Assessment Report
On

2019 Prospecting Program in Hyman Township

Hyman North Project

NTS 42I/05

Zone 17

Sudbury Mining District

Survey Dates: November 24 to December 8, 2019

Frank Racicot, P Geol.
December 23, 2019

Table of Contents

List of Figures

List of Appendices

Summary

These claims were originally staked on the premise or assumption that they were a likely site for QD (Quartz Diorite) dykes. QD dikes are host to some of the richest Ni-Cu- PGE deposits in the Sudbury Basin.

The claims in Hyman township that were on extension were due to be examined in the late fall. On October 31st, a heavy snowfall came and stayed. This is the earliest permanent snowfall in over 40 years. Despite the snow cover, it was still possible to examine outcrop with exposed ledges that were at were at least one to two feet high. Racicot conducted three prospecting traverses on three separate days. One of the traverses was to investigate a VLF conductor at a specific site- that was located four years earlier. (See Figure in Section 3).

1.0 Property Description and Access

1.1 Location and Access

The claim block is located in the northeast corner of Hyman Township, Sudbury District, Ontario. There are two ways to access the property. Access for the northern access route is gained by travelling west from the Greater City of Sudbury via Provincial Highway 17 (the Trans-Canada Highway) towards Sault Saint Marie. One turns right (north) at the first traffic light about 1 km past where the four-lane divided highway ends and then continue just past the Worthington Mine after crossing a CPR railway line. Turn right at the first right- just beyond the stockpile of sand used by the mine. From here one proceeds for about 5.7 km to a sign that says “Chicago Mine”. From here one turns left on a gravel road until there is a 12 km sign- where an old logging road then turns left. An ATV can be taken from here to the west for a distance of about 1.7 km before one hits a small creek- which may or may not be passable- depending on the time of year.

The southern access route is similar to the northern route, but one doesn’t turn after the Vale sand pile- but rather continues west for about 7 km towards High Falls. One then turns right- between several houses. This will bring you to the south access route south of the claims. See Figure 1 for the location of the claims.

1.2 Topography

The landscape was stripped by Pleistocene glaciers revealing ridges with reasonable expanses of outcrop and glacial lodgement till (on southern slopes and scours) with various unconsolidated sedimentary washes in the valley bottoms. Small lakes and swamps occupy parts of the valleys that form part of the Spanish River drainage system flowing into the north shore of Lake Huron.

Elevations vary between 250m in the valleys to the southeast and up to 370m on some ridge tops – i.e., a mildly rugged landscape for the southern Canadian Shield. Nonetheless, most areas are not too far from roads that are readily accessible with trucks in the summer and with snow machines in the winter along with walking traverses during all seasons.

During the course of the three limited traverses, on a local basis there appeared to be limited (1-3 feet) of overburden cover and a minor amount of small to medium size boulders.

1.3 Vegetation

The forest cover is mixed forest and most of the trees (75-80%) were spruce. There was about 5-8% pine, 5% poplar and 5% white birch, with a few yellow birch. There was about 2-4% oak and maple and some balsam.

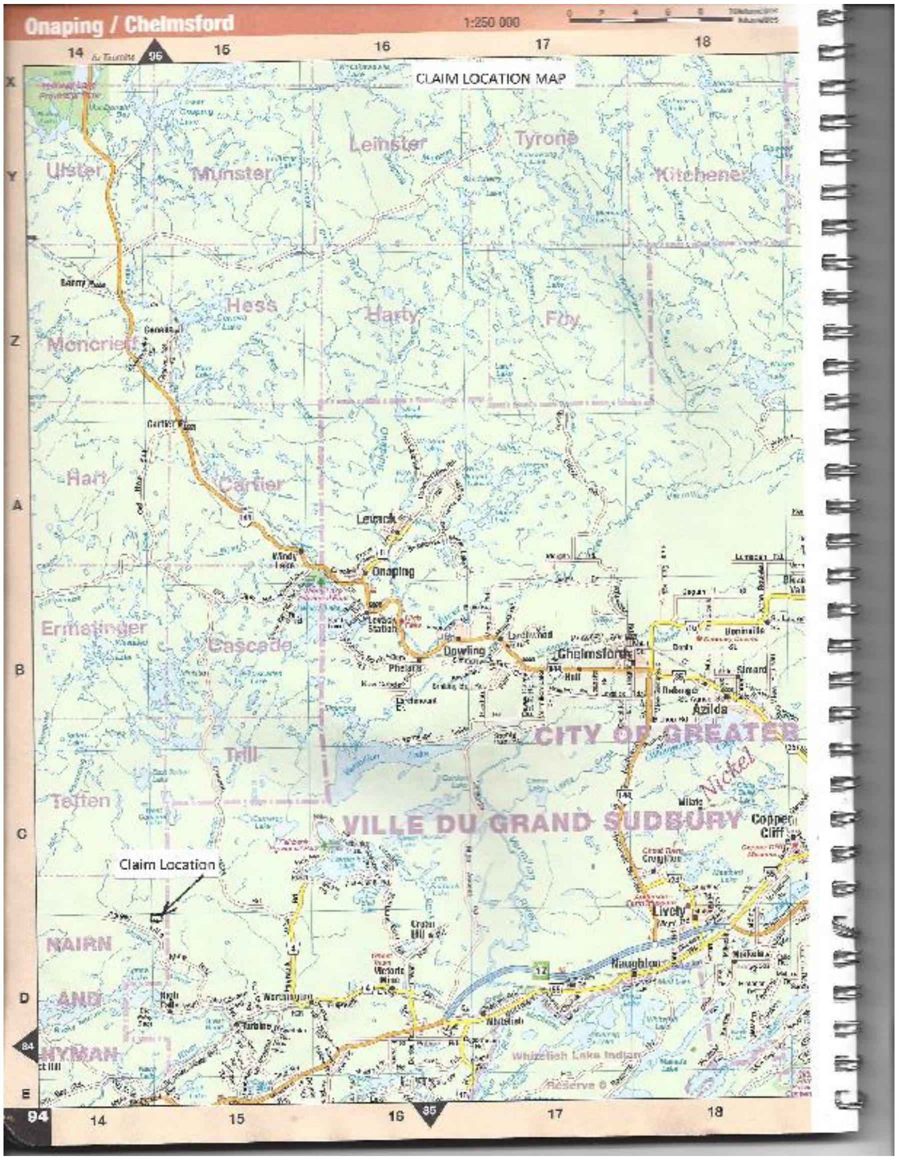

Figure 1 – Location of claim block in Hyman Township, Sudbury District, Ontario.

2.0 Description of Mining Claims

Claim Number	Type of Claim	Work Required	Status	Date Due
223671	Boundary	200	Active	Dec 30, 2019
230945	Boundary	200	Active	Dec 30, 2019
223670	Single cell	400	Active	Dec 30, 2019
296978	Single cell	400	Active	Dec 30, 2019
101978	Single cell	400	Active	Dec 30, 2019
278168	Single cell	400	Active	Dec 30, 2019
326762	Single cell	400	Active	Dec 30, 2019
164258	Single cell	400	Active	Dec 30, 2019
212146	Single cell	400	Active	Dec 30, 2019
279677	Boundary	200	Active	Dec 30, 2019

2.1 Claim Ownership: The claims are 50% equally owned by:

Frank Racicot, 734 Whittaker St., Sudbury Ontario, P3E 4B2 and

Hadyn Butler, 647 Silver Lake Road, Sudbury Ontario, P3G 1J9.

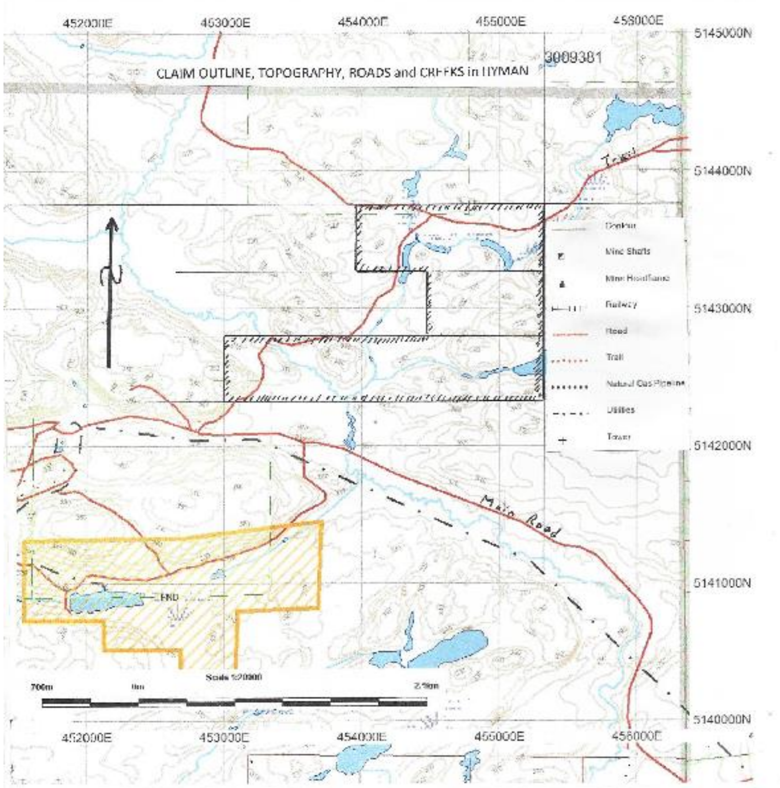

Figure 2a – Location of claim block in Hyman Township showing further topographic details (topographic contours) and access roads. Also, a 1 kilometer UTM grid (NAD 83) is also shown. The claim block is outlined with a bold black line and an area covering a federal reserve (former Agnew Lake Mine tailings is shown in orange).

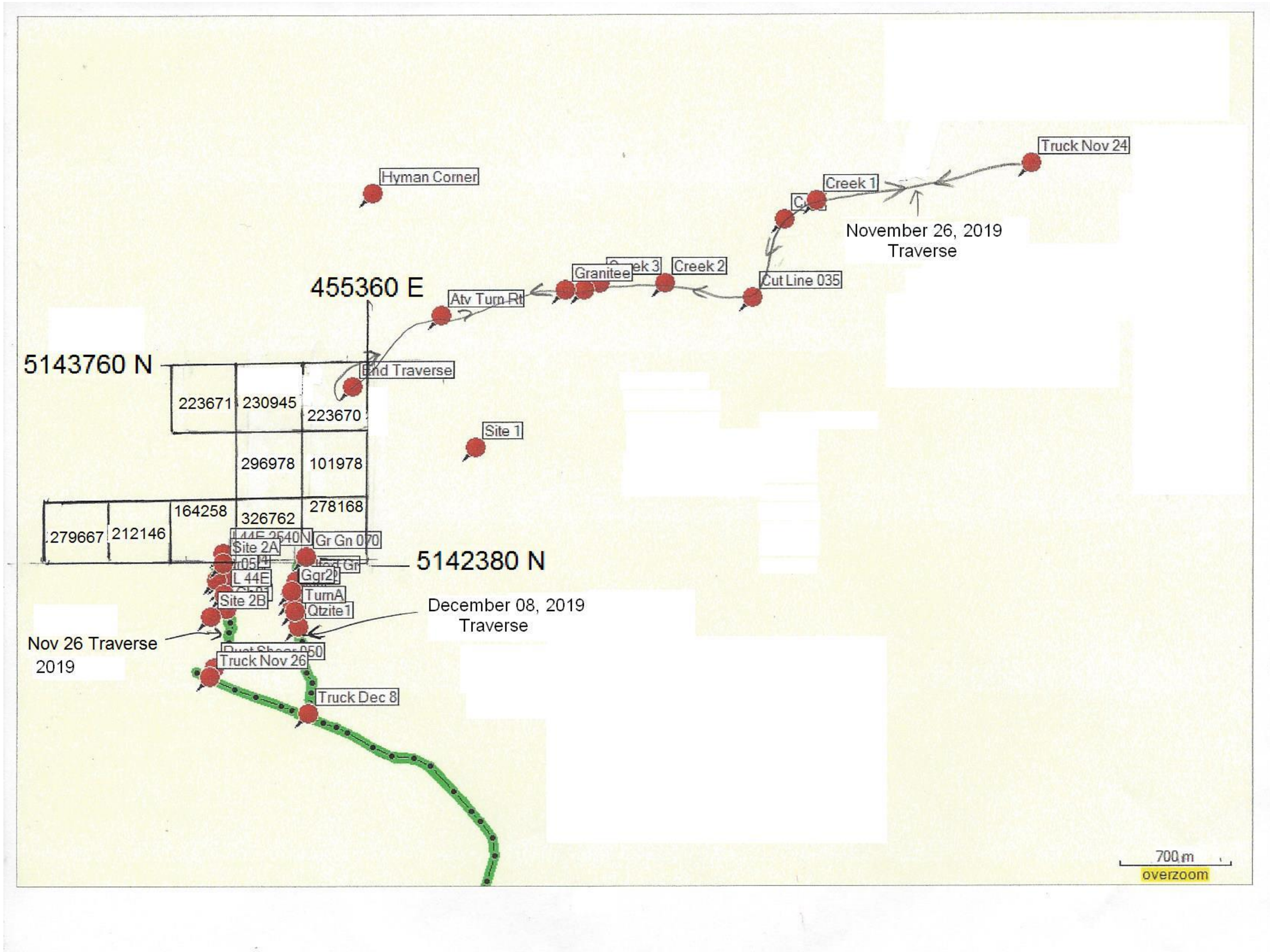

Figure 2b: Claim block distribution with overview of 3 prospecting traverses. Detailed traverse routes are shown in Appendix 1

3.0 Historical Exploration

2015-Preliminary geophysical traverses (VLF; stations and data collected by Ted Lang). This survey was conducted in April (over compacted snow cover and frozen lakes) across known Nipissing Ni-Cu-PGE mineralization, the probable footwall of an East Bull Lake gabbro intrusion and along a NE-trending feature (a potential QD strike direction in the NE corner of the claim block). The data was interpreted by Shaun Parent who has proprietary algorithms. That his algorithms work has been confirmed by a blind survey on the Parkin Offset Dyke (NE corner of the Sudbury Basin footwall), as well as over various other geological and geographical areas.

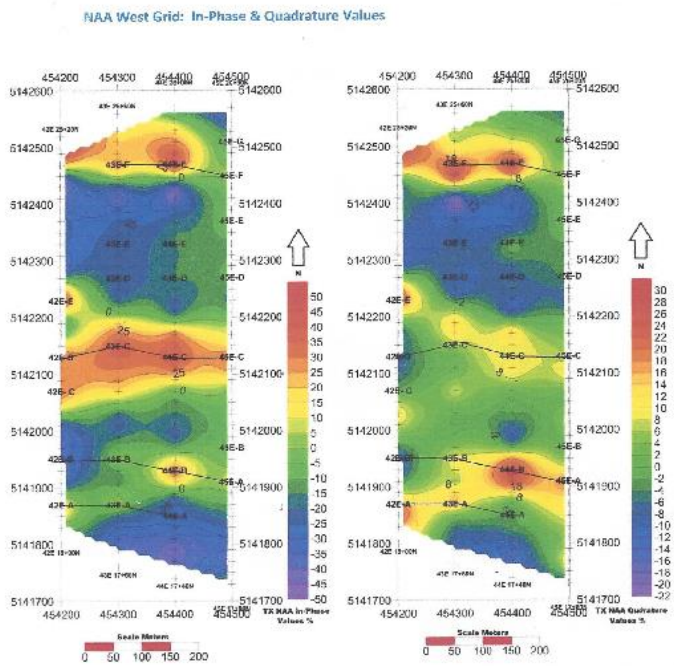

Figure 3: VLF conductor F-F at 5142450N

4.0 Geological Setting

4.1 Regional Geology

The claim block sits to the southwest of the margin of the Sudbury Igneous Complex ("SIC") and contains the contact between the Lower Proterozoic Huronian Supergroup to the south as well as Archean granite gneisses, the Cartier batholith, to the north. NW-striking later Proterozoic diabase dykes as part of the

Sudbury Dyke Swarm (Mackenzie Dyke Swarm-aged) are interpreted to cross the claim block as well as a SW-striking fault that cut the SW corner of the Sudbury Basin.

The Sudbury impact event dated at 1.85 Ga is evidenced in all pre-impact units on the claim block: for instance, complex Sudbury Breccia zones which will be discussed further below. The SW-striking fault noted above is regarded as part of the post-impact part of the Penokean Orogeny. By editing Ames *et al.* (2005),[1] bedrock units on or very close to the claim block include:

1) Archean Cartier Batholith; foliated granodiorite to granite ~2,640 Ma.
2) Units equivalent to the East Bull Lake Gabbro; gabbro, gabbro norite and anorthosite ~
3) Matachewan Dyke Swarm; diabase dykes ~ 2,473 +18/-9 and 2448 ± 3 Ma shown with quite variable strikes and likely, in part, to be of a similar age to the East Bull Lake gabbro complexes – both contain very similar large plagioclase megacrysts, for instance.
4) Nipissing Mafic Intrusive Suite; Noritic quartz gabbro and amphibolitic equivalents. These units form variably differentiated sill-like sheets both cross-cutting and conformable to the Huronian Supergroup units ~ 2210-2217 Ma.
5) Ramsey Lake Formation; matrix supported polymictic conglomerate, minor mudstone, greywacke and arenites (Huronian Supergroup).
6) Pecors Formation; laminated to thin planar and wavy laminated greywacke, mudstone, siltstone and arenite (Huronian Supergroup).
7) Matinenda Formation; cross-bedded arkose, greywacke, and uraniferous quartz pebble conglomerate (Huronian Supergroup).
8) McKim Formation; laminated to thin-bedded greywacke and siltstone (contains turbidites Ta-Te) (Huronian Supergroup).
9) Sudbury Breccia; randomly oriented blocks of country rock in fine-grained pseudotachylyte.

Bell Geospace Inc. (2010)[2] on behalf of the Wallbridge Mining Company Limited flew a broad airborne magnetic and gravity survey for the northeast part of the Claim Block. The information may be too broad to be of use in finding mineralization. The Sudbury Impact Structure and its Range.

The Sudbury Impact Structure is defined by the *Sudbury Basin*, the *Sudbury Igneous Complex* (SIC), *Footwall Breccias* and *Melt Bodies* immediately beneath the SIC, so-called *"Offset Dykes," Shattercones* forming a crude annulus in units immediately beneath the SIC and small to large-scale *"Sudbury Breccias"* extending past the town of Spanish to the west, within Lake Temagami to the northeast, north nearly to the James Bay Watershed and to the southwest near Whitefish Falls. Sudbury Breccia distribution defines the impact to be at least 250 km across.[3] [4] Lineament analysis and extraction techniques (Butler, 1994) seems to suggest that the Sudbury Basin is surrounded by "possible lineament rings." Such features are subtle

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[1] Ames, D.E., Davidson, A., Buckle, J.L. and Card, K. (2005): Sudbury Bedrock Compilation, a map at 1:50,000 scale, *Ontario Geological Survey* Open File Report 4570. See also Card, K.D. and assistants (1964): Hyman and Drury Townships, Sudbury District; *Ontario Geological Survey*, Map 2055.

[2] Bell Geospace Inc. (2010): Final report, Processing and acquisition of Air-FTG Data and airborne magnetics, Trill Project and Extension, Sudbury Basin, Ontario, Canada; *Filed Assessment Report*, text and maps.

[3] Butler, H.R. (1994): Lineament Analysis of the Sudbury multi ring impact structure*; In*, Large Meteorite Impacts and Planetary Evolution; *eds*. B.O. Dressler, R.A.F. Grieve, and V.L. Sharpton*: Geological Society America,* Special Paper 293, pp.319-329.

[4] Spray, J.G., Butler, H.R. and Thompson, L.M. (2004): Tectonic influences on the morphometry of the cture: Implications for terrestrial cratering and modeling; *Meteoritics and Planetary Science*, 39, No.2, pp.287-301.

and have been definitely confirmed topographically (Ring 3 with an apparent diameter of 135-140 km in an independent M.Sc thesis by Underhay, 2011).

The Sudbury impact event occurred on the foreland edge of an early Proterozoic mountain range – a highly asymmetric portion of the continental crust. The southern side of the current SIC ***roughly*** represented the axis of the main mountain range and the current East Range footwall of the SIC represented the edge of the Cobalt Embayment – as a transverse mountain belt parallel to underlying Archean greenstones – the reason; thick platform (anorogenic) covers like the Cobalt Embayment have behaved differently through time.

Normally magnetic Matachewan diabase dykes near the impact center are demagnetized completely up to the position of *putative Ring 2* (Spray *et al.*, 2004, ***Figure 4***) a "ring" that also defines the approximate northern limit of the Foy Offset Dyke extension near La Forest. The Matachewan dykes lose their magnetic signature on approaching *putative* Ring 2 and they are magnetically invisible within Ring 2. This is likely due to a massive EM field caused by the plasma cloud generated above the impact center.

4.2 Sudbury Breccia

Sudbury Breccia comprises several elements - a "shock melt" component filled with rounded country rock blocks (showing a "milled" appearance), fragments and partly digested crystals within a pseudotachylyte matrix. Pseudotachylyte is really a so-called *friction melt* deriving its composition from the most adiabatically compressive minerals in a rock mass (shock wave passage compression). In short, its composition does not mimic Bowen's Reaction Series of partial melt derivation, but is more likely to be derived from the more compressible mafic mineral suite in the rock, something that has been confirmed in the laboratory.[5] Compressive shock waves from the impact centre cause pseudotachylyte production along contrasting specific gravity rock type boundaries by wave-refraction focusing at contacts and stratigraphic bends. In the South Range footwall, large pseudotachylyte bodies commonly occur parallel to Huronian stratigraphy and as irregular cross-stratigraphic bodies. Because of continual earthquake activity during the on-going adjustment of the under-crater footwall, pseudotachylyte melts flow towards the base of the crater fill such that pseudotachylyte chilled margin fragments can be scoured and reincorporated into still-liquid pseudotachylyte (pseudotachylyte fragments within pseudotachylyte), and country rock blocks can accumulate in choke zones as heterogeneous block mixtures after fissures close. Different batches of pseudotachylyte melt can show partial mixing (pseudo-immiscibility, but really minimal-distance coherent/flow) and crystallization (mineral nucleation) in some batches can mimic textures found in ***the marginal facies*** of Quartz Diorite ("QD") Offset Dykes.

Of particular interest, however, is the fact that the giant Frood Ni-Cu-PGE deposit is hosted in ***>90% recrystallized pseudotachylyte***. In short, a widening fissure containing pseudotachylyte liquid was available for injection from above by components of what is called Inclusion-bearing (plus sulphide) Quartz diorite ("IQD") components. At Frood, the recrystallized pseudotachylyte envelope around ore can be seen in outcrop as a "smoothing" – recrystallized material shows smooth outcrop surfaces and unrecrystallized material shows fingernail-sized lumps, an effect emphasized by local industrial acid rain on the outcrop.

[5] Spray, J.G. (2010): Frictional Melting Processes in Planetary Materials: From Hypervelocity Impact to Earthquakes; *Annual Review Earth and Planetary Science*, 38, pp221-254.

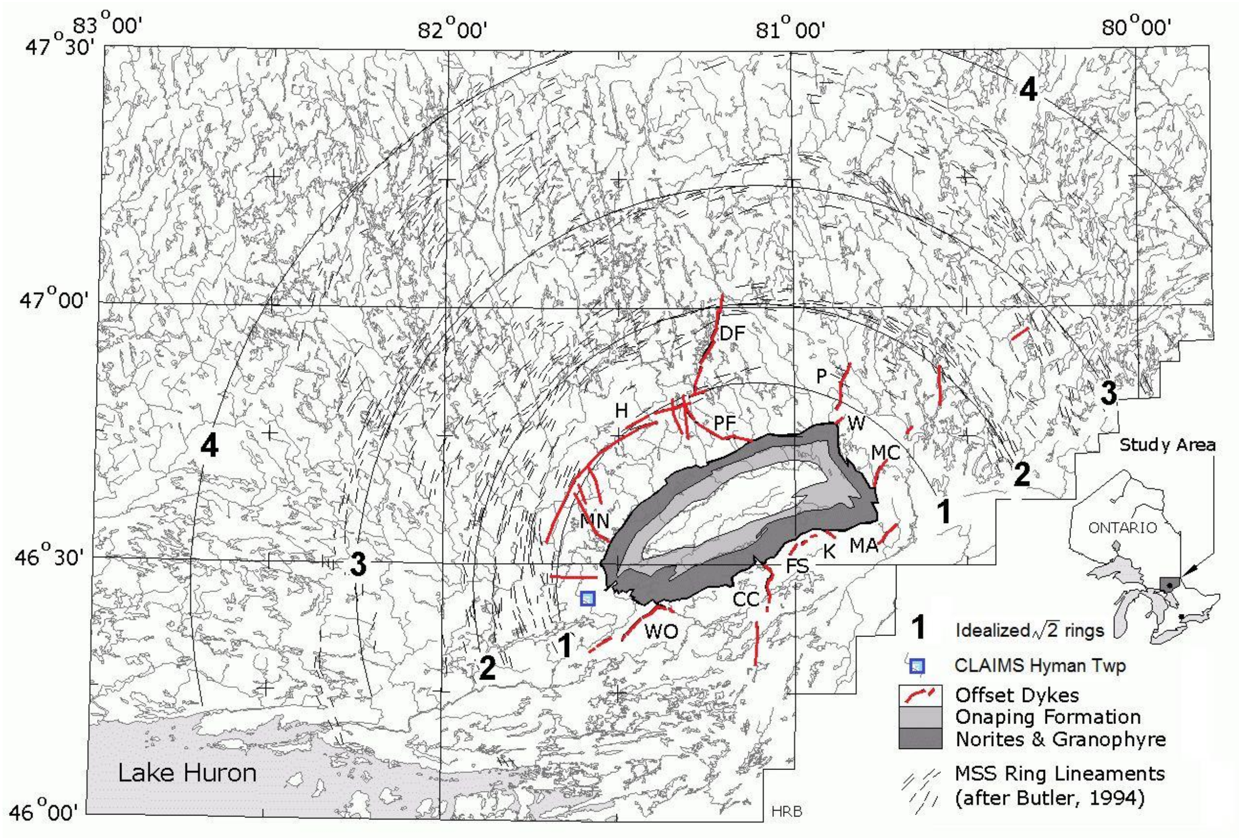

Figure 4 – Distribution of Quartz Diorite (QD) Dykes

4.3 Quartz Diorite Offset Dykes

Figure 4, above, outlines the extent of currently known QD offset dykes has been published by *Smith et al*. (2013)[6]. Interestingly, these authors posit the centre of the impact based on the curvature of the Hess Offset Dyke to a similar position as that proposed by the ring structure of Butler (1994). As shown in Figure 4, Quartz Diorite ("QD") offset dykes occur in the footwall stratigraphically beneath the SIC. The marginal facies of these dykes can be, in the field, somewhat similar to blobs of crystallized pseudotachylyte and likely has a similar history ***but*** with a more-prolonged magmatic evolution. Textures in QD are quite variable but show rapid cooling (Lesher, 2014).[7] QD dyke centres can contain Fe-Ni-Cu-PGE sulphides as veins and disseminations, local falls from country-rock sidewalls (e.g., Nipissing large blocks at Worthington and Totten), fragments of QD (scouring of chilled margins by later magma batches, that is, the fissures did not open all at once but episodically), anatexites that are outcrop prominent in the North Range offset dykes, and so-called "exotic blocks."

In South Range QDs, exotic blocks include numerous small fragments of Huronian mafic volcanics, rare ultramafic pieces, larger rounded to blocky chunks of pyroxenite and grey gabbro, and etc. These

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6 Smith, D.A., Bailay, J.M. amd Pattison, E.F. (2013): Discovery of New Offset Dykes and Insights into the Sudbury Impact Structure; Abs

7 Lesher, C.M. (2014): Recent Advances in Understanding the Petrogenesis and Metallogenesis of the Sudbury Igneous Complex; *MERC Workshop*, November, 2014.

compositions have a slightly higher specific gravity and are the most difficult to melt-digest and most likely represent fragments from pre-existing mafic-ultramafic complexes (possibly like the East Bull Lake complex) settling down with sulphides in the melt footwall. These fragments rarely carry sulphides except along margins (sulphide wetting and strain shadows during subsequent deformation) and as small penetrative crack fillings.[8] Volumetrically, they are quite unlikely to have been a direct pre-impact sulphide source. The sulphides would have precipitated due to the large volume of siliceous melt generated by the impact which lowered the sulphide saturation of the melt (like adding silica to a furnace to create a matte).

4.4 Property Geology

As can be seen on the property geology map, most of the geology that lies under the claims is granite. OGS geology map 2055 indicates that the south boundary also contains some Mississaga quartzite and narrow fingers of gabbro. This was confirmed by two of the traverses. The property geology map also shows a northeast trending lineament that cuts through the southeast corner of the property. Unfortunately, the geology map doesn't show a long east west lineament and stream that shows up on other topographic maps and was confirmed on the December 8th traverse. The property geology is shown in the figure below.

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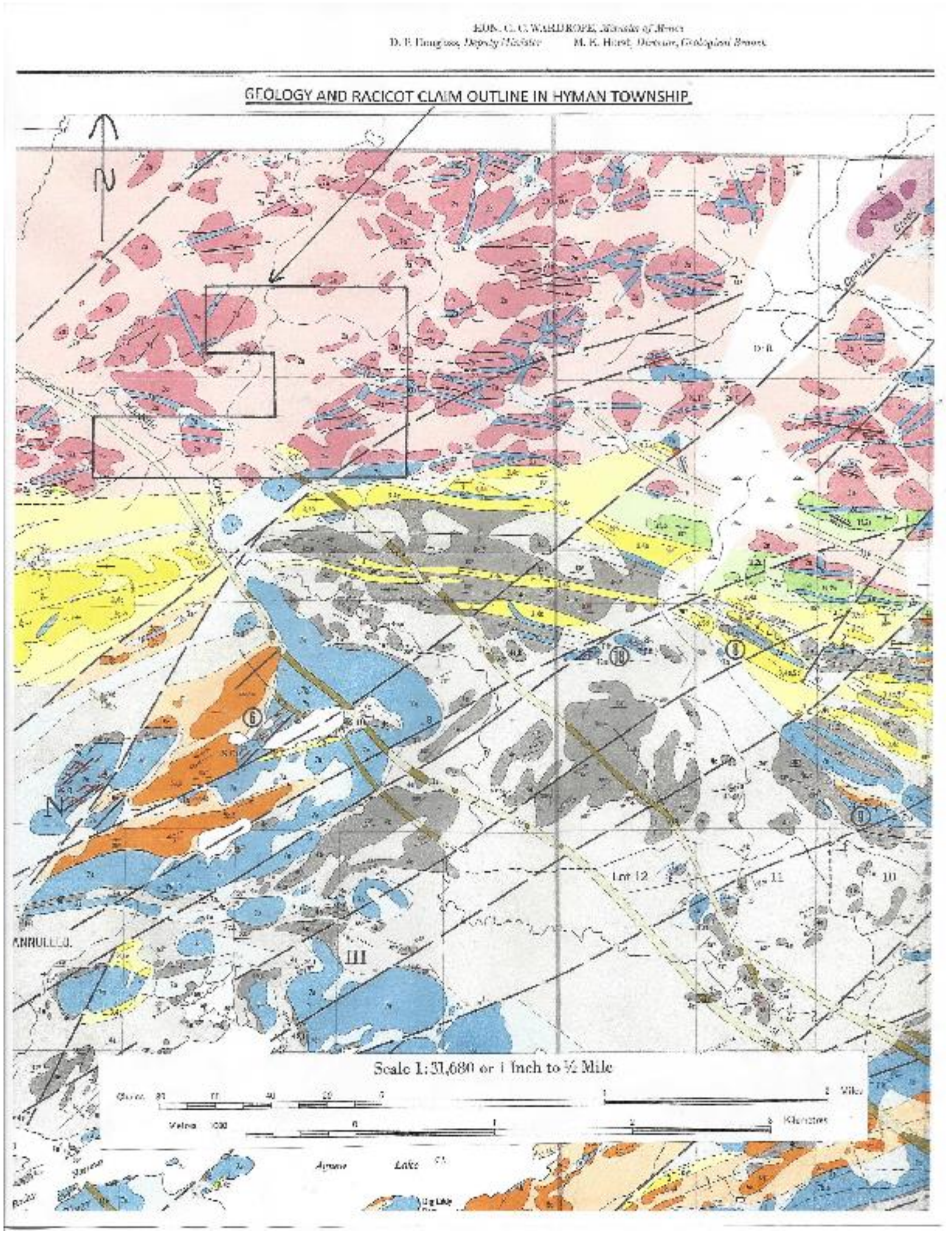


Figure 5: Claim outline and Property Geology in Nairn Township

5.0 Summary of Surface Exploration Program

5.1 Daily Prospecting Logs

Nov 24- Racicot accesses the property via the northern route. After travelling about 1.7 km by ATV- there is a creek that is too deep to cross without possibly getting stuck. Racicot walks the rest of the distance, about 4 km to access the northeast part of the northeast claim (223670). Limited time is spent prospecting in this claim due to observing 3 or more recent and converging wolf tracks. See Photo below.

Nov 26- Racicot hikes to claim 164258 to prospect VLF anomaly ‘F-F’ located in 2015. Two outcrops of granite on route to the area of interest were noted and located on the GPS. No outcrops were located in the vicinity of the VLF anomaly, although several granite outcrops were located in the claim. See photo below.

December 8- Racicot hikes to the western boundary of claim 278168 to prospect the potential on strike extension of VLF anomaly 'F-F' that was pursued on Nov 26. An east west creek in the area has several outcrop ledges of highly foliated granite outcrops in or close to the valley (see 2 photos below). The highly foliated granite next to the creek valley contains numerous 'quartz blobs' that are aligned and almost appear to be stretched quartz veinlets. The foliation is well defined and strikes at 070 degrees/ and has an approximate 80 degree dip east.

Photo of foliated granite with aligned 'quartz blobs' at 454923E/ 5142520N

Photo of granite about 40 meters south of foliated granite shown in previous photo

An outcrop of 'altered gabbro' (labelled an "altered granite' in the field) was also located and noted during this traverse near the southern boundary of claim 278168 at 454862E/ 5142367N. The 'altered gabbro' was a dull, light grey in color with a dirty white weathering in places. See photo below.

6.0 Discussion of Results

The prospecting traverse on November 26th in the immediate vicinity of VLF conductor F-F was unable to locate any outcrop to confirm the existence of the conductor.

The prospecting traverse on December 8th produced the most interesting results. The altered gabbro outcrop that was located on route to the area of interest is worthy of additional investigations in that normal gabbro is typically medium grained and dark. Altered gabbro is an indication of some sort of fluids or heat source in close proximity. The highly strained granite located at the end of the traverse- on the south side of the creek valley is indicative of a structural shear zone- most likely within the creek valley. It is worth noting that this outcrop of strained/sheared granite is on strike with VLF anomaly F-F located about 500 meters to the west.

7.0 **Recommendations**

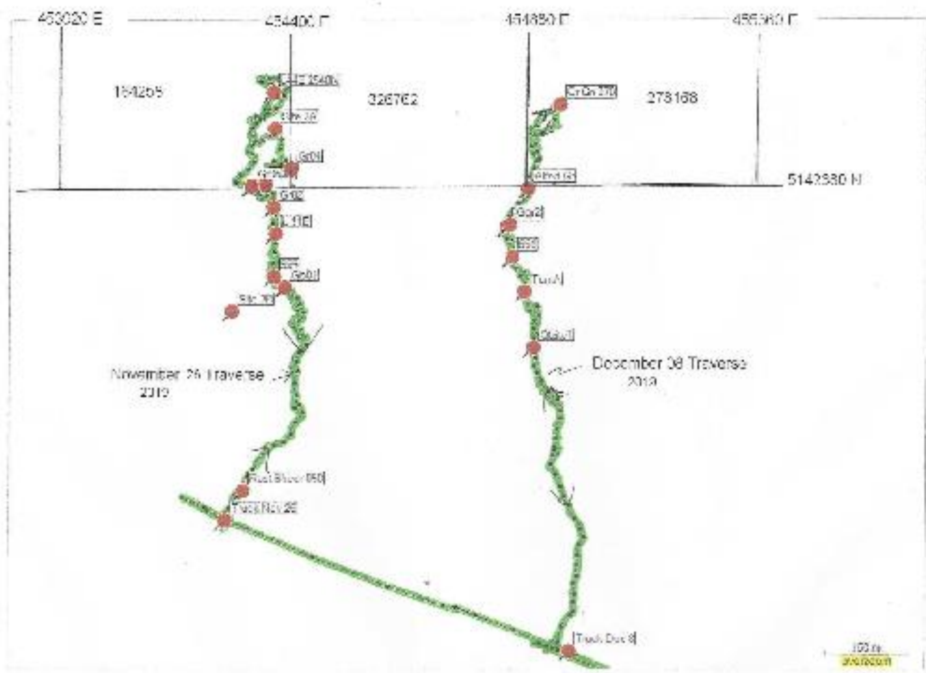
It is recommended that additional prospecting be done in the area of the VLF conductors and the sheared granite outcrop, as well as elsewhere on the claim block in areas not visited this year. Also a series of soil sampling lines should be done over areas where there is little or no outcrop exposure.

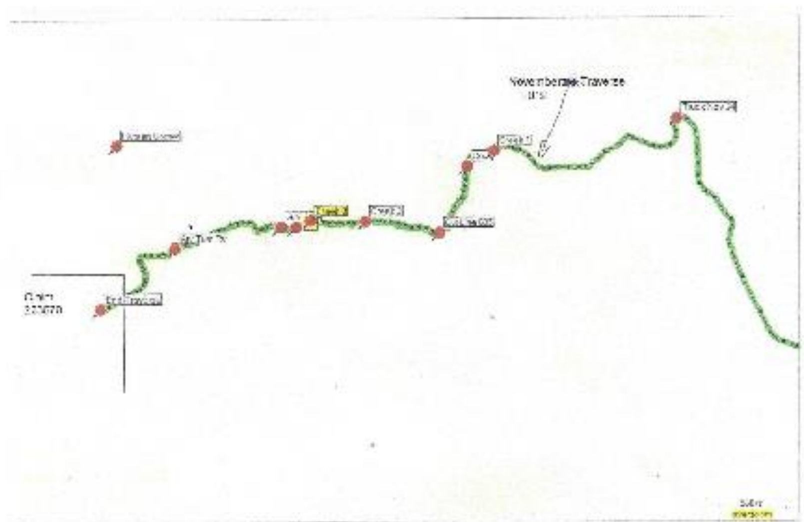
8.0 References

Card, K.D. 1965, ‘Geology of Hyman and Drury Townships’, District of Sudbury, Geological Report No. 34, Geological Map 2065, Ontario Department of Mines, 38p

Racicot F. C./ Butler H.B., May 2015, ‘Mining Property With Potential For Sudbury Footwall Mineralization (Offset Dykes and PGE Mineralization). A VLF Survey Report by Shaun Parent with Geology Notes by Hadyn Butler. Assessment Report No. 20000013825.

Appendix 1


453020 E
454400 E
454850 E
455360 E
154265
326762
278168
5142380 N
November 26 Traverse
2019
December 08 Traverse
2019
Track Dec 8


November Traverse
Claim
Tape Nov 26

Appendix 2

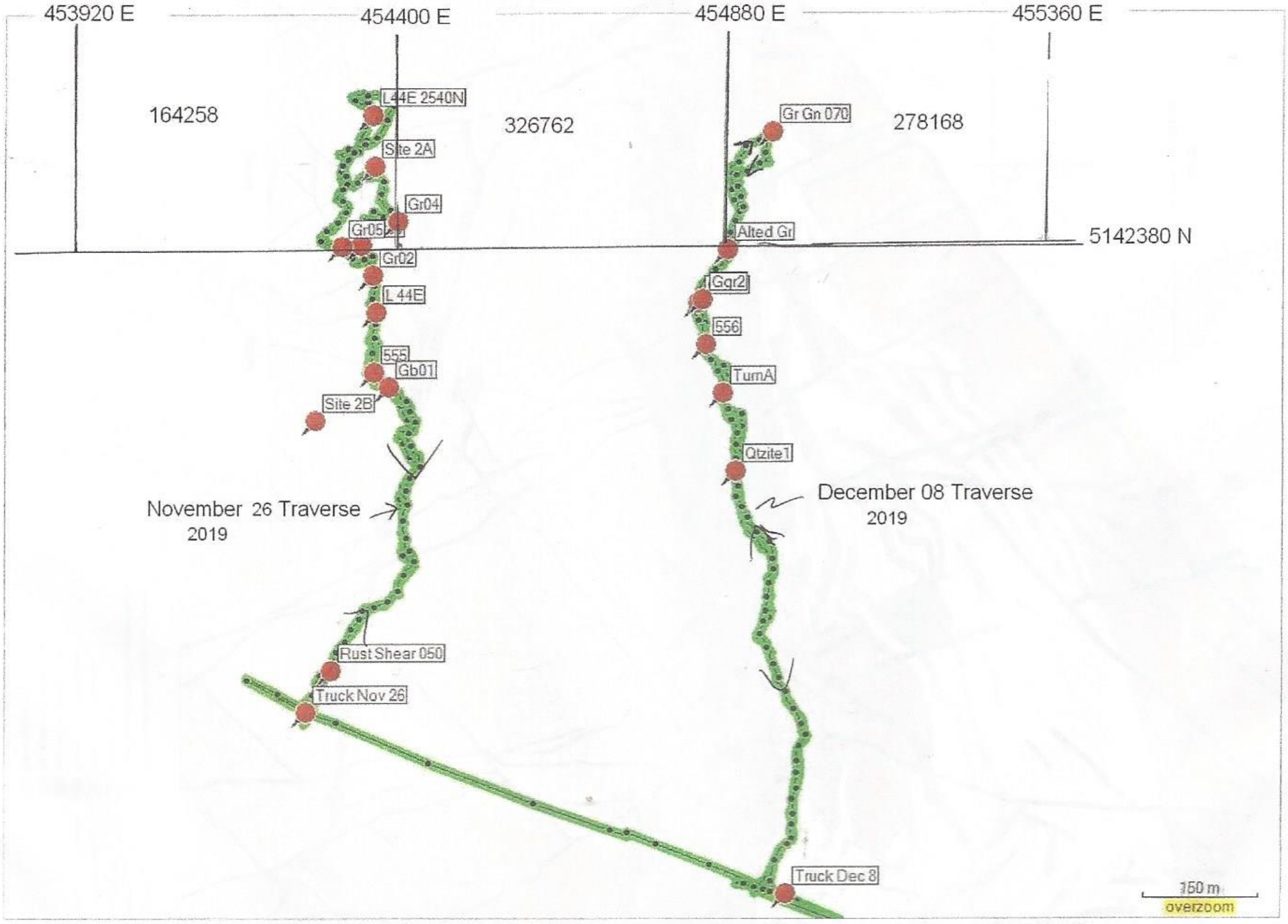
STATEMENT OF QUALIFICATIONS for: FRANK RACICOT

This is to certify that I, Frank Racicot:

- I reside in 734 Whittaker St., Sudbury, Ontario, P3E 4B2
- I am an independent geological consultant with over 35 years varied experience in mineral exploration in Canada.
- I graduated in 1974 from Laurentian University, in Sudbury Ontario with a BSc in geology.
- I am a member in good standing of the Association of Professional Geologists of Ontario (APGO)

Dated this 22' day of December, 2019 at Sudbury, Ontario

Frank Racicot P. Geo (#0958)



453920 E
454400 E
454880 E
455360 E
164258
326762
278168
5142380 N
L44E 2540N
Site 2A
Gr04
Gr05
Gr02
L 44E
555
Gb01
Site 2B
November 26 Traverse
2019
Rust Shear 050
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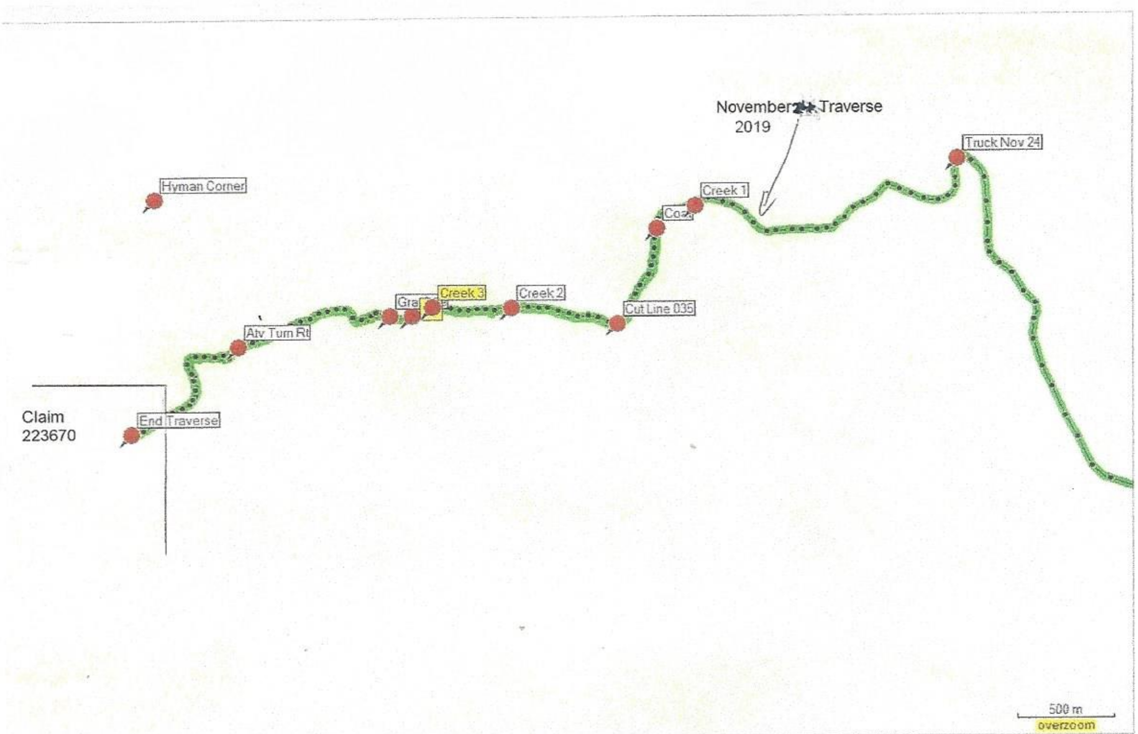
Gr Gn 070
Alted Gr
Ggr2
556
TurnA
Qtzite1
December 08 Traverse
2019
Truck Dec 8
150 m
overzoom



November 24 Traverse
2019
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Creek 3
Creek 2
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Atv Turn Rt
Claim
223670
End Traverse
500 m
overzoom