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**REPORT ON PROSPECTING
AND ROCK SAMPLING**

**JM Property
and
Munro Claim L39421**

MUNRO TOWNSHIP – LARDER LAKE MINING DIVISION

DISTRICT OF COCHRANE

NTS 42A/09

August 22, 2017

Garfield MacVeigh B. Sc. (Hon) Geology

August 22, 2017



320 – 800 West Pender Street
Vancouver, B.C., V6C 2V6

TABLE OF CONTENTS

1.0 SUMMARY3
2.0 INTRODUCTION3
3.0 LOCATION, ACCESS, INFRASTRUCTURE, PHYSIOGRAPHY, LOCAL RESOURCES, AND CLIMATE.....4
4.0 PROPERTY DESCRIPTION.....4
5.0 HISTORY.....6
6.0 GEOLOGIC SETTING8
7.0 PROSPECTING AND SAMPLING WORK.....9
8.0 CONCLUSIONS.....13
9.0 RECOMMENDATIONS.....13
10.0 REFERENCES14
11.0 STATEMENT OF QUALIFICATIONS.....15

LIST OF FIGURES

Figure 1 – JM Property and Munro Claim Location Map.....5
Figure 2- Geology, access, contiguity of JM property and Munro Claim L39421.....7
Figure 3 - Boundary Prospect Map showing Rock Samples and Waypoints10
Figure 4 - Photograph of David Meunier in Boundary pit.....12

LIST OF TABLES

Table 1 - List of Mining Claims.....6
Table 2 - Description of Waypoints and Rock Samples.....11

LIST OF APPENDICES

APPENDIX A PERSONNEL
APPENDIX B ANALYTICAL CERTIFICATES

1.0 SUMMARY

The JM property (2 claims – 4 units, 65 hectares) was acquired by staking in late August 2010. In January 2017 a patented claim L39421 (parcel 9929) adjacent to and immediately south of JM claim L4248884 was acquired 100% by Constantine from Lake Shore Gold. The patented parcel covers the south extension of a high grade gold prospect discovered on the south boundary of JM property. This impressive zone of mineralization and alteration on the south boundary of claim L4248884 in the variolitic volcanics is associated with old trenches and pits shown on Satterly's 1951 map of Munro township. Several samples collected from the waste dump at the edge of a deep trench and previously reported, are well mineralized with arsenopyrite +/- pyrite and returned values of 15.0, 10.3 and 14.4 g/ tonne gold.

On July 17, 2017, five chip samples were taken across the exposed face of mineralization in the boundary pit that identified a core zone of heavy arsenopyrite rich mineralization associated with very strong silicification that returned 5111 ppb (5.1 g/t Au) over 1.55m. An old trench extending 15 to 20 meters from the boundary pit to the south, on the patented claim L39421 (parcel 9929) was sampled on the side of the trench (where some bedrock was exposed) about 15 meter south of the claim boundary. The rock is silicified and mineralized with some arsenopyrite and returned 1296 ppb (1.3 g/t Au). From this location to the south, numerous overburden trenches were dug by the old timers on the trend of a north-south fault mapped by Satterly (1951) that appears to control the mineralization. Excavator trenching to expose the boundary prospect and more prospecting rock sampling and soil sampling is recommended as the next stage of exploration.

2.0 INTRODUCTION

The report describes the results of a one day prospecting and sampling trip on the JM property and the immediately adjacent patented mining claim L39421 (parcel 9929) acquired 100% by Constantine in January of 2017. A previous 2012 assessment report by Constantine describes a high grade gold prospect that was discovered on the south boundary of JM claim L4248884. The focus of the one day prospecting and sampling effort was to collect additional samples from the boundary prospect and check for extensions of the zone to the south on the newly acquired patented claim.

Prospecting and early mining activity in the southwest corner of Munro Township where the JM property and mining claim L39421 are located, dates back as far as 1908. It was however, the discovery of the high grade Croesus mine in 1914 a distance of 1.3 kilometers southeast of the JM claims that significantly elevated the exploration activity in the area. In 1950, the Canadian Johns-Manville Munro asbestos Mine, immediately east of the JM property went into production and was a mainstay for the economy in the Matheson area until the mid-sixties. The high tailings pile that dominates the regional landscape on the north side of Highway 101 East, 13 kilometers east of Matheson, bounds the east edge of the western 2 unit JM claim (L4248884) and also bounds the south edge of the eastern 2 unit JM claim (L4248883).

The current JM property (2 claims – 4 units, 65 hectares) appear to have been patented claims for most of the period of time dating back to the early 1900s and because of this has limited reported exploration activity. Constantine is not aware of any history of previous work on the mining claim L39421 (parcel 9929) immediately to the south of the JM property and was advised that no information was available in the files of the previous owners, Lake Shore Gold. The claim was owned by McIntyre Mines in the past and subsequently acquired by Lac Minerals who were acquired by Barrick in the mid-nineties. Lake Shore Gold ended up with the parcel when they

acquired the Fenn-Gib deposit from Barrick. Lake Shore subsequently transferred the property to Constantine in January 2017 as part of a claim purchase agreement.

3.0 LOCATION, ACCESS, INFRASTRUCTURE, PHYSIOGRAPHY, LOCAL RESOURCES, AND CLIMATE

The Property (figure 1), located approximately 55 kilometers to the north-northwest of Kirkland Lake (pop. 8,200) and 15 kilometers east of Matheson (pop. 2,600), is easily accessible by Highway 101 East and the Canadian Johns-Manville road to the Munro Mine-Mill site. Once at the Munro Mine-Mill site, old Munro Mine roads along waste dumps provide access to the central part of the property a short distance to the northwest (Figure 3). A 2012 vintage cut trail, now very grown in provides walking access to the south part of the property to the west-northwest off the main paved Munro Mine access road (see GPS track Figure 2).

The nearest major economic center is Timmins (pop. 43,000), located approximately 69 kilometers west of Matheson along Highway 101 (Figure 1). Daily scheduled flights connect Timmins with Toronto. The primary industries in the region are forestry and mining. Because of this, mining and exploration equipment and personnel can be found locally.

The JM property is in the Traditional Territory of the Wahgoshig First Nation and Constantine has signed an exploration agreement with the Wahgoshig. The community of Wahgoshig is located approximately 22 kilometers (29 kilometers by road) east of the JM claims.

The exploration work on the JM claims and patented parcel was carried out from Timmins, approximately a 1 hour drive.

The property area is of low relief, ranging from 305 to 340 meters above sea level and is partially covered by Munro mine waste dumps. There is good outcrop exposure on the western claim where most of the work was carried out. In areas of outcrop exposure the principal vegetation is jack pine and spruce, whereas non-outcrop areas are mainly deciduous vegetation, often with very heavy underbrush and some extensive stands of large poplar.

Temperatures and weather patterns are typical of those in Northern Ontario. Data from the nearby town of Kirkland Lake show mean temperature and rainfall in July to be 24 °C and 107 mm, respectively, while mean temperature and snowfall in January are -10 °C and 45 cm, respectively.

4.0 PROPERTY DESCRIPTION

The JM Property (Table 1) consists of 2 contiguous unpatented mining claims (4 units) covering a surface area of 160 acres (65 hectares) in southwest Munro Township. More specifically, claim L4248883 (2 units) is located in the NW1/4, Lot11, Concession II, Munro Township and claim L4248884 (2 units) is located in the SE1/4 of the N1/2, Lot 12, Concession 12 and the NE1/4 of the S1/2 Lot 12, Concession 12. Geographic coordinates of the center of the Property are approximately 48.563° N latitude and 80.263° W longitude. In January 2017, the patented Munro Claim L39421 (parcel 9929) located to the south and contiguous with JM claim L4248884 was acquired 100% by Constantine Metal Resources Ltd. and also provides continuity with the Munro Croesus patented claims that host the past producing Croesus Gold Mine.

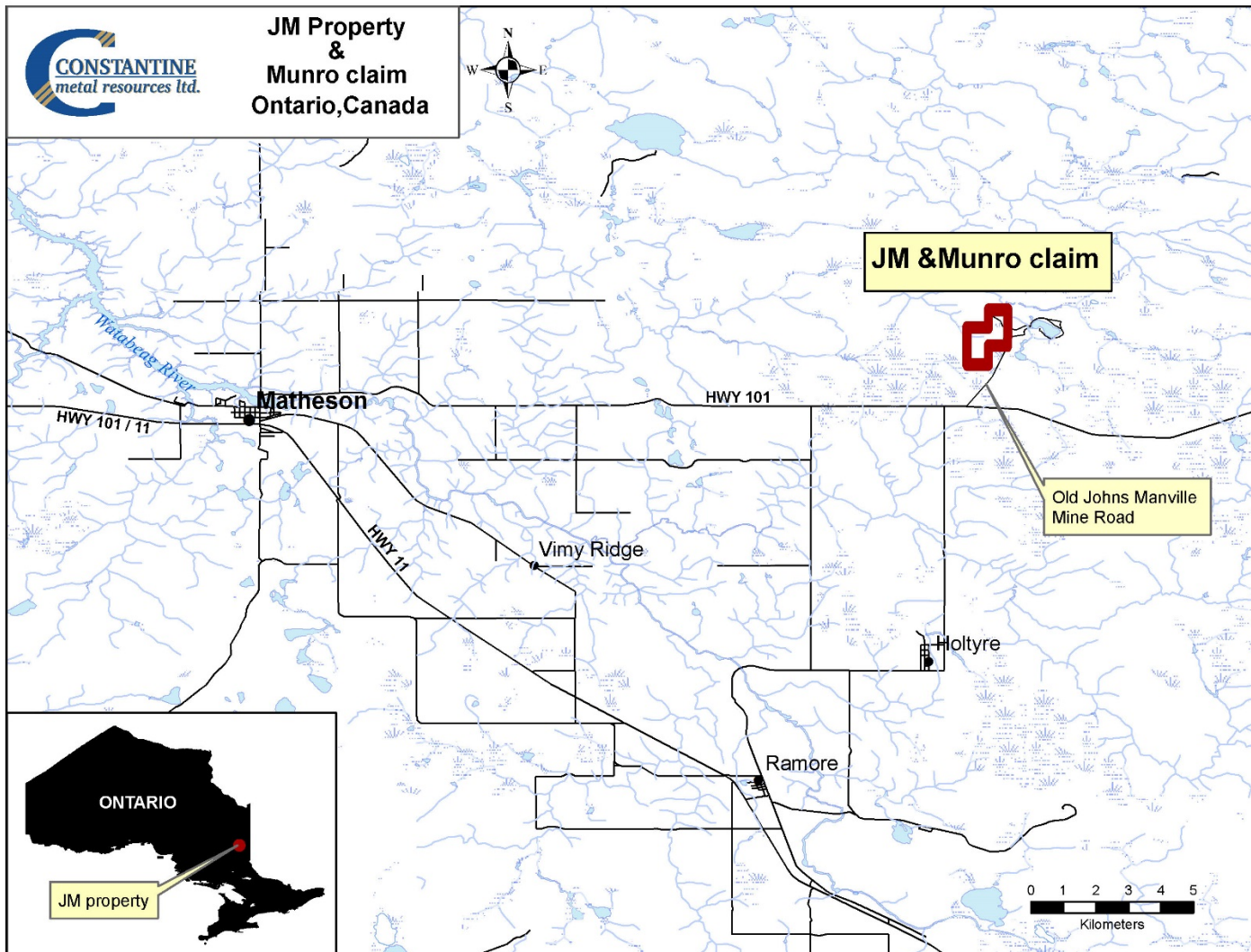


Figure 1: JM Property and Munro Claim Location Map

Table 1: List of Mining Claims for this report

Claim Number	Township	Units	Date Recorded
L 4248883	Munro Tp	2	27/08/2010
L 4248884	Munro Tp	2	27/08/2010
L39421 (pcl 9929)	Munro Tp	1	Not applicable

5.0 HISTORY

Early Ontario government geological mapping in the area dates back to 1911 when A.G. Burrows mapped Munro Township and part of Guibord Township. In 1914 P. E. Hopkins and C.W. Greenland mapped all Munro, Beatty and parts of Warden and Coulson Township and Hopkins (1921) separately described some prospects in Munro Township in the report titled "Ontario Gold Deposits". C.W. Knight et al produced a map and report on the Abitib-Night Hawk Lake Gold area in 1919 that included descriptions of several of the active mining projects in Munro Township.

Jack Satterly's report on Munro Township published in 1951 is an excellent descriptive documentation of the Geology of Munro township with outcrop scale mapping summarized at a scale of 1 inch to 1000 feet. The report also describes much of the exploration activity in the township up to that period of time and is the source of some of the historic information provided in this report. Prospecting and early mining activity in the southwest corner of Munro Township where the JM property and Munro claim L39421 are located dates back to at least 1908. The 1914 discovery of the high-grade Croesus mine, 1.3 kilometers to the southeast of the JM claims significantly elevated the mineral activity in the area. In 1950, the Canadian Johns-Manville Munro Asbestos Mine, immediately adjacent to the east JM claim boundary, went into production and was a mainstay for the economy in the Matheson area until the mid-sixties. It appears that part of the current JM property (see below) was part of the Canadian Johns-Manville Munro Mine property for the period from around 1950 until fairly recently.

Northern Gold Mining Company Limited (organized in 1925) acquired 15 claims (sometime after 1926) from the Matheson Mining Syndicate that were previously held by Matheson Gold Limited and included part of the current JM property. On Northern Gold Mining claim L 16401 which is now the north ½ of claim L 4248883, a camp was constructed and some showings described as quartz veins in acid and basic lavas in the southern part of claim L16401 were explored by pits and trenches. This area is now partially covered by waste rock from the Munro Mine. Satterly describes trenches with minor pyrite and arsenopyrite mineralization in carbonated basic lava that extend into intensely sericitized acid lava. This prospect is also described and documented as MDI42A09SW00155 and was visited by A.C. Bath (1986) and R. C. Gagne (1997) and is described as follows "anomalously enriched gold, silver, and arsenic tenors are associated with a northeast striking quartz-carbonate vein system. Most sulfide (pyrite and arsenopyrite) mineralization where the vein system is hosted by rhyolite occurs marginal to the veins rather than within them. Similarly, where the system is reported (Satterly 1952) to be hosted by basalt, the associated sulfide (pyrite and arsenopyrite) mineralization also occurs within wallrock breccia fragments rather than within vein material". The following sample results are reported in the MDI summary:

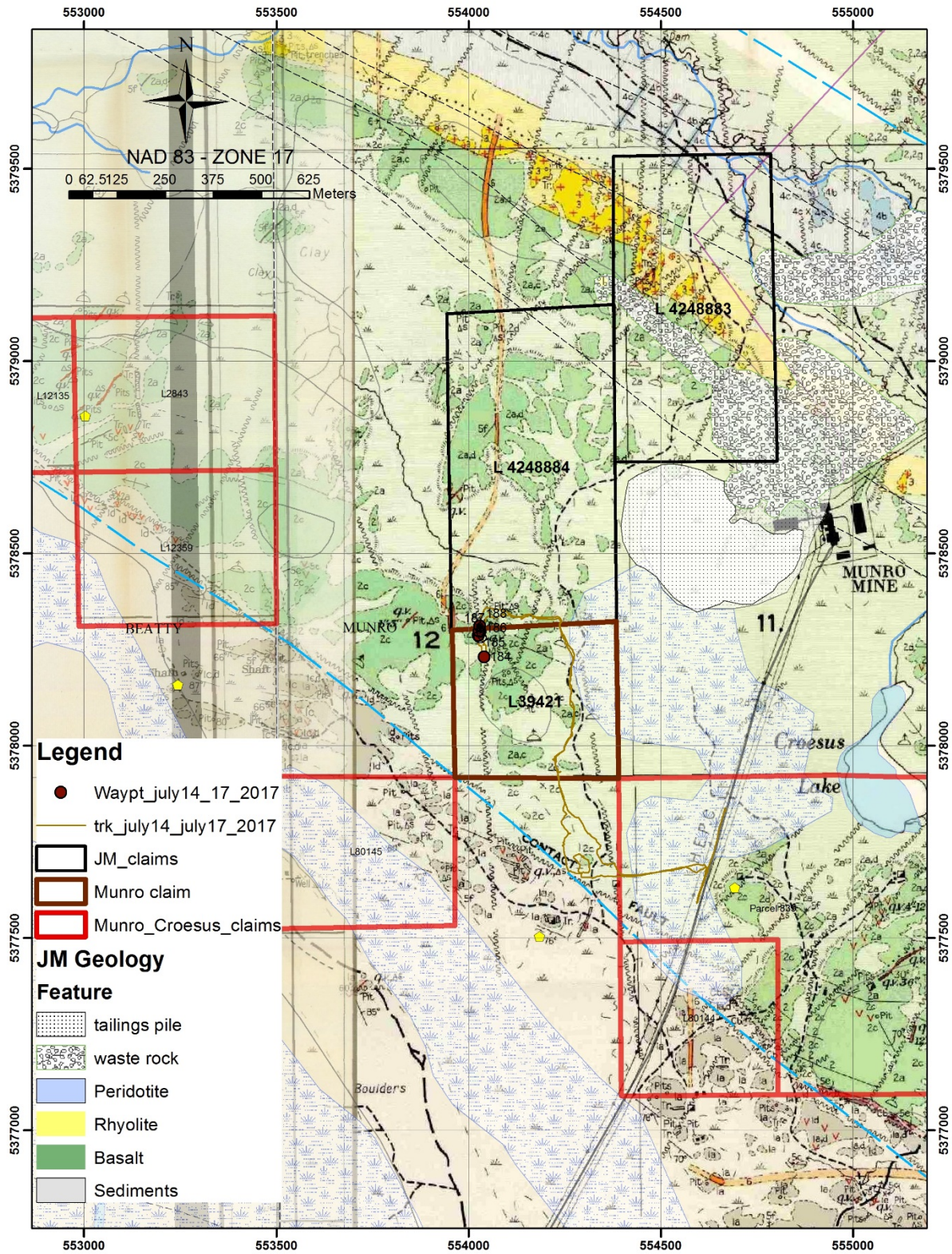


Figure 2: Geology, access, contiguity of JM property and Munro Claim - geology map 1951-5 by J. Satterly et al

Sample AB-86-31: 20 Au ppb, 5.6 Ag ppm, 129 As ppm, <1.5 Cu ppm, 422 Pb ppm, 593 Zn ppm, <5 Mo ppm.

Sample AB-86-32: 179 Au ppb, 30.7 Ag ppm, 184 As ppm, 4.9 Cu ppm, 417 Pb ppm, 491 Zn ppm, <5 Mo ppm.

Sample AB-86-33: 466 Au ppb, 10.6 Ag ppm, 151 As ppm, 6.2 Cu ppm, 352 Pb ppm, 605 Zn ppm, <5 Mo ppm. **Sample AB-86-34:** <10 Au ppb, 2.4 Ag ppm, 42.5 As ppm, 7.0 Cu ppm, 393 Pb ppm, 850 Zn ppm

In 1950, Northern Gold Mining sold 12 claims to the Canadian Johns-Manville Company that probably included what is currently claim L 4248883, but not L 4248884. Three diamond drill holes shown on Jack Satterly's map appear to have tested the south contact of the Munro Mine ultramafic in the northwest corner of L4248883 (previously the northwest corner of L 16401).

Jack Satterly's map locates several pits and trenches that are indications of historic work on claim L 4248884. Other than the location of prospects on his map there is no descriptive information provided and no samples taken at the high grade boundary pit and trenches.

The checkerboard claim ownership in the southwest Munro township results in multiple small land packages and is a hindrance to a cohesive exploration program. Because the JM property has been patented ground for much of its history there is limited information of exploration activity on the property, however additional research is required to determine if there is any more recent work reported on the JM property.

Work by Constantine Metal Resources Limited documented in this report, includes prospecting, and rock sampling carried out on July 17, 2017.

6.0 GEOLOGIC SETTING

The JM Property and Munro claim L39421 are located within the west-central part of the prolific Abitibi Greenstone Belt (AGB), host to many world-class gold, VMS, and Ni-Cu-PGE deposits. The AGB is composed of east-trending synclines of Precambrian age metavolcanics and metasedimentary rocks that are believed to have formed by a complex history of arc volcanism and back arc sediments subsequently deformed during continental collision. The strata generally dip vertically and are separated by east-trending faults.

In Ontario, the stratigraphy of the AGB has been divided into six early volcanic stratigraphic episodes (i.e. assemblages) that are unconformably overlain by two late sedimentary assemblages (Ayer, *et al.*, 2002):

2770-2735 Ma Pacaud assemblage
2730-2724 Ma Deloro assemblage
2723-2720 Ma Stoughton-Roquemaure assemblage
2719-2711 Ma Kidd-Munro assemblage
2710-2704 Ma Tisdale assemblage
2704-2696 Ma Blake River assemblage
~~~~ Unconformity ~~~~~  
2690-2685 Ma Porcupine assemblage  
2676-2670 Ma Timiskaming assemblage

The Kidd-Munro assemblage of the AGB has recently been subdivided into lower and upper parts (Ayer, *et al.*, 2005). The JM Property falls within the Upper Kidd-Munro (2717-2711 Ma) which

consists of tholeiitic and komatiitic volcanic units with minor graphitic metasedimentary rocks and localized tholeiitic felsic volcanic rocks (Ayer, *et al.*, 2005). A felsic volcanic horizon that transects the central part of the JM property has been dated in Beatty Township immediately to the west at 2714+/-2 and confirms the Upper Kidd-Munro age to the JM stratigraphy.

The main structural feature in the region is the Destor Porcupine Fault Zone that extends approximately 450 kilometers from west of Timmins (Ontario) eastward beyond Val d'Or (Quebec) and has an area of influence up to 10 kilometers wide. Many of the prolific gold camps in the region are structurally controlled and spatially related to the Destor Porcupine Fault Zone and its splays. The Pipestone Fault that is a splay of the Destor Porcupine bounds the JM property to the immediate south and the Munro Break (another regional splay of the Destor- Porcupine) lies to the immediate north Figure 3 shows the local geological setting of the property.

For a detailed description of the local geological setting, one is referred to the 2012 Assessment report by Constantine Metal Resources on the JM property.

## **7.0 Prospecting and Sampling work**

A total of 1 day of field work with 2 men was carried out on the JM claims and Munro claim L39421 on July 17, 2017. The work included prospecting and sampling in the area of the high grade showing on the south boundary of L4248884 and the south extension of the prospect onto patented Munro claim L3921. A total of 6 rock samples were collected and analyzed for gold plus multi-element 4 acid digestion ICP. GPS waypoint locations and the access track are shown on Figure 2 . Descriptions of waypoints and rock samples are provided in Table 2 and rock sample and waypoint locations are shown on a detailed pit and trench map of the Boundary prospect (Figure 3). Analytical certificates are included in Appendix B

On July 17, 2017, five chip samples were taken across the exposed face of mineralization in the boundary pit that identified a core zone of heavy arsenopyrite rich mineralization associated with very strong silicification that returned 5111 ppb (5.1 g/t Au) over 1.55m. An old trench extending 15 to 20 meters from the boundary pit to the south, on the patented claim L39421 (parcel 9929) was sampled on the side of the trench (where some bedrock was exposed) about 15 meter south of the claim boundary. The rock is silicified and mineralized with some arsenopyrite and returned 1296 ppb (1.3 g/t Au). From this location to the south, numerous overburden trenches were dug by the old timers on the trend of a north-south fault mapped by Satterly (1951) that appears to control the mineralization.

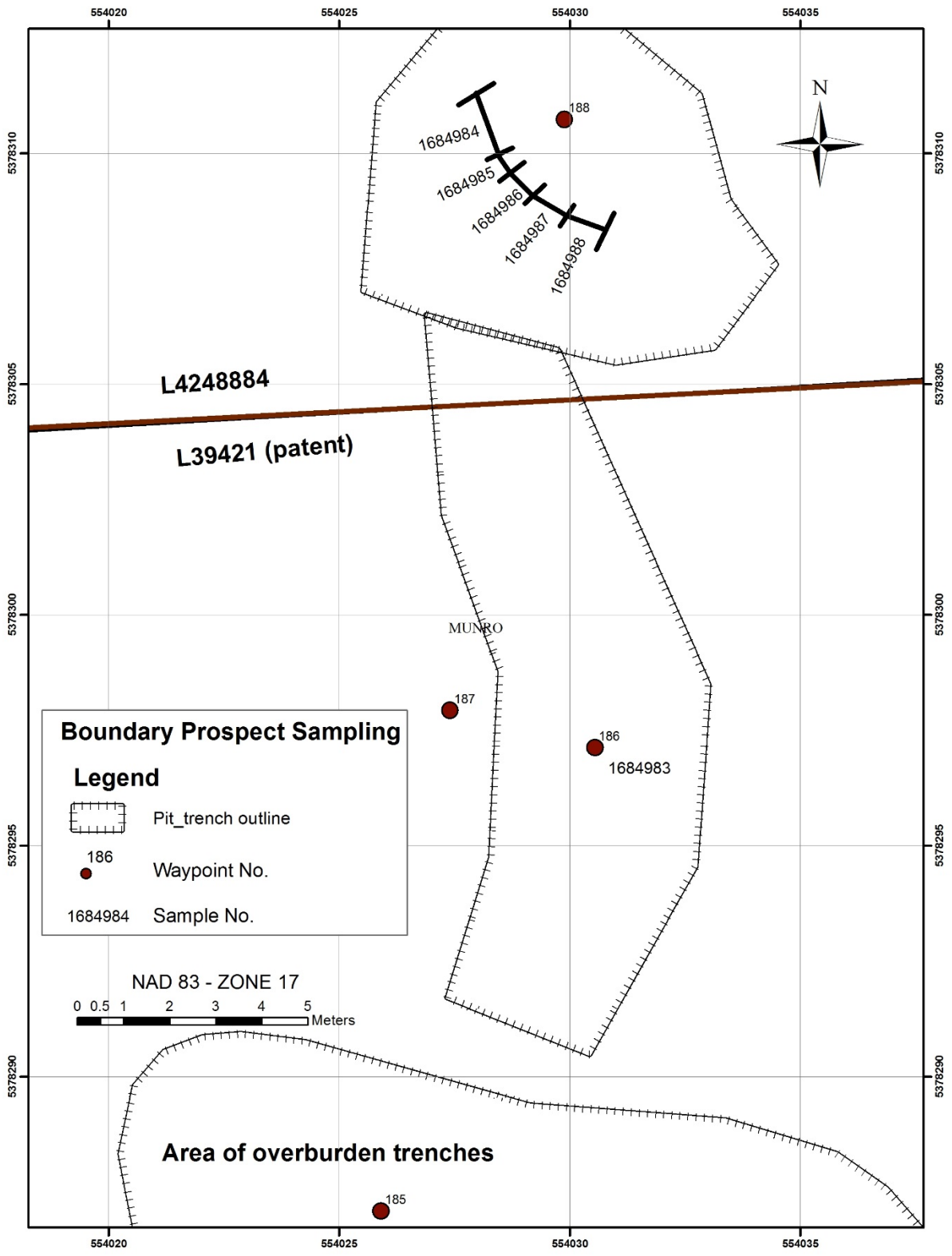


Figure 3: Boundary Prospect Map showing Rock Samples and Waypoints

| <b>Table 2 - Waypoints and Rock Samples</b> |                 |               |                                                                                                                                                                                                                                                                        |              |             |
|---------------------------------------------|-----------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| <b>Property</b>                             | <b>waypoint</b> | <b>Sample</b> | <b>Description</b>                                                                                                                                                                                                                                                     | <b>north</b> | <b>east</b> |
| Munro Claim                                 | 184             | No sample     | South trend of "Satterly Vein". Fe-Cb altered variolitic flow                                                                                                                                                                                                          | 5378231.29   | 554041.10   |
| Munro Claim                                 | 185             | No sample     | several old mainly overburden trenches, made by old timers testing for extension of vein structure. Fairly deep trenches that seem to be slightly off vein trend?                                                                                                      | 5378287.09   | 554025.91   |
| Munro Claim                                 | 186             | 1684983       | sample from south end of main trench - variolitic with fine to mg aspy (1-2%) with mg pyrite                                                                                                                                                                           |              |             |
| JM                                          | 187             | Hand sample   | Hand sample from dump of carbonate-qtz breccia with hazy pale chloritic frag like patches. Mineralized with very heavy arsenopyrite. Note that the dump is full of large blocks that are well mineralized with heavy arsenopyrite.                                     | 5378297.94   | 554027.40   |
| JM                                          | 188             | see below     | sequence of samples 1684984 to 1684988, collected from wall on southwest side of deep pit on claim boundary between claim L4248884 and patented Munro claim. Sequence of samples starts from northwest end and finishes at southwest end (see trench figure in report) | 5378297.94   | 554027.40   |
| JM                                          | 188a            | 1684984       | 1.5m wide coarse chip - variolitic rock - chloritic with some cse cb amy, diss py, no aspy noted                                                                                                                                                                       | 5378297.94   | 554027.40   |
| JM                                          | 188b            | 1684985       | chip sample across 0.40 m, silicified and variolitic with some fine aspy. Sample southeast of and contiguous to sample 1684984                                                                                                                                         | 5378297.94   | 554027.40   |
| JM                                          | 188c            | 1684986       | 0.7m chip contiguous with and southeast of 1684985. Strongly silicified variolitic rock with arsenopyrite                                                                                                                                                              | 5378297.94   | 554027.40   |
| JM                                          | 188d            | 1684987       | 0.85 m across core of zone. Contiguous with and southeast of 1684986. very silicified zone with heavy arsenopyrite.                                                                                                                                                    | 5378297.94   | 554027.40   |
| JM                                          | 188e            | 1684988       | 0.90m sample contiguous with and southeast of 1684987. More chloritic with minor fg aspy +/- pyrite. Marks southeast extent of contiguous samples.                                                                                                                     | 5378297.94   | 554027.40   |



**Figure 4: Prospector David Meunier in Boundary pit**

## **8.0 CONCLUSIONS**

Chip sampling has identified significant gold values in place associated with old trenches on the south boundary of L4248884 and established continuity of the gold bearing structure to the south on the recently acquired patented claim L39421 contiguous to L4248884.

The gold mineralization is related to a north-south fault that is mapped by Satterly (1951) that displaces the top of the variolitic flow horizon. The fault has right lateral displacement (west side north) of 10 to 20 meters. The extensions of the fault controlled mineralization are covered by overburden both to the north and south of the boundary prospect. Extensions of mineralization to the south on L39421 are suggested by iron carbonate alteration in some outcrops that bound the overburden covered fault linear.

The acquisition of patented claim L39421 provides the opportunity to explore the boundary prospect both to the north and south.

## **9.0 RECOMMENDATIONS**

More prospecting and rock sampling is recommended to the south of the Boundary prospect on L39421 where there is generally more outcrop exposure. The fault controlling the mineralization however, is defined by an overburden covered linear and soil sampling may provide a means of identifying "hotspots" along the structure. In the immediate area of the boundary showing, excavator trenching should be utilized to re-open the old trenches and look for extensions of the mineralization to the north and south before considering some diamond drilling.

## 10.0 REFERENCES

Ayer, J. A., Amelin, Y., Corfu, F., Kamo, S. L., Ketchum, J. W., Kwol, K., et al. (2002). Evolution of the southern Abitibi greenstone belt based on U-Pb geochronology: autochthonous volcanic construction followed by plutonism, regional deformation and sedimentation. *Precambrian Research* , 115, 63-95.

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Dube, B., & Gosselin, P. (2007). Greenstone-hosted quartz-carbonate vein deposits. In W. D. Goodfellow (Ed.), *Mineral Deposits of Canada: A Synthesis of Major Deposit-Types, District Metallogeny, the Evolution of Geological Provinces, and Exploration Methods*: Geological Association of Canada, Mineral Deposits Division, Special Publication No. 5 (pp. 49-73).

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Knight, C.W., Burrows, A.G., Hopkins, P.E and Parsons A.L. *Abitibi – Night Hawk Gold Area, Twenty-Eighth Annual Report of the Ontario Bureau of Mines, 1919 being Vol XXVIII., Part II*

Peloquin, A. S., Houle, M. G., & Gibson, H. L. (2005). Geology of the Kidd-Munro assemblage in Munro Township, and the Tisdale and Lower Blake River assemblages in Currie Township: Discover Abitibi Initiative, Open File Report 6157. Ontario Geological Survey.

Satterly, J.(1952). *Geology of Munro Township. Sixtieth Annual Report of the Ontario Department of Mines being Vol. LX, Part VIII, 1951.*

## 11.0 STATEMENTS OF QUALIFICATIONS

I, James Garfield MacVeigh, of Vancouver, British Columbia, Canada, hereby certify that:

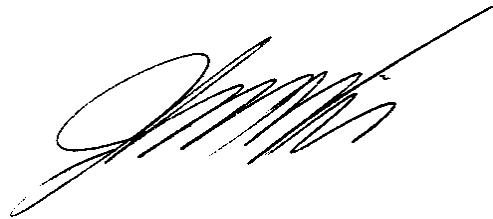
I am a graduate of Queens University at Kingston with a B.Sc. (Hon., First Class) in Geology, 1972 and have practiced my profession continuously since graduation.

I have been employed in the geoscience industry for over 40 years, and have explored for gold and base metals in North, Central, and South America and have experience in all phases of surface and underground exploration.

I am a director and officer and own shares of Constantine Metal Resources Ltd., the owner of the JM property that is the subject of this report.

I carried out the field work with prospector David Meunier for the report entitled "Report On Prospecting And Rock Sampling, JM Property and patented Munro Claim L39421, Munro Township – Larder Lake Mining Division, District Of Cochrane, NTS 42A/09" dated August 22<sup>nd</sup>, 2017.

Dated this 22<sup>nd</sup> day of August, 2017

A handwritten signature in black ink, appearing to read 'J. MacVeigh', with a long, sweeping horizontal stroke extending to the right.

"James Garfield MacVeigh"  
James Garfield MacVeigh



## **APPENDIX A - PERSONNEL**

**James Garfield MacVeigh  
Constantine Metal Resources Ltd.  
320 – 800 West Pender St.  
Vancouver, British Columbia  
V6C 2V6**

**David Meunier  
Prospector  
P.O Box 1624,  
403 Goldrush Ave.,  
South Porcupine, ON  
P0N 1H0**

## APPENDIX B – ANALYTICAL CERTIFICATES



**BUREAU VERITAS** MINERAL LABORATORIES  
Canada

[www.bureauveritas.com/um](http://www.bureauveritas.com/um)

Bureau Veritas Commodities Canada Ltd.  
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada  
PHONE (604) 253-3158

**Client:** **Constantine Metal Resources Ltd.**  
Suite 320 - 800 West Pender St.  
Vancouver British Columbia V6C 2V6 Canada

Submitted By: Garfield MacVeigh  
Receiving Lab: Canada-Timmins  
Received: July 20, 2017  
Report Date: August 18, 2017  
Page: 1 of 2

# CERTIFICATE OF ANALYSIS

TIM17000220.1

## CLIENT JOB INFORMATION

Project: JM  
Shipment ID:  
P.O. Number  
Number of Samples: 6

## SAMPLE DISPOSAL

RTRN-PLP Return After 90 days  
STOR-RJT Store After 60 days Invoice for Storage

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Constantine Metal Resources Ltd.  
Suite 320 - 800 West Pender St.  
Vancouver British Columbia V6C 2V6  
Canada

CC: Darwin Green

## SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

| Procedure Code | Number of Samples | Code Description                                    | Test Wgt (g) | Report Status | Lab |
|----------------|-------------------|-----------------------------------------------------|--------------|---------------|-----|
| PRP70-250      | 6                 | Crush, split and pulverize 250 g rock to 200 mesh   |              |               | TIM |
| FA330-Au       | 6                 | Fire assay fusion Au by ICP-ES                      | 30           | Completed     | VAN |
| EN002          | 6                 | Environmental disposal charge-Fire assay lead waste |              |               | VAN |
| MA300          | 6                 | 4 Acid digestion ICP-ES analysis                    | 0.25         | Completed     | VAN |
| BAT01          | 6                 | Batch charge of <20 samples                         |              |               | TIM |
| SHP01          | 6                 | Per sample shipping charges for branch shipments    |              |               | VAN |

## ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.  
\*\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Suite 320 - 800 West Pender St.

Vancouver British Columbia V6C 2V6 Canada

Project: JM

Report Date: August 18, 2017

Page: 2 of 2

Part: 1 of 2

# CERTIFICATE OF ANALYSIS

TIM17000220.1

| Method  | WGHT | FA330 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 |
|---------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Analyte | Wgt  | Au    | Mo    | Cu    | Pb    | Zn    | Ag    | Ni    | Co    | Mn    | Fe    | As    | U     | Th    | Sr    | Cd    | Sb    | Bi    | V     | Ca    |       |
| Unit    | kg   | ppb   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | %     | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | %     |       |
| MDL     | 0.01 | 2     | 2     | 2     | 5     | 2     | 0.5   | 2     | 2     | 5     | 0.01  | 5     | 20    | 2     | 2     | 0.4   | 5     | 5     | 2     | 0.01  |       |
| 1684983 | Rock | 1.41  | 1296  | <2    | 10    | <5    | 169   | <0.5  | <2    | 4     | 1392  | 8.56  | 5624  | <20   | 4     | 139   | <0.4  | <5    | <5    | 4     | 1.74  |
| 1684984 | Rock | 1.35  | 22    | <2    | 7     | <5    | 140   | <0.5  | <2    | 4     | 1175  | 4.81  | 51    | <20   | 2     | 74    | 0.4   | <5    | <5    | 4     | 2.22  |
| 1684985 | Rock | 1.35  | 8     | <2    | 5     | <5    | 148   | <0.5  | <2    | 3     | 1625  | 5.68  | 53    | <20   | <2    | 78    | 0.5   | <5    | <5    | 4     | 3.07  |
| 1684986 | Rock | 0.91  | 6854  | <2    | 4     | <5    | 129   | <0.5  | <2    | 3     | 1485  | 7.00  | 7330  | <20   | 3     | 66    | 0.5   | 10    | <5    | 6     | 1.70  |
| 1684987 | Rock | 2.09  | 3676  | <2    | 3     | <5    | 103   | <0.5  | <2    | 3     | 1377  | 5.94  | 6929  | <20   | 3     | 86    | 0.5   | 6     | <5    | 6     | 1.59  |
| 1684988 | Rock | 1.44  | 55    | <2    | 3     | <5    | 140   | <0.5  | <2    | 3     | 1862  | 8.06  | 1029  | <20   | 3     | 55    | <0.4  | <5    | <5    | 4     | 1.56  |



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Report Date: August 18, 2017

Page: 2 of 2

Part: 2 of 2

# CERTIFICATE OF ANALYSIS

TIM17000220.1

| Method  | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Analyte | P     | La    | Cr    | Mg    | Ba    | Ti    | Al    | Na    | K     | W     | Zr    | Sn    | Y     | Nb    | Be    | Sc    | S     |       |
| Unit    | %     | ppm   | ppm   | %     | ppm   | %     | %     | %     | %     | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | %     |       |
| MDL     | 0.002 | 2     | 2     | 0.01  | 1     | 0.01  | 0.01  | 0.01  | 0.01  | 4     | 2     | 2     | 2     | 2     | 1     | 1     | 0.1   |       |
| 1684983 | Rock  | 0.053 | 20    | 2     | 0.34  | 206   | 0.42  | 6.46  | 2.29  | 0.87  | <4    | 220   | 3     | 35    | 18    | 1     | 16    | 0.6   |
| 1684984 | Rock  | 0.049 | 15    | <2    | 0.19  | 181   | 0.36  | 5.29  | 2.78  | 0.54  | <4    | 166   | <2    | 45    | 15    | 1     | 12    | 0.3   |
| 1684985 | Rock  | 0.048 | 14    | <2    | 0.26  | 406   | 0.35  | 5.26  | 1.37  | 1.35  | <4    | 161   | <2    | 42    | 15    | 2     | 13    | <0.1  |
| 1684986 | Rock  | 0.061 | 18    | <2    | 0.40  | 301   | 0.38  | 5.80  | 0.92  | 1.89  | 6     | 202   | 3     | 43    | 16    | 2     | 14    | 1.0   |
| 1684987 | Rock  | 0.057 | 19    | <2    | 0.38  | 637   | 0.36  | 6.13  | 0.73  | 2.34  | 7     | 216   | 3     | 44    | 15    | 2     | 14    | 0.6   |
| 1684988 | Rock  | 0.058 | 17    | <2    | 0.44  | 293   | 0.43  | 6.39  | 1.86  | 1.03  | <4    | 175   | 3     | 43    | 18    | 1     | 16    | <0.1  |



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Page: 1 of 1

Part: 1 of 2

# QUALITY CONTROL REPORT

TIM17000220.1

| Method                   | WGHT       | FA330 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 |      |
|--------------------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Analyte                  | Wgt        | Au    | Mo    | Cu    | Pb    | Zn    | Ag    | Ni    | Co    | Mn    | Fe    | As    | U     | Th    | Sr    | Cd    | Sb    | Bi    | V     | Ca    |       |      |
| Unit                     | kg         | ppb   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | %     | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | %     |       |      |
| MDL                      | 0.01       | 2     | 2     | 2     | 5     | 2     | 0.5   | 2     | 2     | 5     | 0.01  | 5     | 20    | 2     | 2     | 0.4   | 5     | 5     | 2     | 0.01  |       |      |
| Pulp Duplicates          |            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |
| 1684985                  | Rock       | 1.35  | 8     | <2    | 5     | <5    | 148   | <0.5  | <2    | 3     | 1625  | 5.68  | 53    | <20   | <2    | 78    | 0.5   | <5    | <5    | 4     | 3.07  |      |
| REP 1684985              | QC         |       |       | <2    | 5     | <5    | 152   | <0.5  | <2    | 3     | 1614  | 5.66  | 51    | <20   | 3     | 77    | 0.4   | <5    | <5    | 4     | 3.02  |      |
| Reference Materials      |            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |
| STD OREAS25A-4A          | Standard   |       |       | 2     | 30    | 21    | 42    | <0.5  | 45    | 7     | 484   | 6.41  | 11    | <20   | 17    | 44    | 0.4   | <5    | <5    | 159   | 0.27  |      |
| STD OREAS45E             | Standard   |       |       | 3     | 807   | 16    | 46    | <0.5  | 482   | 62    | 577   | 25.46 | 18    | <20   | 15    | 14    | <0.4  | <5    | <5    | 332   | 0.05  |      |
| STD OXC145               | Standard   |       |       | 211   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |
| STD OREAS45E Expected    |            |       |       | 2.4   | 780   | 18.2  | 46.7  | 0.311 | 454   | 57    | 570   | 24.12 | 16.3  | 2.41  | 12.9  | 15.9  |       | 1     |       | 322   | 0.065 |      |
| STD OREAS25A-4A Expected |            |       |       | 2.55  | 33.9  | 26.6  | 44.4  |       | 45.8  | 8.2   | 500   | 6.7   | 10.7  | 2.94  | 15.8  | 48.5  |       | 0.67  | 0.35  | 163   | 0.283 |      |
| STD OXC145 Expected      |            |       |       | 212   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |
| BLK                      | Blank      |       |       | <2    | <2    | <5    | <2    | <0.5  | <2    | <2    | <5    | <0.01 | <5    | <20   | <2    | <2    | <0.4  | <5    | <5    | <2    | <0.01 |      |
| BLK                      | Blank      |       |       | 2     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |
| Prep Wash                |            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |
| G1-TIM                   | Prep Blank |       |       | 2     | <2    | 6     | <5    | 39    | <0.5  | <2    | 4     | 739   | 2.30  | <5    | <20   | 5     | 198   | 0.7   | <5    | <5    | 42    | 1.64 |



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Page: 1 of 1

Part: 2 of 2

# QUALITY CONTROL REPORT

TIM17000220.1

| Method                   | MA300      | MA300  | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 |
|--------------------------|------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Analyte                  | P          | La     | Cr    | Mg    | Ba    | Ti    | Al    | Na    | K     | W     | Zr    | Sn    | Y     | Nb    | Be    | Sc    | S     |       |
| Unit                     | %          | ppm    | ppm   | %     | ppm   | %     | %     | %     | %     | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | %     |       |
| MDL                      | 0.002      | 2      | 2     | 0.01  | 1     | 0.01  | 0.01  | 0.01  | 0.01  | 4     | 2     | 2     | 2     | 2     | 1     | 1     | 0.1   |       |
| Pulp Duplicates          |            |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 1684985                  | Rock       | 0.048  | 14    | <2    | 0.26  | 406   | 0.35  | 5.26  | 1.37  | 1.35  | <4    | 161   | <2    | 42    | 15    | 2     | 13    | <0.1  |
| REP 1684985              | QC         | 0.048  | 15    | <2    | 0.26  | 402   | 0.35  | 5.29  | 1.36  | 1.33  | <4    | 179   | 2     | 48    | 15    | 2     | 13    | <0.1  |
| Reference Materials      |            |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| STD OREAS25A-4A          | Standard   | 0.046  | 20    | 114   | 0.33  | 143   | 0.92  | 8.95  | 0.12  | 0.49  | <4    | 150   | 3     | 10    | 21    | <1    | 13    | <0.1  |
| STD OREAS45E             | Standard   | 0.034  | 12    | 1119  | 0.16  | 259   | 0.54  | 7.12  | 0.05  | 0.34  | <4    | 102   | <2    | 9     | 9     | <1    | 97    | <0.1  |
| STD OXC145               | Standard   |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| STD OREAS45E Expected    |            | 0.034  | 11    | 979   | 0.156 | 252   | 0.559 | 6.78  | 0.059 | 0.324 | 1.07  | 97    | 1.32  | 8.28  | 6.8   | 0.62  | 93    | 0.046 |
| STD OREAS25A-4A Expected |            | 0.0495 | 21.8  | 120   | 0.327 | 151   | 0.977 | 8.87  | 0.134 | 0.5   | 2     | 155   | 4.2   | 10.5  | 20.9  | 0.93  | 13.7  | 0.047 |
| STD OXC145 Expected      |            |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| BLK                      | Blank      | <0.002 | <2    | <2    | <0.01 | <1    | <0.01 | <0.01 | <0.01 | <0.01 | <4    | <2    | <2    | <2    | <2    | <1    | <1    | <0.1  |
| BLK                      | Blank      |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Prep Wash                |            |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| G1-TIM                   | Prep Blank | 0.039  | 12    | 3     | 0.60  | 829   | 0.21  | 7.22  | 3.50  | 1.77  | <4    | 52    | <2    | 17    | 6     | 1     | 7     | <0.1  |