Scott Wilson Mining

NORTH AMERICAN PALLADIUM LTD.

TECHNICAL REPORT ON THE LAC DES ILES MINE, THUNDER BAY, ONTARIO, CANADA

NI 43-101 Report

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March 13, 2009

SCOTT WILSON ROSCOE POSTLE ASSOCIATES INC.

TABLE OF CONTENTS

PAGE

LIST OF TABLES

PAGE

LIST OF FIGURES

PAGE

1 SUMMARY

EXECUTIVE SUMMARY

Scott Wilson Roscoe Postle Associates Inc. (Scott Wilson RPA) was retained by North American Palladium Ltd. (NAP) to prepare an independent Technical Report on the Lac des Iles Mine (LDIM), near Thunder Bay, Ontario. LDIM is owned and operated by Lac des Iles Mines Ltd. (LDI), a wholly owned subsidiary of NAP. NAP is a Canadian company publicly listed on the TSX and AMEX. NAP carries out mineral exploration on the mine property on behalf of LDI.

The purpose of this report is to support the disclosure of Mineral Resources at the LDIM property as of December 31, 2008. This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects.

The LDIM was a 14,000 tonnes per day (tpd) combined open pit and underground mine and processing plant, which produced a bulk palladium/nickel/copper concentrate with precious metal credits until October 29, 2008, when it was placed on care and maintenance status due to lower metal prices.. The concentrate produced at the mine was trucked to Sudbury where it was sold on a contract basis to Xstrata Nickel (Xstrata).

CONCLUSIONS

LDIM produced ore from both underground and open pit operations. Previously, the mine had open pit and underground Mineral Reserves, however, no Mineral Reserves are currently estimated for the property. NAP is currently conducting an underground diamond drilling program on the Offset Zone, and carrying out studies on several potential restart scenarios, at various production rates. NAP plans to complete a prefeasibility study this year, which will include an updated resource estimate for the Offset Zone.

Mineral Resources have been estimated under the assumption that production would resume at the previous operating rate of 14,000 tpd milled. Scott Wilson RPA is of the opinion that this rate is dependent on resuming open pit mining, and notes that scenarios that consider lower production rates, without open pit mining, are likely to involve higher unit costs ($/t), leading to higher cut-off grades. Higher cut-off grades would reduce resource quantities, most notably in the 13 million tonnes of a regular grade ore (RGO) stockpile, which is very close to the cut-off grade for the 14,000 tpd operation.

Following the closure of operations, NAP intends to restrict spending at LDIM while management focuses on strategic initiatives including:

- Ongoing drilling and exploration to further delineate Mineral Reserves and Mineral Resources at LDIM, as well as grassroots exploration on property adjacent to the mine.
- Continuing the work required to complete a prefeasibility study on the Offset Zone at LDIM.

RECOMMENDATIONS

Scott Wilson RPA's recommendations are summarized below.

1. Complete more drilling on the Offset Zone.
2. Update the Roby Underground Zone resource model with the 2005 underground drilling, the 2007 Offset Zone drilling, and the chip sample data.
3. Update the Offset Zone underground resource model once the 2009 Offset Zone drilling program is completed.
4. Complete a prefeasibility study.
5. Continue to explore other targets on the property.

The 2009 exploration program planned by NAP includes a major underground drill project and two surface drill projects, for a total project expenditure of approximately $7 million. The underground drill program targets the Offset Zone. The surface drill projects target prospective areas of the Mine Block Intrusion and North LDI. The 2009 exploration program comprises a Phase 1 program totalling approximately $4 million and

a Phase 2 program totalling approximately $3 million that is contingent on positive drilling results from the Phase 1 work. Scott Wilson RPA has reviewed the budget and concurs with NAP that this work is warranted.

The underground project consists of 38 holes for 16,500 m of drilling to test the top of the Offset Zone above the 4650 Level. The holes will be drilled on six 50 m-spaced sections (499-504) by two underground rigs from two drill bays along the 5095 Level exploration drift. The project budget is $2.5 million.

Drill programs are planned by NAP on four prospective areas on the Mine Block Intrusion.

1) **North VT Rim:** Four holes for a total of 3,600 m have been approved for drilling on the north varitextured gabbro rim of the Mine Block Intrusion. The holes will be drilled on two sections within 500 m of the open pit mine. The project budget is $440,000.

2) **South VT Rim:** Four holes for a total of 2,120 m have been approved for drilling on the south varitextured gabbro rim. The project budget is $300,000.

3) **Creek Zone:** Four holes for 1,280 m have been approved to further test the Creek Zone. The budget for this project is $220,000.

4) **Massive Sulphide Bearing Zone:** Four holes for 2,000 m have been approved to drill test the massive sulphide bearing zone. The budget is $280,000.

The exploration program for North LDIM consists of five holes for a total of 5,000 m. The holes will be drilled to test under mineralized trenches and outcrops from which sample assays returned results of up to 7 g/t combined Pd-Pt-Au. The budget for the North LDIM project is $650,000.

TABLE 1-1 PROPOSED PHASE 1 BUDGET AND PROGRAM FOR LDIM
North American Palladium Ltd. - Lac des Iles Mine

Items	$
Underground Diamond Drilling Offset Zone - 38 holes totalling 16,500 m	2,500,000
Surface Diamond Drilling Mine Block Intrusion	
North VT Rim – 4 holes totalling 3,600 m	440,000
South VT Rim 4 holes totalling 2,120 m	300,000
Creek Zone – 4 holes totalling 1,280 m	220,000
Massive Sulphide Zone – 4 holes totalling 2,000 m	280,000
North LDIM 5 diamond drill holes for 5,000 m	650,000
Total Phase 1	**4,390,000**

Drilling success on the Offset Zone could trigger excavation of a new exploration drift on the 4915 L for a major drill program in 2010. The cost of the drift excavation would be approximately $3 million.

TABLE 1-2 PROPOSED PHASE 2 BUDGET FOR THE LDIM
North American Palladium Ltd. - Lac des Iles Mine

Item	$
Drift Excavation on the 4915 L	3,000,000

TECHNICAL SUMMARY

PROPERTY DESCRIPTION AND LOCATION

The LDIM property comprises approximately 86.4 km^2 of mineral claims and leases. The property is located at Latitude 49°10' North, Longitude 89°37' W, 85 km northwest of the community of Thunder Bay in northwestern Ontario.

The mine, mill and tailings impoundment area lie in the Boreal Forest ecoregion, characterized by typical northern Ontario forest with numerous lakes and beaver swamps.

LDI holds six Mining Leases, Land Registry Parcel Nos. 2982, 2983, 2984, 2985, 2531 and 2532431 comprising 3,416.3 ha. Contiguous with these leases are 54 mineral claims consisting of 331 claim units covering 5,119.1 ha, for a total property area of 8,535.3 ha. The company is required to pay a royalty to the Sheridan Platinum Group of Companies equal to 5% of the Net Cash Proceeds.

INFRASTRUCTURE

Thunder Bay is the major service centre for northwestern Ontario and provides most of the services required by the operation. This includes an airport with regular daily service to major Canadian cities, rail connections and ocean access via the Great Lakes and St. Lawrence Seaway. Most mine and mill consumables including fuel, cement and propane are readily available in Thunder Bay as well as a skilled workforce.

HISTORY

Open pit mining of the Roby Zone began in 1993. The open pit was operated by conventional truck and shovel mining, with low and high-grade material stockpiled near the on-site concentrator.

In May 2004, LDI collared a portal in the northwest wall of the pit and ramped down to access the Roby Underground Zone that continues down dip from the Roby Zone hanging wall below the pit. LDI began processing development muck from the Roby Underground Zone in December 2005. The ramp was extended around the pit to the north and new portal was opened in the east wall in 2006. The Roby Underground Zone reached commercial production at 2,000 tpd in April 2006.

The Offset Zone was discovered in 2001 by deep drilling. It is interpreted to be the fault-displaced depth extension of the Roby Underground Zone, and it lies approximately 200 m south and 280 m east of the Roby Underground Zone, where it tops at 500 m below surface. Drilling to date has outlined the steeply dipping zone to a depth of approximately 1,000 m and along a strike length of approximately 600 m. LDI conducted fill-in drilling of the Offset High Grade and Roby Footwall zones to upgrade a portion of the Inferred Mineral Resource to Indicated.

GEOLOGY

The Lac des Iles area is underlain by mafic to ultramafic rocks of the Archean Lac des Iles Intrusive Complex (LDI-IC). These rocks have intruded granites and greenstones of the Wabigoon Subprovince of the Superior Province. The LDI-IC lies immediately north of the Wabigoon-Quetico subprovince boundary, which extends some 300 km from Rainy Lake to Lake Nipigon. The LDI-IC is the largest of a series of mafic and ultramafic intrusions that occur along the boundary and which collectively define a 30 km diameter circular pattern in LDIM area.

The mine lies in the southern portion of the LDI-IC, in a roughly elliptical intrusive package measuring 3 km long by 1.5 km wide. These rocks, locally termed the Mine Block Intrusive (MBI), comprise a very wide range of textures and mafic and ultramafic compositions. The MBI is host to a number of PGE deposits, and the most important of these is the Roby Zone. The Roby Zone consists of three subzones: the North Roby Zone, Roby Underground Zone, and Breccia Zone. The main area of economic interest for underground mining is the Roby Underground Zone, extending beneath the Roby Pit and the Offset High Grade Zone.

PGM and base metal mineralization in the Lac Des Iles intrusion occurs in both primary and secondary situations within sulphide and silicate minerals. Mineralization appears to be dominantly stratabound along the contact between the East Gabbro and the mineralized Heterolithic Gabbro Breccia. Within the Heterolithic Gabbro Breccia, there is a high grade core typically constrained to an easily recognized ultramafic unit know as the Pyroxenite.

Visible PGM mineralization is rare to nil, and difficult to predict. In general, PGM ore grade mineralization is anticipated within gabbroic to pyroxenitic rocks (in close proximity to marker unit East Gabbro) that exhibit strong sausseritization of plagioclase feldspars, strong talcose alteration to amphiboles and association with either disseminated or blebby secondary sulphides

MINERAL RESOURCES

The open pit and underground block models for the LDIM have not changed since 2003 and the resource estimation technical details related to these block models can be found in Pincock Allen & Holt (PAH 2003) and RPA (2004a), respectively. Details related to the Offset Zone Mineral Resource estimate can be found in RPA (2007a). The LDI open pit and underground Mineral Resources as of December 31, 2008 are provided in Table 1-3.

TABLE 1-3 DECEMBER 31, 2008 MINERAL RESOURCE SUMMARY
North American Palladium Ltd. – Lac Des Iles Mine

Location	Tonnes (000's)	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)	PdEq (g/t)
Measured Resources							
Roby Open Pit	3,722	1.99	0.23	0.17	0.075	0.065	3.77
Roby Stockpiles	763	2.09	0.19	0.18	0.060	0.079	3.79
Indicated Resources							
Roby Open Pit	2,565	2.20	0.24	0.18	0.078	0.068	4.07
Roby RGO Stockpile	13,365	0.97	0.12	0.08	0.034	0.056	2.00
Roby Underground	3,292	7.61	0.44	0.33	0.062	0.077	10.46
Offset Underground	12,331	5.02	0.38	0.37	0.114	0.133	8.28
Total M&I Resources	**36,038**	**3.18**	**0.26**	**0.22**	**0.072**	**0.086**	**5.29**
Inferred Resources							
Offset Underground	4,637	4.9	0.4	0.3	0.12	0.13	8.0

Notes:
1. CIM definitions were followed for the estimation of Mineral Resources.
2. Mineral Resources for the Roby open pit were estimated at a cut-off grade of 1.8 g/t PdEq, within an optimized pit shell run below the current pit survey (October 2008).
3. Mineral Resources in stockpiles were estimated at a cut-off grade of 1.9 g/t PdEq.
4. Mineral Resources for the Roby and Offset Zones underground were estimated at a cut-off grade of 5.8 g/t PdEq.
5. Cut-off grades were determined under the assumption that a production rate of 14,000 tpd would be resumed in the event of restarting operations.
6. PdEq factors were calculated separately for each area, based on operating cost and metallurgical performance estimates appropriate for those areas.
7. Metal price assumptions of US$350/oz palladium, US$1,400/oz platinum, US$850/oz gold, US$6.50/lb nickel, and US$2.00/lb copper were used in the estimation of PdEq and cut-off grade. A US$/C$ exchange rate of 1.11 was used.

MINING OPERATIONS

The LDIM has been on care and maintenance since October 29, 2008. It was a 14,000 tpd combined open pit and underground mine and processing plant, producing a bulk palladium/nickel/copper concentrate with precious metal credits. The concentrate produced at the mine was trucked to Sudbury, where it was sold on a contract basis to Xstrata. The open pit mine began operating in 1993 and production from underground started in 2006. Most key operating and cost parameters have been well established through operating experience.

LDI mined ore and waste from the open pit using conventional truck/shovel operations. The pit was mined with 10 m benches and 15 m berms. The overall wall angle is 57^{o} on the east and west walls, and 45^{o} on the south wall. A 20 m high crown pillar was planned to be left between the top level of the Roby underground mine and the bottom of the ultimate pit, intended for recovery at the end of the mine life. Approximately 90 m remain between the current open pit and the highest level mined underground (measured vertically, within the Roby Underground Zone).

The Roby Underground Zone was accessed via a decline ramp, with levels being established every 20 m to 30 m. The mining method was a combination of longitudinal and transverse longhole stoping. Mined stopes were filled with unconsolidated waste generated from underground development. Underground ore was hauled and stockpiled at the portal in the open pit, where it was reloaded into open pit haul trucks and hauled to the crusher.

MINERAL PROCESSING

The current processing plant at LDIM has been in operation since 2001. The mill is a conventional flotation operation with semi-autogenous (SAG) and ball milling, followed by three stages of flotation and two stages of regrind. The final product is a bulk copper/nickel concentrate with high PGM values.

ENVIRONMENTAL CONSIDERATIONS

The Lac des Iles Mine is a mature mine site that has followed the normal Ontario procedures of the Ministry of Northern Development and Mines (MNDM), Ministry of

the Environment, and Ministry of Labour, through the local offices in Thunder Bay. All permits are in place to operate the open pit and underground operations. The mine site is also in compliance with the Canada Fisheries Act, the Canada Water Resources Act, and the Canadian Environmental Protection Act.

2 INTRODUCTION AND TERMS OF REFERENCE

Scott Wilson Roscoe Postle Associates Inc. (Scott Wilson RPA) was retained by Dr. William Stone, P. Geo., Vice President Exploration of North American Palladium Ltd. (NAP) to prepare an independent Technical Report on the Lac des Iles Mine (LDIM), near Thunder Bay, Ontario. LDIM is owned and operated by Lac des Iles Mines Ltd. (LDI), a wholly owned subsidiary of NAP. NAP is a Canadian company publicly listed on the TSX and AMEX. NAP carries out mineral exploration on the mine property on behalf of LDI.

The purpose of this report is to support the disclosure of Mineral Resources at the LDIM as of December 31, 2008. This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects.

Scott Wilson RPA's familiarity with the LDIM operation dates back to 2003 when Scott Wilson RPA completed a prefeasibility study for underground mining on July 31, 2003. Scott Wilson RPA prepared a new underground resource block model in November 2003 and completed a feasibility study for underground mining at the LDIM on February 27, 2004. Scott Wilson RPA also assisted mine personnel with updating the open pit resource block model in July 2003, as well as underground Mineral Resource and Mineral Reserve updates for 2005 and 2006. On February 23, 2007, Scott Wilson RPA issued a NI 43-101 Technical Report for a new underground Mineral Resource estimate of the Offset Zone located at LDIM. On October 31, 2007, Scott Wilson RPA issued a separate NI 43-101 Technical Report to support the disclosure of Mineral Resources and Mineral Reserves of the LDIM to June 30, 2007. On January 15, 2009, Scott Wilson RPA updated the Offset Zone resource estimate.

CURRENT STATUS

On October 21, 2008, NAP announced (NAP, 2008c) that due to declining metal prices it would temporarily place LDIM on a care and maintenance basis effective October 29, 2008.

Following the closure of operations, NAP intends to restrict spending at LDIM while management focuses on strategic initiatives including:

- Ongoing drilling and exploration to further delineate reserves and resources at LDIM, as well as grassroots exploration on property adjacent to the mine.

- Continuing the work required to complete a prefeasibility study on the Offset Zone at LDIM.

SOURCES OF INFORMATION

This report was carried out under the overall supervision of Deborah A. McCombe, P.Geo., Consulting Geologist and Executive Vice President of Scott Wilson RPA. The work was carried out by the following Scott Wilson RPA personnel:

- Deborah McCombe, P.Geo., Executive Vice President
- Ian T. Blakley, P. Geo., Consulting Geologist
- Luke Evans, M,Sc., P.Eng., Supervisor, Resource Estimation
- John Boyce, P.Eng., Senior Engineer
- Jason Cox, P.Eng., Supervisor, Mining
- Richard Routledge, M.Sc. (Appl.) P.Geo., Senior Consulting Geologist

Deborah A. McCombe, P.Geo., and Ian T. Blakley, P. Geo., first visited the property from September 11 to 14, 2007, which included an audit of both mine and exploration activities. On May 30, 2008, Mr. Blakley visited the NAP Thunder Bay Exploration office to review preliminary geology interpretations and obtain drill program data. A site visit to LDIM was carried out by Mr. Blakley on July 15, 2008.

Mr. Evans visited the LDIM from January 30, 2006 to February 1, 2006 and Mr. Routledge visited the LDIM on November 15 and 16, 2005. Technical documents and reports were obtained from NAP personnel, from the NAP exploration office in Thunder Bay, from LDI and from public sources.

Discussions were held with the following technical personnel:

- Krista Nelson, P.Geo., LDI Exploration Geologist
- David Penna, P.Geo., Chief Geologist LDIM
- Dr. William Stone, Ph.D., P. Geo., Vice President of Exploration, NAP
- David Passfield, P.Eng. Vice President of Operations, NAP

- Laila Sedore, P.Eng., LDIM Mill Superintendent and Environmental Coordinator
- Bill McKinney, LDIM Operations Manager
- John Caldbick, P.Eng., LDIM General Manager
- Trent C.A. Mell, B.C.L., LL.B, Vice President, General Counsel & Corporate Secretary, NAP

The documentation reviewed, and other sources of information, are listed at the end of this report in Section 21 References.

UNITS OF MEASUREMENT AND CURRENCY

Unless otherwise stated, all measurements are in the metric system. Imperial Units were used for the historical drilling programs. Results of this drilling have been converted to metric units. All tonnages shown are in metric tonnes of 1,000 kilograms (2,204.6 lbs) and the palladium content is shown as grams per tonne. All currency is in Canadian dollars (C$) unless otherwise indicated.

A table showing abbreviations used in this report is provided below.

TABLE 2-1 LIST OF ABBREVIATIONS

μ	micron
°C	degree Celsius
°F	degree Fahrenheit
μg	microgram
A	ampere
a	annum
AQ	drill core (diameter approx. 27 mm)
Au	Gold
bbl	barrels (petroleum)
BQ	drill core (diameter approx. 36 mm)
Btu	British thermal units
C$	Canadian dollars
cal	calorie
Cu	Copper
cfm	cubic feet per minute
cm	centimetre
cm^2	square centimetre
Co	Cobalt
d	day
dia.	diameter
dmt	dry metric tonne
dwt	dead-weight ton
ft	foot
ft/s	feet per second
ft^2	square foot
ft^3	cubic foot
g	gram
G	giga (billion)
Gal	imperial gallon
g/L	gram per litre
g/t	gram per tonne
Gpm	imperial gallons per minute
gr/ft^3	grain per cubic foot
gr/m^3	grain per cubic metre
hr	hour
ha	hectare (2.471 acres)
hp	horsepower
in	inch
in^2	square inch
J	joule
k	kilo (thousand)
kcal	kilocalorie
kg	kilogram
km	kilometre
km/h	kilometre per hour
km^2	square kilometre
kPa	kilopascal
kVA	kilovolt-amperes
kW	kilowatt
kWh	kilowatt-hour
L	litre
L/s	litres per second
M	metre
MASL	metres above sea level
Mm	millimetre
Min	minute
Mph	miles per hour
MVA	megavolt-amperes
MW	Megawatt
MWh	megawatt-hour
m^3/h	cubic metres per hour
m.y.	million years
Ni	Nickel
NQ	drill core (diameter approx. 48 mm)
NSR	Net smelter return
O_2	Oxygen
opt, oz/st	ounce per short ton
oz	Troy ounce (31.1035g)
oz/dmt	ounce per dry metric tonne
ppb	part per billion
ppm	part per million
Pd	Palladium
psia	pound per square inch absolute
psig	pound per square inch gauge
Pt	Platinum
RL	relative elevation
s	second
st	short ton
stpa	short ton per year
stpd	short ton per day
t	metric tonne
tpa	metric tonnes per year
tpd	metric tonnes per day
US$	United States dollar
USg	United States gallon
USgpm	US gallon per minute
V	Volt
W	Watt
wmt	wet metric tonne
yd^3	cubic yard
yr	year

3 RELIANCE ON OTHER EXPERTS

Scott Wilson Roscoe Postle Associates Inc. (Scott Wilson RPA) has prepared this report for North American Palladium Ltd. (NAP). The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to Scott Wilson RPA at the time of preparation of this report,
- Assumptions, conditions, and qualifications as set forth in this report, and
- Data, reports, and opinions supplied by NAP, LDI and other third party sources. Scott Wilson RPA does not guarantee the accuracy of conclusions, opinions, or estimates that rely on third party sources for information that is outside the area of technical expertise of Scott Wilson RPA.

Scott Wilson RPA has relied on mineral land title information as summarized in a legal opinion by NAP's legal counsel. Scott Wilson RPA has not independently verified the mineral land titles or the status of ownership.

Except for the purposes legislated under provincial securities laws, any use of this report by any third party is at that party's sole risk.

4 PROPERTY DESCRIPTION AND LOCATION

The LDIM property comprises approximately 86.4 km^2 of mineral claims and leases. The property is located at latitude 49°10' N, longitude 89°37' W, 85 km northwest of the community of Thunder Bay in northwestern Ontario (Figure 4-1).

The mine, mill and tailings impoundment area lie in the Boreal Forest ecoregion, characterized by typical northern Ontario forest with numerous lakes and beaver swamps.

LAND TENURE

Lac des Iles Mines Ltd. (LDI), a wholly owned subsidiary of NAP, holds six mining leases, Land Registry Parcel Nos. 2982, 2983, 2984, 2985, 2531, and 2532 comprising 3,416.3 ha. Contiguous with these leases are 54 mineral claims consisting of 331 claim units covering 5,119.1 ha, for a total property area of 8,535.3 ha (Tables 4-1 and 4-2, Figure 4-2).

The mine site straddles the Spruce River and Dog River/Matawin Forests. The land surrounding the mine is Crown Land, with limited access that was used primarily for recreation, forest resource extraction, and trapping. LDIM is the only developed mine in the area. The mine area is part of a registered trap line. LDI co-operates with the Sustainable Forest Licence holders, utilizing the area, to ensure that marketable timber on the mine site is harvested.

SURFACE RIGHTS

LDI owns the surface rights to most of the leases as shown in Table 4-1. LDI does not own the surface rights to any of the claims.

Figure 4-1

Lac des Iles Mines Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Location Map

March 2009

TABLE 4-1 LEASE DISPOSTION AS OF MARCH 31, 2008
North American Palladium Ltd. - Lac des Iles Mine

Claim No.	Parcel No.	Area (ha)	Lease No.	Due Date	Annual Taxes ($)	Comment
CLM251	2982LTB	235.0	104108 G4000197	31-Aug-27	705	Surface and Mining Rights
CLM252	2983LTB	314.4	104109 G4000189	31-Aug-27	1,024	Surface and Mining Rights
CLM253	2985LTB	395.7	104108 G4000192	31-Aug-27	1,187	Surface and Mining Rights
CLM254	2984LTB	497.4	104108 G4000451	31-Aug-27	1,492	Mining Rights Only
CLM430	2531LTB	348.4	107903	30-Sep-27	1,045	Surface and Mining Rights
CLM431	2532LTB	1,625.3	107902	30-Sep-27	5,086	Surface and Mining Rights
Total	**6**	**3,416.2**			**10,539**	

TABLE 4-2 CLAIM DISPOSITION AS OF DECEMBER 31, 2008
North American Palladium Ltd. - Lac des Iles Mine

Township / Area	Claim Number	Unit Size	Area (ha)	Recording Date	Claim Due Date	Work Required ($)
LAC DES ILES	845318	1	8.6	1985-Dec-04	2009-Dec-04	400
LAC DES ILES	864416	1	12.6	1985-Nov-19	2009-Nov-19	400
LAC DES ILES	864417	1	15.6	1985-Nov-19	2009-Nov-19	400
LAC DES ILES	864418	1	12.8	1985-Nov-19	2009-Nov-19	400
LAC DES ILES	864419	1	12.1	1985-Nov-19	2009-Nov-19	400
LAC DES ILES	864420	1	13	1985-Nov-19	2009-Nov-19	400
LAC DES ILES	864421	1	13.5	1985-Nov-19	2009-Nov-19	400
LAC DES ILES	873576	1	16.6	1986-May-05	2009-May-05	400
LAC DES ILES	873577	1	13.4	1986-May-05	2009-May-05	400
LAC DES ILES	873578	1	16.4	1986-May-05	2009-May-05	400
LAC DES ILES	873579	1	17.2	1986-May-05	2009-May-05	400
LAC DES ILES	873580	1	13.8	1986-May-05	2009-May-05	400
LAC DES ILES	873581	1	16.3	1986-May-05	2009-May-05	400
LAC DES ILES	909816	1	11.8	1986-May-16	2009-May-16	400
LAC DES ILES	1165555	12	190	1992-Mar-06	2010-Mar-06	4,800
LAC DES ILES	1165557	3	62.8	1992-Mar-06	2010-Mar-06	1,200
LAC DES ILES	1165558	8	134.6	1992-Mar-06	2010-Mar-06	3,200
LAC DES ILES	1187071	4	56.9	1994-Dec-02	2009-Dec-02	1,600
LAC DES ILES	1191463	6	99.3	1993-Aug-23	2009-Aug-23	2,400
LAC DES ILES	1191464	9	126.6	1993-Aug-23	2009-Aug-23	3,600
LAC DES ILES	1191467	4	59.6	1994-Mar-25	2010-Mar-25	1,600

Township / Area	Claim Number	Unit Size	Area (ha)	Recording Date	Claim Due Date	Work Required ($)
LAC DES ILES	1194309	4	51.8	1991-Sep-09	2009-Sep-09	1,600
LAC DES ILES	1200770	11	161.8	1994-Dec-02	2009-Dec-02	4,400
LAC DES ILES	1205064	12	192.2	1999-Jul-20	2009-Jul-20	4,800
LAC DES ILES	1207892	6	96.4	1995-Feb-03	2010-Feb-03	2,400
LAC DES ILES	1207893	6	102.2	1995-Feb-03	2010-Feb-03	2,400
LAC DES ILES	1215285	12	208.3	1996-Jun-17	2009-Jun-17	4,800
LAC DES ILES	1215286	1	8.5	1996-Jun-17	2009-Jun-17	400
LAC DES ILES	1215287	1	9.2	1996-Jun-17	2009-Jun-17	400
LAC DES ILES	1215288	1	16.3	1996-Jun-17	2009-Jun-17	400
LAC DES ILES	1215289	15	261.3	1996-Jun-17	2009-Jun-17	6,000
LAC DES ILES	1215290	15	222	1996-Jun-17	2009-Jun-17	6,000
LAC DES ILES	1215291	15	217.6	1996-Jun-17	2009-Jun-17	6,000
LAC DES ILES	1215292	3	24.9	1996-Jun-17	2009-Jun-17	1,200
LAC DES ILES	1215294	3	36.2	1996-Jun-17	2009-Jun-17	1,200
LAC DES ILES	1217213	6	98.8	1997-Feb-21	2010-Feb-21	2,400
LAC DES ILES	1217347	1	12.5	1998-Apr-14	2010-Apr-14	400
LAC DES ILES	1232007	6	98.5	1998-Feb-05	2010-Feb-05	2,400
LAC DES ILES	1232008	2	39.1	1998-Feb-06	2010-Feb-06	800
LAC DES ILES	1232009	1	8.3	1998-Apr-14	2010-Apr-14	400
LAC DES ILES	1232010	2	33.6	1998-Apr-14	2010-Apr-14	800
LAC DES ILES	1232011	2	32.3	1998-Apr-14	2010-Apr-14	800
LAC DES ILES	1232619	8	151.8	1998-May-07	2009-May-07	3,200
LAC DES ILES	1232620	8	126.7	1998-May-07	2009-May-07	3,200
LAC DES ILES	1232742	4	69	1998-Apr-21	2010-Apr-21	1,600
LAC DES ILES	1232962	12	216.3	1999-Jun-29	2009-Jun-29	4,800
SHELBY LAKE	1238057	16	259.2	1999-Jun-29	2009-Jun-29	6,400
SHELBY LAKE	1238058	16	257.3	1999-Jun-29	2009-Jun-29	6,400
SHELBY LAKE	1238059	16	255.2	1999-Jun-29	2009-Jun-29	6,400
LAC DES ILES	1238060	6	75	1999-Jun-29	2009-Jun-29	2,400
LAC DES ILES	1238061	15	198.9	1999-Jun-29	2009-Jun-29	6,000
LAC DES ILES	1238062	15	174.4	1999-Jun-29	2009-Jun-29	6,000
HEAVEN LAKE	1245678	15	233.7	2000-Dec-08	2010-Dec-08	6,000
HEAVEN LAKE	1245679	15	247	2000-Dec-08	2010-Dec-08	6,000
	54	**331**	**5,119.4**	**-**	**-**	**132,400**

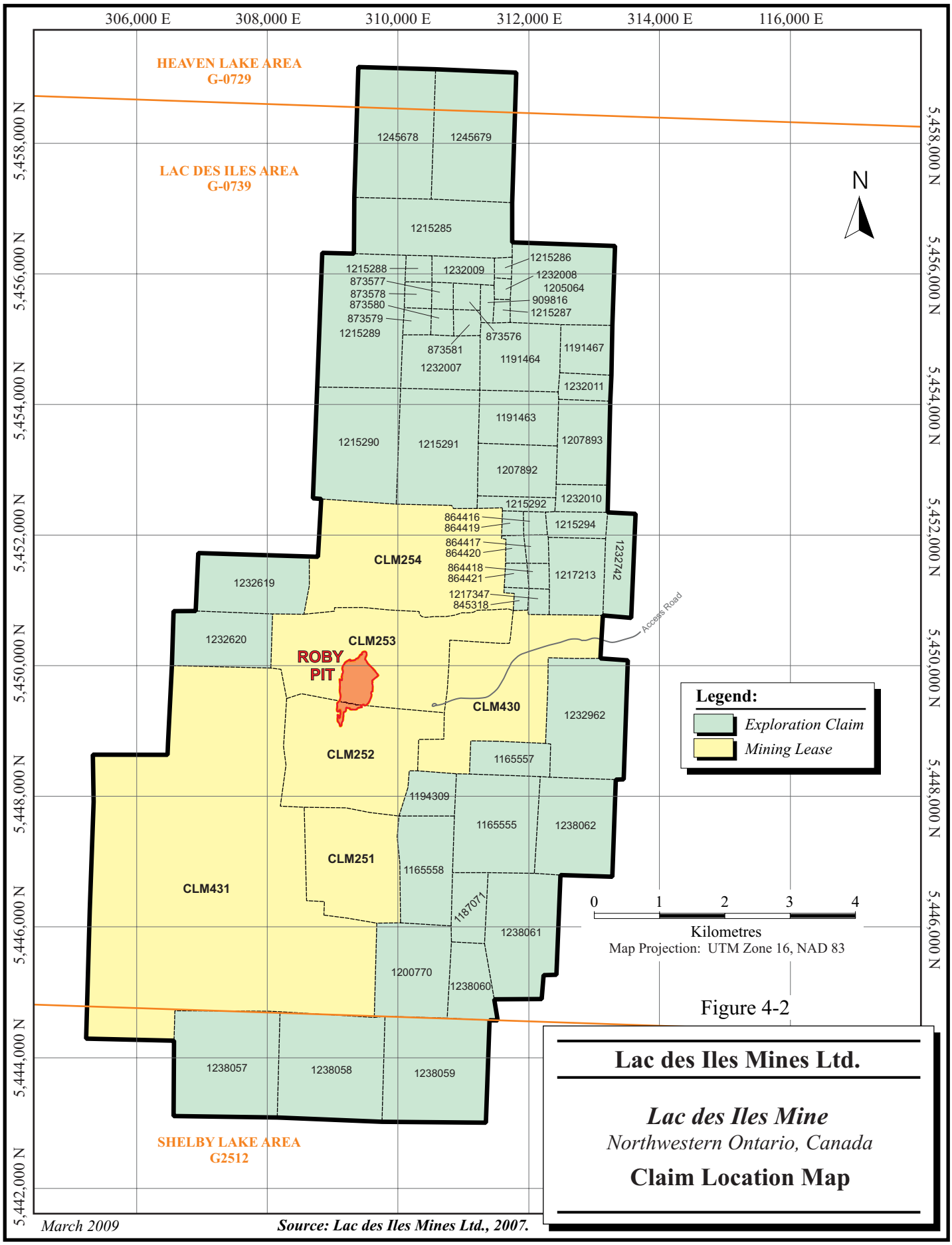


Figure 4-2

Lac des Iles Mines Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Claim Location Map

March 2009 ***Source: Lac des Iles Mines Ltd., 2007.***

AGREEMENTS (ROYALTIES, OBLIGATIONS AND ENCUMBRANCES)

The following information was obtained from NAP's in-house legal counsel.

NAP is required to pay a royalty to the Sheridan Platinum Group of Companies (SPG) equal to 5% of the Net Cash Proceeds, as defined in the agreement, from mining operations until the expiration of the Lac des Iles leases.

The term "net cash proceeds" is defined in the royalty agreement generally as the net proceeds of sale receivable by LDI from the production and sale of concentrates from LDIM after deducting the costs of sampling, assaying, transporting and insuring the concentrate; smelting, processing and refining charges and penalties (excluding LDI's own processing costs); and all applicable taxes and royalties that must be paid in respect of the mining operations. All mining operations at LDIM are on the mining leases covered by the royalty agreement.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

ACCESSIBILITY

Access to the site is via paved Provincial Highway No. 527 from Thunder Bay and then via a 15 km all-weather private road to the mine site. One-way travel time is approximately 1.5 hours depending upon weather conditions. The site itself is served by well-maintained hard surface roads.

CLIMATE

The Lac des Iles area has hot summers and cold, snowy winters. Maximum and minimum temperatures range from an extreme low of –30°C in the winter months to an extreme high of 38°C in the summer months. Winter lows of –30°C are common in January and February.

Mean annual precipitation at LDIM is approximately 714 mm. The area is snow-covered for 5.5 months per year, with monthly snowfalls ranging from 270 mm to 450 mm in winter. Prevailing winds are from the northwest. The relative humidity ranges from 50% to 77%.

Weather conditions are rarely severe enough to halt mining operations and generally the only issue is related to safe traction on the access roads and ramps within the open pit. Mill operations are enclosed and are not exposed to the weather other than feed inputs.

LOCAL RESOURCES

Thunder Bay, with a population of approximately 120,000 (2001 Census), is the major service centre for northwestern Ontario and provides most of the services required by the operation. This includes an airport with regular daily service to major Canadian cities, rail connections, and ocean access via the Great Lakes and St. Lawrence Seaway.

Most mine and mill consumables including fuel, cement, and propane are readily available in Thunder Bay. Due to the project's proximity to Thunder Bay, LDI has had success in hiring experienced staff and personnel with good mining and processing expertise. Most staff worked either a four day on/three day off or seven day on/seven day off shift. Contract miners operated on a 28 day in/14 day out schedule.

LDI, GULL BAY FIRST NATION AND SPRUCE RIVER GROUP COMMUNITY RELATIONS

The Spruce River Forest area is located north of the city of Thunder Bay and is within the traditional lands of the Gull Bay First Nation community. The community of Gull Bay First Nation is situated on the southwest shore of Lake Nipigon, approximately 195 km north of Thunder Bay on Highway 527. It is a small community which is home to 298 band members. The total number of registered band members both on and off reserve is 1,050. Preservation of the natural habitat is of great importance to the First Nation people.

A Sustainable Forest Management Plan is in place to protect and maintain the Spruce River Forest ecosystem. This is a 20-year forest management program that contains resource management objectives, targets and indicators of sustainability. Public participation and consultation is a requirement as defined in the Crown Forest Sustainability Act (1994).

The Local Citizens Committee (LCC) was formed in 1995 and has been actively involved in the forest management planning process. Monthly LCC meetings are held amongst all interested parties to summarize forest management plans, objectives and strategies. Local First Nation communities were also provided with the opportunity to participate in the Forest Management Aboriginal Consultation Program.

INFRASTRUCTURE

A site plan drawing is shown in Figure 5-1. The main facilities are the new camp area, the old camp area, main office and tire shop, the old mill area, the new mill area which includes the open pit shops, warehouse and operational offices, the old

concentrator building, the open pit and stockpile area, the underground portal and related ventilation accesses, and the tailings management facility.

CAMP FACILITIES

A 324-person camp and recreational complex was built in conjunction with the construction of the new mill. This facility was expanded in 2006 to accommodate the underground workforce.

WAREHOUSE AND LOGISTICS

All purchasing is handled by the on-site staff, with regular freight movement between the site and Thunder Bay. On-site warehouse space accommodates spares for open pit and underground mining, as well as milling operations. The trucking contractor maintains a transshipping warehouse in Thunder Bay for LDIM material. Road access to the site is adequate for moving in most materials, including oversize mining equipment.

STOCKPILES

Waste dumps and ore stockpiles of various grades have been established on surface near the concentrator facilities. One significant aspect is that the waste rock from pit walls is relatively benign and classified as non-acid generating. Similar waste rock from the underground workings is placed as fill in the mined underground stopes.

TAILINGS MANAGEMENT FACILITY

Tailings from the mill are deposited at the tailings management facility and the water is reclaimed for use in the concentrator.

SERVICES

Water and sewer services are supplied independently for each facility and are considered by LDI to be adequate for current needs. Expansion of potable water and sewer services were completed for the underground workforce additions.

POWER

Electrical power is supplied by Hydro One via a 118 kV line to a main substation on site. Site distribution is maintained by LDI and consists of 4,160 V overhead lines around the site. There is a services agreement with Hydro One in place.

PHYSIOGRAPHY

LDIM is located in northwestern Ontario which lies within the Superior Province of the Canadian Precambrian Shield, a boreal forest region typified by uplands forested mostly by black spruce, birch, poplar and jack pine, and low areas of numerous lakes and treed swamps. Drainage is poorly integrated and generally south to Lake Superior. Local land use is primarily forestry related. The topography of the site is favourable for the placement of facilities, being generally of low relief. Elevations on the property range from 418 masl to 550 masl, exclusive of the open pit.

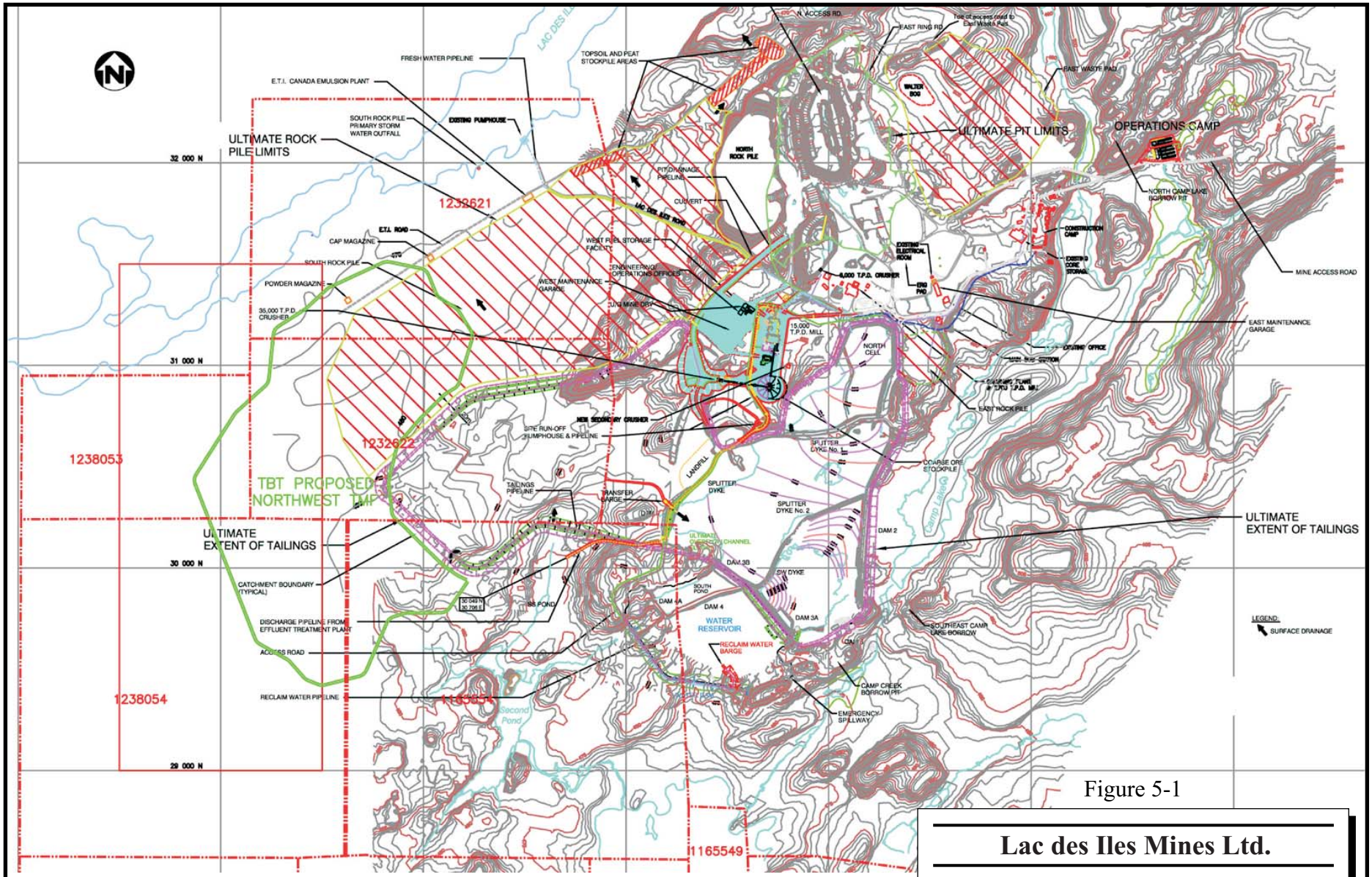


Figure 5-1

Lac des Iles Mines Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Site Plan

March 2009

Source: Lac des Iles Mines Ltd., 2007.

6 HISTORY

Geological investigations in the area began with reconnaissance mapping by Jolliffe (1934), followed by more detailed mapping of the area by Pye (1968). Economic interest in the area was sparked by the discovery of aeromagnetic anomalies in the late 1950s. Significant palladium mineralization was first discovered in the Roby Zone in 1963 by prospectors. Various exploration programs were undertaken over the next 25 years by a number of companies, including Gunnex Ltd., Anaconda Ltd., Texas Gulf Sulphur Co. Inc., and Boston Bay Mines Ltd.

In 1990, Madeleine Mines Ltd., a predecessor company to NAP, developed the property. After intermittent production and continuing capital expenditures, commercial open pit production of the Roby Zone was achieved in December 1993. NAP was formed as an outcome of corporate reorganization. In 2000, LDI commenced an expansion program and a new mill was commissioned in the second quarter of 2001 to achieve its rated 15,000 tpd throughput in August 2002.

A major Phase Four push back of the south and east pit wall was undertaken in 2004-2005, with waste removal of upper benches completed in 2005. In 2006, the pit was redesigned to address south wall stope stability issues. This pit redesign was finalized in September 2006.

From 1999 to 2001, the NAP exploration arm carried out an extensive drilling campaign on behalf of LDI that identified mineralization at depth, below the ultimate pit bottom. The drilling identified two zones with potential for underground mining: the Roby Underground Zone and the Offset Zone.

On July 31, 2003, Roscoe Postle Associates Inc. (RPA) completed a positive pre-feasibility study for underground mining of the Roby Underground Zone (down dip extension of the open pit Main Zone) at the LDIM on behalf of LDI. Subsequently, RPA completed a feasibility study for underground mining dated February 27, 2004. The

study proposed to develop a 2,000 tpd underground mine to run concurrently with the existing Roby open pit. A NI 43-101 Technical Report by RPA (RPA, 2004), dated April 2, 2004, summarized LDI's underground project at the mine as of March 31, 2004. This report was based on the RPA Feasibility Study.

Underground development on the Roby Underground Zone started in 2004, with the ramp developed and the zone accessed in late 2005. Development muck was delivered to the concentrator in December 2005 and underground commercial production began in March 2006.

A number of process improvement and enhancement initiatives were undertaken in 2006 to improve mill performance. In the last quarter of 2006, mill availability reached 90% and palladium recovery rose to 77%.

The Offset Zone was discovered in 2000 by NAP Exploration. The Offset Zone was historically subdivided into the Offset High Grade Zone and the adjacent Roby Footwall Zone. The Offset Zone is the fault-offset, down-dip extension of the Roby Underground Zone that was mined below the Roby open pit at LDIM until October 2008. A number of surface and underground drilling programs have targeted the Offset Zone since 2001.

In 2008, NAP carried out a surface drilling program that focused on exploring targets on the Mine Block Intrusion and on the Southeast Breccia Zone situated adjacent to the southeast corner of the open pit.

PRODUCTION HISTORY

In 2007, the concentrator processed 5.0 million tonnes from the open pit and underground mines and stockpiles. The 2007 metal production was 286,334 ounces of palladium, 24,442 ounces of platinum, 20,092 ounces of gold, 5.5 million pounds of copper, and 3.1 million pounds of nickel.

In the first 10 months of 2008, the concentrator processed 3.7 million tonnes from the open pit and underground mines and stockpiles. The 2008 metal production was 212,046 ounces of palladium, 16,311 ounces of platinum, 15,921 ounces of gold, 4.6 million pounds of copper, and 2.5 million pounds of nickel.

Table 6-1 lists LDIM mill production for the past six years.

TABLE 6-1 MINE/MILL PRODUCTION SUMMARY 2003 TO 2008
North American Palladium Ltd. – Lac des Iles Mine

	Unit	2008	2007	2006	2005	2004	2003
Ore Mined - Underground	Tonnes	615,630	768,841	721,179	---	---	---
Ore Mined – Open Pit	Tonnes	3,060,788	4,374,225	3,926,911	3,705,555	4,574,134	4,396,847
Waste Mined – Open Pit	Tonnes	6,964,501	7,231,026	8,888,037	11,619,658	12,275,889	10,164,806
Mill Throughput	Tonnes	3,722,732	5,006,383	4,570,926	4,780,599	5,298,544	5,159,730
Pd Head Grade	g/t	2.49	2.39	2.18	1.66	2.41	2.31
Pd Recovery	%	75.3	74.8	74.0	69.6	75.2	75.5
Pd Produced	Oz	212,046	286,334	237,338	177,167	308,931	288,703
Pt Produced	Oz	16,311	24,442	22,308	18,833	25,128	23,742
Au Produced	Oz	15,921	20,092	17,237	14,308	25,679	23,536
Ni Produced	Lbs	2,503,902	3,066,973	2,721,042	2,353,227	4,320,970	4,070,785
Cu Produced	Lbs	4,623,278	5,536,044	5,155,588	5,514,670	7,836,183	7,142,674

Source: 2008 LDIM Historical Production File

Almost 42 million tonnes have been processed, and approximately 2.3 million ounces of palladium produced since the mine started in 1993 (Table 6-2).

TABLE 6-2 MILL PRODUCTION SUMMARY 1993 TO 2008
North American Palladium Ltd. – Lac des Iles Mine

Year	Tonnes Milled	Palladium ('000 ozs)	Platinum ('000 ozs)	Gold ('000 ozs)	Copper ('000 lbs)	Nickel ('000 lbs)
1993	51	0	0	0	0	0
1994	607	59	4	3	1	663
1995	744	77	5	5	1,163	979
1996	757	60	4	4	941	741
1997	803	59	4	4	964	778
1998	963	73	5	4	1,010	795
1999	894	64	5	5	1,377	974
2000	893	95	6	6	1,362	1,035
2001	2,662	123	10	10	3,124	1,595
2002	4,852	219	19	16	5,295	2,764
2003	5,160	289	24	24	7,143	4,071
2004	5,299	309	25	26	7,836	4,321
2005	4,781	177	19	14	5,515	2,353
2006	4,571	237	22	17	5,156	2,721
2007	5,006	286	24	20	5,536	3,067
2008	3,723	212	16	16	4,623	2,504
Total	**41,766**	**2,342**	**193**	**173**	**51,046**	**29,361**

Source: LDIM 2008 Mill Production File

PRIOR RESOURCE ESTIMATES

Pincock, Allen and Holt (PAH) carried out an independent resource estimate for the Offset High Grade Zone in June 2003, which was compliant with NI 43-101. RPA assisted mine staff in wireframe modelling of the zone at that time. The Offset High Grade Zone Inferred Resource as of 2003 totalled 5.3 million tonnes averaging 6.10 g/t Pd. The estimate was based on mining costs of $42.89/t and a breakeven cut-off grade of 3.5 g/t Pd inclusive of co-product credits (Buffington et al., 2003). The latter was derived from concentrator and smelter recoveries at that time, and metal price assumptions as follows: Pd = $325/oz, Pt = $550/oz, Au = $325/oz, Cu = $0.85/lb, and Ni = $3.25/lb.

RPA prepared an independent estimate of Inferred Resources for the Offset and Footwall Roby zones dated March 31, 2006, based on drilling to year-end 2005 (RPA, 2006b). At a 3.2 g/t PdEq, Inferred Resources totalled 14.6 million tonnes at 5.24 g/t Pd, 0.36 g/t Pt, 0.35 g/t Au, 0.10% Cu and 0.12% Ni.

On February 23, 2007, Scott Wilson RPA updated the independent estimate of Mineral Resources of the Offset zones (RPA, 2007a). The Offset High Grade Zone was traced from 311,600N to 312,125N on strike (525 m) and vertically from -60 RL to –550 RL (490 m) at depths of 575 m to 1,065 m. At a 3.6 g/t PdEq, Inferred Resources totalled 12.8 million tonnes at 5.25 g/t Pd, 0.38 g/t Pt, 0.37 g/t Au, 0.115% Cu and 0.125 Ni. Indicated Resources totalled 3.2 million tonnes at 5.45 g/t Pd, 0.38 g/t Pt, 0.39 g/t Au, 0.12% Cu and 0.13% Ni.

On May 7, 2008, NAP announced results from a Micon International Limited Preliminary Economic Assessment (PEA) of the Offset High Grade Zone (Micon Study) utilizing the 2007 Mineral Resource Estimate. This study, which Scott Wilson RPA did not review, indicated the viability of extending the LDIM underground mining operation to 2018. The PEA contained in the Micon Study was preliminary in nature and included Measured, Indicated and Inferred Mineral Resources. Approximately 80% of the resources included in the preliminary economic assessment were in the Inferred category. Inferred Mineral Resources are considered too speculative geologically to have economic considerations applied to them that would enable the resource to be categorized as Mineral Reserves. The PEA study's level of accuracy is deemed to be plus or minus 20% to 25%. There is no certainty that the PEA results will be realized.

7 GEOLOGICAL SETTING

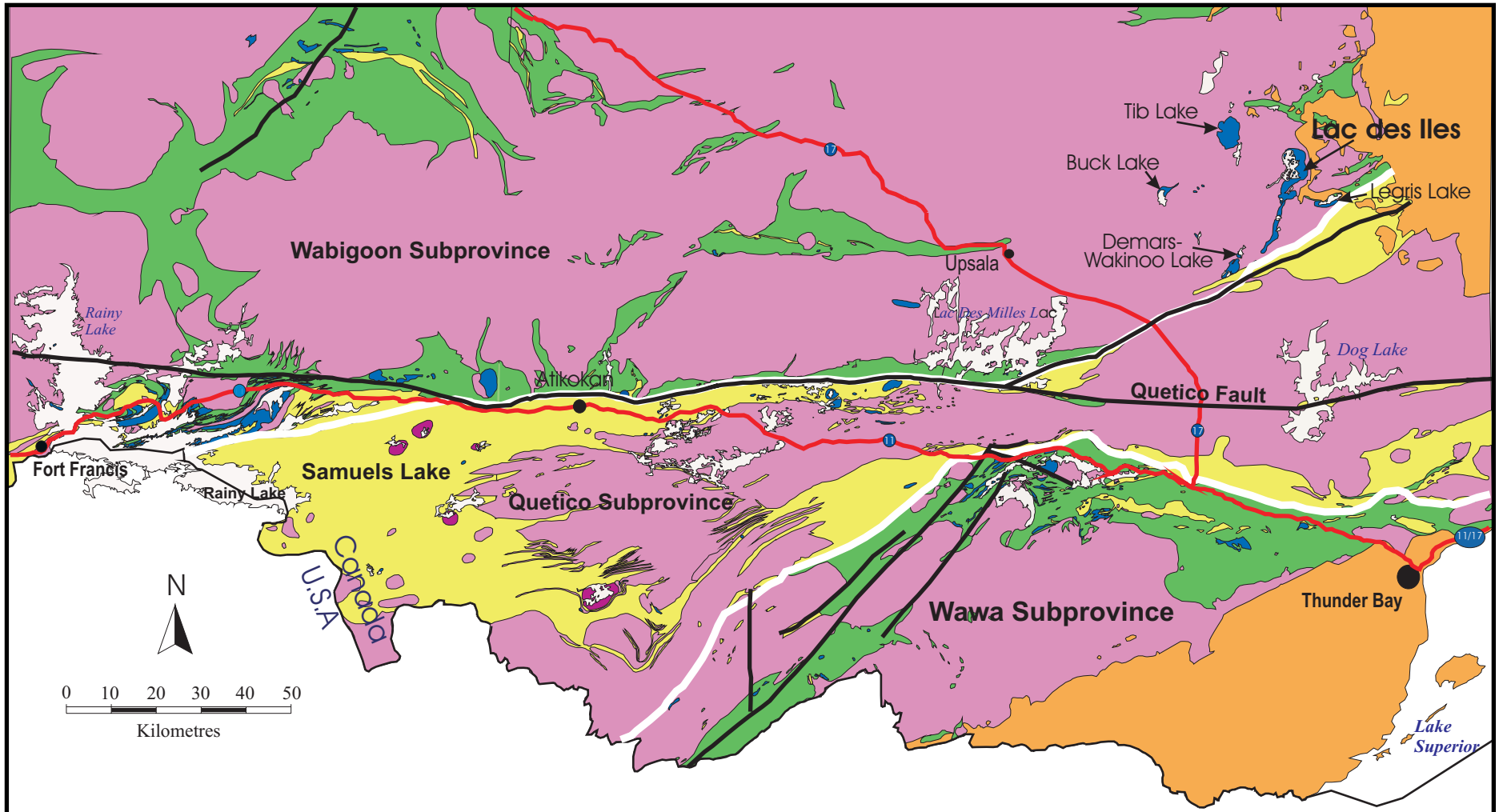
The following geological description has been summarized from RPA (2004a). The original source of this information is Lavigne and Michaud (2001). Additional information is available in Brugmann et al. (1989). The most up-to-date work is available in Hinchey, Hattori, & Lavigne (2005).

REGIONAL GEOLOGY

The Lac des Iles area is underlain by mafic to ultramafic rocks of the Archean Lac des Iles Intrusive Complex (LDI-IC). These rocks have intruded granites and greenstones of the Wabigoon Subprovince of the Superior Province (Figure 7-1). The LDI-IC lies immediately north of the Wabigoon-Quetico Subprovince boundary, which extends approximately 300 km from Rainy Lake to Lake Nipigon. The LDI-IC is the largest of a series of mafic and ultramafic intrusions that occur along the boundary and which collectively define a 30 km diameter circular pattern in the LDIM area (Figure 7-2).

LOCAL AND PROPERTY GEOLOGY

The mine lies in the southern portion of the LDI-IC, in a roughly elliptical intrusive package measuring 3 km long by 1.5 km wide (Figure 7-3). These rocks, locally termed the Mine Block Intrusive (MBI) (Figure 7-4), comprise a very wide range of textures and mafic and ultramafic compositions. The MBI is host to a number of platinum-group metal (PGM or PGE) deposits, and the most important of these is the Roby Zone. The Roby Zone consists of three subzones: the North Roby Zone, the High Grade Zone, and the Breccia Zone. The main area of economic interest for underground mining is the High Grade Zone extending beneath the Roby Pit (referred to as the Roby Underground Zone) and the Offset Zone, a fault-displaced depth extension of the High Grade Zone.



Source: Lavigne and Michaud, 2001.

Legend:

- *Proterozoic rocks*
- ***Archean***
- *Felsic intrusive rocks*
- *Alkaline intrusive rocks*
- *Mafic and felsic volcanic rocks*
- *Ultramafic-mafic intrusive rocks*
- *Metasediments*
- *Major fault*
- *Subprovince boundary*
- *Highway*

Figure 7-1

Lac des Iles Mines Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Regional Geology

March 2009

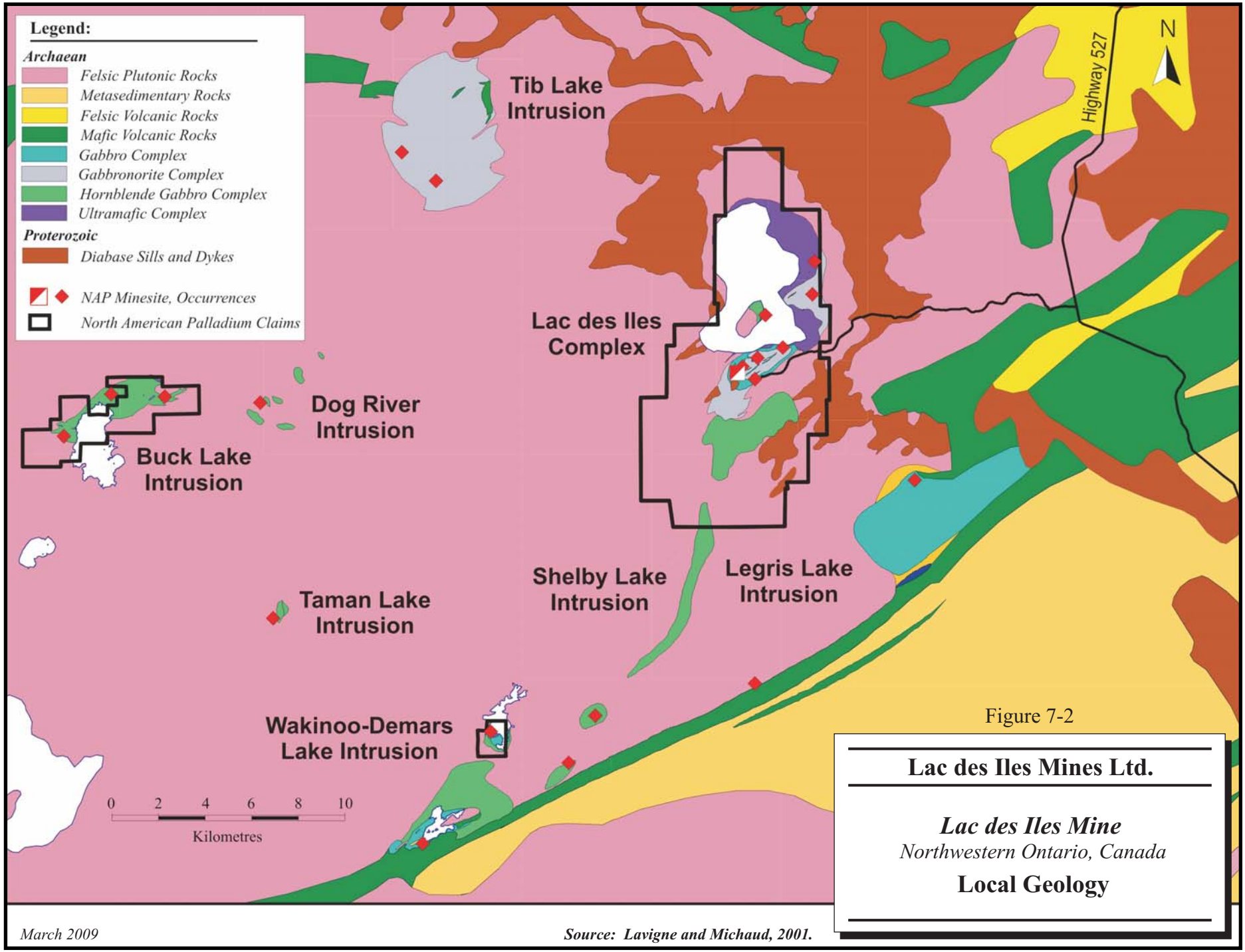


Figure 7-2

Lac des Iles Mines Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Local Geology

March 2009

Source: Lavigne and Michaud, 2001.

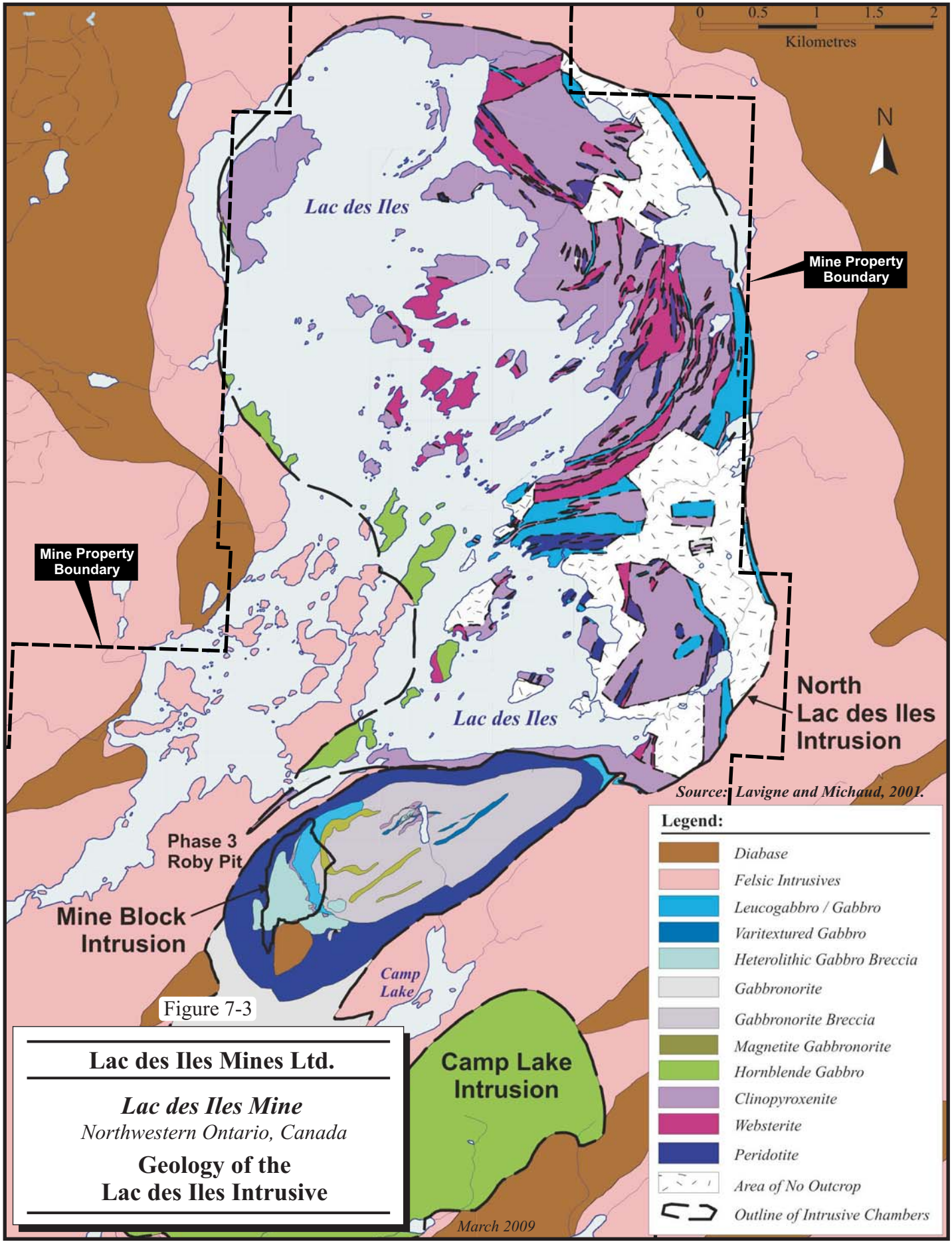


Figure 7-3

Lac des Iles Mines Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Geology of the Lac des Iles Intrusive

March 2009

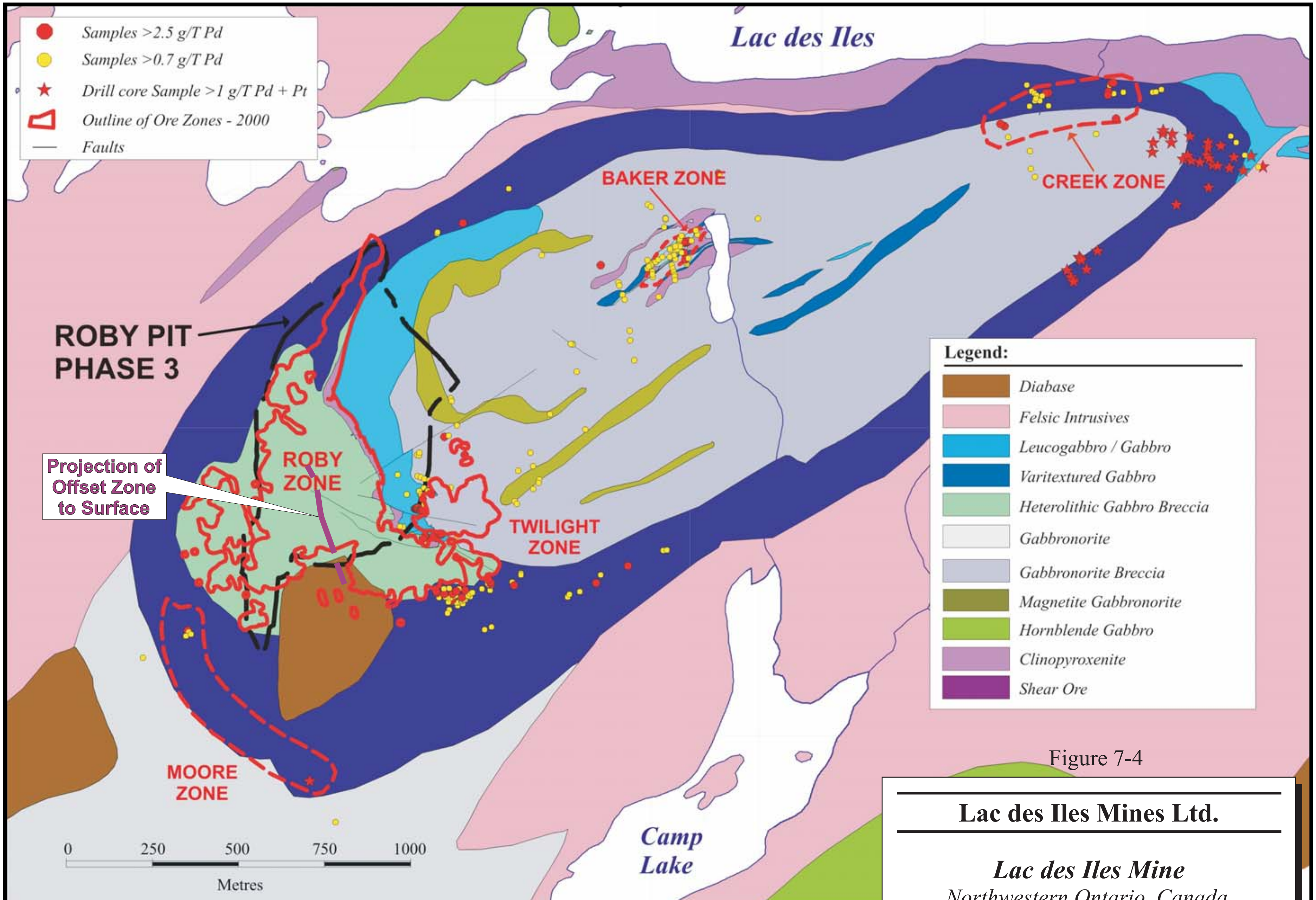


Figure 7-4

Lac des Iles Mines Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Property Geology

March 2009

Source: Lavigne and Michaud, 2001.

The MBI is texturally and compositionally complex. Its composition ranges from anorthosite to clinopyroxenite, leuco-gabbronorite to melanonorite, and includes magnetite-rich gabbro. Textures include equigranular, fine to coarse-grained, porphyritic and pegmatitic, varitextured units and heterolithic gabbro breccias. These last three textural types are the most common host to PGE mineralization, including the Roby Zone.

The MBI consists of two lithologically distinct domains. The oval-shaped domain immediately south of Lac des Iles is lithologically complex and contains widespread PGE mineralization, while the domain further to the south is dominated by massive medium-grained PGE-barren gabbronorite (Figure 7-3).

Systematic surface sampling of the massive gabbronorite has demonstrated that the latter has anomalously low PGE content. Extensive stripping has disclosed that the interior of the oval-shaped domain has an abundance of monolithic and heterolithic breccia with an average composition of gabbronorite. Within this area, individual lithological units are not laterally extensive, signifying a chaotic distribution of lithologies.

The most laterally continuous unit is a massive medium-grained gabbro, referred to as East Gabbro, termed EGAB by the mine staff. The EGAB is adjacent to a variably textured gabbro "rim" to the west and more equigranular gabbronorite (GN) to the east. The variably textured rim is host to the Roby palladium deposit, where heterolithic gabbro breccia (HGABX) commonly occurs as pipes and pods, and large blocks (~60 m) of varying composition. A pyroxenite unit, at the contact between the EGAB and the HGABX, is host to much of the High Grade Zone.

The principal lithologies in the LDIM area, as defined and labelled by the mine staff, are presented in Table 7-1.

TABLE 7-1 PRINICIPAL LITHOLOGIES OF THE LAC DES ILES MINE
North American Palladium Ltd. - Lac des Iles Mine

Code	Lithology	Code	Lithology
ANOR	Anorthosite	MASS	Sulphide, Massive
CPYXT	Clinopyroxenite	MDYK	Dyke, Mafic
DIA	Diabase	MGAB	Melanogabbro
DIOR	Diorite	MGABBX	Breccia, Melanogabbro
DIORBX	Breccia, Diorite	MGBNR	Melanogabbronorite
DUN	Dunite	MGBNRBX	Breccia, Melanogabbronorite
DYKE	Dyke (unsubdivided)	MNOR	Melanonorite
DYKSWRM	Dyke Swarm	MNORBX	Breccia, Melanonorite
EGAB	East Gabbro	MNZD	Monzodiorite
EGABBX	Breccia, East Gabbro	MT	Magnetite (massive)
FDYK	Dyke, Felsic	MTGAB	Magnetite Gabbro
FLT	Structure-Fault	MTGBNR	Magnetite Gabbronorite
FRACT	Structure-Fractured (annealed)	MTNOR	Magnetite Norite
GAB	Gabbro	NOR	Norite
GABBX	Breccia, Gabbro	NORBX	Breccia, Norite
GBNR	Gabbronorite	OB	Overburden
GBNRBX	Breccia, Gabbronorite	OPYXT	Orthopyroxenite
GRAN	Granite	PER	Peridotite
GRDR	Granodiorite	PYXT	Pyroxenite
HARZ	Harzbergite	PYXTBX	Breccia, Pyroxenite
HBLGAB	Hornblende Gabbro	QCV	Vein, Quartz-Carbonate
HBLGABBX	Hornblende Gabbro Breccia	QDIOR	Quartz Diorite
HBLITE	Hornblendite	QMNDR	Quartz Monzodiorite
HBLMGAB	Hornblende Melanogabbro	QV	Vein, Quartz
HBX	Breccia, Heterolithic (unsubdivided)	SHR	Structure-Shear
HGABBX	Breccia, Heterolithic Gabbro	SMS	Sulphide, Semimassive
HGBNRBX	Breccia, Heterolithic Gabbronorite	TON	Tonalite
HLGABBX	Breccia, Heterolithic Leucogabbro	TONDYK	Dyke, Tonalite
HMGABBX	Breccia, Heterolithic Melanogabbro	VEIN	Vein
HMGBNRBX	Breccia, Heterolithic Melanogabbronorite	VGAB	Varitextured Gabbro
HNORBX	Breccia, Heterolithic Norite	VGABBX	Breccia, Varitextured Gabbro
HPYXTBX	Breccia, Heterolithic Pyroxenite	VGBNR	Varitextured Gabbronorite
IDYK	Dyke, Intermediate	VHBLGAB	Varitextured Hornblende Gabbro
LGAB	Leucogabbro	VLGAB	Varitextured Leucogabbro
LGABBX	Breccia, Leucogabbro	VMGAB	Varitextured Melanogabbro
LGBNR	Leucogabbronorite	VMGBNR	Varitextured Melanogabbronorite
LHERZ	Lherzolite	VMTGAB	Varitextured Magnetite Gabbro
LMDYK	Dyke, Late Mafic	VNOR	Varitextured Norite
LNOR	Leuconorite	WEB	Websterite
MASS	Sulphide, Massive	WEHR	Wehrlite
MDYK	Dyke, Mafic		

The principal rock types in the Offset Zone area include:

- **East Gabbro (EGAB)** – is a well-known gabbro "marker unit" that is characteristically uniform and very homogenous in its composition. The East Gabbro has very minor alteration, with local trace pyrite and epidote. The East Gabbro, which has no significant associated mineralization, is a unit bounding the Roby Zone to the east. The East Gabbro marks the hanging wall contact of the Roby Zone.

- **Heterolithic Gabbro Breccia (HGABBX)** – the principal host for the Roby Zone, consisting of a melanogabbro to gabbro matrix with varying clast composition ranging from leucogabbro to pyroxenite. Clast percentage varies commonly from 15% to 60% of unit. This unit comprises most of the economic ore grade material in the current open pit and underground reserves.

- **Varitextured Gabbro (VGAB) –** the majority of rock types, excluding the East Gabbro, have a varitextured counterpart. The VGAB varies from leucocratic to pyroxenitic, with grain sizes from fine to very coarse, pegmatitic. The coarser grain sizes form patches and 'veinlets' within the finer grain sizes.

- **Gabbro (GAB) –** the most common gabbros in the MBI are medium grained, equigranular but range from fine to coarse grained and may locally be leucocratic to melanocratic.

- **Magnetic Gabbro (MTGAB)** – similar medium-grained, equigranular gabbro occurs within the MBI containing black, fine-grained, interstitial magnetite. Typically comprising less than 20% magnetite, it ranges from trace amounts to local, narrow layers of 60% to 95% magnetite.

- **Pyroxenite (PYXT)** – a steeply dipping thin layer situated along the contact between the Heterolithic Gabbro and East Gabbro. It hosts the highest proportion of the High Grade Zone. This unit is responsible for much of the high PGM grades at Lac des Iles. It is to be noted that not all pyroxenites carry economic PGM grades.

- **Gabbronorite (GN)** – a 20 m to 50 m thick steeply dipping slab located along the northwestern contact of the East Gabbro. It is also a host unit of the High Grade Zone, although to a lesser degree than the PYXT. The gabbronorite appears to be a gradational extension of the pyroxenite to the northeast of the minesite.

- **Gabbronorite Breccia (GNBX)** – a Pd-mineralized (Twilight Zone) heterolithic breccia, similar to the HGABBX but without pegmatitic phases or varitextured gabbro. It occurs as a roughly cylindrical pod, approximately 150 m in diameter, completely enclosed by the EGAB.

- **Dykes –** late, post-mineral mafic dykes. These dykes vary from small discreet bodies that occupy space within the modelled mineralized wireframes to large bodies that control the northern termination of the Offset Zone. A mapped dyke swarm approximately 30 m wide and trending approximately east-west is located at the southern extent of the Roby Zone.

Two major faults have been interpreted to influence the Offset Zone:

- **Offset Fault –** The Offset Fault structure displaces the High Grade Zone down and approximately 300 m to the west. This fault, easily picked out in diamond drill core, is often marked by extensive fault gouge, fracturing and alteration of adjacent country rock, and infilling by mafic dikes.

- **B2 Fault –** The B2 Fault has recently been recognized and interpreted from the underground Offset Zone diamond drilling. It lies approximately 20 m to 40 m below and parallel to the westerly dipping Baker Fault and is marked by narrow intersections of fault gouge, fracturing and late mafic dykes.

8 DEPOSIT TYPES

Hinchey, Hattori, & Lavigne (2005) put forward a schematic model illustrating a deposit model for the history of mineralization at the southern Roby Zone (Figure 8-1).

The textures of the Lac des Iles deposit are similar to those of contact-type PGE deposits, but there are fundamental differences between the two. The Lac des Iles deposit is not localized near the contact between the host intrusion and the country rocks and evidence of the assimilation of the host rocks is lacking. Instead, the mineralization at Lac des Iles has many features in common with layered intrusion-hosted deposits, in which pulses of primitive magma introduced the PGE. Unlike the quiescent magma chambers of most layered deposits, the magmas at Lac des Iles were intruded energetically, forming breccias and magma-mingling textures.

Magmas formed by a high degree of partial melting in a depleted mantle source (A1) became enriched in Cu, Pt, and Pd through fractional crystallization of olivine, chromite, and high-temperature PGM (A2), segregated sulfide melt that had low Cu/Pd ratios along the conduit and the base of the magma chamber (A3), and solidified as the early leucocratic gabbros. A second episode of partial melting in the mantle source produced another batch of fertile magma. As with the early magma, this magma was enriched in Cu, Pt, and Pd through fractional crystallization (A2). This magma incorporated the earlier sulfide melt and intruded forcefully into the partially crystallized leucocratic rocks (B1), causing brecciation and magma mingling, and solidified as fertile melanocratic gabbro. Aqueous fluids that separated from the melanocratic magma percolated through the cumulates, partially dissolving Pd and concentrating it in the High Grade ore zone adjacent to barren East Gabbro (B2).

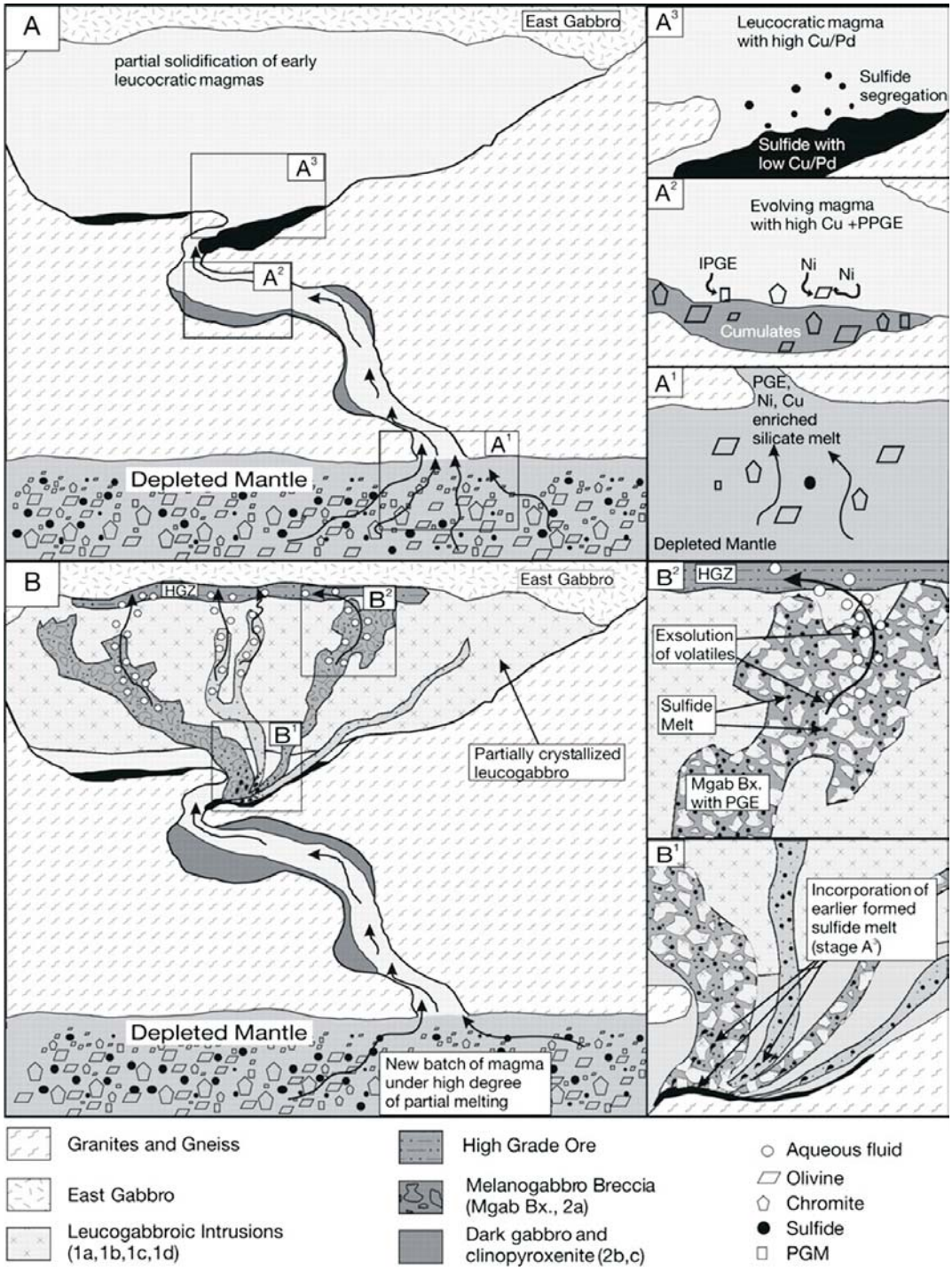


Figure 8-1

Lac des Iles Mines Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Deposit Model

March 2009

Source: Hinchey, Hattori & Lavigne, 2005.

ROBY ZONE

The Roby Zone is a bulk mineable, PGM-enriched disseminated sulphide deposit with a minimum north to south length of 950 m, a width of 815 m, including the Twilight Zone in the southwest portion of the deposit. The Roby Zone is composed of three distinct ore types: High Grade Ore (7.6% of volume), North Roby Ore (5.3% of volume), and Breccia Ore (87.1% of volume). The High Grade Ore is the primary ore type mined underground. Current open pit mining operations segregate muck into direct mill feed for Pd grades of ≥1.1 g/t and a regular grade ore (RGO) stockpile for Pd grades of ≥0.7 g/t.

HIGH GRADE ZONE

High Grade Zone Ore is hosted mainly within a portion of a 15 m to 25 m thick unit of occasionally sheared pyroxenite/melanogabbro (Figure 8-2). A host to high-grade PGE mineralization, it is located in the east central portion of the Roby Zone, bounded by the barren EGAB hanging wall and HGABBX-hosted Breccia Ore to the west. The High Grade Zone is primarily confined to a 400 m long segment of the pyroxenite, although it does extend northward into the gabbronorite. The High Grade Zone, striking north-northwest to north-northeast, dips near-vertically near surface and flattens to nearly 45° at depth. Below the open pit, this zone is referred to as the Roby Underground Zone. The zone appears to be terminated down dip by a relatively shallow dipping fault, the Offset Fault.

OFFSET ZONE

The Offset Zone, a higher grade zone similar to the High Grade Zone, is located below the Offset Fault structure, where it is displaced down and approximately 300 m to the west. The Offset Zone can be split into three horizons:

1) ***Top Offset Zone Horizon (tOZ)***: ≥ 4650 Mine Level
2) ***Middle Offset Zone Horizon (mOZ)***: ≥4300 to < 4650 Mine Level
3) ***Bottom Offset Zone Horizon (bOZ):*** < 4300 Mine Level

The Offset Zone mineralization has been divided into three subzones: the High Grade (HG) Subzone, the Mid (MID) Subzone and the Footwall (FW) Subzone.

HIGH GRADE SUBZONE

HG Subzone mineralization is found statabound along the contact between the EGAB and the mineralized HGABBX. Within the HGABBX, there is a high-grade core typically constrained to an easily recognized ultramafic unit, the pyroxenite. Width varies from 4 m to 30 m, with an average of 15 m.

Within the wireframed HG Subzone, the palladium mineralization is hosted in approximately 57% PYXT, 19% HGABBX, 10% MGAB, 12% VGAB and GABBX. Approximately 2% of the zone is occupied by late dikes (dilution). Less than 1% is occupied by shears and faults.

MID SUBZONE

The MID Subzone is proximal to the HG Zone, generally sharing a common boundary in the centre sections and then splitting away near the top and bottom areas. Palladium grades within the MID Zone can approximate those high grades found within the HG Zone. Apparent widths can vary from 4 m to 90 m, with an average of 15 m.

Within the wireframed MID Subzone, the palladium mineralization is hosted in approximately 53% HGABBX, 19% VGAB, 12% GAB and GABBX, 8% PYXT, and 8% MGAB. Approximately 4% of the zone is occupied by late dikes (dilution). Less than 1% is occupied by shears and faults.

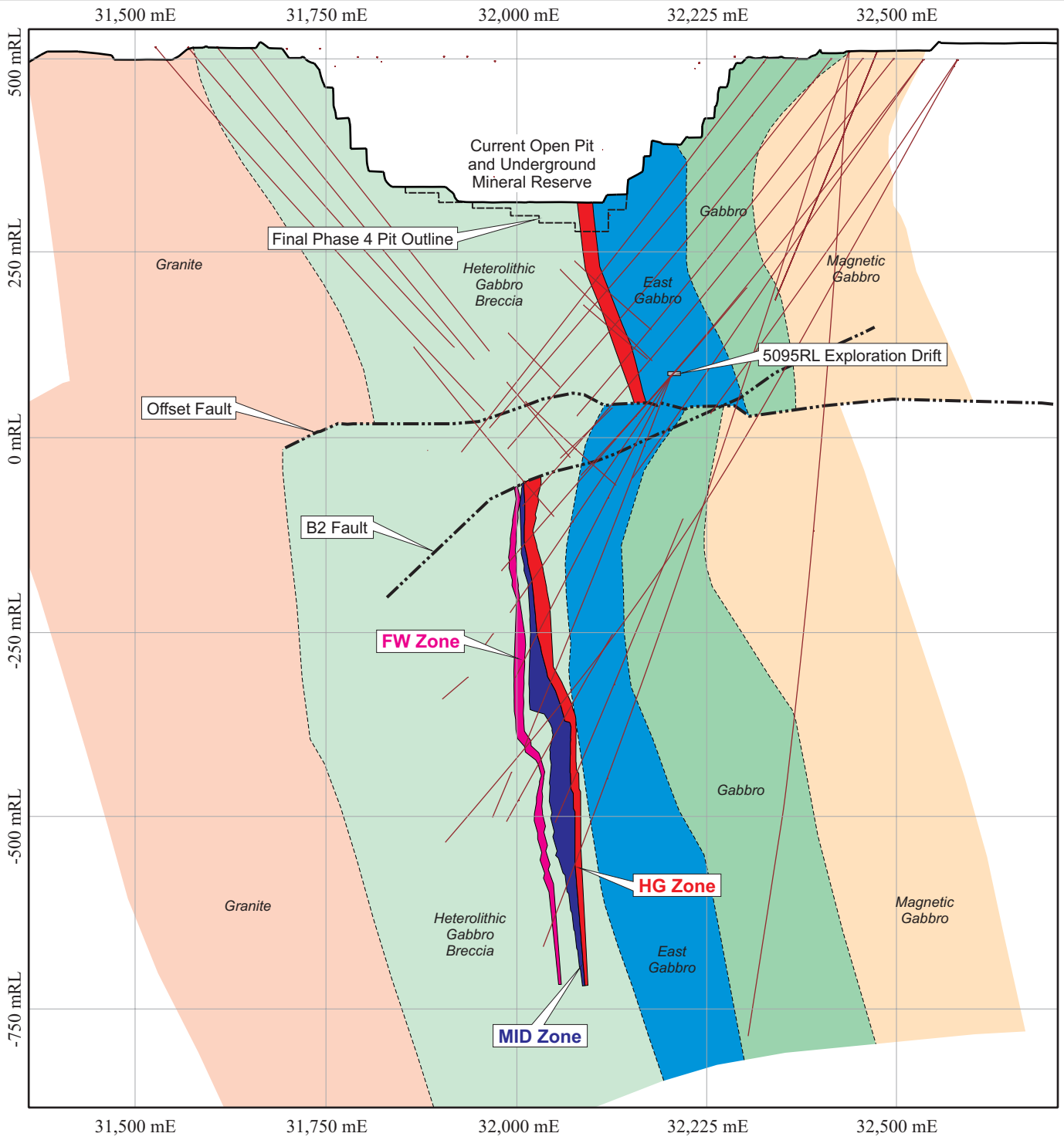


Figure 8-2

0 50 100 150 200 250
Metres

Lac des Iles Mines Ltd.

Lac des Iles Mine
Northwestern Ontario

Typical Cross-Section

March 2009

Source: Lac des Iles Mines Ltd., 2008.

FOOTWALL SUBZONE

The FW Subzone is a stand-alone band of higher grade mineralization that can be defined based on higher grade intersections within the FW varitextured gabbro mineralization.

The FW Subzone, located approximately 2 m to 40 m from the MID Zone was interpreted based on vertical continuity seen in the drill hole intersections. It is discontinuous and sinuous on plan and has less of a defined areal extent than the other zones. Apparent widths can vary from 4 m to 20 m, with an average of 7 m.

Within the wireframed FW Subzone, the palladium mineralization is hosted in approximately 73% VGAB, 15% HGAB, 8% GAB and GABBX, and 3% MGAB. Approximately 1% of the zone is occupied by late dikes (dilution).

OTHER MINERALIZED ZONES

Other mineralized zones present within the MBI, as shown in Figure 7-4, are described below:

TWILIGHT ZONE

The Twilight Zone has been removed with the mining of the current Open Pit.

BAKER ZONE

The Baker Zone is located approximately one kilometre northeast from the Roby and Twilight zones and contains similar rock types and textures. Gabbronorites/norites have been intruded by east-northeast trending, heterolithic melanogabbro breccia and lesser melanogabbro, leucogabbro breccia, varitextured gabbro and late pyroxenite dikes. Surface exploration has exposed the Baker Zone breccias and associated lithologies over an approximately 150 m by 55 m area. The heterolithic melanogabbro breccia hosts blebby to disseminated to narrow veinlets of sulphide with sporadic mineralization in the

adjacent lithologies. The north-south oriented, shallowly westerly dipping Baker Fault appears to truncate the Baker Zone mineralization at depth.

Extensive surface exploration by NAP occurred mainly from 1998-2001 and consisted of prospecting, stripping/trenching (including the main stripped area of approximately 200 m by 120 m), channel sampling, geological mapping and ground induced polarization (IP)/resistivity geophysical surveys. Sixteen diamond drill holes in 1998-99 tested the main portion of the Baker Zone over a 250 m strike length and to a maximum depth of 200 m. Subsequent exploration (trenching and diamond drilling) has tested possible strike extensions of the zone and the area below the Baker Fault. The Baker Zone is a lower grade mineralized zone and no further work is planned at this time.

MOORE ZONE

The Moore Zone is a low-grade, presently uneconomic mineralized zone approximately 500 m south of the current Roby pit with similar lithologies and textures to other MBI breccias. The central area of interest is a small breccia pod measuring approximately 200 m long (northwest-southeast direction), varying from approximately 15 m to 115 m wide which occurs within the massive, medium-grained gabbronorite typical of the more southerly domain of the MBI. The main Moore Zone mineralization is located in the eastern portion of the breccia pod and appears to be structurally controlled (~030°, dipping 70° east), ranging 5 m to 25 m thick. Prospecting, mapping, trenching, sampling and limited diamond drilling of the Moore Zone have indicated limited mineralized potential, and no further work is planned at this time.

CREEK ZONE

The Creek Zone is located approximately two kilometres northeast of the Roby pit in the northeastern nose of the MBI, near the contact with the north LDI-IC. Surface trenching has exposed the main portion of the Creek Zone for approximately 90 m long by 10 m to 40 m wide. It is dominated by low sulphide, juvenile breccias that have intruded the varitextured gabbro rim of the MBI. The breccias are composed of approximately 90% GBNR clasts and only approximately 10% MGAB matrix. Unlike the Roby Zone, mineralization is not dominantly hosted by the breccia matrix but seems to

occur within the pegmatitic gabbronorite. Prospecting, mapping, trenching, sampling and limited diamond drilling of the Creek Zone have indicated limited mineralized potential, and no further work is planned at this time.

9 MINERALIZATION

Platinum-group metal and base metal mineralization appears to be dominantly stratabound along the contact between the EGAB and the mineralized HGABBX. Within the HGABBX, there is a high-grade core typically constrained to an easily recognized pyroxenite unit.

Visible PGM mineralization is rare and its occurrence is difficult to predict. In general, PGM economic grade mineralization is anticipated within gabbroic to pyroxenitic rocks (in close proximity to the marker unit EGAB) that exhibit strong sausseritization of plagioclase feldspars, strong talcose alteration to amphiboles and association with either disseminated or blebby secondary sulphides.

Higher PGM grades (mean – 7.89 g/t Pd, maximum – 55.95 g/t Pd) occur in those portions of the pyroxenite that are altered to an assemblage of amphibole (anthophyllite-actinolite-hornblende)-talc-chlorite. The PGM tenor is not proportional to the sulphide content, and samples free of visible sulphide often contain more than 10 g/t Pd. The high-grade mineralization is located primarily within the western, highly altered portion of the pyroxenite, since much of the pyroxenite between the barren EGAB and the HG Zone is low grade. The higher grade "High Grade Ore" is not restricted to the pyroxenite as it commonly straddles the pyroxenite/gabbro breccia contact to widths exceeding 250 m.

The majority of PGMs either occur interstitially to sulphides as cumulus grains or are associated with sulphides at sulphide-silicate boundaries, occurring as discrete mineral inclusions within secondary silicates of altered rocks (Sweeny, 1989; quoted in Lavigne and Michaud, 2001). Palladium and platinum mineralization within the HG Zone consists primarily of fine-grained PGE sulphide, braggite and telluride minerals, merenskyite and kotulskite (Sweeny, 1989; quoted in Lavigne and Michaud, 2001). The PGM minerals present are summarized below in Table 9-1.

TABLE 9-1 PLATINUM GROUP MINERALS IN THE ROBY ZONE
North American Palladium Ltd. – Lac des Iles Mine

Mineral	Chemical Formula
Braggite	(Pt,Pd)S
Kotulskite	$Pd(Te,Bi)_2$
Isometrieite	$Pd_{11}(Sb,Te)_2As_2$
Merenskyite	$PdTe_2$
Moncheite	$PtTe_2$
Palladoarsenide	Pd_2As
Sperrylite	$PtAs_2$
Stibiopalladinite	Pd_5Sb_2
Stillwaterite	Pd_8As_3
Vysotskite	PdS
Unnamed	$Ag_4Pd_3Te_4$
Unnamed	Pd_5As_2
Melonite, gold, pentlandite	Pd in solid solution

Based on Lavigne and Michaud, 2001

No recent mineralogical testing has been undertaken on the Offset Zone since 2006. It is assumed that Mineralogy (mineral composition, relative percentages) of the Offset Zone is similar to the material previously mined in the High Grade Zone above. The Offset Zone drill core samples that were tested in 2006 behaved similarly to the pit Roby Zone and underground ore. Recoveries were similar and gangue was depressed at similar levels of carboxymethyl cellulose (CMC).

10 EXPLORATION

Since the early 1960s the property has been mapped by several companies. The first detailed mapping of the Roby Zone was conducted by LDI in 1992-1994. During this period the eastern part of the zone was stripped of overburden, then mapped and sampled. This program continued in 1995 over the South Roby area.

In 1998, the area between the south pit and the main pit was stripped, mapped, and channel sampled. In 1999, this program was expanded to the area east of the Roby pit and resulted in the discovery of the mineralized Twilight Zone and several other zones of mineralization.

The Baker, Moore, and Creek zones have been explored sporadically over the last ten years and at present there are no plans for further exploration of these zones.

The Offset Zone was discovered in 2000 by drill hole 00-204. Some 39 holes (35,363 m) were completed in, and immediately above, the zone during 2000 and 2001 to explore the zone. In 2001, geological interpretations of available data were initiated and a large east-west striking oblique-slip fault with an offset throw of 300 m was interpreted to displace the down-plunge extent of the High Grade Zone to the southwest where the zone continues to depth as the Offset Zone. Two holes for 2,783 m were drilled in the zone in 2003 and 2004. Fifteen additional holes (18,230 m) were drilled in 2005.

In 2006, LDI spent approximately $1.5 million for diamond drilling to better define and upgrade a portion of the Offset Zone Inferred Resource. The 2006/2007 infill drilling program was designed to tighten the spacing from approximately 120 m to 140 m to approximately 50 m by 50 m in and around some of the wider intercepts. Eight wedge offset holes (5,663 m) were drilled from two surface holes to fill in on certain sections and close the hole spacing, allowing for classification of some of the resource as Indicated Resource.

Development of the 5095 Level underground exploration drift began in 2006 and was completed in April 2007. Total cost of this exploration drift was $2.0 million.

The objective of the $2.2 million underground infill diamond drilling program completed in 2007 was to increase confidence in the upper portion of the Offset Zone to convert a portion of the Inferred Resource to Indicated. The ultimate goal of the exploration program was to better define an economical size and grade of this resource and guide underground development for continued mining via the ramp. Drilling of the upper portion of the Offset Zone targeted intersections above the -350 m EL, along sections 499N to 514N on roughly 30 m horizontal spacings. Most of the underground drilling was done from the 5095 Level, which is located approximately 150 m to 200 m to the east of the Offset Zone within the hanging wall. Between May 15 and October 25, 2007, 39 drill holes were completed from the eight drill bays in the exploration drift, with an additional five collared in stopes lower down in the underground workings to fill in areas not accessible from the exploration drift. A total of 20,703.9 m were drilled from underground, with individual holes ranging from 293.3 m to 627.0 m in length. An additional 280 m was drilled in a hole (07-037A) that was abandoned due to stuck rods; this hole was not sampled.

Surface diamond drilling in 2007/2008 explored the margins and down-plunge extension of the deeper portion of the Offset Zone via several large step-outs from the known resource. Six deep holes, ranging from 600 m to 1,700 m long and totalling approximately 7,235 m, were planned for the latter part of 2007. The program cost $0.5 million.

Hole 07-05, designed to test the Offset Zone to the north, was drilled to a depth of 1,491.3 m without intersecting the Offset Zone. The varitextured gabbro rim was encountered at a depth of 1,289.6 m, which was followed by basement tonalite at 1,425 m. No significant assays were returned. This hole steepened during drilling and may have undercut the Offset Zone.

Hole 07-052, designed to test the lower margin of the down-plunge extension, was drilled to a depth of 1,797 m in 2007 and then completed to 1,809 m in late January 2008. It encountered an East Gabbro Breccia at 1,760.9 m followed by the main portion of the Offset Zone at 1,767.3 m. A 4.6 m section of pyroxenite (at 1,769.4 m to 1,774.0 m) returned the highest grade intersection at 4.142 g/t Pd. This hole also steepened during drilling and intersected the zone at approximately -1,200 m elevation (approximately 1,700 m below surface). This intersection is approximately 450 m below hole 05-002 on section 498N and is the deepest one to date on the Offset Zone. Hole 07-052 was not completed the end of 2007 due to a major fault zone encountered at 1783.7 m to 1788.4 m which caused problems for the drillers and required cementing. Further problems with the hole were encountered in January 2008 after drilling through the cement with the rods again seized after completing only 12 m more of coring. The geology changed significantly crossing the Offset fault zone with only an equigranular, medium-grained, unmineralized gabbro encountered for 20.7 m below the fault. Considering that nine samples taken from this gabbro in 2007 returned a high of only 0.051 g/t Pd, the hole was abandoned.

Only two of the planned surface drill holes were completely or partially drilled in 2007, with the program continuing into 2008. By the end of the 2008 first quarter, hole 07-053, designed to test the southern extent of the Offset Zone, had been completed to a depth of 1,489.3 m and had intersected Offset Zone starting at 1,265.0 m. An intersection of varitextured gabbro at 1267.0 m to 1269.0 m returned 3.462 g/t Pd, while a deeper intersection of the gabbro breccia at 1,328.4 m to 1,331.0 m) returned 8.551 g/t Pd.

The 2007 surface drilling totalled 3,288.5 m in holes 07-051 (1,491.5 m) and 07-052 (1,797 m). The 2008 surface drilling totalled 1,501.0 m in hole 07-052 (12.0 m) and 1,489.3 m in hole 07-053.

In 2008, NAP carried out additional surface drilling totalling 15,690 m in 29 holes that focused on exploring targets on the Mine Block Intrusion and on the Southeast Breccia Zone situated adjacent to the southeast corner of the open pit, with two holes drilled in the Offset Zone (Table 10-1).

TABLE 10-1 2008 DIAMOND DRILLING PROGRAM
North American Palladium Ltd. - Lac des Iles Mine.

	Offset Zone	Titan 24 Anomaly	VT Rim North	Creek Zone	Southeast Roby Zone	Total
Drill Holes	2	3	8	8	8	29
Metres	2,284	2,721	3,565	2,534	4,586	15,690

11 DRILLING

The property has been subjected to numerous drill campaigns since the early 1960s as summarized in Table 11-1.

TABLE 11-1 DRILLING SUMMARY (AS OF DECEMBER 31, 2008)
North American Palladium Ltd. - Lac des Iles Mine

Year	No. of Holes	Length (m)	Operator	Series
1964	11	1,516	-	G64-1 - G64-9
1966	13	1,900	-	A66-12 - A66-24
1970s	111	17,822	Boston Bay	P001 - P114
1986	9	1,893	Madeleine Mines	86-01 - 86-26
1987	2	176	Madeleine Mines	87-37 - 87-40
1988	6	1,052	Madeleine Mines	88-1 - 88-8
1989	4	607	Madeleine Mines	89-1 - 89-4
1992	22	1,177	LDI	92-01 - 92-22
1995	56	7,802	LDI	95-01 - 95-57
1997	19	4,243	LDI	97-01 - 97-19
1998	51	7,591	LDI	98-01 - 98-53
1998	108	3,272	LDI	EX-P-01 - EX-P-141
1999	254	54,757	LDI	99-001 - EXP99093
2000	233	117,324	LDI	00-001 - 00-339
2001	36	26,792	LDI	01-001 - 01-086
2002	81	47,602	LDI	02-001 - 02-094
2003	25	10,211	LDI	03-001 - 03-029
2004	4	2,546	LDI	04-001 - 04-004
2005	46	25,533	LDI	05-001 - 05-048
2006	8	5,336	LDI	05-006W2 - 05-016W4
2007	46	23,992	LDI	07-001 - 07-024 07-028 - 07-037 07-041 - 07-050 07-051 - 07-052
2008	31	17,198	LDI	07-052 - 07-053 08-001 - 08-108
Total	**1,176**	**380,342**		

A major core drilling program was conducted in 1999, the results of which formed the basis for the 1999 Feasibility Study on the development of a larger sized open-pit

operation (AGRA Simons, 1999). Drilling conducted in 2000 was again focused on expanding the resource of the Roby Zone for potential open pit mining.

From May 1997 to May 2001, Matawin Mineral Exploration Inc., under contract to LDI, managed the exploration and drilling programs on the LDIM property. In May 2001, LDI established its own metals exploration division.

Chibougamau Diamond Drilling was the drill contractor until 1999. A variety of contractors have carried out drilling on the property since then.

The 2007/2008 Lac des Iles diamond drilling program was conducted from both underground and surface, targeting two different portions of the Offset Zone. Both 2007/2008 drilling programs were contracted to Bradley Brothers Drilling (Bradley) of Rouyn-Noranda, Quebec, which supplied two electric underground LM-90 diamond drills and one hydraulic surface VD-5000 diamond drill.

In 2008, 29 exploration holes were drilled. Holes 08-001 and 08-002 were drilled to test the down-plunge continuity of the Offset Zone. The results were not included in the 2009 mineral resource estimate update for the Offset Zone. The remaining 27 holes were drilled to test lithogeochemical and geophysical targets on the Mine Block Intrusion outside the confines of the LDIM itself.

NAP began a 16,000 m diamond drilling program in early February 2009 using two underground drills to continue to evaluate the Offset Zone. Bradley is doing the drilling.

Most of the drilling has recovered NQ core with a diameter of 47.6 mm. Core recovery is excellent throughout the deposit and is reported to average close to 100%. Since 2006, the NAP Exploration department has noted core recovery on the drill logs.

SURVEYING

All hole collars have been surveyed using known mine stations. Since 1995, all holes have been surveyed downhole either with a Tropari instrument or the Reflex Maxibor, a non-magnetic light log method.

COLLAR

SURFACE

For each drill hole on the Lac des Iles mine site, coordinates are generated by the NAP Exploration department geologists for the collar position as well a frontsight and a backsight along the desired azimuth. The frontsight and backsight are generally located 10 m to 15 m and 20 m to 25 m, respectively, in front of the collar location. LDI surveyors use a Leica SR530 GPS unit to accurately locate all three positions.

To establish the drill alignment prior to drilling, a NAP Exploration technician initially sets up a Sokkia Set4E total station on the frontsight location and carefully levels the instrument. The instrument is then aligned at the desired azimuth by sighting on the backsight. Once the technician is satisfied with the orientation, the instrument is secured and the drill rod string is assessed. The drill rod string is sighted along its length to determine whether it is oriented in the plane of the desired section, and then the drill is moved until the technician is satisfied with its position and orientation. The drill site geologist uses a digital SmartTool level to check the dip at several areas on the drill casing and mast rails. The drillers adjust the dip under supervision of the geologist and tighten the mast chains once the final dip is established.

The final collar survey is done by the mine department surveyors after the casing has been driven and the hole has drilled several metres into bedrock. Whenever possible, the surveyor uses the already established frontsight and backsight positions as long as there is a clear line of sight to two points (the rod shot and lower shot) on the drill rod string. Northing, easting, and elevation coordinates for each point are determined. These coordinates are then transferred into a formatted Excel template along with a measurement from the lower of the two points to the top of the drill casing. The

coordinates of the top of casing as well as the azimuth and dip of the drill rod are automatically calculated by the spreadsheet.

UNDERGROUND

All underground holes are planned in AutoCAD with calculated coordinates for front and backsights. An underground mine surveyor then surveys in the front and backsight locations underground. A hole is drilled in the rock face using a percussion drill and then a survey spad is inserted.

To establish the drill alignment prior to drilling, an underground geologist or technician completes an inspection of the setup and, if required, stretches a length of string from front and back spad to confirm alignment along azimuth. Once drilling has commenced and at the earliest depth possible (approximately 15 m), a Maxibor EZ-shot measurement is completed to confirm a proper dip angle. Should the dip angle be off by an unacceptable amount, the hole is recollared and the process repeated.

Once the hole has been completed and the drill has changed locations, a final survey of the actual collar location northing, easting and elevation coordinates is completed. Collar and survey data are stored in an Excel template and transferred into Gemcom using established import profiles.

DOWNHOLE

Since 1995 all holes have been surveyed downhole either with a Tropari instrument or the Reflex Maxibor, a non-magnetic light log method. The Reflex Maxibor instrument has been utilized for downhole surveys, initially by contract (1999) and then in-house (from 2000 on). Depending on the drilled length, multiple downhole tests may be performed on each drill hole. Typically, an initial bedrock test is performed after approximately 100 m of drilling has been completed, followed by intermediate tests spaced approximately 350 m to 450 m apart and a final test after the hole has been completed. Additional tests may be required if any corrective measures are taken (such as changing from the hexagonal core barrel to the round core barrel or insertion of wedges).

Maxibor is a laser-optical system that operates on the principle of bending of the drill rods to trace hole deviation. Readings are taken at nominal three-metre intervals uphole from the bottom. The unit's internal camera images and records data readings for the hole deviation at each position. It gathers data based on the known drill hole collar position, and all further readings are related to the initial collar survey, allowing the instrument to record deviations from the original azimuth and dip. The measurements are turned into X-Y-Z coordinates. At the end of the survey, data are downloaded to a handheld device. Files are subsequently transferred to a computer in the exploration office and compiled into an Excel spreadsheet. Maxibor reports deviation from a straight line with an accuracy of 1:1000 (or 1 mm per 1 m of drill hole). The system is suitable for inclined holes and is not affected by variable geomagnetic fields.

In the spring of 2008, Sperry Sun was contracted by NAP Exploration to resurvey holes 07-052 and 07-053 with a North Seeking Gyro. The results of these gyro surveys were updated within the Offset Zone digital database. Scott Wilson RPA compared the original Maxibor survey results with the Sperry Sun North Seeking Gyro results as shown in Table 11-2. The differences in toe position at 2.3%, with respect to the length of drilling, are within instrument error tolerances and confirm the Maxibor surveys.

TABLE 11-2 COMPARISON OF END OF HOLE RESURVEY RESULTS
North American Palladium Ltd. - Lac des Iles Mine

	Hole # 07-052 (1,809 m)			Hole # 07-053 (1,489 m)		
Survey Type	**Northing**	**Easting**	**Elevation**	**Northing**	**Easting**	**Elevation**
Maxibor	32151.65	31638.58	-1222.31	32127.67	31431.02	-821.09
North Seeking Gyro	32114.50	31654.41	-1210.91	32109.3	31459.57	-815.45
Absolute Variance	**37.15**	**15.83**	**11.4**	**18.37**	**28.55**	**5.64**

12 SAMPLING METHOD AND APPROACH

HISTORICAL CORE SAMPLING

Historical sampling procedures are reviewed in AGRA Simons (1999) and Pincock Allen & Holt (PAH 2003). A geologist marked the core for sampling creating standard 3.0 m intervals. The High Grade Zone was sampled with shorter 1.5 m intervals for drilling completed from 1999 to 2001 and one metre intervals for drilling completed in 2002 and 2003. Geological contacts occasionally necessitated smaller sample intervals. The entire hole was split using a hydraulic splitter, with one-half of the core sent for assay and the remainder stored on racks on site.

RECENT CORE SAMPLING

In 2004, a series of nine diamond drilling, core logging and sampling related procedure manuals were compiled by NAP Exploration department for use at LDIM. Scott Wilson RPA notes that the Core Cutting and Splitting Manuals have been updated as of 2007.

Upon delivery to the core shack, the core boxes are sorted and tagged. The core is digitally photographed and images are archived in JPG format. Geotechnical data including RQD measurements are collected in Excel format by geological technicians. Water immersion specific gravity and magnetic susceptibility measurements are collected every 30 m downhole, with six-metre intervals taken within the mineralized zone.

Samples are generally marked at one-metre intervals but may be dependent upon lithological, mineralogical, structural alteration, and mineralization factors observed by the geologist during core logging. Sampling of the Offset Zone starts within the East Gabbro hangingwall, at least five metres prior to the Offset Zone contact, and continues through the footwall breccia to the end of hole. Any other zones of interest (e.g. pyroxenite-rich breccias) in the hangingwall are also sampled. Sample intervals within the main mineralized zones are generally split using a fresh water diamond saw. In 2007,

however, some of the mineralized zone samples were split by hydraulic splitter. Sample intervals outside the main mineralized zones are split using a hydraulic splitter. Technicians are responsible for core halving, bagging, tagging and inserting the pre-numbered quality assurance and quality control samples into the shipping bags. Core logging and sampling information is entered directly into a customized Microsoft Access drill log form.

Scott Wilson RPA has examined core and reviewed current logging and sampling procedures and found them to be of industry standard and appropriate for the deposit.

13 SAMPLE PREPARATION, ANALYSES AND SECURITY

Historical sample preparation, analyses, and security is discussed in AGRA Simons (1999) and PAH (2003).

From PAH, 2003:

"Previous to 1998, assays were carried out at a variety of labs including the LDIM mine site lab, XRAL in Quebec, ALS Chemex in Vancouver, Accurassay in Thunder Bay and Barringer in Toronto. In 1998 most of the samples went to Accurassay with only a few holes to the mine lab. In 1999 Accurassay was the primary lab, with the mine lab and ALS Chemex performing checks. ALS Chemex was the primary lab used in 2000 and 2001, with one in 20 samples checked at Accurassay and the mine assay lab. Accurassay was the primary lab in 2002-2003, with check assays carried out by Lakefield & Chemex. ALS Chemex sample prep is done in the Thunder Bay facility and assayed in Vancouver. In addition to the commercial lab's standards and blanks, LDI inserts two palladium standards and one base metal standard at a rate of one standard for each 40 samples. Blanks are inserted at every 20th sample. One of two available Palladium standards is inserted at every 30th sample.

LDI used ALS Chemex (Chemex) for 2000 and 2001 drill hole series core preparation and analyses done from March 2000 to August 2001. Chemex is ISO 9002 certified and is accredited under ISO/IEC 25 guidelines. Sample preparation was carried out in Mississauga, Ontario, with analyses performed in Vancouver, British Columbia.

From 2003 to mid-2008, the LDI drill hole core was prepared and analyzed by Accurassay Laboratories (Accurassay), a division of Assay Laboratory Services Inc., in Thunder Bay, Ontario. Since mid-2008 LDI exploration core samples have been analyzed at Activation Laboratories (Actlab) in Thunder Bay. LDI continues to have check samples analyzed by ALS Chemex. Samples analyzed at Actlab are not in the current resource estimation database.

All three companies run independent commercial mineral laboratories. Accurassay is accredited by the Standards Council of Canada (SCC) under ISO/IEC 17025 guidelines for PGM, Cu, Ni, and Co analysis by atomic absorption spectroscopy (AA). It undergoes proficiency testing PTP-MAL through the SCC and participates in Round Robin testing through the Society of Mineral Analysts. Chemex is ISO 9002 certified and is accredited under ISO/IEC 25 guidelines. Actlab is one of only two laboratories with ISO/IEC 17025 and CAN-P-1579 registration in North America.

The sample preparation and assay procedures used by Accurassay are as follows:

- Core sample numbers are entered into the local laboratory information management system (LIMS).
- Samples are dried, if necessary.
- Samples are jaw crushed to –8 mesh (2.36 mm).
- A 250 g to 400 g cut is taken by riffle splitting, with the balance stored as coarse reject.
- The above cut is plate pulverized to 90%-150 mesh (106 μm), and then matted to ensure homogeneity. Silica sand is used to clean out the pulverizing dishes between each sample to prevent cross-contamination.
- For precious metal assay, a one assay ton pulp split (±30 g) is mixed with a lead-based flux and fused in a muffle oven. The resulting lead button is placed in a cupelling furnace where all of the lead is absorbed by the cupel, and a silver bead, which contains any gold, platinum, and palladium, is left in the cupel. Once the cupel has been removed from the furnace and cooled, the silver bead is placed in a labelled small test tube and digested using a 1:3 ratio of nitric acid to hydrochloric acid. The samples are bulked up with 1.0 mL of distilled de-ionized water and 1.0 mL of 1% digested lanthanum solution for a total volume of 3.0 mL. The solution is cooled and vortexed and then allowed to settle. Analysis for gold, platinum, and palladium is then done using AA. The AA unit is calibrated for each element using the appropriate ISO 9002 certified standards in an air-acetylene flame.
- For base metal assay, pulps are digested using a multi-acid digest (HNO_3, HF, HCl). The samples are bulked up with 2.0 mL of hydrochloric acid and brought to a final volume of 10.0 mL with distilled de-ionized water. The samples are vortexed and allowed to settle and then analyzed for copper, nickel, and cobalt using AA.

- The AA results are checked by the technician and forwarded to data entry by electronic transfer, and a certificate is produced. The Laboratory Manager checks the data and validates them if they are error-free. The results are then forwarded to LDI by email and hardcopy in the mail.

The sample preparation and assay procedures used by Chemex are as follows:

- Core samples numbers are entered into the LIMS that employs bar coding and scanning technology for chain of custody reporting, as samples are tracked from sample preparation through analysis, and computer-generated certificate reporting.
- Samples are oven-dried, if necessary. Samples are jaw crushed to >70% -2 mm (9 mesh).
- A 250 g cut is taken by riffle splitting, with the balance stored as coarse reject.
- The above cut is pulverized in a ring and puck LM2 grinding mill to >85% passing minus 75 µm (200 mesh) and homogenized. Barren material is used to clean the mill between sample batches to prevent cross-contamination.
- A one assay ton (30 g, i.e., 27 g to 33 g) aliquot of pulp is fire assay fused for one hour at 1,050ºC, multi-acid digested, and then analyzed by 23- to 24-element inductively coupled plasma - atomic emission spectrometry (FA-ICPAES).

Detection limits for assays are:

Metal	Accurassay Detection limit	Chemex Detection limit
Pd	0.010 g/t	0.005 g/t
Pt	0.015 g/t	0.001 g/t
Au	0.005 g/t	0.001 g/t
Cu	0.001%	0.001%
Ni	0.002%	0.005%
Co	0.0001%	0.0002%

The Exploration Office in Thunder Bay maintains hardcopy laboratory certificates and digital copies on file, the latter stored by drill hole number. The digital analytical results are compiled, formatted, and imported into the master drill hole database.

Core samples are secured in the logging/sampling geology facility at the mine site. The mine itself has a gate house and barriers to restrict public access. Core samples are trucked by exploration staff to the Accurassay laboratory in Thunder Bay. Samples to Chemex in Mississauga were shipped by courier.

MINE SAMPLES

The LDIM Assay Lab prepares and assays all of the mine- and mill-related samples. The LDIM Assay Lab currently processes only production-related material that is used to reconcile between mine and mill operations. Although no exploration diamond drill core is currently being assayed at the LDIM Assay Lab, the reconciliation between as mined production and in situ Mineral Reserves requires that the lab operate at a high standard. The LDIM Assay Lab undergoes proficiency testing by running every 20th sample at the Thunder Bay Accurassay Laboratory.

The sample preparation and assay procedures used by the LDIM Assay Lab for mine samples are as follows:

- The Geological Technician delivers samples and enters sample numbers into the assay requisition binder.
- Samples are jaw crushed to –8 mesh (2.36 mm), for chip and muck samples. The test holes are dried and split, no crushing required.
- Samples are dried, if necessary.
- A 200/250 g cut is taken by riffle splitting, no reject kept.
- The above cut is plate pulverized to 95%-97% 150 mesh (106 µm), and then matted to ensure homogeneity. Silica sand is used to clean out the pulverizing dishes between each batch of samples to prevent cross-contamination.
- For precious metal assay, a one-half assay ton pulp split (14.58 g) is mixed with a lead-based flux and fused in a muffle oven. The resulting lead button is placed in order within a cupelling furnace where all of the lead is absorbed by the cupel, and a silver bead, which contains any gold, platinum, and palladium, is left in the cupel. Once the cupel has been removed from the furnace and cooled, the silver bead is placed in a small test tube and digested using a 1:3 ratio of nitric acid to hydrochloric acid. The samples are bulked

up with 3.75 mL of 5,000 ppm Lanthanum Chloride. The solution is cooled and vortexed and then allowed to settle. Analysis for gold, platinum, and palladium is then done using AA. The Varian 220 AA unit is calibrated for each element using the appropriate ISO 9001 certified standards in an air-acetylene flame.

- For Cu, Ni and Co assays, pulps are digested using a multi-acid digest (HNO_3, HF, HCl). The samples are bulked up with 10 mL of concentrated nitric acid, 0.5 ml of hydrofluoric acid, and 5 mL of hydrochloric acid. The samples are allowed to cool and then bulked to a 100 mL volumetric flask (5% HCL solution) analyzed for copper, nickel, and cobalt using AA.

- The AA results are checked by the assayer and entered by the assayer and a certificate is produced. The Laboratory Manager checks the data and validates them if they are error-free. The results are then forwarded to the LDIM geology department by email and on local intranet "V" drive.

In Scott Wilson RPA's opinion, the sample preparation, security and analytical procedures conform to standard industry practice.

14 DATA VERIFICATION

QUALITY ASSURANCE/QUALITY CONTROL

Details of pre-2007 diamond drilling Quality Assurance/Quality Control (QA/QC) can be found in Scott Wilson RPA (2007a). The summary below compiles the QA/QC information from the 2007 underground diamond drilling program at LDIM. Essentially none of the 2008 drilling influences the LDIM resource estimates.

As part of the data verification process, Scott Wilson RPA examined 2007 QA/QC control results carried out by NAP Exploration and the analytical laboratories. A comprehensive QA/QC program for assay validation is performed by NAP Exploration including blanks, standards, and duplicates. Of the 6,387 underground diamond drilling samples submitted to Accurassay in 2007, 92% were core samples, 5% were blank samples, and 3% were standard samples (Table 14-1). An additional 536 samples (492 drill core, 26 blanks, and 18 standards) submitted from the 2007 surface diamond drilling program were included in the 2007 report (NAP 2008c).

TABLE 14-1 SUMMARY OF 2007 DIAMOND DRILLING SAMPLE QA/QC
North American Palladium Ltd. – Lac des Iles Mine

Hole	Drilled Metreage (m)	Whole Core or Split	# of Core Samples	# of Blank Samples	# of Standard Samples	Total Submitted Samples	# of Duplicate Samples	# of Check Samples
07-001	354.0	S	124	7	4	135	13	7
07-002	435.0	S	147	7	5	159	15	15
07-003	504.0	S	158	8	6	172	17	16
							rejects=	2
07-004	627.0	S	216	11	9	236	23	24
07-005	357.0	S	94	6	4	104	10	10
07-006	381.8	S	94	5	3	102	10	92
07-007	450.0	S	125	7	4	136	13	122
07-008	531.0	S	162	9	6	177	17	18
07-009	402.0	W	73	1	1	75	7	0
		S	224	10	7	241	20	20
07-010	448.9	S	125	7	4	136	13	132
07-011	552.0	S	168	8	5	181	18	182
							¼ split	1
07-012	378.0	S	148	8	5	161	16	16
07-013	471.0	W	66	1	1	68	6	0
		S	157	8	5	170	17	17
07-014	582.0	W	79	1	1	81	8	0
		S	126	7	5	138	13	14
07-015	402.0	W	44	1	1	46	4	0
		S	122	6	5	133	12	132
07-016	380.5	S	77	4	3	84	8	92
07-017	528.0	S	162	9	7	178	17	18
							¼ split	1
07-018	348.0	S	155	8	5	168	16	16
							¼ split	1
07-019	492.0	S	138	8	5	151	15	14
07-020	549.0	S	146	8	5	159	15	16
07-021	603.0	S	141	8	5	154	15	15
07-022	513.0	S	111	6	4	121	12	12
07-023	405.0	S	172	9	6	187	18	19
07-024	450.0	S	113	6	4	123	12	12
							rejects=	4
07-028	465.0	S	172	9	6	187	18	19
07-029	555.0	S	218	10	9	237	24	24
							rejects=	3
07-030	333.0	N/A	0	0	0	0	0	0
07-031	471.0	S	115	6	4	125	12	82
07-032	567.0	W	68	1	1	70	7	7
		S	127	5	5	137	13	13
							rejects=	2
07-033	507.0	S	127	6	4	137	13	14
07-034	471.0	S	80	4	3	87	8	8

Hole	Drilled Metreage (m)	Whole Core or Split	# of Core Samples	# of Blank Samples	# of Standard Samples	Total Submitted Samples	# of Duplicate Samples	# of Check Samples
07-035	539.0	S	103	5	3	111	11	11
07-036	309.0	N/A	0	0	0	0	0	0
07-037	504.0	W	60	1	1	62	6	0
		S	98	4	4	106	10	112
07-037A1	280.0	N/A	0	0	0	0	0	0
07-041	510.0	S	128	7	5	140	14	14
							rejects=	3
07-042	612.0	S	155	8	5	168	16	17
07-043	450.0	W	73	1	1	75	7	8
		S	76	4	4	84	8	7
07-044	420.0	S	36	2	1	39	3	3
07-045	420.4	W	57	2	1	60	6	5
07-046	483.0	S	67	3	3	73	0	6
07-047	516.0	S	84	5	3	92	9	8
07-048	573.0	S	222	11	8	241	5	23
07-049	561.0	S	165	10	5	180	18	15
07-050	293.3	N/A	0	0	0	0	0	0
Total	**20,983.9**		**5,898**	**288**	**201**	**6,387**	**588**	**1,444**

BLANKS

Blank samples, used to detect possible contamination of core samples during laboratory preparation, are inserted into the continuous sampling series. For each drill hole, an Excel spreadsheet generates random positions for the blanks within each set of 20 samples.

A total of 288 blank samples consisting of nine whole core blank samples and 279 split core blank samples were submitted to test for cross-contamination from sample to sample during crushing and pulp separation. The whole core blank samples were generated from an East Gabbro unit in drill hole 02-003 and do not have any background reference assay values. The results do, however, seem reasonable ranging from 0.035 g/t Pd to 0.154 g/t Pd. The split core blank samples were generated from 2001 program drill core samples that had previously assayed at less than or near to the Chemex detection limit of ≤0.016 g/t Pd. Three blank samples used were, however, mistakenly generated from a 2001 sample that originally assayed 0.026 g/t Pd.

Of the 277 split core blank samples assayed, 98 reported palladium values that differed more than 0.030 g/t threshold and 20 of these reported palladium results greater than 0.100 g/t vs. their corresponding original 2001 assay.

Overall, the split core blank sample results from the 2007 underground drilling program show poorer correlation with their original values when compared to the results from previous years, which are likely a result of cross-contamination during the preparation or analytical stages. NAP Exploration has noted a correlation between higher palladium grade differences associated with a higher preceding sample. The nature of the blank sample material may also be a factor, although its overall effect is likely negligible.

Scott Wilson RPA recommends that a study be completed to assess the source and effects of potential cross-contamination. While the use of split core is best practice, NAP Exploration should look at sourcing split core blank material from other properties with nil palladium content.

STANDARDS

Standard samples, used to access any laboratory assaying bias, are inserted into the continuous sampling series. For each drill hole, an Excel spreadsheet generates random positions for the standard samples within each set of 30 samples. Two standard reference materials, ILDI-M and LDI-H, were produced by Geoscience Laboratories (GeoLabs) from percussion hole cuttings and fine-ore stockpile material collected at the mine site in 2001 (Table 14-2).

TABLE 14-2 2007 STANDARD REFERENCE MATERIALS
North American Palladium Ltd. - Lac des Iles Mine

Series	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)	Co (%)
LDI-M	3.038	0.292	0.352	0.1518	0.151	0.0065
LDI-H	4.819	0.290	0.103	0.046	0.066	0.008

Some 201 reference standards were submitted, however, no results are available for fourteen of the standard reference samples. NAP Exploration uses ±3 standard deviations

(std) as a guideline to detect potentially anomalous individual palladium results. Fifty of the 187 standard samples submitted with the 2007 underground drill core (or 26.7% of the total standard samples submitted) exceeded the ±3 std guidelines. The majority of the samples exceeding the ±3 std guidelines returned below expected values. A summary of the 2007 results by standard reference material is shown in Table 14-3.

TABLE 14-3 2007 ACCURASSAY STANDARD REFERENCE MATERIAL ASSAY RESULTS
North American Palladium Ltd. - Lac des Iles Mine

Series	LDI-M Pd (g/t)	LDI-H Pd (g/t)
Total # Of Samples Submitted	94	93
Average	2.893	4.674
Standard Deviation	0.471	0.693
Max	5.107	6.890
Min	1.953	2.887
# Of Differences >+3std and <-3std	32	18

The number of LDI-M samples exceeding ±3 std increased from 11.43% in 2006 to 34.01% in 2007. The number of LDI-H samples exceeding ±3 std remained the same at 19.35% between 2006 and 2007. These results suggest that the in-house LDIM standards have become unreliable and need to be replaced.

EXTERNAL CHECK ASSAYS

Accurassay reject splits from every 10th sample are forwarded to the Chemex sample preparation facility in Thunder Bay and the pulps are assayed in Vancouver and at the LDI mine laboratory. In addition, for each drill hole, one standard sample is included with the other external check samples sent to Chemex and LDI.

During 2007, 572 of the 6,387 samples submitted to Accurassay (9.0%) were check assayed. Of these 572 submitted check samples, 535 were drill core samples (9.1% of the 5,898 drill core samples), 35 were standards (17.4% of the 201 submitted standard samples) and two were blank samples (0.7% of the 288 submitted blank samples). In

addition, 19 check samples were generated from reject reassays or ¼ split drill core for a grand total of 591 check samples for the 2007 underground drilling program.

Samples at all three laboratories are assayed using fire assay with lead collection. Palladium, platinum, and gold are analyzed using atomic absorption (AA) at Accurassay and LDIM laboratories, and ICP-AES at Chemex. All laboratories use a multi-acid ("near total") digestion for base metals with an AA finish. After accounting for blanks, standards, and mixed-up samples, 545 usable precious metal and 493 usable base metal assays remained for comparisons. A comparison of the 2007 mean values and relative percent differences is presented in Table 14-4. Table 14-5 presents the data for check samples that originally assayed greater than 3.0 g/t Pd.

The external check assay results show minor to moderate differences between the three laboratories. In general the LDIM laboratory Pd, Pt, and Ni assays are slightly higher and the Cu and Au assays are slightly lower than those at Accurassay and Chemex. The Accurassay Pd and Ni assays are slightly lower than Chemex and significantly lower than the LDIM laboratory. The LDIM Pd and Ni assays may be biased high by a few percent or more, however, none of the resource related assays are from the mine.

TABLE 14-4 2007 COMPARISON OF MEANS FOR ALL CHECK SAMPLES
North American Palladium Ltd. - Lac des Iles Mine

Mean	No. of Samples	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)
Accurassay	545 (493)	2.213	0.207	0.179	0.0634	0.0732
Chemex	545 (493)	2.352	0.199	0.178	0.0633	0.0802
LDI	545 (493)	2.422	0.211	0.171	0.0620	0.0841

Relative % Difference	No. of Samples	Pd	Pt	Au	Cu	Ni
Accurassay to Chemex	545 (493)	-6.3%	3.9%	0.6%	0.2%	-9.6%
Accurassay to LDI	545 (493)	-9.4%	-1.9%	4.5%	2.2%	-14.9%
Chemex to LDI	545 (493)	-3.0%	-6.0%	3.9%	2.1%	-4.9%

Notes:
1. Bracketed number of samples refers to Cu and Ni assays.
2. Nickel includes the original assays before reruns.

TABLE 14-5 2007 COMPARISON OF MEANS FOR CHECK SAMPLES >3.0 G/T PALLADIUM

North American Palladium Ltd. - Lac des Iles Mine

Mean	No. of Samples	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)
Accurassay	126 (117)	6.601	0.475	0.419	0.1083	0.1312
Chemex	126 (117)	6.847	0.464	0.414	0.1086	0.1390
LDI	126 (117)	6.987	0.474	0.389	0.1048	0.1443

Relative % Difference	No. of Samples	Pd	Pt	Au	Cu	Ni
Accurassay to Chemex	126 (117)	-13.0%	2.3%	1.2%	-0.3%	-5.9%
Accurassay to LDI	126 (117)	-15.3%	0.2%	7.2%	3.2%	-10.0%
Chemex to LDI	126 (117)	-2.0%	-2.2%	6.0%	3.5%	-3.8%

Notes:
1. Bracketed number of samples refers to Cu and Ni assays.
2. Nickel includes the original assays before re-runs.

LABORATORY PULP DUPLICATES

Accurassay generates internal duplicate checks on every 10th sample. Accurassay employs an internal quality control system that tracks certified reference materials and in-house quality assurance standards. Accurassay uses a combination of reference materials, including reference materials purchased from CANMET, standards created in-house by the laboratory, and certified calibration standards. Should any of the standards not fall within an acceptable range, reassaying is performed with a new certified reference material. The number of reassays depends on how far the certified reference material falls outside its acceptable range. Additionally, Accurassay verifies the accuracy of any

measuring or dispensing device (i.e., scales, dispensers, pipettes, etc.) on a daily basis, and devices are corrected/calibrated as required. Blank and reference standard samples assayed by Accurassay that reported less than detection limits were entered in the QA/QC database at half the detection limit.

A total of 588 duplicate check samples were completed on the 6,387 samples (or 9.2%) submitted to Accurassay during the 2007 drilling programs. In general, the assay precision (repeatability) is acceptable, although a number of inconsistencies were noted in the Accurassay reporting due to human error.

SITE VISIT

Ian Blakley, P. Geo., Scott Wilson RPA Senior Consulting Geologist, visited LDIM with Krista Nelson, P.Geo., LDI Exploration Geologist, on September 12, 2007. During the site visit, Scott Wilson RPA inspected the core shack and storage area, including core examination, mineralization verification, a discussion of sampling methodology and preparation procedures, and a review of specific gravity (SG) bulk density determination methodology. In Scott Wilson RPA's opinion, the LDIM Exploration Office and deposit site are well run, with documented exploration procedures.

NAP DRILL HOLE DATABASE MANAGEMENT

Core logging and sampling information is entered directly into a customized Microsoft Access drill log form with automatic data restrictions and error validation routines. Accurassay submits assays results electronically via email to the LDIM site, with hardcopies by mail to the NAP Exploration office in Thunder Bay. Further validation and error checking is completed visually, in Excel, and using Gemcom Desktop database software. Final drill hole log reports are generated from the entered data and stored both as a hardcopy and in digital PDF. SG data is stored in MS Excel files.

SCOTT WILSON RPA DRILL HOLE DATABASE VERIFICATION

Previous audits of the quality control, quality assurance and data verification procedures completed by AGRA Simons (1999), PAH (2003) and RPA (2004a) all concluded that the underlying 2003 diamond drill hole database was reasonable for resource estimations for the Roby and High Grade zones.

In August 2006, Wardrop Engineering Inc. (Wardrop) completed an audit of the 2006 LDIM drill hole database (Wardrop, 2006a), which is not materially different from the 2003 drill hole database used for the resource estimation. Wardrop noted minor consistency errors in the handling of assay values between different drill campaigns, none of which are material to the resource estimation.

As part of the data verification process for the 2007 Offset High Grade Resource Estimation (Scott Wilson RPA 2007a), Scott Wilson RPA used Gemcom software routines to verify data entered into the drill hole database. Scott Wilson RPA also examined results of QA/QC work carried out by NAP/LDI and the analytical laboratories for the Offset Zone drill holes.

In 2008, Scott Wilson RPA re-created the NAP database by extracting data from the 6.04 database, validating both numerically and visually, and then importing into GEMS 6.1.4 database. NAP provided Scott Wilson RPA with 2007 diamond drilling results in CSV file format, which were validated and imported into the revised GEMS 6.1.4 database.

No significant errors were found in Scott Wilson RPA's audit trail of the drill hole database verification and validation process.

Corrections made included:

- 37 separate revisions to hole length in the Header table to match logged sample lengths in the Lithology table;

- Three revisions made to interval depths in the Lithology table (Hole # 88-7);
- Revision to elevation in Hole # 07-002;
- Standardization of GEMS special field codes in the Assay table.

DISCUSSION

Excel spreadsheets are used to track the QA/QC results, but in the past few years limited data analysis has been completed. The importance of the QA/QC program can be seen in the recognition of abnormal Ni assay results. For 2007, only a draft year-end report was compiled by NAP Exploration staff. Scott Wilson RPA recommends that a geologist be designated as the manager responsible for the Drill Hole Database and related QA/QC analysis and reporting.

In Scott Wilson RPA's opinion, the digital diamond drill hole and assay database is acceptable for resource estimation.

15 ADJACENT PROPERTIES

There are no significant mineral properties in the vicinity of LDIM held by interests other than Lac des Iles Mines Ltd.

16 MINERAL PROCESSING AND METALLURGICAL TESTING

The current processing plant at LDIM has been in operation since 2001. The mill recovers minerals by conventional grinding and flotation and the final copper/nickel concentrate contains high values of palladium. In 2002, LDIM completed its first full year as a large-scale open pit mining operation, with the mill achieving its design rate of 15,000 tpd in August 2002. In September 2002, the primary crusher failed and portable crushers were used until repairs were completed in March 2003. A new primary crusher was installed in mid-2003 and, for the balance of 2003, the LDIM operated under normal conditions.

The LDIM mill flowsheet has undergone a number of significant changes since 2003:

- The permanent secondary crushing plant was commissioned in December 2004. This has resulted in increased mill throughput without the need for contractor crushing.
- Since March 2006, all regrind has been removed from the flowsheet. This change has not shown any impact on Pd grade and/or recovery.
- Three banks of flotation cells from LDI's Old Mill have been integrated into the circuit, adding two additional cleaning stages bringing the total to five. This has considerably improved the ability of the mill to achieve the required concentrate grade without impacting on recovery.
- Recirculation of the first cleaner tailings to the last four scavenger cells has also increased recovery significantly.
- The mill has improved and progressed with its preventative maintenance program. As a result, the mill achieved 91.1% availability in 2007 and 89.5% availability in the first quarter of 2008 (Table 16-1).

TABLE 16-1 HISTORICAL MILL PRODUCTION
North American Palladium Ltd. - Lac des Iles Mine

	Units	2008	2007	2006	2005	2004	2003
Mill Throughput	Tonnes	3,722,732	5,006,383	4,570,926	4,780,599	5,298,544	5,159,730
Pd Head Grade	g/t	2.33	2.39	2.18	1.66	2.41	2.31
Pd Recovery	%	75.3	74.8	74.0	69.6	75.1	75.5
Concentrate	Tonnes	25,289	32,793	28,979	30,698	45,652	36,879
Pd Produced	Oz	212,046	286,334	237,338	177,167	308,931	288,703
Pt Produced	Oz	16,311	24,442	22,308	18,833	25,128	23,742
Au Produced	Oz	15,921	20,092	17,237	14,308	25,679	23,356
Ni Produced	Lbs	2,488,623	3,066,973	2,721,042	2,353,227	7,836,183	4,070,785
Cu Produced	Lbs	4,623,278	5,536,044	5,155,588	5,514,670	4,320,970	7,142,674
Mill Availability	%	88.4	91.1	86.4	86.5	88.4	91.1

The LDIM comminution flowsheet (Figure 16-1) consists of a 54x75 Mk-II Metso Gyratory crusher reducing the run-of-mine ore (ROM) to a P80 of 6 in. The coarse ore is stockpiled and fed to the mill at 15,000 tpd. A portion of the ore (40% to 60%) is fed through a secondary crushing plant consisting of a dual-deck vibrating screen deck and Metso HP 800 cone crusher. By reducing the overall feed size, the 30'x14' semi-autogenous (SAG) mill can achieve the budget production of 15,000 tpd. Without secondary crushing, the SAG mill throughput is limited to only 12,000 tpd.

The SAG mill discharge is screened at 7 mm, with the oversize crushed in a recycle crushing circuit consisting of a Metso HP800 short head cone crusher. The SAG discharge screen undersize reports to a pair of 20'x34' ball mills. The grinding circuit product size to flotation has a P80 of 75 μm.

The LDIM flotation circuit (Figure 16-2) consists of a rougher-scavenger circuit comprising two parallel lines of a single 50 m^3 and seven 130 m^3 Outokumpu tank cells. The concentrate from the 50 m^3 and first 130 m^3 cells reports to the Old Mill. The concentrate from the remaining 130 m^3 cells is cleaned by the 1st Cleaners consisting of nine 38 m^3 Outokumpu U cells. The 1st Cleaner concentrate combines with the rougher concentrate and reports to the Old Mill. The Old Mill represents the 2nd and 3rd Cleaners which consist of two parallel rows of six Denver DR300 cells and eleven Denver DR100 cells, respectively.

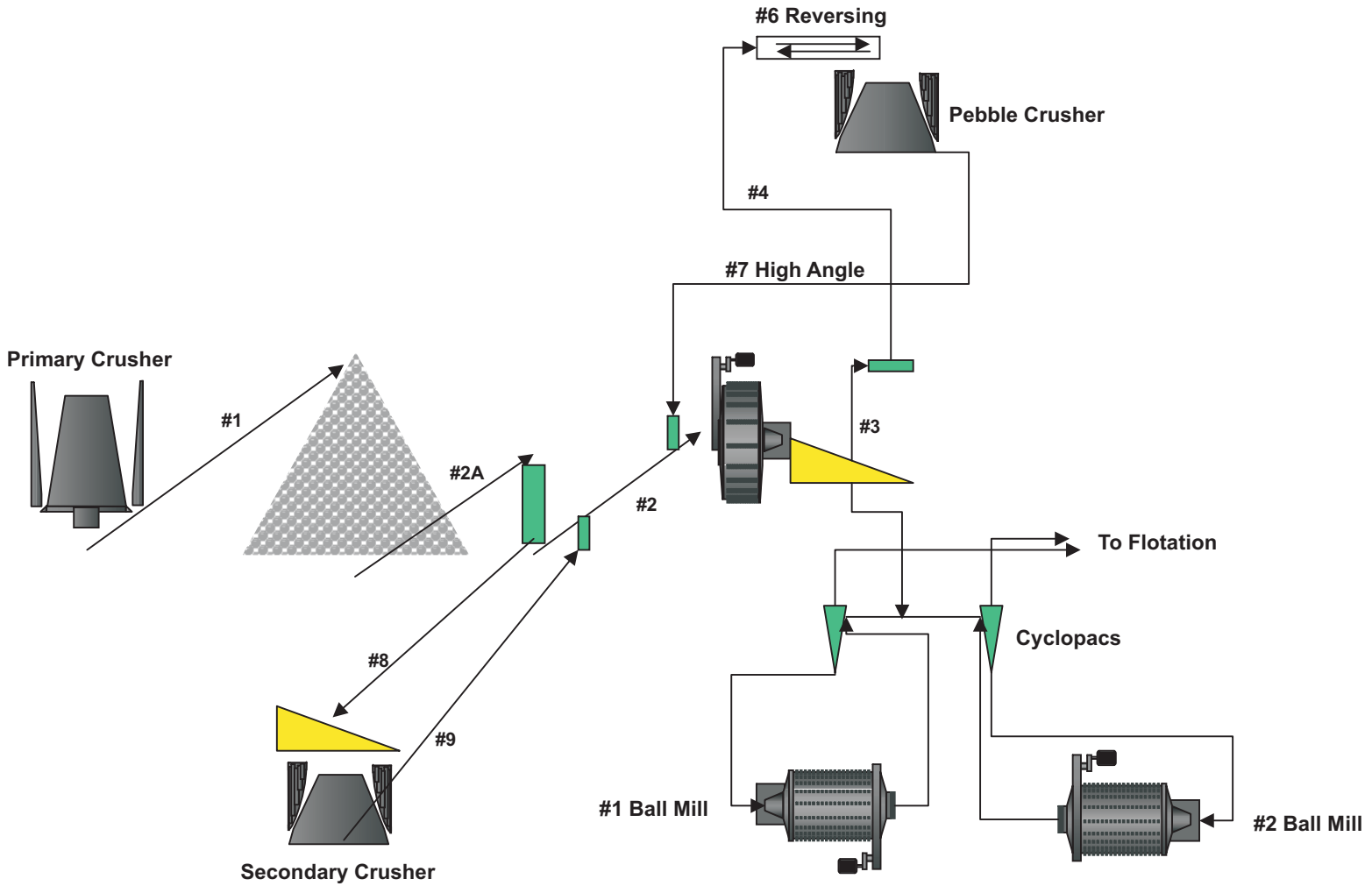


Figure 16-1

Lac des Iles Mines Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Crushing & Grinding Circuit

March 2009

Source: Lac des Iles Mines Ltd., 2007.

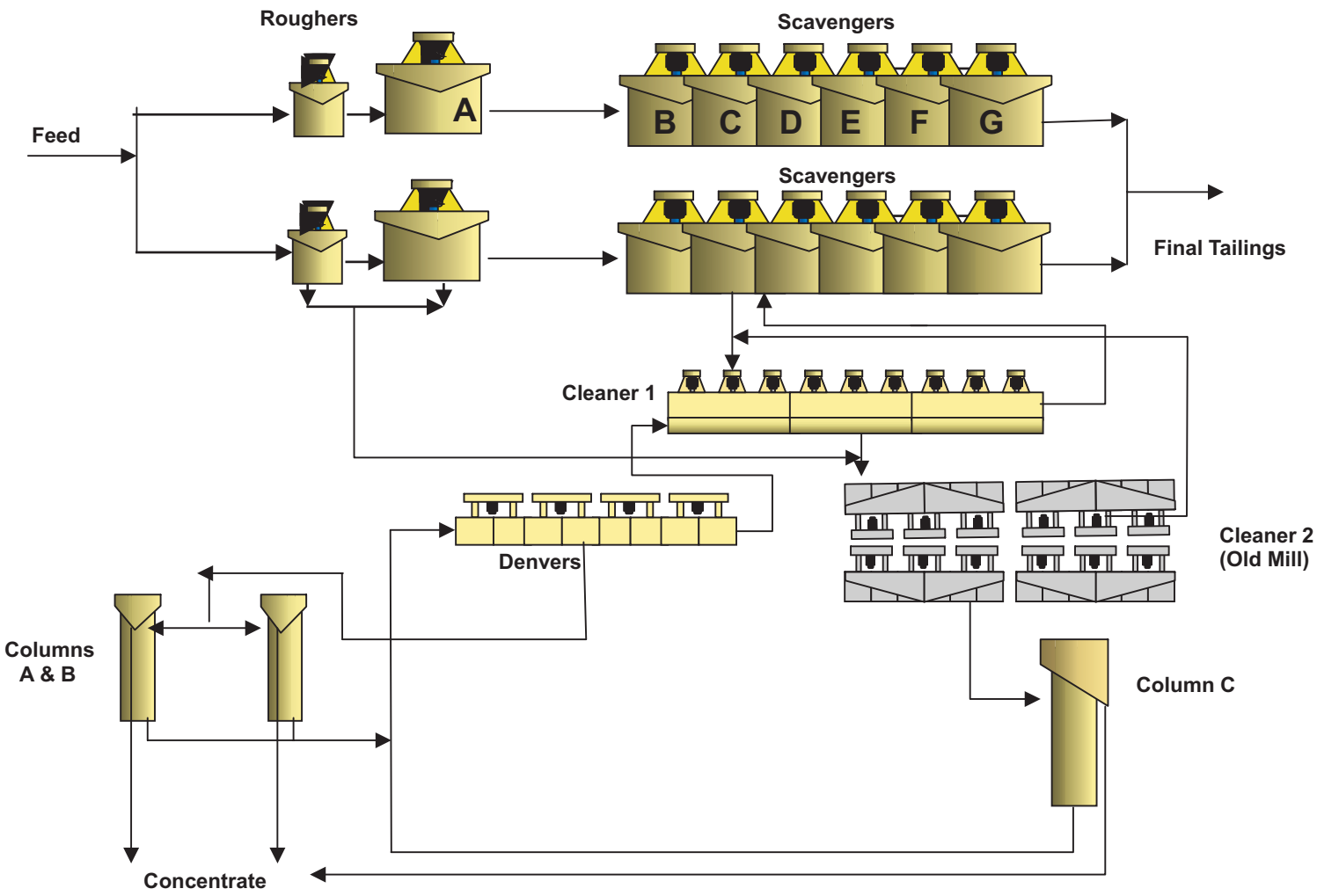


Figure 16-2

Lac des Iles Mines Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Flotation Circuit

March 2009

Source: Lac des Iles Mines Ltd., 2007.

The final concentrate circuit consists of one 5.5'x36' and two 4'x36' Minnovex column cells where the column tailings feed eight Denver DR100 cells. The Column C tail is still considerably rich and the concentrate from the first four Denver cells generally report to final concentrate bypassing Columns A and B.

LDIM concentrates are shipped to Falconbridge (Sudbury) and processed at the Xstrata smelter (formerly Falconbridge Limited) under a smelting and refining agreement. The terms and conditions in this contract are within industry standards and include such standard provisions as concentrate treatment charges, metal payment deductions, refining charges, penalty charges, and settlement periods. LDI receives payment for palladium, platinum, gold, copper, and nickel based on the monthly average spot price as determined by the London Metal Exchange P.M. fix for the month prior to the month that the metal is received by the customer. There is a low content of cobalt and silver in the concentrate for which LDI receives some credit; however, it is not significant. In the past, LDIM concentrates were shipped to both Xstrata and Vale Inco smelters in Sudbury.

METALLURGY AND MINERAL PROCESSING CHARACTERISTICS

LDIM is a mature operation, where the metallurgical character of the mill feed is well established. Recent production successes in the processing of combined open pit and underground ores are reflected in the higher concentrate grades and mill recoveries.

METALLURGICAL TESTING OF ROBY ZONE UNDERGROUND ORE

Lakefield Research Limited (Lakefield), Lakefield, Ontario, completed a study in 2003 entitled "Metallurgical Testing of Current Pit, Future Pit and Underground Ores". LDIM carried out bench-scale tests on four core composite samples from drill holes intersecting the underground deposit (RPA, 2004a). The four drill holes were widely separated both north-south and in elevation. The results, listed in Table 16-2, demonstrated that the underground ore responded well to the existing process flowsheet. The high concentrate grade is properly attributed to the higher head grade of the underground ore versus the open pit ore.

TABLE 16-2 ESTIMATED MILL FEED METALLURGICAL PARAMETERS FOR UNDERGROUND ORE
North American Palladium Ltd. - Lac des Iles Mine

Element	Head Grade	Concentrate Grade	Recovery
Palladium	6.62 g/t	785 g/t	83%
Platinum	0.40 g/t	43 g/t	75%
Gold	0.34 g/t	37 g/t	75%
Copper	0.07%	8.2%	80%
Nickel	0.08%	3.7%	35%

Source: LDI

METALLURGICAL TESTING OF OFFSET MINERALIZATION

A baseline exists for testing of the Offset Zone samples, particularly with reference to the Roby Underground Zone, which has similar mineralization and grades. The thicker Offset Zone with three sub zones combined differs somewhat in host rock in that there is a higher breccia component compared to the pyroxenite-rich Roby Underground Zone. The High Grade subzone in the Offset Zone, however, carries more proxenite than the Roby Underground Zone. In 2006, LDI carried out tests for baseline recoveries and MgO levels. The following is taken from RPA, 2007a.

A series of tests were performed in the LDIM metallurgical laboratory on drill core composite samples from the Offset zones (Legault-Seguin 2006). Overall, samples from the Offset zones have shown good metallurgical performance and the value minerals are recoverable. The only concern is that certain samples show higher gangue recovery than those for the Roby Underground Zone due to the presence of floatable gangue minerals (talc and serpentine). This results in higher mass pull, which is a logistic issue for the plant since the pumps and pump boxes will have to be sized to accommodate transportation of the material downstream in the mill circuit.

However, as the tests described below show, increased carboxymethyl cellulose (CMC) addition can depress the gangue and reduce the mass pull, thereby improving the concentrate grade. Therefore, the mass pull of all samples could be made comparable to the recent LDIM mill feed.

The tests were organized to imitate the rougher-scavenger circuit of the mill such that the ultimate recovery from the Offset Zone material was being evaluated. No additional cleaning stages were conducted and the concentrate grades are not reflective of a final concentrate grade. The composite samples supplied for metallurgical testing are described in Table 16-3. Most of the samples had Cu and Ni grades of approximately 0.1%, except for 05-016W2, which had Cu and Ni grades in the order of 0.3%.

TABLE 16-3 OFFSET ZONE DRILL CORE COMPOSITE SAMPLES FOR METALLURGICAL TESTING
North American Palladium Ltd. - Lac des Iles Mine

Drill Hole	From (m)	To (m)	Length (m)	Comment	Grade				
					Pd (g/t)	Pt (g/t)	Au (g/t)	Cu%	Ni%
01-007	913.70	951.00	37.30	Up dip Northern part of Offset HGZ	5.094	0.281	0.384	0.105	0.093
01-052	973.50	1026.00	52.50	Northern part of Offset HGZ	5.532	0.369	0.404	0.076	0.116
05-014	1169.00 1192.00	1184.00 1222.00	45.00	Southern part of Offset HGZ	5.579	0.346	0.301	0.085	0.098
05-016	1089.00	1132.50	43.50	Roby Footwall Z.	5.769	0.358	0.308	0.089	0.117
05-016W1	1008.00	1036.00	28.00	Low Base Metals	6.260	0.343	0.201	0.076	0.130
05-016W2	1036.00	1051.70	15.70	High Base Metals	4.161	0.345	0.667	0.307	0.315
01-079	941.00	954.00	13.00	East Gabbro Breccia	3.177	0.444	0.157	0.170	0.160

For each test, the weight of the charge was adjusted to 1,240 g. Grind time was one hour at 60% solids and flotation was completed at 30% solids. Reagents used were methyl isobutyl carbinol (MIBC) as frother, potassium amyl xanthate (PAX) as collector, and Depramin 267, a CMC, for gangue depression. A three-stage flotation was conducted in a four litre laboratory scale Denver flotation machine.

Samples of the concentrates from each stage and the final tailings were submitted to the LDIM assay laboratory for Pd, Au, Pt, Cu, Ni, MgO, SiO_2, Al_2O_3, CaO and Fe_2O_3 analyses. The precious metals were assayed through fire assay digestion and by AA

finish. The base metals were digested using hydrofluoric acid (HF) and analysis of the solution by AA. The oxides are analyzed directly using X-ray fluorescence (XRF).

The head grade for each test was calculated using the assays and weight of final tailings and concentrate samples. Recoveries of all elements were then calculated.

The concentrate Pd grade-recovery relationship of the Offset Zone samples and a Roby Zone ore sample is illustrated in Figure 16-3. The recovery of Pd from the samples was excellent and similar for all samples. The variation in grade was due to the presence of increased amount of floatable gangue minerals for samples 01-007, 05-014, 05-016W1 and 05-016W2. The effect of increased CMC dosage on reducing gangue recovery and considerable improvement in concentrate grade is shown in Figure 16-4.

FIGURE 16-3 PD GRADE-RECOVERY RELATIONSHIP, OFFSET ZONE

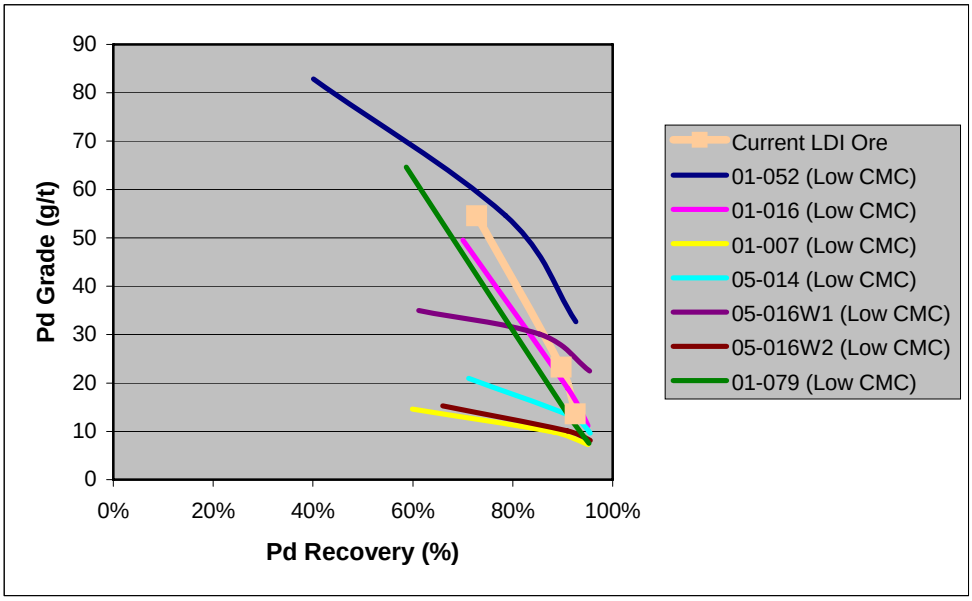
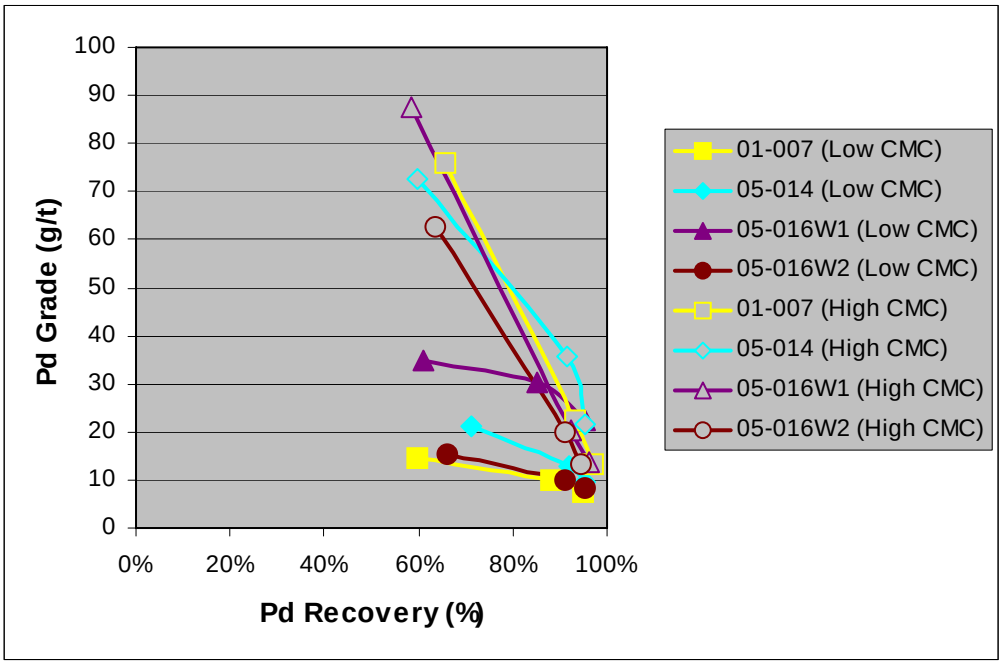


FIGURE 16-4 EFFECT OF CMC DOSAGE ON PD GRADE-RECOVERY RELATIONSHIP



A concentrate grade for the rougher-scavenger was estimated through linear extrapolation using 80% Pd recovery as the basis (Table 16-4). As illustrated, the increased dosage of CMC considerably improved the concentrate grade.

TABLE 16-4 ESTIMATED ROUGHER-CONCENTRATE GRADES AT 80% PD RECOVERY

North American Palladium Ltd. - Lac des Iles Mine

	Pd g/t	Au g/t	Pt g/t	Cu %	Ni %
01-052 (Low CMC)	52.29	3.57	3.36	1.09	0.90
01-016 (Low CMC)	34.92	1.94	1.88	0.57	0.54
01-007 (Low CMC)	11.24	1.01	0.86	0.36	0.37
01-007 (High CMC)	47.88	2.60	2.98	0.70	0.71
05-014 (Low CMC)	17.60	0.84	1.23	0.32	0.33
05-014 (High CMC)	49.00	2.48	3.15	0.90	0.71
05-016W1 (Low CMC)	31.17	1.42	1.81	0.37	0.27
05-016W1 (High CMC)	44.82	1.84	2.61	1.12	0.63
05-016W2 (Low CMC)	12.40	1.89	0.91	0.82	0.68
05-016W2 (High CMC)	37.01	5.45	2.99	1.15	0.78
01-079 (Low CMC)	30.92	1.84	5.35	2.18	0.97

DISCUSSION

The Micon Study utilized plant feed grades and plant recoveries (Table 16-5) that are slightly more conservative than those listed in Table 16-2.

TABLE 16-5 MICON STUDY 2008 OFFSET ZONE METALLURGICAL PARAMETERS
North American Palladium Ltd. - Lac des Iles Mine

Element	Head Grade	Recovery
Palladium	4.76 g/t	80%
Platinum	0.34 g/t	70%
Gold	0.34 g/t	75%
Copper	0.10%	85%
Nickel	0.11%	40%

Source: Micon Study

In Scott Wilson RPA's opinion, the Offset Zone material should produce higher recoveries and head grades than seen in previous production results.

17 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

GENERAL STATEMENT OF MINERAL RESOURCES

Scott Wilson RPA's familiarity with the LDIM operation dates back to 2003 when Scott Wilson RPA completed a prefeasibility study for underground mining on July 31, 2003. Scott Wilson RPA prepared an underground resource block model in November 2003 and completed a feasibility study for underground mining at the LDIM in February 2004, which is summarized in an NI 43-101 report dated April 2004 (RPA, 2004a).

Scott Wilson RPA assisted mine personnel with updating the open pit resource block model in July 2003 (RPA, 2003 and LDI, 2003). The June 30, 2003 open pit Mineral Reserve and Mineral Resource estimation details are disclosed in an NI-43-101 report by PAH dated September 12, 2003 (PAH, 2003).

Scott Wilson RPA also assisted mine personnel with the open pit and underground Mineral Resource and Mineral Reserve estimates for December 31, 2005 (RPA, 2006a). More recently, Scott Wilson RPA reviewed the December 31, 2006 underground Mineral Resource and Mineral Reserve estimates (RPA, 2007b). On February 23, 2007, Scott Wilson RPA issued a separate NI 43-101 technical report for a new underground Mineral Resource estimate of the Offset Zone (Scott Wilson RPA, 2007a). On October 31, 2007, Scott Wilson RPA issued a separate NI 43-101 Technical Report to support the disclosure of Mineral Resources and Mineral Reserves of LDIM to June 30, 2007.

The open pit and underground block models for the LDIM have not changed since 2003 and the resource estimation technical details related to these block models can be found in PAH (2003) and RPA (2004a), respectively. Key resource and reserve estimation parameters related to the LDIM are summarized in the following subsections. Details related to the Offset Zone Mineral Resource estimate can be found in Scott Wilson RPA (2009) and are not repeated in this report. The Roby Zone open pit and underground Mineral Resources are shown in Figures 17-1 and 17-2 and the underground

Mineral Resources at the Offset Zone are shown in Figure 17-3. The LDIM open pit and underground Mineral Resources as of December 31, 2008, are summarized in Table 17-1.

TABLE 17-1 DECEMBER 31, 2008 MINERAL RESOURCE SUMMARY
North American Palladium Ltd. – Lac Des Iles Mine

Location	Tonnes (000's)	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)	PdEq (g/t)
Measured Resources							
Roby Open Pit	3,722	1.99	0.23	0.17	0.075	0.065	3.77
Roby Stockpiles	763	2.09	0.19	0.18	0.060	0.079	3.79
Indicated Resources							
Roby Open Pit	2,565	2.20	0.24	0.18	0.078	0.068	4.07
Roby RGO Stockpile	13,365	0.97	0.12	0.08	0.034	0.056	2.00
Roby Underground	3,292	7.61	0.44	0.33	0.062	0.077	10.46
Offset Underground	12,331	5.02	0.38	0.37	0.114	0.133	8.28
Total M&I Resources	**36,038**	**3.18**	**0.26**	**0.22**	**0.072**	**0.086**	**5.29**
Inferred Resources							
Offset Underground	4,637	4.9	0.4	0.3	0.12	0.13	8.0

Notes:
1. CIM definitions were followed for the estimation of Mineral Resources.
2. Mineral Resources for the Roby open pit were estimated at a cut-off grade of 1.8 g/t PdEq, within an optimized pit shell run below the current pit survey (October 2008).
3. Mineral Resources in stockpiles were estimated at a cut-off grade of 1.9 g/t PdEq.
4. Mineral Resources for the Roby and Offset Zones underground were estimated at a cut-off grade of 5.8 g/t PdEq.
5. Cut-off grades were determined under the assumption that a production rate of 14,000 tpd would be resumed in the event of re-starting operations.
6. PdEq factors were calculated separately for each area, based on operating cost and metallurgical performance estimates appropriate for those areas.
7. Metal price assumptions of US$350/oz palladium, US$1,400/oz platinum, US$850/oz gold, US$6.50/lb nickel, and US$2.00/lb copper were used in the estimation of PdEq and cut-off grade. A US$/C$ exchange rate of 1.11 was used.

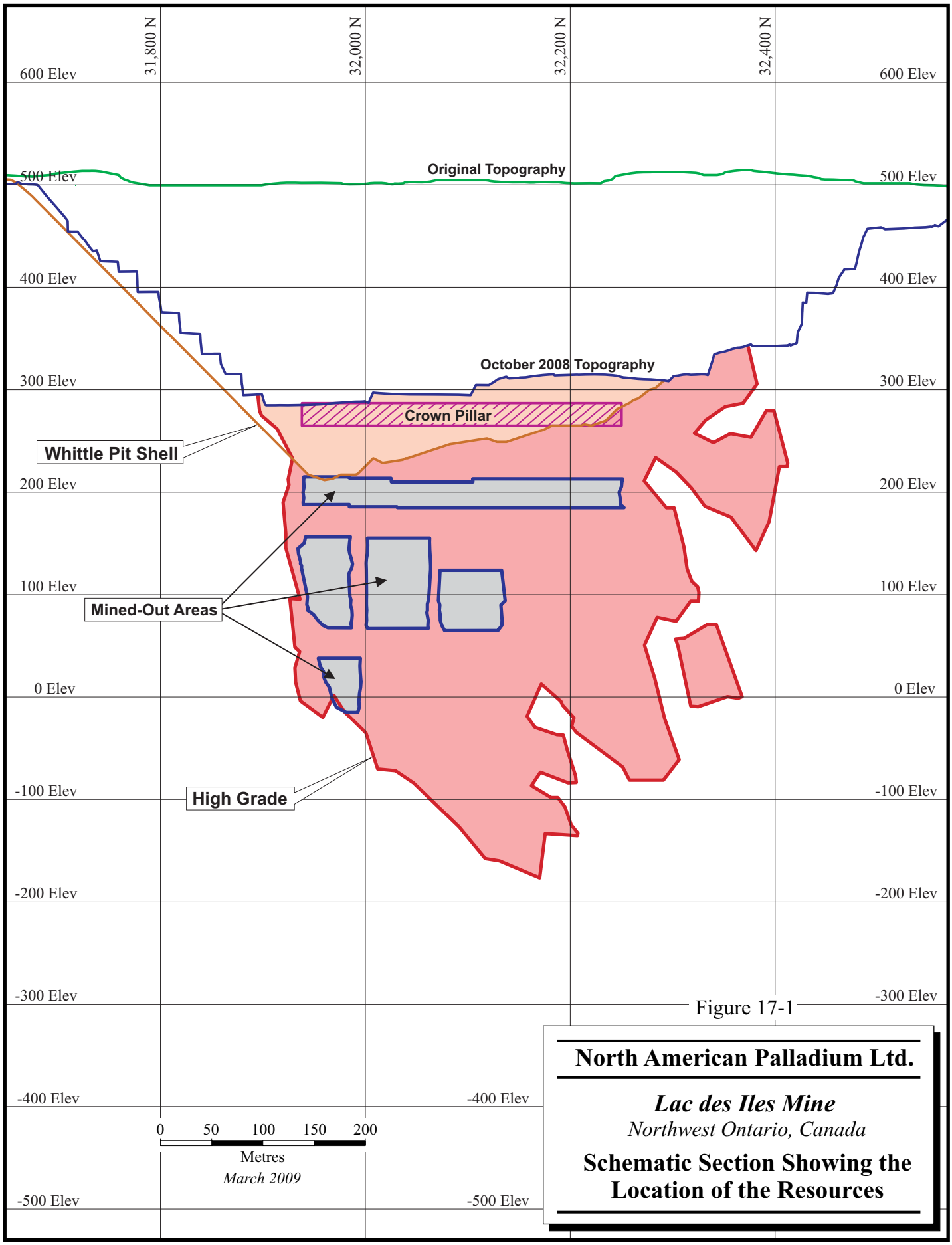


Figure 17-1

North American Palladium Ltd.

Lac des Iles Mine

Northwest Ontario, Canada

Schematic Section Showing the Location of the Resources

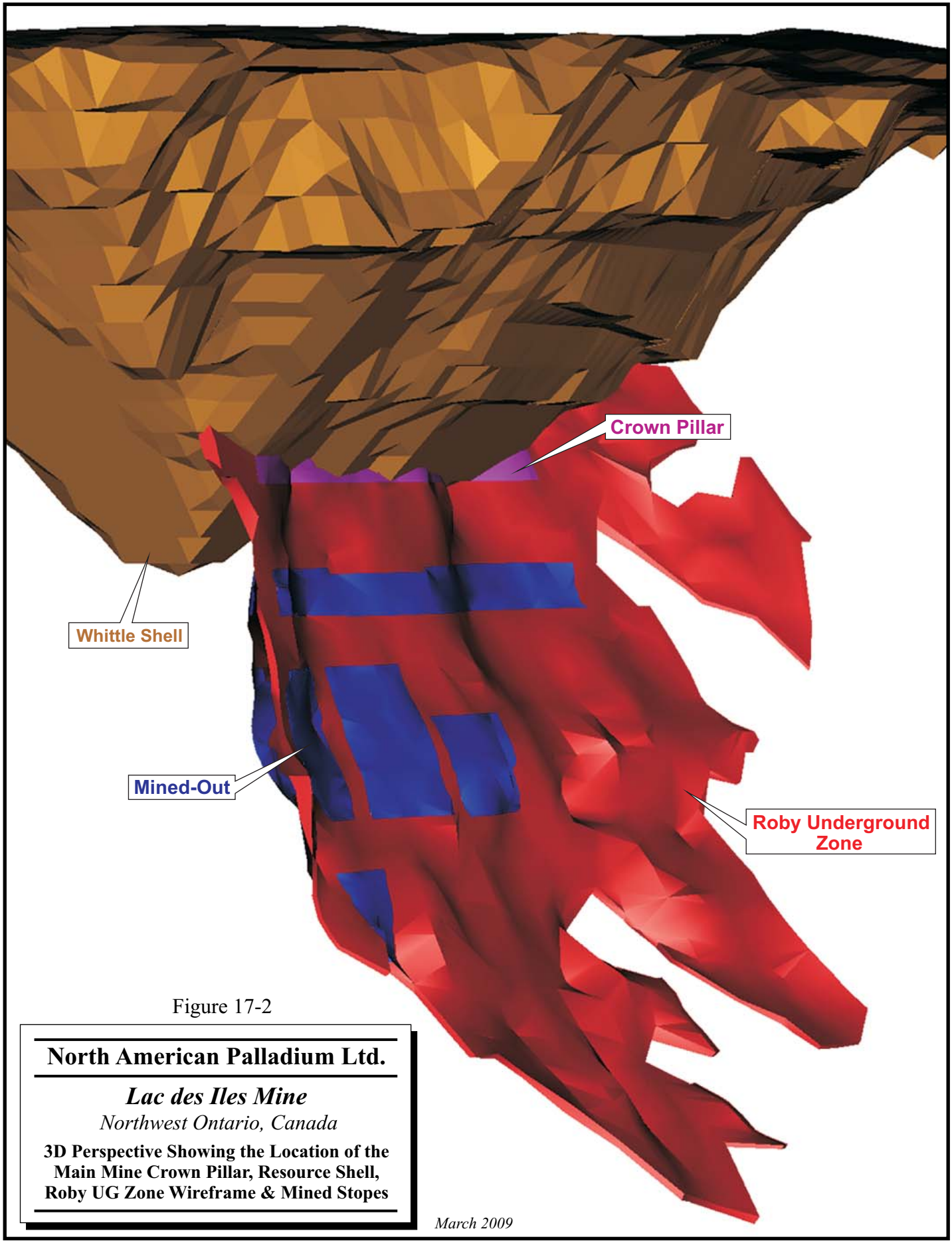


Figure 17-2

North American Palladium Ltd.

Lac des Iles Mine

Northwest Ontario, Canada

3D Perspective Showing the Location of the Main Mine Crown Pillar, Resource Shell, Roby UG Zone Wireframe & Mined Stopes

March 2009

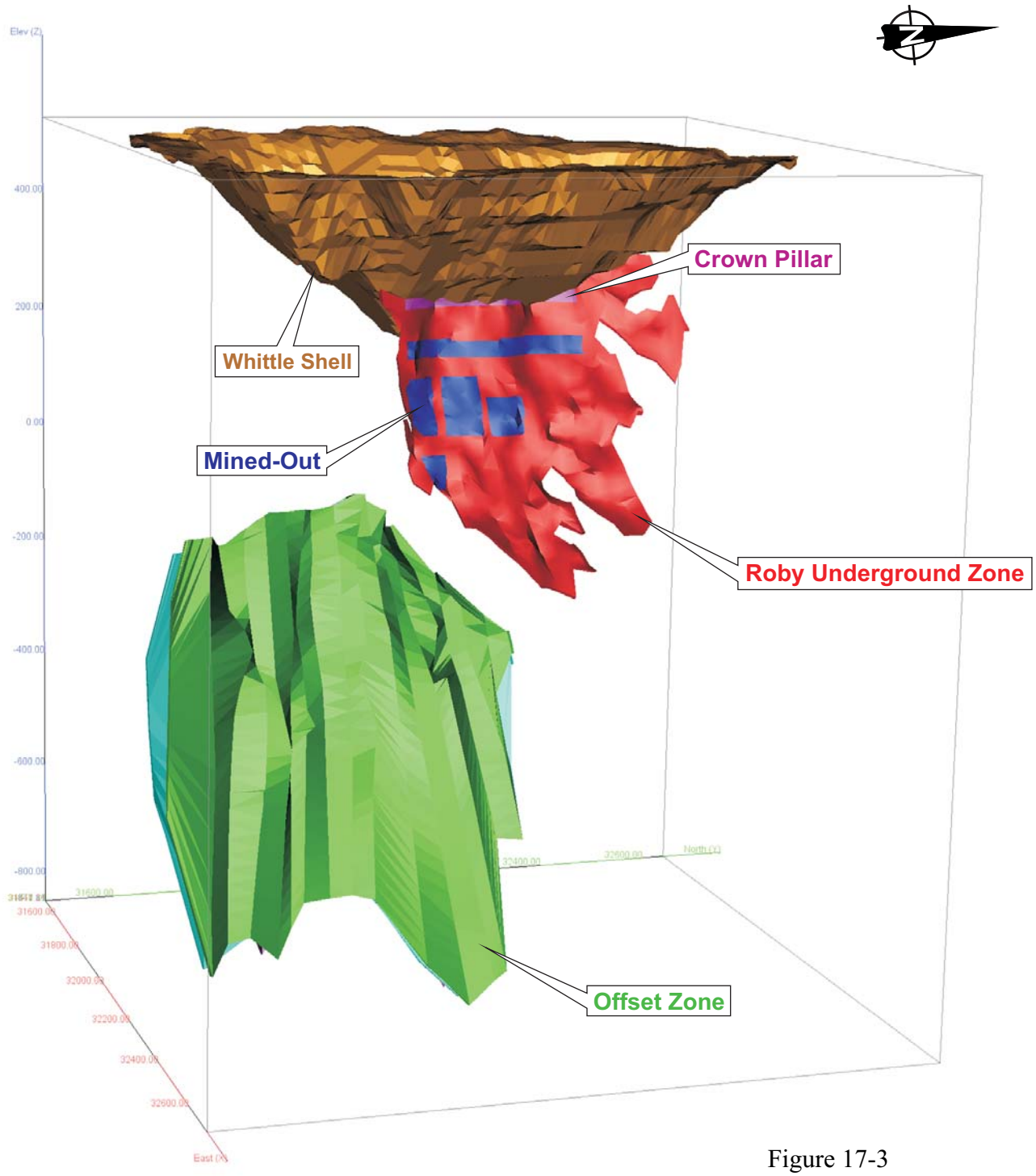


Figure 17-3

North American Palladium Ltd.

Lac des Iles Mine

Northwest Ontario, Canada

3D Perspective Showing the Location of Offset Zone with Respect to the Roby UG Zone

March 2009

MINERAL RESOURCE ESTIMATE COMMENTS

BLOCK MODELS

There has been no new drilling that would affect the 2003 open pit block models. The current open pit resource model is the same as the July 2003 GCDB12 block model. The current open pit reserve model is the same as the July 2003 GCDB13 block model. GCDB12 is used to report the resources situated below the ultimate pit design and GCDB13 is used to report the reserves located in the ultimate pit. The only differences between GCDB12 and GCDB13 are as follows:

1. The GCDB13 Pt, Pd, Au, Cu, and Ni grades have been reduced by up to 9% depending on the rock type. This practice has been applied annually by LDI since the December 31, 2000 open pit reserve estimate to account for dilution and other factors.

2. Inferred blocks, representing approximately 100,000 tonnes and less than one percent of the total open pit reserves, have been assigned zero grades in GCDB13.

Blocks in GCDB12 and GCDB13 are 15 m by 15 m by 8 m high. The mine changed to 10 m high benches in 2005 and Scott Wilson RPA recommends that future open pit models use 10 m by 10 m by 10 m blocks, which is the same block size as the GCDBUG underground block model. The open pit and underground resource block models are rotated 19° counterclockwise. The block models were constructed using Gemcom software.

TONNAGE FACTORS

A 2.88 t/m³ tonnage factor was used for all mineralization and waste rock types and a 1.80 t/m³ tonnage factor was used for overburden. The 2.88 t/m³ tonnage factor is based on the average of 1,143 density determinations performed by LDI at the site in 1999 using a methodology that involved weighing samples in air and suspended in water. The test results, averaged by the main rock codes, range from 2.85 t/m³ to 2.93 t/m³. The 65 tests on Roby Zone samples averaged 2.93 t/m³ and the 209 tests on the East Gabbro averaged 2.91 t/m³ (AGRA Simons, 1999). In Scott Wilson RPA's opinion, the 2.88 t/m³

tonnage factor is acceptable as a global tonnage factor and may be slightly conservative for the Roby Zone.

A tonnage factor of 2.89 t/m^3 was used for volume conversion to tonnage for the Offset Zone resource estimate. Routine specific gravity (SG) measurements on diamond drill core have been recorded for the Offset Zone providing a database of 1,887 tests. Initial SG testing was conducted every 30 m; however, since 2006, LDIM has been taking an SG measurement at six-metre intervals, which is more appropriate for underground mining.

OPEN PIT DISCARD CUT-OFF GRADE

Open pit resources are reported at a 1.8 g/t PdEq discard cut-off grade (Table 17-1), within a preliminary optimized pit shell. The discard cut-off grade is the break-even palladium equivalent grade (which includes by-product credits) that covers the milling and general and administration costs. Mining unit costs are an input into the open pit optimization software, which accounts for ore and waste mining costs while generating the pit shell. For material within the pit shell, all of which is assumed to be mined, the discard cut-off grade determines whether it should be sent to the mill or to a waste dump.

Inputs to the pit optimization included the following:

- Current topography for the open pit, from a survey conducted in October 2008.
- Pit slope wall angles of 45º, representing average slopes for the current pit.
- An NSR block model, giving a unit net revenue ($/t) for each block in the model. The high-grade shear zone was assumed to be part of the underground operation, and assigned zero NSR value for the purposes of the pit optimization.
- Operating costs of:

Mining	$ 3.50 per tonne moved
Milling	$10.00 per tonne milled
G&A	$ 2.50 per tonne milled

The resulting pit shell, which appears in Figures 17-1 and 17-2, above, was trimmed to exclude unmineable “skins” along the existing walls - portions too narrow for a

layback, or picked up from the difference between the smooth pit shell and the toe & crest survey. The areas that were removed were largely waste – care was taken not to invalidate the optimization by adding waste, or by removing portions required to be mined to access ore below. The remaining pit shell consists largely of a continuation of mining at the pit bottom, with a small layback on the south wall.

Figure 17-2 illustrates that the pit shell runs through the shear zone at the current location for the crown pillar, most of which is contained within the shell. Scott Wilson RPA did not carry out trade-off studies to optimize the dividing line between open pit and underground resources. Shear zone material that lies within the pit shell has been reported as open pit resources, and material below the pit shell has been reported as underground resources. Future work may result in slight changes to this delineation.

The NSR values in the block model were estimated by multiplying block model grades by a factor for net revenue per metal unit ($/g or $/% for each metal). Calculation of those factors is summarized in the following table:

TABLE 17-2 NSR CALCULATION FOR OPEN PIT
North American Palladium Ltd. - Lac des Iles Mine

Metal	Recovery	Price	Net Revenue by Metal	Net Revenue per Metal Unit
Palladium	75%	US$350/oz	54%	C$ 7.06 per g
Platinum	64.5%	US$1,400/oz	20%	C$24.31 per g
Gold	73%	US$850/oz	10%	C$16.19 per g
Copper	83%	US$2.00/lb	6%	C$23.11 per %
Nickel	35%	US$6.50/lb	9%	C$38.87 per %

An exchange rate of C$1.00 = US$0.90 was used to convert metal prices to Canadian currency.

Recoveries were taken from LDI's 2008 Budget, which were estimated based on operating history at similar grades. Other factors used to calculate NSR include an exchange rate of C$1.00 = US$0.90, and smelter terms based on LDI's agreement with

Xstrata (including treatment charges, refining charges, penalties for MgO, and freight charges).

Palladium equivalent (PdEq) factors were generated by taking the ratio of Net Revenue per Metal Unit for each byproduct metal to that for Palladium. Multiplying PdEq factors by average grades gave average PdEq grades.

UNDERGROUND CUT-OFF GRADE

Underground resources are reported at a 5.8 g/t PdEq cut-off grade. This cut-off grade was calculated using the following factors:

- NSR block models, giving a unit net revenue ($/t) for each block.
- Operating costs of:

Mining	$35.00 per tonne moved
Milling	$10.00 per tonne milled
G&A	$ 2.50 per tonne milled

Mineral Resources have been estimated under the assumption that production would resume at the previous operating rate of 14,000 tpd milled. In Scott Wilson RPA's opinion, this rate is dependent on resuming open pit mining, and notes that scenarios that consider lower production rates, without open pit mining, are likely to involve higher unit costs, leading to higher cut-off grades. Higher cut-off grades would be expected to reduce resource quantities.

Calculation of NSR factors for underground is summarized in the following table:

TABLE 17-3 NSR CALCULATION FOR UNDERGROUND

North American Palladium Ltd. - Lac des Iles Mine

Metal	Recovery	Price	Net Revenue by Metal	Net Revenue per Metal Unit
Roby Zone				
Palladium	80%	US$350/oz	73%	C$ 8.03 per g
Platinum	70%	US$1,400/oz	15%	C$28.13 per g
Gold	75%	US$850/oz	7%	C$17.73 per g
Copper	82%	US$2.00/lb	2%	C$24.35 per %
Nickel	35%	US$6.50/lb	4%	C$41.44 per %
Offset Zone				
Palladium	80%	US$350/oz	60%	C$ 8.08 per g
Platinum	70%	US$1,400/oz	16%	C$28.31 per g
Gold	75%	US$850/oz	10%	C$17.84 per g
Copper	85%	US$2.00/lb	4%	C$25.40 per %
Nickel	40%	US$6.50/lb	9%	C$47.67 per %

An exchange rate of C$1.00 = US$0.90 was used to convert metal prices to Canadian currency.

Recoveries were estimated by extrapolating operating history (the mill has never processed unblended underground ore at these grades). Other factors used to calculate NSR include an exchange rate of C$1.00 = US$0.90, and smelter terms based on LDI's agreement with Xstrata (including treatment charges, refining charges, penalties for MgO, and freight charges).

Revenues per metal unit are higher for underground ore because recoveries and concentrate grades are higher, increasing recovered metal, and reducing concentrate charges. The Offset Zone has notably higher-grade copper and nickel, accounting for differences between the zones in Table 17-3.

STOCKPILE CUT-OFF GRADE

Resources in stockpile are reported at a 1.9 g/t PdEq cut-off grade. This cut-off grade was calculated using the following factors:

- NSR calculation of unit net revenue ($/t).
- Operating costs:

Material Handling	$ 1.00 per tonne moved (RGO)	
	$ 2.00 per tonne moved (Roby)	
Milling	$10.00 per tonne milled	
G&A	$ 2.50 per tonne milled	

Calculation of NSR factors for the RGO stockpile material is summarized in the following table:

TABLE 17-4 NSR CALCULATION FOR RGO STOCKPILE

North American Palladium Ltd. - Lac des Iles Mine

Metal	Recovery	Price	Net Revenue by Metal	Net Revenue per Metal Unit
Palladium	74%	US$350/oz	49%	C$ 7.03 per g
Platinum	64%	US$1,400/oz	21%	C$24.36 per g
Gold	70%	US$850/oz	9%	C$15.68 per g
Copper	82%	US$2.00/lb	6%	C$23.06 per %
Nickel	34%	US$6.50/lb	15%	C$38.14 per %

An exchange rate of C$1.00 = US$0.90 was used to convert metal prices to Canadian currency.

Recoveries were estimated from operating history, and are expected to be lower for the low-grade RGO stockpile. Other factors used to calculate NSR include an exchange rate of C$1.00 = US$0.90, and smelter terms based on LDI's agreement with Xstrata (including treatment charges, refining charges, penalties for MgO, and freight charges).

Scott Wilson RPA notes that although the smaller stockpiles are well above the cut-off grade, the large RGO stockpile has a very small margin above cut-off. Any production scenarios involving a throughput rate lower than 14,000 tpd would likely have to consider the RGO stockpile as sub-economic.

TREATMENT OF HIGH ASSAYS

LDI does not cap high assays or composites. Instead, a limit is placed on the area of influence for composites grading over 22 g/t Pd. This capping strategy has been incorporated into the open pit and underground block models. Composites grading over 22 g/t Pd were limited to a maximum range of 20 m in the major and semi-major directions and 10 m for the minor axis. These range restrictions represent approximately one-quarter of the maximum search radii. No constraints were applied to high-grade composites for Pt, Au, Cu, or Ni.

High palladium assays at the Offset Zone were capped to 20 g/t for the HG and MID Subzones and to 10 g/t for the FW Subzone. The platinum, gold, copper, and nickel were not capped. The high-grade palladium assays were capped by zone prior to compositing.

COMPOSITING

The open pit and underground drill samples were composited to three metre lengths before use in grade estimation. Compositing was carried out using length-weighting only, as there is little variation in bulk density within the main rock units. The open pit model comprises a number of rock units in addition to the High Grade Zone and only the High Grade Zone mineralization was used for the underground model. Each composite was assigned a rock code.

The Offset Zone assays were composited into two-metre downhole lengths resetting at each of the subzone wireframe boundaries.

GRADE INTERPOLATION AND SEARCH METHODOLOGY

The open pit and underground grade estimates were carried out using ordinary kriging and the composites were restricted by rock codes. The maximum search radius used for all rock types was 80 m. This is shorter than the second structure variography ranges that are 100 m to 200 m, depending on the rock type. The Roby Underground Zone was interpolated in two passes whereby different search orientations were used for material above and below the 200 m elevation to allow for changes in the overall dip and azimuth.

Ordinary kriging was used to interpolate the Offset Zone Pd, Pt, Au, Cu, and Ni grades. A 200 m omni-directional search ellipsoid was utilized for each subzone.

ESTIMATION OF GRADES FOR BROKEN MATERIAL IN LDIM STOCKPILES

Mineral Resources in stockpile are listed in the following table:

TABLE 17-5 MINERAL RESOURCES IN STOCKPILE
North American Palladium Ltd. – Lac Des Iles Mine

Location	Tonnes	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)	PdEq (g/t)
Measured Resources							
Coarse Ore	41,393	2.87	0.21	0.19	0.067	0.086	4.71
Crusher Stockpile	2,298	2.69	0.22	0.25	0.080	0.092	4.77
Oversize Ore	598,813	1.80	0.19	0.16	0.059	0.077	3.43
1" Fine Ore	1,663	2.87	0.21	0.19	0.067	0.086	4.71
Broken in Pit	96,996	2.50	0.19	0.20	0.064	0.091	4.30
Roby UG Ore	21,994	6.72	0.34	0.39	0.063	0.079	9.38
Subtotal Measured	**763,157**	**2.09**	**0.19**	**0.18**	**0.060**	**0.079**	**3.79**
Indicated Resources							
Roby RGO Stockpile	13,364,742	0.97	0.12	0.08	0.034	0.056	2.00
Total M&I Resources	**14,127,899**	**1.03**	**0.13**	**0.09**	**0.040**	**0.060**	**2.10**

The methodology for the estimation of grades for broken material in resources at LDIM is summarized below.

The regular grade ore (RGO) stockpile Measured Resource was updated monthly. The monthly hauled tonnes, at a grade determined from kriging blasthole assays for the material blasted and hauled, are added to the stockpile tonnes and a weighted average grade for the stockpile and hauled material estimated.

The pit stockpile is located within the pit on the bench where it was blasted. The blast pattern was sampled as drilling occurred, with one sample per ten meter blasthole being collected. These samples were assayed at the mine laboratory and the results

imported into Gemcom software. The dig area of material exceeding cut-off grade was outlined on the bench as the blast pattern and its grade were estimated by kriging the blasthole assay data using Gemcom routines.

The crusher stockpile consists of open pit material awaiting crushing. Grades were assigned based on the average grade (kriged) of blasthole samples for the pit blast area (s) where the material originated. Alternatively, an average monthly pit grade was assigned if the material was a blend of several blast patterns.

The grades for the coarse ore stockpile and 1 inch fines material were estimated from the average monthly mill head grade. The coarse ore stockpile is located at the feeders to the mill and the 1 inch fines were produced from the secondary crushing circuit.

The oversize stockpile represents blasted open pit material which is too large to feed the crusher. From 2002 to 2005 the grades were estimated by adding the monthly hauled tonnes to the stockpile and the total stockpile resource updated similar to the method employed for the RGO stockpile. Since 2006, the grade for the oversize added to the stockpile has been assigned the yearly average grade for open pit mined material. The Table 17-5 summarizes the year-end oversize grades since 2002:

TABLE 17-6 OVERSIZE STOCKPILE HISTORIC GRADE RECONCILIATION
North American Palladium Ltd. Lac des Iles Mine

		GRADE					
	TONNES	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)	
December-02	760,497	1.750	0.186	0.152	0.054	0.082	
December-03	515,531	1.770	0.186	0.152	0.054	0.077	
December-04	628,736	1.805	0.185	0.165	0.059	0.077	
December-05	461,860	1.804	0.186	0.164	0.059	0.077	
December-06	435,595	1.627	0.223	0.126	0.053	0.072	Average 2006 pit grade
December-07	644,877	1.788	0.222	0.151	0.057	0.079	Average 2007 pit grade
October-08	598,813	1.845	0.190	0.166	0.062	0.078	Average 2008 pit grade
	Average	1.770	0.197	0.154	0.057	0.077	

Source: LDI

The underground broken material stockpile grades are assigned based on the average monthly underground grade for mined material. The monthly grade is estimated by applying resource block grades to surveyed excavation tonnes and hauled stope tonnes, the latter based on truck counts. Assay results from underground muck samples, collected daily at the portal, are reviewed as a check against the estimated monthly underground grade.

CLASSIFICATION

The definitions for resource categories used in this report are consistent with those defined in CIM (2005) and adopted by NI 43-101. In the CIM classification, a Mineral Resource is defined as "a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the Earth's crust in such form and quantity and of such grade or quality that it has reasonable prospects for economic extraction". Resources are classified into Measured, Indicated, and Inferred categories. A Mineral Reserve is defined as the "economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study". Mineral Reserves are classified into Proven and Probable categories.

The open pit resources are classified based on the distance from block centroids to the closest composite. The Measured Resource category is assigned to blocks located up to 15 m from a composite, Indicated to blocks located 15 m to 30 m from a composite, and Inferred 30 m to 80 m from a composite. LDI first introduced these classification criteria for the December 2000 estimates (LDI, 2001). Scott Wilson RPA notes that distance based classification criteria can result in some local areas that exhibit discontinuous "checker board" mixes of classification categories. Nevertheless, Scott Wilson RPA is of the opinion that the open pit classification methodology results in a reasonable total tonnage for the combined Measured and Indicated Resource, but that some of the Measured Resource might be more appropriately classified as Indicated.

All of the Roby Underground Zone resources are classified as Indicated. The wireframe was constructed using a nominal maximum extrapolation distance of

approximately 25 m. Scott Wilson RPA is of the opinion that the underground chip sampling data could be used in the future to estimate some Measured Mineral Resources.

At the Offset Zone, classification of the Indicated Resource is defined based on a distance to the closest composite of less than or equal to 30 m. The remainder of the blocks within the interpreted subzones were classified as Inferred Resources. There were no blocks assigned to the Measured Resource category.

2005 UNDERGROUND DRILLING DATA

Some 24 diamond drill holes were drilled from underground in 2005. For the area drilled, the holes confirmed that the underground resource model was reasonable and reliable. LDI has not updated the current underground resource block model (GCDBUG) with these 24 drill holes. Scott Wilson RPA, however, constructed a new wireframe and block model for the High Grade Zone mineralization area drilled in 2005 and compared it to the 2003 underground block model. The area affected by the 2005 drilling represented approximately one million tonnes. For this area, the 2005 drilling resulted in approximately a seven percent tonnage decrease, a four percent palladium grade increase, and a four percent decrease in contained palladium metal. A number of the 2005 drill holes successfully extended the mineralization to the south and beyond the current resource limits. In Scott Wilson RPA's opinion, the 24 underground drill holes do not materially affect the underground resource model, however, LDI should update its resource models periodically as new data become available.

2007 OFFSET ZONE UNDERGROUND DRILLING DATA

The 2007 Offset Underground Drilling program, comprising one surface and 44 underground drill holes was completed as of October 31, 2007, the data cut-off for Scott Wilson RPA's Offset Zone resource estimate of January 2009. Of the 21 Offset Zone holes that intersect the Roby Underground Zone, preliminary assays had been received for only six holes. Scott Wilson RPA reviewed the plotted intersections for these six holes and determined that these intersections do not significantly affect the current Roby Underground Zone resource wireframe and that the preliminary assay results are comparable to current resource grade blocks. Scott Wilson RPA recommends updating

the Offset Zone and Roby Underground Zone resource estimates for assay results in these drill holes received after the cut-off date. .

2006 TO 2008 UNDERGROUND CHIP SAMPLING DATA

The Gemcom database includes information for 8,936 underground chip samples taken over 9001.2 m in 1,352 channels. LDI uses the chip sampling data to design the production stopes and for production reconciliation but has not incorporated the chip sampling data into the resource block modelling process yet. To investigate the impact of excluding the chip data, Scott Wilson RPA has compared the current underground block model with a preliminary block model that included chip data. Including the chip data reduced the block model stope grades by approximately 5%. Scott Wilson RPA concluded that excluding the chip data has had no material impact on the underground resource estimate, however, we recommend that LDI use the chip data in future resource models which will permit upgrading all or part of the underground resource classification from Indicated to Measured.

MINERAL RESOURCE REPORTING

The Mineral Resources are exclusive of the Mineral Reserves. There are currently no Mineral Reserves at the LDIM.

REGULAR GRADE ORE STOCKPILE

The regular grade ore (RGO) stockpile tonnage is based on truck counts and the grade is estimated based on historical blast hole ore control models. Scott Wilson RPA understands that the RGO stockpile toe lines are surveyed periodically. From Scott Wilson RPA's view, there is too much uncertainty related to the overall stockpile tonnage and internal grade variability to classify it as Measured. Consequently, the RGO stockpile is classified as Indicated.

RECONCILIATION

The underground operation began sending ore to the mill in early 2006 and full production from the underground began in March 2006. Production reconciliation results for 2006 onwards are less conclusive due to uncertainties related to assigning production grades and tonnages to the various open pit and underground sources of mill feed. Consequently, the most reliable reconciliation information for the open pit, as discussed below, is from 2004 and 2005. Preliminary attempts to reconcile the underground production with the reserves are also discussed below.

MILL DATA

Two automatic samplers are set up on two lines leaving the ball mills. One composite from each line is collected every 12 hour shift. This generates four head sample assays per day. Tail samples are also collected daily. Head, tail, and concentrate samples are assayed daily at the LDIM laboratory. The concentrate samples are also assayed at Lakefield and other independent laboratories. The mill production reconciled head grade estimates also incorporate minor adjustments based on the final concentrate grades agreed upon with Xstrata. Scott Wilson RPA believes that the reconciled mill head grade estimates are reliable.

The mill operates a number of belt weightometers. The most accurate weightometer is located on a conveyor just after the crusher. It has double rollers and load cells and is calibrated with chains on approximately a monthly basis during mill shutdowns. A 1.6% moisture factor is applied to the weightometer tonnage. Scott Wilson RPA believes that the reconciled mill head tonnage estimates are reliable.

OPEN PIT RECONCILIATION

The most recent and most reliable data available to evaluate the open pit reserve model is from 2004 and 2005. Scott Wilson RPA has also completed a preliminary investigation of the open pit reserve model performance for the first half of 2007.

Scott Wilson RPA has reviewed reconciliation data for 2004 and 2005 and concludes that the overall GCDB13 block model tonnage, grade, and contained metal estimates for the combined RGO and high-grade ore (HGO) reconcile reasonably well with mill production (Tables 17-2 and 17-3). RGO was defined as material averaging from 0.7 g/t Pd to 1.1 g/t Pd, most of which is stockpiled. Some RGO was successfully milled in 2005, particularly in September. HGO is material averaging greater than 1.1 g/t Pd.

For 2005, the GCDB13 model overestimated the tonnage by 10%, underestimated the palladium grade by 5%, underestimated the platinum grade by 6%, underestimated the gold grade by 10%, underestimated the copper grade by 4%, overestimated the nickel grade by 0.2%, and overestimated the contained palladium by 5% (Table 17-6).

TABLE 17-7 2005 MILL RECONCILIATION RESULTS FOR HGO PLUS RGO
North American Palladium Ltd. - Lac des Iles Mine, Notario

Source	Tonnes	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)	Pd Ounces
GCDB13 Model Reserves	5,924,137	1.391	0.173	0.102	0.057	0.069	264,987
Ore Control Packet Reserves	6,068,450	1.440	0.185	0.110	0.055	0.069	281,037
Reconciled Mill Production	5,371,882	1.462	0.185	0.113	0.060	0.069	252,496
GCDB13 versus Mill in 2005	**10.3%**	**-4.8%**	**-6.2%**	**-9.5%**	**-4.2%**	**0.2%**	**4.9%**

Sometimes, blasts can generate large rock fragments that are too large for the crusher. This oversize material, generally larger than one metre in diameter, is either broken with a rock breaker in the pit, reblasted in the pit, or sent to an oversize stockpile. In early 2005, it was decided that only oversize material averaging greater than approximately 2 g/t Pd would be stockpiled and the rest would be sent to the waste dumps. For 2005, the ore control packet tonnage was 13% less than the reconciled mill production compared to a zero percent difference in 2004. Scott Wilson RPA believes that the change in handling oversize was the main contributor to this difference and that significantly higher ore losses were experienced in 2005. Scott Wilson RPA understands that some of the ore loss in 2005 was due to overbank blasting and subsequent ore loss in the pit bottom. LDI implemented a number of measures in early 2006 to minimize ore losses.

TABLE 17-8 2004 MILL RECONCILIATION RESULTS FOR HGO PLUS RGO

North American Palladium Ltd. - Lac des Iles Mine, Notario

Source	Tonnes	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)	Pd Ounces
GCDB13 Model Reserves	6,658,192	1.911	0.180	0.155	0.070	0.081	409,165
Ore Control Packet Reserves	6,432,908	2.117	0.200	0.174	0.068	0.082	437,824
Reconciled Mill Production	6,447,692	2.110	0.197	0.175	0.067	0.082	437,339
GCDB13 versus Mill in 2004	**3.3%**	**-9.4%**	**-8.7%**	**-11.5%**	**3.3%**	**-1.4%**	**-6.4%**

The GCDB13 model underestimated the Pd, Pt, and Au grades in 2004 and 2005. Note that the head grades were significantly higher in 2004 than in 2005. Scott Wilson RPA believes that the main cause for the Pd, Pt, and Au grade underestimation is the "dilution" related grade reductions in the GCDB13 block model. The minor effect of capping palladium composites and using restricted search radii can be seen by comparing the Pd and Pt grade differences because only palladium composites were capped during grade interpolation.

The 2004 and 2005 data suggest that the ore control model grade estimates reconcile very well with the mill and that the blasthole grades are reliable and do not require capping.

Scott Wilson RPA carried out a preliminary open pit reconciliation study for the first six months of 2007 by deducting the underground production from the final mill production and comparing this open pit production with the GCDB13 HGO reserves for the same time period. The GCDB13 HGO reserve tonnage and palladium grade estimates were 3% lower and 8% higher, respectively, than production.

Overall, the reconciliation data indicates that the GCDB13 block model performs reasonably well. For this report, the undiluted GCDB12 model has been used to report the remaining open pit resources. The grade variances discussed above should be lower with the GCDB12 model and Scott Wilson RPA is of the opinion that the GCDB12 model is acceptable for reporting the open pit resources.

UNDERGROUND RECONCILIATION

All of the stopes on the 5180 Level have cavity monitoring system (CMS) data. These stopes were mined from March 2006 to March 2007. These CMS stopes contain 343,400 tonnes compared to 349,400 tonnes based on the reserve model. This represents less than a two percent difference in tonnage, which is excellent, and indicates that the underground reserve model is performing well. Scott Wilson RPA tried to redistribute the mill production over this 13 month period back to the 5180 Level stopes, however, some sources of uncertainty were encountered along the way, and the grade reconciliation results are less reliable and very preliminary. In general, the underground resource model may be overestimating the palladium grade by approximately 10%, however, more detailed reconciliation work should be completed to confirm this.

18 OTHER RELEVANT DATA AND INFORMATION

As of October 29, 2008, the LDIM operation has been placed on care and maintenance. There are currently no Mineral Reserves estimated on the property.

MINING OPERATIONS

The LDIM has been on care and maintenance since October 29, 2008. It was a 14,000 tpd combined open pit and underground mine and processing plant, producing a bulk palladium/nickel/copper concentrate with precious metal credits. The concentrate produced at the mine was trucked to Sudbury, where it was sold on a contract basis to Xstrata. The open pit mine began operating in 1993 and production from underground started in 2006. Most key operating and cost parameters have been well established through operating experience.

A mine camp operated on a drive-in drive-out basis, with two 12 hour shifts per day, seven days per week. Operations were scheduled 365 days a year.

LDI mined ore and waste from the open pit using conventional hydraulic 23 m^3 and 27 m^3 shovels, 190 tonne trucks, 187 mm blasthole drills, and a fleet of conventional ancillary equipment. Mine waste was stockpiled outside the design pit limits and used for construction of tailings facilities.

The pit was mined with 10 m benches and 15 m berms. The overall wall angle is 57^o on the east and west walls, and 45^o on the south wall. A 20 m high crown pillar was planned to be left between the top level of the Roby underground mine and the bottom of the ultimate pit, intended for recovery at the end of the mine life. Approximately 90 m remain between the current open pit and the highest level mined underground (measured vertically within the Roby Underground Zone).

The Roby Underground Zone was accessed via a decline ramp which ranges from -14% to -18% grade, with levels being established every 20 m to 30 m. The mining method was a combination of longitudinal and transverse longhole stoping. Mined stopes were filled with unconsolidated waste generated from underground development. Development was achieved using two hydraulic drill jumbos, one mechanized rock bolter, and two scissor-lifts. Production drilling was carried out using two in-the-hole (ITH) longhole drills. Mucking was achieved using both 8 yd^3 and 11 yd^3 Tamrock scooptrams, which loaded a fleet of three Toro 60 tonne capacity haul trucks and one Toro 40 tonne capacity haul truck. Underground ore was hauled and stockpiled at the portal in the open pit, where it was reloaded into 190 tonne capacity 730E haul trucks and hauled to the crusher.

MINERAL PROCESSING

The current processing plant at LDIM has been in operation since 2001. The mill is a conventional flotation operation with SAG and ball milling, followed by three stages of flotation and two stages of regrind. The final product is a bulk copper/nickel concentrate with high PGM values.

ENVIRONMENTAL CONSIDERATIONS

The Lac des Iles Mine is a mature mine site that has followed the normal Ontario procedures of the Ministry of Northern Development and Mines (MNDM), Ministry of the Environment, and Ministry of Labour, through the local offices in Thunder Bay. All permits are in place to operate the open pit and underground operations. The mine site is also in compliance with the Canada Fisheries Act, the Canada Water Resources Act, and the Canadian Environmental Protection Act.

19 INTERPRETATION AND CONCLUSIONS

LDIM produced ore from both underground and open pit operations until October 29, 2008, when the mine was placed on care and maintenance status due to lower metal prices. Previously, the mine had open pit and underground Mineral Reserves, however, no Mineral Reserves are currently estimated for the property. NAP is currently conducting an underground diamond drilling program on the Offset Zone, and carrying out studies on several potential restart scenarios, at various production rates. NAP plans to complete a prefeasibility study this year, which will include an updated resource estimate for the Offset Zone.

Mineral Resources have been estimated under the assumption that production would resume at the previous operating rate of 14,000 tpd milled. Scott Wilson RPA is of the opinion that this rate is dependent on resuming open pit mining, and notes that scenarios that consider lower production rates, without open pit mining, are likely to involve higher unit costs ($/t), leading to higher cut-off grades. Higher cut-off grades would reduce resource quantities, most notably in the 13 million tonne RGO stockpile, which is very close to the cut-off grade applicable for 14,000 tpd mining and processing operations.

Following the closure of operations, NAP intends to restrict spending at LDIM while management focuses on strategic initiatives including:

- Ongoing drilling and exploration to further delineate resources and reserves at LDIM, as well as grassroots exploration in areas adjacent to the mine.

- Continuing the work required to complete a prefeasibility study on the Offset Zone at LDIM.

20 RECOMMENDATIONS

Scott Wilson RPA's recommendations are summarized below.

1. Complete more drilling on the Offset Zone.
2. Update the Roby Underground Zone resource model with the 2005 underground drilling, the 2007 Offset Zone drilling, and the chip sample data.
3. Update the Offset Zone underground resource model once the 2009 Offset Zone drilling program is completed.
4. Complete a prefeasibility study.
5. Continue to explore other targets on the property.

The 2009 exploration program planned by NAP includes a major underground drill project and two surface drill projects for a total project expenditure of approximately $7 million. The underground drill program targets the Offset Zone. The surface drill projects target prospective areas of the Mine Block Intrusion and North LDI. The 2009 exploration program comprises a Phase 1 program totaling approximately $4 million and a Phase 2 program totaling approximately $3 million that is contingent on positive drilling results from the Phase 1 work. Scott Wilson RPA has reviewed the budget and concurs with NAP that this work is warranted.

The underground project consists of 38 holes for 16,500 m of drilling to test the top of the Offset Zone above the 4650 Level. The holes will be drilled on six 50 m-spaced sections (499-504) by two underground rigs from two drill bays along the 5095 Level exploration drift. The project budget is $2.5 million.

Drill programs are planned by NAP on four prospective areas on the Mine Block Intrusion.

1) **North VT Rim:** Four holes for a total of 3,600 m have been approved for drilling on the north varitextured gabbro rim of the Mine Block Intrusion. The holes will

be drilled on two sections within 500 m of the open pit mine. The project budget is $440,000.

2) **South VT Rim:** Four holes for a total of 2,120 m have been approved for drilling on the south varitextured gabbro rim. The project budget is $300,000.

3) **Creek Zone:** Four holes for 1,280 m have been approved to further test the Creek Zone. The budget for this project is $220,000.

4) **Massive Sulphide Bearing Zone:** Four holes for 2,000 m have been approved to drill test the massive sulphide bearing zone. The budget is $280,000.

The exploration program for North LDIM consists of five holes for a total of 5,000 metres. The holes will be drilled to test under mineralized trenches and outcrops from which sample assays returned results of up to 7 g/t combined Pd-Pt-Au. The budget for the North LDIM project is $650,000.

TABLE 21-1 PROPOSED PHASE 1 BUDGET AND PROGRAM FOR LDIM
North American Palladium Ltd. - Lac des Iles Mine

Items	$
Underground Diamond Drilling Offset Zone - 38 holes totalling 16,500 m	2,500,000
Surface Diamond Drilling Mine Block Intrusion	
North VT Rim – 4 holes totalling 3,600 m	440,000
South VT Rim 4 holes totalling 2,120 m	300,000
Creek Zone – 4 holes totalling 1,280 m	220,000
Massive Sulphide Zone – 4 holes totalling 2,000 m	280,000
North LDIM	
5 diamond drill holes for 5,000 m	650,000
Total Phase 1	**4,390,000**

Drilling success on the Offset Zone could trigger excavation of a new exploration drift on the 4915 L for a major drill program in 2010. The cost of the drift excavation would be approximately $3 million.

TABLE 21-2 PROPOSED PHASE 2 BUDGET FOR THE LDIM
North American Palladium Ltd. - Lac des Iles Mine

Item	$
Drift Excavation on the 4915 L	3,000,000

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22 SIGNATURE PAGE

This report titled "Technical Report on the Lac des Iles Project, Thunder Bay, Ontario, Canada" prepared for North American Palladium Ltd. and dated March 13, 2009, was prepared and signed by the following authors:

Dated at Toronto, Ontario
March 13, 2009

(Signed & Sealed)
Deborah A. McCombe, P.Geo.
Consulting Geologist

Dated at Toronto, Ontario
March 13, 2009

(Signed & Sealed)
Richard E. Routledge, M.Sc. P.Geo.
Consulting Geologist

Dated at Toronto, Ontario
March 13, 2009

(Signed & Sealed)
Ian T. Blakley, P.Geo.
Consulting Geologist

Dated at Toronto, Ontario
March 13, 2009

(Signed & Sealed)
Jason J. Cox, P.Eng.
Consulting Engineer

23 CERTIFICATE OF QUALIFICATIONS

DEBORAH A. MCCOMBE

I, Deborah A. McCombe, P.Geo., as an author of this report entitled "Technical Report on the Lac des Iles Project, Thunder Bay, Ontario, Canada" prepared for North American Palladium Ltd. and dated March 13, 2009, do hereby certify that:

1. I am Executive Vice President with Scott Wilson Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.

2. I am a graduate of the University of Western Ontario, London, Canada in 1974 with a degree of B.Sc. in Biology and in 1975 with a B.Sc. degree in Geology.

3. I am registered as a Professional Geoscientist in the provinces of Ontario (Reg. #0021). I have worked as a geologist for a total of 30 years since my graduation. My relevant experience for the purpose of the Technical Report is:
    - Review and report on numerous mining operations and projects around the world for due diligence and regulatory requirements.
    - Responsible for the management of feasibility studies and resource audits on numerous projects as president and consulting geologist for an international consulting engineering company.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI43-101.

5. I visited the Lac des Iles Mine from September 11 to 14, 2007.

6. I am responsible for preparation of Sections 2-11 of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.4 of National Instrument 43-101.

8. I have had no prior involvement with the property that is the subject of the Technical Report.

9. I have read National Instrument 43-101, and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

10. To the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated 13th day of March, 2009

(Signed & Sealed)

Deborah A. McCombe, P.Geo.

RICHARD E. ROUTLEDGE

I, Richard E. Routledge, M.Sc., P.Geo., as an author of this report entitled "Technical Report on the Lac des Iles Project, Thunder Bay, Ontario, Canada" prepared for North American Palladium Ltd. and dated March 13, 2009, do hereby certify that:

1. I am a Geologist with Scott Wilson Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.

2. I am a graduate of Sir George Williams (now Concordia) University, Montreal, Quebec, Canada, in 1971 with a Bachelor of Science degree in Geology and McGill University, Montreal, Quebec, Canada, in 1973 with a Master of Science degree in Applied Mineral Exploration.

3. I am licensed as a Professional Geologist in the Northwest Territories, Canada (L744) and I am a Practising Member of the Association of Professional Geoscientists of Ontario (1354). I have worked as a geologist for more than 35 years. My relevant experience for the purpose of the Technical Report is:
    - Resources and reserves reviews, audits, estimates and reporting as a consultant (25 years) on numerous exploration and mining projects around the world for due diligence and regulatory requirements, including:
        - Resource estimate for the Lac Des Iles Mine Offset Zone (2006).
        - Resource review and audit for the Lockerby Mine Depth and East zones Ni-Cu sulphide deposits, Sudbury, Ontario.
        - Resource estimate for Conwest Zone Ni-Cu sulphide deposit, Sudbury Ontario.
        - Resource review and audit for the Premiere Ridge Ni-Cu sulphide deposit, Sudbury, Ontario.
        - Resource and reserves audits for McCreedy West and Levack nickel and copper mines, Sudbury, Ontario.
        - Resource audit for Onaping Depth nickel and copper deposit, Sudbury, Ontario.
        - Resource estimates for the Birch Lake, Maturi, Spruce Road and Nokomis copper, nickel and PGE deposits, Duluth Complex, Minnesota.
    - Vice President Exploration for a junior mining company. Responsible for diamond exploration programs in NWT and property evaluations worldwide for a variety of commodities, including gold, base metals, and diamonds.
    - Senior geologist with a major Canadian mining company responsible for the evaluation of grassroots to advanced properties/projects and involved in acquisitions for a broad variety of commodities.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person".

5. I visited the Lac Des Iles Mine on November 15 and 16, 2005.

6. I am responsible for portions of Items 12-15 and portions of Item 17 of the Technical Report and jointly with the other authors in the overall preparation of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.4 of National Instrument 43-101.

8. I have had prior involvement with the Lac Des Iles Mine in a consulting capacity for the estimation of Offset zone resources in 2005. Prior to 2005, I had no involvement with the property.

9. I have read National Instrument 43-101F1, and the Technical Report has been prepared to National Instrument 43-101 and Form 43-101F1 standards.

10. To the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated 13th day of March, 2009

(Signed & Sealed)

Richard E. Routledge, M.Sc. Applied, P.Geo.

IAN T. BLAKLEY

I, Ian T. Blakley, P.Geo., as an author of this report entitled "Technical Report on the Lac des Iles Project, Thunder Bay, Ontario, Canada" prepared for North American Palladium Ltd. and dated March 13, 2009, do hereby certify that:

1. I am a Consulting Geologist with Scott Wilson Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.

2. I am a graduate of the University of Waterloo, Waterloo, Ontario, Canada, in 1984 with a Bachelor of Science degree in Honours Co-operative Applied Earth Sciences \ Geology Option.

3. I am registered as a Professional Geoscientist in the Province of Ontario (Reg. #1446) and in the Province of Manitoba (Reg. #20126G). I have worked as a Geologist for a total of 23 years since my graduation. My relevant experience for the purpose of the Technical Report is:
    - Chief Geologist with a major Canadian mining company responsible for the management of geological exploration, resource definition and production.
    - Senior Mines Exploration Geologist for new capital underground mining projects including exploration and definition drilling, resource definition, infrastructure positioning, production and reconciliation.
    - Exploration Geologist responsible for sampling and mapping programs at gold and base metal properties in Canada.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI43-101.

5. I visited the Lac Des Isles Mine from September 11 to 14, 2007.

6. I am responsible for portions of Items 12-15 and portions of Item 17 of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.4 of National Instrument 43-101.

8. I have had no prior involvement with the property that is the subject of the Technical Report.

9. I have read National Instrument 43-101, and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

10. To the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated this 13th day of March, 2009

(Signed & Sealed)

Ian T. Blakley, P. Geo.

JASON J. COX

I, Jason J. Cox, P.Eng., as an author of this report entitled "Technical Report on the Lac des Iles Project, Thunder Bay, Ontario, Canada" prepared for North American Palladium Ltd. and dated March 13, 2009, do hereby certify that:

1. I am a Senior Mining Engineer with Scott Wilson Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.

2. I am a graduate of the Queen's University, Kingston, Ontario, Canada, in 1996 with a Bachelor of Science degree in Mining Engineering.

3. I am registered as a Professional Engineer in the Province of Ontario (Reg.# 90487158). I have worked as a Mining Engineer for a total of 12 years since my graduation. My relevant experience for the purpose of the Technical Report is:
    - Review and report as a consultant on numerous mining operations and projects around the world for due diligence and regulatory requirements
    - Planning Engineer to Senior Mine Engineer at three North American mines
    - Contract Co-ordinator for underground construction at an American mine

4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI43-101.

5. I visited the Lac des Iles Mine property from June 28 to 30, 2004.

6. I am responsible for determination of cut-off grades and for pit optimizations.

7. I am independent of the Issuer applying the test set out in Section 1.4 of National Instrument 43-101.

8. I have had no prior involvement with the property that is the subject of the Technical Report.

9. I have read National Instrument 43-101, and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

10. To the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated 13th day of March 2009

(Signed and Sealed)

Jason J. Cox, P.Eng.