
U.G. 51	-	-	-	-	-	-	128	219	347
Others (41 U.G. / 51 Trench)	-	-	-	-	-	-	44	-	44
Potential mineable resource									
Start of Period	-	-	1,701	1,413	1,155	869	560	254	-
Mined	-	-	288	258	286	309	306	254	1,701
End of Period	-	-	1,413	1,155	869	560	254	-	-
Production Potential mineable resource									
Mined	-	-	288	258	286	309	306	254	1,701
Processed (850 t/d) for 335 days	-	-	285	261	286	309	306	254	1,701
Stockpile	-	-	3	-	-	-	-	-	-

4.2 Labour Force and Occupations

It is expected that a local contractor will provide the necessary equipment and labour to mine the open pits. Open pit labour will consist of supervisors, equipment operators, and blasters. It is envisioned the administration of the mine will consist of personnel recruited as much as possible from the surrounding area and from Newfoundland. Should there be a need to recruit personnel with specific skills and experience not available in Newfoundland, it is expected that we would relocate personnel to Newfoundland.

4.2.1 Underground Labour

Labour estimates for the underground mining operation total approximately 110 mine contractors and up to 16 company staff. These figures include mine supervision, management, engineering and geology staff. Table 4.3 shows proposed labour and rotation schedule.

Table 4.4 shows the total underground labour by year over the project life.

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Table 4.3 Summary Company - Contractor Labour

Underground labour	#/day	#/night	Total	Schedule
800 Mt/day				
Administration				
Project manager	1	0	2	dayshift 14/14
Engineering - Geology	4	2	12	dayshift 14/14
Clerk/buyer	1	0	2	dayshift 14/14
HR				
Safety & Training Coordinator - contractor	1	0	2	dayshift 14/14
U/G Supervision				
Captain - contractor	1	0	2	dayshift 14/14
Supervisor - contractor	2	2	6	day/night shift 28/14
Sub Total			**26**	
				Service - General
Construction - Timber man - contractor	2	2	8	dayshift 14/14
Service man contractor	1	1	3	day/night shift 28/14
Subtotal			**11**	
U/G mechanical services and fixed equipment				
Master mechanic - contractor	1	0	2	dayshift 14/14
Mechanical - contractor	2	2	6	day/night shift 28/14
U/G and surface electrical services				
Master electrician - contractor	1	0	2	dayshift 14/14
Electrician - contractor	1	1	3	day/night shift 28/14
Surface mechanical services				
Surface Labourer				day/night shift 28/14
Machine doctor - contractor	1	0	2	dayshift 14/14
Subtotal			**15**	
U/G Crews				
Dev Crew A - contractor				
Jumbo man	1	1	3	day/night shift 28/14
Miner	2	2	6	day/night shift 28/14
Shotcrete	4	4	12	day/night shift 28/14
Mucker	1	1	3	day/night shift 28/14
Dev Crew B Production Cut and Fill - contractor				
Jumbo man	1	1	3	day/night shift 28/14
Miner	2	2	12	day/night shift 28/14
Shotcrete	4	4	12	day/night shift 28/14
Mucker	1	1	3	day/night shift 28/14
Subtotal			**54**	
Production Crew - contractor				
Longhole Driller	1	1	3	day/night shift 28/14
Longhole C/B Driller	1	0	2	dayshift 14/14
Blasters	2	0	4	dayshift 14/14
Cable Bolters	2	0	4	dayshift 14/14
Muckers	1	1	3	day/night shift 28/14

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Underground labour	#/day	#/night	Total	Schedule
Sub Total			16	
Alimak Raise Crew - contractor				
Raise miners	2	0	4	day/night shift 14/14
Subtotal			**4**	
Total			**126**	

Table 4.4 Life of Project Labour

Position	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Management	10	14	14	14	14	14
Engineering, Geology	8	12	12	12	8	8
Underground Services	11	11	11	11	11	3
Underground Mechanical -Electrical	6	15	15	15	6	6
Development	12	12	0	12	12	0
Production Included C&F Dev	0	36	59	29	16	16
Alimak Raising	4	0	0	4	4	0
Total	**51**	**100**	**111**	**97**	**71**	**47**

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4.2.1 Open Pit Labour

Table 4.5 Open Pit Labour

Description	Position	Staff/ Day
Superintendent	Surface G&A	1
Blasting Foreman	Surface G&A	1
Maintenance Superintendent	Surface Maintenance	1
Total Mine Salaried		**3**
Drillers	Drilling	2
Blaster	Blasting	1
Blaster Helper	Blasting	1
Total Drilling and Blasting		**4**
Excavator Operator	Loading	2
Total Loading		**2**
Truck Driver	Haulage	6
Total Hauling		**6**
Dozer Operator	Roads & Dumps	2
Grader Operator	Roads & Dumps	1
Utility Driver	Roads & Dumps	2
Total Support		**5**
Lead Mechanic	Surface Maintenance	1
Heavy Equipment Mech.	Surface Maintenance	4
Light Vehicle Mech.	Surface Maintenance	2
Total Mine Maintenance		**7**
Grand Total Mine Operations		**27**

4.3 Mill Labour

The concentrator will be set up for operating 24 hours per day; requiring four shifts of operators. The functionality of the crews will include three operators, a millwright and an electrician and an assayer for each crew. There will be a metallurgist, seven days a week on day shifts only. Administration would work 40 hours per week on a Monday – Thursday schedule and would consist of a superintendent, maintenance and electrical foreman as well as a clerk.

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Table 4.6 Labour Requirements for Mill Operation

	Number	Hr/Shift	Shift/Mo	Base $/yr.	Base $/hr	Burden %	Burden $	TOTAL $/yr.	Total $/mo.
Mill Administration									
Mill Superintendent	1		21	140,000		20	28,000	168,000	14,000
Maintenance Foreman	1		21	105,000		20	21,000	126,000	10,500
Electrical Foreman	1		21	105,000		20	21,000	126,000	10,500
Metallurgist / Supervisor	1	12	15	75,000		20	15,000	90,000	7,500
Assayer	1		15	55,000		20	11,000	66,000	5,500
Clerk	1		21	48,000		20	9,600	57,600	4,800
Operations									
Lead Hand / Concentrator Operators	4	12	15		32	20	55,296	331,776	27,648
Crusher Operators / Loader	8	12	15		28	20	96,768	580,608	48,384
Leach/CIP Operator	4	12	15		28	20	48,384	290,304	24,192
Maintenance									
Millwrights	2	12	15		34	20	29,376	176,256	14,688
Electricians	2	12	15		34	20	29,376	176,256	14,688
Total	**26**							**2,188,800**	**182,400**
Cost per tonne	285,000	tons						7.68	$/tonne

Labour adds an additional $7.68/t on top of consumable operating cost of $18.74/t provides a total of $26.42/t.

4.4 Capital and Operating Costs

The estimates were developed by using first principles and applying direct applicable project experience, and by avoiding the use of general industry factors. Virtually all of the estimate inputs are derived from engineers, contractors, and suppliers who have provided similar services to existing operations and have demonstrated success in executing the plans as defined in the PEA. The target accuracy of the capital cost estimate is in the range of +20%/-20%.

The following cost estimates are detailed within this section:

i. Initial Capital Cost – Major costs incurred in constructing the Mill and Tailing Management Facilities (TMF).
ii. Sustaining Capital Cost – Expenditures incurred during operations for waste development, underground set-up and underground infrastructure for deposit 04, 51 and 41.
iii. Closure and Reclamation Cost – Costs incurred to permanently close and reclaim the site

The following capital costs are not discussed in this section:

i. Sunk Costs – Not considered in this PEA.
ii. Owners Reserve – Not considered in this PEA.

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Contractors performed preproduction mining; it is assumed that Contractors will be used for all deposits. The specific scope and execution plans described in this PEA. Any deviations from these plans will affect the capital costs.

The following costs are not included in the capital cost estimate:

i. HST
ii. Schedule acceleration costs
iii. Schedule delays and associated costs, such as those caused by:
    a. Unexpected site conditions
    b. Latent ground conditions
    c. Force majeure
    d. Permit applications
iv. Development fees and approval costs beyond those specifically identified
v. Cost of any disruption to normal operations
vi. Foreign currency changes from project exchange rates
vii. Commodity specific escalation rates
viii. Event risk
ix. Cost associated with third party delays
x. Sunk costs
xi. Escalation – all cost data is presented in Canadian 2015 dollars.

Certain items within the operating costs begin during the pre-production phase and continue through the life of the mine. All costs incurred during the pre-production phase have been capitalized and are part of the capital cost estimate under sustaining capital. Operating costs have been compiled in accordance with industry standards.

The pre-production capital expenditures have an internal contingency factor of 10%. The estimates are based on budget pricing from suppliers for critical components, consultants, contractors and a review of other Canadian projects. Smaller equipment and facilities component costs were factored based on industry norms for the type of facility being constructed and, where possible, adjusted to reflect local conditions.

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Table 4.7 Pre Production Capital Expenditures (in thousands)

Pre-Production Capital	Contingency	Yr-2 ($)	Yr-1 ($)	Yr. 1 ($)	Yr. 2 (S)	Yr. 3 (S)	Yr. 4 (S)	Yr. 5 (S)	Yr. 6 (S)	Total (S)
Permitting	10%	1,359	1,359	-	-	-	-	-	-	2,718
Roadwork-Quote from Adams Construction	10%	506	143	-	-	-	-	-	-	649
Over burden Removal	10%	220	275	-	-	-	-	-	-	495
Surface Infrastructure-Open Pit/Mill	10%	-	2,524	-	-	-	-	-	-	2,524
Material and Waste Pads(3)-Mine & Mill	10%	165	275	-	-	-	-	-	-	440
Dewatering/trench/sumps	10%	-	275	-	-	-	-	-	-	275
Processing Plant	10%	10,481	20,319	-	-	-	-	-	-	30,801
Tailings	10%	-	3,520	-	-	-	-	-	-	3,520
Surface Equipment	10%	-	825	-	-	-	-	-	-	825
Water Treatment Plants/Testing	10%	385	1,650	-	-	-	-	-	-	2,035
Power Distribution to Mill	10%	385	770	-	-	-	-	-	-	1,155
Working Capital	10%	-	550	-	-	-	-	-	-	550
Engineering for Capital	10%	-	802	-	-	-	-	-	-	802
Mine Closure	0%	-	-	-	-	-	-	-	4,400	4,400
Total		**13,502**	**33,287**	**-**	**-**	**-**	**-**	**-**	**4,400**	**51,189**

The sustaining capital expenditures by deposit do not have any contingency. Included in these expenditures are the initial cost to start-up each deposit as well as ramp development for the underground mine. In the open pit the expenditures include initial setup as well as overburden and first pioneer benching (see Table 4.8).

Table 4.8 Sustaining Capital Expenditures by Deposit (in thousands)

Deposit	Yr-2 ($)	Yr-1 ($)	Yr. 1 ($)	Yr. 2 ($)	Yr. 3 ($)	Yr. 4 ($)	Yr. 5 ($)	Yr. 6 ($)	Total ($)
Pit41	-	556	-	-	-	-	-	-	556
U.G.04	-	-	13,669	2,857	-	-	-	-	16,526
Windowglass	-	-	-	3,149	-	-	-	-	3,149
U.G.51	-	-	-	-	2,103	7,514	-	-	9,617
Other (41U.G./51Trench)	-	-	-	-	-	3,840	-	-	3,840
Total	**-**	**556**	**13,669**	**6,007**	**2,103**	**11,355**	**-**	**-**	**33,689**

All the operating costs are based on typical Canadian prices from contractors, suppliers and other similar type Canadian projects, for consumables and parts. The cost of power is based on rates charged by Newfoundland and Labrador Hydro for similar sized power consumers and services in the province. Labour costs for the operating period are based on the labour schedules presented for each department and their associated labour costs. The costs include a burden component of 25-30%. All costs are quoted in constant 2015 Canadian Dollars.

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Table 4.9 Underground Operating Costs

Underground Operating Costs	
Mining Block - Total Tonnes	$49.72/tonne
Development	$4,675/metre
PMR Development with Shotcrete	$94/tonne
Treatment Plants (All inclusive)	$1.10/tonne
Processing	$26.42/tonne

Table 4.10 Open pit Operating Costs

Open pit Operating Costs	$/tonne
Mining Block - Total Waste Tonnes	3.66
Mining Block-Total PMR Tonnes	6.81
Transportation of PMR	2.00
Crushing	1.45
Treatment Plants (All inclusive)	1.10
Processing	26.42

Both operating costs include the expenditures for direct mining related labour and supervision. Geology and engineering staff costs are provided as G&A within each mining method. The vision of this PEA is to use contractors for both Open Pit and underground operations. The processing cost is expected to be $26.42 per tonne of potentially economic mineralization based on preliminary discussions with custom milling operations

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5. Environmental Management

The following sections will briefly describe the physical, biological and socio-economic environments within the area affected by Project activities. The collection of empirical data for all of these environmental aspects is planned for the 2016 and 2017 season as part of the EA process; however, some data on biophysical baseline conditions was obtained from historical publications submitted to the NL government by the previous owners. This information is summarized below. For those aspects where no baseline data exists, plans for the collection of this data will be prepared before initiation of the EA.

5.1 Existing Environment

5.1.1 Regional Climate

The study area has a moderate climate with a maritime influence based on its proximity to the sea. Freeze up usually does not occur until December. There are variable weather conditions and frequent freeze/thaw cycles throughout the winter. The prevailing winds are west to northwesterly in autumn and winter and southwesterly in spring and summer.

Climate data for the periods 1981 to 2010 is shown in Table 5.1 and Figure 5.1. This data was obtained from the Environment Canada Climate Data website from climate monitoring stations located in Isle aux Morts which is the village most proximate to the Project site.

The climate data for the period of record analyzed shows that show daily mean temperatures in August of 15.8 °C and an average maximum August daily temperature of 19.0 °C (see Table 5.1). The average daily winter maximum temperature in February is -2.4°C and the corresponding average minimum is -9.2°C. The extreme winter minimum is -24°C, recorded in February. Average yearly precipitation totals 1,653.1 mm, which includes 325.8 cm of snowfall. Very high winds with gusts >100 km/h can occur, often from southerly and southeasterly directions. Temperature and precipitation averages for Isle aux Morts are shown below in Figure 5.1.

Weather and site conditions during the spring break-up period (typically April to late May) can prevent some exploration activities from being carried out due to high water levels and remnant snow cover. Scheduling of field activities to avoid this period is generally advisable. Winter programs can be carried out with snowmobiles, with consideration given to snowfall and cold temperature conditions, as well as potentially high wind conditions with reduced visibility that generally accompany storm events. Coastal waters south of the Cape Ray Property are free of ice and are navigable all year around.

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Table 5.1 Climate Data for Isle aux Morts, NL [Source: Environment Canada 1981-2010 Data]

1981 to 2010 Canadian Climate Normals station data

Temperature	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Code
Daily Average (°C)	-5.0	-5.8	-3.0	1.5	5.9	10.1	14.0	15.8	12.4	7.5	2.9	-1.5	4.6	C
Standard Deviation	1.3	2.2	2.1	1.2	1.1	1.1	1.0	0.8	1.1	1.1	1.0	1.5	1.2	C
Daily Maximum (°C)	-1.7	-2.4	0.0	4.2	9.1	13.4	17.0	19.0	15.5	10.4	5.6	1.3	7.6	C
Daily Minimum (°C)	-8.3	-9.2	-6.1	-1.2	2.7	6.8	11.0	12.5	9.2	4.5	0.2	-4.2	1.5	C
Extreme Maximum (°C)	9.0	9.0	11.0	17.0	23.0	24.5	26.0	**27.5**	25.0	19.0	16.0	9.5		
Date (yyyy/dd)	2000/ 25	2000/ 29	1983/ 14	1998/ 30	1999/ 07	1983/ 21	1991/ 19	**1996/ 06**	2001/ 10	2003/ 12	2000/ 11	1993/ 14		
Extreme Minimum (°C)	-22.5	**-24.0**	-23.5	-13.0	-8.0	-4.0	4.0	4.5	2.0	-4.0	-11.0	-18.0		
Date (yyyy/dd)	1991/ 26	**1994/ 09**	1986/ 10	1994/ 03	2000/ 10	1988/ 03	1991/ 01	1989/ 29	1988/ 30	1993/ 27	1993/ 25	1984/ 27		

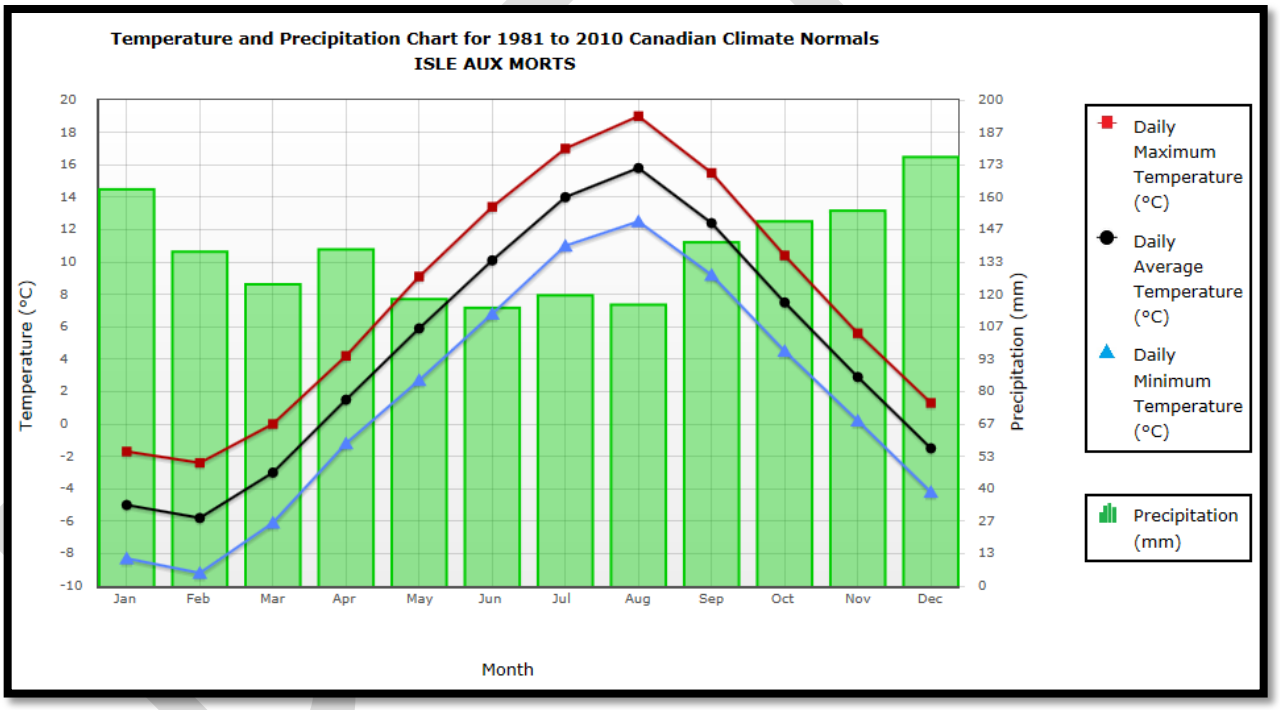

Figure 5.1 Temperature and Precipitation Averages for Isle aux Morts, NL, (Environment Canada)

5.1.2 Air Quality and Noise

There are no historical records for air quality and noise in the regional area surrounding the Project Site. As part of the EA process and Environmental Baseline data collection program, these surveys will be conducted as per previously issued EIS Guidelines for similar mineral development projects in NL. The surveys will take place in 2016 or 2017 and the data included in the EIS or EPR submissions to the government of NL.

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5.1.3 Geology and Topography

There is little historical data available on the Geology and Topography of the study area other what could be obtained from some of the component studies performed by the previous owners of the Site. In summary, the regional area surrounding the Project site was glaciated during the advance of the Wisconsin ice sheet. The study area is located on the southern slopes of the Long Range Mountains and is characterized by broad wooded valleys, gently sloping organic deposits and rugged bedrock dominated uplands. The dominant surficial characteristics are bedrock concealed by vegetation, barren outcrops or lichen covered rock, thin bog cover; minor thin until deposits and the occasional drumlinoid feature. The deeply incised river valleys contain glaciofluvial deposits and alluvial deposits derived from postglacial erosional and sedimentary processes.

The rugged and often strongly sloping topography varies in elevation from approximately 140 m along the valley bottom of the Isle aux Morts River to nearly 480 m along the eastern boundary of the regional study area.

5.1.4 Vegetation and Soils

The following information was gleaned from various component study reports undertaken by the previous owners. Nordmin intends to augment this data with baseline field surveys as part of the EA process. These studies are in the planning stages at present and will be implemented during the 2016 and 2017 field seasons.

Most of the regional study area is occupied by dwarf shrub heath. Species composition varies depending on snow cover and exposure. Sheep laurel (*Kalmia angustifolia*) heath is the most abundant dwarf shrub vegetation in this ecoregion. In areas with deep snow cover, this heath is augmented by rhodora (*Rhododendron canadense*). Exposed knolls and summits are generally occupied by heath, dominated by arctic-alpine species such as diapensia (*Diapensia lapponica*), pink crowberry (*Empetrum eamesii*) and tundra bilberry (*Vaccinium uliginosa*).

Wind pruned stands of black spruce (*Picea mariana*) and balsam fir (*Abies balsamea*) known as tuckamoor are generally found on well-drained sites with moderate wind exposures. These stands are characteristic of the Long Range Barrens ecoregion. Fully developed forests are restricted to sheltered valleys. In the Southern Long Range sub region, these forests are composed mainly of balsam fir, with small quantities of mountain white birch (*Betula cardifolia*) and black spruce. These stands are densely stocked and are often severely affected by moose browsing and damage from exposure to wind and ice.

Peatlands vary in abundance depending on the topography. Peatlands are extensive in the Southern Long Range sub region but are not the dominant feature of the landscape. The most common peatlands are oligotrophic patterned fens.

Ferro-Humic Podzols and Humo –Ferric Podzols are the characteristic soils of the study area. These soils are course textured, extremely stony and bouldery. They are usually very shallow, but bedrock outcrops are uncommon. Soils of the study area are unsuitable for agricultural

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purposes by virtue of their shallowness and wetness, and lack of organic matter and nutrients. Organic soils in the form of Typic Mesisols are derived from sedge peats and occur throughout the study area. Orthic Regosols occur on the lower terraces along the rivers and streams. These soils are by definition poorly developed and have poor moisture holding capacity because of their coarse textures and are susceptible to inundation because of their location.

5.1.5 Wetlands

There are no historical records for the wetlands that occur in the regional area surrounding the Project Site. As part of the EA process and Environmental Baseline data collection program, these surveys will be conducted as per previously issued EIS Guidelines for similar mineral development projects in NL. The surveys will take place in 2016 or 2017 and the data included in the EIS or EPR submissions to the government of NL.

5.1.6 Hydrology

Monthly average flow rates for the Isle aux Morts River were obtained from the Water Survey of Canada (WSC) hydrometric database. The WSC maintains a hydrometric gauging station on the Isle aux Morts River just below the Highway 470 bridge (Sta 02ZB001). Hydrometric data is available for this station dating back to 1962, however, only the period from 2000 to 2013 (the last year available) was analyzed for trending purposes for this report. Table 5.2 summarizes the mean monthly flow rates (m^3/sec) for this period. Figure 5.2 illustrates the flow trends over this same period of record. As illustrated, the maximum flow rates occur in April and May and minimum flow rates generally occur in January and February and again in July/August.

Table 5.2 Monthly Mean Discharge Volumes of the Isle aux Morts River (m^3/s), 2003-2013

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean
2003	20.10	15.90	4.51	42.20	29.80	11.70	9.08	3.43	7.30	17.80	14.10	12.80	15.70
2004	2.18	0.92	0.74	29.60	31.40	14.90	7.00	3.46	12.60	10.30	20.30	19.20	12.70
2005	4.19	3.09	2.26	19.20	23.50	4.07	4.46	4.69	18.00	11.30	20.40	12.20	10.60
2006	13.50	3.23	1.17	25.50	11.70	6.38	9.81	10.90	9.14	23.90	29.80	8.49	12.80
2007	9.18	1.76	7.65	12.40	30.40	10.50	13.60	17.90	16.20	10.10	20.80	3.74	12.90
2008	3.13	9.38	4.06	22.50	30.30	7.13	2.70	11.70	14.40	12.20	22.90	20.60	13.40
2009	2.93	1.47	6.16	40.70	27.20	11.20	3.03	10.50	5.85	11.40	19.10	11.30	12.60
2010	4.36	1.98	2.35	22.40	10.10	8.83	11.10	3.38	12.00	21.50	15.60	19.40	11.10
2011	4.26	3.11	12.00	27.70	37.50	17.80	8.42	4.98	4.37	13.30	13.80	14.70	13.50
2012	9.38	9.12	4.74	39.30	17.30	2.01	5.02	5.86	26.60	17.00	11.70	20.90	14.00
2013	3.34	12.00	11.70	27.30	32.00	6.81	8.96	7.80	14.90	8.06	36.10	9.84	14.90
2011	1.73	1.73	2.03	2.20	2.41	1.93	1.83	1.70	1.65	1.97	1.96	1.99	1.93
2012	1.90	1.78	1.79	2.31	1.96	1.48	1.63	1.71	2.12	2.01	1.90	2.05	1.89
2013	1.69	2.29	1.98	2.11	2.24	1.75	1.79	1.74	1.96	1.82	2.19	2.01	1.96
Mean	5.85	4.84	4.51	22.53	20.56	7.61	6.32	6.41	10.51	11.62	16.48	11.37	10.71
Min	1.69	0.92	0.74	2.11	1.96	1.48	1.63	1.70	1.65	1.82	1.90	1.99	1.89
Max	20.10	15.90	12.00	42.20	37.50	17.80	13.60	17.90	26.60	23.90	36.10	20.90	15.70

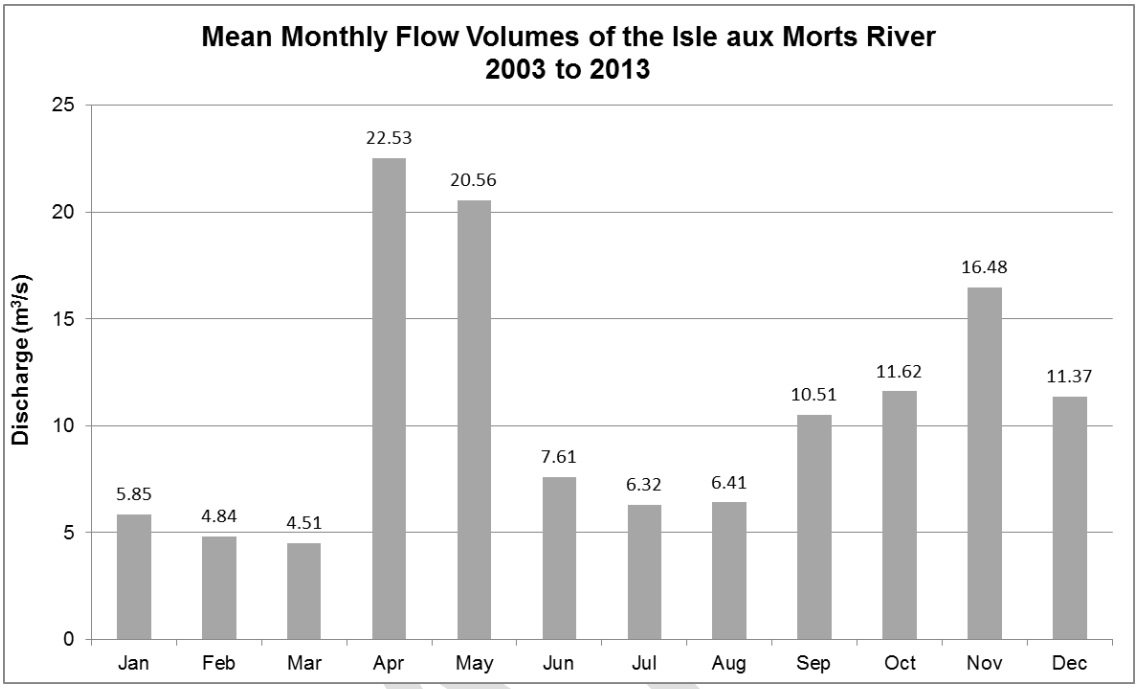

Figure 5.2 Mean Monthly Flows for Isle aux Morts River for 2003- 2013.

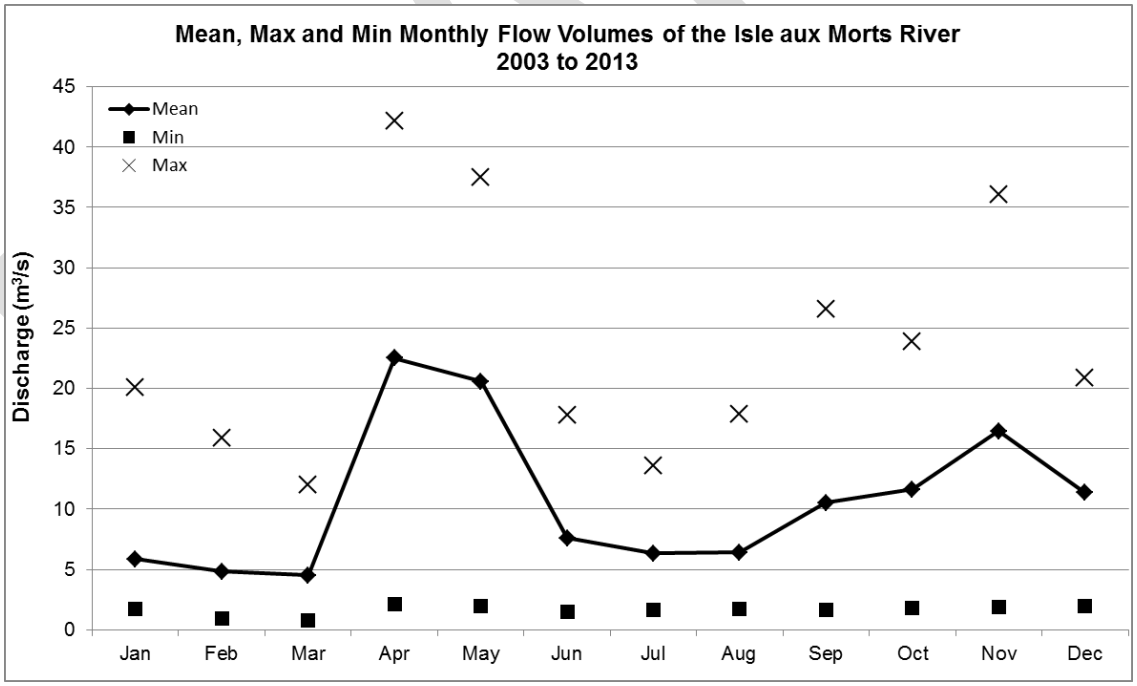

Figure 5.3 Mean, Max and Min Monthly flows for Isle aux Morts River 2003 - 2013

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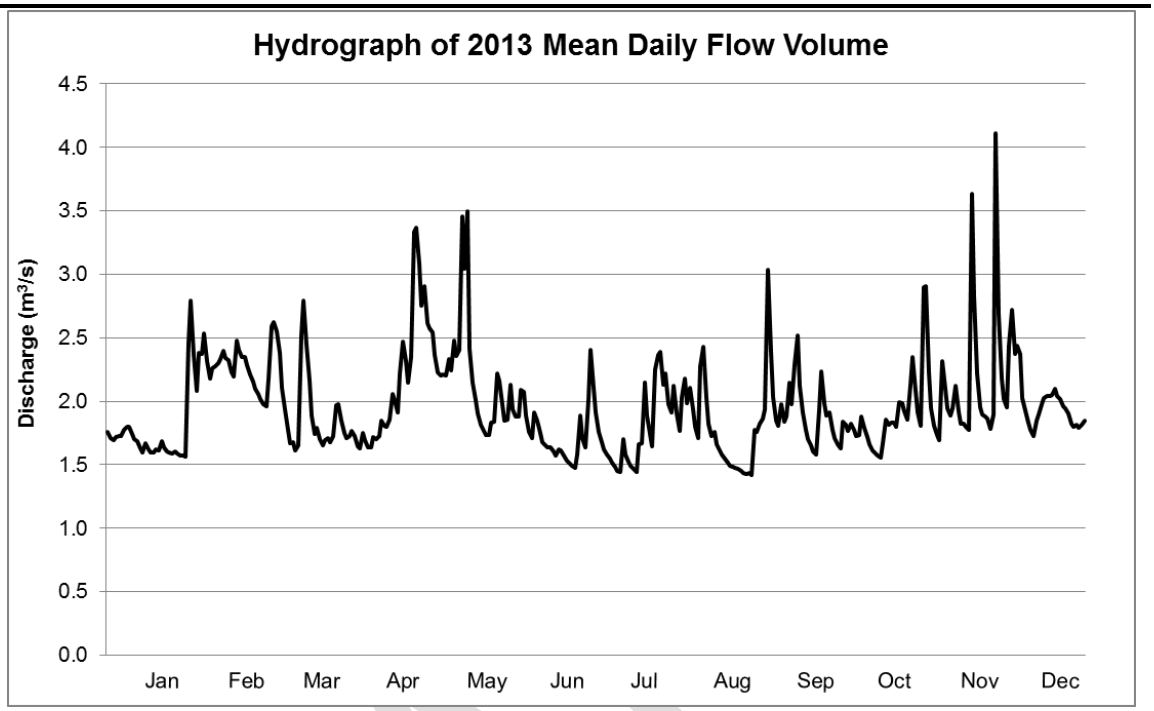

Figure 5.4 Isla aux Morts River Hydrograph for 2013

The drainage area for the Isle aux Morts river system is 205 km^2 and as can be seen from the hydrometric data the river tends to be quite "flashy" with mean daily flows, which can increase up to 150% or more from one day to the next. This is due mainly to the very shallow soils in the study area, exposed bedrock and very little moisture retention capability from these materials.

As illustrated, the largest number of peak floods occurs during the months of April and May, then again in November and December.

5.1.6.1 Project Area Hydrology

The Project will utilize existing ponds for water and tailings storage as illustrated in Figure 3.6 The final option for this has yet to be determined pending baseline hydrology studies to be completed in 2016. The preferred option at this stage is utilizing the small pond northeast of the access road for tailings and wastewater storage. This would create the smallest footprint in terms of sub-watershed area utilized out of the entire Isle aux Morts River watershed. This small pond reports to a series of larger ponds that eventually report to the Isle aux Morts River by way of Jack Henry's Brook 3.8 km downstream. These smaller ponds would be utilized as polishing ponds or emergency ponds in the event of an unplanned discharge. Control structures would be constructed at the outlet of the tailings storage pond and the emergency pond.

Currently, ground water from the existing underground workings (flooded adit), flows into a perimeter collection ditch then into a series of settling ponds which then discharge to a small un-named brook which flows into the Isle aux Morts River. Water samples were obtained by Nordmin staff in September of 2014 from several locations along this collection system for the purposes of assessing water quality. Samples were obtained from the portal entrance, north

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drainage ditch, south drainage ditch and the polishing pond overflow which reports to the Isle aux Morts River. The results of this sampling campaign are summarized in Table 5.3 Water quality currently discharging from the property is good and there are no exceedances of CCME criteria for the protection of aquatic life or the Newfoundland and Labrador Environmental Control and Sewage Regulation 65/03. A broader baseline surface water monitoring program is scheduled to be implemented at the site and regional study area in 2016 in support of the EA and permitting process.

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Table 5.3 2014 Water Quality Summary

Physical Tests	MDL [1]	UNITS	Reg 65/03 [2]	CEQG-PAL [3]	PORTAL	NORTH DRAINAGE DITCH WP87	POND OVERFLOW CULVERT WP90	SOUTH DRAINAGE DITCH WP93
					22-SEP-14 @ 16:30	22-SEP-14 @ 16:45	22-SEP-14 @ 17:00	22-SEP-14 @ 17:30
Hardness (as CaCO3)	0.51	mg/L			35.2	121	50.6	23.5
pH	0.1	pH			7.42	7.72	7.54	7.29
Total Suspended Solids	2	mg/L	30 [4]		<2.0	<2.0	5.6	<2.0
Anions and Nutrients								
Alkalinity, Total (as CaCO3)	2	mg/L			27	67.3	31.5	13.6
Ammonia, Total (as N)	0.02	mg/L	2		<0.020	<0.020	<0.020	<0.020
Chloride (Cl)	0.1	mg/L		120	4.3	4.17	4.16	4.68
Fluoride (F)	0.03	mg/L		0.120	<0.030	0.032	<0.030	<0.030
Nitrate (as N)	0.03	mg/L	10		0.47	0.249	0.121	<0.030
Nitrite (as N)	0.02	mg/L			<0.020	<0.020	<0.020	<0.020
Total Kjeldahl Nitrogen	0.25	mg/L			0.51	0.38	0.46	0.54
Phosphorus (P)	0.003	mg/L			0.0113	0.008	0.0118	0.0115
Sulfate (SO4)	0.3	mg/L			5.83	54.8	18.3	5.22
Cyanides								
Cyanide, Total	0.002	mg/L	0.025		<0.0020	<0.0020	<0.0020	<0.0020
Organic/Inorganic Carbon								
Total Organic Carbon	1	mg/L			13.3	21.3	16.7	16.1
Total Metals								
Aluminum (Al)	0.005	mg/L			0.112	0.0428	0.0843	0.139
Antimony (Sb)	0.0006	mg/L			<0.00060	<0.00060	<0.00060	<0.00060
Arsenic (As)	0.001	mg/L	0.5	0.005	<0.0010	<0.0010	0.0011	<0.0010
Barium (Ba)	0.01	mg/L	5		0.028	0.026	0.01	<0.010
Beryllium (Be)	0.001	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
Bismuth (Bi)	0.001	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)	0.05	mg/L	5	1.5	<0.050	<0.050	<0.050	<0.050
Cadmium (Cd)	0.000017	mg/L	0.05	0.09	0.000113	0.000201	0.000107	0.000244
Calcium (Ca)	0.2	mg/L			12.7	43.9	16.9	7.81
Chromium (Cr)	0.001	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)	0.0005	mg/L			<0.00050	<0.00050	<0.00050	<0.00050
Copper (Cu)	0.001	mg/L	0.3	0.002 to 0.00278	**0.0109**	**0.0037**	**0.006**	**0.0052**
Iron (Fe)	0.02	mg/L	10	0.300	0.138	**0.341**	0.202	0.124
Lead (Pb)	0.001	mg/L	0.2	0.001 to 0.00406	<0.0010	<0.0010	**0.0022**	**0.0021**
Lithium (Li)	0.05	mg/L			<0.050	<0.050	<0.050	<0.050
Magnesium (Mg)	0.02	mg/L			0.819	2.68	2.05	0.979
Manganese (Mn)	0.001	mg/L			0.0239	0.295	0.0513	0.0077
Mercury (Hg)	0.00001	mg/L	0.005	0.000026	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)	0.001	mg/L			<0.0010	0.002	<0.0010	<0.0010
Nickel (Ni)	0.002	mg/L	0.5	0.025 to 0.11048	<0.0020	<0.0020	<0.0020	<0.0020
Potassium (K)	0.5	mg/L			0.73	1.42	0.7	<0.50
Selenium (Se)	0.001	mg/L	0.01	0.001	<0.0010	<0.0010	<0.0010	<0.0010
Silicon (Si)	1	mg/L			1.3	1.3	<1.0	<1.0
Silver (Ag)	0.0001	mg/L	0.05	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Sodium (Na)	0.1	mg/L			2.82	2.48	2.53	2.75
Strontium (Sr)	0.001	mg/L			0.0408	0.116	0.0597	0.0273
Tellurium (Te)	0.001	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
Thallium (Tl)	0.0003	mg/L		0.0008	<0.00030	<0.00030	<0.00030	<0.00030
Tin (Sn)	0.001	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
Titanium (Ti)	0.002	mg/L			<0.0020	<0.0020	<0.0020	<0.0020
Tungsten (W)	0.01	mg/L			<0.010	<0.010	<0.010	<0.010
Uranium (U)	0.005	mg/L		0.015	<0.0050	<0.0050	<0.0050	<0.0050
Vanadium (V)	0.001	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)	0.003	mg/L	0.5	0.030	0.0042	0.0136	0.0081	0.0125
Zirconium (Zr)	0.001	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
Radiological Parameters								
Ra-226	0.01	Bq/L			<0.0100	<0.0100	<0.0100	<0.0100

NOTES:

1) MDL - Laboratory Method Detection Limit, ALS Environmental laboratory, Thunder Bay, Ontario.

2) Newfoundland and Labrador, Regulation 65/03 under the Environmental Control Water and Sewage Regulations, 2003 under the Water Resources Act (O.C. 2003-231)

3) Canadian Council of Ministers of the Environment (CCME), Water Quality Guidelines for the Protection of Freshwater Aquatic Life.

4) If water is being abstracted from a water course, used, treated and subsequently returned to the same water course, the total suspended solids data mean that the effluent should not contain more than 30 mg/L more than was in the water originally abstracted.

5) The sample concentrations were not equal to or greater than the Reg.65/03 crietria concentrations .

6) Shaded, bold values indicate concentrations equal to or greater than the CEQG-PAL criteria.

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5.1.7 Hydrogeology

There are no historical records for hydrogeology in the regional area surrounding the Project Site. As part of the EA process and Environmental Baseline data collection program, these surveys will be conducted as per previously issued EIS Guidelines for similar mineral development projects in NL. The surveys will take place in 2015 or 2015 and the data included in the EIS or EPR submissions to the government of NL.

5.1.8 Fish and Fish Habitat

Information on fish and fish habitat within the surface waters of the regional study area was gleaned from component study reports prepared by the previous owners of the site. Although this data is dated (1989/90) it is still of relevance and will be augmented by further fishery baseline studies to be conducted by Nordmin at the site in 2015 and 2016 as part of the EA and permitting process.

Historical data indicates that species reported to be present in the Isle aux Morts River are; Atlantic salmon(*Salmo salar),* brook trout (*Salvelinus fontinalis),* and American eel (*Anguilla rostrate).* The river was considered to be completely obstructed 3.2 km from the mouth until the two falls were channelized by the Department of Fisheries and Oceans (DFO) in 1961 and is now considered unobstructed clear to the headwaters.

Salmon angling data for 2012 for the Isle aux Morts River, collected by DFO revealed that a total of 177 individual fish were either captured and retained, or released (small and large) over a total of 289 rod/days. This resulted in a catch-per-unit-effort (CPUE) of 0.61. The river is considered to be an important angling river by DFO although fishing effort is restricted to the lower 5 km of river. The removal of the obstructions in 1961 has not dramatically changed the success rate or harvest. The 2012 angling data was compared to historical catch and CPUE data (1952 – 1990) and revealed that individual numbers of fish caught or released has remained fairly constant (mean = 172 vs. 177), while the CPUE has increased (mean = 0.42 vs. 0.61). This may be due to the fact that commercial fishing for salmon was suspended in 1984.

Brook trout are fished in the watershed but mostly in ponds and brooks near the lower reaches of the river.

Fish community data was collected in 1989 by the previous owners as part of the component studies and involved backpack electrofishing of the small brooks and ponds as well as in the river and overnight gill net sets in the deeper ponds. This effort produced 123 Atlantic salmon, 2 brook trout and 1 American eel. These were all captured in the Isle aux Morts River and the lower reaches of Jack Henry's Brook. Most of the salmon captured (52%) were young of the year (age 0+) with the remainder (36%) being either yearlings (age 1+) or 2 year old fish (12%).

The two brook trout that were captured were taken in the lower reaches of Jack Henry's Brook just upstream of the confluence with the Isle aux Morts River. Age of the specimens was estimated to be 0+ and 1+. The single American eel was captured in the river.

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Gill net sets in the deeper ponds to the south of the proposed mine site did not produce any fish. Electroshocking of the interconnecting streams, shoreline areas and shallower sections of these ponds also did not produce any fish.

Level of effort was not recorded so a CPUE could not be calculated for these surveys.

5.1.8.1 Fish Habitat

Fish habitat mapping was also undertaken as part of the fishery resource component studies conducted in 1989 by the previous owners and is summarized below. Habitat mapping was completed on the entire length of the Isle aux Morts River from the mouth at the Gulf of St. Lawrence to the headwaters upstream of the proposed mine site. The river forks into two branches approximately 6 km upstream from the mouth; the Main Stem branch and the Big Pond branch.

The main stem of the Isle aux Morts comprises 12 sections of river each of which can be categorized into five main habitat types. They are (moving from upstream to downstream):

i. Section 1 – described as wide well defined channel with steep banks for the first four kilometers of the river. Shoreline is mainly bedrock and heavily wooded with mature spruce and alder that provide some instream cover. Average water depth is one metre or more with some cobble and gravel bars that would be exposed during low flow periods. This section of river has some holding pools and is subject to the highest fishing pressure as the upstream areas are difficult to access on foot. The spawning habitat type could be characterized as Type I and II good for spawning and rearing of salmonid species.
ii. Section 2 – described as a narrow stretch of rapids and chutes with a substrate of mainly bedrock. The banks are steep and also bedrock with steep vertical cliffs. There are many rapids, riffles and chutes along these sections but they do not pose as an obstacle to upstream migration. The spawning habitat types can be characterized as Type II, good for rearing and III, mostly falls or rapids which are not optimal areas for spawning or rearing.
iii. Section 3 – described as a wide shallow stretch of river with some slow riffle sections and an average depth of less than one metre. The average width is 20 m with low banks composed of boulders, cobble and sod with a gentle back slope. The substrate in this section of the river is mainly cobble, gravel and boulders with some exposed bars. There is limited shoreline cover and the spawning habitat is Type II and some Type I areas.
iv. Section 4 – this section is described as having several braided channels with large wooded islands in the middle of the river. The water depth is shallow (< 1m) and is boulder strewn with large banks that would be exposed during low flow periods. The shoreline areas are gently sloping and treed with spruce and alder providing some shade and overhead cover. River substrate here is mainly cobble and gravel which provide good areas for spawning and rearing for salmonid species (Type I and II).

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v. Section 5 – this section is defined as being boulder strewn with an ill-defined streambed. The banks are barren plateau areas indicative of the upper watershed areas of the river with boulders and rock providing the only cover. This section is poor spawning and rearing habitat and is probably not utilized by anadromous salmon or trout. This section is typical of the numerous rivulets and small streams that drain the highland regions of this watershed.

The Big Pond branch of the Isle aux Morts River comprises habitats similar to those described above, with some Type I and II spawning habitats at the section closest to the confluence with the main stem. Upstream of this point is the limit for migrating salmonids due to physical barriers however there are still good rearing areas for trout.

5.1.9 Wildlife

Little current information exists on the wildlife common to the Project site and surrounding areas however, some information was obtained from the Environmental Preview Report for the proposed mine access road that was prepared by the previous owners in 1988. Most of this information is anecdotal in nature or based on personal communication with local residents or outfitters. Some information was gathered from game harvesting records as well. This information is summarized below.

5.1.9.1 Large Mammals

Three species of big game are known to inhabit the Project site and surrounding areas. They are: black bear (*Ursus americanus*), woodland caribou (*Rangifer tarandus*), and moose (Alces *alces*). Although no detailed information is available on black bear populations in the area, sightings are common but they are not considered to be abundant in the Project area.

Woodland caribou are by far the most abundant big game in the Project area and surrounding territories however the two major herds (La Poile, and Long range Barrens) listed in the information available showed that they exist mainly 50 -60 km and 30 -40 km respectively from the proposed mine site. However, some of these caribou migrate south to the Burnt Island Pond area to calve in the spring which is approximately 10 km east of the proposed mine site.

Although some moose habitat does exist in the Project area, it is considered marginal and confined to the river valleys where there is some forest cover. Moose herd numbers are unknown but 1988 harvest records show that the two local outfitters harvested 15 moose each during the season.

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5.1.9.2 Small and Furbearing mammals

Very little data exists on small game and furbearing mammals in the immediate Project Area but information obtained from historical reports suggest that the area provides habitat for the following species: arctic hare *(Lepus arcticus*), willow ptarmigan (*Lagopus lagopus*), snowshoe hare (*Lepus americanus*), rock ptarmigan (*Lagopus mutus*), red fox (*Vulpes vulpes),* muskrat (*Ondatra gibethicus*), mink (*Mustela vison*), ermine (*Mustela erminea*), beaver (*Castor Canadensis*), and otter (*Lutra Canadensis*).

5.1.10 Avifauna

There is some historical information available on raptor resources in the Project area from the component study report prepared by the previous owners and this is summarized below. Information on waterfowl and passerines is not available other than anecdotal references in some reports that the area may be used by migrating waterfowl in the spring and fall and that waterfowl production in the proposed Project area is not considered significant.

Aerial and ground surveys for large raptors were conducted by the previous owners in 1989 as part of the resource component studies. Aerial surveys covering 100 % of the study area and ground surveys covering approximately 30 km of ground within an 8 km radius of the proposed mine site and along the access road were conducted during early June of 1989. Ground surveys involved the use of tape recorded raptor calls to evoke a vocal response if any raptors were present.

The results of the surveys revealed the presence of only one species of raptor. Two ospreys (*Pandion haliaetus*) were sighted during one of the ground surveys. No other raptors were sighted or responded to any of the raptor calls.

Although only one species of raptor was noted during these surveys, the Project area would likely be frequented by other raptor species for hunting , nesting or overwintering such as Bald Eagle (*Haliaeetus leucocephalus*), Northern Harrier (*Circus cyaneus*), American Rough-legged Hawk (*Buteo lagopus*), Northern Goshawk (*Accipiter gentiles*), Sharp-shinned Hawk (*Accipiter striatus)*, American Kestrel (*Falco sparverius*), Merlin (*Falco columbarius*), Great Horned Owl (*Bubo virginianus*), Northern Hawk Owk (*Surnia ulula*), Short-eared Owl (*Asio flammeus*), and Boreal Owl (*Aegolius funereus*).

5.2 Human Environment

5.2.1 Historic and Heritage Resources

There are no known designated environmentally sensitive or cultural heritage sites within the Project lands. Aboriginal consultation, as well as biological and archaeological assessment work that is planned as part of the EA process will identify environmentally sensitive sites and cultural heritage sites. An objective of the on-going consultation process with the engaged Aboriginal communities is anticipated to result in the identification of such sites so that they can be considered for preservation during the EA and Project planning process.

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A Stage 1 Archaeological Assessment of the Project lands and road corridor will be completed as part of the baseline studies to be undertaken as part of the EA process. This assessment would be conducted by a licensed archaeologist, in accordance with requirements of the Government of NL, with full participation and involvement by the surrounding First Nations to the extent that they are willing to participate.

5.3 Potential Environmental Constraints to Development

The following sections describe possible constraints to development of the property and, are based solely on visual observations and literature available on the site. These may or may not be mitigated through good management and sustainable development practices but this would require further investigation and collection of empirical data from the site though baseline environmental assessment studies.

5.3.1 Proximity to Isle aux Morts River

As stated previously, previous studies have shown that this river is utilized by Atlantic salmon for spawning purposes and is a Scheduled Salmon River. The present mine workings (adit, ore/waste rock pile, collection ditching and ponds) are within 900 metres of the river and are currently discharging directly into it. The location of the open pit mines would likely be within 500 metres of the river. If spawning (and early life cycle stage) salmon are utilizing the section of the river proximate to the site, water would likely have to be treated and pumped into the watershed south of the mine site. This may be a requirement regardless of salmon activity but would depend on the quality of the water discharging from the adit and coming into contact with the ore/waste rock piles. Preliminary geochemistry data suggests the waste rock is potentially acid generating.

5.4 Environmental Management and Protection

5.4.1 Environmental Protection Plans(s)

Environmental Protection Plans (EPP) will be developed for all aspects of the project development from construction to operation, decommissioning and closure. Best management practices and the adoption of the precautionary principle will be followed in the preparation of these documents. Guidance documents such as E3- Plus (Excellence in Environmental Stewardship e-tool kit) as well as other government publications will be used as reference material for the development of the EPPs.

5.4.2 Emergency Response and Reporting(s)

Emergency Response and Reporting Plans will also be developed for unforeseen environmental incidents such as spills or out of compliance events.

5.5 Nordmin Project Documents

Mineral Resources Estimate Technical Report for the Cape Ray Property; 04, 41, 51 and Windowglass Hill Deposits, NI 43-101 technical report and PEA is filed with SEDAR.

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5.6 Other Required Environmental Approvals and Permits

A list of potentially applicable Permits and Authorizations that may be required for the Project from Provincial, Federal or Municipal Governments is provided below.

Nordmin will initiate the necessary approvals for the Project following the EA process. Although legislation is continuously evolving, based on the current Project description, approvals are anticipated to be required pursuant to the Acts listed in Table 5.4. The specific approvals will be detailed once the EA process has been completed and the project is more clearly defined.

It is premature to prepare a precisely detailed approvals list until the EA process is completed and each aspect of the Project is better defined. However, this can be provided at a later date if requested.

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Table 5.4 Summary of Anticipated Applicable Acts and Regulations

Level of Government	Approval Potentially Required	Responsible Agency	Legislation/Act
Federal	Authorization under Section 35 or 36 of the Fisheries Act	Department of Fisheries and Oceans and Environment Canada	Fisheries Act
		Transport Canada	Navigation Protection Act Transportation of Dangerous Goods Act
	Environmental Assessment, Compliance Standards; Permits may be required	Environment Canada	Migratory Birds Convention Act Canadian Environmental Protection Act Canadian Environmental Assessment Act 2012 Species at Risk Act Federal Policy on Wetland Conservation
	Explosives User Magazine Licence	Natural Resources Canada	Explosives Act
	Compliance Standards; Permit may be required	Engineering Services Division, Service Newfoundland	National Fire Code National Building Code
Provincial	Surface Lease – Areas to be developed for mining should be held under a Surface Lease.	Mineral Development Division, Department of Natural Resources	Mining Act
	Mineral Exploration Approval – An application for approval must contain a detailed plan and description of the exploration activities	Mineral Development Division, Department of Natural Resources	Mineral Act and Mineral Regulations
	Environmental Assessment Water Use Licence – Water withdrawals for use at temporary camps or during construction and operation. Certificate of Approval for Water withdrawal system of > 4,500 L/d. Water supply for construction or operations activities.	Department of Environment and Conservation	Water Resources Act Environmental Protection Act Environmental Assessment Regulations
	Certificate of Approval for Septic System > 4,546 L/d and for drilled wells. Certificate of Approval for Storage and Handling of Gasoline and Associated Products Fuel cache Permit	Engineering Services Division, Service Newfoundland	Environmental Protection Act
	Quarry Permit – to dig, excavate and extract quarry borrow material for construction purposes	Mineral Lands Division, Department of Natural Resources	Quarry Materials Act and Regulations
	Cutting Permit Operating Permit Permit to Burn	Forestry Branch, Department of Natural Resources	Forestry Act and Regulations
	Certificate of Approval for installation of a water supply and Sewage system.	Water Resources Division, Department of Environment and Conservation.	Health and Community Services Act and Regulations
	Permit for Storage, Handling, Use or Sale of Flammable and Combustible Liquids	Engineering Services Division, Service Newfoundland	Fire Protection Act
Municipal	Approval for Waste Disposal – the operation of a waste disposal site may require municipal approval. License to operate a temporary work camp.	Community Council	Municipal Plan and Development Regulations

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6. Consultation

6.1 Aboriginal, Community and Social Requirements

Aboriginal and community engagement will be an integral part of the Environmental Assessment process should the project move forward. Consultation plans will be developed for Aboriginal groups, local communities and other interested persons including NGO's and implemented to provide feedback on social and community impacts from the project.

In addition to community meetings, Aboriginal organizations and the public will have several opportunities for participation and feedback during the EA process. The project proponent will also provide current information to the communities most likely affected by the project as early as possible and at key points of the project development. This will ensure that all stakeholders have an opportunity to gain an understanding of the proposed Project and may facilitate their continued involvement in the EA process.

A record of all consultation efforts will be kept which will describe key stakeholder groups, summarize comments heard, and identify key issues of concern and responses.

6.2 Governmental Consultation

Consultation with government agencies will be scheduled at key points during the EA process and project development.

The following government agencies will be engaged as required by the EA process and for general project updates on an ongoing basis:

Newfoundland and Labrador Government:

Department of Environment and Conservation – Environmental Assessment Division

Department of Natural Resources – Mineral Lands Division

Federal Government:

Canadian Environmental Assessment Agency (CEAA)

Fisheries and Oceans Canada (DFO)

Municipal Governments:

Municipalities of Port aux Basques and Isle aux Morts

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7. Closure

In closing we trust that the contents of this EA Registration fulfills the requirements of provincial and/or federal environmental assessment legislation under the provincial Environmental Protection Act (EPA, 2002), and CEAA 2012.

We look forward to your review and assessment of this document.

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8. References

I. *Government of Newfoundland and Labrador Department of Environment and Conservation Labrador Environmental Assessment A Guide To the Process.*

II. *Newfoundland and Labrador Regulation 54/03 Environmental Assessment Regulations, 2003 Under the Environmental Protection Act (O.C. 2003-220) (filed May 23, 2003)*

III. *Newfoundland And Labrador Regulation 65/03 Environmental Control Water And Sewage Regulations, 2003 Under The Water Resources Act (O.C. 2003-231) Amended By: 23/09 Newfoundland And Labrador Regulation 65/03 Environmental Control Water And Sewage Regulations, 2003 Under The Water Resources Act(O.C. 2003-231) (Filed May 23, 2003)*

IV. *Consolidated Newfoundland and Labrador Regulation 1143/96. Mineral Regulations Under The Mineral Act(O.C. 96-299) Amended by: 57/97, 85/97, 71/98, 104/98, 107/98, 32/99, 38/99, 81/99, 97/00, 36/01, 2001 c42 s45, 31/04, 16/05, 46/06, 78/06, 100/06, 2006 c40 s12, 8/08, 28/09, 63/09, 20/10, 66/10, 5/13, 79/14, 34/15.*

V. *Environmental Guidelines For Construction And Mineral Exploration Companies*

VI. *Raptor Resources Component Study For the Cape Ray Environmental Impact Statement*

VII. *Prepared for: Dolphin Explorations Limited Suite 1900 Adelaide st. Toronto, Ontario M5H 1T1 Prepared By: Ledrew, Fudge And Associates Limited 607 Torbay Road St. John's, Newfoundland A1A 2Y3 F-213 10 April 1990.*

VIII. *An Environmental Preview Report For The Proposed Access Road To The Cape Ray Exploration Site S. Fudge And Associated Limited*

IX. *Wildlife Caribou Component Study For The Cape Ray Environmental Impact Statement Prepared For: Dolphin Explorations Limited Suite 1900 Adelaide St. Toronto, Ontario M5H 1T1 Prepared By: Ledrew, Fudge And Associates Limited 607 TORBAY ROAD ST. JOHN'S, NEWFOUNDLAND A1A 2Y3 F-212 August 20, 1990*

X. *Ecological Land Classification Component Study For The Cape Ray Environmental Impact Statement Prepared For: Dolphin Explorations Limited Suite 1900 Adelaide st. Toronto, Ontario M5H 1T1 Prepared By: Ledrew, Fudge And Associates Limited 607 Torbay Road St. John's, Newfoundland A1A 2Y3 l-246 10 August 1990*

XI. *Fisheries Resource Component Study Environmental Impact Statement Prepared For: Dolphin Explorations Limited Suite 1900 Adelaide St. Toronto, Ontario M5H 1T1 Prepared By: Ledrew, Fudge And Associates Limited 607 Torbay Road St John's, Newfoundland 1A1 2Y3 April 25, 1990 l-247*

XII. *Kilborn Consulting Engineers And Architect Kilborn Limited. 2200 Lake Shore Boulevardwest. Toronto, Canada MAV 1A4. January 12, 1990 file 3714 15. corr/1*

XIII. *Dolphin Explorations Ltd. 120 Adelaide Street West Suite 1900 Toronto, Ontario. M5H 1T1 Reference: Cape Ray Project Feasibility Study*

XIV. *Guidelines For The Assessment Of Alternatives For Mine Waste Disposal*
Cape Ray Waste Management System Feasibility Study Prepared For Dolphin Explorations Limited By D. Comrie Consulting Ltd. 120 Traders Boulevard East Suite 209 Mississauga, Ontario LAZ 2H7 April 24, 1989

XV. *Dubé, B. & Lauzière, K. (1997). Gold Metallogeny of the Cape Ray Fault Zone, southwestern Newfoundland; Geological Survey of Canada Bulletin 508. 90 p.*

XVI. *Arnold, R. (1988). 1988 Surface Diamond Drilling Report on the Cape Ray Project, SW Newfoundland. Fourth year assessment report on diamond drilling exploration for the Cape Ray Project for licence 2875 on claim blocks 3297-3302 and 3843-3846 in the Isle aux Morts River area, southwestern Newfoundland.*

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Unpublished report for Dolphin Explorations Ltd. and Corona Corporation, Newfoundland and Labrador Geological Survey, Assessment File 110/0325; 1567 pp.

XVII. *Wilton, D.H.C. & Strong, D.F. (1986). Granite-related gold mineralization in the Cape Ray Fault Zone of southwestern Newfoundland. Economic Geology, v. 81. p. 281-295.*

XVIII. *Ford, G. (1985). First year assessment report on underground geological exploration and feasibility study for the Cape Ray project for licence 2443 on property in the Isle aux Morts River area, southwestern Newfoundland, 2 reports. Unpublished reports for New Venture Equities Limited. Newfoundland and Labrador Geological Survey, Assessment File 11O/0171, 197 pp.*

XIX. *Wilton, D.H.C. (1983a) Metallogenic, tectonic and geochemical evolution of the Cape Ray Fault Zone, with emphasis on electrum mineralization; Ph.D. thesis, Memorial University of Newfoundland, St. John's, Newfoundland. 618 p.*

XX. *Wilton, D.H.C. (1983b) The geology and structural history of the Cape Ray Fault Zone in southwestern Newfoundland. Canadian Journal of Earth Sciences, v. 20. p. 1119-1133.*

XXI. *Mining Association of Canada (2011) A Guide to the Management of Tailings Facilities, Second Edition, 68 p.*

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Appendices

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