

### **Ministry of Energy, Mines & Petroleum Resources** Mining & Minerals Division

BC Geological Survey



TYPE OF REPORT [type of survey(s)]: Rock and Soil Sampling	TOTAL COST: \$16513.81
AUTHOR(S): Erik Ostensoe, P.Geo	SIGNATURE(S): A. Stenson
NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):	YEAR OF WORK: 2015
STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S):	5556160, 5563342
PROPERTY NAME: Pitman-Keaper	
CLAIM NAME(S) (on which the work was done): 854416, 1000162, 100	00163, 1000263, 1037482, 1031824
COMMODITIES SOUGHT: Mo, Cu, Au, Ag	
MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:	
MINING DIVISION: Omineca	NTS/BCGS: 103
LATITUDE: <u>54</u> ° <u>47</u> ' <u>00</u> " LONGITUDE: <u>128</u>	o <u>22 '00 " (at centre of work)</u>
OWNER(S): 1) Casa Minerals Inc.	2) Farshad Shirvani
MAILING ADDRESS: 880-409 Granville St., Vancouver, BC, V6C 1T2	880-409 Granville St., Vancouver, BC, V6C 1T2
OPERATOR(S) [who paid for the work]:  1) Casa Minerals Inc.	2)
MAILING ADDRESS: 880-409 Granville St., Vancouver, BC, V6C 1T2	
PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure Pitman molybdenite mineralization occurs in Carpenter Creek gr	· · · · · · · · · · · · · · · · · · ·
in narrow quartz veins. Nearby Hazelton formation volcaniclastic	c rocks have been hornfelsed.
WoMo area at high elevation comprises sulphide mineralized ho	ornfelsic alteration peripheral to Carpenter Creek granodiorite
REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT R	EPORT NUMBERS: 30900, 29151, 0866

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for)			
Soil 28 - 36 element ICP			
Silt			
Rock 9			
Other above rock chip samp	les include historic drill core		\$ 6,000
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
PROSPECTING (scale, area) 4 sqkm	reconnaissance traverses	854416, 1000162	\$10,000
PREPARATORY / PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/	trail		
Trench (metres)			
Other report preparation			\$ 1,100
		TOTAL COST:	\$17,158.81
			roviood

revised \$16513.81

#### **TECHNICAL REPORT - PITMAN AND KEAPER PROPERTIES**

EAST OF TERRACE, B. C.

#### SKEENA MINING DIVISION, BRITISH COLUMBIA, CANADA

**NTS 103I** 

Pitman - 54°47'N, 128°22'W

**UTM (NAD 83, ZONE 9) - 540724E, 6067689N** 

Keaper - 54°31'N, 128°11'W

- UTM (NAD 83, ZONE 9) - 545100E, 6004200N

Mineral Tenures: Pitman: 854416, 1000162, 1000163, 1000263, 1037482

Keaper: 1031824

Owners: Casa Minerals Inc. and Farshad Shirvani

Report Prepared for: Casa Minerals Inc.

880-409 Granville Street, Vancouver, B. C., V6C 1T2

Report Prepared by: Erik Ostensoe, P. Geo.

305-3766 West 7th Avenue Vancouver, B. C., V6R 1W8

Effective Date of Report: July 29, 2015, amended Feb 17, 2016

Events No. 5556160, 5563342

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#### INTRODUCTION

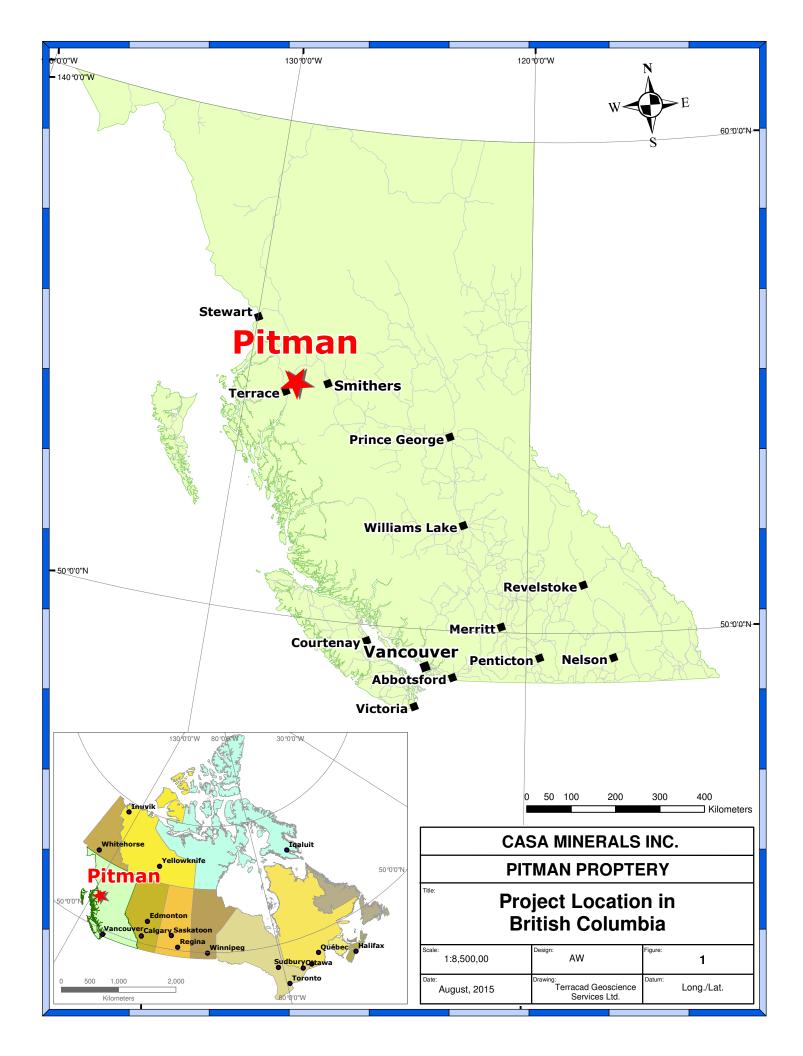
The Pitman property, located 27 km northeast of Terrace, B. C., (Figure 1) is an historic molybdenum occurrence that has been explored by technical surveys and diamond drilling since 1957. Casa Minerals Inc. and related parties have held the property since 2006 and in that period have conducted several programs of technical surveys, all of which have been reported in assessment reports (see References).

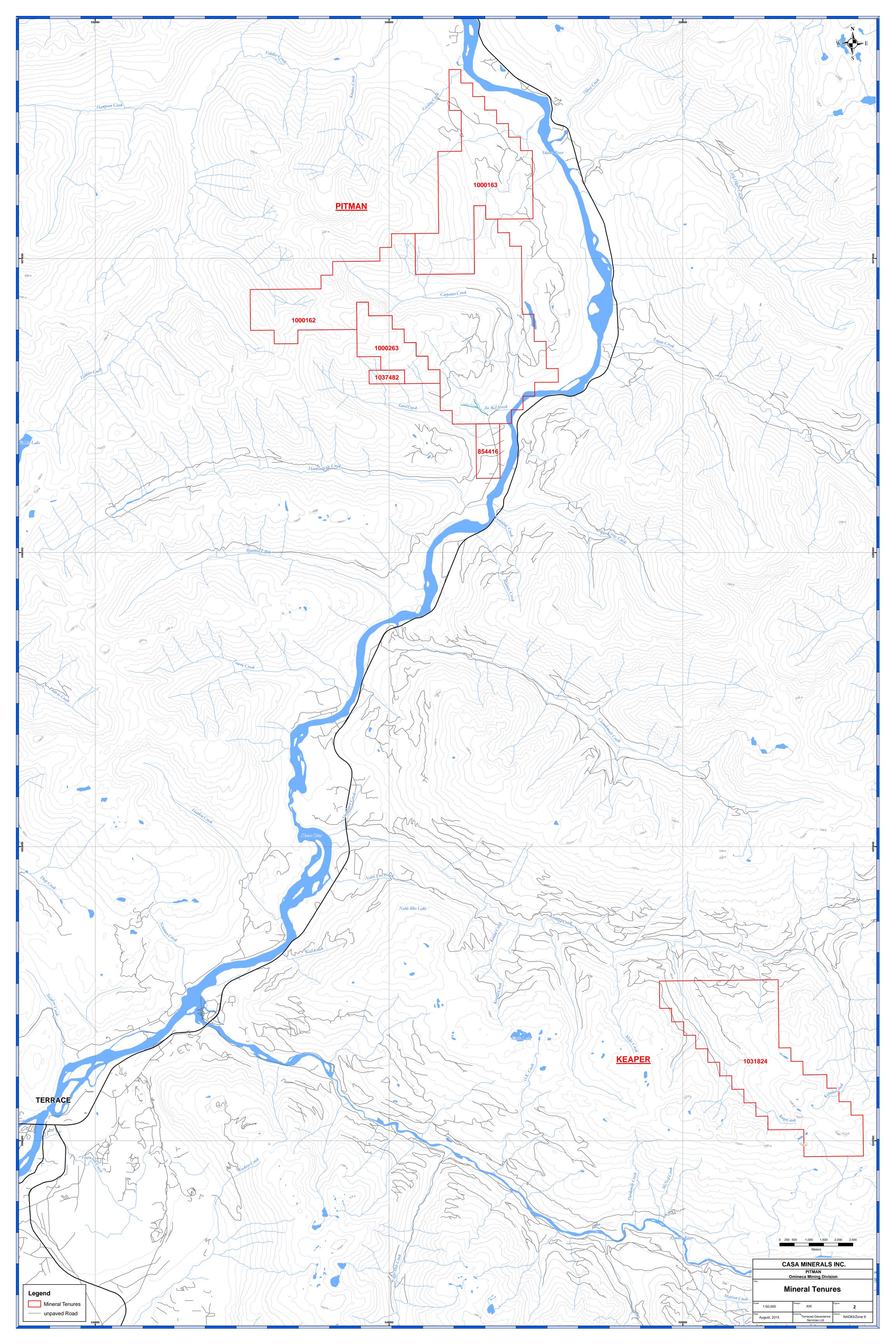
The Keaper mineral tenure, located 20 km north of Terrace, B. C., includes a site that was identified in 2006 by a provincial Geological Survey Branch team of field geologists (MMAR Report of Activities, 2007) as having strongly anomalous silver values. Casa Minerals Inc. prospectors and geologists have in recent years attempted to confirm the metal values and determine if it comprises a viable exploration site.

Casa Minerals Inc. in May, 2015, engaged Erik Ostensoe, P. Geo. and Robert Johnston, P. Geo., consulting geologists, to complete a program of prospecting, mapping and geochemical sampling at the Pitman mineral tenures and in the Keaper area, that are the subject of this technical report. Work included several traverses in the Pitman area of the reported molybdenum occurrences and the collection of eight rock chip samples and 28 soil geochemical samples that were analysed for 36 elements by induced coupled plasma (ICP) methods. Work in the Keaper area comprised traversing and sampling in the near vicinity of the reported silver occurrence(s). One sample of mineralized rock was analysed.

Title Number	Claim Name	Owner	Issue Date	Good To Date	Area (ha)
854416	PITMAN SOUTH	Casa Minerals Inc.	2011/may/12	2016/jan/10	149.46
1000162	PITMAN	Casa Minerals Inc.	2012/jun/22	2016/jan/10	3229.17
1000163	WOMO	Casa Minerals Inc.	2012/jun/22	2016/jan/10	1398.53
1000263	PADDY MAC	Casa Minerals Inc.	2012/jun/22	2016/jan/10	373.39
1037482	PADDY MAC EXT 1	Farshad Shirvani	2015/jul/23	2016/jul/23	56.02
1031824	KEAPER	Farshad Shirvani	2014/oct/27	2015/oct/27	1876.80

Pitman-Keaper Tenures





#### **2015 PROGRAM OF WORK**

The Pitman property extends from elevation 120 metres near the Skeena River to 1300 metres at the WoMo multi-metal occurrence (reference ARIS no. 31853). Since it was first reported in 1957 (MMAR, 1957) following its discovery by Joe Bell, a prospector, the molybdenum occurrence has been explored by drilling (Heustis Molybdenum Corp., 1958) (Canex, 1964-1965), (E & B Explorations Inc., 1979) and by technical surveys by Casa Minerals Inc. and related parties (2006 to 2015). The property, that extends easterly from Sand Creek, across Joe Bell Creek to Carpenter Creek (Figure 2), is underlain by granitic intrusives and siliceous fine grained sandstones in which molybdenum mineralization ( $MoS_2$ ) is present as tiny disseminated specks, films and small flakes. Pyrite is more abundant and occurs in small (1 – 2 mm wide) veinlets, often in close mixture with molybdenite. Chalcopyrite grains are also present.

Several historic, mostly wholly overgrown, roads east of Joe Bell Creek that serviced one or more drill sites and areas where overburden was trenched are believed to have been the work of Canex (1964-1965). In May, 2015 the Casa Minerals field crew re-located and mapped various sites of historic work using GPS methods. The field crew also located two areas of drilling at the top of the ridge that separates Sand and Joe Bell Creeks. One site comprised remnants of a camp and what is believed to be the location of Canex drill hole 6 and E & B Explorations drill holes 79P1 and 79P2 and another close by site, E & B drill holes 79P3 and 79P4. An historic helicopter landing site is completely overgrown with berry bushes and evergreen trees with trunks up to 25 cm in diameter. Piles and racks of core boxes in advanced state of decay were found in each location but drill hole collar locations, box numbers and footage markers could not be deciphered and the cores have no value. A search of nearby areas, including parts of George Creek, failed to locate additional drill sites that were shown on an E & B sketch (reference ARIS #7993).

Eight rock chip samples were taken from outcrops along Joe Bell Creek (Figure 3) and along the east-side drill access roads/trenches. Small amounts of molybdenite were noted in several locations but none appeared to match either the "Upper" or "Lower" Showing as diagrammed in ARIS #7993. Rock samples were submitted to Acme Analytical Laboratories Ltd. (now BV Minerals) in Vancouver for preparation followed by ICP-MS analysis for 36 elements.

Soil samples were taken, mostly at 50 metre spacing, from 28 locations in Joe Bell Creek drainage close to east side 'dozer roads (Figure 3). Soils have good profile development and for sampling purposes a dark reddish brown "B" horizon layer found at shallow depth (20 to 25 cm depth) was selected. Soil samples were submitted to Acme Analytical Laboratories Ltd. (now BV Minerals) in Vancouver for preparation followed by ICP-MS analysis for 36 elements (reference: BV Minerals Cert. of Analysis VAN15001433.1, Appendix 2).

Rock and soil sample locations and molybdenum analyses are plotted in Figure 3 of this report. Rock sample descriptions are included in Appendix 1.

The Keaper reconnaissance work is illustrated in Figure 4 of this report. Granite typical of Coast Intrusions occurs throughout the area. A site that appears to be the source of the GSB sample was relocated and re-sampled and other parts of the mineral tenure were examined. Rock sample #201542 was submitted for analysis.

Certificates of Analysis are included in Appendix 2 of this report.

#### DISCUSSION OF RESULTS

The 2015 program of work comprised an attempt to determine the merits of the Pitman molybdenum prospect. Field work benefited from historic drill data and from work in recent years that included data compilation, prospecting, MMI and conventional soil geochemical surveys, and a structural study based on satellite imagery. The present work included what may be the first serious attempt to locate the reported areas of molybdenite occurrences and, possibly, the first re-visit in many years to the Canex and E & B Explorations camp area. The "Upper" and "Lower" mineral zones, shown in a drawing in the 1980 E & B Explorations Ltd. assessment report (Kruchkowski, 1980) could not be positively identified in the field, due in part to vague descriptions in earlier reports, but also to the passage of time that has resulted in erasure of most features that might have been useful clues to their locations. The expectation that rock and soil analytical data would provide sufficient information to allow re-discovery of the reported mineral zones was not realized.

The geology of Pitman molybdenum area is dominated by a granitic intrusion that is almost certainly related to the large nearby Carpenter Creek pluton. Several variations were noted, ranging from quartz porphyry with coarse, glassy quartz grains, to sugary-textured equigranular granite. Small areas of dark, very fine grained meta-sedimentary rocks that were located in bulldozer side-cuts are remnant pendants, likely of Hazelton Group formations.

Work in the Keaper area may have re-located the mineral zone first reported by GSB scientists. From initial observations, it appears that the subject zone is situated on a slumped area that has displaced a mass of rock, glacial till and vegetation about 100 metres down a 20° slope. Such a situation is not uncommon in mountainous terrains but is usually obscured by vegetation whereas at Keaper the entire slope has been clearcut logged, thereby exposing the escarpment and the displaced (?) material. A grab sample of the mineralization (sample no. 201542) that was analysed (see Appendix 2) returned 8 ppm molybdenum, 3522.0 ppm copper, 3267.7 ppm lead, >10000 ppm zinc, >100 ppm silver, 150.6 ppm arsenic, 8.0 ppb gold, 440.7 ppm cadmium, 1954.1 ppm antimony, 3.41 ppm mercury and apparently-elevated levels of nickel, cobalt, manganese, strontium and vanadium. The array of elevated metal values is consistent with a hydrothermal mineralizing event and is strongly suggestive of the presence of sulphosalt (i.e. tetrahedrite family) minerals.

The host formations in the Keaper area were identified by McKeown, et al. (2008) as "Paleozoic volcanic rocks of the Stikine assemblage" but much of the area is underlain by monotonous, grey, equigranular granite related to the Coast Intrusions Complex.

Possible programs of follow-up work in the field at both Pitman and Keaper sites is included in the Recommendations section of this report.

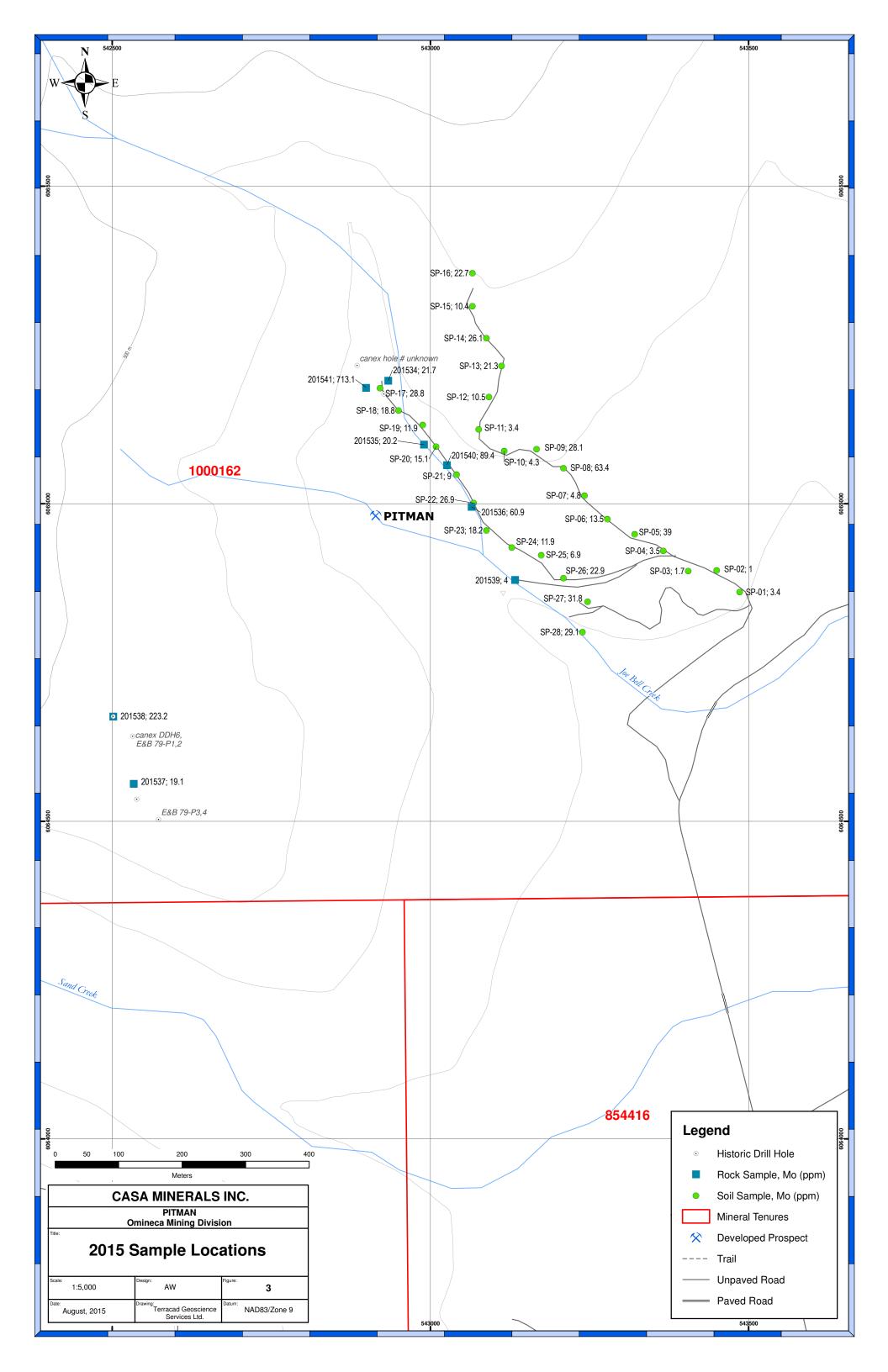
#### **CONCLUSIONS**

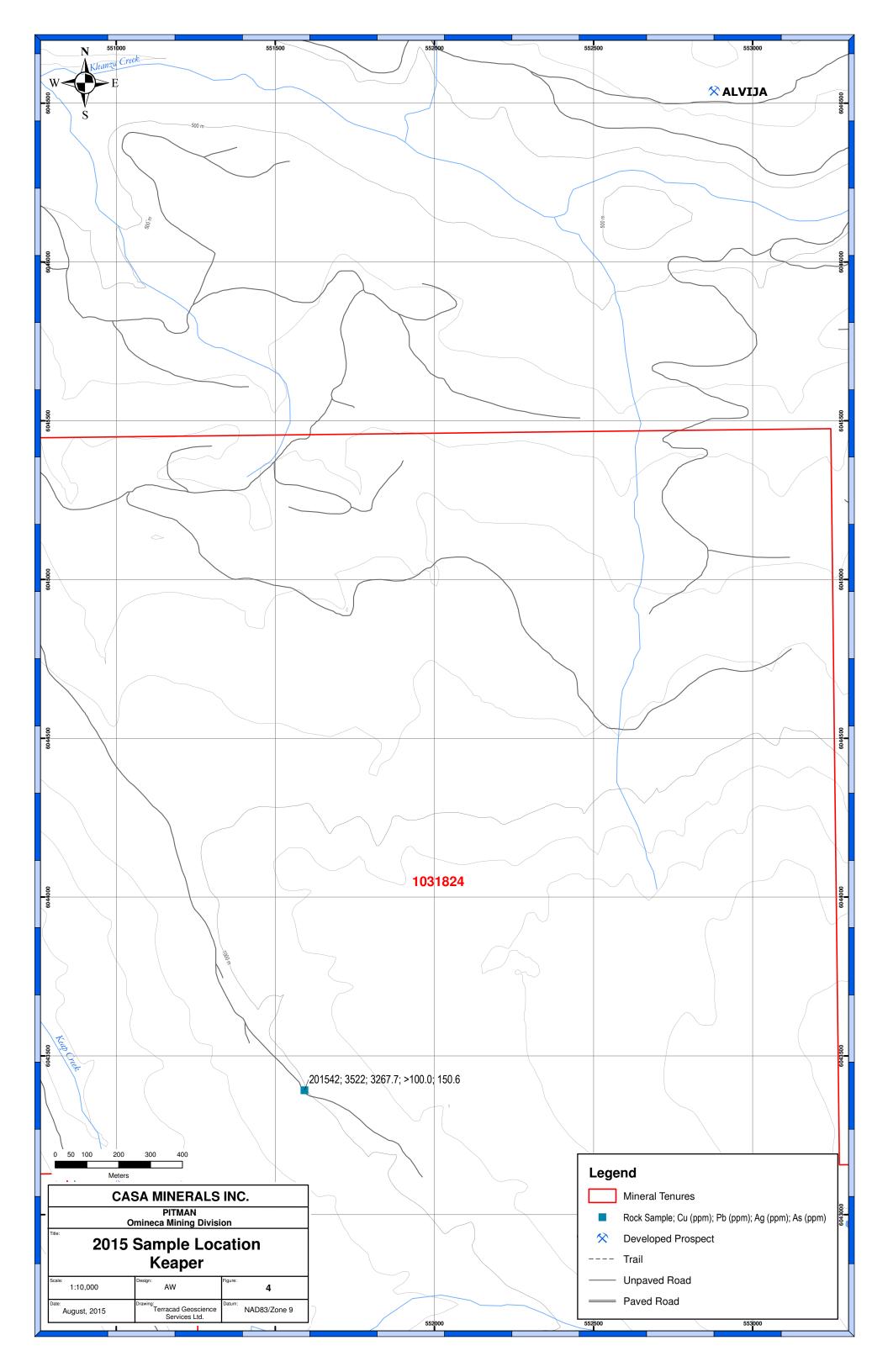
The Pitman molybdenite occurrences in leucocratic granitic intrusions and proximal meta-sedimentary formations constitute a credible site worthy of additional exploration. The property database, although thin, combined with the recent work, shows indications of molybdenite mineralization over an east-west distance of at least 1 km and, less convincingly, a vertical distance of not less than 600 metres.

Best available historic analytical data include 55 metres (180 feet) of 0.12% Mo in Canex drill hole 6 (quoted in ARIS #7993). Best molybdenum analyses from the recent sampling were 63.4 ppm Mo in soil sample 8 and 713.1 ppm Mo in rock sample #201541.

Recent work, including geological reconnaissance and soil and rock geochemical sampling, has contributed to confirmation of the historic exploration model: potassium-rich adamellite (?) is host to thin films, veinlets and disseminated tiny grains, of molybdenite. Best exposures are found in Joe Bell Creek, a small stream that flows southerly across the mineral tenures.

Historic data, including a highly speculative, non-NI 43-101 compliant, resource estimate, needs to be further confirmed by detailed geological mapping and further sampling. Existing but overgrown exploration roads and trenches may be re-established to excavate, where practical, bedrock exposures.





#### RECOMMENDATIONS

The previously-issued exploration permit that would have allowed property work, including drilling, was issued subject to posting of a reclamation bond in the amount of \$5,000. That permit lapsed due to inaction by the owner. The permitting process should be re-started by filing a Notice of Work with the Ministry of Energy and Mines.

It is recommended that reconnaissance geological mapping of the Joe Bell Creek drainage should be continued. Ideally a small field crew would, initially, prospect and map the entire property in order to build a comprehensive database of geological information. In the Joe Bell Creek molybdenum area it will be practical to direct special attention to exposures proximal to the historic bulldozer roads, with coverage then being extended westerly to Sand Creek and easterly to Carpenter Creek. Work then should be extended into the higher elevation areas that include the WoMo and Paddy Mac prospects. It is estimated that such work would require approximately four to six weeks to complete

The structural study already prepared by Terracad Geoscience (ARIS #29151) should be reviewed to determine regional trends and to search for structures that are otherwise obscured by dense forest cover.

One or more of the historic trenches located east of Joe Bell Creek should be re-opened in order to better expose the geological features. A small bulldozer or excavator would be needed for approximately three days.

When the above work is complete it may be possible to identify sites that warrant exploration by drilling.

#### **REFERENCES**

The following sources were consulted as part of the preparation of the accompanying report:

Duffell, S. and Souther, J. G., (1964) Geology of Terrace Map-Area, British Columbia (103I E1/2), Geol. Surv. Canada, Memoir 329

Kruchkowski, E. R., 1980, Drill Report on the Pit IV Claim, Omineca M. D., B. C., report to E & B Explorations Inc. filed as assessment report # 07993, ARIS, Geol. Surv. Branch, Ministry of Energy, Mines and Petroleum Resources

McKeown, M., Nelson, J. L. and Friedman, R (2008): Newly discovered volcanic-hosted massive sulphide potential within Paleozoic volcanic rocks of the Stikine assemblage, Terrace area, northwestern British Columbia (NTS 103I/08); in Geological Fieldwork 2007, B. C. Ministry of Energy, Mines and Petroleum Resources, Paper 2008-1, pp. 103 - 116

MINFILE, 2015, MINFILE BC mineral deposits database; BC Ministry of Energy and Mines, accessible from computer search services

Nelson, J. and Kennedy, R., 2007, Terrace Regional Mapping Project Year 2: New Geological Insights and Exploration Targets (NTS 103I/16S, 10W), West-Central British Columbia, entry in Geological Fieldwork 2006, Paper 2007-1, Geol. Surv. Branch, Ministry of Energy, Mines and Petroleum Resources, British Columbia

Nelson, J., Kyba, J., McKeown, M., and Angen, J., 2008, Terrace Regional Mapping Project Year 3: Contributions to Stratigraphic, Structural and Exploration Concepts, Zymoetz River to Kitimat River, East-Central British Columbia (NTS 103I/08), entry in Geological Fieldwork 2007, Paper 2008-1, Geol. Surv. Branch, Ministry of Energy, Mines and Petroleum Resources, British Columbia

Payie, G. and Ostensoe, E.A., 2009, Technical Report, Pitman Borden Properties, Skeena River Area, Omineca Mining Division, Northwestern British Columbia, ARIS #30900, Geol. Surv. Branch, B.C. Ministry of Energy, Mines and Petroleum Resources

Schindler, J. N. and Barker, R. A., 1966, Geological and Geochemical Report on the Fiddler Creek Claims, Sno #1 – 10, ARIS No. 0866, Assessment report for Amax Exploration, Inc.

Shirvani, Farshad, 2007, Technical Report of Structural Analysis, Pitman Molybdenite Project, Omineca Mining Division, Skeena River Area, Northwestern British Columbia, ARIS #29151, Geol. Surv. Branch, B.C. Ministry of Energy, Mines and Petroleum Resources

Venable, M. E. and Wodjak, P. J., 2009, Shan Deposit, east-central British Columbia: an emerging deposit model, Geol. Fieldwork 2008, Paper 2009-1, Ministry of Energy and Mines

### **AUTHORS' QUALIFICATIONS**

Erik Ostensoe, P. Geo., consulting geologist, is the principal author of the accompanying report. He has been active in mineral exploration work for more than 45 years and is familiar with the geology of molybdenum deposits and with the geology of all parts of the Canadian Cordillera.

Robert Johnston, P. Geo., consulting geologist, participated in the fieldwork that is the subject of the accompanying report and prepared some of the illustrations that are included in that report. Mr. Johnston has been active in mineral exploration work in the Canadian Cordillera and in many parts of

Central and North aspects of mineral	elsewhere foi	r more	than 30	) years	and is tl	noroughly	familiar	with all

### **STATEMENT OF EXPENDITURES**

The following expenditures were incurred in fieldwork and data management related to the accompanying technical report:

Professional fees: Erik Ostensoe, P. Geo. – field work - eight days @ \$600	\$4800.00
Robert Johnston, P. Geo. – field work - eight days @ \$450/day	\$3600.00
Farshad Shirvani, MSc. (Geology) – project supervision – 1 1/2 days @ \$600/day	900.00
Expenditures – air fares and extra luggage charges Hawkair -	\$1120.91
National Truck Rental – Terrace	\$692.21
Costa Lessa Motel – 7 nights	\$862.19
Restaurant meals and lunch items -	\$536.74
Gasoline -	\$100.00
Analyses per Acme Analytical (BV Minerals) invoice -	\$482.16
Taxis – Vancouver – EAO to/from airport -	87.60
Johnston to/from airport -	\$62.00
Report Preparation – Terracad GIS Services – illustrations – 8 hrs @ \$90/hr	\$720.00
Text and final assembly– Erik Ostensoe, P. Geo. – 3.5 days @ \$600/day	1950.00
Allowance for consumables, GPS, computers, printers, communications, et al.	\$600.00
Total expenditures -	\$16,513.81

#### APPENDIX 1 – DESCRIPTIONS OF ROCK AND SOIL SAMPLES

Schindler and Barker (1966) provided the following description of Pitman area intrusives:

aphanitic to fine grained granite

equigranular granodiorite

porphyrytic granite - 75 to 65% pinkish feldspar

25 to 30% quartz

3% fine grained biotite (brown)

2% disseminated pyrite

<1% epidote

Soil samples: 28 soil samples were obtained from cutbanks exposed along access roads and trenches on the east side of Joe Bell Creek. Where practical, "B" horizon soils were selected and where suitable "B" material was not present or identifiable, "C" horizon soils were sampled. The B soil horizon is characterized by a reddish colour and in most locations was found to have a sandy texture. Overall, it is believed that the samples are representative of a moderately mature soil profile from a boreal forest.

	NAD 83/UTM Z9	NAD 83/UTM Z9			
Field-Sample	Easting	Northing	Elev (m)	Lab-Sample	Type
SP-01	543486	6064861	211	1	Soil
SP-02	543450	6064895	232	2	Soil
SP-03	543405	6064894	246	3	Soil
SP-04	543366	6064926	235	4	Soil
SP-05	543321	6064952	256	5	Soil
SP-06	543278	6064976	278	6	Soil
SP-07	543242	6065013	290	7	Soil
SP-08	543209	6065056	298	8	Soil
SP-09	543167	6065086	303	9	Soil
SP-10	543116	6065083	306	10	Soil
SP-11	543076	6065117	327	11	Soil
SP-12	543092	6065168	346	12	Soil
SP-13	543112	6065217	374	13	Soil
SP-14	543088	6065261	376	14	Soil
SP-15	543066	6065311	397	15	Soil
SP-16	543066	6065363	419	16	Soil
SP-17	542921	6065182	326	17	Soil
SP-18	542950	6065147	328	18	Soil

	NAD 83/UTM Z9	NAD 83/UTM Z9			
Field-Sample	Easting	Northing	Elev (m)	Lab-Sample	Type
SP-19	542988	6065124	281	19	Soil
SP-20	543009	6065090	262	20	Soil
SP-21	543041	6065046	269	21	Soil
SP-22	543068	6065001	271	22	Soil
SP-23	543088	6064958	267	23	Soil
SP-24	543128	6064931	253	24	Soil
SP-25	543174	6064919	250	25	Soil
SP-26	543209	6064883	241	26	Soil
SP-27	543247	6064846	229	27	Soil
SP-28	543239	6064798	208	28	Soil

Rock samples: eight rock samples were obtained from outcroppings of Pitman area bedrock and from disorganized piles of historic drill cores that were found in two locations near the crest of the ridge that lies between Sand Creek and Joe Bell Creek. One sample is from what is presumed to be the Keaper mineral zone that may be displaced as much as 100 metres downslope from source.

201534 (NAD 83, UTM Z 9;542934E, 6065194N) – quartz-feldspar rock – granite/adamellite (?) with 0.25% disseminated pyrite grains <1 mm to 1 mm diameter. Oxidized pyrite appears as orange limonite. Tr. tr. MoS<sub>2</sub>. Qtz grains, est. 30 to 50%, are sub-rounded, up to 5 mm diameter. Rock is in part thoroughly oxidized, elsewhere fresh appearing. Several QV's from 0.3 to 1.2 cm wide – apparently unmineralized. Feldspar is all anhedral, uniformly white.

201535 (NAD 83, UTM Z 9; 542990E, 6065093N) – Same as #201534. Tr. pyrite. No MoS<sub>2</sub> noted.

201536 (NAD 83, UTM Z 9; 543065E, 6064995N) – Same as #201534 and 201535. Feldspar is in part beige coloured – stained by FeOx. Tr. to 0.3% pyrite. VQ present but without sulphides.

201537 (NAD 83, UTM Z 9; 542534E, 6064559N) – pieces of AQ-size drill core salvaged from rotted core boxes at E + B drillsite 2 – dhs 3 & 4. Footages unknown, etc. Rock is fine grained,  $\sim$  1 mm, granite with 15% Qtz, 1 – 2 % biotite(?), feldspar is buff to beige coloured. Tr. pyrite. No strong structures. Rock is "fresh".

201538 (NAD 83, UTM Z 9; 542502E, 6064665N) — drill core pieces. Biotite granite — fine- to medium-grained, flesh-coloured feldspar, glassy quartz grains — all <3mm maximum diameter. Some fractures have coatings of pyrite and chalcopyrite.

201539 (NAD 83, UTM Z 9; 543133E, 6064880N) – sugary-textured granite with up to 3% biotite. Traces pyrite. Rock is not magnetic and not porphyritic with quartz in the main fabric. Grain size < 1 - 2 mm.

201540 (NAD 83, UTM Z 9; 543026E, 6065061N) – granite. 50% quartz, with whitish feldspar, traces of mafic minerals (likely biotite). Traces of very fine grained pyrite.

201541 (NAD 83, UTM Z 9; 542899E, 6065183N) – 100% vein quartz. Glassy to white.

201542 (NAD 83, UTM Z 9; 551592E, 6043392N) — Keaper area. One piece of vein quartz with tetrahedrite, minor azurite and malachite. Host rock is quartz + carbonate with about 15 to 20% dark minerals — mixture of tetrahedrite and amorphous black sooty "gunk".

### **APPENDIX 2 - CERTIFICATES OF ANALYSIS**

**BV Certificate of Analysis VAN15001432.1 (9 rock samples)** 



Bureau Veritas Commodities Canada Ltd.

Client: Terracad Geoscience Services Ltd.

880 - 409 Granville St.

Vancouver BC V6C 1T2 CANADA

www.bureauveritas.com/um

Submitted By: Erik Ostensoe

Receiving Lab: Canada-Vancouver

Received: June 16, 2015

Report Date: July 21, 2015

Page: 1 of 2

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA PHONE (604) 253-3158

### **CERTIFICATE OF ANALYSIS**

### VAN15001432.1

#### **CLIENT JOB INFORMATION**

Project: None Given Shipment ID:

P.O. Number

Number of Samples:

#### **SAMPLE DISPOSAL**

DISP-PLP Dispose of Pulp After 90 days
DISP-RJT Dispose of Reject After 90 days

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: Terracad Geoscience Services Ltd.

880 - 409 Granville St. Vancouver BC V6C 1T2

CANADA

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	9	Crush, split and pulverize 250 g rock to 200 mesh			VAN
AQ200	9	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN
DRPLP	9	Warehouse handling / disposition of pulps			VAN
DRRJT	9	Warehouse handling / Disposition of reject			VAN

#### **ADDITIONAL COMMENTS**







Client:

**Terracad Geoscience Services Ltd.** 

880 - 409 Granville St.

Vancouver BC V6C 1T2 CANADA

None Given

Report Date:

Project:

July 21, 2015

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

Rock

0.92

8.0 3522.0 3267.7 >10000

PHONE (604) 253-3158

201542

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Part: 1 of 2

CERTIFIC	CERTIFICATE OF ANALYSIS														VAN15001432.1							
	Method	WGHT	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200													
	Analyte	Wgt	Мо	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	Р	
	Unit	kg	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%								
	MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	
201534	Rock	0.99	21.7	6.4	5.6	21	<0.1	1.0	2.5	177	1.04	<0.5	1.7	4.2	26	<0.1	<0.1	5.1	6	0.16	0.046	
201535	Rock	0.95	20.2	3.6	6.5	27	<0.1	0.8	2.1	163	1.03	<0.5	1.6	6.3	23	<0.1	<0.1	<0.1	11	0.12	0.038	
201536	Rock	1.59	60.9	42.6	10.6	12	<0.1	0.6	1.2	150	0.71	<0.5	<0.5	10.2	11	<0.1	<0.1	<0.1	4	0.02	0.017	
201537	Rock	1.20	19.1	4.1	2.3	26	<0.1	1.6	2.2	194	1.61	<0.5	<0.5	3.6	43	<0.1	<0.1	<0.1	26	0.70	0.057	
201538	Rock	1.34	223.2	76.8	4.2	38	0.1	0.7	3.7	268	1.45	<0.5	<0.5	5.0	79	<0.1	<0.1	0.2	27	0.60	0.040	
201539	Rock	1.52	4.0	13.6	5.1	40	<0.1	0.7	2.2	227	2.17	<0.5	<0.5	3.5	8	<0.1	<0.1	<0.1	11	0.12	0.056	
201540	Rock	1.11	89.4	12.6	16.9	5	<0.1	0.5	0.8	121	0.55	<0.5	0.6	8.2	31	<0.1	<0.1	0.3	3	0.07	0.012	
201541	Rock	1.29	713.1	10.4	29.0	5	<0.1	0.6	1.0	76	0.63	<0.5	1.9	8.0	59	0.3	<0.1	44.8	3	0.51	0.008	

14.9

10.8

654

2.57

150.6

8.0

0.1

254

440.7 1964.1

0.4

29

3.52

0.045

>100

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## CERTIFICATE OF ANALYSIS

## VAN15001432.1

	Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
	Analyte	La	Cr	Mg	Ва	Ti	В	Al	Na	K	W	Hg	Sc	TI	S	Ga	Se	Te
	Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
201534 Ro	ck	19	1	0.02	656	0.001	<20	0.32	0.045	0.18	<0.1	<0.01	1.0	<0.1	0.08	1	<0.5	<0.2
201535 Ro	ck	21	1	0.04	462	0.003	<20	0.35	0.047	0.16	<0.1	<0.01	1.2	<0.1	<0.05	2	<0.5	<0.2
201536 Ro	ck	19	1	<0.01	253	<0.001	<20	0.22	0.041	0.14	<0.1	<0.01	0.8	<0.1	<0.05	<1	<0.5	<0.2
201537 Ro	ck	8	4	0.46	213	0.112	<20	0.62	0.065	0.14	0.4	<0.01	2.0	<0.1	<0.05	4	<0.5	<0.2
201538 Ro	ck	11	2	0.37	200	0.073	<20	0.49	0.047	0.24	1.1	<0.01	2.1	0.1	0.32	4	<0.5	<0.2
201539 Ro	ck	13	<1	0.17	70	0.014	<20	0.49	0.061	0.12	<0.1	<0.01	1.8	<0.1	<0.05	3	<0.5	<0.2
201540 Ro	ck	16	1	0.01	581	<0.001	<20	0.21	0.026	0.16	<0.1	<0.01	0.5	<0.1	<0.05	<1	<0.5	<0.2
201541 Ro	ck	3	1	0.02	425	0.001	<20	0.08	0.013	0.07	0.4	<0.01	0.4	<0.1	0.29	<1	0.7	0.3
201542 Ro	ck	3	18	0.96	108	0.001	<20	0.88	0.003	0.03	<0.1	3.41	3.9	<0.1	1.29	3	1.5	2.1



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Part: 1 of 2

QUALITY CONTROL REPORT VAN15001432.1															.1						
	Method	WGHT	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
	Analyte	Wgt	Мо	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	Р
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
	MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001
Pulp Duplicates																					
201537	Rock	1.20	19.1	4.1	2.3	26	<0.1	1.6	2.2	194	1.61	<0.5	<0.5	3.6	43	<0.1	<0.1	<0.1	26	0.70	0.057
REP 201537	QC		20.0	4.5	2.3	26	<0.1	1.7	1.9	198	1.63	<0.5	<0.5	3.3	42	<0.1	<0.1	<0.1	26	0.71	0.054
Reference Materials																					
STD DS10	Standard		13.5	164.6	149.4	388	1.8	76.9	12.7	861	2.65	43.5	58.9	7.4	66	2.7	8.4	12.2	42	1.02	0.073
STD OREAS45EA	Standard		1.7	654.5	14.0	29	0.2	364.0	48.9	378	19.98	10.6	40.5	9.7	4	<0.1	0.3	0.2	284	0.03	0.028
STD DS10 Expected			14.69	154.61	150.55	370	2.02	74.6	12.9	875	2.7188	43.7	91.9	7.5	67.1	2.49	8.23	11.65	43	1.0625	0.073
STD OREAS45EA Expected			1.39	709	14.3	28.9	0.26	381	52	400	23.51	9.1	53	10.7	3.5	0.02	0.2	0.26	303	0.036	0.029
BLK	Blank		<0.1	<0.1	<0.1	<1	<0.1	0.2	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001
Prep Wash																					
ROCK-VAN	Prep Blank		8.0	2.5	1.1	29	<0.1	8.0	3.5	426	1.63	<0.5	1.7	2.1	22	<0.1	<0.1	<0.1	21	0.59	0.039



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Part: 2 of 2

# QUALITY CONTROL REPORT

## VAN15001432.1

	Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
	Analyte	La	Cr	Mg	Ва	Ti	В	Al	Na	K	w	Hg	Sc	TI	s	Ga	Se	Te
	Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Pulp Duplicates																		
201537	Rock	8	4	0.46	213	0.112	<20	0.62	0.065	0.14	0.4	<0.01	2.0	<0.1	<0.05	4	<0.5	<0.2
REP 201537	QC	8	4	0.47	209	0.109	<20	0.63	0.065	0.14	0.4	<0.01	2.0	<0.1	0.05	4	<0.5	<0.2
Reference Materials																		
STD DS10	Standard	18	55	0.74	411	0.080	<20	0.99	0.065	0.32	3.1	0.27	3.0	4.8	0.28	5	2.1	4.8
STD OREAS45EA	Standard	7	807	0.09	137	0.095	<20	2.90	0.019	0.05	<0.1	0.01	71.8	<0.1	<0.05	11	0.9	<0.2
STD DS10 Expected		17.5	54.6	0.775	412	0.0817		1.0259	0.067	0.338	3.32	0.3	2.8	5.1	0.29	4.3	2.3	5.01
STD OREAS45EA Expected		6.57	849	0.095	148	0.0875		3.13	0.02	0.053			78	0.072	0.036	11.7	0.6	0.07
BLK	Blank	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
Prep Wash																		
ROCK-VAN	Prep Blank	5	2	0.40	57	0.071	<20	0.87	0.096	0.10	<0.1	<0.01	2.9	<0.1	<0.05	4	<0.5	<0.2

<b>BV Certificate of Analysis VAN15001433</b>	ertificate of Analysis VAN15001433.1 (28 soil samples)							



Bureau Veritas Commodities Canada Ltd.

Client: Terracad Geoscience Services Ltd.

880 - 409 Granville St.

Vancouver BC V6C 1T2 CANADA

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Submitted By: Erik Ostensoe

Receiving Lab: Canada-Vancouver

Received: June 16, 2015

Received: June 16, 2015 Report Date: July 27, 2015

Page: 1 of 2

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### **CERTIFICATE OF ANALYSIS**

### VAN15001433.1

#### **CLIENT JOB INFORMATION**

Project: None Given

Shipment ID: P.O. Number

Number of Samples: 29

#### **SAMPLE DISPOSAL**

DISP-PLP Dispose of Pulp After 90 days
DISP-RJT-SOIL Immediate Disposal of Soil Reject

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: Terracad Geoscience Services Ltd.

880 - 409 Granville St. Vancouver BC V6C 1T2

CANADA

#### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	28	Dry at 60C			VAN
SS80	28	Dry at 60C sieve 100g to -80 mesh			VAN
AQ200	28	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN
DRPLP	28	Warehouse handling / disposition of pulps			VAN

#### **ADDITIONAL COMMENTS**







20

21

22

23

24

25

26

27

28

29

Client: Terracad Geoscience Services Ltd.

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July 27, 2015

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Soil

15.1

9.0

26.9

18.2

11.9

6.9

22.9

31.8

29.1

L.N.R.

20.0

17.0

29.9

13.0

14.4

8.5

13.3

9.2

10.3

L.N.R.

35.4

25.9

80.2

21.5

44.1

23.0

12.8

15.9

18.9

L.N.R.

100

94

65

75

66

87

59

123

63

L.N.R.

< 0.1

< 0.1

0.1

< 0.1

< 0.1

< 0.1

0.2

0.2

L.N.R.

32.6

25.2

11.7

12.6

17.8

18.2

14.8

32.7

18.5

L.N.R.

14.7

10.6

7.4

6.7

8.9

10.1

6.3

8.1

6.6

L.N.R.

403

394

423

435

351

412

162

302

248

L.N.R.

3.94

3.90

2.49

3.32

3.67

3.41

4.26

4.79

4.11

L.N.R.

11.7

13.3

7.5

9.9

11.7

11.2

5.4

9.9

14.9

L.N.R.

< 0.5

0.6

< 0.5

0.5

< 0.5

< 0.5

< 0.5

< 0.5

0.8

L.N.R.

3.9

3.0

6.1

2.8

3.6

2.1

1.6

1.2

0.6

L.N.R.

12

9

6

9

8

9

11

31

L.N.R.

< 0.1

< 0.1

0.2

0.1

< 0.1

< 0.1

< 0.1

0.1

0.2

L.N.R.

0.4

0.3

0.3

0.3

0.4

0.4

0.2

0.4

0.5

L.N.R.

2.8

2.2

0.9

0.4

0.7

0.4

0.3

0.6

0.3

L.N.R.

54

58

33

46

51

57

73

89

70

L.N.R.

0.08

0.05

0.03

0.05

0.06

0.07

0.05

0.06

0.20

L.N.R.

0.065

0.059

0.044

0.108

0.058

0.051

0.107

0.085

0.071

L.N.R.

16

12

17

L.N.R

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Part: 1 of 2

#### **CERTIFICATE OF ANALYSIS** VAN15001433.1 Method AQ200 Analyte Mo Cu Pb Zn Ag Ni Co Mn Fe As Au Th Sr Cd Sb Bi ν Ca Unit % ppm ppm ppm ppm ppm ppm ppm ppm % ppm ppb ppm ppm ppm ppm ppm ppm % ppm MDL 0.1 0.01 0.5 2 0.01 0.001 0.1 0.1 1 0.1 0.1 0.1 1 0.5 0.1 1 0.1 0.1 0.1 Soil 3.4 38.5 12.9 114 < 0.1 34.2 14.9 673 4.10 28.3 2.7 1.9 7 0.2 1.0 0.2 61 0.07 0.132 2 Soil 1.0 32.4 9.1 86 < 0.1 35.1 12.7 892 4.03 15.0 0.7 1.2 0.3 1.1 0.2 55 0.11 0.064 10 3 Soil 1.7 29.5 7.8 64 < 0.1 22.9 10.7 698 3.21 11.4 3.2 1.4 11 0.1 0.3 55 0.12 0.069 4 Soil 3.5 26.4 9.6 111 0.2 24.5 10.4 461 3.83 15.1 2.9 1.4 6 0.1 0.6 0.4 60 0.04 0.152 5 Soil 39.0 53.9 14.5 74 11.8 7.7 356 3.44 1.0 3.9 7 < 0.1 0.3 0.1 6.6 0.9 46 0.06 0.066 6 Soil 13.5 3.22 0.6 9 < 0.1 13.0 7.9 45 0.1 10.9 5.1 212 9.3 1.0 0.3 0.4 64 0.05 0.084 Soil 77 11.1 0.7 1.4 < 0.1 4.8 16.2 8.5 0.1 16.5 8.0 281 3.49 6 0.4 0.2 68 0.03 0.110 8 Soil 63.4 12 25.6 9.8 64 < 0.1 17.7 10.1 586 3.27 19.5 2.7 2.3 < 0.1 1.1 0.5 48 0.14 0.100 9 Soil 28.1 14.9 10.2 78 < 0.1 14.2 7.3 279 3.96 15.0 0.6 1.4 12 0.2 0.5 0.6 68 0.07 0.103 10 Soil 4.3 27.4 10.7 82 < 0.1 19.8 11.1 421 3.81 17.3 1.5 2.0 8 < 0.1 0.7 0.7 59 0.06 0.052 11 Soil 3.4 28.6 9.4 76 < 0.1 20.0 10.0 317 3.87 17.0 1.4 1.6 7 < 0.1 0.8 0.2 60 0.05 0.061 12 Soil 10.5 12.5 10.5 64 0.1 9.9 5.3 196 4.44 11.7 < 0.5 2.6 5 < 0.1 0.3 0.6 75 0.04 0.164 13 Soil 21.3 28.7 9.5 94 < 0.1 16.7 10.7 310 3.80 15.7 0.6 2.7 7 < 0.1 0.6 3.0 58 0.05 0.066 14 Soil 26.1 50.7 12.2 84 < 0.1 14.0 10.0 297 3.35 11.9 0.8 2.9 6 < 0.1 0.5 3.6 45 0.04 0.070 15 Soil 10.4 19.1 12.4 113 0.3 13.5 8.7 285 5.95 14.0 < 0.5 2.0 6 < 0.1 0.4 1.0 94 0.04 0.161 16 Soil 22.7 10.8 8.1 32 0.3 4.5 2.6 120 4.42 10.8 < 0.5 0.8 5 < 0.1 0.5 0.3 84 0.03 0.073 17 Soil 28.8 32.0 29.2 91 0.1 14.3 9.0 443 3.17 5.1 0.9 5.4 20 < 0.1 0.2 13.1 41 0.10 0.091 18 Soil 18.8 50.9 15.3 80 < 0.1 26.5 13.4 698 3.42 6.8 1.9 4.0 15 0.1 0.3 9.4 54 0.17 0.061 23 19 Soil 11.9 46.5 14.1 92 < 0.1 30.7 15.7 788 3.90 14.2 3.3 2.4 11 < 0.1 0.8 1.2 59 0.09 0.061 20



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## CERTIFICATE OF ANALYSIS

## VAN15001433.1

Part: 2 of 2

	Method	AQ200															
	Analyte	Cr	Mg	Ва	Ti	В	Al	Na	K	W	Hg	Sc	TI	s	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
1 Soil		30	0.66	100	0.052	<20	2.94	0.007	0.05	0.2	0.07	6.2	<0.1	<0.05	6	<0.5	<0.2
2 Soil		28	0.80	83	0.041	<20	2.01	0.005	0.06	0.2	0.05	7.9	<0.1	<0.05	6	<0.5	<0.2
3 Soil		22	0.66	89	0.056	<20	1.87	0.007	0.06	1.7	0.08	7.2	<0.1	<0.05	5	<0.5	<0.2
4 Soil		26	0.60	68	0.037	<20	2.99	0.006	0.04	0.5	0.12	5.4	<0.1	<0.05	7	<0.5	<0.2
5 Soil		14	0.32	189	0.013	<20	2.47	0.007	0.09	0.3	0.04	3.1	0.1	<0.05	6	<0.5	<0.2
6 Soil		19	0.23	89	0.040	<20	2.13	0.007	0.03	0.2	0.07	2.7	<0.1	<0.05	7	<0.5	<0.2
7 Soil		24	0.34	82	0.064	<20	2.76	0.007	0.03	0.4	0.06	5.1	<0.1	<0.05	7	<0.5	<0.2
8 Soil		23	0.55	74	0.048	<20	4.06	0.010	0.05	1.4	0.07	5.4	<0.1	<0.05	5	8.0	<0.2
9 Soil		21	0.33	177	0.046	<20	2.88	0.009	0.03	0.3	0.07	3.3	<0.1	<0.05	8	<0.5	<0.2
10 Soil		21	0.68	120	0.070	<20	3.20	0.007	0.05	0.9	0.06	5.7	<0.1	<0.05	7	<0.5	<0.2
11 Soil		23	0.52	87	0.064	<20	3.11	0.007	0.03	0.4	0.05	4.6	<0.1	<0.05	6	<0.5	<0.2
12 Soil		22	0.24	91	0.033	<20	3.83	0.007	0.03	0.4	0.12	3.3	<0.1	<0.05	9	<0.5	<0.2
13 Soil		22	0.48	133	0.056	<20	3.52	0.007	0.03	0.5	0.10	4.6	<0.1	<0.05	6	<0.5	<0.2
14 Soil		14	0.46	99	0.027	<20	2.28	0.012	0.06	0.3	0.04	4.9	<0.1	<0.05	5	<0.5	<0.2
15 Soil		28	0.32	108	0.036	<20	4.36	0.006	0.04	0.3	0.11	5.6	<0.1	<0.05	11	1.0	<0.2
16 Soil		12	0.13	75	0.043	<20	1.48	0.004	0.02	0.2	0.08	2.0	<0.1	<0.05	10	<0.5	<0.2
17 Soil		17	0.32	453	0.007	<20	2.65	0.007	0.12	0.2	0.07	3.4	0.2	<0.05	6	<0.5	<0.2
18 Soil		26	0.71	328	0.042	<20	2.06	0.010	0.12	0.3	0.03	5.3	0.1	<0.05	5	<0.5	<0.2
19 Soil		28	0.85	231	0.060	<20	2.55	0.009	0.07	0.4	0.06	7.2	<0.1	<0.05	6	<0.5	<0.2
20 Soil		27	0.66	462	0.017	<20	3.21	0.007	0.08	0.1	0.06	5.4	0.1	<0.05	6	<0.5	<0.2
21 Soil		26	0.59	282	0.034	<20	2.71	0.006	0.06	0.3	0.04	4.5	0.1	<0.05	7	<0.5	<0.2
22 Soil		12	0.27	179	0.007	<20	2.30	0.004	0.12	0.3	0.05	2.2	0.2	<0.05	5	<0.5	<0.2
23 Soil		16	0.29	209	0.012	<20	3.01	0.007	0.07	0.4	0.05	2.9	0.2	<0.05	6	<0.5	<0.2
24 Soil		19	0.42	121	0.013	<20	3.22	0.006	0.07	0.4	0.05	3.1	0.1	<0.05	7	<0.5	<0.2
25 Soil		22	0.44	182	0.047	<20	3.55	0.006	0.04	0.5	0.04	3.9	<0.1	<0.05	8	<0.5	<0.2
26 Soil		27	0.29	104	0.010	<20	2.73	0.005	0.04	0.2	0.06	2.3	<0.1	<0.05	8	<0.5	<0.2
27 Soil		86	0.67	142	0.047	<20	3.41	0.007	0.05	1.1	0.09	5.3	0.2	<0.05	11	0.5	<0.2
28 Soil		27	0.35	340	0.028	<20	2.40	0.007	0.04	0.6	0.04	3.8	<0.1	<0.05	8	0.5	<0.2
29 Soil		L.N.R.															



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QUALITY CON	NTROL	REP	'OR'	Т												VA	N15	001	433.	.1	
	Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
	Analyte	Мо	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	Р	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
Pulp Duplicates																					
22	Soil	26.9	80.2	29.9	65	0.1	11.7	7.4	423	2.49	7.5	<0.5	6.1	6	0.2	0.3	0.9	33	0.03	0.044	17
REP 22	QC	28.5	82.1	31.0	70	<0.1	12.2	7.9	450	2.58	7.7	1.0	6.6	6	0.1	0.3	0.9	34	0.03	0.046	18
Reference Materials																					
STD DS10	Standard	14.0	145.2	153.2	373	1.9	70.3	12.0	840	2.65	43.4	82.6	7.2	69	2.3	10.1	12.5	40	1.03	0.072	17
STD OREAS45EA	Standard	1.6	680.6	15.9	31	0.2	353.9	50.8	396	23.24	11.5	59.5	10.4	4	<0.1	0.4	0.3	297	0.04	0.029	7
STD OREAS45EA	Standard	1.6	625.9	13.9	28	0.2	340.8	46.8	392	21.07	11.2	50.7	9.4	4	<0.1	0.5	0.3	266	0.04	0.027	7
STD DS10 Expected		14.69	154.61	150.55	370	2.02	74.6	12.9	875	2.7188	43.7	91.9	7.5	67.1	2.49	8.23	11.65	43	1.0625	0.073	17.5
STD OREAS45EA Expected		1.39	709	14.3	28.9	0.26	381	52	400	23.51	9.1	53	10.7	3.5	0.02	0.2	0.26	303	0.036	0.029	6.57
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1



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## QUALITY CONTROL REPORT

## VAN15001433.1

	Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
	Analyte	Cr	Mg	Ва	Ti	В	Al	Na	K	w	Hg	Sc	TI	s	Ga	Se	Те
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Pulp Duplicates																	
22	Soil	12	0.27	179	0.007	<20	2.30	0.004	0.12	0.3	0.05	2.2	0.2	<0.05	5	<0.5	<0.2
REP 22	QC	13	0.28	186	0.007	<20	2.42	0.004	0.13	0.3	0.06	2.3	0.2	<0.05	5	<0.5	<0.2
Reference Materials																	
STD DS10	Standard	50	0.75	406	0.074	<20	0.95	0.061	0.32	3.5	0.28	2.8	5.1	0.29	4	3.1	4.9
STD OREAS45EA	Standard	824	0.10	139	0.100	<20	2.90	0.020	0.05	<0.1	<0.01	78.5	<0.1	<0.05	12	0.8	<0.2
STD OREAS45EA	Standard	738	0.09	134	0.090	<20	2.82	0.020	0.06	<0.1	<0.01	73.8	<0.1	<0.05	12	1.9	<0.2
STD DS10 Expected		54.6	0.775	412	0.0817		1.0259	0.067	0.338	3.32	0.3	2.8	5.1	0.29	4.3	2.3	5.01
STD OREAS45EA Expected		849	0.095	148	0.0875		3.13	0.02	0.053			78	0.072	0.036	11.7	0.6	0.07
BLK	Blank	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2