# **AURORA PLATINUM CORP.**

# LANSDOWNE HOUSE PROPERTY BARTMAN LAKE AREA NORTHWESTERN ONTARIO

National Instrument 43-101F1 Technical Report

**April 12, 2002** 

Richard J. Mazur, P.Geo.

Mirador Management Co.

Ike A. Osmani, M. Sc., FGAC, P. Geo.

Greenstone Consulting, Sudbury, ON

# **TABLE OF CONTENTS**

SUMMARY (ITEM 3)	1
INTRODUCTION AND TERMS OF REFERENCE (ITEMS 4 & 5)	2
PROPERTY DESCRIPTION AND LOCATION (ITEM 6)	3
LOCATION	4
ACCESSIBILITY, CLIMATE, LOCAL RESOURCES INFRASTRUCTURE AND PHYSIOGRAPHY (ITEM 7)	6
TOPOGRAPHY AND PHYSIOGRAPHY ACCESS AND INFRASTRUCTURE CLIMATE	6
HISTORY (ITEM 8)	7
Prior Ownership Type, Amount, Quantity of Work and Results Historical Resource Estimates	8
REGIONAL GEOLOGICAL SETTING (ITEM 9)	11
PROPERTY GEOLOGY (ITEM 9)	13
OVERVIEW SUPRACRUSTAL ROCKS LANSDOWNE HOUSE IGNEOUS COMPLEX (LHIC) LHIC – ULTRAMAFIC INTRUSIVE ROCKS LHIC - MAFIC INTRUSIVE ROCKS LHIC - MAFIC TO INTERMEDIATE DYKE ROCKS GRANITOID ROCKS PROTEROZOIC MAFIC INTRUSIVE ROCKS METAMORPHISM STRUCTURAL GEOLOGY	13 15 16 17 18 18
EXPLORATION MODEL (ITEM 10)	19
MINERALIZATION (ITEM 11)	20
OVERVIEW LAVOIE LAKE-LAVOIE CREEK AREA BARTMAN LAKE AREA GABBRO LAKE AREA ADJACENT PROPERTIES AND MINERAL BELTS (ITEM 17)	20 21
EXPLORATION RESULTS (ITEM 12)	23
SUDVEY CONTROL	23

GEOLOGICAL MAPPING AND LITHOGEOCHEMICAL SAMPLING	23
GEOCHEMICAL SURVEYS	23
GEOPHYSICAL SURVEYS	25
Drilling (Item 13)	26
STATEMENT OF IDENTIFICATION OF PERSONS (ISSUER OR CONTRACTOR) CONDUC	TING
THE SURVEYS	
DISCUSSION AND INTERPRETATION	28
QUALITY ASSURANCE AND CONTROLS	31
SAMPLING METHODOLOGY AND RELIABILITY (ITEM 14)	31
SAMPLE PREPARATION, ANALYTICAL PROCEDURES AND SECURITY (ITEM 15)	
DATA CORROBORATION STATEMENT (ITEM 16)	
MINERAL PROCESSING AND METALLURGICAL TESTING (ITEM 18	) 33
MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES (ITEM	19)33
OTHER DATA, ADDITIONAL REQUIREMENTS & ILLUSTRATIONS	
(ITEMS 20, 25 & 26)	33
CONCLUSIONS AND RECOMMENDATIONS (ITEMS 21 & 22)	34
REFERENCES (ITEM 23)	36
STATEMENT OF THE QUALIFIED PERSONS (ITEM 24)	39
APPENDIX I DRILL HOLE DESCRIPTIONS	41

# LIST OF FIGURES

Figure 1.	Tectonic subdivisions of the Superior Province into Subprovinces within northwestern Ontario and location of the Lansdowne House Property.
Figure 2.	Property disposition map
Figure 3.	Major regional structures and location of mafic-ultramafic intrusions within Sachigo Subprovince. Also shown are carbonatite/alkalic intrusions and Attawapiskat kimberlites.
Figure 4.	Property geology
Figure 5.	AFM diagram showing the compositional trend of mafic-ultramafic rocks of the Lansdowne House Igneous Complex. Also showing the differentiation trends for the Duluth and Skaergaard igneous complexes.
Figure 6.	Total Magnetics, EM Anomalies and Drill Hole Locations
Figure 7.	Cross Section: Lansdowne Igneous Complex
Figure 8.	Drill Section DDH LH01-20
	LIST OF TABLES
Table 1.	List of claims – Lansdowne House Property
Table 2.	Selected drill results (1970-1974) – Canadian Nickel Company.

Table 2.	Selected drill results (1970-1974) – Canadian Nickel Compar

- Table 3. Selected drill results (1992) – KWG Resources Inc.
- Table 4. Summary of exploration work and the list of personnel

# LANSDOWNE HOUSE PROPERTY BARTMAN LAKE AREA NORTHWESTERN ONTARIO NTS MAP SHEETS 43D/5, 6, 11 AND 12

# **SUMMARY (ITEM 3)**

The 100% owned Lansdowne House Property of Aurora Platinum Corporation is located approximately 200 kilometres northeast of Pickle Lake and 450 kilometres northeast of Thunder Bay, in northwestern Ontario. The Property consists of 64 unpatented mining claims (898 units, 14,368 ha).

The 2001 exploration program, which consisted of airborne magnetic and electromagnetic (EM) survey, bedrock mapping, diamond drilling and lithogeochemical sampling, was designed to evaluate the economic potential of the layered maficultramafic Lansdowne House Igneous Complex (LHIC) for copper-nickel (Cu-Ni) and reef-type platinum group metal (PGM) mineralization similar to those hosted by Stillwater and Bushveld igneous complexes in Montana and South Africa, respectively.

In the regional context, the Lansdowne House Property occurs within a 2.7 Ga-2.8 Ga old Oxford Lake-Stull Lake terrane near the faulted contact with 2.9 Ga-3.0 Ga old North Caribou terrane within the Sachigo Subprovince of northwestern Superior Province. The Property is underlain by volcanic-sedimentary sequences and mafic to ultramafic rocks of the LHIC. The LHIC, which was probably emplaced initially as a lopolith/sill-like body into the supracrustal and gneissic tonalitic basement rocks, is presently exposed as a ring-shaped structure. After the emplacement, the LHIC was folded along with supracrustal and tonalitic rocks and later tilted to southwest exposing the northeastern ultramafic base of the intrusion within the northeastern part of the Property.

From the economic perspective, the most important rocks on the Property are the layered mafic-ultramafic sequences of the LHIC, hosting numerous Cu-Ni-PGM occurrences. The LHIC is informally and broadly subdivided into three zones:

- 1) a predominantly ultramafic basal zone comprising layered peridotitepyroxenite sequences in the Rowell Lake area;
- a middle zone, comprising predominantly cumulate gabbroic sequences (meso- to melanocratic, gabbro±leucogabbro-gabbroic breccias) and minor ultramafic rocks within the Lavoie Lake-Lavoie Creek-Bartman lakes areas; and
- an upper zone, consisting of predominantly diorite-leucogabbro-anorthosite-gabbro-magnetite cumulate sequences in the Gabbro Lake area near the northwestern Property boundary. The PGM-dominated mineralization (e.g., 1.04 g/t Pd+Pt (palladium+platinum) over 25.5 metres includes 3.1 g/t Pd+Pt over 1.5 m LH01-20) occurs within sulphide-poor, plagioclase-rich gabbroic rocks within the middle zone of the complex (the "reef").

The Cu-Ni mineralization, which is associated with disseminated and net-textured semi-massive to massive sulphide, occurs within meso- to melanocratic cumulate gabbro and associated magmatic breccias within the middle zone of the LHIC. The chondrite normalized plots of these gabbros display flat to weak slopes/fractionation trends (La/Yb=<5). The best example of disseminated Cu-Ni sulphide mineralization occurs in drill hole LH01-06 where a 220.6 m (134.2 m-354.8 m) intercept yielded 0.23% Cu+Ni and 0.32 g/t Pd+Pt. Within this broad intercept several massive sulphide lenses yielded higher grades of copper (e.g., 1.1%-2% over 0.4m-1m) and nickel (e.g., 0.4%-0.9% over <0.5m).

Previously unknown vanadium-titanium (V-Ti) mineralization (up to  $0.81\%~V_2O_5$  and  $8.2\%~TiO_2$  over 3-13.5 m) is associated with semi-massive to massive magnetite cumulate was discovered in the drill hole LH01-10. The mineralization is hosted by gabbro-leucogabbro-anorthosite sequences within the upper/roof zone of the LHIC. These values are comparable to vanadium deposits being mined, at average grade ranging from 0.47% to  $1.4\%~V_2O_5$ , in the Bushveld Igneous Complex (South Africa) and at the Windimurra Mine (Australia).

In order to thoroughly evaluate the economic potential (e.g., lateral and down-dip extensions and grades) of both sulphide and oxide associated base-precious metal mineralization, a 5000 m diamond drilling program, and a detailed ground magnetic and EM survey in selected areas are recommended on the Lansdowne House Property.

# **INTRODUCTION AND TERMS OF REFERENCE (ITEMS 4 & 5)**

Richard Mazur, a principal of Mirador Management Co., and Ike Osmani, a principal of Greenstone Consulting, have been engaged to provide a summary of exploration results to date on the Lansdowne Project. This report has been prepared for the purposes of filing an Annual Information Form for Aurora Platinum Corp., a publicly-traded mineral resource company listed on the TSX Venture Exchange. This compilation is a summary of a more comprehensive document prepared by Osmani and Jacques Samson, B.Sc.H. dated January, 2002. The authors do not take any responsibility for legal, environmental, political or other non-technical issues related to this report.

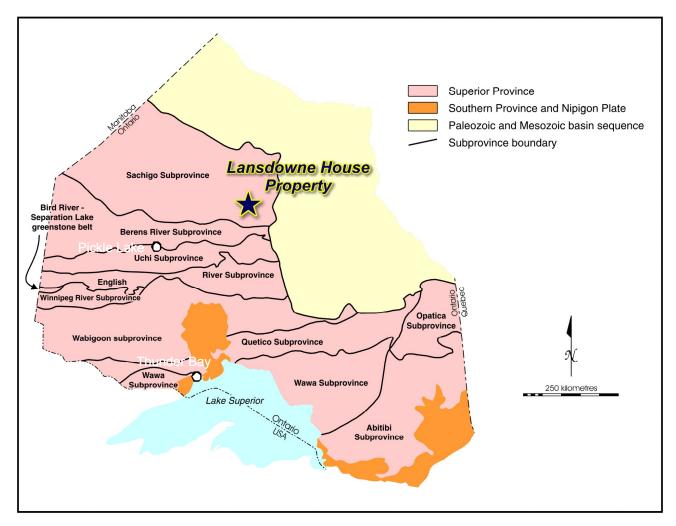


Figure 1. Tectonic subdivisions of the Superior Province into Subprovinces within northwestern Ontario and location of the Lansdowne House Property.

# **PROPERTY DESCRIPTION AND LOCATION (ITEM 6)**

## Location

The Lansdowne House Property is located approximately 40 kilometres north-northeast of the First Nation community of Lansdowne House and 200 and 450 km, respectively, northeast of Pickle Lake and Thunder Bay in northwestern Ontario, Canada (Figure 1). The Property is centred at UTM 460 000E/ 5817 000N and occurs within 43D/5, 6, 11 and 12 NTS map sheets.

# **Claim Ownership and Status**

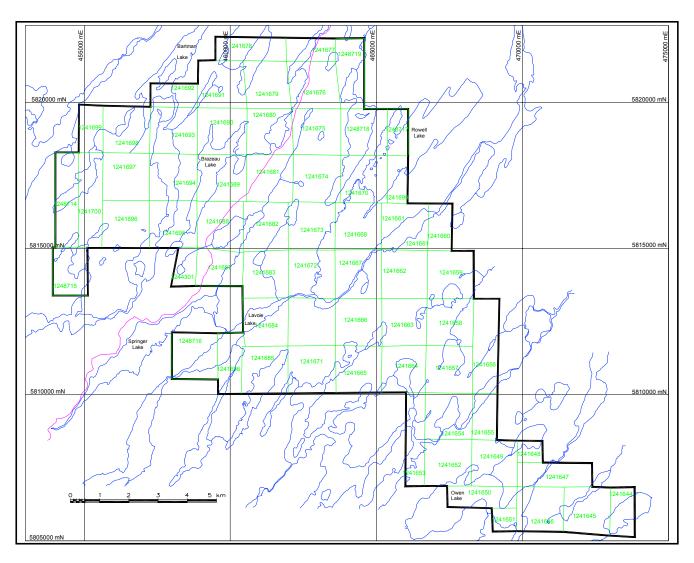


Figure 2. Property disposition map.

Table 1. List of claims – Lansdowne House Property

		F	Recording	g Due
Claim No. Township	Units Area	(ha)	Date	Date
TB1241301 Springer Lake	6	96	19/4/00	19/4/02
TB1241644 Owen Lake	8	128	19/4/00	19/4/02
TB1241645 Owen Lake	16	256	19/4/00	19/4/02
TB1241646 Owen Lake	16	256	19/4/00	19/4/02
TB1241647 Owen Lake	12	192	19/4/00	19/4/02
TB1241648 Owen Lake	4	64	19/4/00	19/4/02
TB1241649 Owen Lake	16	256	19/4/00	19/4/02
TB1241650 Owen Lake	12	192	19/4/00	19/4/02

		F	Recording	Due
Claim No. Township	Units Are		Date	Date
TB1241651 Owen Lake	4	64	19/4/00	19/4/02
TB1241652 Owen Lake	16	256	19/4/00	19/4/02
TB1241653 Owen Lake	16	256	19/4/00	19/4/02
TB1241654 Owen Lake	16	256	19/4/00	19/4/02
TB1241655 Owen Lake	8	128	19/4/00	19/4/02
TB1241656 Owen Lake	16	256	19/4/00	19/4/02
TB1241657 Owen Lake	16	256	19/4/00	19/4/02
TB1241658 Owen Lake	16	256	19/4/00	19/4/02
TB1241659 Owen Lake	16	256	19/4/00	19/4/02
TB1241660 Owen Lake	8	128	19/4/00	19/4/02
TB1241661 Springer/Owen	16	256	19/4/00	19/4/02
TB1241662 Springer/Owen	16	256	19/4/00	19/4/02
TB1241663 Springer/Owen	16	256	19/4/00	19/4/02
TB1241664 Springer/Owen	16	256	19/4/00	19/4/02
TB1241665 Springer Lake	16	256	19/4/00	19/4/02
TB1241666 Springer Lake	16	256	19/4/00	19/4/02
. •	16	256	19/4/00	19/4/02
TB1241667 Springer Lake				19/4/02
TB1241668 Springer Lake TB1241669 Bartman Lake	16 8	256	19/4/00	
		128	19/4/00	19/4/02
TB1241670 Bartman Lake	16 16	256	19/4/00	19/4/02
TB1241671 Springer Lake	16	256	19/4/00	19/4/02
TB1241672 Springer Lake	16	256	19/4/00	19/4/02
TB1241673 Springer Lake	16	256	19/4/00	19/4/02
TB1241674 Bartman Lake	16	256	19/4/00	19/4/02
TB1241675 Bartman Lake	16	256	19/4/00	19/4/02
TB1241676 Bartman Lake	16	256	19/4/00	19/4/02
TB1241677 Bartman Lake	8	128	19/4/00	19/4/02
TB1241678 Bartman Lake	12	192	19/4/00	19/4/02
TB1241679 Bartman Lake	16	256	19/4/00	19/4/02
TB1241680 Bartman Lake	16	256	19/4/00	19/4/02
TB1241681 Bartman Lake	16	256	19/4/00	19/4/02
TB1241682 Springer Lake	16	256	19/4/00	19/4/02
TB1241683 Springer Lake	16	256	19/4/00	19/4/02
TB1241684 Springer Lake	16	256	19/4/00	19/4/02
TB1241685 Springer Lake	16	256	19/4/00	19/4/02
TB1241686 Springer Lake	12	192	19/4/00	19/4/02
TB1241687 Springer Lake	12	192	19/4/00	19/4/02
TB1241688 Springer Lake	16	256	19/4/00	19/4/02
TB1241689 Bartman Lake	16	256	19/4/00	19/4/02
TB1241690 Bartman Lake	16	256	19/4/00	19/4/02
TB1241691 Bartman Lake	16	256	19/4/00	19/4/02
TB1241692 Bartman Lake	8	128	19/4/00	19/4/02
TB1241693 Bartman Lake	16	256	19/4/00	19/4/02
TB1241694 Bartman Lake	16	256	19/4/00	19/4/02
TB1241695 Springer Lake	16	256	19/4/00	19/4/02
TB1241696 Springer Lake	16	256	19/4/00	19/4/02
TB1241697 Bartman Lake	16	256	19/4/00	19/4/02
TB1241698 Bartman Lake	16	256	19/4/00	19/4/02

		F	Recording	g Due
Claim No. Township	Units Area	a (ha)	Date	Date
TB1241699 Bartman Lake	8	128	19/4/00	19/4/02
TB1241700 Bartman/Springer	16	256	19/4/00	19/4/02
TB1248714 Bartman/Springer	16	256	29/3/01	29/3/03
TB1248715 Springer Lake	12	192	29/3/01	29/3/03
TB1248716 Springer Lake	16	256	29/3/01	29/3/03
TB1248717 Bartman Lake	8	128	29/3/01	29/3/03
TB1248718 Bartman Lake	16	256	29/3/01	29/3/03
TB1248719 Bartman Lake	12	192	29/3/01	29/3/03
Total = 64	898	14368		

# **Nature of Company's Interest**

The Lansdowne House Property consists of 64 unpatented mining claims (898 units, 14368 ha) located within Bartman (G-202), Springer (G-413) and Owen lakes (G-364) areas (Table 1, Figure 2). Of the 64 claims, 58 were staked in year 2000 and 6 were in 2001 by Aurora. Aurora owns 100% interest in all the claims on the Property. A total of \$1,794,691 was spent on the Property and assessment in this amount was filed with the Geoscience Assessment Office on March 25, 2002 to hold all of the claims for a minimum of four years and some claims for five years.

# ACCESSIBILITY, CLIMATE, LOCAL RESOURCES INFRASTRUCTURE AND PHYSIOGRAPHY (ITEM 7)

# **Topography and Physiography**

The Lansdowne House Property and adjacent areas are drift-covered. The drift underlies both flat lying swampy areas and northeast-trending ridges (eskers) attaining maximum relief of 30 metres. Rivers and lakes are shallow, averaging 2 m depth, generally filling the intervening esker depressions. The larger water bodies on the Property are Bartman, Lavoie and Rowell lakes. Water from these and other smaller lakes and rivers drain into the Hudson Bay via the Winisk and Attawapiskat river systems.

Outcrops are scarce (<1%) due to glacial drift cover. They tend to occur in small clusters and were mainly observed in the Lavoie, Bartman and Gabbro (local name) lakes areas within south-central and western map areas. No outcrops were observed in the north or northeastern parts of the Property.

Vegetation is modestly thick to locally sparse and commonly includes black spruce, birch, poplar and jackpine. Harvestable jackpine and poplar occur in the well-drained areas of the morainal complex. Alders and cedars are generally found along shores of lakes and rivers.

#### **Access and Infrastructure**

The Property is remotely located and can be accessed by major and subsidiary highways from Thunder Bay, Ontario to Pickle Lake and from there, by fixed wing or float aircraft and helicopter to the Lansdowne House Property. The Neskantaga First Nation community of Lansdowne House is 40 km south of the Property on Attawapiskat Lake and has an airstrip for small charter aircraft and float plane access. There are regularly scheduled flights to Lansdowne House.

The 2001 exploration work by Aurora was conducted during winter/spring and summer seasons. During winter/spring drilling work, a drill rig capable of drilling holes up to 500 m deep was transported using the existing winter road from Pickle Lake to the airport at Lansdowne House. The drill rig was disassembled into various pieces at the airport and then flown-in by helicopter to the campsite on the Property. The fixed wing aircrafts equipped with the skis or floats were chartered from North Star Air Services out of Pickle Lake and were used for bringing in the camp supplies (e.g. groceries, fuel, equipments etc.), personnel and shipping back empty fuel drums, rock samples etc. to Pickle Lake. The drill rig within the Property boundary was moved both during the winter and summer programs by helicopter to various drill hole sites.

#### Climate

The project area receives extreme weather conditions. Heavy snowfalls occur between mid-October to December and then again from March through April. The winter is generally cold and dry; lows reaching down to -40°C is not uncommon, especially during late December and throughout January. Spring thaw usually occurs by mid-May. Summer is dry and hot, reaching up to 30°C, but rare subzero conditions can also occur.

# **HISTORY (ITEM 8)**

# **Prior Ownership**

In early 1900's, W. McInnes (1904, 1911) explored the Winisk and Attawapiskat rivers areas that also included the Lansdowne House Property. In 1939, Prest (1940a, 1940b) conducted a reconnaissance bedrock mapping survey and produced geological maps of the area. In early 1960's, he also carried out a surficial mapping program and produced a first-ever surficial map of the area (Prest 1963). Between 1959-61, the Federal Department of Mines and Technical Surveys and the Ontario Department of Mines jointly conducted various geological and geophysical surveys in northwestern

Ontario that covered approximately 50,000 square miles (Duffell et al. 1963). The Lansdowne House Property area was included in these surveys.

In early 1970's, the Ontario Geological Survey conducted a large, helicopter-supported reconnaissance bedrock-mapping program ("Operation Winisk"), covering the area from west of James Bay to Big Trout-North Caribou lakes areas in northwestern Ontario (Thurston et al. 1979). In the recent past, as part of the Geology of Ontario Project, the survey produced a set of geological (bedrock and surficial), tectonic and geophysical (magnetic and gravity) compilation maps (scale 1: 1 000 000) for the area (OGS 1991).

The earliest mineral discovery in the Lansdowne House area was made in 1930, when a mineralized (Cu-Ni sulphides) rock sample, found by an Ojibway trapper on the small peninsula of an unnamed lake (later named Rowlandson Lake), was brought to the attention of Mr. J.E. Rowlandson. This mineral discovery (also known as "Copper Point") is located approximately 10 km west of the Lansdowne House Property. Mr. Rowlandson staked the showing and adjacent areas and conducted a small trenching, sampling and drilling program. His claims lapsed after a few years. In 1936, Mr. Rowlandson re-staked the discovery area and conducted more work, which led to the discovery of a new gold showing, up to 5.36 oz/t gold (Au) on Rowlandson Lake (Novak 1984).

# Type, Amount, Quantity of Work and Results

A summary of exploration activities on the Lansdowne House Property and adjacent areas, taken both from internal reports of private companies and the government assessment files, is given below:

**1937-1940:** Lansdowne Minerals Limited/Winisk River Mines Limited (founded by Mr. Rowlandson) spent \$45,000 on trenching and diamond drilling in the Rowlandson Lake area. Seven quartz veins were discovered by prospecting and trenching. Drilling on some of the quartz veins yielded multiple intersections of gold values from \$1.75-\$4.55 over 2.5-5.0 feet (Northern Miner, December 1937). One drill hole that targeted the gabbro along the contact with the metavolcanics, intersected up to 2.54% Cu and 0.8% nickel. These initial successes achieved by the company triggered the staking rush in the area and as a result, many more Cu-Ni and gold discoveries were made in the early 1940's. Detailed exploration work on the Rowlandson Lake Property and adjacent areas are described by Rowlandson (1937).

**1956: Aberdoon Mines Ltd.** carried out prospecting and diamond drilling (4 holes, 505 m) in the central Bartman Lake area. All holes intersected mineralized pyrite-pyrrhotite-chalcopyrite-magnetite (po-py-cpy-mt) amphibolite/gabbro-diorite that reportedly yielded anomalous Cu+Ni (up to 0.16% over 26m to 29m).

**1957:** La Corne Lithium Ltd. conducted ground magnetic and EM surveys in the Bartman, Lavoie and Rowlandson lakes areas. Results of these surveys were compiled. No follow-up work conducted by the company.

**1960: Pickle Patricia Explorers** drilled 2 holes (233m) along east-central shore of Bartman Lake. Both holes intersected predominantly gabbro to diorite with minor mafic volcanic rocks. Mineralized (up to 10% py-po-cpy-mt) diorite was intersected in both holes. No assay results reported by the company.

**1960: Temagami Mining Company Ltd.** carried out geophysical surveys and diamond drilling (3 holes, totaling 583m) north of Lavoie Lake. No assay results reported by the company.

**1970-81:** Canadian Nickel Company (Canico, now INCO) carried out a systematic exploration program, which included both airborne and ground magnetic and EM (vertical and horizontal loop EMs) surveys and diamond drilling (47 holes, totaling 5839m). Drilling was concentrated on 3 km long EM anomalies, the L-11 and M-12 zones, coincident with magnetic highs in the Lavoie-Springer Lake area within south-central portion of the current Lansdowne House Property. Odd intersections carrying anomalous platinum, palladium and gold have also been reported (Novak, 1992). This property is currently held by PGM Ventures.

1983-86: Forester Resources Inc. acquired 1,400 claims in 1983, stretching from Lavoie Lake (south-central Lansdowne House Property) to approximately 10 km west in the Rowlandson Lake area. The Forester Resources Inc. claims covering the current Lansdowne House Property included all Cu-Ni-PGM occurrences that were delineated by Canadian Nickel Company. In 1984, Forester Resources Inc. conducted regional airborne and ground geophysical (magnetic, EM) and geological mapping surveys in the Rowlandson, Canopener and Springer-Lavoie lakes areas. The company's trenching, sampling and diamond drilling (~280m) efforts concentrated mainly in the Rowlandson Lake area. During 1985-86, a detailed induced polarization survey was carried out and additional trenching and diamond drilling (~540m) was conducted.

**1985-86:** Weaco Resources Ltd. conducted geophysical surveys (airborne and ground magnetics, VLF-EM and Shootback EM) and diamond drilling within and adjacent to the Lansdowne House Property. Two drill holes totaling 160m were sunk on EM targets, which did not intersect any significant base or precious metal mineralization.

**1991:Seaway Base Metals Limited** carried out airborne geophysical survey in the Bartman, Owen, Springer and Wapitotem lakes areas but no other follow-up work, which is in the author's knowledge, was conducted.

**1992: KWG Resources Inc.** carried out drilling essentially in the areas that were drilled by Canico in 1970-74. The company's drilling program confirmed the Canico's results. Selected mineralized (copper and nickel) drill intersections are listed in Table 3. Drill core samples were not analyzed for PGM's.

**2000: Aurora** staked the Lansdowne House Property and conducted reconnaissance mapping and prospecting program in order to evaluate the economic potential of the LHIC (Internal Report 2000 - Aurora Platinum Corp., 2000). Exploration activities by Aurora since the initial reconnaissance program are summarized in this report.

Table 2. Selected drill results (1970-1974) – Canadian Nickel Company.

ZONE	E DDH	Cu+Ni (%)	Pd+Pt(g/t)	Au (g/t)
L-11	54004	1.15/17.8m	0.63/1.5m	0.63/1.5m
	49172	0.62/8.6m	N/A	10.6/0.4m
	49197	0.43/12.2m	N/A	2.1/0.5m
	54003	0.42/33.4m	N/A	1.3/0.9m
		0.80/12.1m	N/A	2.2/0.6m
M-11	54014	0.45/4.6m	N/A	N/A
		0.14/9.2m	N/A	N/A
M-12	54002	1.50/21.5m	N/A	N/A
	54001	0.73/28.3m	0.63/1.4m	N/A
	54015	0.61/15.0m	N/A	2.8/0.5m
	49101	0.60/15.3m	N/A	N/A
		0.70/13.0m	N/A	N/A
K-13	49182	1.06/21.0m	0.69/2.1m	0.8/3.5m
	.,	0.94/11.6m	N/A	1.1/2.7m
				1.0/1.5m
L-13	54019	0.65/18.0m	N/A	N/A
	54017	1.50/13.1m	N/A	N/A
		0.82/14.2m	N/A	N/A

**Note:** N/A= elements not determined.

## **Historical Resource Estimates**

The only historical resource estimate available is on the L-11 and M-12 prospects drilled by Inco Ltd. in the Lavoie-Springer Lake area. Novak (1992) reports that in 1974, Inco delineated a mineralized body (10m thick on average), comprising 14.6 Mt grading 0.58% Cu, 0.37% Ni, 0.03% cobalt. The authors have not corroborated the Inco drill data nor can they comment on whether this estimate meets with any of the current CIM definitions of resource under sections 1.3 and/or 1.4 of the Canadian Securities Administrators National Instrument 43-101.

Table 3. Selected drill results (1992) – KWG Resources Inc.

Zone	DDH	Cu (%/m)	Ni (%/m)	Canico/Inco Zone
A-B	92-A-1	0. 45/5.2	0.20/5.8	M-12
A-B	92-A-2	0.13/32.3	0.05/32.3	
A-B	92-A-3	0.3/27.5	0.22/27.5	
A-B	92-A-4	0.32/29.0	0.17/29.0	
A-B	92-A-5	0.31/16.0	0.19/16.0	
A-B	92-A-6	0.12/16.8	0.11/16.8	
A-B	92-A-7	0.32/8.5	0.10/8.5	
A-C	92-A-8	0.11/3.5	0.06/3.5	
A-B	92-A-9	0.13/29.6	0.12/29.6	
A-A	92-A-10	0.94/10.2	0.12/10.2	
C	92-C-1	0.23/49.6	0.06/49.6	L-11
D	92-D-1	0.20/37.0	0.08/37.0	L-11
	92-D-2	0.51/53.0	0.11/53.0	
	92-D-3	0.32/40.7	0.07/40.7	
	92-D-4	0.34/22.6	0/12/22.6	
	92-D-5	0.41/24.7	0.13/24.7	
	92-D-6	0.28/45.3	0.11/45.3	
	92-D-7	0.16/13.7	0.06/13.7	

Note: M-12 = DDH 49101, 49102, 49176, 49200, 54001, 54002 and 54015 L-11 = DDH 49108, 49171, 49197, 54005, 54007, 54008 and 54010

# REGIONAL GEOLOGICAL SETTING (ITEM 9)

In the regional context, the Lansdowne House Property lies within Sachigo Subprovince of northwestern Superior Province (Figure 1). The recently revised subdivision of the Sachigo Subprovince into the various terranes/blocks places the Property within 2.70 to 2.83 Ga old Oxford Lake-Stull Lake Terrane (OST), near the contact with 2.9 to 3.0 Ga old North Caribou Terrane (NCT) (Thurston, Osmani et al. 1991. The OST to the south and northwest is separated from the NCT, 2.73 to 2.88 Ga Island Lake Terrane (ILT), 2.70 Ga Munro Lake Terrane (MLT) by Stull-Wunnumin Fault Zone (SWFZ) and bounded in the north by Kenyan Structural Zone (KSZ) (Osmani and Stott 1988; Osmani et al. 1989; Thurston, Osmani et al. 1991).

These are long-lived, deep crustal structures, which probably represent the ancient terrane boundaries. The layered mafic-ultramafic LHIC and other similar intrusions (e.g., Big Trout Lake, Fishtrap Lake, Canopener Lake and other unnamed intrusions), occurring along these regional faults and their associated subsidiary structures, are thought to have been emplaced, possibly in an intra-continental rift environment (Figure 3).

The OST consists of the Stull Lake, Swan Lake, Ellard Lake, Big Trout Lake, part of Mameigwess-Rowlandson Lake and other smaller greenstone belts. The terrane in the Manitoba-Ontario border area is dominated by 2.83 Ga old arc sequence, the Hayes River Group, unconformably overlain by 2706 Ma old Oxford Lake/Stull Lake sedimentary (alluvial-fluvial) and alkalic to calc-alkalic volcanic rock sequences. The NCT is characterized by 2.9 Ga old metavolcanic-metasedimentary sequences overlying ~3.0 Ga gneissic tonalitic basement (Thurston, Osmani et al. 1991).

The SWFZ and other regional structures were reactivated probably several times in their long-lived history resulting in the emplacement of alkalic complexes (e.g., 2534±147 Ma Wapikopa Lake, Sage 1991) and the emplacement of carbonatite complexes in the Mesoproterozoic (e.g., 1109±61 Ma Big Beaver House and 1145±74 Ma Schryburt Lake, Osmani, 1991). The Winisk River Fault (WRF) hosts Attawapiskat kimberlite pipes (152±8 Ma to 180±9 Ma, Janse, Downie et al. 1986) in the James Bay area.

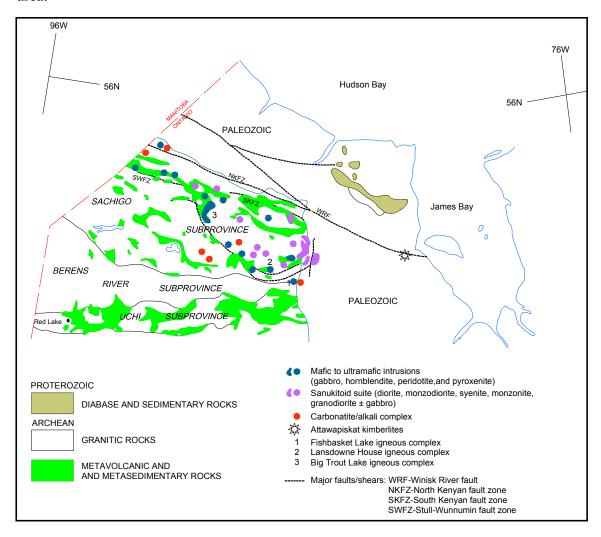


Figure 3. Major regional structures and location of mafic-ultramafic intrusions within the Sachigo Subprovince.

# **PROPERTY GEOLOGY (ITEM 9)**

#### Overview

The Lansdowne House Property is underlain by west-northwest trending metavolcanic-metasedimentary rocks of the Mameigwess-Rowlandson Lake Greenstone Belt (MRGB), which overlies the older (≥2.8 Ga), gneissic tonalitic basement rocks (Figure 4). The layered mafic to ultramafic LHIC, a lopolith/sill-like body, has been emplaced into the supracrustal sequence. All these rocks are intruded by late Archean, felsic to mafic granitoid rocks. Although no isotopic ages are available on the supracrustal rocks or LHIC, the geochemical data (rare earth elements) however, both on volcanic and intrusive rocks of LHIC, suggests they are co-magmatic.

# **Supracrustal Rocks**

Supracrustal rocks, which consist of mafic, felsic to intermediate, chemical and clastic sedimentary rocks, are present on the Property. These rocks have been intruded by syn- to post-tectonic mafic to ultramafic and granitoid bodies and are complexly folded, faulted and metamorphosed to upper greenschist to middle amphibolite grade facies.

The mafic metavolcanic rocks (Map Unit 2) underlie the southern and central portion of the Property. These rocks are mainly exposed in the Bartman and Lavoie lakes areas within southwestern and south-central parts of the Property. In the northern half of the Property they do not outcrop, but were intersected in drill holes LH01-14 and 15.

The mafic metavolcanic rocks consist of fine-grained aphyric to plagioclase-phyric massive and pillowed flows, flow/flow top breccias, amygdaloidal lavas, tuffs and amphibolitized volcanic rocks. The pillowed flow and breccias are the most dominant and relatively well-preserved units exposed on the shores of Bartman Lake and north of Lavoie Creek.

The felsic to intermediate metavolcanic rocks (Map Unit 3) occur mainly as narrow bands in southern part of the Property. These rocks are not exposed but were intersected both within the current (LH01-01) and historical drill holes. The metavolcanic rocks, which mainly consist of fragmental rocks (pyroclastic/volcaniclastic), are usually intercalated with metasedimentary (clastic and chemical) and mafic tuff units.

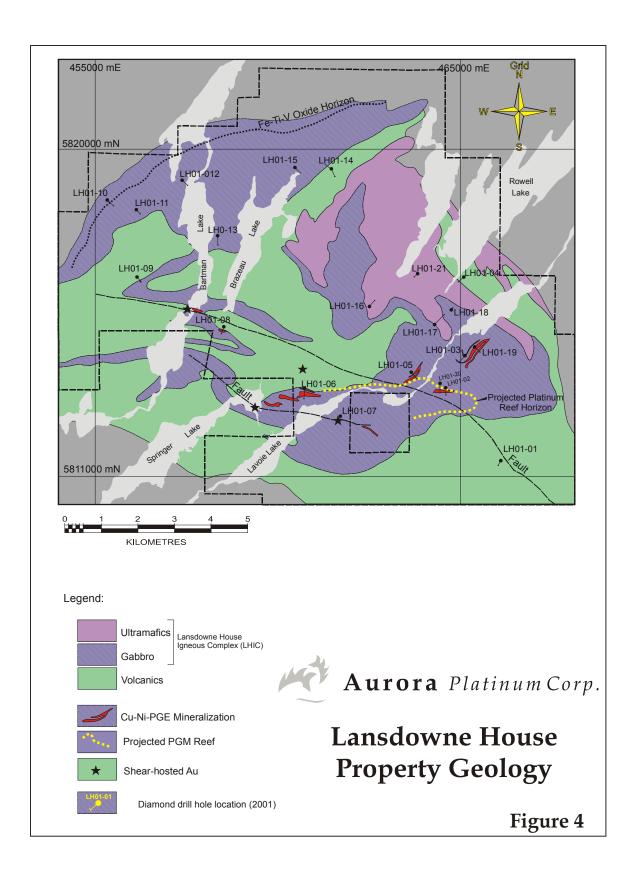


Figure 4. Property geology.

The chemical metasedimentary rocks (Map Unit 5) include oxide, silicate and sulphide facies iron formation. These rocks were mainly intersected in diamond drill holes (LH01-01, 04, 09 and 14). The iron formation in these drill holes were seen intimately associated with clastic and less commonly, felsic to intermediate volcaniclastic rocks.

The clastic metasedimentary rocks (Map Unit 6), which are commonly intercalated with felsic to intermediate metavolcanic rocks, also occur as narrow bands but are relatively thicker and widely distributed. The clastic metasedimentary rocks are rarely exposed (e.g., southwestern shore of Lavoie Lake) but have been intersected both in the current (LH01-01, 4, 14 and 15) and historical drill holes. The clastic metasedimentary rocks mainly consists of wacke, siltstone, pelite/mudstone, graphitic and siliciclastic units. The pelitic/mudstone beds often contain garnets.

# **Lansdowne House Igneous Complex (LHIC)**

The layered LHIC was probably emplaced initially as a lopolith/sill-like body within the supracrustal (metavolcanic-metasedimentary) and gneissic tonalitic basement rocks of the OST. The intrusion at the present erosional level displays a ring-shaped structure (approximately 10km X 13km area) with an outer shell predominantly comprised of mafic-ultramafic intrusive sequences and a core of complexly folded supracrustal and gabbroic rocks. After the emplacement, the intrusion has been folded along with supracrustal and tonalitic basement rocks and later tilted to the southwest, thus exposing the northeastern ultramafic base of the intrusion. The middle and upper (roof) zones, as revealed by bedrock mapping and diamond drilling, occur along the western and southern margins of the LHIC, respectively. The roof zone of the LHIC is exposed in the Gabbro Lake area in the extreme northwestern part of the Property. Detailed mapping and a short drill hole (LH01-10, ~326m) in this area revealed the magmatic stratigraphy from the base upwards, comprised of melagabbro to mesocratic gabbro, quartz gabbro, leucogabbro-anorthosite and diorite to quartz diorite lithologies. The underlying ultramafic base was neither observed in the outcrops nor intersected in the hole.

The LHIC includes the following lithologies: a layered ultramafic sequence consisting of peridotite and pyroxenite/hornblendite at the base overlain by a thick package of layered/differentiated mafic rocks (melanocratic gabbro, mesocratic gabbro, leucogabbro to anorthosite and diorite). Myriads of mafic to intermediate dykes/sills (microgabbro, amphibolite and diorite), some clearly related to the LHIC, intrude all lithologies of the Complex and supracrustal rocks.

# **LHIC – Ultramafic Intrusive Rocks**

The ultramafic intrusive rocks (Map Unit 7) are rarely exposed on the Property. The distribution of these rocks (Figure 4) is largely based on the geophysical data in

conjunction with the available drill hole information. The ultramafic rocks predominantly comprised of fine- to coarse-grained peridotite, pyroxenite, hornblendite and their altered equivalents.

Three areas of strong to intense magnetic susceptibilities were drilled in order to confirm the presence of ultramafic rocks and evaluate their economic potential (*see* Map No. 2). These high magnetic susceptibility areas are the Rowell Lake, Bartman-Gabbro lakes and Springer-Lavoie lakes. The "Rowell Lake Magnetic High", as termed here, situated over the northeastern part of the Property was drilled at five locations (e.g., drill holes LH01-04, 14, 16, 17 and 21) revealing the strong magnetic response was due to underlying layered ultramafic rocks. This area (4.6km X 7.4km) represents the largest concentration of ultramafic rocks on the Property.

#### **LHIC - Mafic Intrusive Rocks**

The mafic intrusive rocks (Map Unit 8) that include various phases of gabbro, amphibolite, diorite and related breccias are widely distributed in two main areas on the Property: 1) an arcuate gabbroic mass (1.0-4.0km wide and 7km long) in the Lavoie Lake-Lavoie Creek area, and 2) a long (>10km), linear gabbroic belt in the Gabbro Lake area. Both cumulate and non-cumulate gabbroic rocks ranging from fine- to coarse-grained occur in these areas.

In the Lavoie Lake-Lavoie Creek area, drilling (current and historical) and mapping defined an arcuate, 1.0-4.0 km wide mafic intrusive sequence comprised of melanocratic gabbro at the base grading upwards through mesocratic gabbro, gabbroic breccias and leucogabbro, plagioclase-phyric gabbro and minor anorthosite and diorite. These layered gabbroic rocks, overlying the ultramafic basement rocks of the LHIC, are collectively interpreted to represent the middle to upper zone of the Complex. The medium- to coarse-grained cumulate mesocratic gabbro is the most dominant phase among all the mafic intrusive rocks in the Lavoie Lake area. The mesocratic gabbro is massive to foliated and non-magnetic to strongly magnetic that generally corresponds with low to high magnetic susceptibilities. The strong magnetism is generally reflecting the higher pyrrhotite content (>10% to massive) and subordinate magnetite concentration (1-5%) in the gabbros. The mesocratic to melanocratic gabbro is a target lithology hosting several significant Cu-Ni±PGM occurrences in the Lavoie Lake area. The base and precious metals in these rocks are associated with disseminated, net-textured semi-massive to massive sulphides (po-cpy).

The heterolithic gabbroic breccia, which is the second or equally important unit in terms of base metal potential, occurs at or near the contact of meso- to melanocratic gabbro and leucocratic gabbro. The breccia unit that usually consists of angular to subrounded, pebble to boulder size fragments of fine to medium-grained mafic to ultramafic intrusive rocks (gabbros, amphibolite, hornblendite etc) and, less commonly mafic metavolcanic and other materials of uncertain protoliths, are set within predominantly medium-grained gabbro.

Sulphide mineralization (po-cpy) in breccias occurs both along the fragment margins and within the matrix and, less commonly in the fragment itself. The sulphides within the matrix occur as disseminations and blebs (2-10%), net-textured semi-massive, massive and millimetre to centimetre scale stringers.

Other mafic intrusive phases that also include amphibolite and plagioclase-phyric gabbro are significant units within the mafic intrusive package in the Lavoie Lake area.

A distinctly layered mafic-ultramafic unit, characterized by centimetre to metre scale alternating layers of gabbro, leucogabbro to anorthosite and melagabbro to pyroxenite, occurs along the length of Lavoie Creek within south-central part of the Property. This layered unit trends northeast and is internally deformed into a southwest plunging fold of uncertain symmetry. Stratigraphically, it overlies the meso- to leucocratic, PGM-rich gabbroic layer/reef (e.g., LH01-02 and 20). The underlying breccia unit and overlying layered mafic-ultramafic units serve as the stratigraphic marker for the PGM-bearing reef in the Lavoie Creek area.

In the Gabbro Lake area, the mafic intrusive rocks that occur as a 0.3-1.2 km wide and 10.5 km long layered differentiated package, consisting of predominantly cumulate gabbros to diorite and subordinate ultramafic rocks are interpreted, on the basis of currently available mapping and drill hole (LH01-10) information, to represent the upper/roof zone of the LHIC. The mafic rock sequence includes, from the base to the top, meso- to melanocratic gabbro, quartz gabbro, leucogabbro to anorthosite, hosting massive to net-textured semi-massive magnetite (<1-11m wide) and diorite to quartz diorite.

# **LHIC - Mafic to Intermediate Dyke Rocks**

Myriads of dykes, ranging in composition from mafic to intermediate (microgabbro, amphibolite and diorite), intrude all major lithologies. They are rarely exposed but are intersected by most drill holes suggesting their wide distribution on the Property. However, these dykes are generally too narrow, ranging from a few centimeters to up to 5 m wide, to be portrayed as an independent unit on the map. The dykes are generally fine- to medium-grained, both aphyric and plagioclase-porphyritic, massive to foliated and non-magnetic to magnetic. They usually display sharp, clean contacts and, rarely contain xenoliths of their host rocks.

At least two generations of mafic to intermediate dykes occur on the Property. The older or first generation dykes that include mainly microgabbro and amphibolite, are usually dark green to blackish-green, medium- to fine-grained, strongly foliated, magnetic to non-magnetic and intrude all but the younger granitic rocks. The gabbroic and amphibolite dykes contain trace to 3% sulphides (py-po-cpy).

Younger mafic to intermediate dykes that include both aphyric and porphyritic diorite to gabbro are massive to weakly foliated and weakly to moderately altered (calcite, chlorite, biotite), occurring within or adjacent to the fault/shear zones. They

intrude all lithologies including the younger granitoid rocks and appear to be mainly post-tectonic.

## **Granitoid Rocks**

Granitoid rocks, which are represented by an early intermediate to felsic basement complex and a suite of Late Archean granitic rocks, occur on the Property. The Late Archean granitic rocks intrude both the basement and overlying supracrustal rocks.

The early intermediate to felsic intrusive rocks (Map Unit 9), which represents the basement to the supracrustal and mafic to ultramafic intrusive rocks, are neither exposed or were intersected in the drill holes on the Property. These rocks reportedly consist of gneissic to foliated tonalite, granodiorite, quartz diorite and migmatitic rocks.

Late Archean granitoid rocks (Map Unit 10) that include granodiorite, tonalite, and diorite and quartz diorite with subordinate quartz monzonite, trondhjemite, gabbro and mafic amphibolitized rocks are rarely exposed on the Property.

Hypabyssal intrusive rocks (Map Unit 11), including feldspar porphyry, felsite and their altered equivalents, occur as narrow dykes or sills throughout the Property. As with the mafic to intermediate dykes as described above, the hypabyssal intrusive rocks are rarely exposed but are commonly encountered in drill holes.

## **Proterozoic Mafic Intrusive Rocks**

A few northwest-trending mafic/diabase dykes (Map Unit 12) shown on the geology map are interpreted from aeromagnetic data only. These dykes, probably part of the northwest-trending Mackenzie Dyke Swarm in northwestern Ontario (Osmani 1991), were neither observed on the ground nor intersected in the drill holes. The dykes are characterized by narrow, linear magnetic anomalies of moderate susceptibility.

# Metamorphism

Both supracrustal and mafic to ultramafic rocks of the LHIC may have been affected by two metamorphic events: an earlier regional, possibly lower-grade metamorphism; and a second, primarily contact metamorphic episode thought to be the result of the emplacement of Late Archean granitoid bodies along the northern and southern, and possibly the eastern margin of the Property. These plutons have superimposed a belt-wide, lower to upper amphibolite-grade metamorphic aureole upon pre-existing greenschist regional metamorphism. The rocks belonging to the LHIC and the country rocks proximal to the granitoid contact are generally affected by higher-grade metamorphism (middle to upper amphibolite facies) than rocks within the interior of the belt.

The amphibolite grade metamorphism that affected the mafic rocks of both the LHIC and supracrustal assemblage is represented mainly by green to greenish-black

hornblende, actinolite (after pyroxene) blue-green to green actinolitic hornblende (after diopside), labradorite, garnet, epidote and biotite. The reterograde greenschist metamorphic mineral assemblage is represented by sericite (after plagioclase) and chlorite (after biotite), epidote, carbonate and quartz. Ultramafic rocks are comprised of tremolite, talc, carbonate, muscovite, magnetite and serpentine mineral assemblage.

# **Structural Geology**

The LHIC is a 10 km X 13 km ring-shaped structure in plan view. It may have been intruded initially as a lopolith/sill-like body, which then complexly folded, uplifted and eroded; hence, giving a more subcircular shape of the body at the present erosion level. The highest magnetic amplitude response, corresponding to a bull's-eye shaped anomaly located approximately 1.5 km north of Lavoie Lake within the central part of the Property, may possibly represent the core/feeder of the LHIC. By way of magnetic inversion methods, the area adjacent to this bull's-eye magnetic anomaly has been determined to exceed 1 km depth.

Tectonic foliation, primary layering and sedimentary bedding, are generally highly variable, reflecting the structural complexity (e.g., folding/faulting) of the intrusive-extrusive complex. However, where deformation is relatively less severe, for example in the extreme southern part of the Property, the planar fabrics show a reasonably coherent west- to northwest trend having moderate to subvertical dips (40°-85°).

Large scale folding and/or refolding is well discernible on the aeromagnetic map (Figure 6). Mesoscopic folds of S, Z and W-fold symmetries mimic the large fold pattern observed locally. Large-scale faults/shears, forming three major sets (trending west- to northwesterly, northeasterly and north) cut all major lithologies on the Property. These structures are usually narrow, brittle to ductile, dip moderately to steeply and locally form a conjugate shear/fault system. Generally, the northwest-trending and northeast-trending structures display, respectively, dextral and sinistral sense of horizontal movements. The north-south striking faults show conflicting sense of movements with some dip-slip component to it. The largest of all these structures is northwest-trending, dextral Bartman Lake Fault (BLF), extending from the northwest Property boundary in southeasterly direction via Lavoie Creek to southeastern limit of the map area.

# **EXPLORATION MODEL (ITEM 10)**

The objective of 2001 exploration program was three fold:

1) to determine the size, shape and the architecture of the igneous stratigraphy within the LHIC that would establish the suitability of the intrusion for hosting economic PGM-Cu-Ni mineralization,

- 2) to find a distinct magmatic layer or phase that could host a reef-type PGM mineralization similar to those found in the layered complexes of Stillwater, Montana and Bushveld, South Africa, and
- 3) to extend and evaluate, both at depth and laterally, the possible extension of reported drill-indicated Cu-Ni-PGM resource on the adjacent property held by PGM Ventures, and also to find new similar or high grade magmatic base metal sulphide deposit on the Aurora's Lansdowne House Property.

To achieve this objective, an integrated exploration approach, including an airborne geophysical survey, prospecting/geological mapping, diamond drilling and extensive lithogeochemical sampling, was carried out on the Lansdowne House Property.

# **MINERALIZATION (ITEM 11)**

#### Overview

Higher background and anomalous assay values returned by gabbroic samples suggest at least two areas that may host potentially economic Cu-Ni-PGM mineralization and one area of V-Ti±PGM mineralization on the Property. The two areas of potentially economic Cu-Ni-PGM deposit are: 1) Lavoie Lake-Lavoie Creek, and 2) Bartman Lake. Both areas are underlain predominantly by gabbroic (±ultramafic) sequences of the LHIC (Figure 4).

The V-Ti mineralization was not observed in outcrop but intersected in drill hole LH01-10 in the Gabbro Lake area within northwestern part of the Property (Figure 4).

#### Lavoie Lake-Lavoie Creek Area

In the Lavoie Lake-Lavoie Creek area two styles of base and precious mineralization occur:

- 1) PGM-dominated mineralization hosted within sulphide-poor (trace to 3% po-cpy), medium- to coarse-grained, meso- to leucocratic cumulate gabbro reef, and
- 2) Cu-Ni-PGM mineralization associated with disseminated and net-textured semimassive to massive po-cpy within medium-grained, meso- to melanocratic cumulate gabbro and associated breccias. The second style of mineralization was not observed during the course of prospecting/mapping, but was identified by current and past drilling programs carried out in the area.

The best exposures of gabbros found with PGM mineralization occur along the full length of Lavoie Creek within the east-central part of the Property. The PGM in this area occurs in medium- to coarse-grained (to pegmatitic), mesocratic cumulate gabbro and within a uniquely layered mafic-ultramafic unit consisting of alternating layers of meso- to leucogabbro, anorthosite, and melanocratic gabbro to pyroxenite. A total of 26

grab samples of these rocks were collected and analyzed. Of the 26 samples, only four yielded less than background value of 10 ppb Pd+Pt and the remaining 21 samples ranging from 12-260 ppb Pd+Pt. All samples contained nil to <1% sulphides. The PGM mineralization appears to extend from the northeastern end of the Lavoie Creek southwesterly for approximately 2.7 km, closely following the entire length of Lavoie Creek and then folding in an east-southeasterly direction for about 1.3 km to drill holes LH01-02 and 20 (1.04 g/t Pd+Pt over 25.5m, including 3.2 g/t Pd+Pt over 1.5m). This interpretation is based on both geophysical and litho-tectonic similarities displayed by the two areas.

Shear zone-hosted gold mineralization was discovered in two areas east of Lavoie Lake. It was not observed in the outcrops but intersected in drill holes (LH01-06 and LH01-07). At these locations, gold is associated with 10 to 50% py-po-aspy ( - arsenopyrite). In the drill hole LH01-07, for example, four consecutive core samples taken over 3.0 m core length, yielded 0.45 to 4.8 g/t gold (weighted average 2.96 g/t Au). Anomalous copper-gold also occurs within the Lavoie Lake North Shear Zone (LNSZ) that was intersected by drill hole LH01-06.

#### Bartman Lake Area

The Bartman Lake area is underlain predominantly by mafic metavolcanic rocks (massive to pillowed flows and associated breccias), which have been intruded by numerous, small and large sill-like bodies of mafic to ultramafic composition (gabbros, hornblendite/pyroxenite). In terms of the Cu-Ni-PGM mineralization, the mafic intrusive rocks are probably the most significant lithologies in the Bartman Lake area. However, shear hosted gold mineralization was also discovered in this area. A grab sample of mafic rock, was taken from an old trench located approximately 120 m west of Bartman Lake (UTM 457536E/ 5815500N), assayed 9.3 g/t Au and geochemically anomalous GM, copper and nickel. The sample contained 70-75% arsenopyrite and quartz fragments. The gold at this location occurs within a west-trending, 1-2 m wide silicified (quartz) shear zone. A broad, west- to northwest striking deformation zone, the Brazeau Lake Deformation Zone (BLDZ), transect this area. The BLDZ is coincident with similarly trending trains of EM conductors that should be investigated for potentially economic gold mineralization in the Bartman Lake area.

The Cu-Ni mineralization associated with disseminated to semi-massive sulphides (po-cpy-pn) best characterizes the mafic intrusive rocks in the Bartman Lake area. The PGM's are generally subordinate to the Cu-Ni mineralization. Of the few locations, the best example of this style of mineralization was observed at the "Bartman Lake Showing" located on the east shore of central Barman Lake. Two grab samples of mineralized gabbro taken from the showing assayed highly anomalous base metals and weakly anomalous precious metals (3150 ppm Cu, 3110 ppm Ni, 278 ppm Co, 85 ppb Pd+Pt, 13 ppb Au; and 665 ppm Cu, 1565 ppm Ni, 165 ppm Co and 42 ppb Pd+Pt).

Significant Cu-Ni mineralization was also observed in an old exploration trench located on the western shore of Bartman Lake, approximately 400 m south-southwest of

Aurora's base camp. The trench is underlain by highly oxidized float of gabbroic and mafic metavolcanic rocks. The trenched and adjacent areas are characterized by a west-northwest trending linear anomaly of strong magnetic susceptibility, representing the folded southeastern arm of the Bartman Lake North Magnetic High (BNMH). One grab sample of mineralized gabbro assayed 1.11% Cu, 0.17% Ni, 0.018% Co and 6 ppb Pt+Pd (sample 166605).

## Gabbro Lake Area

Two types and styles of magmatic mineralization occur in the Gabbro Lake area: 1) V-Ti mineralization associated with oxides occurring within highly fractionated gabbroic sequences, and 2) Cu-Ni±PGM in relatively lesser fractionated gabbroic sequences. The second type and style of mineralization is of lesser economic significance in the Gabbro Lake area than is the first type.

The V-Ti-rich mineralization (0.16 to 0.82%  $V_2O_5$  and up to 8.2%  $TiO_2$ ) within 3 to 11 m thick, semi-massive to massive magnetite layers within gabbroic anorthosite occurs near the contact with overlying magnetite-bearing diorite in drill hole LH01-10. This drill hole, located at the north end of the Gabbro Lake, intersects the northeast-trending axis of the BNMH. These V-Ti-rich oxide layers were not observed in outcrops. However, a grab sample (166608) of magnetite gabbro that was initially collected for the whole rock geochemistry yielded highly anomalous values of these elements (465 ppm V or 0.083%  $V_2O_5$  and 5.32%  $TiO_2$ ).

# **Adjacent Properties and Mineral Belts (Item 17)**

The SWFZ and KSZ are long-lived, deep crustal structures, which probably represent the ancient terrane boundaries. The layered mafic-ultramafic LHIC and other similar intrusions (e.g., Big Trout Lake, Fishtrap Lake, Canopener Lake and other unnamed intrusions), occurring along these regional faults and their associated subsidiary structures, are thought to have been emplaced, possibly in an intra-continental rift environment (Figure 3). These intrusions collectively form a 50-110 km wide and 480 km long magmatic belt.

The Big Trout Lake Igneous Complex, located 200 kilometres northwest of the LHIC, is a large layered mafic-ultramafic intrusive body measuring 93 kilometres in length and 7 kilometres in thickness (Trusler, 1997). Inco Limited explored for chromite and copper-nickel in the 1960's and 1970's until it was recognized in 1980 that the Complex had potential for Merensky Reef-style PGM mineralization. Exploration for this type of deposit has been undertaken and significant horizons of platinum-palladium have been identified.

# **EXPLORATION RESULTS (ITEM 12)**

# **Survey Control**

All locations of geological data were recorded by GPS co-ordinates.

# Geological Mapping and Lithogeochemical Sampling

In 2000, Aurora carried out a reconnaissance mapping and lithogeochemical sampling program on the LHIC for Cu-Ni-PGM mineralization of economic significance. Thirty samples were collected and analyzed and a majority of the samples yielded anomalous background values of Cu, Ni, Pd and Pt.

During the 2001 summer field season, a total of 141 grab samples were collected during the course of prospecting and mapping programs. Of these 141 samples, 10 were analyzed for whole rock geochemistry and the rest analyzed for Pd, Pt, Au, Cu, Ni, Co, Ag, Pb and Zn. The grab samples included both mineralized and non-mineralized mafic and ultramafic intrusive rocks, mafic metavolcanic and quartz veins/pods. The majority of mafic metavolcanic samples analyzed for Cu, Ni and PGM's either yielded geochemically anomalous values or were below the detection limit. From an economic point of view, the gabbros within the LHIC are probably the most significant potential host for Cu-Ni-PGM and/or PGM-only mineralization on the Property. The majority of the gabbroic samples analyzed with or without sulphides contained above the background value of 10 ppb PGM's, an arbitrarily assigned value for the Lansdowne House Property. The Cu-Ni values varied depending upon the amount of sulphides (po and cpy) present in these samples. Typically, the sulphide-poor (Nil to trace amount) samples contain on average 100 ppm Cu and Ni each. The results of core samples suggest that the ultramafic rocks probably are not as economically significant as the mafic rocks of the LHIC.

# **Geochemical Surveys**

A total of 179 samples (169 core and 10 grab) were selected for whole rock geochemistry analysis. These samples included peridotite, pyroxenite, gabbros, mafic and felsic to intermediate metavolcanic rocks, mafic to intermediate dyke and intermediate to felsic hypabyssal intrusive rocks. All samples were analyzed for Cu, Ni, PGM's (Pt+Pd), Co, Ag, Pb, Zn, major oxides, rare earth (REE) and other trace. The major oxides were determined by XRF and rare earths and other trace elements by ICP methods. A broad, generalized geochemical characterization of representative rock types from the Property is briefly discussed below.

Figure 5, illustrating selected gabbro, peridotite, pyroxenite/hornblendite samples from drill holes LH01-02, 03 and 04, displays differentiation trend lines from ultramafic to gabbroic rocks suggesting the source rock was of tholeitic composition. These differentiation trend lines are similar to those displayed by Duluth and Skaergaard igneous complexes.

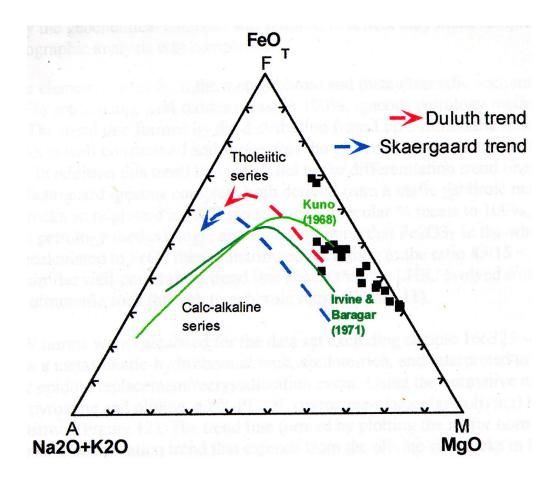


Figure 5. AFM diagram showing the compositional trend of mafic-ultramafic rocks of the LHIC. Also showing the differentiation trends for the Duluth and Skaergaard igneous complexes.

The gabbroic rocks with moderate to steep slopes (La/Yb=6-11) show gradual increase in light and intermediate REEs as they evolve from primitive ultramafic melt (peridotitic) through melagabbro, gabbro and leucogabbro to anorthosite. Samples displaying the steepest slopes/fractionation trends (La/Yb=11) come from the magnetite-rich diorite-lecogabbro-anorthosite-gabbro-magnetite cumulate sequence intersected in the drill hole LH01-10. This highly evolved mafic sequence occurring in the roof zone of the LHIC is host to vanadium mineralization.

With regards to PGM-dominated mineralization, the cumulate gabbros (meso- to leucocratic gabbro reef) with moderate slopes/fractionation trends appear the best host to these metals (see drill holes LH01-02 and 20). Samples of these gabbros are characterized by relatively higher Al<sub>2</sub>O<sub>3</sub> (17.44 to 19.64 wt.%) and lower MgO (5.95 to 7.39 wt.%), TiO<sub>2</sub> (0.17 to 0.64% wt.%) and Fe<sub>2</sub>O<sub>3</sub> (6.37 to 10.12 wt.%) compared to lower Al<sub>2</sub>O<sub>3</sub> and higher MgO, TiO<sub>2</sub> and Fe<sub>2</sub>O<sub>3</sub> contents in non-reef gabbros (meso- to melanocratic gabbro). The chondrite normalized plots of two mineralized gabbro reef samples, one taken from drill hole LH01-02 (1.0 g/t Pd+Pt, La/Yb=5, sample 1666092) and the other from drill hole 20 (0.47 g/t Pd+Pt, La/Yb=5, sample 679028) display moderate fractionation trends. While the least mineralized plagioclase-phyric gabbro (0.02 g/t Pd+Pt, La/Yb=6, sample 679017) and medium-grained gabbro (0.04 g/t Pd+Pt, La/Yb=10, sample 679106) occurring immediately above and below the gabbro reef in drill hole LH01-20, display moderate to strong fractionation trends.

# **Geophysical Surveys**

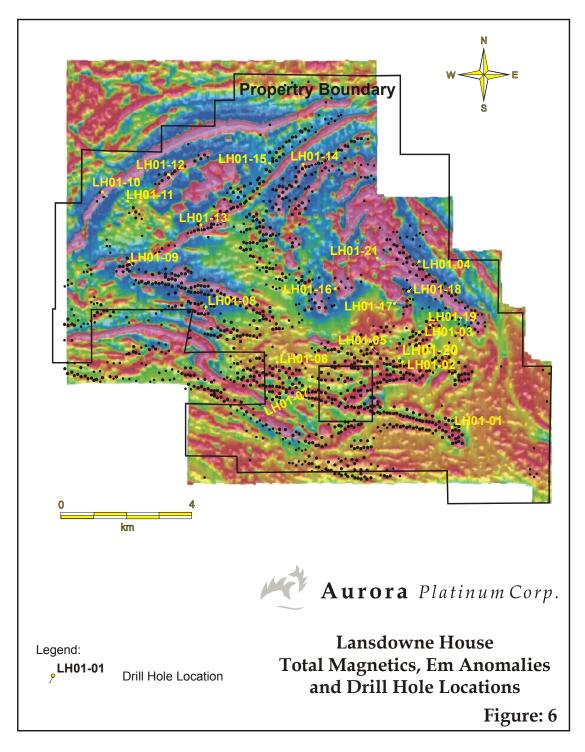
An MEGATEM EM and magnetic survey was flown between January 14 and 19, 2001, over the Lansdowne House Property by Fugro Airborne Surveys Corporation (Figure 6). A total of 1,512 line kilometers of data were collected. The survey data is presented as maps of the magnetic total field, calculated vertical gradient of the magnetics, apparent conductance, EM B-field X-coil channel 10 amplitude and EM anomalies at 1:20,000 scale.

The main purpose of the MEGATEM survey was to define the LHIC geologically and structurally and to identify the areas of base metal sulphide mineralization covered under heavy drift on the basis of bedrock conductive and magnetic responses. With some exceptions, the short anomalies of high conductivity associated with coincident magnetic anomalies of high susceptibility generally represent semi-massive to massive sulphide mineralization hosted by gabbroic rocks on the Property. Also, the short and weak to moderate EM anomalies, characterizing the disseminated sulphides (trace to 5%), correlate with PGM-only mineralization as for example demonstrated in the drill holes LH01-02 and 20. In these holes, strong conductors and magnetic susceptibilities correspond well with net-textured semi-massive to massive sulphides (Cu-Ni±Co) hosted within gabbros and associated breccia zones. Overlying vertically 70-80 m above this zone is a distinctive meso- to leucocratic, sulphide-poor (trace to 3%) gabbro layer coincident with the PGM mineralization. Interpretation of magnetic vertical gradient suggests that the PGM reef horizon in these holes can be traced for at least six kilometres.

There are also some formational conductive zones with coincident higher and/or lower magnetic susceptibilities, correspond with sedimentary and tuffaceous volcanic rocks (e.g., pelitic graphite, oxide, silicate and sulphide facies iron formation). These conductive zones, in most cases, are easily distinguished by having long, linear trains of conductors, some of which, lying in multiple parallel bands from their mafic intrusion-hosted Cu-Ni-PGM mineralization counterparts that are usually identifiable by short wavelength conductive zones with strong magnetic responses.

# **Drilling (Item 13)**

A total of 21 diamond drill holes, totaling 6,009.4 metres, were drilled between March 28-April 13, 2001 and from June 6-August 27, 2001 (Figure 4 and 6). Downhole dip deviations in drill holes were determined by acid tests. Since there are no cut grids on the Property, the drill hole locations were determined using GPS-assisted coordinates.



The 2001 exploration program was carried out in three phases on the Lansdowne House Property. The first phase of the exploration started with a high-resolution airborne magnetic and EM (MEGATEM) survey flown in the winter followed by a first phase of reconnaissance diamond drilling (4 holes, totaling 1,114.5 m) in the spring. A much larger second phase of reconnaissance diamond drilling (17 holes totaling 4,894.9 m), geological mapping and lithogeochemical sampling program was conducted during the summer field season. This program, in addition to testing mineralized zones, was formulated to determine the stratigraphy of the LHIC. Figure 7 is a conceptual cross section based on the drilling campaign.

A total of 3,324 samples, representing 4285.9 metres of core, were taken and sent to the ALS Chemex, Mississauga, Ontario for assaying and whole rock geochemical analyses. All samples were analyzed for Pt, Pd, Au, Cu, Ni, Co, Ag, Pb and Zn. Selected oxide samples from drill hole LH01-10 were also analyzed for V, Ti, Fe, Cr and other trace elements

A brief description of each drill hole is found in Appendix I. Significant Cu-Ni-PGM mineralization was intersected in DDH LH01-05 and 06, potential PGM reef-style mineralization was encountered in DDH LH01-02 and 20, and an oxide horizon with V-Ti mineralization was discovered in DDH LH01-10. Some interesting intersections of shear-hosted gold mineralization were intersected during the drill campaign as well as minor zinc mineralization related to volcano-sedimentary rocks.

# Statement of Identification of Persons (Issuer or Contractor) Conducting the Surveys

A summary of exploration work conducted by Aurora and its contractors is listed in Table 4.

Table 4. Summary Of Exploration Work And The List Of Personnel.

Activities/Personnel	Date	<b>Product/Comments</b>
Fugro – Airborne EM	January 14-19, 2001	Total field magnetic and
(MEGATEM) and		EM anomaly maps
magnetic survey		
Phase-1 diamond drilling –	March 21-April 20, 2001	4 holes, totaling 1114.5m
Spring		
Phase-2 diamond drilling –	June 1-August 31, 2001	17 holes, totaling 5894.9m
Summer		
Geological mapping/	June 1-July 1, 2001	Geology Map and
prospecting – Summer		lithogeochemical sampling
		(assay and whole rock)
Ike A. Osmani	March 21-April 20, 2001	Project Manager/

Activities/Personnel	Date	<b>Product/Comments</b>
	June 1-August 31, 2001	Independent Consultant
Jacques Samson	March 21-April 20, 2001	Project Geologist, Aurora
	June 1-August 31, 2001	
Duncan Quick	June 1-August 31, 2001	Mapping Geologist,
		Aurora
Steve Walsh	June 1-July 2, 2001	Student Geologist, Aurora
David Osmani	June 1-August 23, 2001	Geotechnician, Aurora
Bradley Brothers	March 21-April 20, 2001	Diamond Drilling
	June 1-August 31, 2001	Contractor
Ron Moonias	June 19-July 10, 2001	Environmental Officer,
	August 11-27, 2001	Resident of Neskatanga
		First Nation Community

# **Discussion and Interpretation**

Mineral potential on the Property is associated with the layered mafic-ultramafic sequences of the LHIC, hosting numerous Cu-Ni-PGM occurrences. The LHIC is informally and broadly subdivided into three zones:

- 1) a predominantly ultramafic basal zone comprising layered peridotite-pyroxenite sequences in the Rowell Lake area within the northeastern part of the Property;
- 2) a middle zone, comprising predominantly cumulate gabbroic sequences (meso- to melanocratic gabbro±leucogabbro-gabbroic breccias) and minor ultramafic rocks within the Lavoie Lake-Lavoie Creek-Bartman lakes areas: and
- 3) an upper zone, consisting of predominantly leucogabbro-gabbro-magnetite cumulate sequences in the Gabbro Lake area near the northwestern Property boundary.

Figure 7 illustrates a generalized cross section of the LHIC as interpreted from the drill information.

The basal ultramafic rocks of the LHIC are almost barren in sulphides and would be considered a poor exploration target, based on current drill hole data, for Cu-Ni-PGM mineralization of economic interest. The gabbroic middle zone, the most significant part within the LHIC, is host to numerous occurrences and lower grade deposits of Cu-Ni±PGM. It has the best potential for hosting an ore body (or bodies) of economic interest.

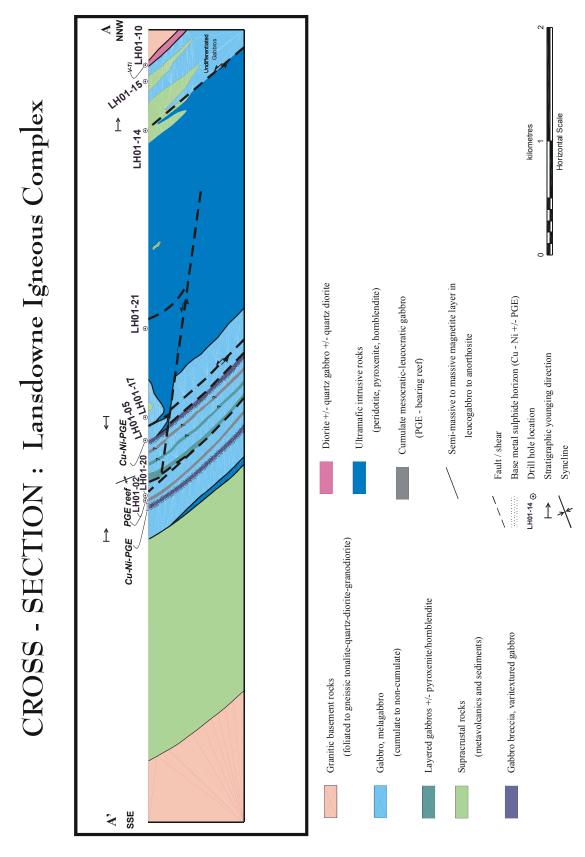


Figure 7. Cross-section: Lansdowne Igneous Complex.

In the early 1970's, INCO delineated several zones of low grade Cu-Ni mineralization in the Lavoie Lake area underlain by the gabbroic middle zone of the LHIC. In 1992, KWG Resources/Spider Resources virtually re-drilled these deposits, all located outside of the Lansdowne House Property, confirming the INCO findings. Diamond drilling under the current program tested both INCO's findings and new adjacent areas discovering and/or re-discovering similar grades; however, potential exists for better grades both at depth and laterally. Under the current program, many drill holes intersected several broad, but lower grade mineralization that included multiple, narrow intercepts of better grade Cu, Ni and PGM's. Examples of this type of mineralization were observed in drill holes LH01-02, 03, 05 and 06. In drill hole LH01-06, a 220.6 m intercept contained 0.23% Cu+Ni, 0.32 g/t Pd+Pt+Au, and also includes 0.4% Cu+Ni, 0.3 g/t Pd+Pt+Au over 39.0 m. A highly anomalous broad zone of Cu-Ni-PGM mineralization was also intersected at 90.0m-167.0 m in drill hole LH01-02, which yielded 0.34% Cu+Ni, 0.22 g/t Pd+Pt+Au over 77.0 m. This included 0.81% Cu+Ni, 0.42 g/t Pd+Pt+Au over 11.0 m (90.0m-101.0m), 0.53% Cu+Ni, 0.32 g/t Pd+Pt+Au over 42.6 m (90.0m-132.6m), 0.73% Cu+Ni, 0.5 g/t Pd+Pt+Au over 11.6 m (121.0m-132.6m); and 1.43% Cu+Ni, 0.93 g/t Pd+Pt+Au over 4.5 m (128.1m-132.6m).

With regards to Pt-Pd mineralization, the gabbroic middle zone in the Lavoie Creek area holds best promise of hosting an economic ore body. INCO reported some values but no systematic sampling was conducted for PGM's. KWG Resources/Spider resources did not even analyze for the PGM's. Magnetic highs with flanking medium to low magnetic susceptibilities, with or without EM anomalies, were either disregarded or thought to be low priority targets by INCO. These supposedly low priority targets are proven at two locations by current drilling to be good geophysical targets for PGM mineralization. The medium to lower magnetic signatures generally corresponds with sulphide-poor, non-magnetic gabbros on the Property. Examples of these were revealed in drill holes LH01-02 and 20, where a non-magnetic, sulphide-poor (trace to 3% po-cp), medium- to coarse-grained cumulate meso- to leucocratic gabbro reef hosted 1.1 g/t Pd+Pt over 4.5 m and 1.04 g/t Pd+Pt over 25.5 m, respectively. Geochemically, the gabbro reef is moderately fractionated and characterized by higher Al<sub>2</sub>O<sub>3</sub> (17.44 to 19.64 wt.%) and lower MgO (5.95 to 7.39 wt.%), TiO<sub>2</sub> (0.17 to 0.64% wt.%) and Fe<sub>2</sub>O<sub>3</sub> (6.37 to 10.12 wt.%) compared to lower Al<sub>2</sub>O<sub>3</sub> and higher MgO, TiO<sub>2</sub> and Fe<sub>2</sub>O<sub>3</sub> in the nonreef gabbros. The chondrite normalized REE plots of gabbro reef also reflecting this fractionation trend by displaying moderate REE slopes (La/Yb=5) compared to flatter (La/Yb=<1-5) or steeper slopes (La/Yb=10) of least mineralized gabbros.

In DDH LH01-02 and LH01-20 (Figure 8), the reef occurs 70-80 m vertically above the sulphide-rich Cu-Ni zone, which corresponds well with strong EM anomalies. This can be used as a marker horizon in delineating the PGM mineralization in the Lavoie Creek and possibly to other areas on the Property. Using this as a guide to exploration, the PGM horizon can be extended by simply following the strong EM anomaly to the west north of Lavoie Creek, to northeast in the drill hole 5 area and then a small jog to southwest and back east-northeast towards the Lavoie Creek forming a large, and a small Z-shaped drag fold. The PGM mineralization may also extend further to the northeast in an area where Lavoie Creek drains into the wider water body, but since there

are no strong conductors to follow its presence here it cannot be interpreted with certainty. However, prospecting and lithogeochemical sampling in this area did reveal many anomalous Pd+Pt zones (12–260 ppb Pd+Pt) hosted by layered gabbro-anorthosite and coarse-grained gabbros, suggesting a possible extension of the PGM horizon in this area.

A previously unknown horizon of vanadium mineralization associated with semimassive to massive magnetite cumulate within gabbro-leucogabbro-anorthosite sequences, representing the roof zone of the igneous complex, was in the Gabbro Lake area, near the northwestern Property boundary. Three intercepts containing near economic grades of vanadium and titanium oxides are: 0.34%  $V_2O_5$  and 0.5%  $TiO_2$  over 13.5 m (126.0m-139.5m), 0.4%  $V_2O_5$  and 0.42%  $TiO_2$  over 6 m (144.0m-150.0m) and 0.081%  $V_2O_5$  and 0.27%  $TiO_2$  over 3 m (175.8m-178.0m). The average  $V_2O_5/TiO_2$ ratio from all three intercepts stands at 0.7. These results were obtained from samples analyzed by the ICP partial digestion method. However, when randomly selected core samples from all three intercepts analyzed by the complete digestion method, all revealed higher values of  $V_2O_5$  (up to 0.81%) and  $TiO_2$  (8.2%) than those determined earlier. These values are comparable to vanadium deposits being mined (0.47% to 1.4%  $V_2O_5$ ) in the Bushveld Igneous Complex, South Africa and at the Windimurra Mine, Australia.

# **QUALITY ASSURANCE AND CONTROLS**

# Sampling Methodology and Reliability (Item 14)

For the Lansdowne Project drilling program, the drill core is split in half with a hydraulic core splitter. Half of the drill core is generally sampled in half metre, onemetre or one and a half metre intervals. The remaining half of the core is stored in drill racks at the Company's exploration camp at Bartman Lake. Lithogeochemical samples are panel sampled or channel sampled during mapping and prospecting to be representative of the outcrop.

# Sample preparation, Analytical Procedures and Security (Item 15)

Aurora has implemented a quality control program to ensure best practice in the sampling and analysis of the drill core. The drill core and lithogeochemical samples are transported in security-sealed bags for preparation at ALS Chemex in Mississauga, Ontario.

Samples are dried, crushed and approximately 250 grams are pulverized to pass 75 microns. Pulps are shipped to the ALS Chemex laboratory in Vancouver, B.C. for analyses. Gold, platinum and palladium are analyzed by fire assay with an ICP finish. A gravimetric assay is done for gold values greater than 1000 ppb. Silver, copper, nickel and cobalt are initially digested in a partial extraction by aqua regia digestion and analyzed by atomic absorption. For values greater than 10,000 ppm a total digestion with atomic absorption finish is undertaken. Vanadium and titanium are either partially or totally digested and analyzed by ICP.

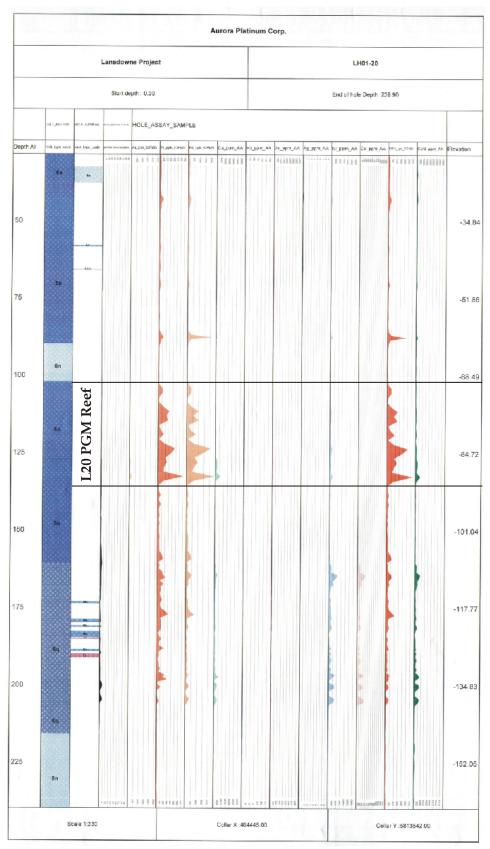


Figure 8. Drill section DDH LH01-20.

Figure 8

This ISO 9002 registered laboratory is preparing for ISO 17025 certification and has participated successfully in the CANMET PTP-MAL round robin program.

## **Data Corroboration Statement (Item 16)**

The authors are satisfied that the geological controls, accuracy of surveying of drill collars and downhole orientation, the sampling methods and procedures, and the chain of custody met with the highest standards of best practice. Aurora is using a reputable, certified lab for their analysis and the analytical methods used for the project meets with industry standards.

In the authors' opinion, adequate quality control procedures are in place for the reconnaissance stage of the project. As the project advances to a resource development stage, further quality control procedures such as the insertion of blanks, standards, the analysis of pulp duplicates at different labs to detect analytical precision and the analysis of field duplicates to confirm sampling and analytical precision is recommended.

In the opinion of the authors, the computerized data management system utilized by Aurora is of the highest standards. The information is well organized, is backed up on a regular basis and produces high quality geological logs, sections and three-dimensional drawings.

## MINERAL PROCESSING AND METALLURGICAL TESTING (ITEM 18)

No mineral processing or metallurgical studies have been undertaken at this stage of the project. Mineralogical studies were completed on the mineralized samples by Kishar Research. Scanning electron microscope studies have verified the main platinum-palladium ore mineral as michenerite, a (Pt, Pd) bismuth telluride. It occurs interstitially with Cu-Ni sulphides (pyrrhotite, pentlandite, chalcopyrite) and magnetite or with silicates associated spatially with very fine-grained pyrrhotite.

## MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES (ITEM 19)

No mineral resource or mineral reserve estimates have been defined.

# OTHER DATA, ADDITIONAL REQUIREMENTS & ILLUSTRATIONS (ITEMS 20, 25 & 26)

Items 20 and 25 are irrelevant and item 26 – illustrations are distributed through the report.

## CONCLUSIONS AND RECOMMENDATIONS (ITEMS 21 & 22)

In summary:

- 1. The layered LHIC is a lopolith/sill-like body that consists of a basal ultramafic zone (peridotite-pyroxenite) overlain by middle mafic zone (cumulate meso- to melanocratic gabbro sequences) followed by mafic to intermediate upper/roof zone (diorite-leucogabbro-anorthosite-gabbro-magnetite cumulate),
- 2. PGM-dominated mineralization occurs in sulphide-poor, medium- to coarse-grained, plagioclase-rich gabbro reef (moderately fractionated with La/Yb=5) within the gabbroic middle zone of the LHIC,
- 3. Cu-Ni±PGM, which is associated with disseminated and net-textured semimassive to massive sulphide, is hosted by cumulate meso- to melanocratic gabbros (La/Yb=<5) and associated breccias within the middle zone of the LHIC,
- 4. The economic potential for Cu-Ni-PGM mineralization is greater higher-up in the stratigraphy, as in DDH LH01-02, within the middle zone of the complex .
- 5. V-Ti mineralization, associated with disseminated to massive magnetite, is hosted by diorite-leucogabbro-anorthosite-gabbro-magnetite cumulate (La/Yb=11) in the upper/roof zone of the Complex, and
- 6. Ultramafic sequences (peridotite-pyroxenite, La/Yb=<1), which comprise the basal zone of the LHIC, contain virtually no sulphides and are deemed a poor host for Cu-Ni or PGM mineralization.

Based on the results of 2001 exploration program, the following recommendations are made for future work on the Lansdowne House Property:

- 1. Detailed ground magnetic and EM surveys are recommended to accurately delineate and extend the drift-covered PGM reef on strike from drill holes LH01-02 and LH01-20. The PGM reef, which is characterized by sulphide-poor, non-magnetic to weakly magnetic meso- to leucocratic gabbro, overlies (50-60m vertically) moderately to strongly magnetic, sulphide-rich meso- to melanocratic gabbro and associated breccias hosting the C-Ni mineralization. The recommended surveys will help delineate these units and associated mineralization on the basis of their geophysical responses.
- 2. The newly discovered V-Ti mineralization at Gabbro Lake should be explored for down dip and lateral extension to evaluate its full economic potential. The mineralization was intersected in drill hole LH01-10, hosted by gabbro-anorthosite-magnetite cumulate sequence within the roof zone of the LHIC. The mineralization is coincident with the axis (>8km long) of the BNMH and is

potentially prospective along its entire strike length. Since V-Ti mineralization is largely associated with semi-massive to massive oxide, diamond drilling would be the best way to explore this magnetic high.

- 3. The Cu-Ni mineralization occurs widely and extensively within the gabbroic sequences generally close to margins of gabbroic sills intruding the mafic metavolcanic sequences in the Lavoie Lake area. An extensive drilling program is recommended to evaluate these laterally extensive contact zones. Drilling to date suggests that potentially higher-grade base and precious metals may occur both laterally and/or at depth within the interior and along the margins of these gabbroic sills (0.8-2km wide and 8km long).
- 4. In order to carry out exploration works as set out above, a 5,000 m diamond drilling program is recommended in the year 2002. Of the 5,000 metres, at least 3,500 m is required to explore Cu-Ni-PGM in the Lavoie Lake-Lavoie Creek area and 1500 m should be allocated to properly evaluate the BNMH for potentially economic V-Ti mineralization.

A budget of \$1.35 million would be required to complete this program as follows:

	B-TOTAL S CONTINGENCY ΓAL	\$1,229,750 122,975 \$1,352,725		
Camp Costs, supplies, transportation and other		<u>\$100,000</u>		
Geological and support labour (4 months –2 geologists/4 support)		130,000		
Ground magnetic and EM surveys (150 line km @	60,000			
Linecutting for survey grids (150 line km @ \$265	39,750			
Analytical costs (3,000 samples @ \$25/sample)	75,000			
Helicopter-supported diamond drilling (5,000 met	tres @ \$165/metre)	\$825,000		

## **REFERENCES (ITEM 23)**

## Davis, D.W. and Stott, G.M.

2001: Geochronology of several greenstone belts in the Sachigo Subprovince, northwestern Ontario; Ontario Geological Survey, Open File Report 6070, p.18-1 to 18-13.

## Duffell, S., MacLaren, A.S. and Holman, R.H.C.

1963: Red Lake-Lansdowne House Area (Bedrock Geology, Geophysical and Geochemical Investigations), Northwestern Ontario; Geological Survey of Canada, Paper 63-5, 15p.

## Fugro Airborne Surveys, Ottawa, Ontario

2001: Logistics and Processing Report of the Airborne Magnetic and MEGATEM Electromagnetic Multicoil Survey of the Lansdowne House, Ontario, Canada for Aurora Platinum Corp., Job 680 March, 2001

## Janse, A.J.A., Downie, I.F., Reed, L.E. and Sinclair, I.G.L.

1986: Exploration methods, petrology and geochemistry; *in* Extended Abstracts, Fourth International Kimberlite Conference, Perth Australia, 1986, p.469-471.

## McInnes, W.

1911: Report on the part of the Northwest Territories of Canada drained by the Winisk and Upper Attawapiskat rivers; Geological Survey of Canada, Publication 1080.

## Miller, A.

2001: The Layered Lansdowne House Intrusive Complex: Petrography and ore Microscopy of Selected Samples from the 2001 Drill Program, Thunder Bay Mining Division, Ontario, Volume I-III for Aurora Platinum Corp., Kishar Research Inc., Ottawa, Ontario, July 23, 2001.

## Novak, N.D.

1984: Geologic Report – Lansdowne House area project; Unpublished Report, Assessment Files, Thunder Bay Resident Geologist Office.

## Novak, N.D.

1992: The Blue Heron Project – Geological evaluation report prepared for Blue Falcon Mines Limited covering Springer-Lavoie Lake anomaly and Copping Lake anomaly, Assessment Files, Thunder Bay Resident Geologist Office.

## Ontario Geological Survey

1991: Bedrock Geology of Ontario, Northern Sheet; Ontario Geological Survey, Map 2541, scale 1: 1 000 000.

## Osmani, I.A.

1997: Geology and mineral potential: Greenwater Lake area, West-central Shebandowan greenstone belt; Ontario Geological Survey, Report 296, 135p.

1991: Proterozoic mafic dyke swarms in the Superior Province of Ontario; *in* Geology of Ontario, Ontario Geological Survey of Ontario, Special Volume 1, p. 431-446.

## Osmani, I.A. and Stott, G.M.

1988: Regional-scale shear zones in Sachigo Subprovince and their economic significance; Ontario Geological Survey, Miscellaneous Paper 141, p.53-67.

## Osmani, I.A., Stott, G.M., Sanborn-Barrie and Williams, H.R.

1989: Recognition of regional shear zones in south-central and northwestern Superior Province of Ontario and their economic significance; *in* Mineralization and Shear Zones, Geological Association of Canada, Short Course Notes, Volume 6, p. 199-218.

## Prest, V.K.

1940a: Geology of the Rowlandson Lake area; Ontario Department of Mines, Volume 49, Part 8, p. 1-9.

1940b: Geology of the Wunnummin Lake area; Ontario Department of Mines, Volume 49, Part 8, p. 10-19.

1963: Red Lake-Lansdowne House area (Surficial Geology), Northwestern Ontario; Geological Survey of Canada, Paper 63-6, 23p.

## Rowlandson, J.E.

1937: Report on Winisk River Mines Limited; Unpublished Annual Report, Assessment Files, Red Lake Resident Geologists Office.

## Sage, R.P.

1991: Alkalic rock, carbonatite and kimberlite complexes of Ontario, Superior Province; *in* Geology of Ontario, Ontario Geological Survey of Ontario, Special Volume 1, p. 683-709.

## Stott, G.M., Corfu, F., Breaks, F.W. and Thurston, P.C.

1989: Multiple orogenies in northwestern Superior Province; *in* Geological Association of Canada-Mineralogical Association of Canada, Program with Abstracts, v.14, p. A56.

## Thurston, P.C., Osmani, I.A. and Stone, D.

1991: Northwestern Superior Province: Review and Terrane analysis; in Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 1, p. 81-142.

# Thurston, P.C., Sage, R.P. and Siragusa, G.M.

1979: Geology of the Winisk Lake area; District of Kenora (Patricia Portion), Ontario Geological Survey, Geological Report 193, 169p.

## Trusler, J.R.

1997: International precious Metals Corporation, Interpretation of the Max-Min II Horizontal Loop EM Survey on a Portion of the Big Trout Lake property, J.R. Trusler and Associates, June 9, 1997.

## **STATEMENT OF THE QUALIFIED PERSONS (ITEM 24)**

- I, Richard James Mazur do hereby certify that:
- 1. I am a Professional Geoscientist (P.Geo.) residing at 6011 Sunwood Drive, Delta, British Columbia V4E 2Y7,
- 2. I graduated from the University of Toronto with a B. Sc. (Geology) degree in 1975 and from Queen's University with a Masters of Business Administration degree in 1985,
- 3. I am a member of the Canadian Institute of Mining and Metallurgy (Mineral Economics Society), the Prospectors and Developers Association of Canada, the British Columbia and Yukon Chamber of Mines and a member of the Association of Professional Engineers and Geoscientists of British Columbia,
- 4. I have practiced my profession as an exploration geologist continuously since 1975 on base metal, precious metal, industrial minerals, coal and uranium projects in Canada, the United States, Guyana and the Dominican Republic,
- 5. I am an independent Consultant since 1992,
- 6. I am a Qualified Person,
- 7. I have not visited the Lansdowne Property and have been engaged primarily to compile the exploration program and results for inclusion in the Annual Information Form for Aurora Platinum Corp. (the "Company"),
- 8. I have relied on information provided on the Lansdowne Project under the supervision of Ike Osmani, P.Geo., co-author of this report,
- 9. I have relied on the Company's counsel for the legal status of mineral tenure and environmental liability,
- 10. As of the date of this certificate, I am not aware of any material fact or material change with regard to the Property that would make the report misleading,
- 11. I have read and understand National Instrument 43-101 and for the purposes of this report, I am not an independent Qualified Person as defined in Section 1.5 of the Instrument.

Signed and Sealed this 12th day of April, 2002	in the City of Vancouver.
Richard J. Mazur, P.Geo.	-

## I, Ikram (Ike) A. Osmani do hereby certify that:

- I am a Professional Geoscientist (P.Geo.) residing at 2640 South Lane Road, Sudbury, Ontario P3G 1C3,
- I graduated with a B.Sc. (Geology) degree in 1971 from Lucknow University, India; and with an M.Sc. (Geology) degree in 1973 from Aligarh Muslim University, India,
- I hold an M.Sc. degree in Geology with a major in Geophysics from the University of Windsor, Ontario, Canada (1982),
- 4) I am a member of the Association of Professional Engineers and Geoscientists of the Province of Manitoba, the Sudbury Geological Discussion Group, and a Fellow, in good standing, of the Geological Association of Canada,
- 5) I have been practicing my profession in Ontario since 1981,
- I have practiced my profession as a mapping geologist and research geoscientist/geophysicist with the Ontario Geological Survey, and as an exploration geologist (as an employee and independent consultant) on precious and base metal projects with exploration/mining companies,
- 7) I am a Qualified Person,
- 8) the information contained in this report is based on my personal field observations, published data, and assessment data contained in the government files.
- 9) I have relied on the Company's (Aurora Platinum Corp.) counsel for the legal status of mineral tenure and environmental liability,
- as of the date of this certificate, I am not aware of any material fact or material change with regard to the Property that would make the report misleading,
- I have read and understood National Instrument 43-101 and for the purposes of this report, I am an independent Qualified Person as defined in Section 1.5 of the Instrument.

Signed and Sealed this 12 <sup>th</sup> day of April	il, 2002 in the City of Sudbury, Ontario

Ikram (Ike) A.	Osmani,	M. Sc.,	FGAC,	P. Geo.	

## **APPENDIX I DRILL HOLE DESCRIPTIONS**

#### LH01-01

Drill hole LH01-01 was designed to test easterly-trending, long, linear anomaly of medium to strong magnetic susceptibility with coincident multiple trains of EM conductors located south-southeast of Lavoie Creek within southeastern map area. The hole intersected interlayered felsic to intermediate volcaniclastic/pyroclastic, clastic and chemical metasedimentary sequences with subordinate mafic tuffaceous units.

#### LH01-02

LH01-02 was drilled to test west- to northwest-trending, conductors associated with high magnetic susceptibility and also to confirm the presence of Cu-Ni mineralization (L-13 Zone) intersected by INCO's historical diamond drill holes. The drill hole intersected alternating layers of cumulate meso- to leucocratic gabbro, plagioclase-phyric gabbro and gabbroic breccias with subordinate layers of hornblendite and xenoliths/rafts of country rocks.

#### LH01-03

The drill hole was designed to test the hook-shaped (fold nose?) EM conductors as defined by both the historical ground survey and the current airborne MEGATEM survey. These conductors are coincident with a magnetic anomaly of medium strength. Drill hole LH01-03 encountered a mixed lithologic package comprising of massive to layered mafic-ultramafic sequences (gabbro-melagabbro-hornblendite). The gabbros in the drill hole 3 tend to be more melanocratic compared to usually leucocratic phases observed in DDH LH01-02.

## LH01-04

Drill hole LH01-04 was designed to test northwest-trending EM conductors coincident with contact between the magnetic high, the RLMH, and low. This contact is coincident with a similarly trending deformation zone, the RLSZ. The upper half of the hole is dominated by intermediate to felsic hypabyssal intrusive (feldspar porphyry) and metasedimentary (wacke to siltstone, pelitic graphite, silicate and sulphide facies iron formation) rocks. The lower half of the hole is dominated by layered ultramafic sequences, including peridotite, clinopyroxenite and hornblendite and subordinate gabbroic layers.

#### LH01-05

Drill hole LH01-05 was drilled across the geophysically interpreted northwest limb of the isoclinal fold underlying the Lavoie Creek area. The geophysical signatures (EM conductors and coincident anomaly of moderate magnetic susceptibility) and the gabbroic sequences intersected in the hole 5 are similar to those encountered in drill holes LH01-02 and 20, situated 0.9 to 1 km southeast of hole 5. These similarities suggest the rocks in these two areas occur at similar litho-structural level and their present sites probably occupying the respective limbs of the isoclinal fold.

The hole intersected predominantly medium- to coarse-grained, cumulate to non-cumulate meso- to melanocratic gabbro, gabbroic breccias, vari-textured and plagioclase-phyric gabbros with subordinate mafic metavolcanic rocks.

#### LH01-06

Drill hole LH01-06 was collared approximately 400 m north of Lavoie Lake to test the parasitic fold of S-symmetry as defined by the strong EM conductors. The conductors are coincident with a magnetic anomaly of moderate susceptibility. The drill hole LH01-06 is located approximately halfway between the L-11 North and L-11 East Cu-Ni zones that were drilled in the early seventies by INCO (Figure 4).

The hole intersected multiple zones of vari-textured gabbro and gabbro breccias alternating with predominantly medium- to coarse-grained, meso- to melanocratic gabbro.

## LH01-07

Drill hole LH01-07, which is located approximately 300 m east of Lavoie Lake and 600 m northeast of INCO's M-12 Cu-Ni zone, was designed to test a series of east to east-northeast-trending, short curvy-linear EM conductors of high strength. These conductors are interpreted to be part of an approximately 2.6 km long, linear EM anomaly extending in east-southeasterly direction from northeast shore of Springer Lake to the drill hole LH01-07 area.

The drill hole intersected a complex mix sequence of gabbros-ultramafic-mafic metavolcanic rocks. Although majority of the samples returned higher background values of Cu, Ni and PGM's, no mineralization of economic significance was intersected in the drill hole.

#### LH01-08

Drill hole LH01-08 was designed to test an easterly-trending, 300 m long high strength EM conductor coincident with similar trending magnetic anomaly of high susceptibility. The upper half of the hole mainly comprised of mafic metavolcanic rocks (aphyric, plagioclase-phyric, variolitic and pillowed flows) with abundant, narrow sill-like bodies of mafic to ultramafic composition. The lower half of the hole is dominated by gabbro-ultramafic sequences.

#### LH01-09

Drill hole LH01-09 was drilled across northeast-trending magnetic high coincident with strong EM conductors. The hole intersected a complex mix of highly deformed and altered intrusive-extrusive rock sequences.

#### LH01-10

Drill hole LH01-10 was drilled to test the previously unexplored northeast-trending BNMH for stratigraphic information. It intersected a differentiated layered sequence of mafic cumulate intrusive rocks that range, top to bottom of the hole, from diorite-quartz diorite through leuco- and melanocratic gabbro with subordinate anorthosite-gabbroic anorthosite, magnetite-rich cumulate (semi-massive to massive), heterolithic vari-textured gabbro breccias and pyroxenite.

#### LH01-11

The drill hole LH01-11 was designed to test a northeast-trending historical EM anomaly (100m X 600m). The hole intersected predominantly gabbroic sequence, consisting of medium-to fine-grained gabbro, melagabbro, amphibolite and associated gabbroic breccias.

## LH01-12

Drill hole LH01-12 was drilled across the contact of magnetic low and high within the BNMH. The magmatic stratigraphy revealed gabbro-ultramafic sequences at the bottom of the hole moving up hole into the gabbro-melagabbro sequences, which suggest the top to the northwest. This is consistent with the stratigraphic top determined in the hole LH01-10.

#### LH01-13

Drill hole LH01-13 was designed to test a northeast-trending, 500 m long EM conductor with a corresponding magnetic high along southeastern margin of the BNMH.

It intersected moderately to highly altered gabbros, intermediate to felsic hypabyssal intrusions and minor mafic metavolcanic rocks similar to those intersected in the LH01-09 situated approximately 2.4 km southeast.

#### LH01-14

Drill hole LH01-14 was designed to test the northeast-trending, linear EM conductors of high strength coincident with, and located along the northwest margin of the RLMH. The RLMH is a magnetic expression that corresponds with the ultramafic rocks, the base of the LHIC brought to the surface by uplifting and subsequent deep erosion.

It intersected a mixed package of extrusive-intrusive sequences that includes, from top to bottom of the hole, amygdaloidal to pillowed mafic flow, layered melagabbro-pyroxenite-melagabbro and altered mafic flow-clastic sediment-iron formation (oxide/sulphide facies)-mafic flow.

## LH01-15

Drill hole LH01-15 was designed to test an approximately 3.0 km long, northeast-trending trains of EM conductors. This conductive target is different from others described above in that it associated with a magnetic low instead of high. It intersected predominantly clastic metasedimentary with subordinate mafic metavolcanic rocks. Trace to 3% sulphides (po, py) within a structural zone corresponds well with the EM conductors

#### LH01-16

Drill hole LH01-16 was collared within the southwest margin of the RLMH near the contact with a magnetic low. The purpose of this hole was to determine the geological expression of this magnetic high and to evaluate the PGM potential that might occur along this magnetic contact. With the exception of a few narrow intermediate to felsic porphyry dykes, the entire hole is dominated by ultramafic rock sequences. These ultramafic rocks comprised of alternating layers of peridotite, pyroxenite and their altered equivalents.

#### LH01-17

Drill hole LH01-17 was designed to test the PGM potential along the geophysically interpreted contact zone between the mafic and ultramafic rocks of the LHIC. The hole, was collared into the magnetic low near the contact with the RLMH.

It intersected a layered melagabbro±gabbro-pyroxenite sequence at the top (31.7m-146.0m) and mafic metavolcanic rocks at the bottom (422.3m-480.7m), corresponding with the magnetic lows on either side of the hole.

#### LH01-18

The objective of drilling hole LH01-18 was the same as the LH01-17. The drill hole was intended to test the magnetic low-high contact for possible PGM mineralization related to mafic-ultramafic transitional zone. The hole was stopped at 170.3 m, falling short of its intended length of 450 m mainly because it went down dip into magnetic mafic amphibolite.

#### LH01-19

Drill hole LH01-19 was designed to test possible northeast extension of Cu-Ni-PGM horizon associated with strong EM conductors intersected in LH01-03. The EM conductors at both locations are coincident with a magnetic anomaly of moderate susceptibility.

It intersected predominantly gabbroic sequences that includes, from bottom to top of the hole, a medium-grained mesocratic gabbro with minor gradational layers of melagabbro to hornblendite/pyroxenite sequence (62.0m-287.7m), a heterolithic gabbro breccia zone (32.5m-62.0m) followed by massive to layered, cumulate to subcumulate mesocratic gabbro-melagabbro sequence (13.4m-32.5m).

#### LH01-20

Drill hole LH01-20 was collared 120 metres to the northwest of the hole LH01-02 to test down dip continuity of previously discovered Pd+Pt mineralization intersected at the top of the drill hole LH01-02.

It intersected gabbroic sequences (Figure 8) that includes a predominantly medium- to coarse-grained, locally pegmatitic and plagioclase-phyric, cumulate to non-cumulate meso- to leucocratic gabbroic sequences occurring in the upper half (28.7m-161.0m) and a vari-textured gabbro-breccia plagioclase-phyric gabbro sequences in the lower half of the hole (161.0m-206.0m). These sequences are similar to those encountered in the drill hole LH01-02. The gabbroic sequences within hole 2 and 20 are interpreted to overlie close to the ultramafic rocks of the LHIC as evident from the presence of numerous, thin ultramafic layers within predominantly gabbroic rocks hence, it may represent lower to middle portion of a middle gabbro zone within the LHIC.

#### LH01-21

Drill hole LH-01-21 was a stratigraphic hole testing the south-central RLMH. No EM conductors are associated with this magnetic high. It intersected layered ultramafic sequences across the entire length of the hole. These ultramafic rocks comprised of alternating, fine to coarse-grained peridotite and pyroxenite layers.