

**ENVIRONMENTAL PROTECTION ACT**

**PROJECT REGISTRATION**

**Direct-Shipping Ore Project**

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## ACRONYMS, ABBREVIATIONS AND SYMBOLS

±	approximately
°C	degree Celsius
\$	dollar
'	foot/second
"	inch/minute
>	larger than
%	percentage
<	smaller than
µg/m <sup>3</sup>	micro gramme per cubic meter
µm	micron
µmho/cm	micro mho per centimeter
asl	above sea level
BHP	BHP Billiton
C	carbon
Ca	calcium
CA	certificate of authorization
CaCO <sub>3</sub>	calcium carbonate
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DFO	Department of Fisheries and Oceans
DRI	direct reduced iron
DSO	direct-shipping ore
EIA	environmental impact assessment
EIS	environmental impact statement
FAPAQ	Société de la faune et des parcs du Québec
FDSC	Federation of Digital Seismograph Networks
Fe	iron
ft	foot/feet
GNL	Government of Newfoundland and Labrador
GoQ	Government of Québec
ha	hectare
HCO <sub>3</sub>	bicarbonate
hr	hour
IBA	impact and benefits agreement
IOCC	Iron Ore Company of Canada
ITUM	Innu Takuaiakan Uashat mak Mani-Utenam
JTU	Jackson turbidity unit
K	potassium
km	kilometer
km <sup>2</sup>	square kilometer
kV	kilovolt
l	liter
LIOP	LabMag Iron Ore Project

LLP	LabMag Limited Partnership
LO	lump ore
M353	Mile 353
MDDEP	ministère du Développement durable, de l'Environnement et des Parcs
mg	milligramme
Mg	magnesium
mg/l	milligramme per liter
m	meter
m <sup>2</sup>	square meter
m <sup>3</sup>	cubic meter
m <sup>3</sup> /h	cubic meter per hour
mm	millimeter
Mn	manganese
MN	Nuttli magnitude
MRC	regional county municipality
MRNF	ministère des Ressources naturelles et de la Faune du Québec
Mt	million tonnes
N	North
n/a	not applicable
Na	Sodium
NIMLJ	Nation Innu Matimekush-Lac John
NML	New Millennium Capital Corporation
NNK	Naskapi Nation of Kawawachikamach
NOCM	National Occupational Classification Matrix
NTSC	National Topographic System of Canada
NTU	nephelometric turbidity unit
Pb	lead
pi	pi
Project	Direct-Shipping Ore Project
S	sulfur
SARA	<i>Species at Risk Act</i>
SF	sinter fines
SiO <sub>2</sub>	silica
spp.	species
TSH	Tshiuetin Rail Transportation Inc.
UIF	Upper Iron Formation
UTM	Universal Transverse Mercator
Vale	Companhia Vale do Rio Doce
var.	variety
W	West

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**1. NAME OF UNDERTAKING**

The Name of the undertaking is the “Direct-Shipping Ore Project” (“DSOP”).

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## **4. THE UNDERTAKING**

### **4.1 INTRODUCTION**

Iron ore is a relatively low-priced product and operations to produce it must be on a large scale to be profitable. Almost 98% of the global output of iron ore is used in steelmaking plants. Most of the major steelmaking countries import iron ore. The raw material used by steel plants comes from three sources: hot metal (iron) or pig iron produced in a blast furnace; scrap and recycled steel; the metallic product obtained from the solid-state reduction of iron ore in pellet form at a relatively low temperature in a reducing atmosphere (direct reduced iron).

Three categories of iron ore can be used in a blast furnace to produce iron: fines (sinter fines); large lumps (lump ore); pellets.

Pellets can also be used in a direct reduction unit to produce DRI.

LO is also known as sized ore, and is the most sought-after category of iron ore. It is produced by a relatively simple process that involves only the crushing of blocks of ore created by blasting the ore body, screening and washing the crushed ore to produce a clean, sized material known as LO. The granulometry of LO is -38 mm to +6 mm. However, not every deposit has rock that is sufficiently hard to produce this category of ore.

SF are the ore products collected naturally at the base of the above-referenced screening process and have a granulometry of -6 mm to +0.15 mm.

Iron ore pellets are made in a two-stage process involving crushing, grinding, screening and concentration followed by a transformation step called pelletising that agglomerates the concentrate into small balls that are subsequently hardened by induration. Because of the energy requirements of these processes, pellets are the most costly class of iron ore to produce.

### **4.2 NATURE OF THE UNDERTAKING**

The deposits contemplated by the present Project Notice ([Table 4.1](#)) were explored, developed and mined in the Schefferville region between 1954 and 1982. After that date, the owner relinquished its rights to the mining claims. Between 2004 and 2006, NML obtained from the GQ and GNL the claims to most of these deposits.

The DSO holdings controlled by NML are sub-divided into four areas designated Sector 1, Sector 2, Sector 3 and Sector 4. NML intends to mine these areas in two phases.

#### 4.2.1 First Phase

In the first phase, NML intends to mine sectors 2 and 3, which together represents about 20% of the Company's DSO historical estimated resources. The crude ore will be transported by haulage truck from the 10 open pit deposits in Sector 2 (10 km north of Schefferville) and Sector 3 (20 km north of Schefferville) to a wash plant to be built and installed in Sector 3.

NML will process the ore to achieve a quality acceptable to European steelmakers. It thus plans crushing and screening the ore to achieve an LO product sized between 8 mm and 32 mm. Screened SF will be washed to reduce the percentage of SiO<sub>2</sub> to 4-5%. The resulting SF product will be sized between 8 mm and 106 µm and will have an Fe content in the order of 65%.

NML plans to transport these products by rail to a marshalling yard near Schefferville prior to shipment on the main line to Sept-Îles.

The objective is to produce 2 Mt of DSO in Year 1, 4 Mt in Year 2 and 2 Mt in Year 3 from Sectors 2 and 3 in Québec and Labrador. Based on processing for 8 months per year, the production rates in Québec will be approximately 2,700 tonnes/day in Years 1 and 3 and approximately 5,300 tonnes/day in Year 2. The production rates in Labrador will be approximately 5,700 tonnes/day in Years 1 and 3 and approximately 11,300 tonnes/day in Year 2.

[Table 4.1](#) presents the list of the deposits in Sectors 2 and 3 that will be mined by NML in Sectors 2 and 3.

**Table 4.1: The DSO Deposits by Sector**

Sector 02 (23J/15)	Sector 03 (23J/14)
Star Creek <sup>1</sup> 2	Fleming 7N
Ferriman 4	Timmins 3N
	Timmins 4
	Timmins 7
	Timmins 8
	Howse
	Barney 1
	Barney 2

#### 4.2.2 Future Phase

The future phase of the Project will be to mine DSO in Sectors 1 and 4 ([Figure 4.1](#)). Sector 1 is located 2 km south and south-west of Schefferville and Sector 4 is located approximately 50 km north-west of Schefferville.

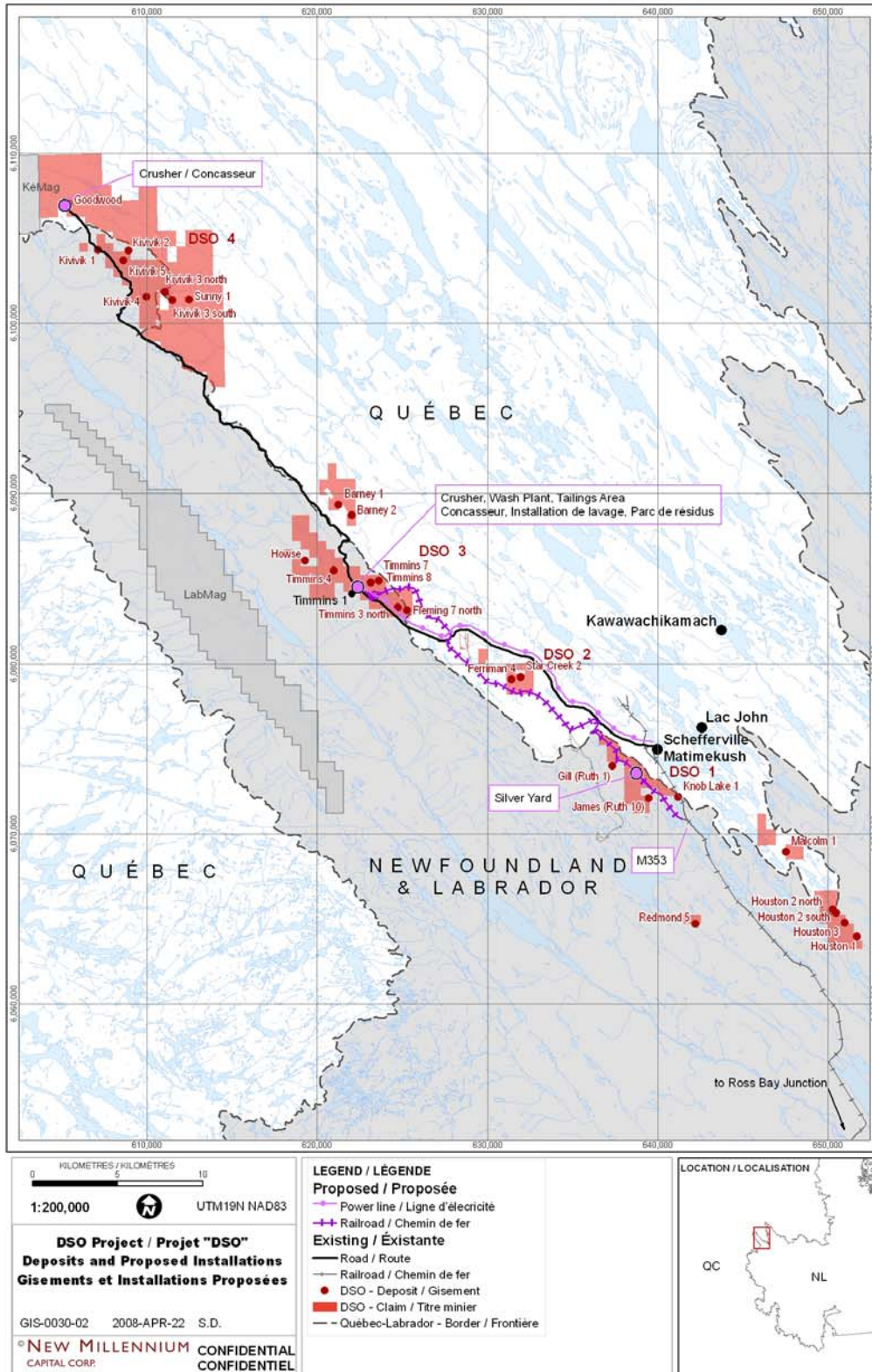
<sup>1</sup> The terminology of the deposits is that established historically.

The crude ore extracted from Sector 4 will be hauled by truck to a crusher located in Sector 4, after which it will be transported by overland conveyor to the wash plant in Sector 3. For Sector 1 the crude ore will be hauled by truck to the crusher located in Sectors 2 and 3. It is anticipated that production in Sectors 1 and 4 will start in 2013.

Approximately 75% of NML's DSO resources are located in Sector 4. Based on historical estimates, production in Sector 4 will span 10-13 years, and the life of the mineral processing facilities will be extended correspondingly.

The Present Project Registration addresses only Sectors 2 and 3. There will be a separate Project Registration and a separate process of environmental impact assessment for the future phase.

**Figure 4.1: Location of the Project**



### 4.3

#### PURPOSE/RATIONALE/NEED FOR THE UNDERTAKING

A dramatic increase in global demand for seaborne iron ore, mainly reflecting the industrial development of China, has created supply tightness in the iron ore market. Seaborne trade has increased from 452 Mt in 2001 to over 800 Mt in 2007. The price of fines went up by 478% from 2002 to 2008. Analysts are projecting that the supply tightness will last until 2011-12.

The Project is a brownfield project that can be brought into production in a relatively short time, as some of the required infrastructure (e.g., railway from Sept-Îles; electricity supply; airport; Schefferville municipal infrastructure) is already in place. The capital cost requirement will therefore be lower than that of a greenfield project. Because of the favourable market conditions and potentially attractive return on investment, NML has decided to seek authorization to proceed with the re-activation of DSO operations in the Schefferville area.

Currently, the iron ore seaborne market is dominated by three companies that collectively control over 70% of the market. Two of them, BHP and Rio Tinto, have their main operations in Australia, while the third, Vale, is located in Brazil. Canada has a competitive advantage over Australia and Brazil in supplying ore to Europe because of the lower shipping cost, and European steelmakers want to reduce their dependence on the three large suppliers. Based on initial discussions, European steelmakers are willing to give NML long-term supply contracts, provided that quality requirements are met. NML is also holding discussions with potential investors that are interested in a captive source of supply in order to insulate themselves against the rising price of iron ore.

NML's strategy is to enter into long-term supply contracts with European steelmakers in order to ensure the sale of its products during the entire operating life of the mines. As an alternative, NML is also considering selling a majority stake in the Project to a steelmaker that will consume the entire production of DSO in its own plants.

Given high prices and supply tightness, the timing appears to be opportune for NML to reactivate operations at the DSO deposits near Schefferville.