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**ASSESSMENT WORK REPORT**

**CLAIM L 4282175**

**Gillies Limit**

**Larder Lake Mining Division**

**Claim Holder - Brian Anthony (Tony) Bishop client #108621**

**Report prepared and submitted by Tony Bishop**

**November 27, 2017**

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## **ASSESSMENT REPORT FOR CLAIM 4282175, Gillies Limit, LARDER LAKE MINING DIVISION**

*Prepared by Brian A. (Tony) Bishop, submitted November 27, 2017*

### **INTRO:**

Hereby submitted by Brian Anthony (Tony) Bishop [Client No. 108621, 100% holder on record], on November 27, 2017, an assessment report for Claim no. L 4282175. This claim is comprised of 4 units, situated in the NE¼ of the NW¼, SE¼ of the NW¼, NW¼ of the NE¼, and SW¼ of the NE¼ of Block 22 of Gillies Limit, Larder Lake Mining Division [see Appendix 2: Map 1, page 14]. This report includes details of work done to date, including a reconnaissance survey and prospecting, with recommendations for further assessment.

### **PURPOSE:**

The purpose of staking Claim L 4282175 and the goal of the assessment work done to date and included in this report is to look for evidence and test the hypothesis that the claim may contain the top of a kimberlite pipe manifested in the post-glacial topography by the circular nature of the lake. As Shigley et al (2016) state, in reference to the Diavik Mine, "Because kimberlites weather and decompose faster than much older surrounding rocks, pipes often occur in topographical depressions beneath lakes...most [pipes] are buried beneath bodies of water".

Work completed to date includes an on-foot observational examination/prospecting of the claim, a research component, carefully determined and mapped out soil sampling plans, screening, concentrating, sorting and examining potential kimberlite indicator minerals (KIMs) in collected soil samples, microphotography, and recording these and other findings.

### **ACCESS:**

Access to Claim no. 4282175 (Chopin Lake) can be made from the town of Cobalt.

Cobalt is reached from Highway 11 via Highway 11B. Claim no. 4282175 is situated approximately 9 km south-southeast of the town of Cobalt. From Cobalt, Coleman Road can be taken to the juncture of Silverfields Road (aka. Hound Chute Road) and Glenn Lake Road, situated between Cart Lake and Peterson Lake. Glenn Lake Road leads to Kerr Lake, where it becomes the Beaver Temisk Road (aka. the Cobalt-Brady Lake Road). This road passes Brady Lake and reaches the old Ophir Mine site, approximately 7 km south of Cobalt. The next two km of road access is on a very old, boulder strewn, and heavily overgrown road, suitable for an ATV or a carefully driven small 4-wheel drive truck. The road from the Ophir Mine site to Silver Lake is fairly open, but becomes more overgrown south of Silver Lake. Halfway between the Ophir Mine site and Claim no. 4282175 there is a fork in the road as it passes Mary Ann Lake – continue south on the right side until you are adjacent to the east boundary of Claim no. 4282175; you will have to park at the top of a hill west of Chopin Lake and continue southward along the road on foot until reaching a creek which intersects the road. The claim lies east of the road, and can be accessed by following the creek.

### **PREVIOUS WORK and significance to Claim 4282175:**

Research at the Kirkland Lake Mines office, and other maps and books such as MRC-10 turn up no direct work. Previously, I had read of prospecting done just off the western boundary of this claim for silver/cobalt although nothing of note was found, and the work was not directly on the claim. A short distance south a large silver float was found years ago toward on the GEM claim, but heavy prospecting turned up only a bit of Cobalt mineralisation.

### **GEOLOGY:**

Claim 4282175 (Chopin Lake) has a contact on the East side between Lorrain granite and mafic metavolcanic – which then forms the bedrock of most of the rest of the claim. Diabase contacts this immediately north of the claim. A

northwest to southeast fault runs through Chopin Lake. This claim lies approximately midway between the Cross Lake Fault to the east and the Montreal River Fault to the west.

## **FIELDWORK:**

**Traverse 1: fieldwork**      August 17, 2016

Graeme Bishop, Mike Barrette

### **Traverse write-up provided by Graeme Bishop:**

Mike Barrette and I left the truck parked at the same place on the access road as used for Claim no. 4284088, and no. 4282176, situated between those claims on the west and Chopin Lake on the east, and continued south down the road on foot until reaching the place where the creek connected to Chopin Lake intersects the road. We collected two samples from the creek itself, which was populated by cobbles and boulders, having to remove enough rock each time to dig a suitable sample hole. To avoid carrying them, we cached the samples to be picked up during our egress from the traverse. From the creek, we walked due east through the bush toward WP1, about half a kilometer in from the road. We climbed up a slight grade, which was surmounted by a large area of tangled blow-down which occupied the north-east shoulder of the hill. Care was taken passing through this blow-down, with certain parts being traversed by walking on the tops of fallen trunks, along their lengths. Reaching the bottom of the hill we passed from the blowdown and entered a swampy area in which black ash trees were the dominant growth, at WP1. After taking a sample, we continued due east to WP2, passing through dense bush. Between WP1 and WP2 we avoided the northern fringe of a mossy swamp. At WP2 we collected another sample before heading north-north-west toward WP3. The ground became dryer and the bush was less thick toward WP3, but near WP3 itself, we encountered the eastern boundary of a wet swamp which extends south from Chopin Lake. After collecting a sample, Mike and I crossed the swamp at the most likely place, heading west-south-west toward WP4, both receiving wet boots during the attempt. The growth on both sides of the swampy area was very thick, making travel slow. We collected a sample at WP4, located near the east shore of the southern extension of Chopin Lake, and continued south about 250 meters to reach WP1 and the line of our entry. From WP1, we headed due west to reach the road, doing our best to avoid the blow-down area while each carrying a heavy load of samples. After collecting the cached samples near the creek, we walked north to the truck park area.

It should be noted that four of the samples collected during this traverse were taken on claim, other samples originate from an area just outside of the south boundary of Claim no. 4282175. The sampling-program for the traverse was designed to find KIMs associated with the target area in Claim no. 4282175; however, due to the mechanics of glacial transport, the KIMs associated with this target would also be found in the area outside but adjacent to the southern boundary of the claim, unstaked on Crown land. The intent of sampling in this manner is to determine the presence of KIMs originating up-ice, from the target area within Claim no. 4282175.

Unfortunately, due to relying on the Ice Flow Movement map [see Appendix 2: Map 5, page 18], I used a southeast direction for sampling. However, after plotting 89 recent glacial striae from Cobalt to the Bishop Claims ~20km south, we realised I should have sampled in a more southwest direction. Further sampling programs will take this information into account. We now have more efficient concentrators as well.



## L 4282175 – Chopin Lake

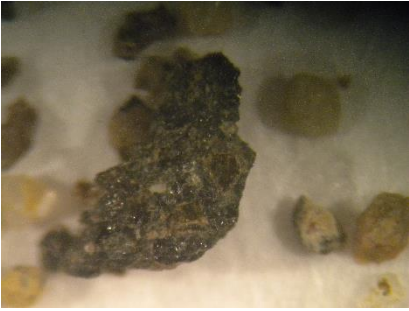
## Traverse 1: field notes August 17, 2016

Graeme Bishop, Mike Barrette

Sample #	Coordinates 17T UTM	Description
S1	0602838_E 5241030_N	
S2	0602823_E 5240745_N	On/inside claim line
S3	0602947_E 52400880_N	On/inside claim line
S4	0603017_E 5240687_N	
S5	0602876_E 5240713_N	
S6	0602721_E 5240707_N	
S7	0602712_E 5240988_N	Dry ground
S8	0602493_E 5240729_N	
S9	0602269_E 5240760_N	In creek
S10	0602216_E 5240688_N	In creek

Location #	Coordinates 17T UTM
Corner post #1	0603071_E / 5241610_N
Corner post #2	0603090_E / 5240840_N
Corner post #3	0602280_E / 5240815_N
Corner post #4	0602270_E / 5241002_N

Location #	Coordinates 17T UTM
WP1	0602721_E / 5240707_N
WP2	0603017_E / 5240687_N
WP3	0602838_E / 5241030_N
WP4	0602712_E / 5240988_N

**RESULTS:****MICROSCOPE PHOTOS OF KIMs:**

1. 3.0mm – Cr diopside/mica (with reaction rims)



2. 3.0mm – Cr diopside/mica (with reaction rims)



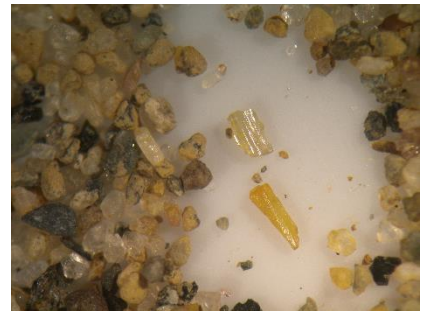
3. 2.0mm – Silver &amp; bornite



4. Erythrite crystals



5. Green/orange crystals in cons



6. 1.3mm - Crystals



7. 0.6mm – Pink/purple garnet &amp; orange grain in cons



8. Orange grains



9. 0.6mm – Orange garnet (coated) in cons



10. 0.4mm – Orange garnet in cons



11. 1.0mm – Orange sub-kelyphitic garnet



12. 0.8mm – Orange garnet (coated)





13. 2.0mm – Orange garnet, fractured



14. 0.5mm – Pink garnet



15. 0.6mm – Green crystal (kyanite?)



16. 0.5mm – Green crystal



17. 0.7mm – Cr diopside



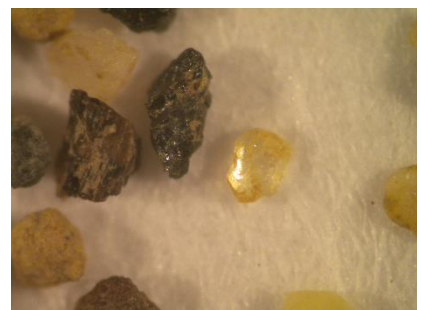
18. 0.6mm – Cr diopside



19. 1.0mm – Green stone with mica



20. 0.5mm – Cr diopside



21. 0.4mm – Bright yellow stone



22. 0.6mm – Yellow stone (frosted)



23. 0.6mm – Yellow stone (frosted)



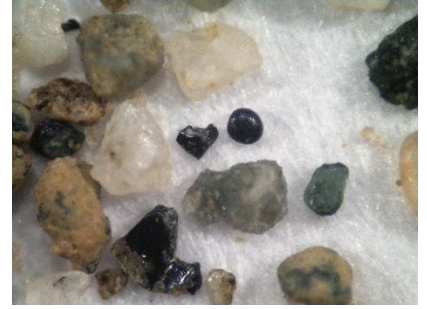
24. Sulphide



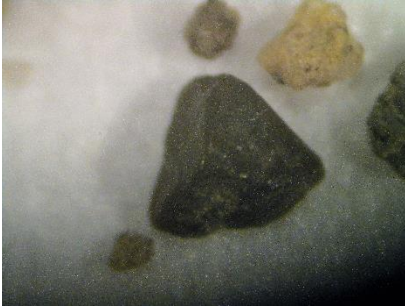
25. Mica



26. 0.6mm – Ilmenite



27. Round black grain – non-mag, Fe(II)? in cons



28. 1.0mm – Euhedral chromite, partially resorbed



29. 0.5mm – Titanite?



30. 0.9mm – Non-mag grain – Fe(II)?

## **CONCLUSIONS & RECOMMENDATIONS FOR FUTURE WORK:**

The results of till sampling were interesting but not (yet) conclusive. In I have since determined my sampling program was not quite down-ice glacial direction due to using a large scale regional map [Appendix 2: Map 5, page 18], I have since created a local scale map [Appendix 2: Map 6, page 19], so resampling will be done and concentrated for KIMs to recheck these results.

As the photographs show, there are interesting grains, including silver and erythrite. The silver/cobalt potential of the claim is actually quite good [see Geology, page 3], I've been approached several times by a company looking for cobalt/silver. After a number of odd grains (similar to some in the Results section) were microprobed in Sudbury, I'm finding some very interesting correlations to these grains and kimberlite/diamonds. That investigation is still ongoing and will be included in future reports.

[See References & Resources, page 25, for more detailed information]

**EXPENSES of Assessment Work Claim L 4282175 (Aug 17, 2016 to Nov 27, 2017)**

<b>Work Type</b>	<b>Units of work</b>	<b>Cost per unit of work</b>	<b>Total Cost</b>
Till sample collection x 1 traverse Aug 17, 2016	2 man days (Graeme Bishop: 1day/ Mike Barrette: 1 day)	\$285 per day	\$ 570
Till sample processing, HMC, separating into 6 mesh fractions, sorting, microscope picking and interpretation of KIMs and logging results, microphotography of select grains & KIMs picked, computer storage of microphotos, storage of picked grains & concentrates picked	Tony Bishop:4 samples	\$500 per sample	\$2,000
Sampling plan, report preparation, map compilations, interpretations	Tony Bishop: 1 day	\$500 per day	\$ 500
Clerical support for reports & technical computer support	Chloë Bishop	\$200	\$ 200
Transportation based on OPA OEC rate	1 return trip to claim 240 km	\$0.50 per km x 240 km= \$120	\$ 120
Food re 1 traverse	2 people x 1 day	\$35/day	\$ 70
<b>TOTAL VALUE OF ASSESSMENT WORK</b>			<b>\$3,460</b>

## History of Development in the Cobalt Area

Before 1900, when the surveyors for the right-of-way of the Temiskaming and North Ontario (T.&N.O.) Railway worked north from North Bay past Long Lake Station [Cobalt, ON] up to Cochrane, there was limited activity in what is now Lorrain Township. Logging expeditions entered Lake Temiskaming after coming up the Ottawa River from Montreal as early as the late 1700s and some mid-to-late 1800s colonization of Lake Temiskaming on the Quebec shore. A farming community was settled in the 1880s on Paradis Bay in Lorrain Township, in addition to a mission of oblate Fathers, and the posts of the Northwest Company and Hudson Bay Trading Companies not far away on Lake Temiskaming. Charles Farr founded Haileybury in the late 1880s and petitioned the government for railway access to facilitate colonization of the area. A colonization road did exist which reached the southernmost part of Lake Temiskaming on the Ontario side, but was never widely used.

The first government infrastructure nearest the claim was the building of the T. & N.O. railway which passed to the west, reaching Cobalt, Ontario in 1903-1904, where a silver and cobalt-nickel arsenide deposit was discovered. The mining boom which followed the discovery of silver at Cobalt often dominated the geological interest in the area for many decades, and although prospectors and geologists closely explored the terrain all around Cobalt (leading to the settling of Silver Centre south of these claims in 1907-08), most of the exploration was guided by the search for more silver and cobalt-nickel arsenide deposits.

In the 1980s, there was renewed interest in the geology of the area, this time in search of diamond-bearing kimberlite pipes, stimulated in part by the discovery of an 800-carat yellow diamond by a settler “somewhere in the Cobalt area” in 1904 (which was sent out and cut into a number of stones by Tiffany’s of New York, and some are still to this day retained and treasured by great-granddaughters), but became overshadowed by the vastly rich silver discoveries of the day. Soil sampling and geophysics by companies like Cabo, Tres-Or Resources Ltd., and others in addition to exploration by the Ontario Geological Survey, uncovered many kimberlite pipes/dykes, some diamondiferous, which helped to outline the existence of a Lake Temiskaming Kimberlite Field on the Lake Temiskaming structural zone, which appears to have intruded the Canadian Shield in this region approximately 148 million years before present. Deep sonar has also revealed circular features beneath the water of Lake Temiskaming itself which are inferred to be kimberlite pipes.

As well, a number of diamondiferous lamprophyres have been discovered near Cobalt, including one just NW of Latour Lake in the south part of Lorrain Twp, and another on the “Nip” Hill in Cobalt, as well as others.

## Map Appendix Overview

**MAP 1:** Claim Location

**MAP 2:** Road Access

**MAP 3:** Geological Compilation (portion of OGS P.3581)

**MAP 4:** Mag Map (portion of OGS Map 82 067)

**MAP 5:** Ice Flow Movement (from OGS OFR 6088)

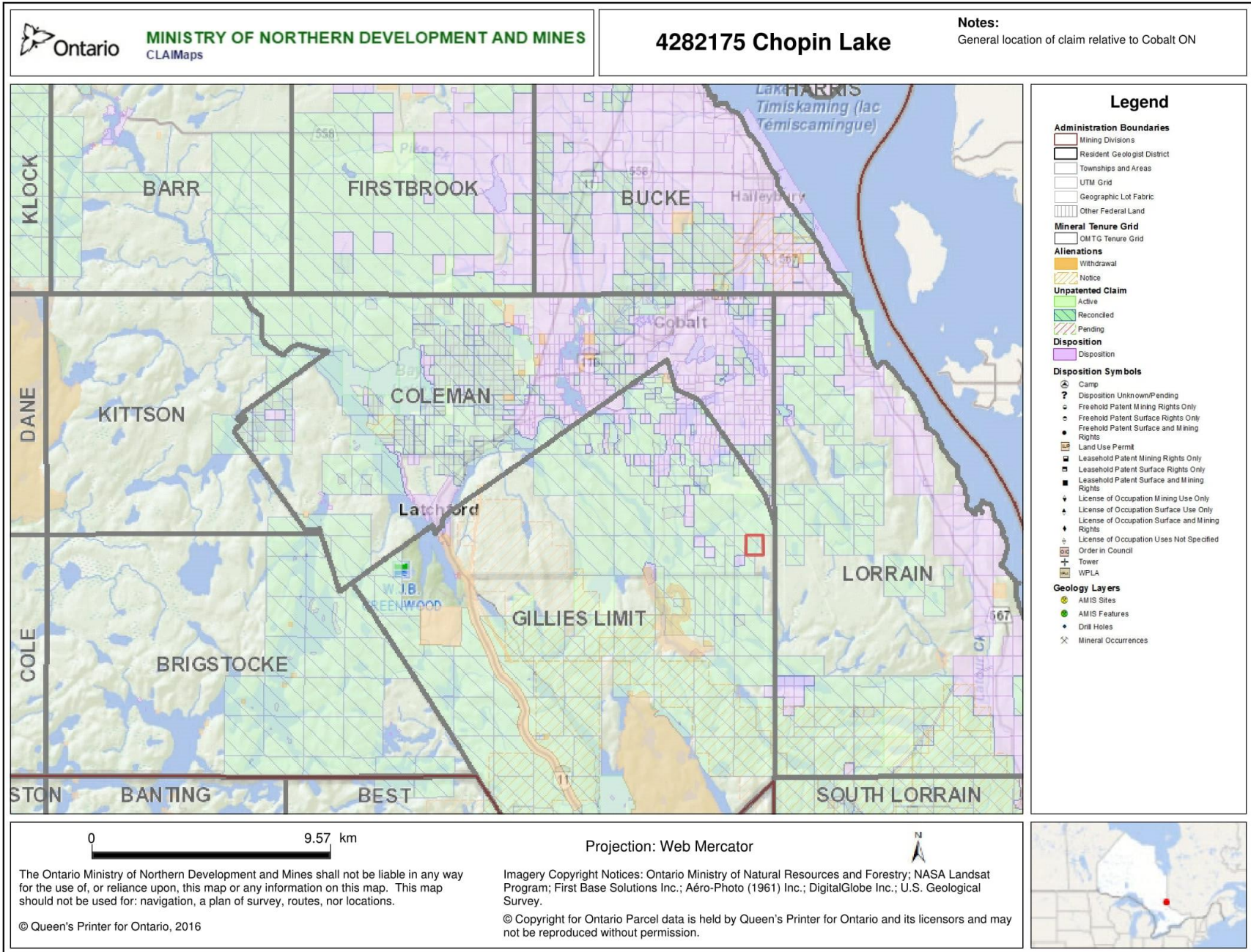
**MAP 6:** Local Glacial Flow Direction

**MAP 7:** Lake Temiskaming Structural Zone (from OGS OFR 6088)

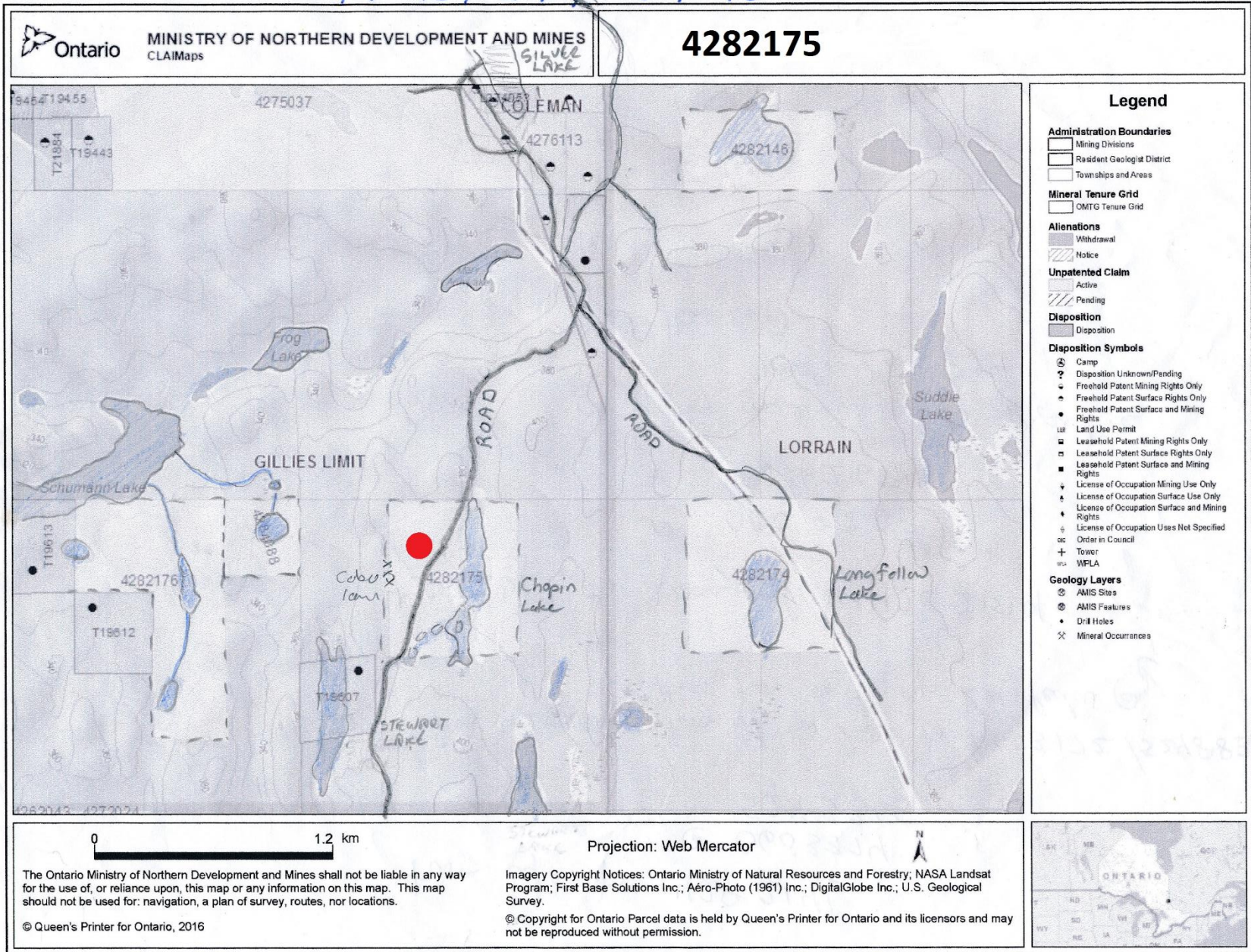
**Map 8:** Detailed Local Faults

**Map 9:** Down-ice glacial direction – tilted view (Google Earth)

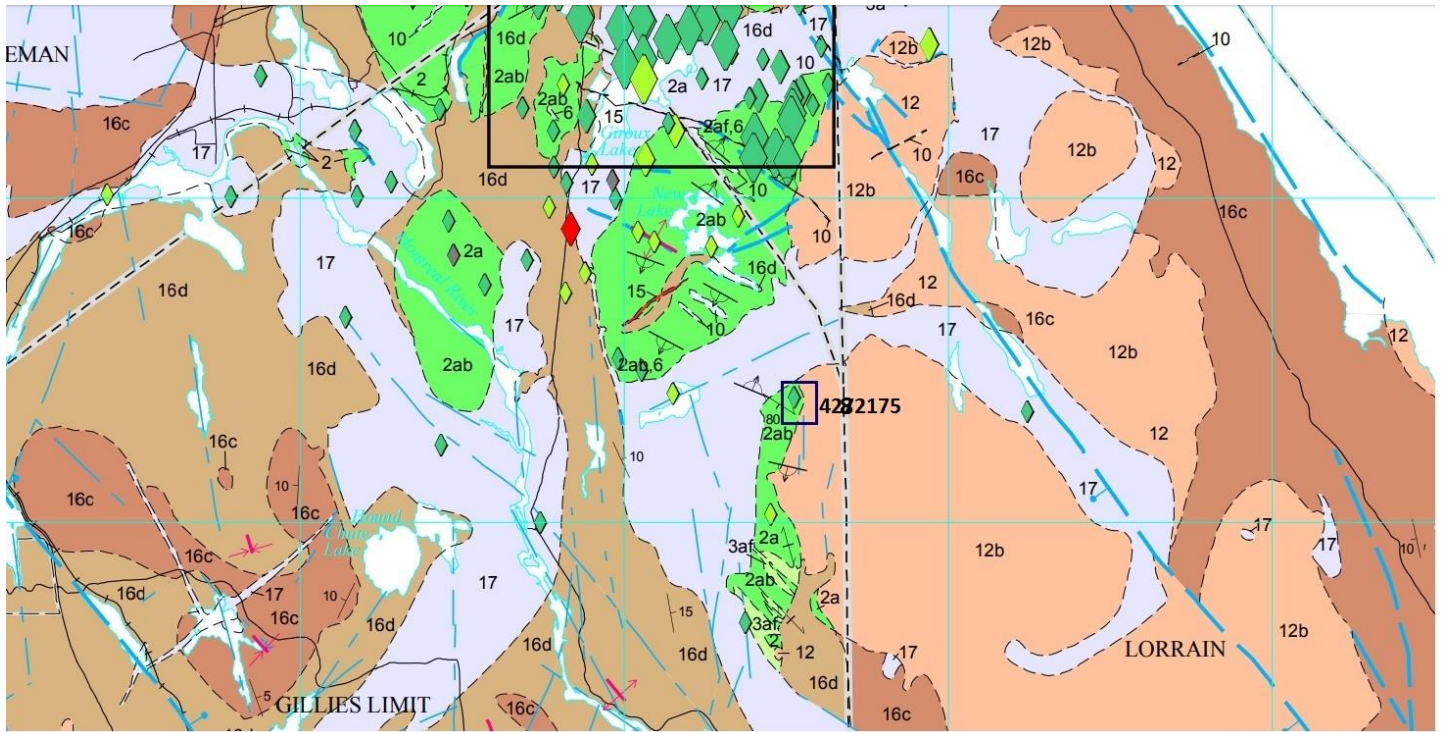
**Map 10:** Straight-down view of Chopin Lake (Google Earth)



ROAD MAP TO 4282174 / 2175 / 2146 / 4088 / 2176







Scale 1:100 000

Claim #428 2175



LEGEND<sup>abcd</sup>

PRECAMBRIAN

PROTEROZOIC

NIPISSING

17 Mafic Intrusive Rocks: diabase, granophyre

HURONIAN SUPERGROUP

16 Sedimentary Rocks

16a Bar River Formation<sup>o</sup>  
16b Gordon Lake Formation<sup>o</sup>  
16c Lorrain Formation

16d Gowganda Formation

16f Mississagi Formation

ARCHEAN

NEOARCHEAN

12 Felsic to Intermediate Intrusive Suite  
12a Tonalite, granodiorite, trondhjemite  
12b Granite, quartz monzodiorite, quartz diorite  
12c Schistose textured

INTRUSIVE CONTACT

8 Timiskaming-Type Clastic Metasedimentary Rocks  
8a Arenite  
8b Wacke  
8c Conglomerate  
8d Mudstone, siltstone  
8e Schistose textured

UNCONFORMITY

6 Clastic Metasedimentary Rocks  
6a Arenite  
6b Wacke  
6c Conglomerate  
6d Mudstone, siltstone  
6f Schistose textured

2 Mafic (to Intermediate) Metavolcanic Rocks/Intrusions  
2a Massive flows  
2b Pillowed flows

Map Portion courtesy of



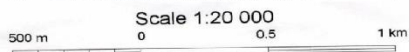
Ontario Geological Survey

MAP P.3581


PRECAMBRIAN GEOLOGY

GEOLOGICAL COMPILATION  
OF THE COBALT-  
TEMAGAMI AREA,  
ABITIBI GREENSTONE BELT

Map 3



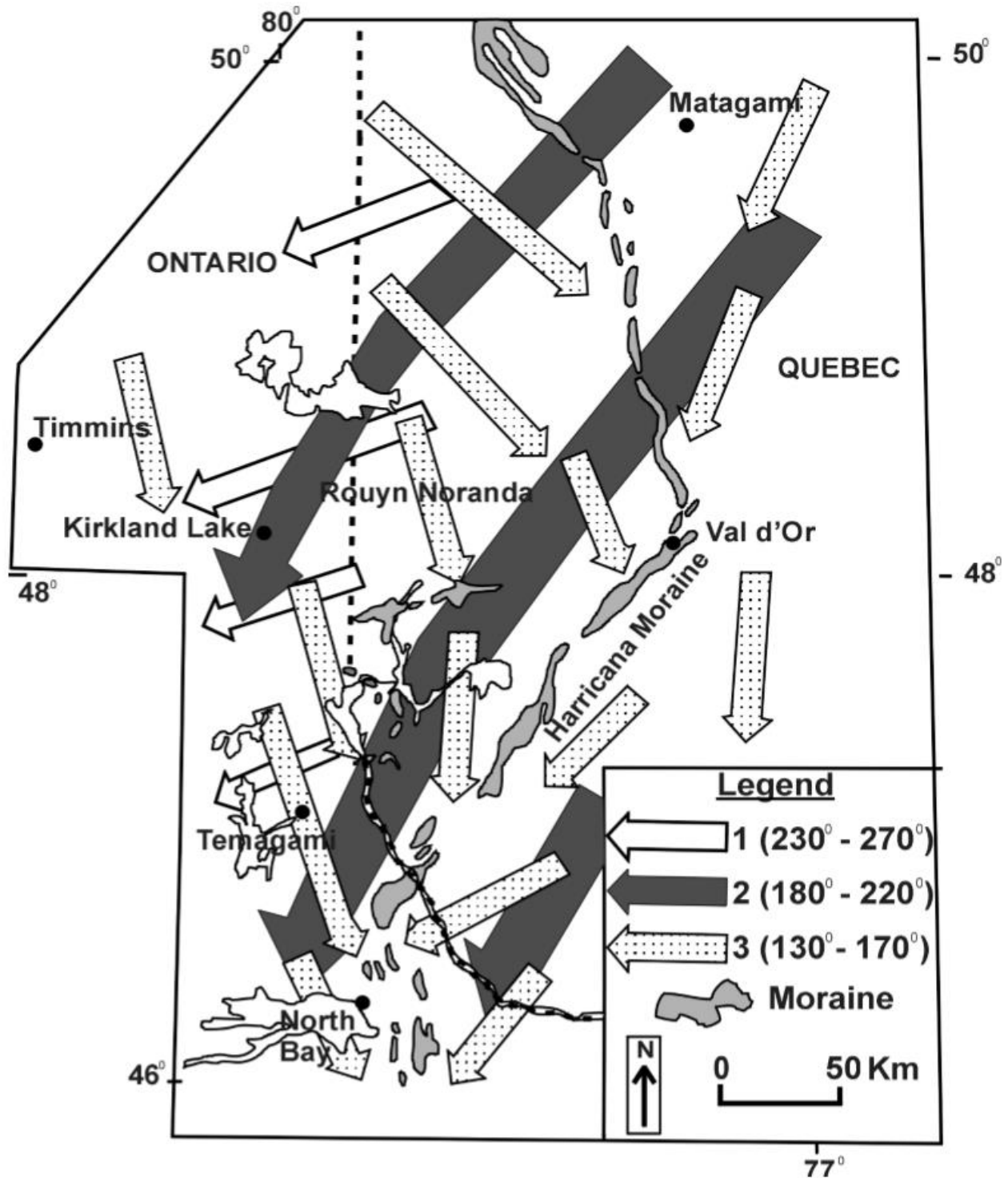
Scale 1:20 000

Map Portion courtesy of  
  
Ontario Geological Survey  
MAP 82 067  
AIRBORNE MAGNETIC AND  
ELECTROMAGNETIC SURVEYS  
TEMAGAMI AREA



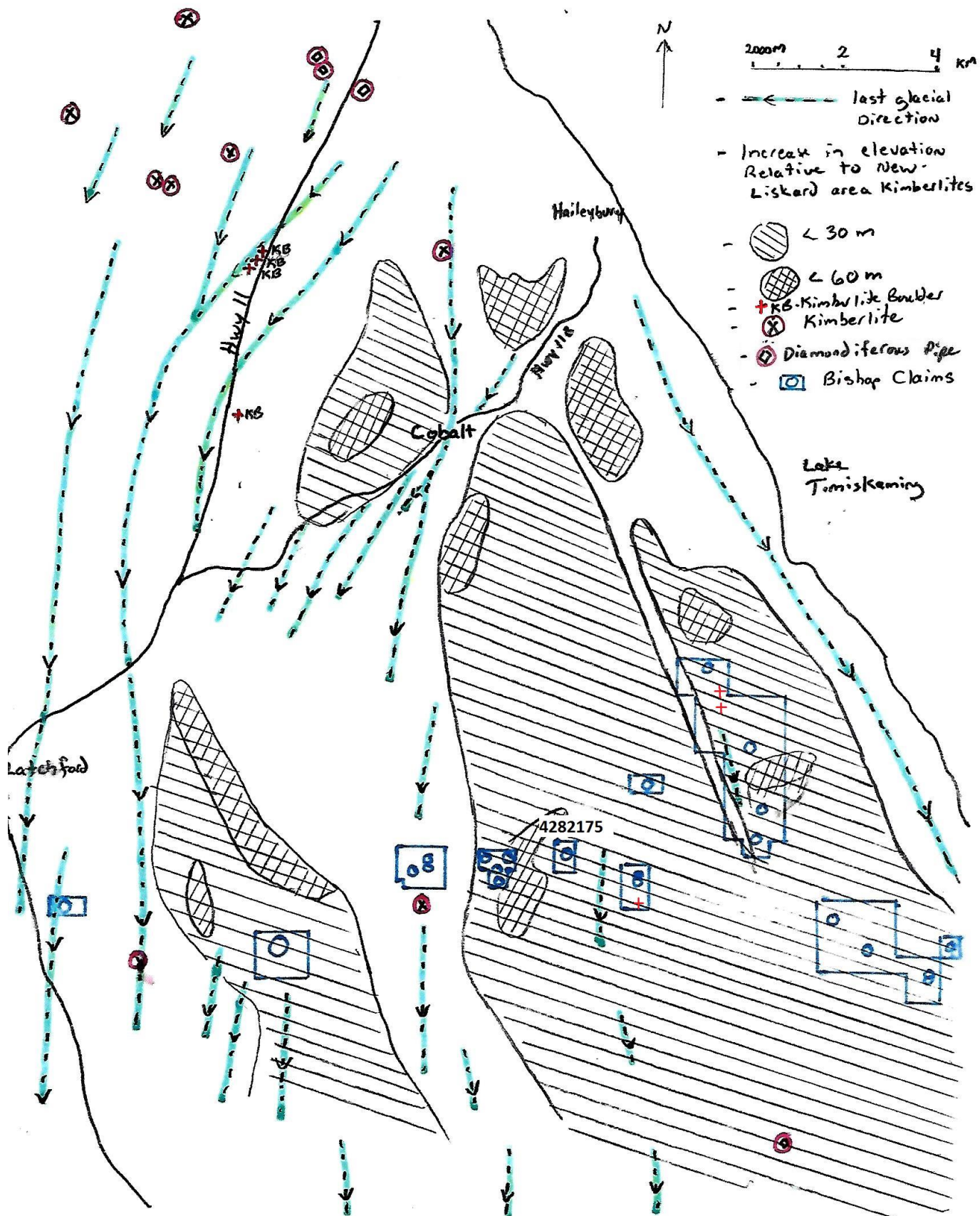
Claim #428 2175

Map 4

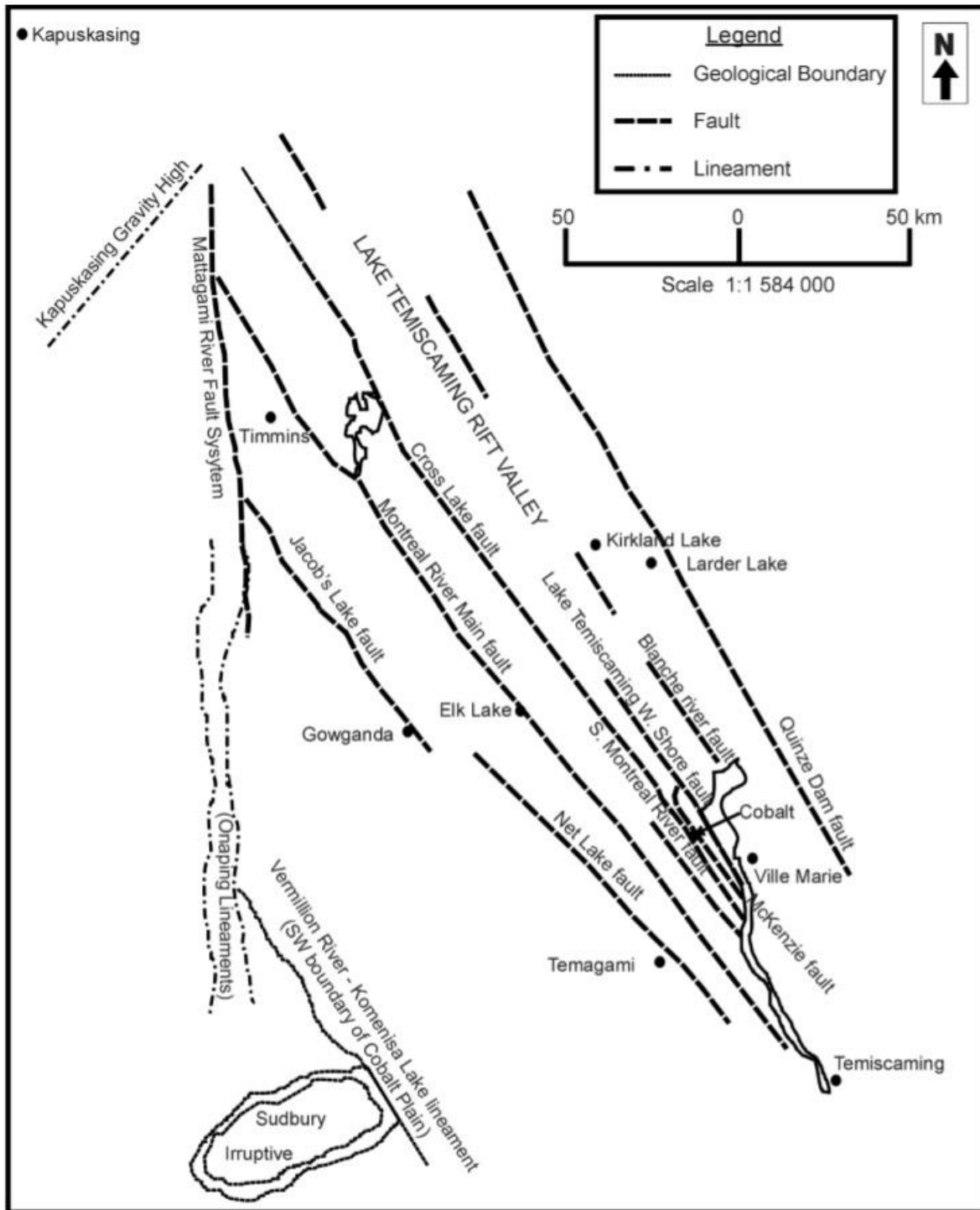


Ice flow movement in the Abitibi-Temiskaming area. The oldest ice flow event is the number 1 movement, the youngest the number 3 movement (after Veillette 1986).

Used courtesy of  
Ontario Geological Survey  
Open File Report 6088

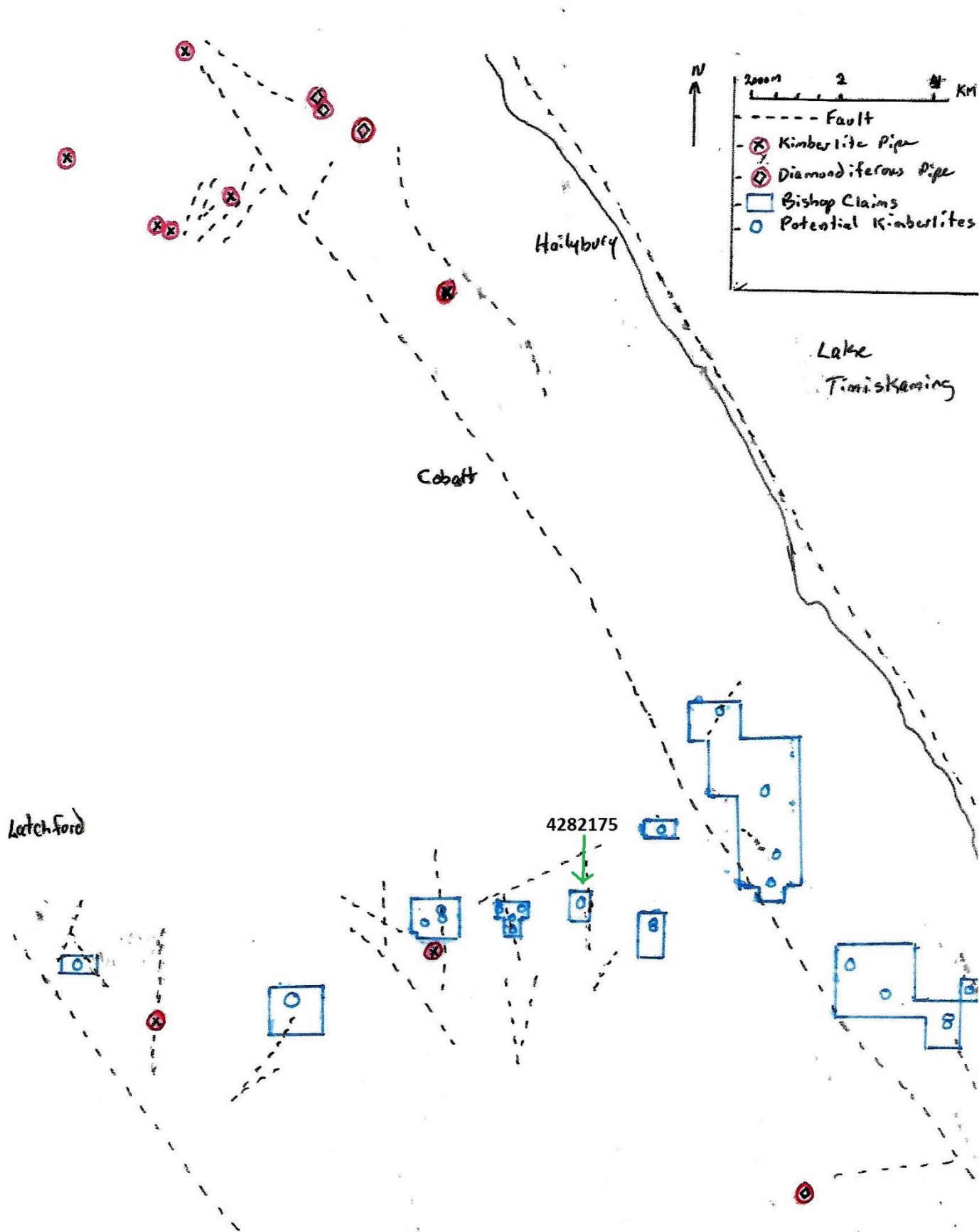


Map 6

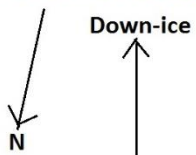


The Lake Temiskaming Rift Valley (also known as the Lake Temiskaming Structural Zone) (after Lovell and Caine 1970).

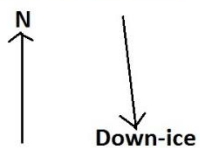
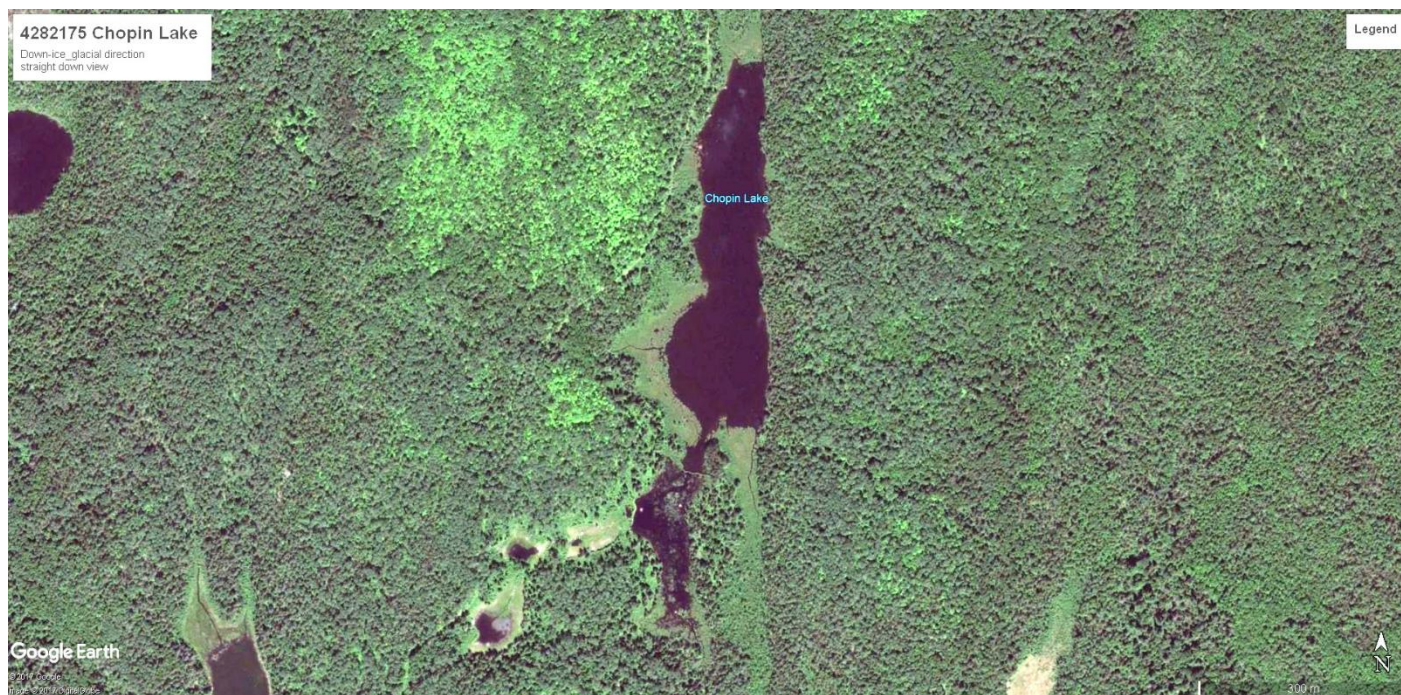
Used courtesy of  
Ontario Geological Survey  
Open File Report 6088



Map 8



Map 9



Map 10

In the interest of brevity, this report does not include the following. Please refer to Bishop, B.A. (2016), Bishop B.A. (2017a), Bishop B.A. (2017b), and Bishop, B.A. (2017c) for more detailed information pertaining to these appendices.

- **Appendix 3, Advances in Diamond Exploration in Canada: Understanding the Importance of Non-Magnetic Signatures and Geo-Chemical and Structural Geology**
- **Appendix 4, Methodologies for Field Work and Till Sample Processing**
- **Appendix 5, Sluice Efficiency Test Results**
- **Appendix 6, Flow Sheet for Concentrating and Retrieving KIMs from Till & Stream Samples**
- **Appendix 7, Equipment List**
- **Appendix 8, Equipment Photos**
- **Appendix 9, Reference Photos to Arctic Star and North Arrow Announce Drilling at Redemption Diamond Project**



## Statement of Qualifications:

I, Brian Anthony (Tony) Bishop p/l #A44063 of Kenogami (RR#2 Swastika, ON), hereby certify as follows concerning my report on Claim L 4282175 in Gillies Limit, Larder Lake Mining Division:

I have been prospecting and placer mining part-time for 43+ years in Ontario, British Columbia, and Nova Scotia (which led to writing a book *The Gold Hunter's Guide to Nova Scotia* (Nimbus Publishing, 1988, ISBN 0-920552-93-9) which was used in prospecting courses in Nova Scotia). I have held an Ontario Prospector's License for 36 years, and was issued a Permanent Prospector's License in 2005. I have completed a number of prospecting courses given by the Ministry, and have my Prospector's Blasting Permit. I was one of the directors on the Northern Prospectors Association (NPA) in the early years when Mike Leahy revitalized/resurrected the NPA in Kirkland Lake, and with Mike, initiated the annual gold panning event as part of Kirkland Lake Gold Days.

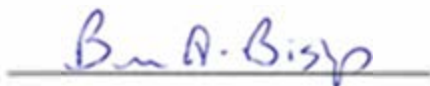
As well, I sold and used small scale mining and concentrating/processing equipment for over 20 years. This included instructing others in their use.

On short term contracts I have performed specialized work for Cobatec, Macassa, Castle Silver Mines Inc., Gold Bullion Development Corp, as well as short stints in Ecuador and Montana.

The last three years I have devoted to full-time diamond exploration. This has included 1,000+ hours of research from many diverse sources on exploration and processing techniques.

Drawing on this research and my many years of practical experience I have assembled a complete till processing lab I feel rivals many commercial ones. Importantly, I sometimes exceed their results by testing a wider range of samples' fraction sizes and as a result have found a number of kimberlite indicator minerals, notably a number of indicators in the 2.0 – 3.0 mm size that are larger than the usual upper cut-off for commercial labs' mesh sizes. Additionally, I pick far more potential KIMs than any lab can reasonably do, given time/cost constraints. Redundancy tests are routinely performed to monitor potential losses of the KIMs and I feel my equipment and techniques closely match that of the industry.

Signed:



Brian Anthony (Tony) Bishop

November 27, 2017

## References & Resources:

**Please refer to the following reports by Brian Anthony Bishop for full reference & resource list:**

Bishop, B.A. (2016) Work Assessment Report, Claim L4273040, Lorrain Township, Larder Lake Mining Division, MNDM, Oct 3, 2016

Bishop, B.A. (2017a) Work Assessment Report, Claim L4284088, Gillies Limit, Larder Lake Mining Division, MNDM, Jan 26, 2017

Bishop, B.A. (2017b) Work Assessment Report, Claims L4282189 and L4282187, Lorrain Township, Larder Lake Mining Division, MNDM, Nov 2, 2017

Bishop, B.A. (2017c) Work Assessment Report, Claim L4282172, Gillies Limit, Larder Lake Mining Division, MNDM, Nov 27, 2017

## **Acknowledgements**

To the following individuals (alphabetically listed) who provided geological, technical, historical, and other important help relating to Claim L 4282175: Chloë Bishop, Graeme Bishop, Jesse Bishop, Shelley Bishop, David Crouch, Mike Leahy, Doug Robinson, and the staff of the K.L. MNDM.

Appreciation is expressed also to staff at MNDM Sudbury for their assistance with completing MNDM forms and procedures.

Thank you.