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**N.T.S. 032D04**

**REPORT ON ROCK SAMPLING  
CLAIM: 4284069  
McVITTIE TOWNSHIP, ONTARIO  
Larder Lake Mining Division**

**Written by: Robert J. Dillman  
8901 Reily Drive  
Mount Brydges, Ontario**

**Dr. Jim Renaud  
21272 Denfield Road,  
London, Ontario**

**December 5, 2016**

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## **Summary**

This report summarizes the results of a rock sampling and petrographic program on claim 4284069 located in McVittie Township, Ontario. During the program, two rock samples were collected for assay and a third sample was selected for petrographic examination. The samples were collected on September 20, 2015 by property owners: Robert Dillman and James M. Chard.

Both rock samples tested positive for nickel using Dimethylglyoxime powder and pentlandite was identified during the petrographic examination. Assays confirmed the presence of anomalous nickel and vanadium. Petrographic examination has identified the host rock is a vesicular metabasalt that has been initially metamorphosed and subsequently hydrothermally retrogressed to epidote-chlorite assemblages.

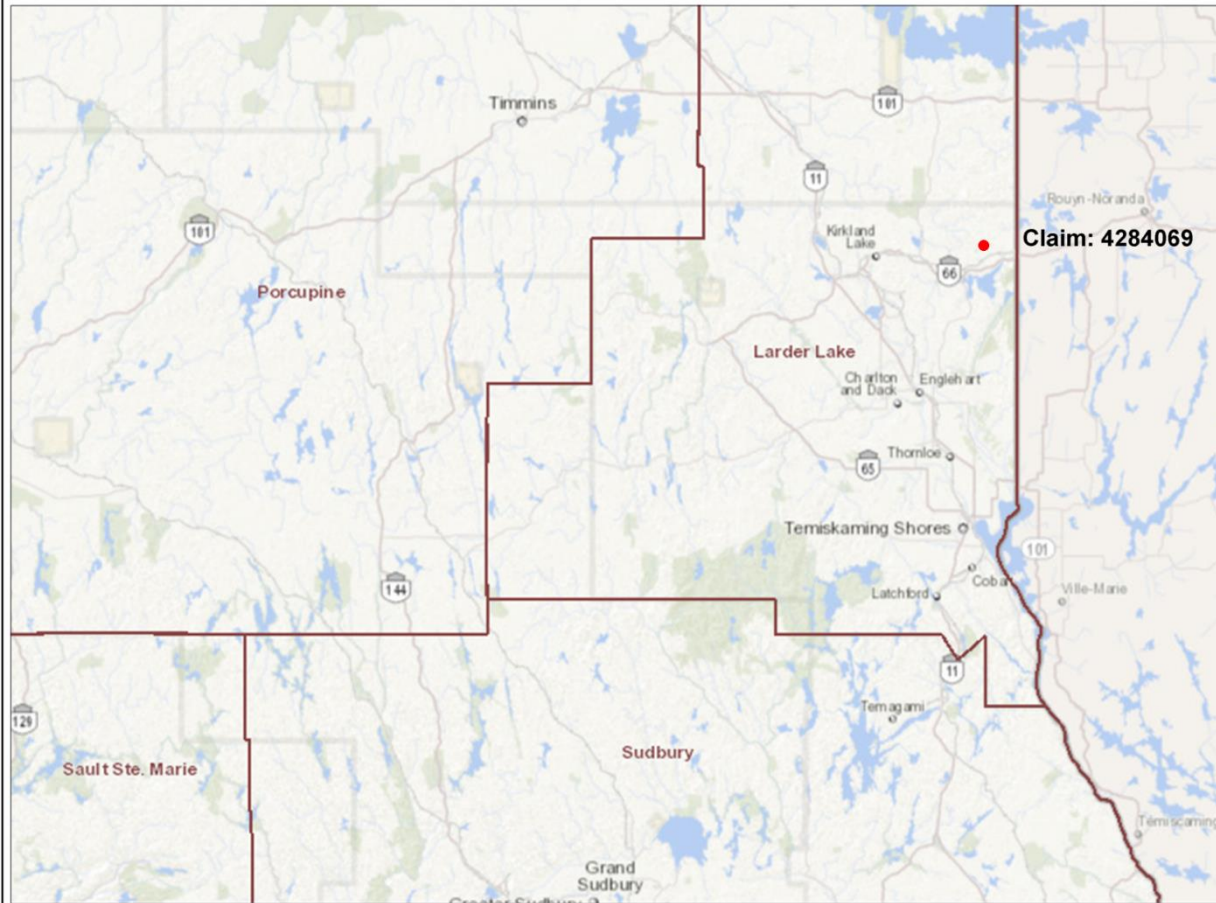
## **Location, Property Ownership, Access**

Claim 4284069 is located in the northeast section of McVittie Township in the Larder Lake Mining Division in northeast Ontario (Figure 1).

The property is situated 10 kilometres northeast of the town of Larder Lake located on provincial highway 66 (Figure 2). From Larder Lake, the property can be reached by travelling east on Highway 66 for a distance of 1.2 km to the intersection of the Larder Station Road. Travelling north for a distance of 9.5 km, claim 4284069 is located 450 metres east of the Larder Station Road. A hunters trail can be followed part way to the property.

The property is within the Larder Lake Mining Division and consists of a single non-patented claim unit covering a total area of 15.3 hectares (Figure 3). The logistics of the mining claims are summarized in Table 1. Title to claim 4284069 is equally held by:

Robert J. Dillman of Mount Brydges, Ontario,  
Jim Renaud of London, Ontario, and  
James M. Chard of Cordova Mines, Ontario



Legend

- Administration Boundaries**
  - Mining Divisions
  - Resident Geologist District
  - Townships and Areas
  - UTM Grid
  - Geographic Lot Fabric
  - Other Federal Land
- Mineral Tenure Grid**
  - OMTG Tenure Grid
- Alienations**
  - Withdrawal
  - Notice
- Unpatented Claim**
  - Active
  - Reconciled
  - Pending
- Disposition**
  - Disposition
- Disposition Symbols**
  - Camp
  - Disposition Unknown/Pending
  - Freehold Patent Mining Rights Only
  - Freehold Patent Surface Rights Only
  - Freehold Patent Surface and Mining Rights
  - Land Use Permit
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  - Leasehold Patent Surface Rights Only
  - Leasehold Patent Surface and Mining Rights
  - License of Occupation Mining Use Only
  - License of Occupation Surface Use Only
  - License of Occupation Surface and Mining Rights
  - License of Occupation Uses Not Specified
  - Order in Council
  - Tower
  - WPLA
- Geology Layers**
  - AMIS Sites
  - AMIS Features
  - Drill Holes
  - Mineral Occurrences

0 79.1 km

Projection: Web Mercator



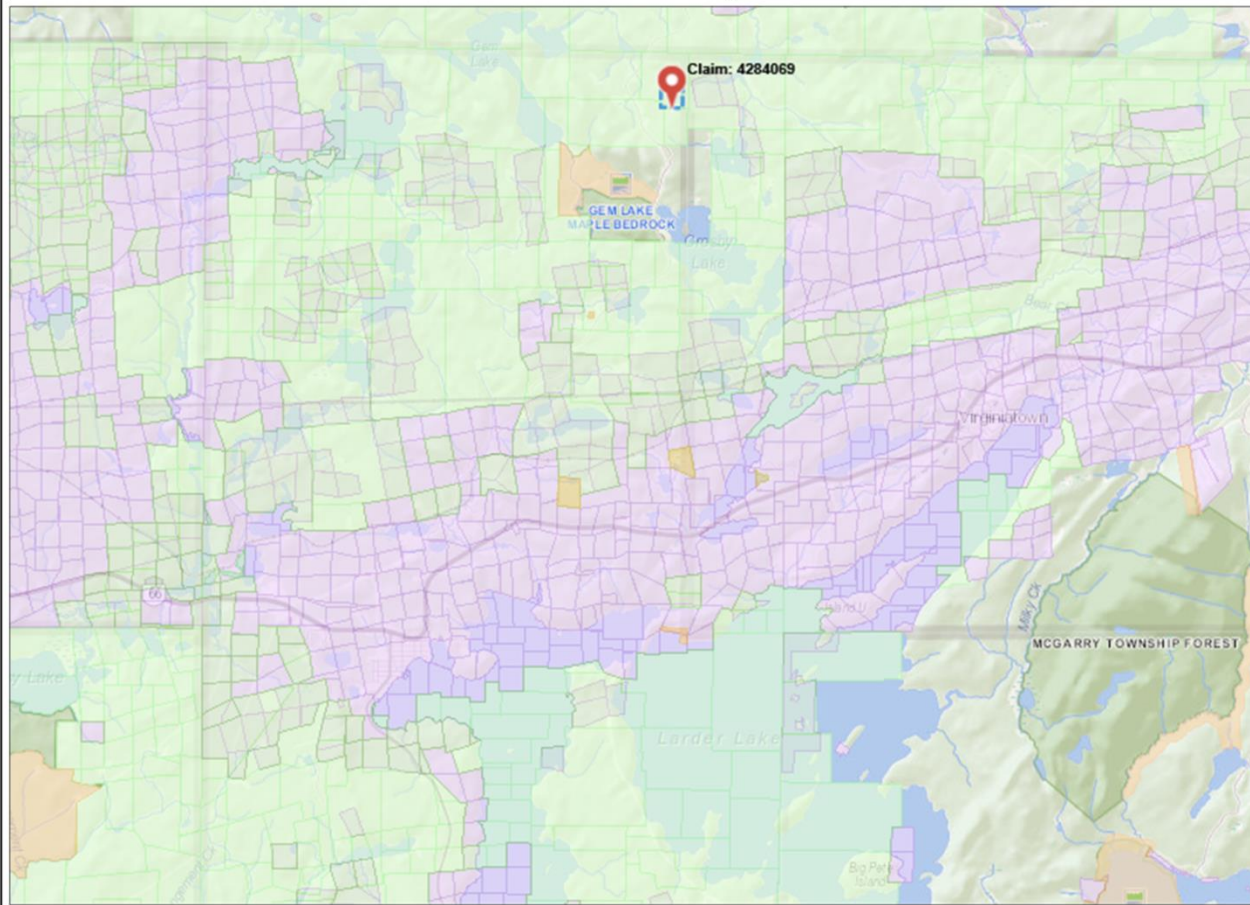
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  - Mining Divisions
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  - License of Occupation Surface and Mining Rights
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  - AMIS Sites
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0 4.9 km

Projection: Web Mercator



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# CLAIM MAP

Notes:  
Figure 3.



### Legend

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- Other Federal Land

**Mineral Tenure Grid**

- OMTG Tenure Grid

**Alienations**

- Withdrawal
- Notice

**Unpatented Claim**

- Active
- Reconciled
- Pending

**Disposition**

- Disposition

**Disposition Symbols**

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- Disposition Unknown/Pending
- Freehold Patent Mining Rights Only
- Freehold Patent Surface Rights Only
- Freehold Patent Surface and Mining Rights
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- Leasehold Patent Surface and Mining Rights
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- License of Occupation Surface Use Only
- License of Occupation Surface and Mining Rights
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**Geology Layers**

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## Table 1. Claim Logistics

### Claim 4284069, McVittie Twp., Ontario

Claim	Location	Number of Units	Size Hectares	Assessment Due Date	Amount Due	Assessment Bank
4284069	No.1 Post: Zone 17 600184mE, 5337580mN	1 unit	15.2 ha	12/ 11/ 2016	\$400	\$0

Title:

33.33%

Robert J. Dillman

8901 Reily Drive Mount Brydges, Ontario N0L 1W0

33.33%

Jim Renaud

21272 Denfield Road, London, Ontario N6H 5L2

33.33%

James M. Chard

3495 Country Road 48 Cordova Mines, Ontario K0L 1Z0



## **Land Status and Topography**

Claim 4284069 is situated on uninhabited Crown Land. The property is forested with spruce and balsam. There are no building structures or electrical power lines close to the property.

The claim is centered over a partially circular topographic depression. The depression is usually filled with water and forms a small pond held back by a beaver dam. At the time of the property investigation, the dam was broken and the depression was flat and dry.

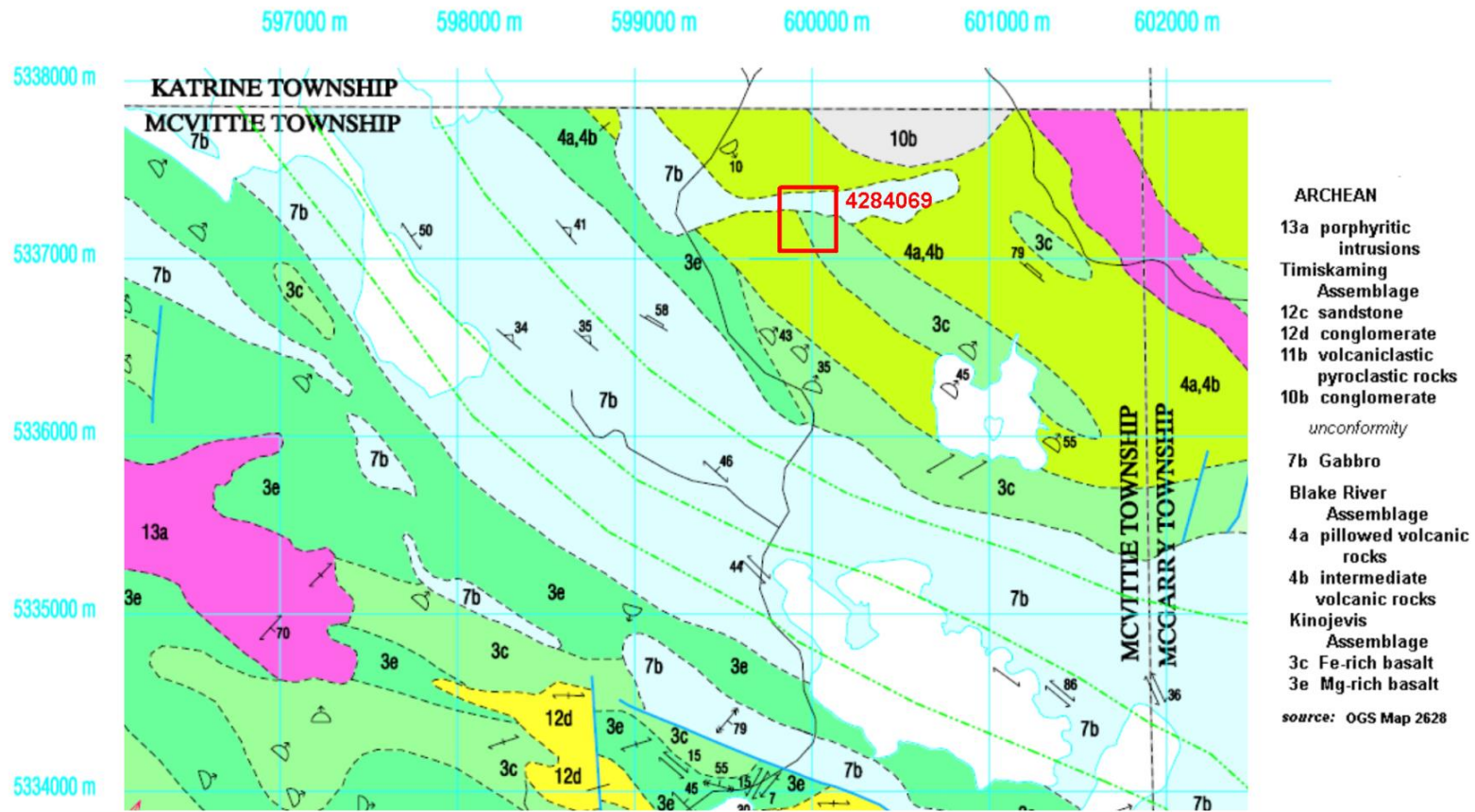
The property is at a mean elevation of 315 metres above sea level. Slightly higher elevations occur along the north and southeast boundaries of the property.

The claim is mostly covered by glacial outwash sand and recent swamp deposits. Outcrop exposure is poor. Several outcrops can be found in the southeast section of the claim and in the vicinity of the pond in the central region of the claim.

## **Regional and Local Geology**

Claim 4284069 is situated in the Larder Lake area of the Abitibi Greenstone Belt. The Abitibi Greenstone Belt consists of a variety of Precambrian metavolcanic and metasedimentary rocks extending from Timmins, Ontario to the Val D'Or region of Quebec. The property is on the south limb of a regional syncline structure and approximately 9 km north of the Cadillac-Larder Break.

The geology of claim 4284069 is depicted in Figure 3. The property is underlain by pillowed to intermediate metavolcanic rocks of the Lower Blake River Formation dated 2704 - 2701 Ma and iron to magnesium rich mafic metavolcanic rocks of the Kinojevis Assemblage. Units strike northwest and dip moderately towards the northeast. The northern section of the claim is crossed by a gabbro sill.



**Figure 4.**  
**Geology of Claim 4284069**  
**McVittie Twp., Ontario**

## History of Exploration

In 1941, the geology of McVittie Township was described in detail by J.E. Thompson on behalf of the Ontario Ministry of Northern Development and Mines.

In 1979, McVittie Township was covered by an airborne electromagnetic and magnetic survey by the Ontario Geological Survey.

In 1985, Kerr Addison Mines Ltd. explored a large area in the northeast section of McVittie Twp. which included the area covered by claim 4284069. Surveys by Kerr Addison included: geological mapping, stream sediment sampling, ground magnetometer and VLF surveys. The company reports pyrite mineralization in outcrops exposed in the vicinity of the pond in the center of the claim 4284069. The outcrops are mapped as intermediate volcanic rock, breccia, porphyritic rock and amygdaloidal flows. The area was not covered by their geophysical surveys. A stream-sediment sample was taken in the creek draining the pond but the sample did not contain any gold.

In 1988, Regal Star Resources Limited completed an Induced Polarization (IP) survey over their claim block which included the area covered by claim 4284069. The survey revealed claim 4284069 is located at the intersection of northwest trending and east-west trending conductive features.

In 2000, the Ontario Geological Survey completed an airborne magnetic and electromagnetic survey over the Kirkland Lake area. The survey included McVittie Township and the area covered by claim 4284069.

In 2006, SouthernEra Diamond Inc. prospected the area around the pond in the centre of claim 4284069. The company reported finding outcrops of rusty, altered grano-diorite exposed on the peninsula extending from the west side of the pond. Later in the same year, the company completed a ground magnetometer survey which identified a positive bulls-eye type magnetic feature centred just east of the peninsula under the pond.

## **Survey Dates and Personnel**

Claim 4284069 was investigated on September 20, 2015 by claim owners: Robert Dillman and James M. Chard. Several hours were spent examining outcrops located in southeast corner of the claim and in the vicinity to the pond in the center of the claim.

## **Survey Logistics**

The area traversed on claim 4284069 is shown in Figure 5. Approximately 1,100 meters were traversed.

Two rock samples were collected from outcrops in the vicinity to the pond. The locations of the samples and the assay results are summarized in Table 2. Sample locations and assay results are also shown in Figure 5. The UTM coordinates for each sample site was recorded using a Garmin GPS model GPSmap 60Cx. The GPS unit was set to NAD 83, Zone 17.

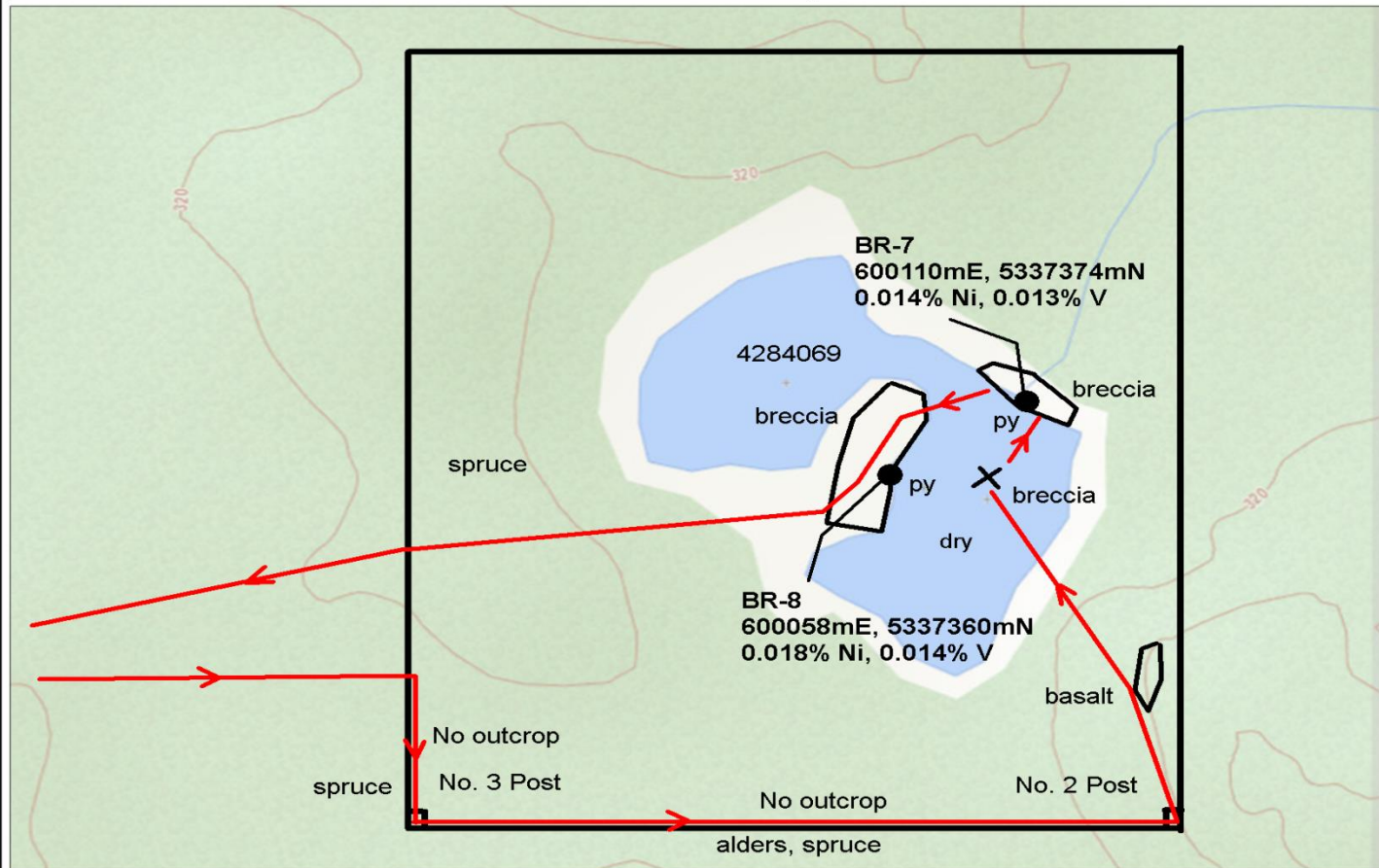
The rock samples were sent for analysis at AGAT Laboratories in Mississauga, Ontario. Both samples were assayed for gold, platinum and palladium using a standard Fire Assay method. At the lab, each sample was weighed and 3.0 kg of each sample was removed and dried at 1,050C. The 3kg pulps were crushed and passed through a 2mm screen until 75% of the material was sieved. From the -2mm fraction, 250g was selected and further pulverized until 85% had passed through a 75 micron screen. From the -75 micron fraction, a 30 g charge was selected for fire assay by lead (Pb) fusion technique. The amount of gold in each sample was measured by Atomic Absorption Spectrometry (AAS). The samples were subsequently assayed by a multi-element Ore-grade package using a 2 acid digestion method involving Sodium Peroxide Fusion and Aqua Regia Digest. After digestion, elements were measured by Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES).

An assay certificate from AGAT Laboratories is appended to this report.

An additional rock sample was collected for petrographic examination from sample site BR-8 (Figure 6). The rock sample was sent for petrographic examination at Renaud Geological Consulting Ltd. in London, Ontario. Dr. Renaud's petrographic report is appended to this report.



Figure 5.  
Traverse and Rock Sample Location Map  
Claim 4284069, McVittie Twp, Ontario



### Legend

**Administration Boundaries**

- Mining Divisions
- Resident Geologist District
- Townships and Areas
- UTM Grid
- Geographic Lot Fabric
- Other Federal Land

**Mineral Tenure Grid**

- OMTG Tenure Grid

**Alienations**

- Withdrawal
- Notice

**Unpatented Claim**

- Active
- Reconciled
- Pending

**Disposition**

- Disposition

**Disposition Symbols**

- Camp
- Disposition Unknown/Pending
- Freehold Patent Mining Rights Only
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- Freehold Patent Surface and Mining Rights
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- Leasehold Patent Mining Rights Only
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- License of Occupation Mining Use Only
- License of Occupation Surface Use Only
- License of Occupation Surface and Mining Rights
- License of Occupation Uses Not Specified
- Order in Council
- Tower
- WFLA

**Geology Layers**

- AMIS Sites
- AMIS Features
- Drill Holes
- Mineral Occurrences

**Legend Symbols**

- ◇ × outcrop
- rock sample location
- ➔ traverse
- py pyrite



Projection: Web Mercator



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Table 2.  
 Rock Sample Locations, Descriptions and Assay Results  
 Claim 4284069, McVittie Twp., Ontario  
 Assays by: AGAT Laboratories, Mississauga, Ontario

Fire Assay, ICP-OES Finish

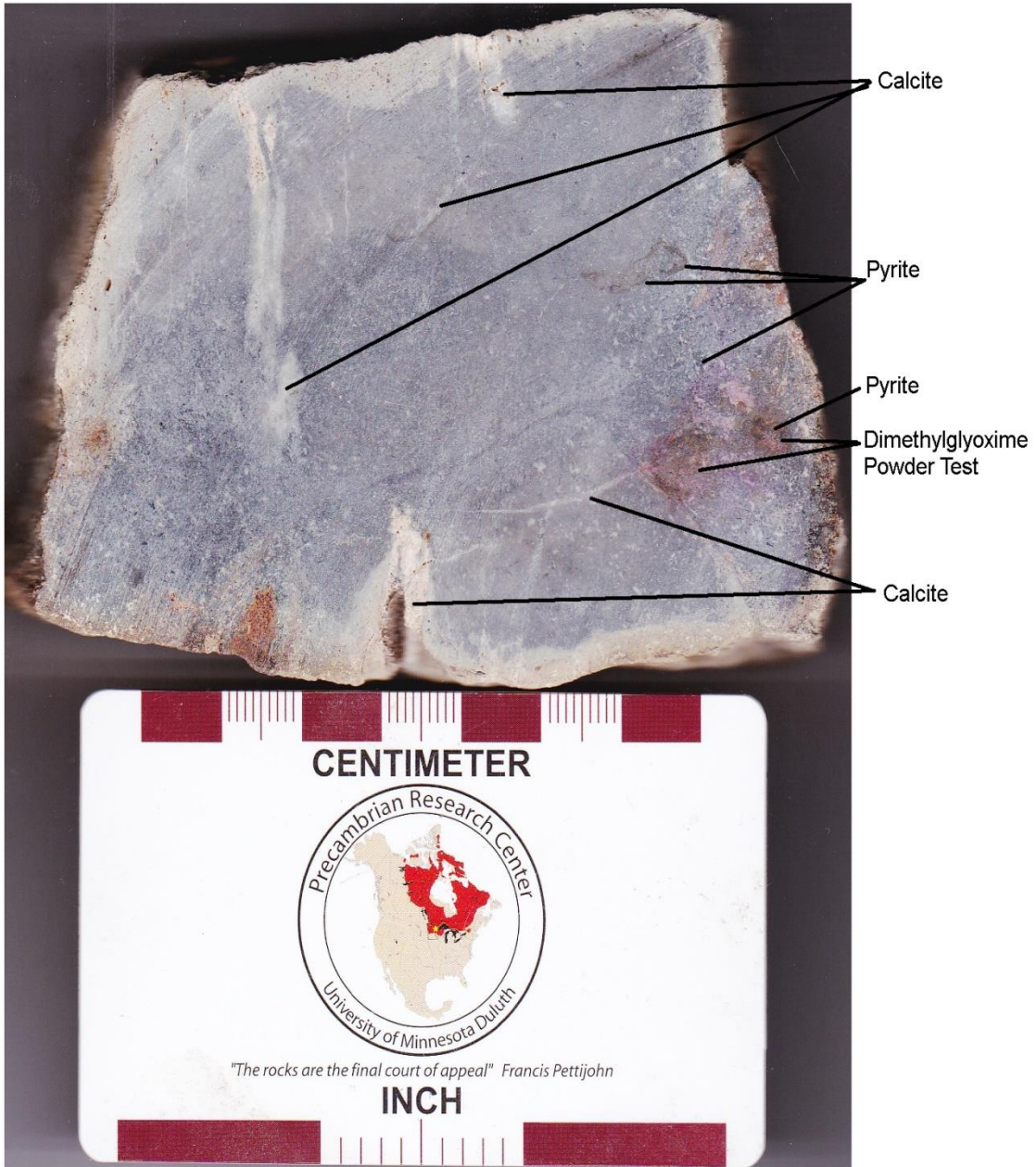
Sample Number	Claim Number	UTM	Sample Type	Width metres	Description	Au ppm	Pt ppm	Pd ppm
BR-7	4284069	600110mE 5337374mN	Grab best	1.0	Fine grained brecciated rock with trace to 1% patchy disseminated pyrite. Calcite filled fractures.	0.007	0.002	<0.005
BR-8	4284069	600058mE 5337360mN	Grab best	1.0	Fine grained brecciated rock with trace to 1% patchy disseminated pyrite. Calcite filled fractures.	0.002	<0.001	<0.005

Sodium Peroxide Fusion, ICP-OES Finish

Sample Number	Claim Number	UTM	Sample Type	Width metres	Description	Ag ppm	Al %	As %	Cu %	Co %	Ni %	Pb %	V %	Zn %	Ca %	Mg %
BR-7	4284069	600110mE 5337374mN	Grab best	1.0	Fine grained brecciated rock with trace to 1% patchy disseminated pyrite. Calcite filled fractures.	NA	8.86	0.018	0.004	0.003	0.014	<0.005	0.013	0.007	4.15	2.81
BR-8	4284069	600058mE 5337360mN	Grab best	1.0	Fine grained brecciated rock with trace to 1% patchy disseminated pyrite. Calcite filled fractures.	NA	8.49	<0.005	0.005	0.003	0.018	<0.005	0.014	0.008	4.89	3.25

Aqua Regia Digestion, ICP-OES Finish

Sample Number	Claim Number	UTM	Sample Type	Width metres	Description	Ag ppm	Al %	Cu ppm	As ppm	Co ppm	Pb ppm	Ni ppm	V ppm	Zn ppm	Ca %	Mg %
BR-7	4284069	600110mE 5337374mN	Grab best	1.0	Fine grained brecciated rock with trace to 1% patchy disseminated pyrite. Calcite filled fractures.	<0.05	2.81	36.2	211	23.2	8.6	109	115	49.1	1.76	1.76
BR-8	4284069	600058mE 5337360mN	Grab best	1.0	Fine grained brecciated rock with trace to 1% patchy disseminated pyrite. Calcite filled fractures.	<0.05	3.01	40.3	15	27.4	8.0	137	117	61.9	2.13	2.41



**Figure 6.**  
**BR-8 Sample**  
**Brecciated Metavolcanic Rock**  
**UTM: 600058mE, 5337360mN**  
**Claim 4284069**  
**McVittie Twp., Ontario**

## **Survey Results**

Outcrops of brecciated metavolcanic rock with homolithic fragments of metavolcanic rock outcrop in the vicinity of the pond in the center of the claim. The fragments are angular and several centimetres in size. They can be easily seen on the weather surface of the outcrop but are very discrete on a fresh surface. Petrographic examination has identified the primary rock as a vesicular metabasalt that has been initially metamorphosed and subsequently hydrothermally retrogressed to epidote-chlorite assemblages. Late stage hydrothermal fluids were calcite rich and caused late-staged calcite flooding and soft contact fracture filling.

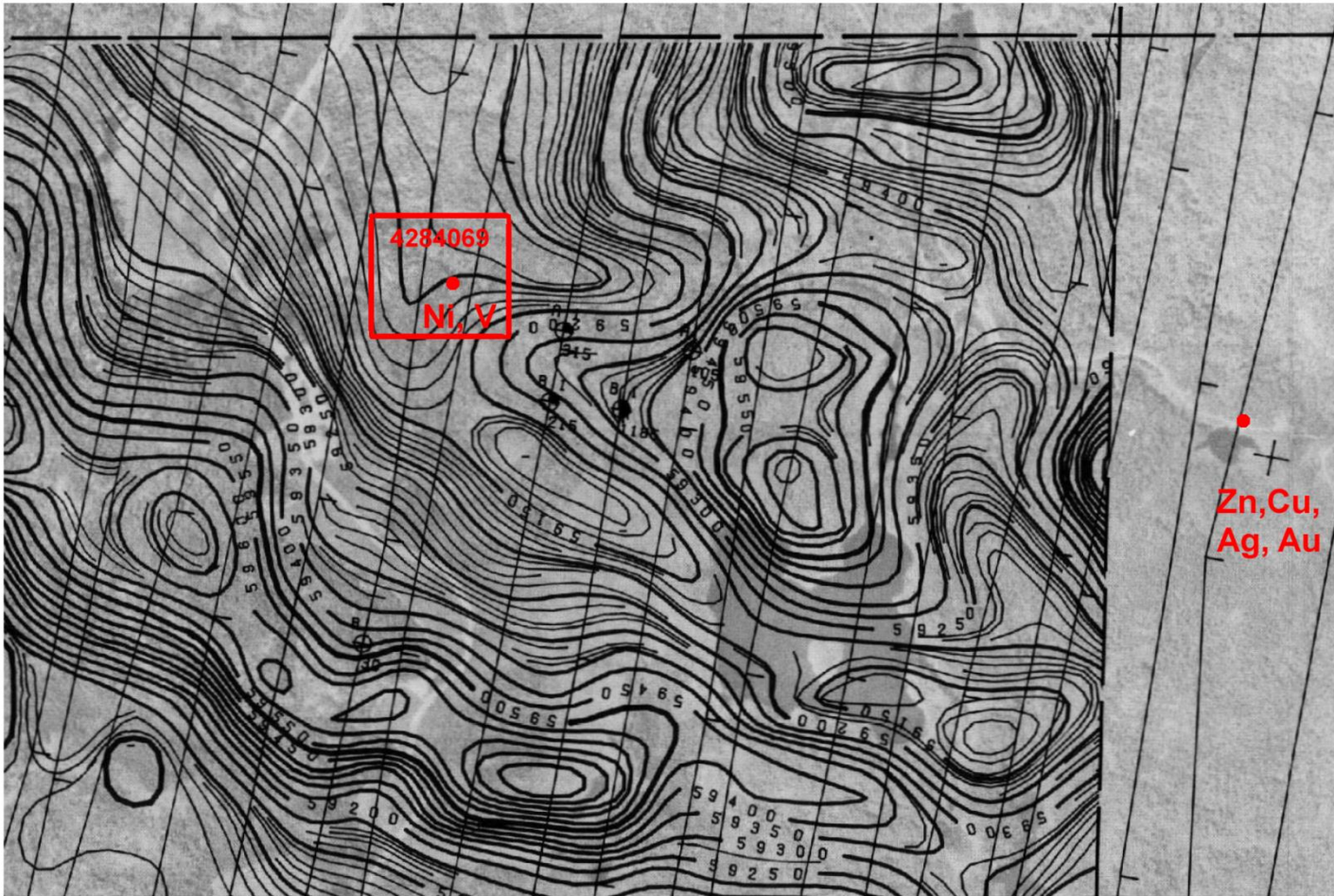
The brecciated rock outcropping on the peninsula and on the east side of the pond, are mineralized with traces of disseminated, dull brown anhedral grains of pyrite. The pyrite mineralization tests positive for nickel using Dimethylglyoxime powder. In addition to pyrite, grains of pentlandite and inclusions of pentlandite within some of the pyrite grains were identified using the Energy Dispersive System (EDS) on the microprobe. Grains and inclusions of chalcopyrite and galena were also identified by the microprobe.

Assays for rock samples BR-7 and BR-8 both showed anomalous nickel and vanadium values, assaying: 0.014% Ni, 0.013% V and 0.018% Ni, 0.014% V, respectively. Assays for Cu and Pb were low. Both rock samples contain high concentrations of calcium and magnesium reflecting hydrothermal calcite rich fluids potentially derived from a mafic intrusive source such as gabbro.

## **Discussion of Results**

It is unclear if the brecciated rocks outcropping in the vicinity of the pond represent a collapse volcanic flow or brecciation resulting from faulting. Geophysical information such as airborne magnetic data (Figure 7) and the IP survey by Regal Star Resources Limited (1988) suggest the property is located over an east-west trending fault structure. The gabbro intrusion occurring on the north margin of the property appears to follow the east-west trend. The calcite and pyrite mineralization present in the brecciated rocks are most likely derived from hydrothermal solutions which emulated from the gabbro during emplacement. The anomalous nickel is associated with pentlandite mineralization occurring as individual grains and in solution with the dull brown anhedral grains of pyrite. At this time, it is unclear what is the source of the vanadium mineralization.





0 500 metres

Total magnetic intensity

⊕ Conductor

Figure 7.  
 Airborne Magnetic and Electromagnetic Map  
 Claim 4284069  
 McVittie-McGarry Twp,'s, Ontario  
 source: OGS Preliminary Map P-2266

## Conclusions and Recommendations

Anomalous nickel and vanadium has been detected with pyrite-pentlandite mineralization in brecciated rocks outcropping in the vicinity of the pond in central section of claim 4284069. Although the exposed mineralization is not "ore-grade", further exploration may result in the discovery of stronger sulphide mineralization and potentially better concentrations of nickel and vanadium. Additional work is warranted. A ground magnetometer and electromagnetic-VLF survey is recommended along with further prospecting and geological mapping.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "R. J. Dillman", is written over a light gray rectangular background.

Robert J. Dillman P.Geo., B.Sc.

December 5, 2016

## References

- Allan, S. 2007.** ASSESSMENT REPORT FOR 18 MINERAL CLAIMS: LARDER LAKE DISTRICT 3004365; 4202975; 4202976; 4202977; 4202979; 4202981; 4202985; 4203890; 4206398; 4206402; 4206422; 4206425; 4206426; 4206427; 4206428; 4206429; 4206475; 4209282. *For:* SouthernEra Diamonds Inc.
- Jackson, S.L. 1995.** Precambrian Geology, Larder Lake area; Ontario. Ontario Geological Survey, Map 2628, scale 1 : 50,000.
- Lambert, G. and Turcotte, R 1988.** Induced Polarization, property of Regal Star Resources Ltd., Katrine-McVittie Twp.'s, Ontario, March 1988.
- Lewis, M.P. 1985.** Work Report on Katrine-McVittie Project, Katrine-McVittie Townships, Northeastern Ontario, Larder Lake Mining District. *For:* Kerr Addison Mines Limited
- Ontario Geological Survey 2000.** Airborne magnetic and electromagnetic surveys, Kirkland Lake area, Ontario. Ontario Geological Survey. Map 82035. Scale 1 : 20,000
- Ontario Geological Survey 1979.** Airborne Electromagnetic and Total Intensity Magnetic Survey, Kirkland Lake area, McVittie Township, District of Timiskaming, by Questor Surveys Limited, for the Ontario Geological Survey, Prelim. Map P.2266 Geophys. Ser., scale 1: 20,000 Survey and compilation, February and March 1979.

**Robert J. Dillman P.Geo, B.Sc.**  
**ARJADEE PROSPECTING**  
**8901 Reily Drive, Mount Brydges, Ontario, Canada, N0L1W0**  
**Phone/ fax (519) 264-9278**

**CERIFICATE of AUTHOR**

I, **Robert J. Dillman, Professional Geologist**, do certify that:

1. I am the **President** and the holder of a **Certificate of Authorization** for:

**ARJADEE PROSPECTING**  
**8901 Reily Drive**  
**Mount Brydges, Ontario, Canada**  
**N0L1W0**

2. I graduated in 1991 with a **Bachelor of Science Degree** in **Geology** at the **University of Western Ontario**.

3. I am an active member of:

**Association of Professional Geoscientists of Ontario, APGO**  
**Prospectors and Developers Association of Canada, PDAC**

4. I have been a **licensed Prospector in Ontario** since 1985.

5. I have worked continuously as a **Professional Geologist** for 25 years.

6. Unless stated otherwise, **I am responsible** for the preparation of all sections of the Assessment Report titled:

**REPORT ON ROCK SAMPLING**  
**CLAIM: 4284069**  
**McVITTIE TOWNSHIP, ONTARIO**  
**Larder Lake Mining Division**

**dated, December 5, 2016**

7. I am not aware of any material fact or material change with respect to the subject matter of the Assessment Report that is not contained in the Assessment Report and its omission to disclose makes the Assessment Report misleading.

**Dated this 5th day of December, 2016**



Robert James Dillman P.Geo  
Arjadee Prospecting



**CLIENT NAME: MISC AGAT CLIENT ON, ON  
(403)**

**ATTENTION TO: Robert Dillman**

**PROJECT:**

**AGAT WORK ORDER: 16T135252**

**SOLID ANALYSIS REVIEWED BY: Brandon Wang, Spectroscopy Supervisor**

**DATE REPORTED: Sep 20, 2016**

**PAGES (INCLUDING COVER): 11**

Should you require any information regarding this analysis please contact your client services representative at (905) 501-9998

**\*NOTES**

**BR-1, BR-2, BR-3: Black River North Property, Grimsthorpe Twp., Ontario**

**BR-4, BR-5, BR-6: Black River South Property, Grimsthorpe Twp., Ontario**

**BR-7, BR-8, Claim 4284069, McVittie Twp., Ontario**

All samples are stored at no charge for 90 days. Please contact the lab if you require additional sample storage time.



### Certificate of Analysis

AGAT WORK ORDER: 16T135252  
PROJECT:

5623 McADAM ROAD  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1N9  
TEL (905)501-9999  
FAX (905)501-0589  
http://www.agatlabs.com

CLIENT NAME: MISC AGAT CLIENT ON

ATTENTION TO: Robert Dillman

(201-079) Sodium Peroxide Fusion - ICP-OES finish															
DATE SAMPLED: Sep 08, 2016		DATE RECEIVED: Sep 08, 2016						DATE REPORTED: Sep 20, 2016				SAMPLE TYPE: Rock			
Sample ID (AGAT ID)	Analyte: Unit: RDL:	Al % 0.01	As % 0.005	B % 0.01	Ca % 0.05	Co % 0.001	Cr % 0.005	Cu % 0.001	Fe % 0.01	K % 0.05	Li % 0.01	Mg % 0.005	Mn % 0.005	Mo % 0.005	Ni % 0.001
BR-1 (7830215)		4.17	7.56	<0.01	0.47	0.006	0.013	0.005	10.3	1.26	<0.01	0.906	0.016	<0.005	0.006
BR-2 (7830216)		6.94	3.12	<0.01	2.17	0.010	0.015	0.004	6.75	1.68	<0.01	1.51	0.052	<0.005	0.005
BR-3 (7830217)		4.08	2.55	<0.01	3.07	0.002	0.015	0.001	4.96	1.39	<0.01	1.99	0.054	<0.005	0.006
BR-4 (7830218)		0.07	0.007	<0.01	3.70	<0.001	0.009	0.003	9.36	<0.05	<0.01	0.039	0.096	<0.005	0.001
BR-5 (7830219)		2.42	3.30	<0.01	0.48	0.003	0.008	0.018	5.75	0.76	<0.01	0.681	0.008	<0.005	0.004
BR-6 (7830220)		3.81	1.89	<0.01	0.57	0.009	0.011	0.030	9.12	1.41	<0.01	0.806	0.015	<0.005	0.011
BR-7 (7830221)		8.86	0.018	<0.01	4.15	0.003	0.013	0.004	6.16	0.13	<0.01	2.81	0.085	<0.005	0.014
BR-8 (7830222)		8.49	<0.005	<0.01	4.89	0.003	0.014	0.005	6.63	0.12	<0.01	3.25	0.095	<0.005	0.018
Sample ID (AGAT ID)	Analyte: Unit: RDL:	Pb % 0.005	S % 0.01	Si % 0.005	Sn % 0.005	Ti % 0.005	V % 0.005	W % 0.01	Zn % 0.005						
BR-1 (7830215)		<0.005	4.44	29.2	<0.005	0.362	0.005	<0.01	0.007						
BR-2 (7830216)		<0.005	2.23	29.3	<0.005	0.760	0.007	<0.01	0.007						
BR-3 (7830217)		<0.005	1.50	30.4	<0.005	0.668	<0.005	<0.01	0.008						
BR-4 (7830218)		<0.005	0.17	37.1	<0.005	0.006	<0.005	<0.01	<0.005						
BR-5 (7830219)		0.007	3.36	36.8	<0.005	0.169	<0.005	<0.01	0.007						
BR-6 (7830220)		<0.005	6.88	32.4	<0.005	0.274	<0.005	0.02	<0.005						
BR-7 (7830221)		<0.005	0.30	25.3	<0.005	0.612	0.013	<0.01	0.007						
BR-8 (7830222)		<0.005	0.36	25.1	<0.005	0.638	0.014	<0.01	0.008						

Comments: RDL - Reported Detection Limit

Certified By: \_\_\_\_\_



### Certificate of Analysis

AGAT WORK ORDER: 16T135252  
PROJECT:

5623 McADAM ROAD  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1N9  
TEL: (905)501-8998  
FAX: (905)501-0569  
http://www.agatlabs.com

CLIENT NAME: MISC AGAT CLIENT ON

ATTENTION TO: Robert Dillman

(201-273) Aqua Regia Digest - Ore Grade Metals Package, ICP-OES finish															
DATE SAMPLED: Sep 08, 2016		DATE RECEIVED: Sep 08, 2016					DATE REPORTED: Sep 20, 2016					SAMPLE TYPE: Rock			
Sample ID (AGAT ID)	Analyte:	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe
	Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	RDL:	0.5	0.01	5	5	5	1.0	5	0.01	1.0	5	2.0	2.0	2.0	0.01
BR-1 (7830215)		<0.5	1.42	75400	<5	78	<1.0	<5	0.10	<1.0	11	60.7	68.2	40.8	9.08
BR-2 (7830216)		<0.5	2.43	32200	<5	145	1.8	<5	0.43	<1.0	19	98.1	118	36.9	6.01
BR-3 (7830217)		<0.5	1.65	25400	11	114	1.3	<5	2.17	<1.0	25	21.8	120	10.5	4.39
BR-4 (7830218)		<0.5	0.03	102	<5	30	<1.0	<5	0.25	<1.0	<5	<2.0	43.7	28.1	3.90
BR-5 (7830219)		1.4	0.92	32700	<5	87	<1.0	<5	0.11	<1.0	10	29.5	50.4	187	5.21
BR-6 (7830220)		1.8	1.50	18400	16	96	1.0	<5	0.19	<1.0	17	85.0	70.5	295	8.19
BR-7 (7830221)		<0.5	2.81	211	<5	42	1.6	<5	1.76	<1.0	<5	23.2	96.0	35.2	4.75
BR-8 (7830222)		<0.5	3.02	15	<5	56	1.8	<5	2.13	<1.0	<5	27.4	94.8	40.3	5.22
Sample ID (AGAT ID)	Analyte:	Ga	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	Rb
	Unit:	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	RDL:	20	5	5	0.01	5	5	0.01	5	2.0	0.01	2.0	50	2.0	50
BR-1 (7830215)		<20	<5	9	0.69	<5	16	0.75	156	<2.0	0.04	42.2	356	11.9	55
BR-2 (7830216)		21	6	14	1.38	7	20	1.30	277	<2.0	0.17	36.3	829	13.9	88
BR-3 (7830217)		20	<5	6	0.96	8	21	1.70	572	2.1	0.06	43.5	1730	17.2	56
BR-4 (7830218)		<20	<5	<5	<0.01	<5	<5	0.02	119	<2.0	<0.01	5.4	53	3.8	<50
BR-5 (7830219)		<20	<5	6	0.47	<5	7	0.60	109	3.1	0.05	30.1	319	52.1	<50
BR-6 (7830220)		<20	<5	8	0.56	5	30	0.66	171	<2.0	0.05	89.5	880	19.4	<50
BR-7 (7830221)		21	<5	<5	0.02	<5	12	2.17	773	<2.0	0.13	109	375	8.6	<50
BR-8 (7830222)		22	<5	<5	0.02	<5	13	2.41	850	<2.0	0.10	137	481	8.0	<50
Sample ID (AGAT ID)	Analyte:	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W
	Unit:	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	RDL:	0.01	5	2.0	50	20	2.0	50	50	20	0.01	50	20	2.0	5
BR-1 (7830215)		4.29	19	6.6	<50	<20	<2.0	<50	<50	<20	0.09	<50	<20	80.9	<5
BR-2 (7830216)		2.17	11	13.5	<50	<20	5.4	<50	<50	<20	0.18	<50	<20	118	11
BR-3 (7830217)		1.43	11	9.7	<50	<20	24.4	<50	<50	<20	0.15	<50	<20	57.9	26
BR-4 (7830218)		0.11	<5	<2.0	<50	<20	<2.0	<50	<50	<20	<0.01	<50	<20	4.9	<5
BR-5 (7830219)		3.23	13	5.1	<50	<20	<2.0	<50	<50	<20	0.07	<50	<20	36.0	<5
BR-6 (7830220)		6.27	9	6.8	<50	<20	<2.0	<50	<50	<20	0.07	<50	<20	87.3	122
BR-7 (7830221)		0.25	7	6.5	<50	<20	5.5	<50	<50	<20	0.19	<50	<20	115	6
BR-8 (7830222)		0.27	5	6.3	<50	<20	8.6	<50	<50	<20	0.21	<50	<20	117	6

Certified By: 



**Certificate of Analysis**

AGAT WORK ORDER: 16T135252  
PROJECT:

5623 McADAM ROAD  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1N9  
TEL (905)501-9998  
FAX (905)501-0589  
http://www.agatlabs.com

CLIENT NAME: MISC AGAT CLIENT ON

ATTENTION TO: Robert Dillman

(201-273) Aqua Regia Digest - Ore Grade Metals Package, ICP-OES finish				
DATE SAMPLED: Sep 08, 2016	DATE RECEIVED: Sep 08, 2016	DATE REPORTED: Sep 20, 2016	SAMPLE TYPE: Rock	
Sample ID (AGAT ID)	Analyte:	Y	Zn	Zr
	Unit:	ppm	ppm	ppm
	RDL:	5	2.0	20
BR-1 (7830215)		6	33.2	<20
BR-2 (7830216)		8	55.6	<20
BR-3 (7830217)		11	60.4	<20
BR-4 (7830218)		<5	<2.0	<20
BR-5 (7830219)		<5	53.2	<20
BR-6 (7830220)		7	29.2	<20
BR-7 (7830221)		<5	49.1	<20
BR-8 (7830222)		<5	61.9	<20

Comments: RDL - Reported Detection Limit

**Certified By:** \_\_\_\_\_





**AGAT** Laboratories

**Certificate of Analysis**

AGAT WORK ORDER: 16T135252  
PROJECT:

5623 McADAM ROAD  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1N9  
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http://www.agatlabs.com

CLIENT NAME: MISC AGAT CLIENT ON

ATTENTION TO: Robert Dillman

**(202-055) Fire Assay - Au, Pt, Pd Trace Levels, ICP-OES finish**

DATE SAMPLED: Sep 08, 2016	DATE RECEIVED: Sep 08, 2016			DATE REPORTED: Sep 20, 2016	SAMPLE TYPE: Rock
Analyte:	Au	Pd	Pt		
Unit:	ppm	ppm	ppm		
RDL:	0.001	0.001	0.005		
Sample ID (AGAT ID)					
BR-1 (7830215)	5.72	0.007	<0.005		
BR-2 (7830216)	1.37	0.010	<0.005		
BR-3 (7830217)	0.234	<0.001	<0.005		
BR-4 (7830218)	0.003	<0.001	<0.005		
BR-5 (7830219)	2.61	0.004	<0.005		
BR-6 (7830220)	2.20	0.018	<0.005		
BR-7 (7830221)	0.007	0.002	<0.005		
BR-8 (7830222)	0.002	<0.001	<0.005		

Comments: RDL - Reported Detection Limit

Certified By: \_\_\_\_\_



Quality Assurance - Replicate  
 AGAT WORK ORDER: 16T135252  
 PROJECT:

5623 McADAM ROAD  
 MISSISSAUGA, ONTARIO  
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 TEL: (905)501-8998  
 FAX: (905)501-0589  
 http://www.agatlabs.com

CLIENT NAME: MISC AGAT CLIENT ON

ATTENTION TO: Robert Dillman

(201-079) Sodium Peroxide Fusion - ICP-OES finish				
Parameter	Sample ID	REPLICATE #1		RPD
		Original	Replicate	
Al	7830215	4.17	4.09	1.9%
As	7830215	7.56	7.47	1.2%
B	7830215	< 0.01	< 0.01	0.0%
Ca	7830215	0.47	0.47	0.0%
Co	7830215	0.006	0.006	0.0%
Cr	7830215	0.013	0.013	0.0%
Cu	7830215	0.005	0.005	0.0%
Fe	7830215	10.3	10.3	0.0%
K	7830215	1.26	1.26	0.0%
Lj	7830215	< 0.01	< 0.01	0.0%
Mg	7830215	0.906	0.926	2.2%
Mn	7830215	0.016	0.018	11.8%
Mo	7830215	< 0.005	< 0.005	0.0%
Ni	7830215	0.006	0.006	0.0%
Pb	7830215	< 0.005	< 0.005	0.0%
S	7830215	4.44	4.55	2.4%
Si	7830215	29.2	29.3	0.3%
Sn	7830215	< 0.005	< 0.005	0.0%
Ti	7830215	0.362	0.359	0.8%
V	7830215	0.005	0.005	0.0%
W	7830215	< 0.01	< 0.01	0.0%
Zn	7830215	0.007	0.007	0.0%
(201-273) Aqua Regia Digest - Ore Grade Metals Package, ICP-OES finish				
Parameter	Sample ID	REPLICATE #1		RPD
		Original	Replicate	
Ag	7830215	< 0.5	< 0.5	0.0%
Al	7830215	1.42	1.44	1.4%
As	7830215	75400	76500	1.4%
B	7830215	< 5	< 5	0.0%
Ba	7830215	78	82	5.0%
Be	7830215	< 1.0	< 1.0	0.0%



Quality Assurance - Replicate  
 AGAT WORK ORDER: 16T135252  
 PROJECT:

5623 McADAM ROAD  
 MISSISSAUGA, ONTARIO  
 CANADA L4Z 1N6  
 TEL (905)501-9988  
 FAX (905)501-0589  
 http://www.agatlabs.com

CLIENT NAME: MISC AGAT CLIENT ON

ATTENTION TO: Robert Dillman

Bi	7830215	< 5	< 5	0.0%																		
Ca	7830215	0.10	0.10	0.0%																		
Cd	7830215	< 1.0	< 1.0	0.0%																		
Ce	7830215	11	11	0.0%																		
Co	7830215	60.7	60.2	0.8%																		
Cr	7830215	68.2	68.0	0.3%																		
Cu	7830215	40.8	41.1	0.7%																		
Fe	7830215	9.08	9.05	0.3%																		
Ga	7830215	< 20	< 20	0.0%																		
Hg	7830215	< 5	< 5	0.0%																		
In	7830215	9	6																			
K	7830215	0.69	0.70	1.4%																		
La	7830215	< 5	< 5	0.0%																		
Lj	7830215	16	16	0.0%																		
Mg	7830215	0.75	0.77	2.6%																		
Mn	7830215	156	171	9.2%																		
Mo	7830215	< 2.0	< 2.0	0.0%																		
Na	7830215	0.04	0.04	0.0%																		
Ni	7830215	42.2	43.6	3.3%																		
P	7830215	356	367	3.0%																		
Pb	7830215	11.9	18.0																			
Rb	7830215	55	54	1.8%																		
S	7830215	4.29	4.42	3.0%																		
Sb	7830215	19	25	27.3%																		
Sc	7830215	6.6	6.4	3.1%																		
Se	7830215	< 50	< 50	0.0%																		
Sn	7830215	< 20	< 20	0.0%																		
Sr	7830215	< 2.0	< 2.0	0.0%																		
Ta	7830215	< 50	< 50	0.0%																		
Te	7830215	< 50	< 50	0.0%																		
Th	7830215	< 20	< 20	0.0%																		
Ti	7830215	0.09	0.09	0.0%																		
Tl	7830215	< 50	< 50	0.0%																		
U	7830215	< 20	< 20	0.0%																		



**Quality Assurance - Replicate**  
**AGAT WORK ORDER: 16T135252**  
**PROJECT:**

5623 McADAM ROAD  
 MISSISSAUGA, ONTARIO  
 CANADA L4Z 1N9  
 TEL: (905)501-9998  
 FAX: (905)501-0589  
<http://www.agatlabs.com>

**CLIENT NAME: MISC AGAT CLIENT ON**

**ATTENTION TO: Robert Dillman**

V	7830215	80.9	82.5	2.0%														
W	7830215	< 5	< 5	0.0%														
Y	7830215	6	6	0.0%														
Zn	7830215	33.2	33.8	1.8%														
Zr	7830215	< 20	< 20	0.0%														

**(202-055) Fire Assay - Au, Pt, Pd Trace Levels, ICP-OES finish**

REPLICATE #1				
Parameter	Sample ID	Original	Replicate	RPD
Au	7830215	5.72	5.80	1.4%
Pd	7830215	0.0074	0.0075	1.3%
Pt	7830215	< 0.005	< 0.005	0.0%



Quality Assurance - Certified Reference materials  
 AGAT WORK ORDER: 16T135252  
 PROJECT:

5623 McADAM ROAD  
 MISSISSAUGA, ONTARIO  
 CANADA L4Z 1N9  
 TEL (905)501-9998  
 FAX (905)501-0589  
 http://www.agatlabs.com

CLIENT NAME: MISC AGAT CLIENT ON

ATTENTION TO: Robert Dillman

<b>(201-079) Sodium Peroxide Fusion - ICP-OES finish</b>				
CRM #1 (ref.MP-1b)				
Parameter	Expect	Actual	Recovery	Limits
Al	3.465	3.538	102%	90% - 110%
As	2.3	2.3	99%	90% - 110%
Ca	2.47	2.41	98%	90% - 110%
Cu	3.069	3.05	99%	90% - 110%
Fe	8.19	8.19	100%	90% - 110%
K	0.2	0.2	93%	90% - 110%
Mn	0.048	0.052	108%	90% - 110%
Mo	0.0285	0.0298	105%	90% - 110%
Pb	2.091	2.134	102%	90% - 110%
S	13.79	13.94	101%	90% - 110%
Si	16.79	16.37	97%	90% - 110%
Ti	0.0752	0.078	104%	90% - 110%
Zn	16.67	16.01	96%	90% - 110%
<b>(201-273) Aqua Regia Digest - Ore Grade Metals Package, ICP-OES finish</b>				
CRM #1 (ref.CDN-ME-1304)				
Parameter	Expect	Actual	Recovery	Limits
Ag	34	35	102%	80% - 120%
Cu	2680	2717	101%	80% - 120%
Pb	2580	2595	101%	80% - 120%
Zn	2200	2183	99%	80% - 120%
<b>(202-055) Fire Assay - Au, Pt, Pd Trace Levels, ICP-OES finish</b>				
CRM #1 (ref.PG129)				
Parameter	Expect	Actual	Recovery	Limits
Au	1.1	1.1	99%	90% - 110%
Pd	0.115	0.114	99%	90% - 110%
Pt	0.239	0.236	99%	90% - 110%



## Method Summary

CLIENT NAME: MISC AGAT CLIENT ON

AGAT WORK ORDER: 16T135252

PROJECT:

ATTENTION TO: Robert Dillman

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
<b>Solid Analysis</b>			
Al	MIN-200-12001		ICP/OES
As	MIN-200-12001		ICP/OES
B	MIN-200-12001		ICP/OES
Ca	MIN-200-12001		ICP/OES
Co	MIN-200-12001		ICP/OES
Cr	MIN-200-12001		ICP/OES
Cu	MIN-200-12001		ICP/OES
Fe	MIN-200-12001		ICP/OES
K	MIN-200-12001		ICP/OES
Li	MIN-200-12001		ICP/OES
Mg	MIN-200-12001		ICP/OES
Mn	MIN-200-12001		ICP/OES
Mo	MIN-200-12001		ICP/OES
Ni	MIN-200-12001		ICP/OES
Pb	MIN-200-12001		ICP/OES
S	MIN-200-12001		ICP/OES
Si	MIN-200-12001		ICP/OES
Sn	MIN-200-12001		ICP/OES
Ti	MIN-200-12001		ICP/OES
V	MIN-200-12001		ICP/OES
W			ICP/OES
Zn	MIN-200-12001		ICP/OES
Ag	MIN-200-12020		ICP/OES
Al	MIN-200-12020		ICP/OES
As	MIN-200-12020		ICP/OES
B	MIN-200-12020		ICP/OES
Ba	MIN-200-12020		ICP/OES
Be	MIN-200-12020		ICP/OES
Bi	MIN-200-12020		ICP/OES
Ca	MIN-200-12020		ICP/OES
Cd	MIN-200-12020		ICP/OES
Ce	MIN-200-12020		ICP/OES
Co	MIN-200-12020		ICP/OES
Cr	MIN-200-12020		ICP/OES
Cu	MIN-200-12020		ICP/OES
Fe	MIN-200-12020		ICP/OES
Ga	MIN-200-12020		ICP/OES
Hg	MIN-200-12020		ICP/OES
In	MIN-200-12020		ICP/OES
K	MIN-200-12020		ICP/OES
La	MIN-200-12020		ICP/OES
Li	MIN-200-12020		ICP/OES
Mg	MIN-200-12020		ICP/OES
Mn	MIN-200-12020		ICP/OES
Mo	MIN-200-12020		ICP/OES
Na	MIN-200-12020		ICP/OES
Ni	MIN-200-12020		ICP/OES
P	MIN-200-12020		ICP/OES
Pb	MIN-200-12020		ICP/OES

## Method Summary

CLIENT NAME: MISC AGAT CLIENT ON

AGAT WORK ORDER: 16T135252

PROJECT:

ATTENTION TO: Robert Dillman

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Rb	MIN-200-12020		ICP/OES
S	MIN-200-12020		ICP/OES
Sb	MIN-200-12020		ICP/OES
Sc	MIN-200-12020		ICP/OES
Se	MIN-200-12020		ICP/OES
Sn	MIN-200-12020		ICP/OES
Sr	MIN-200-12020		ICP/OES
Ta	MIN-200-12020		ICP/OES
Te	MIN-200-12020		ICP/OES
Th	MIN-200-12020		ICP/OES
Ti	MIN-200-12020		ICP/OES
Tl	MIN-200-12020		ICP/OES
U	MIN-200-12020		ICP/OES
V	MIN-200-12020		ICP/OES
W	MIN-200-12020		ICP/OES
Y	MIN-200-12020		ICP/OES
Zn	MIN-200-12020		ICP/OES
Zr	MIN-200-12020		ICP/OES
Au	MIN-200-12006	BUGBEE, E: A Textbook of Fire Assaying	ICP/OES
Pd	MIN-200-12006	BUGBEE, E: A Textbook of Fire Assaying	ICP/OES
Pt	MIN-200-12006	BUGBEE, E: A Textbook of Fire Assaying	ICP/OES

**Petrographic and Electron Microprobe Investigation of Selected Samples from the  
McVittie Claim Block, Larder Lake District, Northern Ontario.**

**by**

**Jim Renaud  
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**December 3, 2016**



This report is based on a rock from the McVittie Township claim block, Larder Lake District, Northern Ontario. The rock was collected by Mr. Robert Dillman for detailed petrographic and microprobe investigation to detail mineral textures, metamorphic and hydrothermal conditions and to evaluate the base and precious metal prospectivity of the property area.

The rock was cut and polished thin sections were made. Samples were carbon coated and examined in transmitted and reflected light with a Zeiss petrographic microscope. Regions of interest were photographed and circled with a diamond scribe to enable relocation of the selected areas when in the microprobe. Samples were examined in detail using the Energy Dispersive System (EDS) on the microprobe. Backscattered electron detector images of relevant and interesting mineralogical and textural relationships were collected digitally. The scale bar in microns at the left of each backscatter image is useful in evaluating the grain sizes of the various minerals. All minerals were analyzed using a JEOL JXA 733 electron microprobe equipped with a Tracor Northern EDS and five wavelength spectrometers.

Three polished thin sections (MV1, MV2, and MV3) were made of the sample to best establish the base metal population of the sample. The rock is a vesicular metabasalt that has been initially metamorphosed and subsequently hydrothermally retrogressed to epidote-chlorite assemblages. The rock is a mafic igneous rock with some primary texture preserved such as vesicles and relict primary plagioclase laths (Plate 1). However, due to the retrogression and hydrothermal alteration, all primary igneous minerals have been replaced by a retrogressive epidote-chlorite-albite mineral assemblage. The original igneous plagioclase grains are now albite-oligoclase and all primary mafic minerals are dominantly epidote-chlorite-magnetite and fine-grained micas. Vesicles are filled with calcite-chlorite-epidote-Kfeldspar. One vesicle was noted to contain epidote and pentlandite.

In terms of sulphide content, Sample MV1 and MV2 contained 2-5% disseminated pyrite grains with occasional grains of pentlandite. In sample MV3, pyrite grains comprise 2-5% of the sample and occasionally have inclusions of chalcopyrite and galena (Plates 4,5). One end of the section also has a pyrite vein with one of the pyrite grains containing an inclusion of galena. Importantly there is also pentlandite randomly disseminated throughout the section typically associated with the late stage retrogressive silicates, chlorite and epidote (Plates 2-3).

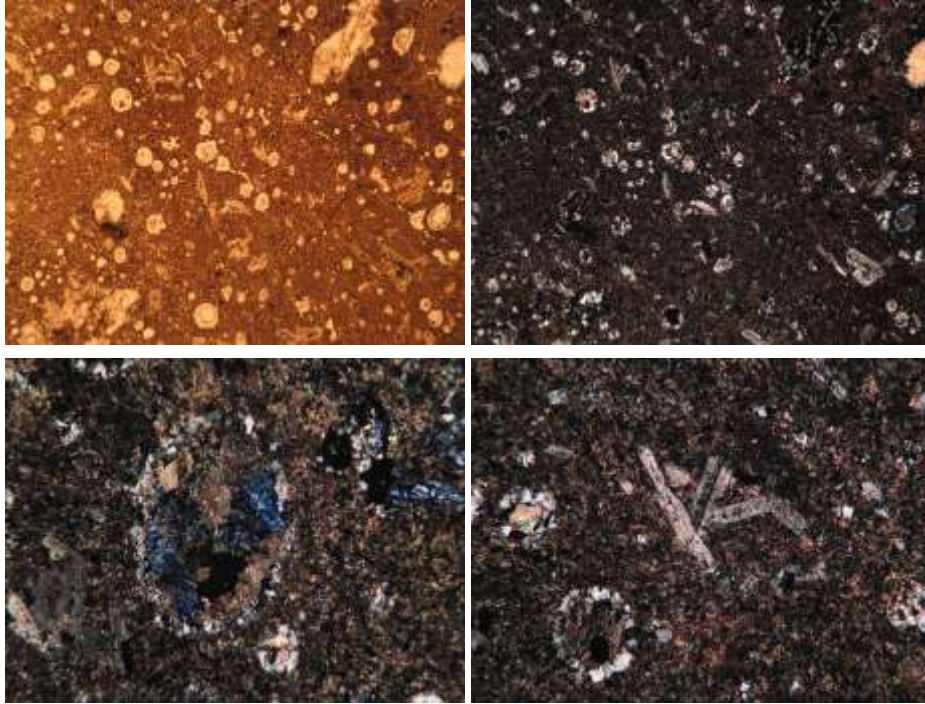


Plate 1: Plane light image (top left) of the metabasalt illustrating the primary vesicles and relict plagioclase laths. Crossed polarized image (top right) illustrating the infilling of vesicles by calcite-epidote-chlorite-opaques and the relict plagioclase laths in the metabasalt. Bottom left image is a crossed polarized light image of a vesicle illustrating the complex mineral growth of calcite and epidote (bright birefringent colours) and birefringent blue chlorite. Bottom right image again illustrating the vesicles and the array of relict plagioclase grains now albite-oligoclase.

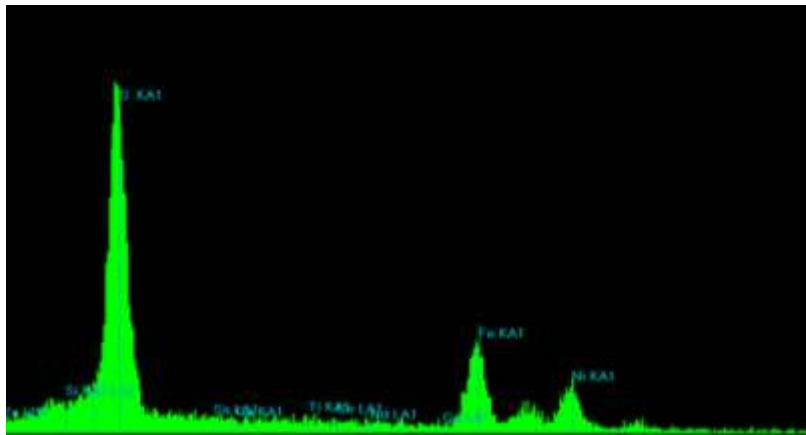
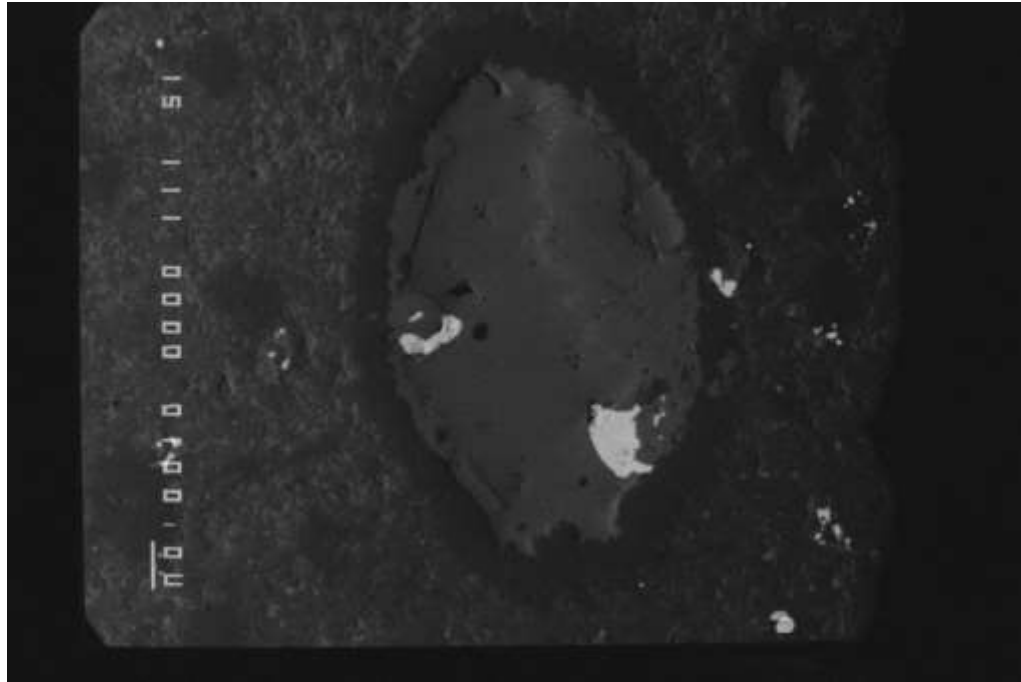


Plate 2: Vesicle filled with epidote with included grains of pentlandite (brightest). The EDS spectra below the image shows the presence of Fe,Ni,S.

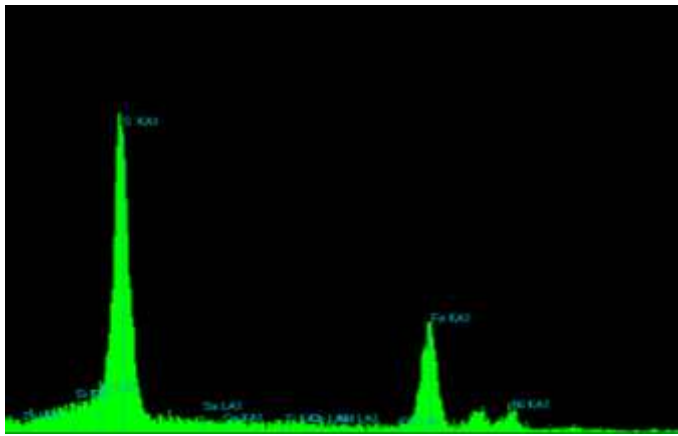
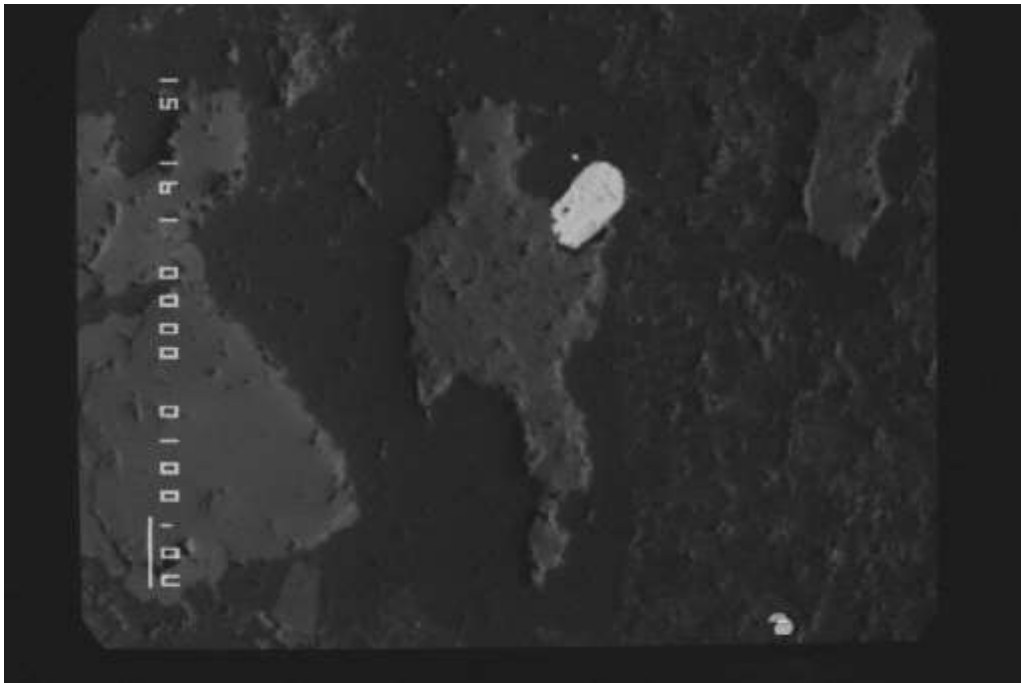


Plate 3: A grain of chlorite with a brighter inclusion of pentlandite. The EDS spectra below the image shows the presence of Fe,Ni,S.

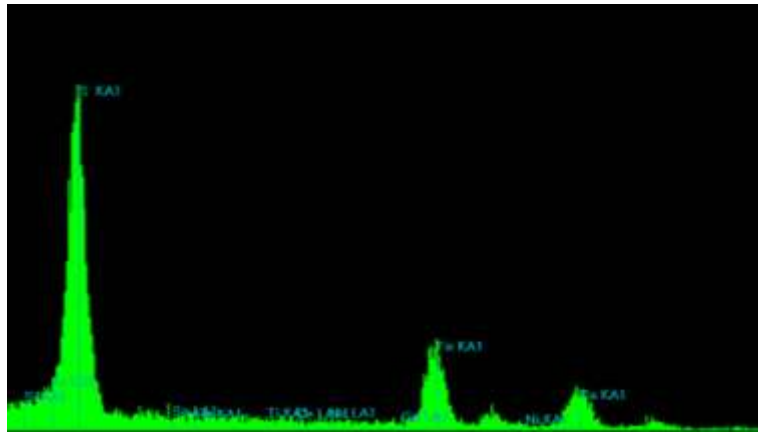
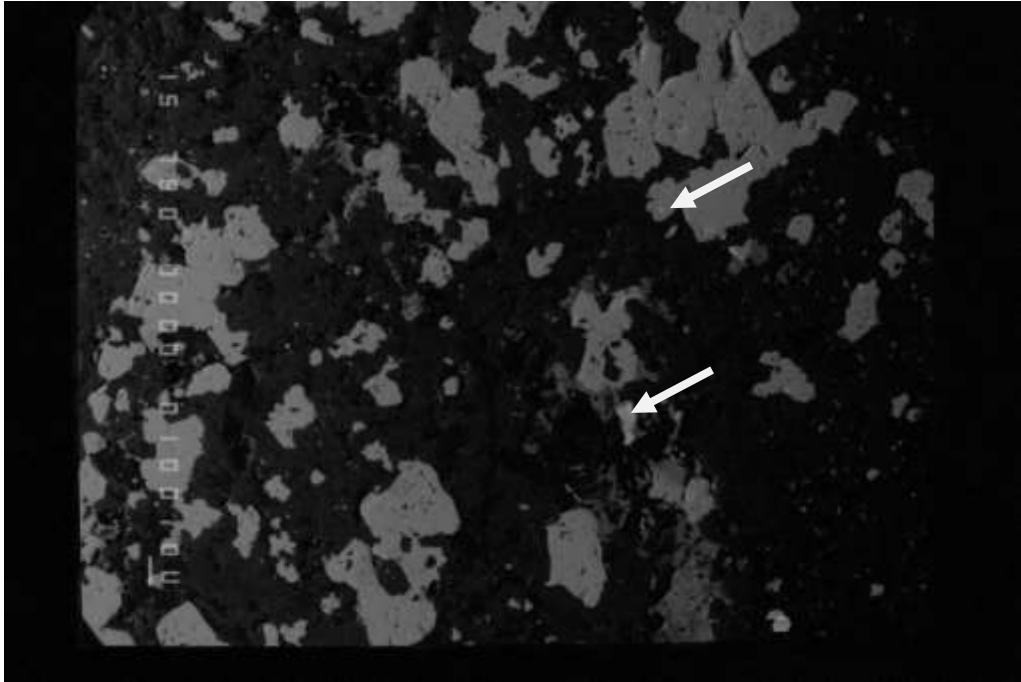


Plate 4: A concentration of pyrite grains with some containing inclusions of chalcopyrite (white arrows). The EDS spectra below the image shows the presence of Fe,Cu,S, chalcopyrite.

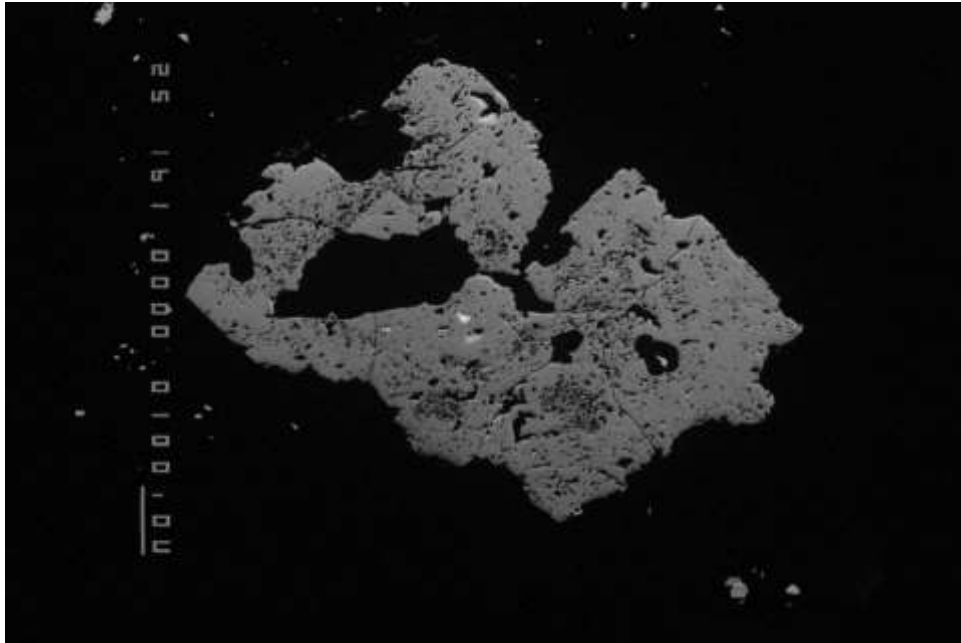


Plate 5: Backscatter image of a pyrite grain with bright inclusions of galena.