## ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT: Assessment Report on the Giant Mineral Claims, Tenure Number 404495, Rossland British Columbia, Geological and Geochemical Surveys

## TOTAL COST: \$5,307.58

AUTHOR(S): Lorne M. Warner, P.Geo L 25734
SIGNATURE(S):
NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):
STATEMENT OF WORK EVENT NUMBER(S)/DATE(S ): 5704459 , May 15, 17-18
YEAR OF WORK: 2018
PROPERTY NAME: Giant
CLAIM NAME(S) (on which work was done): Giant \# 404495

COMMODITIES SOUGHT: Mo, Co
MINERAL INVENTORY MINFILE NUMBER(S),IF KNOWN:
MINING DIVISION: Trail
NTS / BCGS:082F04W/082F002

UTM Zone: 11 N EASTING:439700 NORTHING:5436750
OWNER(S): Vangold Resources Ltd.
MAILING ADDRESS: 7681 Prince Edward Street, Vancouver, BC, V5X 3R4
OPERATOR(S) [who paid for]: Vangold Resources Ltd.
MAILING ADDRESS: 7681 Prince Edward Street, Vancouver, BC, V5X 3R4

REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. Do not use abbreviations or codes)

Early Jurassic Age Rossland Group Volcanics, northeast trending Elise argillaceous siltstone, mafic and basaltic flows intruded by augite porphyry Rossland Sills, Rossland Monzonite and Rainy Day Pluton with associated molybdenum breccia complex and late stage, north-south trending Tertiary lamprophyre and feldspar porphyry dykes. Mineralization consists of semimassive to massive, healed shears, trending approximately east-west, dipping steeply north.
\(\left.$$
\begin{array}{|l|c|c}\hline \begin{array}{l}\text { TYPE OF WORK IN } \\
\text { THIS REPORT }\end{array} & \begin{array}{c}\text { EXTENT OF WORK } \\
\text { (in metric units) }\end{array} & \text { ON WHICH CLAIMS }\end{array}
$$ \begin{array}{c}PROJECT COSTS <br>
APPORTIONED <br>

(incl. support)\end{array}\right]\)| GEOLOGICAL (scale, area) |
| :--- |
| Ground, mapping |

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| Other | PAC | $\$ 1003.78$ |
| :---: | ---: | :---: |
|  | TOTAL <br> COST | $\$ 5,307.58$ |

Page 2 of 2

# Assessment Report on Giant Mineral Claim, Tenure 404495, Rossland, British Columbia, Geological and Geochemical Surveys 

For<br>Vangold Resources Ltd<br>Trail Creek Mining Division British Columbia<br>Map Number 082F001<br>Latitude $49^{\circ} 04^{\prime} 20^{\prime \prime} \mathrm{N}$<br>Longitude $117^{\circ} 49^{\prime} 52^{\prime \prime} \mathrm{W}$

Lorne M. Warner, P.Geo. L 25734 Geocon Enterprises Inc.

Date: Revivsed May 02, 2019

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### 1.0 Summary

A field examination of the property was undertaken by the author on May 15, May 17-18, 2018 Geological mapping including four grab, rock samples were collected from the property containing sulphide mineralization. The purpose of the program was to determine if other potentially economic mineralization is associated with the known intrusive hosted molybdenite. From 1966 to 19721.1 million tons of molybdenum ore, grading 0.22 \% Mo. ( 4.8 million pounds of elemental molybdenum) was open pit mined from the western slopes of Red Mountain northwest of Rossland. This ore came from a mineralized system of breccias located about 1000 meters northwest of the Le Roi vein system.

The claims are important and more exploration work is recommended however, data compilation is required before any further field work should proceed.

### 2.0 Introduction

Field studies entailed geological mapping and rock sampling conducted on Mineral Titles \# 404495. The claims are owned by Vangold Resources and field work was conducted on May 15, 17-18 by the author. Work was applied to Mineral Titles \# 404489-404493, 404495, 404496, 404498-404501, 404503 and 404505. All mineral titles listed above are reverted crown grants.

### 2.1 Location

The mineral claims are located in the valley slopes just north of the City of Rossland in the Trail Creek Mining Division, south-eastern British Columbia (Figure 1, page 16 and Figure 2 page 17). Rossland is located approximately 6 km . southwest from the City of Trail, B.C. and about 7 km . north of the United States border. Geographic coordinates of the centre of the mineral claims is Longitude $117^{\circ} 49^{\prime} 52^{\prime \prime} \mathrm{W}$ by Latitude $49^{\circ} 04^{\prime} 20^{\prime \prime} \mathrm{N}$.

### 2.2 Access

Rossland and vicinity is served by provincial highways 3 b and 22 and by Castlegar airport, located 26 km. north of Trail, B.C. Recently, and the Trail airport has been opened to regularly schedule commercial flights.

The mineral properties are located less than 300 metres from paved road and minutes away from both the Canada - U.S.A border and Teck - Cominco's Trail smelter (where a new copper smelter has been proposed). Access to the property is very good along numerous old mining, railway, logging, and utility/communications service roads. Surface rights in the Southbelt area, where drilling occurred, are registered with retired diamond drillers Mike and Brian Pistak of Rossland B.C.

Relief on the property is approximately 450 metres with moderate to locally steep slopes. The property is moderately treed and locally logged with some dense bushy areas. Interior Douglas fir and Lodge pole pine with localized stands of cedar are the predominant forest cover. Numerous stands of poplar and birch occur in the lower elevations. The region has been affected by continental glaciation. Two ice directions have been recorded with the final advance being south-southwest. Glacial till, on the order of 1 5 m . thick covers most of the property. Outcrop exposure is good in general especially near road cuts and previously explored/worked areas.

### 2.3 Claim Status

Based upon the work completed the following claims, all reverted crown grants in Table \#1 will now remain in good standing until July 22, 2018 except for the Evening reverted crown grant which will be in good standing until July 22, 2020.

## Table \#1

| Title \# | Claim Name | Old Expiry <br> Date | New Expiry <br> Date | Applied Work <br> Value |
| :--- | :--- | ---: | :--- | ---: |
| 404489 | Mountain View | $2018 / \mathrm{jul} / 22$ | $2019 / \mathrm{jul} / 22$ | $\$ 436.99$ |
| 404490 | Eureka | $2018 / \mathrm{jul} / 22$ | $2019 / \mathrm{jul} / 22$ | $\$ 436.99$ |
| 404491 | Evening | $2019 / \mathrm{jul} / 22$ | $2020 / \mathrm{jul} / 22$ | $\$ 500.69$ |
| 404492 | California | $2018 / \mathrm{jul} / 22$ | $2019 / \mathrm{jul} / 22$ | $\$ 436.99$ |
| 404493 | Nevada | $2018 / \mathrm{jul} / 22$ | $2019 / \mathrm{jul} / 22$ | $\$ 436.99$ |
| 404495 | Giant | $2018 / \mathrm{ju} / 22$ | $2019 / \mathrm{jul} / 22$ | $\$ 436.99$ |
| 404496 | San Francisco | $2018 / \mathrm{jul} / 22$ | $2019 / \mathrm{jul} / 22$ | $\$ 436.99$ |
| 404498 | Peak | $2018 / \mathrm{jul} / 22$ | $2019 / \mathrm{jul} / 22$ | $\$ 436.99$ |
| 404499 | Mariposa | $2018 / \mathrm{jul} / 22$ | $2019 / \mathrm{jul} / 22$ | $\$ 436.99$ |
| 404500 | Coxey | $2018 / \mathrm{jul} / 22$ | $2019 / \mathrm{jul} / 22$ | $\$ 436.99$ |
| 404501 | Sam Hayes | $2018 / \mathrm{jul} / 22$ | $2019 / \mathrm{jul} / 22$ | $\$ 436.99$ |
| 404503 | Rockingham | $2018 / \mathrm{jul} / 22$ | $2019 / \mathrm{jul} / 22$ | $\$ 436.99$ |
| 404505 | Rockingham Frac. | $2018 / \mathrm{jul} / 22$ | $2019 / \mathrm{jul} / 22$ | $\$ 436.99$ |
|  |  | Total Applied Work Value | $\$ 4303.80$ |  |
|  |  | PAC Amount Used | $\$ 1003.78$ |  |
|  |  | Total Value of Work | $\$ 5307.58$ |  |

### 2.4 History

The annual BC Minister of Mines annual reports show only 116 claims were staked in the Rossland camp in 1890. The majority were staked on the Main belt veins (Red - Monte Christo - Columbia/Kootenay Mountains), North belt veins (Red and Monte Christo Mountains) and the 'free gold belt' (OK Mountain 2 km . west of Rossland the OK, IXL and Midnight claims where 10,000 tons of ore returning $33,000 \mathrm{oz}$. gold, 13,000 oz. silver and 10 tons of copper was mined from 1898 to 1962). By the end of 1895 the first large ore body in the camp had been discovered on the War Eagle, over 2,200 mineral claims had been staked, a smelter was being built in Trail and two different railways were being built to reach Rossland.

Dividend paying gold mines were active in Rossland from 1890 to 1928 and in 1906 the Consolidated Mining and Smelting Company of Canada Ltd. was organised with the Rossland gold mines forming Cominco's founding asset (Consolidated stood for the consolidation of the Rossland mines). With gold at $\$ 20 /$ ounce and water pumping costs approaching the cost of extraction, production was shut down in 1928. Further incentive occurred when at that time metallurgical problems associated with the massive Sullivan lead - zinc - silver deposit in Kimberly were solved. The Rossland gold mines were also shut down for nearly 2 years during the 1920 - 1922 when the Company made a preliminary focus on the challenges of the Sullivan ore body.

At the time of the Rossland gold mine shutdown in 1928, records show that seven, 1 ounce/ton gold stopes were still being mined in the War Eagle mine alone. In the early 1930's leasers reactivated the 4 upper dry levels of the Le Roi mine complex on Red Mountain, where it is estimated that approximately 250,000 ounces of gold were further extracted. Leaser production was so large that by the mid 1930's Cominco severely limited such operations and gold production from the Rossland area virtually ceased. It is said that during the 1930's leasing operations, shipping ore had to be greater than 0.5 oz/ton gold or it was left behind (personal communication 1989, Mike Delich, Jack MacDonald, depression era gold lease workers).

From 1966 to 19721.1 million tons of molybdenum ore, grading 0.22 \% Mo. ( 4.8 million pounds of elemental molybdenum) was open pit mined from the western slopes of Red Mountain northwest of Rossland. This ore came from a mineralized system of breccias located about 1000 meters northwest of the Le Roi vein system.

From 1994 to 1995 the Evening Star and Iron Colt properties on Monte Christo Mountain together produced 20,000 tons of ore at a recovered grade of 0.44 ounces gold / ton (1994-1995). During this operation shrink stoppage mining produced gold from near surface ore bodies only above previously existing adit levels. Development of intermediate and lateral gold resources was hindered by $\$ 350 /$ ounce gold. These claims are located approximately 1500 metres east of the property area on the same mineralized structural trend.

### 2.5 2018 Exploration Program

The author's field work program for Vangold in the Rossland Camp in 2018 was to map and possible collect rock samples of the intrusion breccias to determine if other potentially economic mineralization is present in the breccia environment.

Four grab, rock samples were collected for analysis. These samples were in place, some of which were collected from within old trenches. Their locations and sample descriptions are located in the Table \# 2 below. Full analytical results are posted in Appendix I.
Table \#2

| SAMPLE \# | TYPE | UTM mE | UTM mN | DESCRIPTION |
| :--- | :--- | :--- | :--- | :--- |
| W5084479 | GRAB | 0439462 | 5437207 | Intrusion Breccia with 2-5\% MoS2 clots and along fractures. |
| W5084480 | GRAB | 0439756 | 5437056 | Intrusion Breccia with trace MoS2 along fractures. |
| W5084481 | GRAB | 0439756 | 5437056 | Intrusion Breccia with trace MoS2, arsenopyrite along fractures and as <br> fragments with traces of cobalt bloom on oxidized surface. |
| W5084482 | GRAB | 0439756 | 5437056 | Fine grained intrusive with traces of Mos2 along fractures. |

### 2.6 Economic and General Assessment

The Rossland gold camp produced approximately 6.2 million tons of ore with a recovered grade of 0.47 oz/ton gold, 0.6 oz /ton silver and 1\% copper (Gilbert 1948).
Ninety-eight percent of the production came from four adjacent properties (Le Roi, Centre Star, War Eagle, Josie) located on the northwest contact of the Rossland monzonite northwest of Rossland. These four properties were collectively known as the LeRoi Mine, and acquisition and operation of them by Consolidated Mining and Smelting (now Teck - Cominco) in the early part of the last century was a major factor in the initial growth of the company. The Velvet Mine, located 8 km . southwest of Rossland also produced a significant tonnage of gold-copper ore. Approximately 50 smaller mines were operated within the camp including the Homestake, Maid of Erin, Evening Star and Iron Colt, producing up to 100,000 tons of ore (Little 1960). From 1966 to 19721.1 million tons of molybdenum ore, grading 0.22 \% Mo. (4.8 million pounds of elemental molybdenum) was open pit mined from the western slopes of Red Mountain
northwest of Rossland. This ore came from a mineralized system of breccias located about 1000 meters northwest of the Le Roi vein system where the Giant claim is located.

### 3.0 Geological Setting and Mineralization

### 3.1 Regional Geology

The geology of the Rossland camp has been studied by various federal and provincial government geologists, namely Drysdale (1915), Little (1982), Fyles (1984) and Hoy (2001). Detailed information on the geology, structure and mineralization of the Rossland area can be found in the well investigated and documented Bulletin 109, Metallogeny and Mineral Deposits of the Nelson - Rossland map area, B.C. Ministry and Mines Energy and Minerals Division (Hoy and Dunne, 2001).

Other ideas about the geology of the Rossland area and the gold deposits in particular were outlined by geological consultants Westoll (1987), Hogg (1989), Sampson (1994), Lang (2003) and Wehrle (2006, 2007). The following description of the area is attributed to Sampson (1994) and mostly based on the work of Westoll and Hogg.

The oldest major sequence in the Rossland area consists of Carboniferous siltstone, argillaceous quartzite and slate of the Mount Roberts Formation, which is uncomfortably overlain by lower Jurassic volcanic flows, agglomerates and tuffs of the Rossland Formation (Little 1982). Contemporaneous with the volcanism were intrusions of augite-porphyry sills and in southwest of Rossland an ultramafic body. The volcanic sequence has a regional north-south trend with dips usually to the west. These rocks have been intruded by the Rossland monzonite and Nelson plutonic suite of upper Jurassic age. These intrusions are closely associated with the ore deposits of the area. The Rossland monzonite is an eastwest trending elongated stock which plunges north to northwest. The Nelson granodiorite and diorite intrusions which outcrop to the northeast of Rossland are believed to underlie the area of the known ore deposits (LeRoi, Centre Star). Numerous diorite and lamprophyre dikes related to this intrusion cut the country rock and the Rossland monzonite.

During the Tertiary period the Coryell alkaline syenite, Sheppard granite and associated dikes intruded the area. These are post mineralization.

A unique feature within the volcano-sedimentary Rossland Formation is the Red Mountain Breccia Complex, lying 1.5 km . northwest of Rossland. This may represent a volcanic neck developed as part of the late Jurassic intrusive cycle.

Major structural features in the area are poorly evident due to the lack of outcrop. Based on underground and geophysical information, there appears to be two main fracture directions: an east-west set of shears dipping north and a north-south set of faults dipping steeply east. The latter are frequently occupied by dikes and sometimes offset the east-west shears. In addition to these recurrent structures, a north-south trending thrust fault has been identified by Little (1982) west of Rossland as outlined in Figure 3, page 19.

### 3.2 Property Geology

This area is underlain predominantly by volcanic pyroclastics, some flows and siltstones which mostly belong to the Rossland group. The units form an arcuate configuration to the south of the Rossland monzonite and in many areas have been thermally metamorphosed to hornfels. Formational strikes vary from 030 to 330 degrees and dips are steeply to the west. The monzonite contact is sinuous, trends east -west and lies partly within South belt properties. Locally the sequence has been metamorphosed by the emplacement of intrusions so that the volcanics now appear to grade into rocks of dioritic texture. The siliceous sediments have been metamorphosed to banded hornfels as part of the contact aureole around the Rossland monzonite. In the surrounding Giant claim area, from 1966 to 1972, 1.1 million tons of molybdenum ore, grading 0.22 \% Mo. ( 4.8 million pounds of elemental molybdenum) was open pit mined from the western slopes of Red Mountain northwest of Rossland. This ore came from a mineralized system of intrusion breccias. The intrusion breccia mineralization is located approximately 1000 meters northwest of the Le Roi vein system. Figure 4, page 18.

### 3.3 Mineralization

In close proximity to the Giant claim, historical mining of the intrusion breccias has been focused on molybdenite mineraization averaging, $0.22 \%$ MoS2. Molybdenite mineralization is concentrated within the intrusion breccias occurring along dry fractures but also as clots associated with pyrite/pyhotite and arsenopyrite. During the field exam erythrite (cobalt blooms) were observed and sampled.

The majority of mineralization in the Rossland area consists of replacement sulphides along east-west fractures developed in Rossland group volcanics and the Rossland monzonite. The ore varies from disseminated to narrow stringers to massive sulphides. The sulphides are chiefly pyrrhotite and chalcopyrite with minor amounts of other sulphides. Gangue consists of altered wall rock with variable
amounts of quartz and calcite. The gold occurs in solid solution or ex-solution within chalcopyrite (Thorpe 1967). The gold-silver ratio of the ore averages 0.78 . There is a trend towards decreasing chalcopyrite content towards the monzonite contact, coupled with an increase in the gold-silver ratio. Within the LeRoi mine a similar trend is observed from the upper to the lower portions of the ore body.
Mineralized veins in Rossland area commonly strike in an east-west to north 60-70 degree east direction (LeRoi, Centre Star), but there is also a less frequently observed strike of N60 W (War Eagle). Dips are 68-80 N. Although the veins may be continuously mineralized over distances of hundreds of meters, the ore bodies generally occur as a series of shoots 2-13 metres in width, 60-120 metres in strike length and in excess of 400 metres in plunge length. These dimensions were those exhibited by deposits in the LeRoi Mine vicinity, but the smaller deposits of the area appear to conform to the same lensitic pattern along shear systems. Overall depths at the LeRoi Mine exceeded 480 metres. The California and Evening Mineral claims are situated along the west flank along the same structure that extends through the War Eagle, LeRoi, Centre Star and Iron Colt Deposits.

It has been noted from previous authors that a number of factors appear to be important in the localization of shoots, namely:

Proximity to the Rossland monzonite contact;
Development of shears along the contacts of various intrusive dikes or tongues;
Intersection of north-south and east-west shearing;
Intrusions of lamprophyre and diorite dikes in north-south structures which influence thickening or ore;
Wall rock reaction with intrusive dikes and tongues; Intensity of fracturing.

### 4.0 Interpretation and Conclusion

Molybdeum values were as anticipated. The discovery of erythrite associated with the molybdenite mineralization and values of up to $0.43 \% \mathrm{Co}$ and might be associated with arsenopyrite mineralization, however the assay results do not indicate either a positive or negative coorelation. Also observed was the occurrence of molybdenite mineralization along dry fractures in the surround metasediment country rock. From this limited field program of mapping and rock sampling there appears to be the potential of significant concentrations of cobalt, something probably not investigated in the past but due to higher demand for cobalt should be evaluated further.

Located on Figure \# 5 are the 4 rock samples collected on the property. Below in Table \# 3 lists Molybdenum, Cobalt, Arsenic, Bismuth and Nickel values obtained from rock sampling during geological mapping. All results are posted in Appendix 1.

Table \# 3

| Sample <br> Number | Mo | Co | As | Bi | Ni |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\%$ | ppm | ppm | ppm | ppm |
| W5084479 | 2.40 | 68 | $>5000$ | 691 | 56 |
| W5084480 | 0.953 | 23 | 84 | 68 | 13 |
| W5084481 | 0.807 | 4310 | $>5000$ | 468 | 138 |
| W5084482 | 0.763 | 396 | 977 | 518 | 100 |

### 5.0 Recommendations

These recommendations are specific to the Giant claim area and surrounding claims that potentially host the intrusion breccias.

The database requires extensive compilation prior to any substantial field work. A lot of the data contains only partial information to that survey, most of which is not in electronic form. It is recommended that previous geological maps be compiled and put into electronic form; this recommendation can be made for all the properties currently under the ownership of Vangold Resources and Rossland Resources in the Rossland Camp.

During the winter months some thin section work should be completed on the cobalt bearing sample.
During field season more geological mapping and sampling is required, a later start to the field work is recommended as the snow pack was not completely gone and in fact was still over 2-3 feet thick in areas of interest.

### 6.0 References

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### 7.0 Statement of Costs



### 8.0 Statement of Qualifications

I, Lorne M. Warner of Kamloops B.C., do hereby certify that:

1. I am a Consulting Geologist currently residing at 2269 Ainslie Place, Kamloops, BC, V1S 1H3.
2. I am a graduate of the University of Alberta with B.Sc. Geology (1985).
3. I have worked continuously in mineral exploration on a fulltime basis since 1985 in the employ of Noranda Inc. (1985-1988) and Placer Dome Exploration Limited (1988-2001) with experience in North and South America. From 2002 to Present I have consulted for over five junior mining companies and worked in China, Mali, Niger, South Africa, Namibia and Papua New Guinea.
4. I am a registered member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia. I am also a registered member of Professional Engineers, Geologists and Geophysicists for Nunavut and Northwest Territories and am a qualified person for the purposes of National Instrument 43-101.
5. I conducted exploration on the Property described in this report, in May 2018.
6. I was responsible for all sections of the report.

Lorne M. Warner
Lorne M. Warner, P.Geo.
Revised May 02/2019

Figure 1 Location Map


Figure 1. Location of the Rossland mining district, southeastern British Columbia, which contains the South belt property of Vangold Resources Ltd.

Figure 2 Claim Location Map


Figure 3 Regional Geological Setting


Figure 3. Regional geological setting of the Rossland district, British Columbia. Geology modified fron Hoy and Dunne (2001). Zoning pattern of mineralization compiled from Hoy and Dunne (2001), Thorpi (1967) and Rhys (1995a). Representation of mineralized zones is generalized from Rhys (1995a).

Figure 4 - Property Geology and Known Mineralized Structures


Figure 5 Survey Area 2018


200 metres

Vangold Resources Ltd Giant Claim
Geology and Rock Sample Locations October 2018 Figure \# 5

## Appendix I- Analytical Results

Innovative Technologies

Date Submitted: 04-Jun-18<br>Invoice No.: A18-07307 (i)<br>Invoice Date: 25-Jul-18<br>Your Reference: Iron Colt/South Block<br>Rossland Resources LTD<br>2269 Ainslie Place<br>kamloops BC<br>ATTN: Lorne Warner

## CERTIFICATE OF ANALYSIS

17 Soil samples were submitted for analysis.
The following analytical package(s) were requested
Code 1A2-Kamloops Au - Fire Assay AA
Code 1F2-Kamloops Total Digestion ICP(TOTAL)

REPORT A18-07307 (i)
This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:
If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3
Values which exceed the upper limit should be assayed for accurate numbers.


| Results |  |  |  |  |  |  |  | Activation Laboratories Ltd. |  |  |  |  |  |  | Report: A18-07307 |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Analyte Symbol | Mo | Au | Ag | Al | As | Ba | Be | Bi | Ca | Cd | Co | Cr | Cu | Fe | Ga | Hg | K | Mg | Li | Mn | Mo | Na | Ni |
| Unit Symbol | \% | ppb | ppm | \% | ppm | ppm | ppm | ppm | \% | ppm | ppm | ppm | ppm | \% | ppm | ppm | \% | \% | ppm | ppm | ppm | \% | ppm |
| Lower Limit | 0.003 | 5 | 0.3 | 0.01 | 3 | 7 | 1 | 2 | 0.01 | 0.3 | 1 | 1 | 1 | 0.01 | 1 | 1 | 0.01 | 0.01 | 1 | 1 | 1 | 0.01 | 1 |
| Method Code | $\begin{aligned} & \text { 4ACid } \\ & \text { ICPOE } \\ & \mathrm{S} \end{aligned}$ | FA-AA | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP |
| Iron Colt W5084466 |  | 35 | 0.3 | 7.30 | 64 | 820 | 2 | <2 | 1.79 | 2.0 | 19 | 45 | 71 | 4.41 | 18 | <1 | 1.48 | 0.92 | 30 | 1670 | 2 | 1.60 | 33 |
| $\begin{array}{\|l\|} \hline \text { Iron Colt } \\ \text { W5084467 } \\ \hline \end{array}$ |  | 54 | 0.4 | 6.32 | 374 | > 1000 | 2 | <2 | 2.40 | 8.3 | 44 | 61 | 89 | 4.60 | 15 | <1 | 1.35 | 1.20 | 24 | 2250 | 2 | 1.32 | 40 |
| $\begin{array}{\|l\|} \hline \text { Iron Colt } \\ \text { W5084468 } \end{array}$ |  | 36 | 0.3 | 8.26 | 454 | 767 | 2 | <2 | 1.54 | <0.3 | 22 | 48 | 169 | 5.52 | 18 | 3 | 1.50 | 1.08 | 27 | 780 | 6 | 1.36 | 38 |
| $\begin{aligned} & \hline \text { Iron Colt } \\ & \text { W5084469 } \\ & \hline \end{aligned}$ |  | 28 | 0.5 | 8.11 | 120 | > 1000 | 2 | <2 | 1.49 | 1.5 | 32 | 66 | 153 | 5.73 | 17 | <1 | 1.66 | 1.52 | 31 | 1100 | 3 | 1.47 | 54 |
| $\begin{array}{\|l\|} \hline \text { Iron Colt } \\ \text { W5084470 } \end{array}$ |  | 39 | 0.4 | 8.44 | 255 | 752 | 2 | 7 | 2.17 | 1.3 | 36 | 137 | 162 | 5.30 | 20 | <1 | 1.50 | 2.25 | 38 | 966 | <1 | 1.53 | 125 |
| $\begin{aligned} & \hline \text { Iron Colt } \\ & \text { W5084471 } \\ & \hline \end{aligned}$ |  | 1880 | 15.3 | 2.47 | > 5000 | 103 | <1 | 11 | 0.76 | <0.3 | 49 | 34 | 1230 | 26.4 | 6 | <1 | 1.84 | 0.39 | 7 | 296 | 9 | 0.44 | 11 |
| Iron Colt <br> W5084472 |  | 722 | 1.6 | 8.08 | 3680 | 758 | 2 | 3 | 2.30 | < 0.3 | 71 | 30 | 549 | 6.03 | 20 | <1 | 1.65 | 1.02 | 36 | 605 | 1 | 1.49 | 29 |
| $\begin{aligned} & \text { Iron Colt } \\ & \text { W5084473 } \end{aligned}$ |  | > 5000 | 0.9 | 5.94 | > 5000 | 751 | 1 | 6 | 2.56 | 0.4 | 146 | 54 | 753 | 13.2 | 17 | <1 | 1.55 | 1.34 | 23 | 997 | 2 | 1.06 | 17 |
| South Block W5084474 |  | 9 | 0.5 | 8.45 | 16 | 832 | 2 | <2 | 2.16 | 1.3 | 11 | 37 | 26 | 3.17 | 20 | <1 | 1.80 | 0.77 | 30 | 1060 | <1 | 1.88 | 20 |
| South Block W5084475 |  | < 5 | 0.3 | 7.37 | 7 | 790 | 2 | <2 | 2.00 | 0.7 | 8 | 53 | 14 | 2.95 | 19 | <1 | 1.73 | 0.71 | 27 | 588 | <1 | 1.92 | 14 |
| South Block W5084476 |  | 5 | 0.3 | 8.52 | 17 | 867 | 2 | <2 | 2.14 | 0.9 | 12 | 38 | 22 | 3.58 | 20 | <1 | 1.69 | 0.87 | 30 | 794 | < 1 | 1.93 | 23 |
| South Block W5084477 |  | < 5 | 0.6 | 8.55 | 19 | 924 | 2 | <2 | 2.31 | 0.7 | 13 | 46 | 32 | 3.58 | 22 | 3 | 1.75 | 0.99 | 27 | 647 | <1 | 2.05 | 27 |
| South Block W5084478 |  | 7 | <0.3 | 7.66 | 6 | > 1000 | 2 | <2 | 2.52 | 1.0 | 12 | 59 | 20 | 3.46 | 18 | <1 | 1.78 | 0.97 | 25 | 1000 | < 1 | 1.97 | 22 |
| W5084479 | 2.40 |  | 2.1 | 6.16 | >5000 | 296 | $<1$ | 691 | 3.97 | 0.5 | 68 | 88 | 153 | 2.62 | 7 | 13 | 5.77 | 1.08 | 9 | 592 | - 10000 | 0.46 | 56 |
| W5084480 |  |  | <0.3 | 8.70 | 84 | 774 | 2 | 68 | 5.57 | 0.7 | 23 | 25 | 28 | 2.77 | 16 | 3 | 1.53 | 1.73 | 16 | 804 | 9530 | 3.69 | 13 |
| W5084481 |  |  | 0.5 | 8.08 | > 5000 | 204 | 2 | 486 | 5.32 | 0.4 | 4310 | 26 | 6 | 3.96 | 16 | 2 | 1.21 | 1.33 | 10 | 514 | 8070 | 3.66 | 138 |
| W5084482 |  |  | 1.2 | 8.21 | 977 | 224 | 2 | 518 | 6.55 | <0.3 | 396 | 18 | 313 | 4.60 | 16 | 3 | 0.96 | 2.05 | 13 | 685 | 7630 | 3.32 | 100 |




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|  |  |  |  | QC |  |  | Activation Laboratories Ltd. |  |  |  |  |  |  | Report: A1 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Analyte Symbol | P | Pb | Sb | S | Sc | Sr | Te | Ti | TI | U | V | W | Y | Zn | Zr | Au |
| Unit Symbol | \% | ppm | ppm | \% | ppm | ppm | ppm | \% | ppm | ppm | ppm | ppm | ppm | ppm | ppm | gftonne |
| Lower Limit | 0.001 | 3 | 5 | 0.01 | 4 | 1 | 2 | 0.01 | 5 | 10 | 2 | 5 | 1 | 1 | 5 | 0.03 |
| Method Code | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | $\begin{aligned} & \text { FA- } \\ & \text { GRA } \end{aligned}$ |
| SDC-1 Meas | 0.066 | 16 | < 5 |  | 14 | 199 |  | 0.80 | <5 | < 10 | 113 | < 5 |  | 100 | 67 |  |
| SDC-1 Cert | 0.0690 | 25.00 | 0.54 |  | 17.00 | 180.00 |  | 0.606 | 0.70 | 3.10 | 102.00 | 0.80 |  | 103.00 | 290.00 |  |
| SDC-1 Meas | 0.061 | 24 | < 5 |  | 14 | 179 |  | 0.18 | <5 | < 10 | 40 | < 5 |  | 98 | 34 |  |
| SDC-1 Cert | 0.0690 | 25.00 | 0.54 |  | 17.00 | 180.00 |  | 0.606 | 0.70 | 3.10 | 102.00 | 0.80 |  | 103.00 | 290.00 |  |
| GXR-6 Meas | 0.035 | 97 | < 5 | 0.01 | 21 | 40 | $<2$ |  | <5 | <10 | 92 | < 5 | 10 | 130 | 40 |  |
| GXR-6 Cert | 0.0350 | 101 | 3.60 | 0.0160 | 27.6 | 35.0 | 0.0180 |  | 2.20 | 1.54 | 186 | 1.90 | 14.0 | 118 | 110 |  |
| GXR-6 Meas | 0.042 | 104 | < 5 | 0.03 | 25 | 39 | 4 |  | <5 | < 10 | 175 | < 5 | 12 | 133 | 91 |  |
| GXR-6 Cert | 0.0350 | 101 | 3.60 | 0.0160 | 27.6 | 35.0 | 0.0180 |  | 2.20 | 1.54 | 186 | 1.90 | 14.0 | 118 | 110 |  |
| GXR-6 Meas | 0.037 | 96 | < 5 | 0.02 | 23 | 37 | <2 |  | <5 | < 10 | 96 | < 5 | 11 | 123 | 51 |  |
| GXR-6 Cert | 0.0350 | 101 | 3.60 | 0.0160 | 27.6 | 35.0 | 0.0180 |  | 2.20 | 1.54 | 186 | 1.90 | 14.0 | 118 | 110 |  |
| OREAS 134b (4 ACID) Meas |  | > 5000 | 35 | 19.6 |  |  |  |  |  |  |  |  |  | > 10000 |  |  |
| $\begin{array}{\|l} \hline \text { OREAS 134b (4 } \\ \text { ACID) Cert } \\ \hline \end{array}$ |  | 134000 | 124 | 19.7 |  |  |  |  |  |  |  |  |  | 180000 |  |  |
| MP-1b Meas |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MP-1b Cert |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 133b (4 Acid) Meas |  | > 5000 | 22 | 11.0 |  |  |  |  |  |  |  |  |  | > 10000 |  |  |
| OREAS 133b (4 Acid) Cert |  | 50600 | 181 | 11.5 |  |  |  |  |  |  |  |  |  | 114000 |  |  |
| DNC-1a Meas |  | 5 | < 5 |  | 26 | 147 |  | 0.28 |  |  | 141 |  | 14 | 63 | 34 |  |
| DNC-1a Cert |  | 6.3 | 0.96 |  | 31 | 144 |  | 0.29 |  |  | 148 |  | 18.0 | 70 | 38.0 |  |
| DNC-1a Meas |  | 6 | < 5 |  | 27 | 130 |  | 0.28 |  |  | 145 |  | 14 | 59 | 36 |  |
| DNC-1a Cert |  | 6.3 | 0.96 |  | 31 | 144 |  | 0.29 |  |  | 148 |  | 18.0 | 70 | 38.0 |  |
| DNC-1a Meas |  | <3 | < 5 |  | 26 | 126 |  | 0.28 |  |  | 142 |  | 14 | 57 | 35 |  |
| DNC-1a Cert |  | 6.3 | 0.96 |  | 31 | 144 |  | 0.29 |  |  | 148 |  | 18.0 | 70 | 38.0 |  |
| OxQ90 Meas |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 24.7 |
| OxQ90 Cert |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 24.9 |
| SBC-1 Meas |  | 28 | < 5 |  | 16 | 195 |  | 0.48 | 6 | < 10 | 214 | <5 | 26 | 186 | 106 |  |
| SBC-1 Cert |  | 35.0 | 1.01 |  | 20.0 | 178.0 |  | 0.51 | 0.89 | 5.76 | 220.0 | 1.60 | 36.5 | 186 | 134.0 |  |
| SBC-1 Meas |  | 32 | < 5 |  | 19 | 174 |  | 0.50 | <5 | < 10 | 221 | < 5 | 31 | 177 | 119 |  |
| SBC-1 Cert |  | 35.0 | 1.01 |  | 20.0 | 178.0 |  | 0.51 | 0.89 | 5.76 | 220.0 | 1.60 | 36.5 | 186 | 134.0 |  |
| SBC-1 Meas |  | 29 | < 5 |  | 18 | 175 |  | 0.49 | <5 | < 10 | 219 | < 5 | 29 | 176 | 118 |  |
| SBC-1 Cert |  | 35.0 | 1.01 |  | 20.0 | 178.0 |  | 0.51 | 0.89 | 5.76 | 220.0 | 1.60 | 36.5 | 186 | 134.0 |  |
| OREAS 214 Meas |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 214 Cert |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 214 Meas |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 214 Cert |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 214 Meas |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 214 Cert |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 214 Meas |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 214 Cert |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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|  |  |  |  | QC |  |  | Activation Laboratories Ltd. |  |  |  |  |  |  | Report: A |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Analyte Symbol | P | Pb | Sb | S | Sc | Sr | Te | Ti | TI | U | V | W | Y | Zn | Zr | Au |
| Unit Symbol | \% | ppm | ppm | \% | ppm | ppm | ppm | \% | ppm | ppm | ppm | ppm | ppm | ppm | ppm | g/tonne |
| Lower Limit | 0.001 | 3 | 5 | 0.01 | 4 | 1 | 2 | 0.01 | 5 | 10 | 2 | 5 | 1 | 1 | 5 | 0.03 |
| Method Code | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | TD-ICP | $\begin{aligned} & \text { FA- } \\ & \text { GRA } \end{aligned}$ |
| OREAS 214 Meas |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 214 Cert |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 218 Meas |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 218 Cert |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 218 Meas |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 218 Cert |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 218 Meas |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 218 Cert |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 218 Meas |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 218 Cert |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 218 Meas |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 218 Cert |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OREAS 923 (4 <br> Acid) Meas | 0.066 | 86 | <5 | 0.67 | 12 | 50 |  | 0.42 | < 5 | < 10 | 95 | 10 | 28 | 344 | 143 |  |
| OREAS 923 (4 <br> Acid) Cert | 0.0630 | 83.0 | 1.29 | 0.691 | 13.1 | 43.0 |  | 0.405 | 0.860 | 3.06 | 91.0 | 4.85 | 26.4 | 345 | 116 |  |
| OREAS 923 (4 <br> Acid) Meas | 0.070 | 84 | < 5 | 0.72 | 12 | 44 |  | 0.44 | < 5 | < 10 | 96 | 10 | 26 | 344 | 137 |  |
| OREAS 923 (4 <br> Acid) Cert | 0.0630 | 83.0 | 1.29 | 0.691 | 13.1 | 43.0 |  | 0.405 | 0.860 | 3.06 | 91.0 | 4.85 | 26.4 | 345 | 116 |  |
| OREAS 923 (4 <br> Acid) Meas | 0.067 | 86 | <5 | 0.71 | 12 | 43 |  | 0.42 | < 5 | < 10 | 97 | 10 | 26 | 334 | 139 |  |
| OREAS 923 (4 Acid) Cert | 0.0630 | 83.0 | 1.29 | 0.691 | 13.1 | 43.0 |  | 0.405 | 0.860 | 3.06 | 91.0 | 4.85 | 26.4 | 345 | 116 |  |
| OREAS 621 (4 Acid) Meas | 0.037 | > 5000 | 97 | 4.50 | 6 | 78 |  | 0.19 | < 5 | < 10 | 34 | <5 | 13 | > 10000 | 183 |  |
| OREAS 621 (4 <br> Acid) Cert | 0.0359 | 13600 | 139 | 4.48 | 6.24 | 91.0 |  | 0.149 | 1.96 | 2.83 | 31.8 | 2.35 | 11.1 | 52200 | 168 |  |
| OREAS 621 (4 <br> Acid) Meas | 0.039 | $>5000$ | 134 | 4.49 | 6 | 87 |  | 0.19 | < 5 | < 10 | 34 | < 5 | 13 | > 10000 | 180 |  |
| OREAS 621 (4 Acid) Cert | 0.0359 | 13600 | 139 | 4.48 | 6.24 | 91.0 |  | 0.149 | 1.96 | 2.83 | 31.8 | 2.35 | 11.1 | 52200 | 168 |  |
| OREAS 520 (4 <br> Acid) Meas | 0.069 | 10 | < 5 | 0.90 | 15 | 82 | 18 | 0.36 | < 5 | 20 | 230 | 11 | 19 | 23 | 129 |  |
| $\text { OREAS } 520(4$ Acid) Cert | 0.0740 | 5.85 | 3.21 | 1.01 | 17.0 | 104 | 0.360 | 0.445 | 0.260 | 17.9 | 257 | 43.8 | 20.8 | 22.7 | 134 |  |
| South Block W5084475 Orig |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| South Block W5084475 Dup |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| South Block W5084478 Orig | 0.213 | 61 | < 5 | 0.01 | 11 | 657 | 14 | 0.35 | < 5 | < 10 | 82 | <5 | 15 | 131 | 75 |  |
| South Block W5084478 Dup | 0.212 | 64 | < 5 | 0.01 | 10 | 649 | 13 | 0.39 | < 5 | < 10 | 90 | < 5 | 15 | 132 | 75 |  |
| W5084479 Orig |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



