

**Report on the Geological Mapping of
Claim 1500808 and Parts of Claim 4209871,
Limerick Twp. South-Eastern, Ontario**

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Toronto , Ontario,
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Introduction

Claim 1500808 was map staked to cover a nickel anomaly along the northern boundary of claim 4209871 which in turn, had been staked in 2009 to cover the extension of the geology that hosted the north and south mineralized deposits outlined by Macassa Mines in the early 1960s and in more detail in the 1969-72 period. A soil survey by Wilroy Mines filed with the OGS had shown a copper-nickel anomaly along the north boundary of claim 4209871 (Onodera, 1972).

In 2010 Hastings Highlands Resources Ltd. acquired claim 4209781 from the owners and restored the 100 metre spaced grid across it; this grid was extended as a flagged grid across the present claim and geological mapping was carried out. It extended on to claim 4209781 where previous geological coverage was lacking. This is the first phase of mapping and is designed to identify the rocks present, their internal variations and their relationships to each other. At the time of previous work, the grid could not be located in the north western part of the block; logging and subsequent re-growth had obliterated parts between the numerous linear beaver ponds. The present program has been able to complete geological mapping this area, mainly due to the ponds being frozen.

Property Location and Description (Figure 1)

Claim 1500808 consists of a single 50 acre pioneer land grant unit described a lot 21 East Hastings Road and is adjacent to EHR Lot 20 part of claim 4209871. It is situated in the southwest part of Limerick Township, Hastings County. Access is from the Old Hastings Road, either by the North Steenburg Lake Road from Highway 62 or south on the Hastings Road from Ormsby on Highway 620.

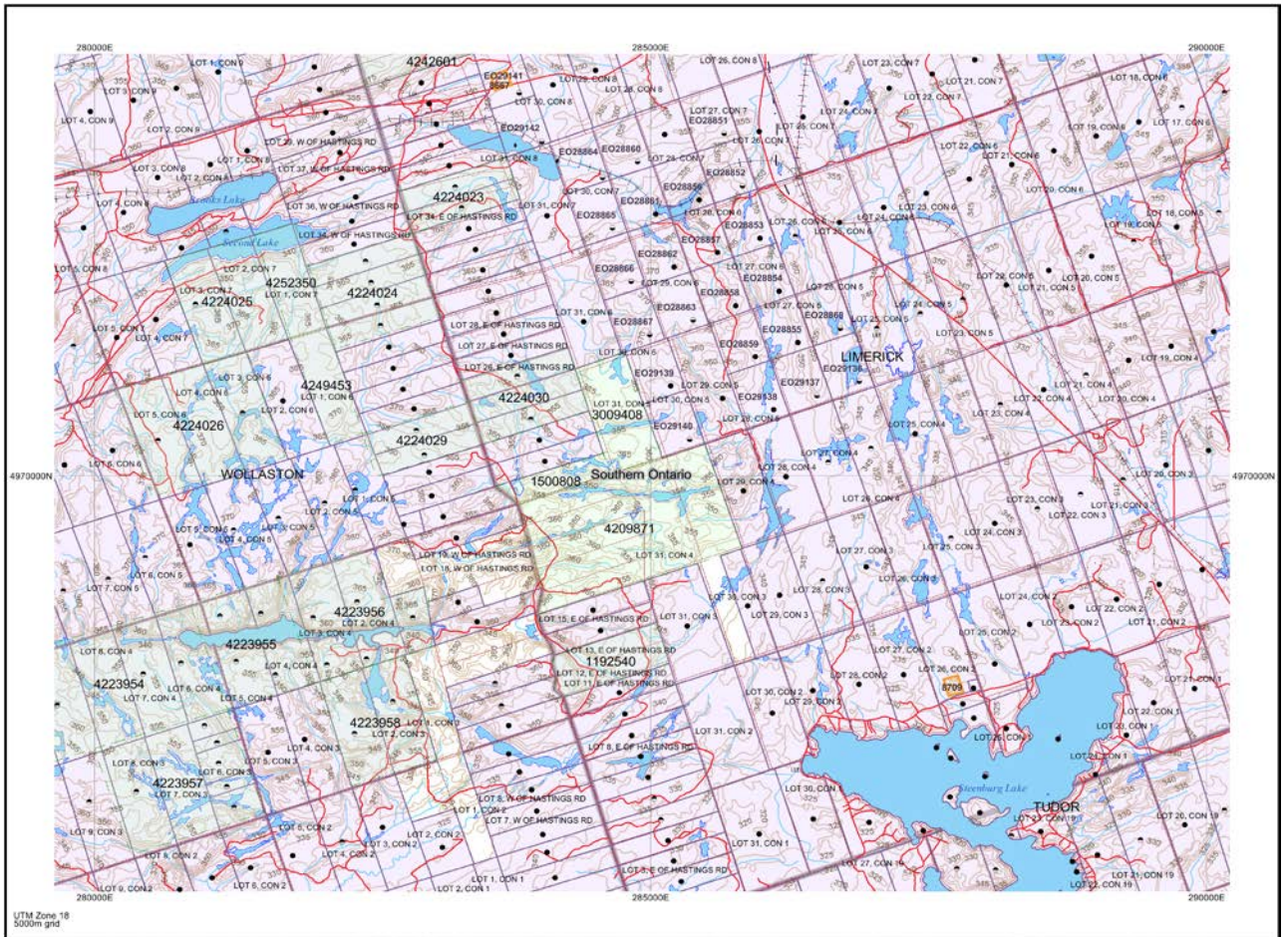
The block is underlain by the Thanet ultramafic-mafic complex and exhibits a rugged sub-outcrop and beaver swamp topography. Forest cover is mixed evergreens, mature pines and lesser amounts of hardwoods. Much of the mature forest has been blown down and 3 to 4 metre Balsam trees make up dense re-growth. Relief seldom exceeds 15 metres.

Regional Geology

The most recent geological mapping was performed in 1961 and 1962 (Lumbers, 1969). He differentiates the complex into three phases of uralitized gabbro with minor uralitized diorite, uralitized diorite with minor uralitized gabbro and tonalite with quartz-bearing diorite (uralization is the conversion of pyroxene to amphibolite during intrusion and its alteration). The phases are described as heterogeneous commonly with rapid changes. The average compositions for the two main phases, uralitized gabbro and uralitized diorite do not show much difference (Lumbers, 1969, Table 7).

Lumbers' map (Map 1267) shows the Thanet Complex to be in an intrusive contact and having a pronounced contact metamorphic aureole with the surrounding feldspathic clastic and calcareous feldspathic clastic sedimentary rocks.

Figure 1
Map Showing Position of Claim 4209871 and the New Claim 1500808 Addition in the Southwest Part of Limerick Township



These rocks form part of the Vansickle Formation which has undergone regional metamorphism and deformation to the upper greenschist or lower amphibolite grade of metamorphism with north, northeast trending folds and a possible later second period of cross folds.

The above interpretation was made at a time when all ultramafic rocks were considered to be intrusive; it was not until a few years later that ultramafic-mafic volcanic rocks were recognized.

Geology of Claim Block 4209871 and 1500808 (Map 1, in pocket)

The 4209871 claim block and new claim 1500808 were mapped using extensions of the restored grid put in by Limerick Mines Inc. in the late winter of 2004 on claim 4209781. 100 metre-spaced lines run at 125 degree azimuth with base lines at 75+00E and 80+00E; pickets are 25 metres apart along all lines.

Outcrop is abundant in areas underlain by the Thanet Complex and the soil veneer is usually less than a metre, but good exposures are rare due to the mosses and grasses. The attached map shows the density of small outcrops illustrating the continuity of the sub-outcrop. Usually only the rock type can be determined at any location. Mapping concentrated on a detailed description of the rock at each outcrop. The pyroxene crystals appear fresh, short and stubby; they do not appear to be altered or show the longer crystal form of amphibolite. The main variations were the grain size and ratio of pyroxene to felsic material. The cause, of these variations, appears to be complicated; however pond margin and logging road exposures suggest that the explanation lies in part due to the fragmental nature (Photo 1) and banding in the unit (Photo 2 to 4). Minor barren quartz veins are present, but rare. A major one lies along the south side of Yvonne's Pond; it can be traced for 25 metres.

Along the contact between the two claims, the extensive pond system provides good exposure of the rocks. For the most part they are similar to those described above. The quartz vein along the south west side of Yvonne's Pond lies in fine-grained Thanet Complex which show a strong foliation (Photo 5). Course and fine-grained banding was seen further east along the south side of the pond (Photo 3). The long pond to the north seems to follow finer-grained Thanet rocks and the small linear one on the south boundary of 1500808 follows a coarse-grained pyroxenite band within the more variable gabbros. This pyroxenite band is diagnostic by its pot-marked weathering (Photo 6) and lack of feldspar. This weathering also is seen associated with the North Zone mineralization.

The relationships described above are more common in the eastern and southeastern part of the claim block. To the west the contact seems more abrupt between medium to coarse-grained Pyroxenite-gabbro and grey quartz arenites. That being said the gradational contacts with the highly folded Vansickle quartz arenites seen to the east strongly suggest that the Thanet rocks are volcanic in origin and slowly are buried by clastic sedimentary rocks and folded with them (Photos 7 and 8).

Mineralization is usually restricted to disseminated pyrite in the igneous rocks; in the adjacent quartz arenites, pyrite up to 10 percent is common near the contact especially to the northeast of the claim block.

Photo 1
Fragmental Nature of Thanet Complex in the
Western Part of Claim Block 4209871



Photo 2
Banded Fine-grained Layering in the Thanet Complex
Central Part of Claim Block 4209871



Photo 3
Vertical, Layering in the Thanet Complex, South Side Yvonne's Pond,



Photo 4
Boulder of the Thanet Complex Rocks
Showing Fine-grained Layering and Folding



Photo 5
Schistosity in Fine-grained rocks hosting the Quartz vein, Yvonne's Pond



Photo 6
Coarse-grained Pyroxenite on Southern Boundary of Claim 1500808



Photo 7
Bedded Quartz Arenite Showing Dark Layers
Rich in Fine-grained Pyroxenitic Material



Photo 8
Finely Bedded and Folded Typical Quartz Arenite



Interpretation and Conclusions

Detailed mapping of part of the Thanet Complex situated on claim 1500808 and adjacent parts of claim 4209871 have shown that the Complex is much more heterogeneous than previously thought. These variations are best described as being of volcanic not intrusive in origin. Gradational contacts with the overlying quartz arenites of the Vansickle Formation strongly support this conclusion as does the presence of sulphide mineralization in both units near their contact.

It is recommended that a new soil geochemical survey be performed to update the 1969 survey. Trenching is required to further expose the mineralization found on the claim blocks and more detailed mapping is required to better define the mineralized trends. These claim blocks were originally part of the major land position covering the mineralization that described in Limerick's NI43-101 report of 2004 and this mineralization is interpreted as a continuation of it.

Dr. Derek McBride P.Eng.
February 10th 2015

References

Lumbers, S. B. 1969: Geology of Limerick and Tudor Townships, Hastings County; Ministry of Northern development and Mines, Geol. Rept. 67.

McBride, D. E. 2002: Limerick Township Nickel-Copper Deposit; Abs. Ann. Mtg, Ontario Prospector's Association.

Onodera, V.T. 1972: A geochemical Soil Survey of Wilroy Mines Ltd. (Formerly Macassa Gold Mines), West Limerick Township Claims, Ormsby, Ontario: OGS Assessment Rept., 31C13SE0004.

Pressacco, R. 2004: A review of the Nickel-Copper Mineralization at the Limerick property, Limerick Township, Ontario, Canada, NTS 31 C/13; Limerick Mines report on www.sedar.com.

STATEMENT OF COSTS

2014 Assessment Work Cl. 4209871 and 1500808			
Date	Item	Cost	HST Incl.
01-Dec-14	Groceries	\$ 124.04	\$ 0.90
04/12/2014	refreshments	\$ 19.90	\$ 3.08
04/12/2014	supplies	\$ 24.86	\$ 2.86
10/12/2014	meals	\$ 40.00	\$ 4.06
12/12/2014	meals	\$ 42.70	\$ 4.34
12/12/2014	groceries	\$ 24.80	\$ 0.42
11/12/2014	Truck mileage 1891 km @ \$0.50	\$ 940.50	
	Totals	\$ 1,216.80	
10/02/2015	Digitizing map	\$ 1,000.00	
	Time D McBride field 1500808 @ \$500/day	\$ 3,875.00	
	Time D McBride field 4209871	\$ 1,625.00	
	Time D McBride Report Writing an plotting 50-50%	\$ 2,250.00	
	Time J. Laidlaw field 1500800 @ \$300/day	\$ 1,743.00	
	Time J. Laidlaw field 4209871	\$ 1,083.75	
	Distribution by claim		
	Labour 1500808 D McBride	\$ 3,875.00	
	Labour 1500808 J Laidlaw	\$ 1,743.00	
	Digitizing 1500808 10%	\$ 100.00	
	Field Expenses 50-50	\$ 608.40	
	Report writing	\$ 1,125.00	
	Total Claim 1500808	\$ 7,451.40	
	Labour 4209871 D McBride	\$ 1,625.00	
	Labour 4209871 J Laidlaw	\$ 1,083.75	
	Digitizing 1500808 90%	\$ 900.00	
	Field Expenses 50-50	\$ 608.40	
	Report writing	\$ 1,125.00	
	Total Claim 4209871	\$ 5,342.15	

Approximate Location of Photographs	
Photo No.	Location
1	On logging road from Hasitngs Rd. at southern boundary of Cl. 4209871
2	Line 42 N, 75E
3	South side Yvonne's Pond near Line 33N
4	Line 43 N, 78E
5	South side Yvonne's Pond near beaver dam
6	On south boundary of claim 1500808 near line 38N.
7	Near Line 36N 82E
8	Near Line 38N 82E

CERIFICATE

I, Dr. Derek E. McBride P.Eng., do hereby certify that:

1. I reside at 20 Forsythia Dr., West Hill, Ontario, Canada, M1E 1Y1.
2. I am a consulting geologist and have been authorized to practice as a geological engineer since 1980 in Ontario, British Columbia and prior to that in New Brunswick and Nova Scotia since 1975.
3. I am a graduate of the Haileybury School of Mines with a diploma in Mining Technology and from the Queen's University, Kingston, Ontario with B. Sc. Eng. And M.Sc. Eng. Degrees in 1968 and 1972 respectively and a Ph.D. in geology from the University of New Brunswick 1976, and I have practised my profession continuously since that time. My speciality has been in mineral exploration and has included porphyry copper, volcanogenic massive sulphide, orogenic gold, silver, iron, uranium and diamond experience. Projects have covered most geological provinces in Canada and in 16 different countries. I am credited with two gold mine discoveries.
4. I am a Professional Engineer licensed by PEO (Membership Number 29879012).
5. I am a "Qualified Person" for the purpose of NI 43-101.
6. I am solely responsible for all sections of this report.

“Original signed by Dr. Derek McBride P.Eng.”

Dr. Derek McBride, P.Eng.
February 10, 2014

