



## ASSESSMENT REPORT TITLE PAGE AND SUMMARY

**TITLE OF REPORT: ASSESSMENT REPORT ON GEOCHEMICAL SAMPLING, TREASURE MOUNTAIN PROPERTY**

**TOTAL COST: \$79,000**

AUTHOR(S): A. Walus, P.Geo

SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):

STATEMENT OF WORK EVENT NUMBER(S)/DATE(S): Events No: 5699020 and 5709493

YEAR OF WORK: 2018

PROPERTY NAME: Treasure Mountain Property

CLAIM NAME(S) (on which work was done): 505631, 505628, 510714, 556682, 558987, 510716, 1052313, 1060996, 1060997

COMMODITIES SOUGHT: copper, silver, gold

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 103I 090

MINING DIVISION: Skeena

NTS / BCGS: 103I-050, 060; 93I 041, 051

LATITUDE: 54° 30'

LONGITUDE: 128° 00' " (at centre of work)

UTM Zone: 9

EASTING: 564000

NORTHING: 6040000

OWNER(S): Decade Resources

MAILING ADDRESS: 611 8th Street,  
PO Box 211  
Stewart, BC

OPERATOR(S) [who paid for the work]: Decade Resources

MAILING ADDRESS: Same

REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**): copper-silver mineralization, chalcocite-bornite.

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:  
28304, 29726, 30780, 31853

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			
Magnetic			
Electromagnetic			
Induced Polarization			
GEOCHEMICAL (number of samples analysed for ...)			
Soil			
Silt			
Rock	199	505631, 505628, 510714, 556682, 558987, 510716, 1052313, 1060996, 1060997	79,000
Other			
DRILLING (total metres, number of holes, size, storage location)			
Core			
RELATED TECHNICAL			
Sampling / Assaying			
Petrographic			
PROSPECTING (scale/area)			
PREPATORY / PHYSICAL			
Line/grid (km)			
Topo/Photogrammetric (scale, area)			
Legal Surveys (scale, area)			
Road, local access (km)/trail			
Trench (number/metres)			
Underground development (metres)			
Other			
<b>TOTAL COST</b>			<b>\$79,000</b>

**ASSESSMENT REPORT ON  
GEOCHEMICAL SAMPLING  
TREASURE MOUNTAIN PROPERTY**

**Located 35 kilometres East of  
Terrace, British Columbia in  
Skeena Mining Division**

**NTS 103I 050, 060; 93I 041, 051  
Latitude 54° 30" W  
Longitude 128° 00' N**

**Events Number: 5699020 and 5709493**

**On Behalf of  
Decade Resources Ltd**

**Report by  
Alojzy A. Walus, P. Geo.  
[alexwalus@hotmail.com](mailto:alexwalus@hotmail.com)**

**October 2018**

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## SUMMARY

The Treasure Mountain property lies approximately 35 kilometers east of Terrace, British Columbia within the Skeena Mining Division. At the present time access to most of the property is only by helicopter from Terrace with flight time of approximately 15 minutes. The northern and southern parts of the property can be accessed by well-maintained logging roads. Previous property operators used several access roads constructed in the 1960's.

The Treasure Mountain property consists of 29 mineral claims totaling 12,679.6 hectares. Ownership of all 29 claims is presently registered with Randolph Kasum who hold them in trust for Decade Resources.

During the 2018 exploration program a total of 199 rock samples were collected. Rock sampling was supplemented by microscopic examination of 14 thin sections. Decade Resources crew was able to locate the historical DF zone situated some 500 metres south-west from the Purdex zone. Mineralized samples collected from the zone were identified as basalt and andesite with trace to 2% chalcopyrite, covellite and bornite. Several grab samples collected from the zone in 2018 returned from 0.17 to 2.57 percent copper and from 0.9 to 34.8 g/t silver.

In 2018 Decade Resources crew found Epidote 1 and 2 zones located in the northern part of the property. Each of the zone contains several quartz-carbonate-epidote veins up to 35 cm wide. Mineralization includes bornite, chalcocite and malachite. Samples collected from these zones returned up 13.6 percent copper and 218 g/t silver.

Five grab samples collected from another copper bearing zone discovered in 2018 called Malachite zone assayed up to 0.74% copper and 19.0 g/t silver. Mineralization is restricted to a few places within a 130 metres long semi-continuous outcrop of basalt exposed along a logging road. Two float samples with similar mineralogy collected some 300 metres to the northwest from Malachite zone yielded 1.92 and 5.02 percent copper, and 82 and 122 gram per ton silver.

The Treasure Mountain property features numerous copper-silver +/- gold showings. Most of them are located north of Copper River within a north-south trending zone approximately 1.2 km wide and 10 km long. Purdex and DF are the most promising copper bearing zones found to date on the property. Nine chip samples ranging in length from 0.9 to 4.0 metres collected from the Purdex zone in 2017 by Decade Resources gave a weighted average of 3.37% copper and 30.68 g/t silver. The DF zone, located some 500 metres south-west from the Purdex zone was intensely trenched in the 1960's. A 13 metres long trench completed in the 1960's, averaged 1.54% copper. Several grab samples collected from the DF zone in 2018 returned from 0.17 to 2.57 percent copper and from 0.9 to 34.8 g/t silver.

The following types of mineralization were noted on the property:

- 1) Copper-silver mineralization hosted mostly within vesicular and to lesser extent massive basalt. It is dominated by bornite, chalcocite and malachite with lesser covellite and chalcopyrite. They constitute from trace to 5% of the rock forming grains, small blebs and veinlets which show strong association with silicification. This type of mineralization does not show obvious association with faults or fracture zones.
- 2) Copper +/-silver +/-gold bearing veins and fracture zones related to faults. Copper minerals are represented by chalcocite, bornite and malachite with lesser chalcopyrite and covellite. They are accompanied by quartz, carbonates, epidote and chlorite. Epidote is much more abundant in the northern part of the property.

The first type of mineralization bears certain characteristics of the Volcanic Redbed mineralization as defined by Lefebvre, D. V. and Church, B.N. (1996) in the British Columbia Mineral Deposit Profiles. However, strong association with silicification indicates formation in hydrothermal environment. This type of mineralization was observed in the southern part of the property in Purdex and DF zones as well as in the Clore River area. Zones with this type of mineralization tend to be located close to diabase porphyry intrusions (called long laths porphyry in the previous assessment reports) which are the most likely source of the mineralization.

The second type of mineralization was observed throughout the entire property. In the northern part of the property it is clearly related to a large granite/granodiorite intrusion. The intrusion was the most likely source of mineralization, it also caused formation of weak hornfels in the surrounding rocks.

Many copper bearing veins and fracture zones in the southern part of the property are located in direct vicinity of diabase porphyry intrusions (e.g. Trail and Switch-back zones) which are the most likely source of the mineralization. An important Danee zone is hosted within one of such intrusions.

Exploration on the property is hampered by the scarcity of outcrops and the fact that outcrops are strongly leached of copper what makes copper mineralization very difficult to detect. Outcrops are often so strongly leached that there is no sign of high-grade copper mineralization on the surface which can only be found after removing the first 10-15 cm of barren rock.

The IP method would be best suited for the environment observed in the Purdex and DF zones. Disseminated nature of mineralization along with the accompanying silicification should produce a distinct IP signature of high chargeability and resistivity.

An IP geophysical survey covering Purdex and DF zones is recommended for the next exploration program. The cost of the program is estimated at 50,000 dollars.

## **INTRODUCTION**

This report is based on the results of the 2018 geochemical rock sampling on Treasure Mountain property. Data from previous assessment reports and MINFILE were also used. The complete list of sources used in this report is provided in references.

The program was conducted under author's supervision on behalf of Decade Resources between May 29 to July 25, 2018. The pertinent statements on exploration work performed in this period were filed on June 01 (event # 5699020) and on August 29, 2018 (event # 5709493). Statement of exploration costs shows total expenditures incurred during these two events.

### **Location and Access**

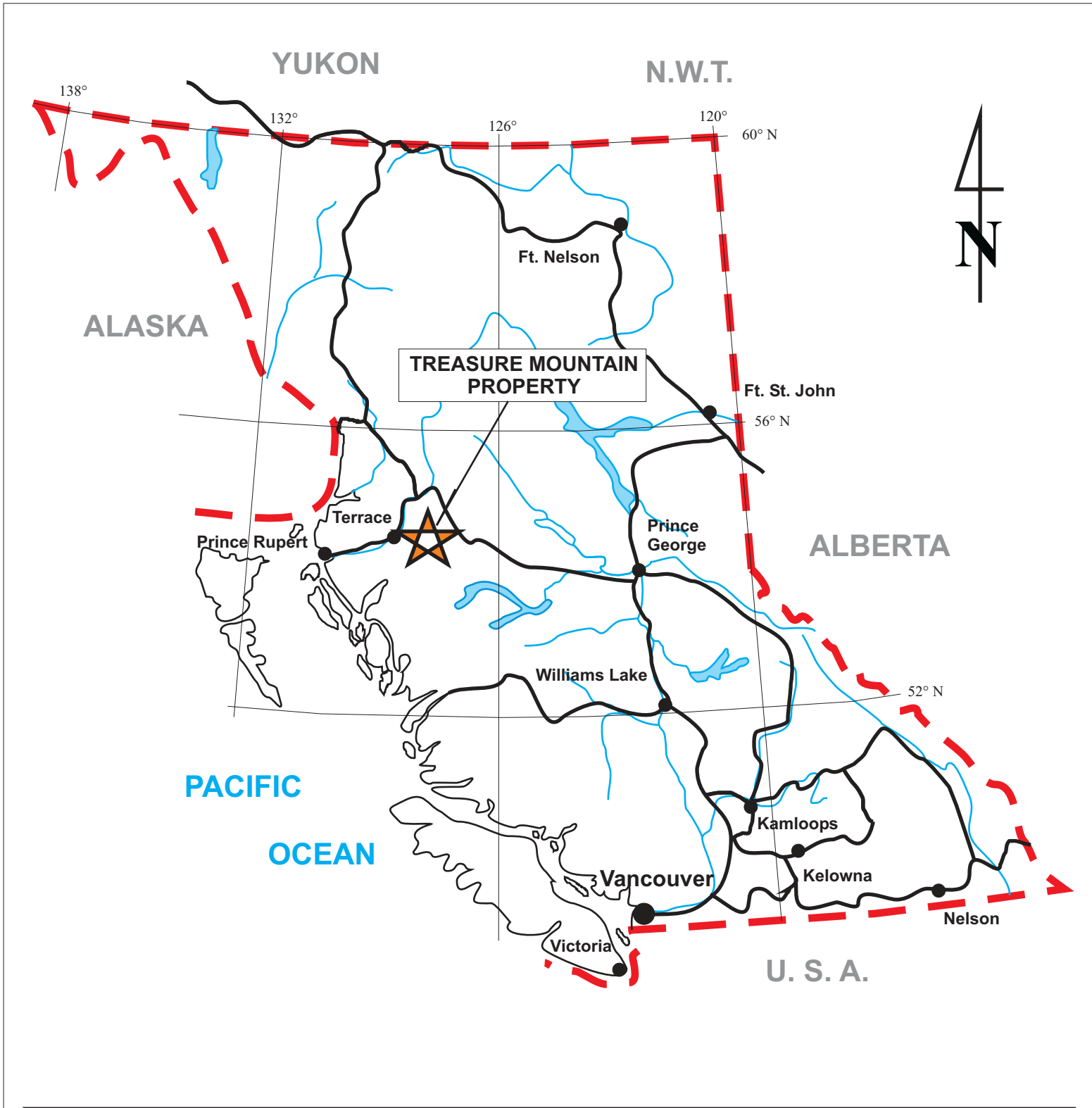
Treasure Mountain property lies approximately 35 kilometers east of Terrace, British Columbia within the Skeena Mining Division (see figure 1 for location). The property is located in the Zymoetz River (locally known as the Copper River) Valley and extends from the Zymoetz River Valley bottom, along a north trending ridge line, to the Kleanza Creek Valley bottom. At the present time access to most of the property is only by helicopter from Terrace with flight time of approximately 15 minutes. The northern and southern parts of the property can be accessed by well-maintained logging roads. Previous property operators used several access roads constructed in the 1960's. Some of them were used by pick-up trucks while others were only accessible to ATVs. Significant portion of them was cleared by Trade Wind Ventures during the 2005-2008 exploration programs. To access these roads a boat is required to get across the Zymoetz River at 29.5 km mark of the Zymoetz River FSR.

### **Topography & Physiography**


The low elevation portion of the property is primarily alluvial benches and unsorted glacial till. The property rises from the valley bottom to low and mid mountain slope. In these areas colluvial and glacial material cover the bedrock, sporadic outcrops can be seen in road cuts. In the mid to upper slope position, rock outcrops are common in bluffs and road cuts. The terrain is rounded due to glacial activity with some east/west trending hogs back ridge features. In the upper slope to mountain top areas, morphologic forms range from rounded ridgelines to precipitous cliffs.

Water courses appear to follow faulting patterns as well as along bedding planes. Salmon Run Creek is the dominant water feature on the western side of the property, with Mattock Creek being a significant drainage to the east and South Kleanza Creek and Peerless Creek to the North.

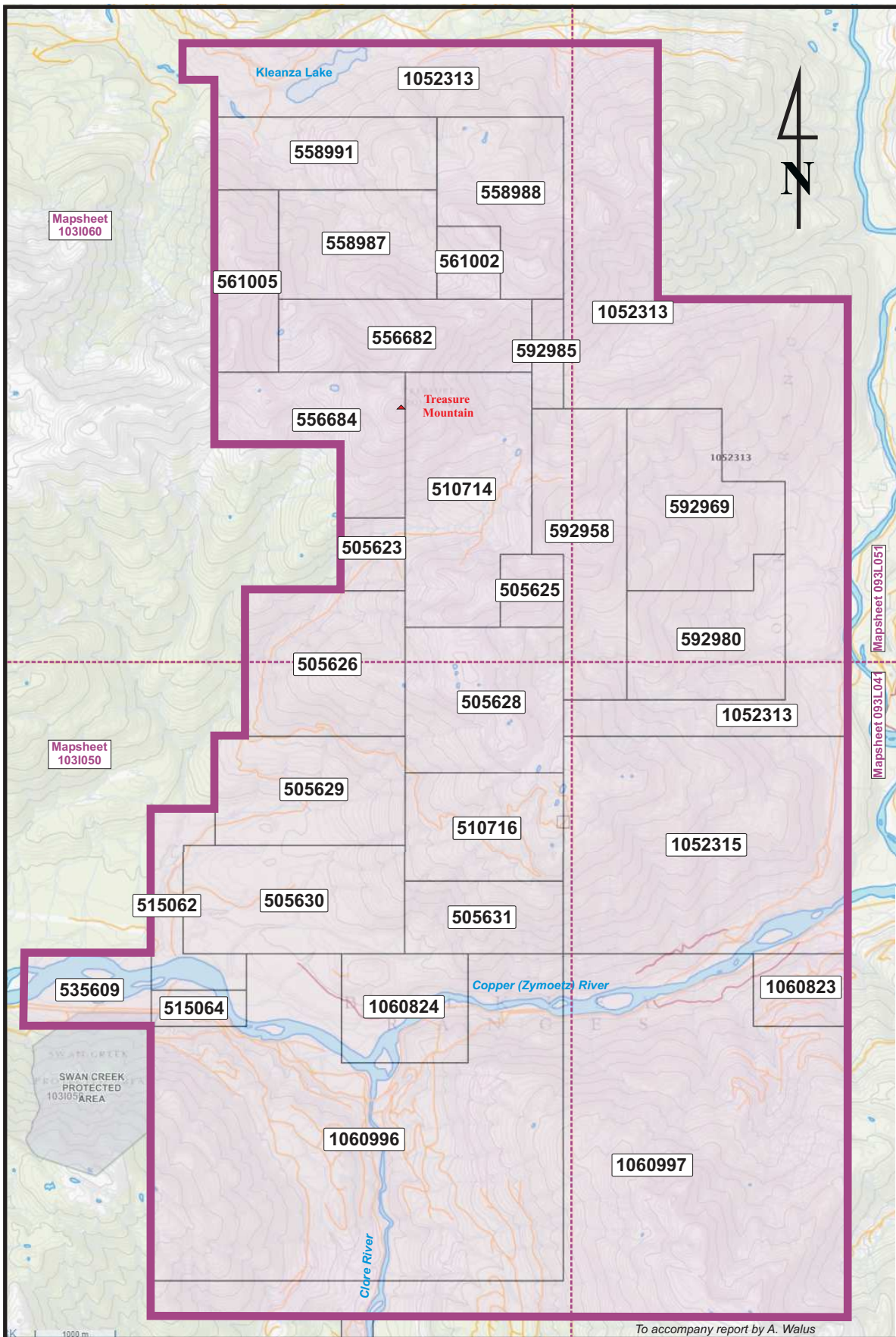




To accompany report by A. Walus

100 km  


<b>DECADE RESOURCES LTD.</b>	
<b>TREASURE MOUNTAIN PROPERTY</b> SKEENA MINING DIVISION	
<b>LOCATION MAP</b>	
Date: October 2018	Figure 1 Scale as shown



Mapsheet  
1031060

Mapsheet  
1031050

Mapsheet 093L05

Mapsheet 093L04

SWAN CREEK  
PROTECTED  
103105 AREA

To accompany report by A. Walus

**LEGEND:**

- 1060824 - boundary of the Treasure Mountain property, claim boundary and claim label
- gravel and/or dirt road
- boundaries of 1:20,000 Mapsheet Grid

0 5 km

**DECADE RESOURCES LTD.**

**TREASURE MOUNTAIN  
PROPERTY**

**CLAIM MAP**

NTS 093L/05, 093L/12,  
Date: September 2018

**Figure 2**  
Scale as shown

## Property Ownership

The Treasure Mountain property consists of 29 mineral claims totaling 12,679.6 hectares located approximately 30 km east of Terrace, BC. Claims location copied from MINFILE database is presented on figure 2. Ownership of all 29 claims is presently registered with Randolph Kasum who hold them in trust for Decade Resources. Relevant claim information is summarized in the table below.

<b>Title Number</b>	<b>Claim Name</b>	<b>Owner</b>	<b>Map No.</b>	<b>Good to Date</b>	<b>Area (ha)</b>
505623	BF 5	245542 (100%)	103I	2019/DEC/05	75.1
505625	BF 6	245542 (100%)	103I	2019/DEC/05	75.1
505626	Treasure 1	245542 (100%)	103I	2019/DEC/05	375.6
505628	Treasure 2	245542 (100%)	103I	2019/DEC/05	375.7
505629	Treasure 3	245542 (100%)	103I	2019/DEC/05	338.2
505630	Treasure 4	245542 (100%)	103I	2019/DEC/05	394.6
505631	Treasure 5	245542 (100%)	103I	2019/DEC/05	187.9
510714		245542 (100%)	103I	2019/DEC/05	488.1
510716		245542 (100%)	103I	2019/DEC/05	281.8
515062	SALMON RUN	245542 (100%)	103I	2019/DEC/05	150.3
515064	SALMON RUN 2	245542 (100%)	103I	2019/DEC/05	56.4
535609	TREASURE	245542 (100%)	103I	2019/DEC/05	150.4
556682	WELLS2	245542 (100%)	103I	2019/DEC/05	300.2
556684	WELLS3	245542 (100%)	103I	2019/DEC/05	300.3
558987	KING1	245542 (100%)	103I	2019/DEC/05	281.4
558988	KING2	245542 (100%)	103I	2019/DEC/04	300.1
558991	KING3	245542 (100%)	103I	2019/DEC/04	262.6
561002	KING4	245542 (100%)	103I	2019/DEC/03	75.0
561005	KING5	245542 (100%)	103I	2019/DEC/03	187.6
592958	TWD1	245542 (100%)	093L	2019/DEC/03	375.5
592969	TWD3	245542 (100%)	093L	2019/DEC/03	375.5
592980	TWD4	245542 (100%)	093L	2019/DEC/03	300.5
592985	TWD2	245542 (100%)	103I	2019/DEC/03	56.3
1052313	TREASURE 50	245542 (100%)	093L	2019/SEP/02	1876.3
1052315	TREASURE 70	245542 (100%)	093L	2019/SEP/02	1014.7
1060823	TREASURE 80	245542 (100%)	093L	2019/MAY/28	112.8
1060824	TREASURE 90	245542 (100%)	103I	2020/MAY/28	225.6
1060996	TREASURE 100	245542 (100%)	103I	2020/JUN/07	1861.7
1060997	TREASURE 105	245542 (100%)	093L	2019/JUN/07	1824.3
<b>Total</b>					<b>12,679.6</b>

## **HISTORY**

### Early 1900's

The Treasure Mountain area was intensively explored in the early 1900's as it was thought that the Grand Trunk and Pacific Railroad would go through the Copper (Zymoetz) River Valley and open up the District. When the railway was routed along the Hazelton route most exploration work died after 1915 when the camp was reported on in the B.C. Minister of Mines Annual Report. After that, there were periods of resurgent exploration on the various copper showings in the area which mostly represent veins with bornite and chalcocite.

### The 1960's

In the 1960's exploration on the present-day Treasure Mountain property was centered on Purdex zone. The property was explored by Glen Copper Mines Ltd. in 1966 which completed approximately 2,400 metres of drilling and 1,600 metres of trenching. In addition, 11.2 km of access roads were constructed (Ministry of Mines Annual Report 1966). The records of this work have not been published. It is postulated that this work was to develop the vein showings at the head waters of Salmon Run Creek. The Salmon Run road was constructed as part of this work along with significant trail building at the head waters of Mattock Creek.

### 1997 or 1998

Some drilling took place on Drill Stem zone. No records of this work are available.

### 2005-2008

In 2005 Trade Winds Ventures Inc. of Vancouver optioned the property from the owner Mr. W. H. McRae of Terrace, BC. Exploration work during this period included rehabilitation of old roads, mapping and drilling of Purdex zone, as well as property wide mapping, prospecting and sampling. Drilling of Purdex zone included 6 ATW holes. Extensive prospecting resulted in the discovery of Danee, Trail, Camp, Fundi and Switchback copper-silver bearing zones. In 2007, a total of 60 blasted pits were completed of which 51 were completed over the Danee zone.

## **REGIONAL GEOLOGY**

### **Introduction**

The property is located east of the Coast Range Intrusives and totally within what has been determined to be Jurassic Age Hazelton Volcanics (194 - 200Ma). Recent mapping carried out in 2007 and 2008 by J. Nelson et al, from British Columbia Geological Survey assigned the rocks of Treasure Mountain to the Lower Jurassic Telkwa Formation of the volcanoclastic dominated division (see figure 3). The property falls into the northeast corner of the quadrant mapped by the British Columbia Geological Survey (BCGS) as Open File 2008-3, Geology of Chist Creek Map Area, B.C., 103I 08 and the south east corner of Open File 2007-4, Geology of Terrace Map Area,

B.C., 103I 09, 10, 15 and 16. East of Longitude 128 degrees, prior mapping (BCGS 2005), identifies only undifferentiated L JT or Lower Jurassic Telkwa Formation.

### **Lower Unit**

The western portion of the property is primarily the LJTax and on the property, this has been mapped as the Lower Unit which is described as: “Plagioclase-phyric andesite lapilli tuff. It is coarse to fine grained, compositionally monolithologic to polymictic. Minor hornblende and rare clinopyroxene phenocrysts. Also, plagioclase-phyric andesite flows and flow breccia; minor dacite, rhyolite and volcanic sedimentary rocks. Green, maroon and bright burgundy.” The main copper bearing units, the Purdex, and the Danee are located at the upper top portion of the lower unit.

### **Acidic Volcanic Unit**

The next higher stratigraphic unit found on the property is called the Acidic Volcanic Unit and is equivalent to BCGS’s Lower and intraflow felsic marker units called LJTr described as:

“Lower marker unit lies at base of flow dominated division: Upper marker unit lies both above and below andesite flows. Rhyolite and dacite distinguished by labels locally, but not separated.”

### **Red Bed Unit**

The uppermost unit mapped on the property is called the Red Bed Unit and is roughly equivalent to the LJTa Flow Dominated Division.

## **PROPERTY GEOLOGY**

Description of the property geology provided below is based in large part on Alex Burton description of geology provided in Assessment Report #30780 which in turn is based on BCGS work (Nelson J.L. et al, 2007, 2008) which is presented on figure 3. The rocks found within the property are divided into three main units, Lower Unit, Acidic Volcanic Unit, and Red Bed Unit. (Burton A., 2009).

### **Volcanic Rocks**

#### **Lower Unit**

The Lower Unit is complex and has not been mapped in detail except near its top where Purdex sub-unit has been the subject of much exploration. The base of the Lower Unit is not known, but it extends at least down to the 400 m elevation and up to 1200 meters at the Purdex zone. It strikes north-south consistently dipping 45 degrees east.

### Acid (felsic) Volcanic Unit

The Acidic Volcanic Unit appears to lie on an unconformable erosional surface of the Lower Unit. In this unit the volcanic bedding is uniform with North strike and gentle dip to the east. The individual beds in the Acidic Volcanic Unit are quite different from the Purdex Sub-Unit zone and can be individually identified and followed along dip for at least one kilometer. The beds are acidic, fine grained tuffs or crystal ash flows exhibiting welded crystal tuff features with occasional gas holes.

### Red Bed Unit

The Red Bed Unit is the youngest and appears to conformably overly the Acidic Volcanic Unit. Beds in the Red Bed Unit range from less than 1 m to more commonly half a dozen to a dozen meters thick. Often, certain beds will have patches of bright green ‘celadonite’ up to a centimeter across which have the appearance of replacing mafic minerals or fine particles in the matrix of the beds.

### Intrusive Rocks

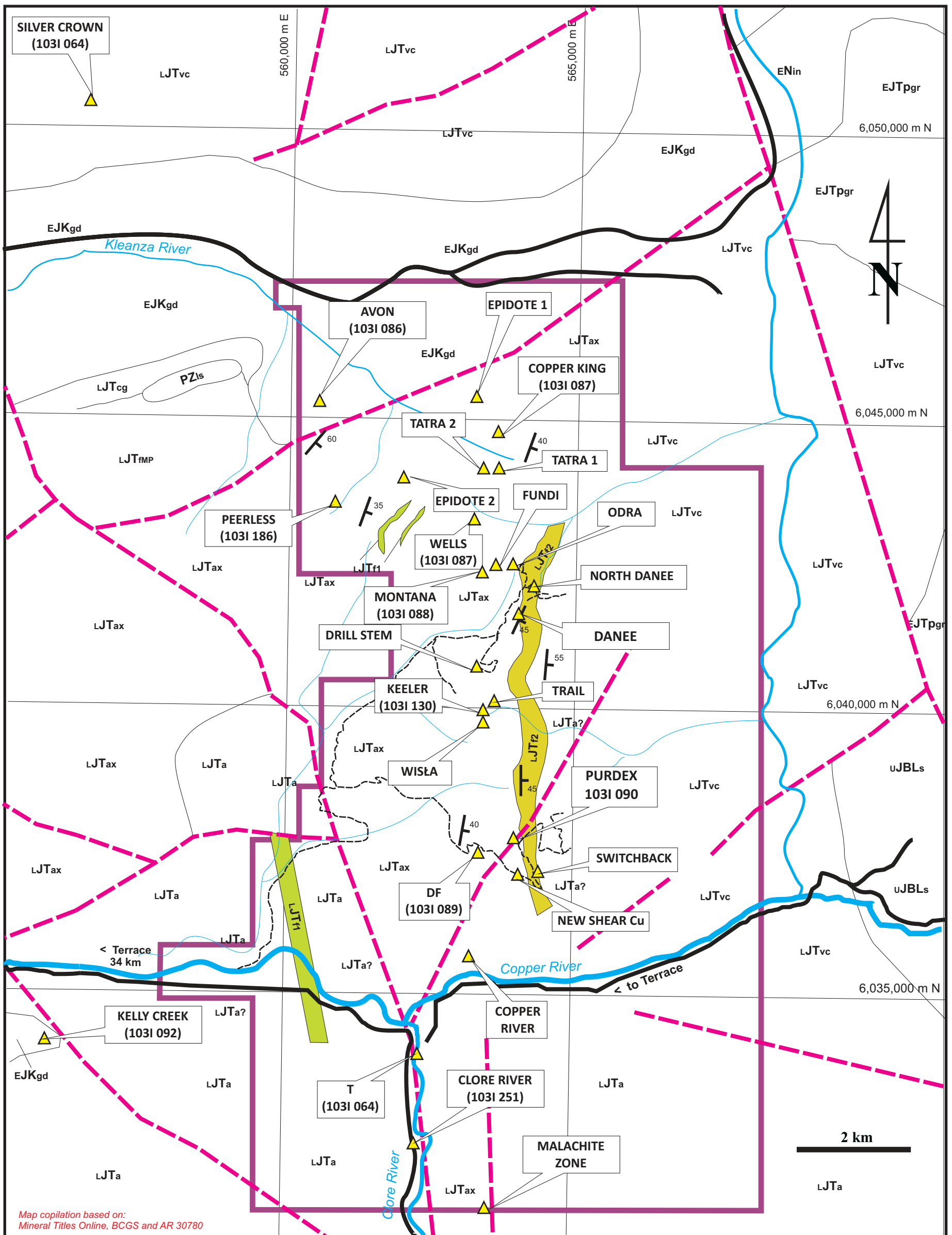
#### Diabase Porphyry

In assessment reports from 2007 and 2008 these rocks are called long lath porphyry and described as flows (Burden A., 2007, 2008). In these reports they are assigned a role of marker horizon. However, samples of this rock collected in 2017 and 2018 commonly displays ophitic texture (see microscopic description of samples 106 and SW-BA in Appendix III) which is characteristic of subvolcanic diabase. Because of the large size of plagioclase phenocrysts (crystals up to 5 cm long were noted) the rock is called diabase porphyry in this report. The rock often contains miarolitic cavities filled with carbonates, chlorite, quartz and zeolites. The largest intrusion of diabase porphyry is located on claim 1060996, on the east side of Clore river. It is a multi-phase intrusion comprised of many diabase intrusions with different sizes of plagioclase phenocrysts as well as phenocrysts to groundmass ratios.

Many copper bearing zones including DF, Trail and Clore River occurrences are situated in close proximity to diabase porphyry intrusions. An important Danee zone is hosted within one of such intrusions at least 300 metres in size. Diabase porphyry was not recorded close to Purdex zone but this could be the result of very limited rock exposure in this area. Intrusions of diabase porphyry are the most likely source of copper mineralization in the southern part of the property.

#### Granite/Granodiorite

Large intrusion of this rock is located in the northern part of the property. It caused formation of a weak hornfels in the adjacent areas. The intrusion is the most likely source of copper bearing mineralization related to faults and fracture zones in the northern part of the property.



Map compilation based on:  
Mineral Titles Online, BCGS and AR 30780

To accompany report by A. Walus

**LEGEND:**

- Intrusive rocks:**
- EJKgd** - Kleanza Plutonic Suite; granodiorite, granite
  - EJTpgr** - Topley Plutonic Suite; granodiorite
  - ENin** - Nanika Plutonic Suite; intrusives
- Stratified rocks:**
- uJBLs** - Bowser Lake Gp, sedimentary rocks
  - LJTvc** - Telkwa Gp, volcanic rocks, undivided
  - LJTa** - Telkwa Gp, mainly flow units; andesite, dacite, basalt, minor volcanoclastics
  - LJTf2** - Telkwa Gp, upper felsic marker
  - LJTf1** - Telkwa Gp, lower felsic marker
  - LJTax** - Telkwa Gp, andesite volcanoclastics, lapilli tuff to volcanic breccia
  - LJTfmp** - Telkwa Gp, Mt Pardek felsic unit
  - LJTcg** - Telkwa Gp, volcanogenic conglomerates
  - PZls** - Zymoetz Gp (Permian), limestone
- Other symbols:**
- fault
  - stratification (strike and dip angle)
  - mineral occurrence
  - old access road/trail

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**TREASURE MOUNTAIN PROPERTY**  
**OMINECA MINING DIVISION**

**GEOLOGY**  
AND  
**MINERAL OCCURRENCES**

NTS 093L/05, 093L/12, 1031/08, 1031/09  
Date: September 2018

Figure 3  
Scale as shown

## MINERALIZATION

The Treasure Mountain property features numerous mineralized occurrences which are shown on figure 3. In this report they are divided into the following three groups:

- 1) Mineral occurrences listed in the MINFILE Mineral Inventory.
- 2) Mineral zones discovered from 2006 to 2008 by Trade Wind Ventures and not yet listed in MINFILE
- 3) Mineral occurrences not listed in group 1 or 2 which include several new mineralized zones discovered during the 2017 and 2018 work programs.

### MINERAL OCCURENCES LISTED IN MINFILE

#### Purdex (MINFILE No: 103 I 090)

This is the main copper-silver zone within the Treasure Mountain property. In the 2007 and 2008 assessment reports it is referred to as Purdex zone. In earlier reports as well as in the MINFILE it is referred to as Northwest, Snow and Treasure Mt. zone. MINFILE gives the following description of the zone:

*“The area is underlain by volcanic rocks of the Jurassic Hazelton Group which include 020 degree north trending, 35 to 50 degree east dipping purple lapilli tuff and vitrophyre. A brown feldspar porphyry sill intrudes the volcanics. Chalcocite, bornite and minor chalcopyrite occur as disseminations and veinlets along a bed of the pyroclastic rock. The mineralized block is about 60 metres long, 10 metres true width and 36 metres down dip length. A gouge-filled shear zone cuts the zone to the east, with a continuation of the zone east of the fault (drill intersections).*

*A 26 metre surface chip sample assayed 2.44 per cent copper and 0.4 grams per tonne silver (Minister of Mines Annual Report 1965). The mineralized block is estimated to contain 40,820 tonnes of about 2 per cent copper (Property File: Campbell, 1964). Unclassified reserves are 28,120 tonnes grading 1.7 per cent copper (Statement of Material Facts June 19, 1973 - Spectroair Explorations Ltd., T. Sadler-Brown, October 1972). A parallel zone, similar in character and 60 metres to the west, measures 30 by 10 metres. Surface samples average 3.26 per cent copper (Property File: Campbell, 1964). “*

In the 2007 and 2008 assessment reports A. Burton gives the following description of the Purdex Zone:

*“Copper mineralization in the Purdex area is filling the matrix of the breccia beds with bornite and chalcocite, or in the lower outcropping Purdex beds near the collar of diamond drill hole 1-64, with hematite mineralization. No pyrite or pyrrotite was seen and chalcopyrite is rare. The mineralization fills the matrix in the breccia or pepperite volcanic beds, and appears almost as disseminations in ‘porphyry’ beds or flows or cross cutting dykes. New trenches in bedrock and cleaning out prior trenches reveal that better mineralized beds can be traced along strike for tens*



*of meters at least and apparently down dip as well. There are at least three main beds and a couple more of lesser mineralized beds that have been identified by the Trade Wind Ventures Inc. work.”*

Considerable work has been done on the zone which include trenching, drilling and construction of an adit. The latest drilling was done by Trade Wind Ventures of Vancouver in 2005 and 2007. In total, 6 ATW holes were completed.

In 2017 the author of this report spent two days mapping and sampling Purdex zone. Description of the zone based on this work is provided below:

The main zone can be traced for 45 metres along the north-south direction and is open to the south-west (Walus A., 2017, AR 37213). Its width ranges from 6 to 16 metres. Beside the main zone there is also a smaller zone located 70 metres to the west. Only 5-6 metres of this zone is exposed at the bottom of the cliff, below the main zone. It is not clear if this zone constitutes a separate zone or is part of the main zone. Purdex zone is hosted partly in basalt and partly in volcanoclastic andesite (or basalt?) breccia/conglomerate. The zone contains from 1 to 7 % of combined bornite and chalcocite along with abundant malachite. Rocks within the zone are often silicified. During the 2017 exploration program a total of nine chip samples ranging in length from 0.9 to 4.0 metres were collected. All samples except one were collected from old trenches. They assayed from 0.49 to 5.51 % copper and from 7.2 to 42.7 g/t silver (Walus A., 2017, AR 37213). They gave a weighted average of 3.37% copper and 30.68 g/t silver.

Under the microscope five samples derived from the zone were identified as amygdaloidal basalt containing xenoliths of coarser grained porphyritic diabase (Walus A., 2017, AR 37213). Copper minerals were identified as bornite, chalcocite, covellite and chalcopyrite. They are associated with quartz and small amounts of chlorite, sericite and actinolite. Copper sulphides and the associated minerals mostly form numerous amygdales within basalt. The bulk of sulphides occurs as scattered grains and patches ranging in size from 0.05 to 1.5 mm. Small part of sulphides occurs within quartz veinlets. All samples contain several percent of disseminated crystalline hematite. Staining the samples with sodium cobaltinitrite revealed the presence of 1 to 10% K- feldspar (one sample contained 30-40% K-feldspar). K-feldspar most likely is of a secondary origin. Timing of hematite and K-feldspar formation and their relationship to copper mineralization is uncertain.

#### DF (MINFILE No: 103 I 089)

According to MINFILE, this major copper occurrence (also named Northwest and Snow 31 zone) is located about 700 metres west of Purdex zone. MINFILE provides the following description of the zone: *“Bornite, chalcocite, chalcopyrite and malachite occur as disseminations, in vesicles and in fractures within the purple flow rocks and tuffs and, to a lesser degree, the porphyry sill. The best ore occurs along an east fault in the top of the trachytic porphyry and adjacent purple porphyry and tuff. The mineralized zone (No. 2 Zone) is about 120 metres long and 90 metres wide. A 13 metre sample from a trench assayed 1.54 per cent copper (Property File: Campbell, 1964).”*

During the 2018 sampling program Decade Resources crew was able to locate this zone some 500 metres south-west from the Purdex zone. Several grab samples collected in 2018 returned from 0.17 to 2.57 % copper and from 0.9 to 34.8 g/t silver. More details on copper mineralization of the DF zone are included in chapter the 2018 WORK PROGRAM.

#### Keeler (MINFILE 103 I 130)

MINFILE provides the following description of the zone:

*“Chalcocite and lesser bornite, native copper, azurite and malachite occur as veinlets and disseminations within a 40 degree east dipping feldspar porphyry flow of the Jurassic Hazelton Group. The mineralization occurs discontinuously over 180 metres in a northwest direction. Sampling of a trench assayed 1.55 per cent copper and 12.34 grams per tonne silver over 10.7 metres (Property File - Bell, 1963).”*

Trade Wind Ventures was not able to locate this showing despite spending several days looking for it during the 2007 and 2008 field programs. In 2017, half a day was spent in unsuccessful attempt to locate the showing. It is postulated the location of the showing may be recorded incorrectly.

#### Montana (MINFILE No. 103I 088)

Description of this showing presented in MINFILE is as follows:

*“Shear zones with associated quartz-calcite veins cut andesitic volcanic rocks of the Jurassic Hazelton Group. Mineralization consists of stringers and disseminations of bornite and chalcocite. A quartz vein, up to 90 centimetres wide and 76 metres long returned a 71 centimetre channel sample assaying 1.18 per cent copper, 20 grams per tonne silver and trace gold (Geological Survey of Canada Memoir 212). A 6 metre sample of a shear zone assayed 1.1 per cent copper and 65 grams per tonne silver (Minister of Mines Annual Report 1917).”*

Alex Burden postulated the Montana location to be inaccurate and the showing is likely a ridge top vein at the crest of the headwall of Mattock Creek (Burden A., 2007, AR 29726).

#### Wells (MINFILE No. 103I 087)

In MINFILE the zone is described as follows:

*“Mineralization consisting of bornite, chalcocite and cuprite occurs in three shear zones cutting andesitic volcanic rocks of the Jurassic Hazelton Group. The variably oriented shear zones are up to 1.2 metres wide and contain stringers of quartz, calcite and epidote, up to 20 centimetres wide. A 1.2 metre sample from an adit assayed 9.5 per cent copper, 79 grams per tonne silver and trace gold (Minister of Mines Annual Report 1917). A sample of another shear zone assayed 4.2 per cent copper and 103 grams per tonne silver over 3 metres (Minister of Mines Annual Report 1917).”*

#### Copper King (MINFILE No. 103I 163)

Brief description of this zone copied from MINFILE is provided below:

*“The area is underlain by felsic to basic volcanic rocks of the Jurassic Hazelton Group. Copper minerals, likely chalcocite and bornite, occur in the volcanics.*

*A 12 metre surface sample is reported to assay 1.35 per cent copper, 12 grams per tonne silver and 0.3 grams per tonne gold (National Mineral Inventory 103I9 Cu13). “*

#### Peerless (MINFILE No. 103I 186)

MINFILE provides the following description of the zone:

*“Andesitic volcanics of the Jurassic Hazelton Group are cut by intrusive dykes and northeast trending shear zones. A shear zone, dipping 75 degrees west and up to 2 metres wide, contains quartz- calcite veinlets mineralized with lenses of chalcocite, bornite, magnetite, and chalcopyrite. A 1.2 metre sample assayed 11.93 per cent copper, 157.7 grams per tonne silver, and 1.4 grams per tonne gold (Geological Survey of Canada, Summary Report 1925A).”*

#### Avon (MINFILE No. 103I 086)

MINFILE gives the following description of the zone:

*“Triassic age limestone and andesite of the Jurassic Hazelton Group are intruded by a granodiorite stock of the Cretaceous to Tertiary Coast Plutonic Complex. A wide band of limestone, striking north and dipping 45 degrees east is altered and silicified into a green banded skarn containing garnet, epidote, quartz and calcite. The rock is cut by several north striking, vertical faults resulting in brecciated zones up to 2 metres wide.*

*A zone is sparsely mineralized with chalcopyrite, pyrite, bornite and chalcocite. A 61 centimetre channel sample across the zone assayed 2.1 grams per tonne gold and 1.4 grams per tonne silver and a 25 centimetre sample of a nearby quartz vein with chalcopyrite assayed 0.04 per cent copper (Geological Survey of Canada Memoir 212).”*

#### Clore River (MINFILE No. 103I 251)

In the MINFILE this showing is described as a shear zone which hosts chalcopyrite mineralization.

*” In 2005, a sample taken from this mineral occurrence by the British Columbia Geological Survey assayed 0.295 gram per tonne gold, 16.0 grams per tonne silver, and 1.35 per cent copper (AR 31853). In 2010, two grab samples (KK 12-10 and KK 11-10) taken from this area assayed up to 0.66 gram per tonne gold, 22.6 grams per tonne silver and 0.38 per cent copper (AR 31853).”*

#### T (MINFILE No. 103I 091)

The showing, located close to Clore river is underlain by andesites, basalts and rhyolites of the Jurassic Hazelton Group. Chalcopyrite, malachite, azurite, bornite and barite occur in a northwest trending, steeply dipping shear zone within the volcanics. The shears range up to 1.0 metre in width (MINFILE).

## MINERAL OCCURENCES DISCOVERED IN 2006-2008 BY TRADE WINDS VENTURES AND NOT YET LISTED IN MINFILE

### Danee

Danee zone was discovered in 2006 by Trade Winds Ventures and according to A. Burden (Burden A., 2008; AR 30780) represents a large exhalate zone. In 2007, a few dozen blasted pits and trenches were completed within the zone. The average copper content of the 51 samples collected from them was 0.15% Cu. The average of the ten best mineralized samples was 0.64% Cu (Burden A., 2008; AR 30780).

Decade Resources 2017 sampling program consisted of resampling of the 2007 pits and trenches. Six chip samples (A17-74 to 78, A17-81 and one grab sample (A17-80) were collected from two trenches and two pits blasted within massive, reddish-brown rock which often contained pervasive limonite and locally malachite. Locally silicification, sericitization and carbonate alteration was noted. The samples averaged 0.2% Cu, five samples returned anomalous silver values ranging from 0.5 to 3.9 ppm. Sample A17-79, a composite grab collected from 15-20 cm wide fault assayed 4.01% Cu, 55.5 ppm Ag and 61 ppb Au. Sample A17-82, a grab derived from 10-20 cm wide quartz-chalcocite vein yielded 4.43 % Cu, 45 ppm Ag and 38 ppb Au. The zone strikes NE-SW, it is at least 70 m long and 30 m wide. Microscopic examination of a sample A17-76 (Walus A., 2017; AR#37213) collected from one of the trenches indicate copper mineralization is hosted within portion of a large diabase intrusion at least 300 metres in size.

### Lower Danee

According to the 2008 Assessment report (Burden A., 2008; AR 30780), the Lower Danee zone is a recessively weathering zone stratigraphically at the base of the main Danee zone. A 2007 sample from weathered material collected within this zone yielded 79.8 ppm Cu, a second sample from blasted hole returned 42.5 ppm Cu. These values are considered significant given the extensive surface leaching in Treasure Mountain area. This lower zone is not yet fully delineated and could mean a considerable enlargement of Danee Zone.

### North Danee Extension

Two samples collected in an area which possibly constitutes the northern extension of Danee zone assayed 508 and 79 ppm ppm Cu in rusty material similar to the Lower Danee.

### Trail

The Trail zone was discovered in 2006 as a result of excavator work opening up the old trail to the northern workings. No signs of mineralization were evident on the natural surface before digging with the excavator. Many of the samples are leached and show little sign of copper mineralization on or near the weathered surface. Copper results from 2007 samples derived from excavated trenches ranged from 50 to 17,200 ppm Cu.

During the 2017 program three old trenches were found and resampled in the area designated as Trail zone in the 2008 Assessment Report. A grab from one of the 2006 trenches collected in 2017 returned 1.51% Cu and 9.98 g/t Au. The sample represent quartz-carbonate replacement of feldspar porphyritic andesite or basalt with 2-3% disseminated bornite and chalcopyrite. Samples from other trenches did not record anomalous values in copper or other metals.

#### Switch Back

Approximately 600m south-east of the Purdex zone, a mineralized fault is exposed in a switch back road cut. A 1.4 m chip sample obtained in 2017 from 1.5-2.0 m wide fault zone returned 0.79 % Cu and 10.7 ppm Ag. The fault is comprised of strongly sheared and altered rocks locally containing pervasive malachite. Fault orientation is 80/v.

Another copper occurrence found in 2008 is located just below the Switch Back zone. A 1 meter chip across the shear returned 0.35% Cu while a 1 meter chip of the country rock returned 0.01% Cu (Burden A., 2008; AR 30780).

#### Shear Veins

Shear veins show up as rusty linear zones on the surface above timberline to the north of the main Danee zone. There are no old obvious workings on them. They were sampled in 2007 from available surface rusty material. The northernmost of them assayed 393 ppm Cu and the southern one returned 940 ppm Cu. Both of these linear features warrant extensive excavator trenching.

#### Camp and Fundi zones

The camp and Fundi zones are described as outcrops of exhalate similar to Danee zone (Burden A., 2008; AR 30780). However, there is no mention of any mineralization associated with these zones.

### MINERAL ZONES NOT LISTED IN GROUP ONE OR TWO

#### Drill Stem

This showing is located at about 1400m elevation on an east/west trending ridge. Significant work was done at this location by Glen Copper Mines in 1966 and by unknown company in 1997-1998. No record of this work has been found to date. The work included drilling as indicated by four old drill pads located during the 2017 program. A cat trail was built to access the top of the ridge as well as to expose a near vertical fault which contains veins of remobilized copper mineralization. Samples collected in 2007/2008 exploration campaigns returned values of up to 3.5% copper and 26g/t silver.

Decade Resources 2017 program identified a 3-4 metre wide fault zone with up to 2% bornite plus locally abundant malachite. This zone which can be traced for 20 metres (it is obscured on both ends by talus) seems to represent the main drilling target during the previous exploration programs. Two chip samples (A17-63 and 64) collected from the fault zone returned up to 1.54% copper, 51.9 ppm silver and 795 ppb gold.

In another place, a grab sample (A17-65) collected from a 1-2 m wide fault mineralized with malachite returned 1.29% Cu and 11.2 ppm Ag.

### Zymoetz (Copper) River

According to A. Burton (Burton A., AR 30780), “there is a verbal report of native copper being found to the east of the property along the north bank of the Zymoetz River, in a southern trend from the Purdex, probably in the 400m elevation range.” Attempts to locate this showing during the 2007/2008 as well as 2017 exploration programs were unsuccessful.

### Odra

The Odra zone was found in 2017 while looking for Fundi zone. The zone, exposed by excavator during previous exploration program represents a 5-10 cm wide quartz-carbonate vein with minor pyrite and some malachite stain. Grab sample from the vein (A17-83) returned 1.14% Cu, 35.8 ppm Ag and 22.7 ppm Au (Walus A., 2017; AR#37213). The vein is striking 340 degrees and dipping 80 degrees to SW. There is no mention of this vein in historical reports.

### Tatra-1

Tatra-1 zone was discovered during the 2017 program. It represents a carbonate-chlorite altered fracture zone with trace to minor malachite and locally minor chalcocite. The zone seems to strike NE-SW but the size of the zone was not possible to evaluate as it is mostly covered by overburden. Three grab samples taken from the zone assayed up to 2.42% Cu and 13.0 ppm Ag (Walus A., 2017; AR#37213).

### Tatra-2

This zone was also discovered during the 2017 program. It is located approximately 100 metres west from Tatra-1 zone. The zone represents carbonate-quartz-epidote replaced rock with 1-2% chalcocite and some malachite hosted in red volcanics. Approximately 1.5x1.5 m of the zone is exposed, with the remainder covered by overburden. Two grab samples were collected from the zone. Sample A17-88 returned 4.40% Cu, 39.4 ppm Ag and 362 ppb Au. The second sample (A17-89) derived from a 5 cm wide quartz vein with 1-5% bornite assayed 2.39% Cu and 21.0 ppm Ag.

### Wisla

Approximately 80 m south from sample A17-68 (Trail zone), a new occurrence with copper mineralization was found. The occurrence forms a 2-3 m wide zone within 20-30 m wide NE-SW striking resistant horizon comprised of variably silicified pale reddish andesite tuff (?). The zone

is cut by 1-3 mm wide quartz veinlets. Copper mineralization consists of malachite which occurs on fractures and sporadically also in veinlets. Grab samples A17-71 and 72 collected from the zone assayed 0.34 and 0.28 percent copper, and 2.8 and 1.8 ppm silver (Walus A., 2017; AR#37213).

#### Epidote 1 and 2 zones, Malachite zone

These copper bearing zones were discovered by Decade Resources during the 2018 sampling program (see figure 3 for location). Description of these zones is provided in chapter the 2018 WORK PROGRAM.

## **2018 WORK PROGRAM**

### **Introduction**

During the 2018 exploration program a total of 199 rock samples were collected. Rock sampling was supplemented by microscopic examination of 14 thin sections (see Petrographic Report in Appendix III). Samples location along with copper, gold and silver results are presented on figures 4A to 4F. Sample descriptions along with their coordinates are presented in Appendix I. Full geochemical results are presented in Appendix II. All samples were analyzed by Actlabs – an ISO certified Laboratory in Kamloops, BC. All samples were analyzed for the 30 elements ICP. Samples which returned > 5,000 ppb gold and/or >100 ppm silver and/or > 5,000 ppm copper by ICP method were assayed for these elements.

### **Rock Sampling Results**

#### DF zone

During the 2018 program Decade Resources crew was able to locate the historical DF zone (Minfile No:103 I 089) located some 500 metres south-west from the Purdex zone (see figure 3 for location). Mineralized samples collected from the zone were identified as basalt and andesite - see petrographic report (Appendix III). Sulphide minerals present in these samples were identified as chalcopyrite, covellite and bornite. They constitute from trace to 2% of the rock forming grains, small blebs and veinlets associated with quartz and chlorite. Several grab samples collected from the zone in 2018 returned from 0.17 to 2.57 percent copper and from 0.9 to 34.8 g/t silver.

#### Epidote 1 zone

The zone, located in the northern part of the property (see figure 3) was discovered during the 2018 sampling program. The zone contains several quartz-carbonate-epidote veins up to 35 cm wide. Mineralization includes bornite, chalcocite and malachite. Of the 14 grab samples taken from the zone (samples KMT-18105 to KMT-18117 on figure 4F) seven returned between 0.62 and 8.53 percent copper, 1.5 and 29.3 g/t silver and 34 and 517 ppb gold.

### Epidote 2 zone

This copper bearing zone was also discovered during the 2018 sampling program (see figure 3 for location). Twelve grab samples (KMT-1893 to 18104) were taken from several thin quartz-carbonate-epidote veins and fracture zones containing up to 3 % of combined bornite and chalcocite. They assayed up to 2.87% Cu, 76.7 g/t Ag and 1630 ppb gold. A float of carbonate vein with copper mineralization (sample A18-59) derived from this zone assayed 13.6 percent copper and 218 g/t silver (figure 4F).

### Malachite zone

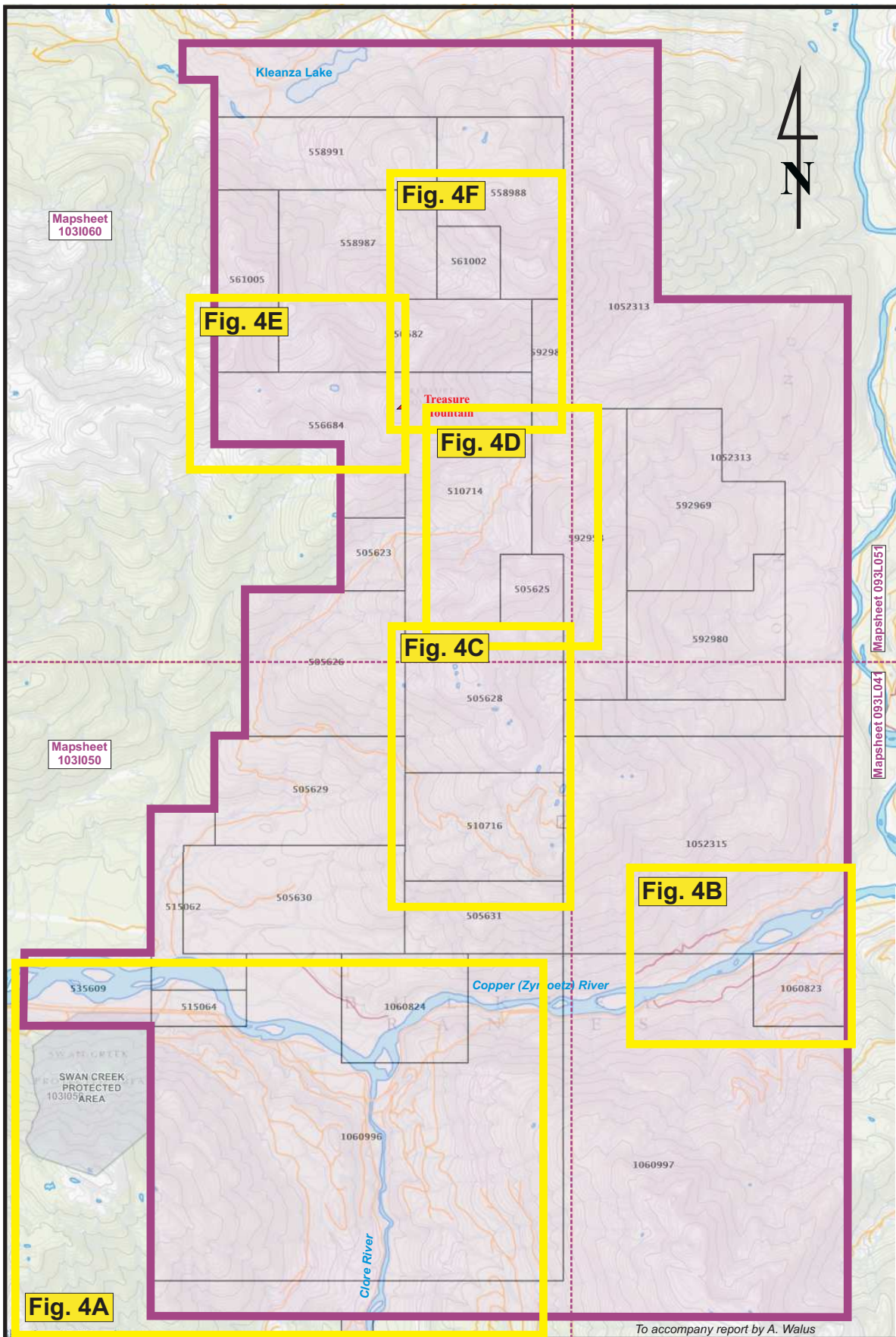
Five grab samples collected from another copper bearing zone discovered in 2018 called Malachite zone assayed up to 0.74% copper and 19.0 g/t silver (see figure 3 for location). Copper minerals include malachite which is concentrated mostly on fractures, in one sample minor chalcocite was noted. Mineralization is restricted to a few places within a 130 metres long semi-continuous outcrop of feldspar porphyritic basalt exposed along a logging road. Two float samples (A18-17 and A18-18) with similar mineralogy collected some 300 metres to the northwest from Malachite zone yielded 1.92 and 5.02 percent copper, and 82 and 122 gram per ton silver.

### Clore River area




In 2010, copper mineralization was reported from several outcrops situated along a stretch of the logging road just west of Clore River (Ostesoe E., 2010); AR31853). Several grab samples collected from this area in 2018 returned up to 0.78 % copper and 17.0 g/t silver (see figure 4A). Almost all mineralized samples collected in 2018 from Clore River area were identified as basalt (see petrographic report in Appendix III). Sample KMT-1818 (0.44% copper) was taken from quartz-epidote replaced rock. Copper minerals present in these samples we identified as chalcocite, bornite, covellite and malachite. They constitute from trace to 2% of the rock forming grains, small blebs and veinlets associated with quartz and in sample A18-55 carbonate.

Elsewhere on the property numerous grab and float samples returned significant values in copper, silver and gold. Most of them came from copper bearing veins and fracture zones. Of note is a float sample KMT-1875 collected in the Trail Showing area which yielded 0.98% copper and 46.8 g/t silver. The sample was identified as silicified basalt with 2-3% disseminated bornite which resembles mineralization from Purdex and DF zones.





**LEGEND:**

-  - boundary of Treasure Mountain property
-  - forestry road
-  - borders of the detailed sample maps

0 5 km

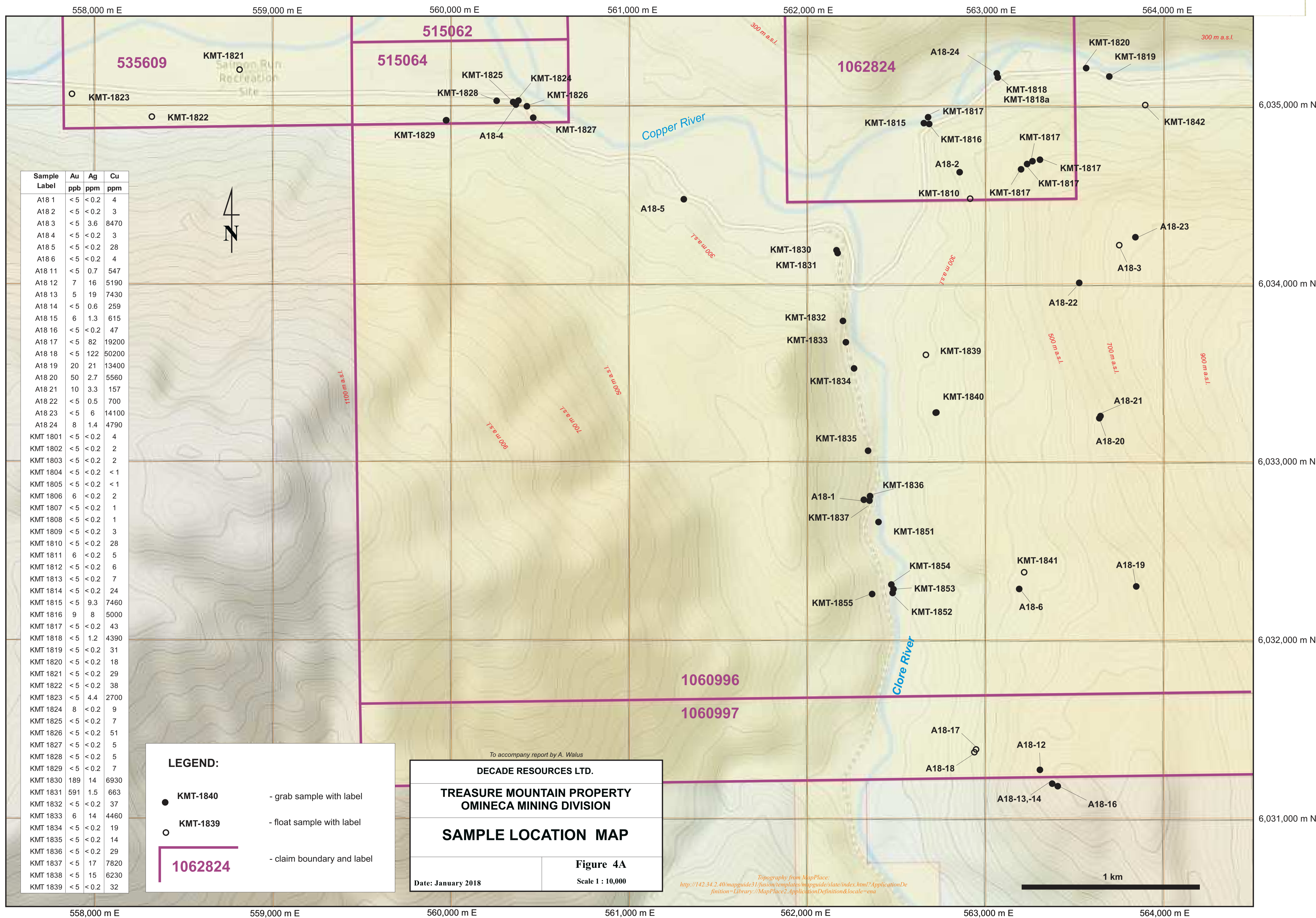
**DECADE RESOURCES LTD.**

**TREASURE MOUNTAIN  
PROPERTY**

**Index Map**

NTS 093L/05, 093L/12,  
Date: September 2018

**Figure 4**  
Scale as shown



Sample Label	Au ppb	Ag ppm	Cu ppm
A18 1	<5	<0.2	4
A18 2	<5	<0.2	3
A18 3	<5	3.6	8470
A18 4	<5	<0.2	3
A18 5	<5	<0.2	28
A18 6	<5	<0.2	4
A18 11	<5	0.7	547
A18 12	7	16	5190
A18 13	5	19	7430
A18 14	<5	0.6	259
A18 15	6	1.3	615
A18 16	<5	<0.2	47
A18 17	<5	82	19200
A18 18	<5	122	50200
A18 19	20	21	13400
A18 20	50	2.7	5560
A18 21	10	3.3	157
A18 22	<5	0.5	700
A18 23	<5	6	14100
A18 24	8	1.4	4790
KMT 1801	<5	<0.2	4
KMT 1802	<5	<0.2	2
KMT 1803	<5	<0.2	2
KMT 1804	<5	<0.2	<1
KMT 1805	<5	<0.2	<1
KMT 1806	6	<0.2	2
KMT 1807	<5	<0.2	1
KMT 1808	<5	<0.2	1
KMT 1809	<5	<0.2	3
KMT 1810	<5	<0.2	28
KMT 1811	6	<0.2	5
KMT 1812	<5	<0.2	6
KMT 1813	<5	<0.2	7
KMT 1814	<5	<0.2	24
KMT 1815	<5	9.3	7460
KMT 1816	9	8	5000
KMT 1817	<5	<0.2	43
KMT 1818	<5	1.2	4390
KMT 1819	<5	<0.2	31
KMT 1820	<5	<0.2	18
KMT 1821	<5	<0.2	29
KMT 1822	<5	<0.2	38
KMT 1823	<5	4.4	2700
KMT 1824	8	<0.2	9
KMT 1825	<5	<0.2	7
KMT 1826	<5	<0.2	51
KMT 1827	<5	<0.2	5
KMT 1828	<5	<0.2	5
KMT 1829	<5	<0.2	7
KMT 1830	189	14	6930
KMT 1831	591	1.5	663
KMT 1832	<5	<0.2	37
KMT 1833	6	14	4460
KMT 1834	<5	<0.2	19
KMT 1835	<5	<0.2	14
KMT 1836	<5	<0.2	29
KMT 1837	<5	17	7820
KMT 1838	<5	15	6230
KMT 1839	<5	<0.2	32

**LEGEND:**

- KMT-1840 - grab sample with label
- KMT-1839 - float sample with label
- 1062824 - claim boundary and label

To accompany report by A. Walus

**DECADE RESOURCES LTD.**

**TREASURE MOUNTAIN PROPERTY  
OMINECA MINING DIVISION**

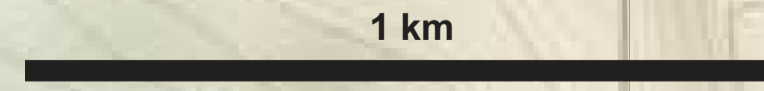
**SAMPLE LOCATION MAP**

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Date: January 2018

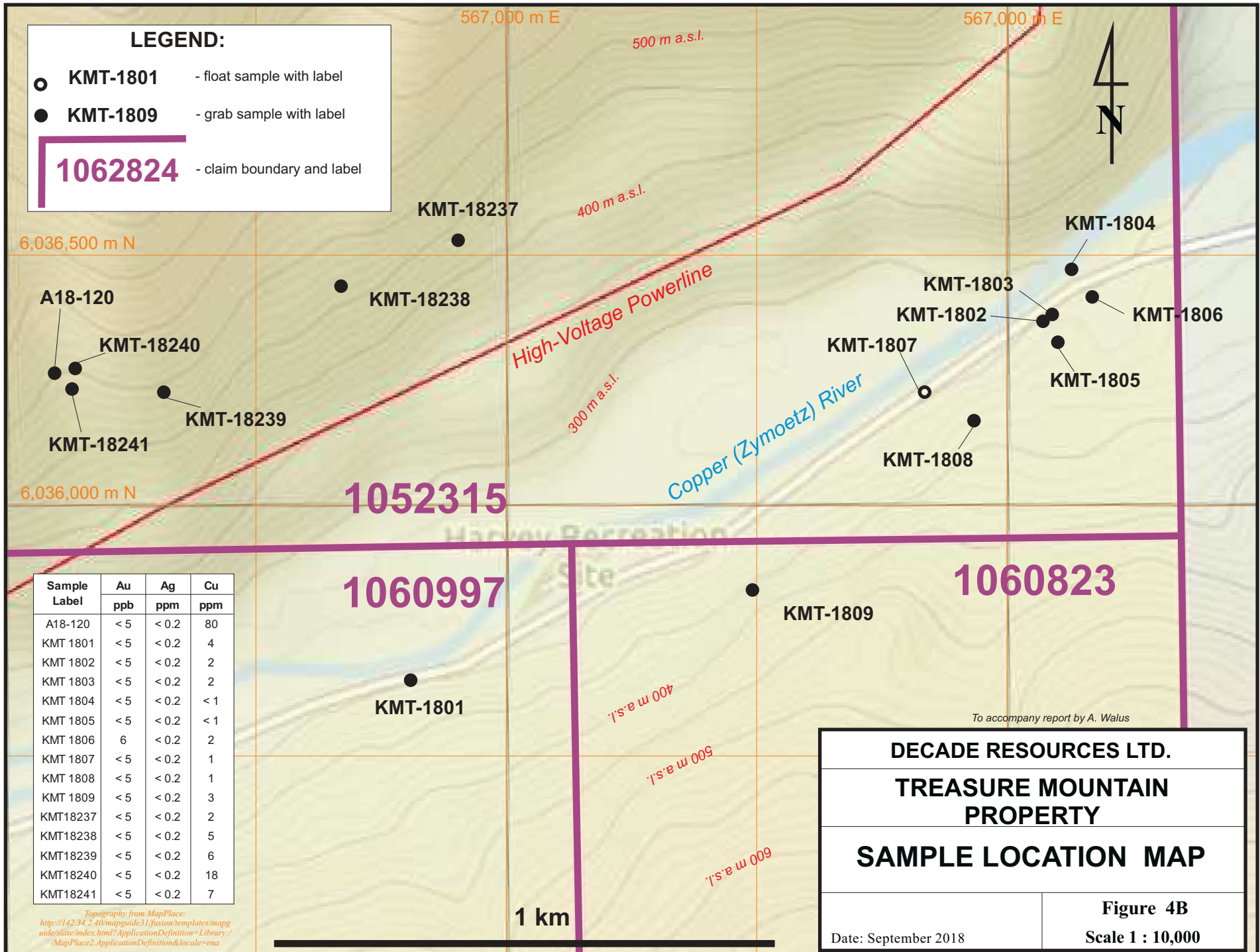
Figure 4A  
Scale 1 : 10,000

Topography from MapPlace:  
<http://142.34.2.40/maguide31/fusion/templates/maguide/slate/index.html?ApplicationDefinition=Library://MapPlace2.ApplicationDefinition&locale=ena>



**LEGEND:**

- KMT-1801 - float sample with label
- KMT-1809 - grab sample with label
- 1062824 - claim boundary and label

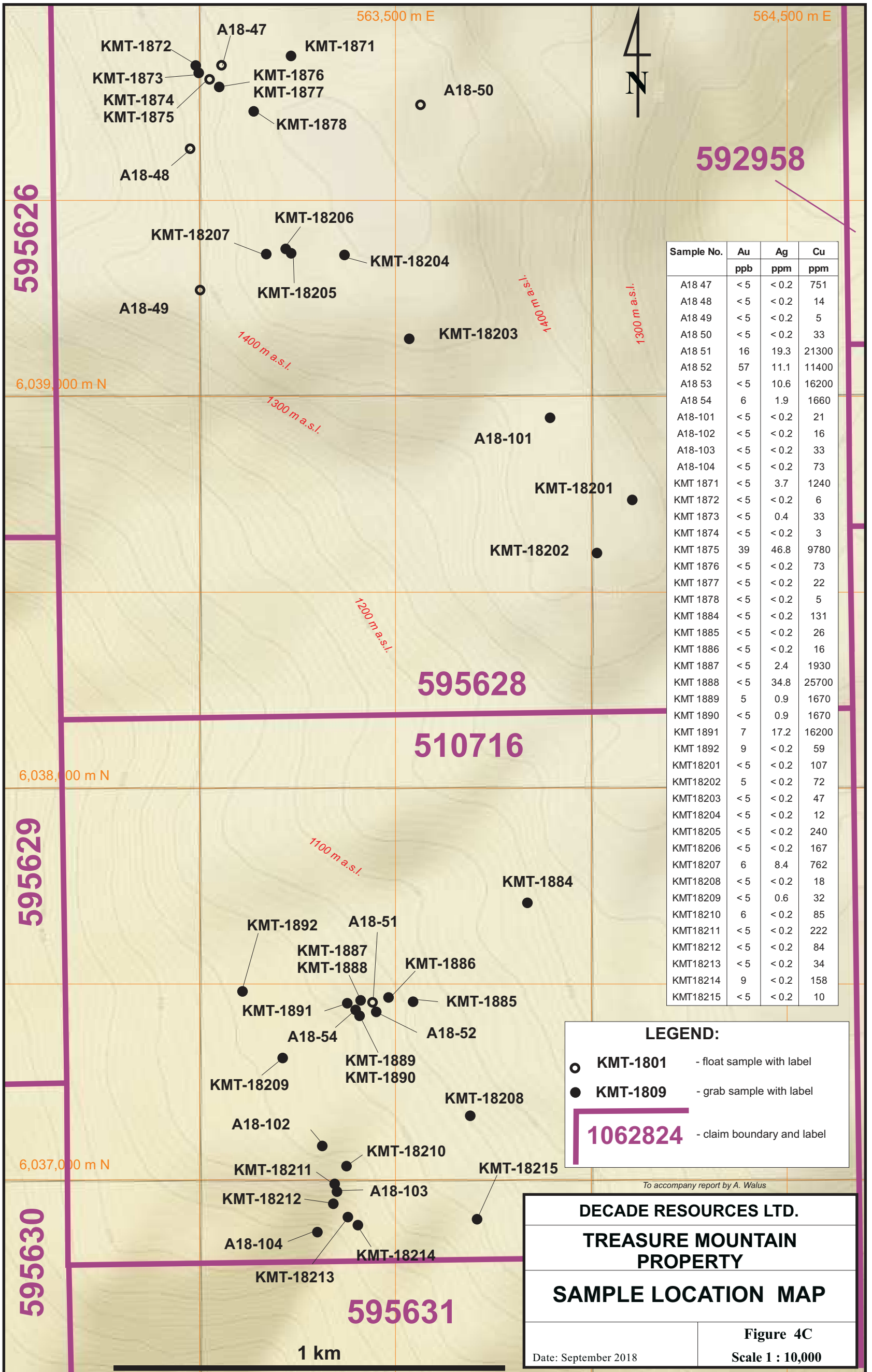


Sample Label	Au ppb	Ag ppm	Cu ppm
A18-120	< 5	< 0.2	80
KMT 1801	< 5	< 0.2	4
KMT 1802	< 5	< 0.2	2
KMT 1803	< 5	< 0.2	2
KMT 1804	< 5	< 0.2	< 1
KMT 1805	< 5	< 0.2	< 1
KMT 1806	6	< 0.2	2
KMT 1807	< 5	< 0.2	1
KMT 1808	< 5	< 0.2	1
KMT 1809	< 5	< 0.2	3
KMT18237	< 5	< 0.2	2
KMT18238	< 5	< 0.2	5
KMT18239	< 5	< 0.2	6
KMT18240	< 5	< 0.2	18
KMT18241	< 5	< 0.2	7

Topography from MapPlace:  
<http://142.34.2.40/mapguide31/fusion/templates/mapguide/slate/index.html?ApplicationDefinition=Library:/MapPlace2.ApplicationDefinition&locale=ena>

*To accompany report by A. Walus*

<b>DECADE RESOURCES LTD.</b>	
<b>TREASURE MOUNTAIN PROPERTY</b>	
<b>SAMPLE LOCATION MAP</b>	
Date: September 2018	Figure 4B Scale 1 : 10,000



Sample No.	Au	Ag	Cu
	ppb	ppm	ppm
A18 47	< 5	< 0.2	751
A18 48	< 5	< 0.2	14
A18 49	< 5	< 0.2	5
A18 50	< 5	< 0.2	33
A18 51	16	19.3	21300
A18 52	57	11.1	11400
A18 53	< 5	10.6	16200
A18 54	6	1.9	1660
A18-101	< 5	< 0.2	21
A18-102	< 5	< 0.2	16
A18-103	< 5	< 0.2	33
A18-104	< 5	< 0.2	73
KMT 1871	< 5	3.7	1240
KMT 1872	< 5	< 0.2	6
KMT 1873	< 5	0.4	33
KMT 1874	< 5	< 0.2	3
KMT 1875	39	46.8	9780
KMT 1876	< 5	< 0.2	73
KMT 1877	< 5	< 0.2	22
KMT 1878	< 5	< 0.2	5
KMT 1884	< 5	< 0.2	131
KMT 1885	< 5	< 0.2	26
KMT 1886	< 5	< 0.2	16
KMT 1887	< 5	2.4	1930
KMT 1888	< 5	34.8	25700
KMT 1889	5	0.9	1670
KMT 1890	< 5	0.9	1670
KMT 1891	7	17.2	16200
KMT 1892	9	< 0.2	59
KMT 18201	< 5	< 0.2	107
KMT 18202	5	< 0.2	72
KMT 18203	< 5	< 0.2	47
KMT 18204	< 5	< 0.2	12
KMT 18205	< 5	< 0.2	240
KMT 18206	< 5	< 0.2	167
KMT 18207	6	8.4	762
KMT 18208	< 5	< 0.2	18
KMT 18209	< 5	0.6	32
KMT 18210	6	< 0.2	85
KMT 18211	< 5	< 0.2	222
KMT 18212	< 5	< 0.2	84
KMT 18213	< 5	< 0.2	34
KMT 18214	9	< 0.2	158
KMT 18215	< 5	< 0.2	10

**LEGEND:**

- KMT-1801 - float sample with label
- KMT-1809 - grab sample with label
- 1062824 - claim boundary and label

To accompany report by A. Walus

<b>DECADE RESOURCES LTD.</b>	
<b>TREASURE MOUNTAIN PROPERTY</b>	
<b>SAMPLE LOCATION MAP</b>	
Date: September 2018	<b>Figure 4C</b> Scale 1 : 10,000

563,500 m E

564,500 m E

**LEGEND:**

- **KMT-1801** - float sample with label
- **KMT-1809** - grab sample with label
- 1062824** - claim boundary and label



6,042,000 m N

Sample Label	Au	Ag	Cu
	ppb	ppm	ppm
A18 36	< 5	0.3	161
A18 55	17	27	14000
A18 56	87	59.4	18900
A18 57	43	116	44100
A18 58	73	76.6	24400
A18-105	< 5	< 0.2	306
A18-106	< 5	< 0.2	7
A18-107	< 5	< 0.2	463
A18-108	< 5	< 0.2	4
A18-109	< 5	< 0.2	21
KMT 1879	75	10.8	5180
KMT 1880	55	0.5	551
KMT 1881	< 5	0.8	2430
KMT 1882	< 5	< 0.2	28
KMT 1883	7	< 0.2	67
KMT18216	5	< 0.2	11
KMT18217	8	0.3	116
KMT18218	9	< 0.2	308
KMT18219	< 5	< 0.2	144
KMT18220	< 5	< 0.2	31
KMT18221	< 5	< 0.2	8
KMT18222	7	< 0.2	78
KMT18223	10	< 0.2	125
KMT18224	36	1.4	31
KMT18225	5	< 0.2	507
KMT18226	17	< 0.2	55

510714

592958

505625

505628

1400 m a.s.l.

1500 m a.s.l.

1500 m a.s.l.

1300 m a.s.l.

1400 m a.s.l.

1300 m a.s.l.

1200 m a.s.l.

1 km

To accompany report by A. Walus

**DECADE RESOURCES LTD.**

**TREASURE MOUNTAIN PROPERTY**

**SAMPLE LOCATION MAP**

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Date: September 2018

Figure 4D  
Scale 1 : 10,000

KMT-1879

KMT-1881

KMT-1883

KMT-1882

A18-109

A18-108

A18-107

A18-106

A18-105

KMT-18216

KMT-18217

KMT-18218

KMT-18221

KMT-18220

KMT-18219

A18-36

KMT-18225

KMT-18224

KMT-18222  
KMT-18223

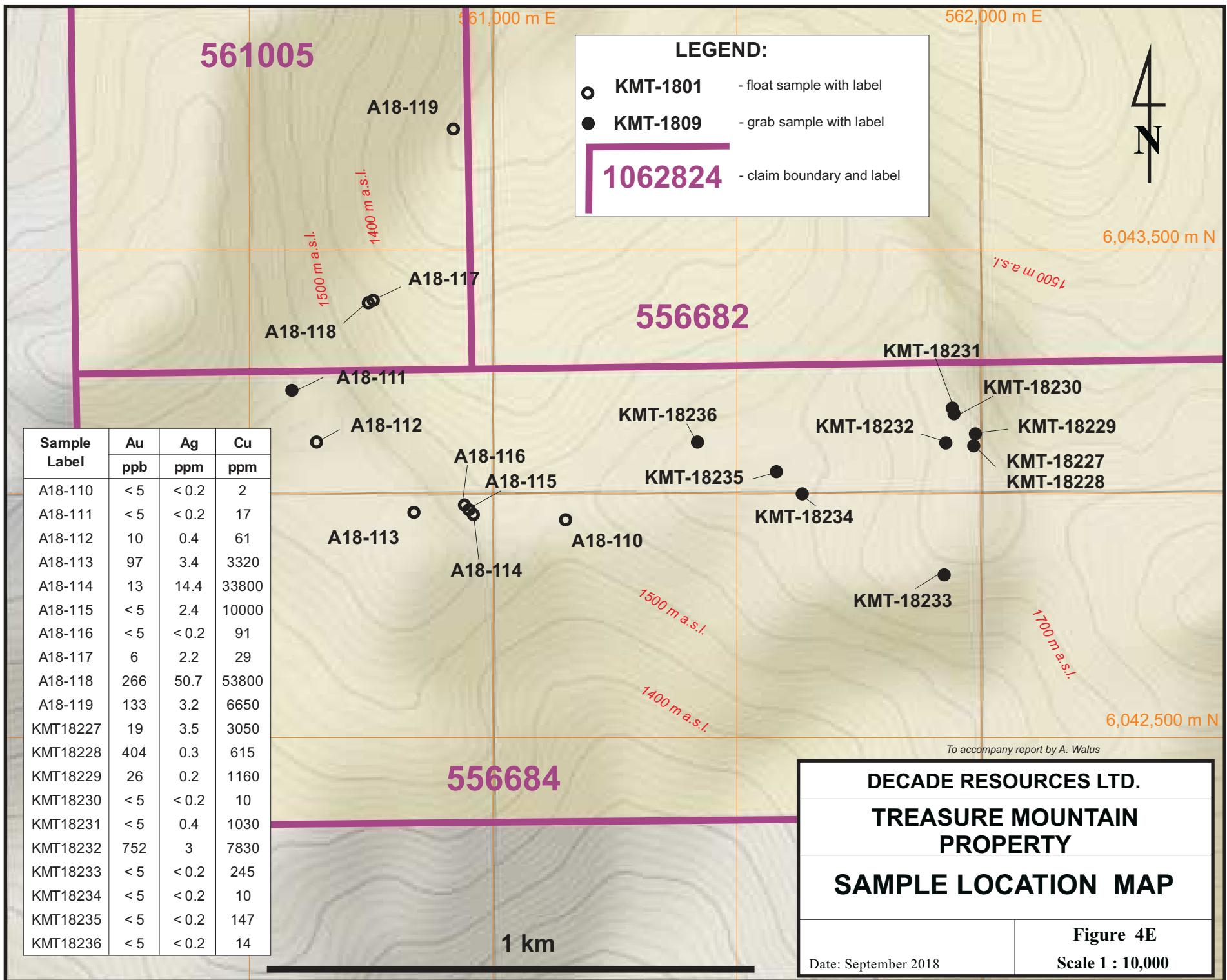
A18-57

A18-56

A18-55

A18-58

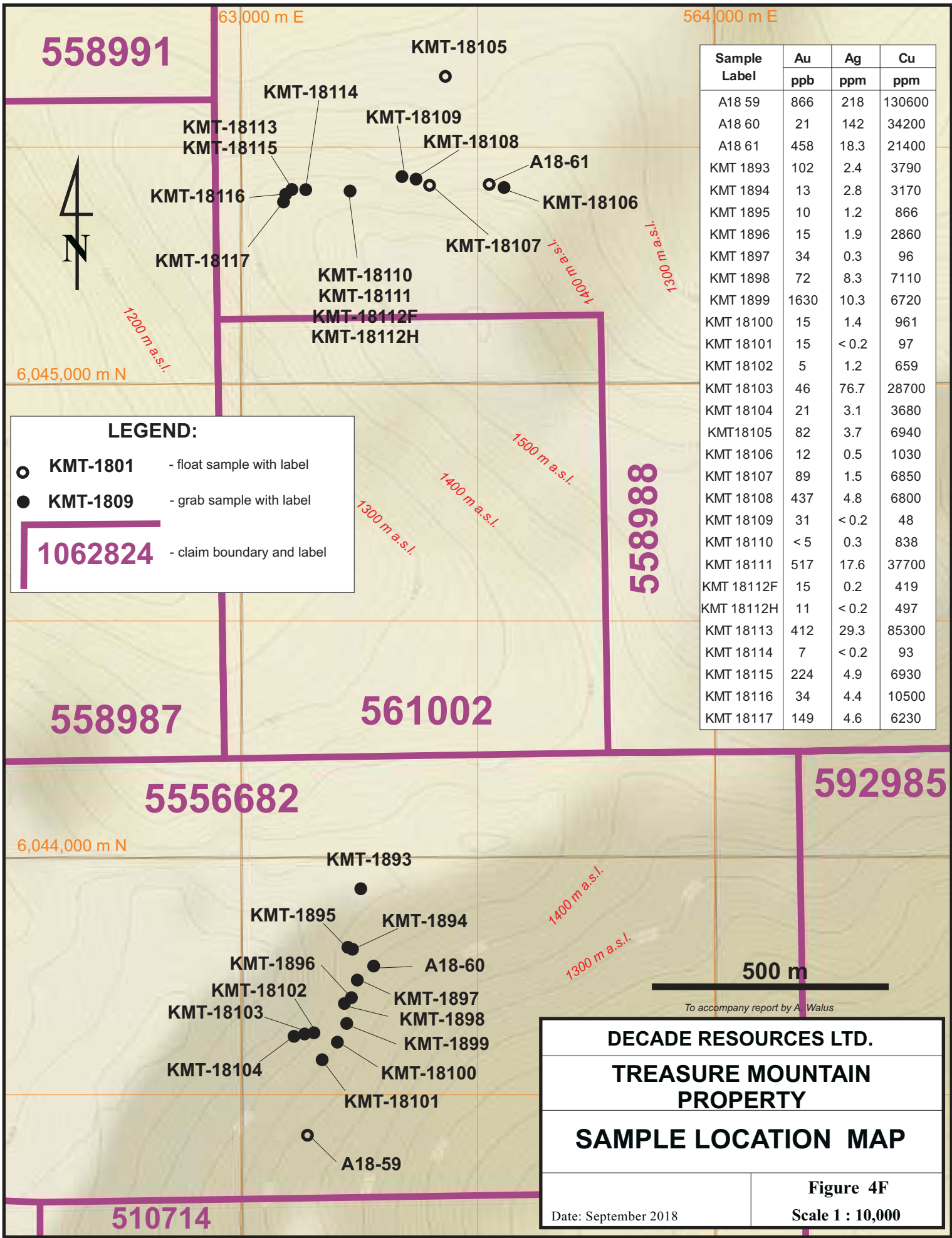
KMT-18226



Sample Label	Au	Ag	Cu
	ppb	ppm	ppm
A18-110	< 5	< 0.2	2
A18-111	< 5	< 0.2	17
A18-112	10	0.4	61
A18-113	97	3.4	3320
A18-114	13	14.4	33800
A18-115	< 5	2.4	10000
A18-116	< 5	< 0.2	91
A18-117	6	2.2	29
A18-118	266	50.7	53800
A18-119	133	3.2	6650
KMT18227	19	3.5	3050
KMT18228	404	0.3	615
KMT18229	26	0.2	1160
KMT18230	< 5	< 0.2	10
KMT18231	< 5	0.4	1030
KMT18232	752	3	7830
KMT18233	< 5	< 0.2	245
KMT18234	< 5	< 0.2	10
KMT18235	< 5	< 0.2	147
KMT18236	< 5	< 0.2	14

To accompany report by A. Walus

<b>DECADE RESOURCES LTD.</b>	
<b>TREASURE MOUNTAIN PROPERTY</b>	
<b>SAMPLE LOCATION MAP</b>	
Date: September 2018	<b>Figure 4E</b> Scale 1 : 10,000



Sample Label	Au	Ag	Cu
	ppb	ppm	ppm
A18 59	866	218	130600
A18 60	21	142	34200
A18 61	458	18.3	21400
KMT 1893	102	2.4	3790
KMT 1894	13	2.8	3170
KMT 1895	10	1.2	866
KMT 1896	15	1.9	2860
KMT 1897	34	0.3	96
KMT 1898	72	8.3	7110
KMT 1899	1630	10.3	6720
KMT 18100	15	1.4	961
KMT 18101	15	< 0.2	97
KMT 18102	5	1.2	659
KMT 18103	46	76.7	28700
KMT 18104	21	3.1	3680
KMT18105	82	3.7	6940
KMT 18106	12	0.5	1030
KMT 18107	89	1.5	6850
KMT 18108	437	4.8	6800
KMT 18109	31	< 0.2	48
KMT 18110	< 5	0.3	838
KMT 18111	517	17.6	37700
KMT 18112F	15	0.2	419
KMT 18112H	11	< 0.2	497
KMT 18113	412	29.3	85300
KMT 18114	7	< 0.2	93
KMT 18115	224	4.9	6930
KMT 18116	34	4.4	10500
KMT 18117	149	4.6	6230

**LEGEND:**

- KMT-1801 - float sample with label
- KMT-1809 - grab sample with label
- 1062824 - claim boundary and label

**DECADE RESOURCES LTD.**

**TREASURE MOUNTAIN PROPERTY**

**SAMPLE LOCATION MAP**

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**Figure 4F**

Date: September 2018 Scale 1 : 10,000

## INTERPRETATION AND CONCLUSIONS

The Treasure Mountain property features numerous copper-silver +/- gold showings. Most of them are located north of Copper River within a north-south trending zone approximately 1.2 km wide (from 63200 E to 64400 E) and 10 km long. Purdex and DF are the most promising copper bearing zones found to date on the property. Nine chip samples ranging in length from 0.9 to 4.0 metres collected from the Purdex zone in 2017 by Decade Resources gave a weighted average of 3.37 percent copper and 30.68 g/t silver. The DF zone, located some 500 metres south-west from the Purdex zone was intensely trenched in the 1960's and according to the MINFILE, the best mineralization is contained within an exposed area 120 metres long and 90 metres wide. A 13 metres long trench completed in the 1960's, averaged 1.54% copper. Several grab samples collected from the DF zone in 2018 returned from 0.17 to 2.57 percent copper and from 0.9 to 34.8 g/t silver. The area between DF and Purdex zones is overgrown by dense vegetation and features very few outcrops. No reported exploration was done in this area.

The following types of mineralization were noted on the property:

- 1) Copper-silver mineralization hosted mostly within vesicular and to lesser extent massive basalt. It is dominated by bornite, chalcocite and malachite with lesser covellite and chalcopyrite. They constitute from trace to 5% of the rock forming grains, small blebs and veinlets which show strong association with silicification. This type of mineralization does not show obvious association with faults or fracture zones.
- 2) Copper +/-silver +/-gold bearing veins and fracture zones related to faults. Copper minerals are represented by chalcocite, bornite and malachite with lesser chalcopyrite and covellite. They are accompanied by quartz, carbonates, epidote and chlorite. Epidote is much more abundant in the northern part of the property.

The first type of mineralization bears certain characteristics of the Volcanic Redbed mineralization as defined by Lefebvre, D. V. and Church, B.N. (1996) in the British Columbia Mineral Deposit Profiles. However, strong association with silicification indicates formation in hydrothermal environment. This type of mineralization was observed in the southern part of the property in Purdex and DF zones as well as in the Clore River area. Zones with this type of mineralization tend to be located close to diabase porphyry intrusions (called long laths porphyry in the previous assessment reports) which are the most likely source of the mineralization.

The second type of mineralization was observed throughout the entire property. In the northern part of the property it is clearly related to a large granite/granodiorite intrusion. The intrusion was the most likely source of mineralization, it also caused formation of weak hornfels in the surrounding rocks,



Many copper bearing veins and fracture zones in the southern part of the property are located in direct vicinity of diabase porphyry intrusions (e.g. Trail and Switch-back zones) which are the most likely source of the mineralization. An important Danee zone is hosted within one of such intrusions.

Exploration on the Treasure Mountain property is hampered by the scarcity of outcrops and the fact that outcrops are strongly leached of copper what makes copper mineralization very difficult to detect. Outcrops are often so strongly leached that there is no sign of high-grade copper mineralization on the surface which can only be found after removing the first 10-15 cm of barren rock. A. Burden reports that “several times plugger holes were drilled into apparently barren fresh outcrop, and after blasting discovered high-grade copper mineralization at shallow depths.” (A. Burden, 2008).

## **RECOMMENDATIONS AND BUDGET**

Historical reports do not mention any IP survey conducted on the property. The IP method would be best suited for the environment observed in the Purdex and DF zones. Disseminated nature of mineralization along with the accompanying silicification should produce a distinct IP signature of high chargeability and resistivity. During the field work on the property, the author did not observe any rocks which might give false IP anomalies such as graphite or pyrite bearing rocks.

An IP geophysical survey covering Purdex and DF zones is recommended for the next exploration program.

### **Estimated Cost of the Program**

A total of 10-line kilometers of IP survey.....\$50,000  
(the price includes all IP and helicopter costs)

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## CERTIFICATE OF AUTHORS' QUALIFICATIONS

I, Alojzy Walus, residing at 8577 165 Street in Surrey, BC, hereby certify that:

1. I received a Master of Science degree in Geology from the University of Wroclaw, Poland in 1985.
2. I have been practicing my profession continuously since graduation.
3. I am a member of the Association of Professional Engineers and Geoscientists of British Columbia.
4. I am a consulting geologist working on behalf of Decade Resources Ltd.
5. This report is based on my 2018 field work as well as historical reports from this area.
6. I am familiar with this type of deposit having conducted exploration programs on similar mineral occurrences in the Terrace region.

Date: October 25, 2018

"Alojzy Walus"  
Alojzy Walus, P. Geo.

## STATEMENT OF EXPENDITURES FOR 2018 PROGRAM

ITEM	Quantity	Units	Rate	Subtotal	Totals
<b>Field Personnel</b>					<b>33,670</b>
Alex Walus - geologist	26	days @	\$650.00	16,900	
Dates worked: June 24 to July 3, July 7 to 17 and July 21 to 25					
Krzysztof Mastalerz - geologist	21	days @	\$650.00	13,650	
Dates worked: May 29 to June 01, July 3, July 7 to 17 and July 21 to 25					
Jacob Szpila – field assistant	13	days @	\$240	3,120	
Dates worked: May 29 to June 01 and June 24 to July 02					
<b>Helicopter</b>					<b>22,697</b>
Yellowhead helicopters based in Terrace, BC					
B-2 helicopter used July 12, 13, 14, 15	4.8	hours @	\$1,869	8,971	
206 helicopter used July 16, 17, 21, 22, 23, 24, 25		hours @	\$1,271	13,726	
<b>Field Expenses</b>					<b>10,592</b>
Truck rental	32	days @	\$91.47	2,927	
Gas				468	
Accommodation	30	nights @	\$101	3,030	
Food	60	man/days @	\$56.37	3,382	
Shipment of samples				153	
Field equipment and supplies				632	
<b>Assay Costs</b>					
Rock samples - ICP	199	samples @	\$27.55	5,482	<b>5,836</b>
Rock samples – Cu, Ag assays	25	samples @	\$14.18	354	
<b>Report</b>					<b>6,225</b>
Thin sections preparation	14	sections @	\$30	420	
Thin section descriptions – Alex Walus	14	sections @	\$150	2,100	
Drafting				1,305	
Report writing – Alex Walus	6	days @	400	2,400	
				<b>Grand Total</b>	<b>\$79,020</b>

**APPENDIX I**  
**ROCK SAMPLES DESCRIPTIONS**

Sample #	Coordinates (NAD 83)		Sample type	Description
	Easting	Northing		
A18-1	562321	6032789	grab	Altered, massive to vesicular basalt.No visible sulphides.
A18-2	562852	6034622	grab	Altered, massive basalt (?), manganese stain on fractures.
A18-3	563747	6034213	float	Angular float 20x10 cm in size, quartz and possibly K-feldspar replaced rock with trace to minor chalcocite and bornite.
A18-4	560357	6035016	grab	Small, irregular basalt intrusion moderately to strongly carbonate-clays-hematite altered.
A18-5	561301	6034471	grab	Small outcrop of massive, maroon basalt with trace to minor sulphides.
A18-6	563186	6032292	grab	Strongly altered massive, maroon basalt (?).
A18-11	563300	6031281	grab	Altered, maroon basalt; minor malachite stain on fractures.
A18-12	563300	6031281	grab	Altered feldspar porphyritic basalt with malachite and wad stain. The same outcrop as A18-11. Mineralized area is approximately 0.5 by 0.5 m.
A18-13	563379	6031205	grab	Altered maroon massive basalt with abundant malachite stain.
A18-14	563379	6031205	grab	Altered maroon basalt with trace to minor malachite. Sample taken 70 cm from sample A18-13.
A18-15	563384	6031198	grab	Altered maroon massive basalt with minor chalcocite.
A18-16	563401	6031188	grab	Altered feldspar porphyritic basalt (?) with few amygdules, trace malachite.
A18-17	562944	6031390	float	Fist size angular boulder of basalt (?) with some malachite.
A18-18	562937	6031379	float	Sample from a large angular boulder 1 metres across. The sample concentrated on a mineralized patch 20X10 cm containing 3-5% chalcocite.
A18-19	563837	6032302	grab	Chlorite-carbon. altered zone of fracturing with some malachite. The zone is only 0.3x0.3 m in size.
A18-20	563641	6033244	grab	Sheared chloritized diabase with minor malachite.
A18-21	563642	6033250	grab	Irregular carbonate veining hosted within sheared diabase, minor malachite.
A18-22	563521	6034001	grab	Altered, maroon basalt with feldspar phenocrysts, minor malachite on fractures.
A18-23	563833	6034257	grab	Fist size patch of carbonate with malachite hosted in diabase porphyry.
A18-24	563055	6035181	grab	2-3 metres wide zone of pervasive epidote alteration, locally malachite stain and tiny specks of bornite.
A18-36	564000	6041800	grab	Granodiorite with minor malachite on fractures.
A18-47	563058	6039845	float	Angular float 0.8x0.5 m in size of andesite tuff cut by carbonate lesser quartz veining with minor malachite.
A18-48	562979	6039632	float	Fist size angular float of andesite tuff cut by quartz stockwork.
A18-49	563004	6039271	float	Fragment of 10 cm wide quartz vein with minor limonite.
A18-50	563568	6039742	float	Suboutcrop of basalt with minor white/bluish stain.
A18-51	563446	6037454	float	Angular boulder 20x10 cm of vesicular basalt (?) containing 0.5-1.0% chalcopyrite and chalcocite as disseminated grains and occasionally as infilling of vesicles.

Sample #	Coordinates (NAD 83)		Sample type	Description
	Easting	Northing		
A18-52	563453	6037429	grab	Vesicular basalt (?) flow locally with copper mineralization which include mostly fracture filling malachite and lesser disseminated chalcocite (?) grains.
A18-53	563412	6037448	grab	Silicified andesite (?) with some malachite.
A18-54	563406	6037430	grab	Very strongly silicified massive basalt or andesite, locally minor chalcocite and chalcopyrite, some malachite.
A18-55	564115	6042428	grab	Breccia zone formed on N side of the fault cemented by carbonate and quartz; abundant malachite, sporadically 1-2% chalcocite.
A18-56	564103	6042439	grab	Fault mineralized with 1-2% chalcocite and abundant malachite. Fault strikes 355 degrees and dips moderately W. Footwall of the fault is not exposed.
A18-57	564067	6042444	grab	10-15 cm wide shear zone hosted in andesite crystal tuff. Abundant pervasive malachite.
A18-58	563868	6042494	grab	5-10 cm wide fault mineralized with abundant malachite and up to 3 % chalcocite. Fault orientation 320 degrees with moderate SW dip.
A18-59	563144	6043409	float	Angular float 15 cm across of carbonate vein fragment with 10-15% chalcocite. The source of the float is the cliff above.
A18-60	563283	6043767	grab	Andesite crystal tuff with pervasive malachite stain. Mineralization is associated with N-S oriented nearby fault.
A18-61	563525	6045419	float	Angular float 20x10 cm of andesite pyroclastics with some malachite stain
A18-101	563898	6038947	grab	Very altered maroon andesite pyroclastics with manganese stain.
A18-102	563317	6037088	grab	Diabase porphyry with amygdoidal texture.
A18-103	563351	6036971	grab	Diabase porphyry with amygdoidal texture.
A18-104	563303	6036865	grab	Altered, maroon andesite tuff, rusty, minor calcite veining.
A18-105	564449	6041077	float	Angular fragment 10-15 cm in size of carbonate-quartz vein with trace of blackish sulphide.
A18-106	564290	6041165	float	Angular boulder 10 cm in size of partly quartz replaced andesite pyroclastics, abundant limonite.
A18-107	564205	6040865	float	Brecciated andesite pyroclastics healed by white and greenish quartz, no sulphides.
A18-108	563843	6040652	grab	Altered maroon andesite or basalt cut by carbonate veining.
A18-109	563735	6040542	grab	Aphanitic dacite, limonite on fractures.
A18-110	561145	6042948	float	Composite sample of small float pieces composed of partly carbonate replaced andesite pyroclastics.
A18-111	560586	6043212	grab	Fine grained diorite cut by carbonate veinlets, no sulphides.
A18-112	560637	6043107	float	Angular float 15 cm across of aphanitic felsic rock with 3-5% disseminated pyrite.
A18-113	560831	6042960	float	Semiangular float 35x10 cm in size of epidote-garnet skarn with minor covellite and malachite.





Sample Label	UTM Coordinates		Sample Type	Description
	Easting	Northing		
KMT-1839	562,660	6,033,600	Fl	Dark-brownish medium-grained andesite porphyry; some fractures filled with Py and hematite(?)
KMT-1840	562,725	6,033,275	Gb	Dark maroon, aphanitic to fine-porphyrific andesite, slightly fractured; very likely zeolite alteration along fractures (dark green spots)
KMT-1841	563,213	6,032,382	Fl	Brownish-maroon andesite porphyry with quartz veins (probably float comes from nearby fault zone); tr.-0.5% Mal along quartz veins
KMT-1842	563,893	6,034,998	Fl	Angular float fragments of pale brownish andesite volcanic with thin calcite veins; no visible sulphide mineralization
KMT-1851	562,357	6,032,254	Gb	Brownish-maroon vesicular to amygdaloid andesite(?) lava flow, subhorizontal layering, slightly-moderately silicified; no visible sulphides
KMT-1852	562,480	6,032,260	Gb	Irregular thin quartz (less carbonate) veins and veinlets, white to orange, drusy, cutting through greenish-grey andesite(?) volcanic; nearby a diabase dyke with chilled margins
KMT-1853	562,478	6,032,285	Gb	Irregular small-scale pods of chalcedony-quartz, light greenish to white, in greenish andesite(?) volcanics
KMT-1854	562,471	6,032,314	Gb	Thin (0.5-2 cm) quartz veins white to reddish-orange in maroon andesite(?) porphyry (lava flow unit?); locally contacts with wall rock are slickensided and accompanied by up to 1% Mal
KMT-1855	562,395	6,032,660	Gb	Maroon andesite/basalt lava flow breccia to lava flow with numerous chalcedony-quartz veinlets and pods with diffuse boundaries, locally vuggy
KMT-1861	557,952	6,048,116	Gb	Pinkish-to-grey medium crystalline granodiorite, moderate to weak chlorite alteration, limited quartz veining; Bor and Mal mostly along fractures, 1-2%
KMT-1862	559,332	6,046,159	Sc	Greenish-pink andesite tuff/lapilli tuff with pinkish granodiorite dykes; no visible sulphides
KMT-1863	565,971	6,047,360	Gb	Dark reddish-grey fine-to-medium crystalline granodiorite with xenoliths of the chlorite altered andesite(?) volcanics; no visible sulphides
KMT-1864	565,843	6,047,413	Gb	Grey andesite(?) tuff/lapilli tuff, polymictic composition, massive, thick bedded; no visible sulphides
KMT-1865	560,379	6,034,876	Gb	Brownish to maroon andesite(?) crystal-rich tuff, incipient irregular quartz veinlets and brecciation; no sulphides
KMT-1866	561,479	6,032,204	Gb	Maroon andesite porphyry (flow or crystal-rich tuff?) with subvertical quartz veinlets and thin veins striking N-S, moderate calcareous alteration; no visible sulphides
KMT-1867	561,216	6,031,436	Gb	Dark maroon andesite(?) lapilli tuff and tuff breccia, thick-bedded, dips toward SW at 60 deg, slight slickensides along layering

Abbreviations: Bor - bornite, Chalc - chalcocite, Cpy - chalcopyrite, Mal - malachite, Az - azurite, Py - pyrite, Po - pyrrhotite, Cpy - chalcopyrite, Ga-galena, Sph-Sphalerite, alt'n-alteration, LT-lapilli tuff, TBx-tuff breccia

Sample Label	UTM Coordinates		Sample Type	Description
	Easting	Northing		
KMT-1871	563,238	6,039,875	Gb	Light maroon polymictic composition LT/TBx ignimbrite, very weak silicification, dominant steep fractures striking N-S and less common striking WNW-ESE, some associated quartz veinlets; diss. and fracture controlled Mal up to 0.5%
KMT-1872	563,001	6,039,847	Gb	Reddish-brown andesite(?) tuff with subparallel subvertical fractures and associated quartz veinlets striking E-W; no visible sulphides
KMT-1873	562,998	6,039,828	Gb	Light reddish andesite(?) tuff with some irregular quartz veinlets and silicification pods (orange-pinkish)
KMT-1874	563,029	6,039,810	Fl	Light creamy-grey felsic/intermediate volcanic rock, plagioclase -phyric, slightly silicified; diss Py 3-5%
KMT-1875	563,029	6,039,810	Fl	Light brownish-grey andesite(?) LT with numerous subparallel quartz veinlets, drusy, locally also cross-cutting veinlets; Mal 2-5%
KMT-1876	563,050	6,039,790	Gb	Dark brownish, strongly weathered andesite(?) tuff with thin cross-cutting quartz-zeolite veins, moderately fractured; zeolites are also disseminated in the wall-rock; tr. Mal?
KMT-1877	563,050	6,039,790	Fl	Brownish andesite(?) lava flow(?) with Malachite-Zeolite and less common Chalcocite filled vesicles
KMT-1878	563,139	6,039,732	Gb	Dark brownish amygdaloidal lava flow (or ignimbrite LT?) locally with irregular quartz pods, up to quartz breccia; no visible sulphides
KMT-1879	563,293	6,040,063	Sc	Strongly weathered subcrop-to-talus of brownish, silicified andesite, locally sheared, locally up to stockwork of quartz veinlets; locally Mal 0.5-1%
KMT-1880	563,325	6,040,078	Gb	Brownish plagioclase-phyric andesite(?) with numerous thin quartz veins up to stockwork/quartz breccia, strongly silicified; no visible sulphides
KMT-1881	563,535	6,040,115	Fl	Greenish to maroon andesite(?) tuff with common thin quartz veins/veinlets; Mal - 1%, tr. Azurite, Py - 1%, tr. Bor, Chalc and Cpy
KMT-1882	563,582	6,040,194	Gb	Light maroonish (weathered) andesite(?) LT, slightly/moderately clay/chlorite altered, with a few quartz pods and irregular veins; tr. Mal
KMT-1883	563,592	6,040,197	Gb	Greenish-grey andesite(?) tuff with irregular light pinkish-orange quartz-carbonate veins; tr. Mal
KMT-1884	563,840	6,037,708	Gb	Brownish-maroon andesite(?) tuff, locally incipiently gossaneous along thin quartz veins, strongly fractured
KMT-1885	563,547	6-37455	Gb	Dark greenish-brown large-lath plagioclase porphyry, incipient flow banding, locally abundant dark green zeolite concentrations, locally calcite veins; no visible sulphides
KMT-1886	563,485	6,037,465	Gb	Welded andesite/dacite LT, slightly siliceous; diss Py 0.5-1%
KMT-1887	563,414	6,037,457	Gb	Maroon andesite/basalt lava(?) slightly siliceous with pinkish-orange veinlets and irregular pods of quartz-carbonate; tr. Mal along fractures and veins

Abbreviations: Bor - bornite, Chalc - chalcocite, Cpy - chalcopyrite, Mal - malachite, Az - azurite, Py - pyrite, Po - pyrrotite, Cpy - chalcopyrite, Ga-galena, Sph-Sphalerite, alt'n-alteration, LT-lapilli tuff, TBx-tuff breccia

Sample Label	UTM Coordinates		Sample Type	Description
	Easting	Northing		
KMT-1888	563,414	6,037,457	Sc	Tailings: maroon andesite tuff with diss. Bor 1-2% and Mal 1%
KMT-1889	563,414	6,037,416	Gb	Brownish andesite/basal lava or vesicular tuff, slightly siliceous, steep quartz veinlets striking NNW-SSE with accompanying tr. Mal
KMT-1890	563,407	6,037,416	Gb	Thin quartz veins and veinlets from the brownish andesite/basalt with tr. -1% Mal
KMT-1891	563,380	6,037,451	Gb	Light brownish andesite/basalt, siliceous with WNW-ESE striking fractures with associated tr.-0.5% Mal
KMT-1892	563,110	6,037,479	Gb	Brownish andesite tuff with a stockwork of thin quartz veins and veinlets; no visible sulphides
KMT-1893	563,258	6,043,933	Gb	Light reddish-brown andesite LT with thin quartz veins striking WNW-ESE; cryst Py 1-2% + tr. Mal
KMT-1894	563,225	6,043,808	Gb	Light greenish-grey coarse-grained andesite/dacite tuff, few thin quartz veins, locally incipient quartz/silica flooding with associated epidote; tr diss. Py, tr.-0.5% Mal
KMT-1895	563,230	6,043,811	Gb	Strongly fractured light greenish-grey tuff as previously with associated quartz veining, dark green zeolites and tr. Mal
KMT-1896	563,243	6,043,735	Gb	Greenish coarse-grained andesite tuff to LT with few pods of orange-pinkish quartz + carbonates, up to incipient brecciation; diss. Py 0.5%, Mal 0.5-1%
KMT-1897	563,231	6,043,704	Gb	Greenish coarse-grained andesite tuff of plagioclase-porphyry flow, crude banded silicification-vuggy quartz; diss. Py 0.5%, tr. Apy?
KMT-1898	563,224	6,043,697	Gb	Greenish-grey vesicular andesite flow(?); diss. and fracture controlled Bor and Mal tr.-1%
KMT-1899	563,223	6,043,651	Gb	Steep fault zone striking E-W in fractured andesite(?) volcanics, numerous quartz veins and veinlets with associated Mal 3-5%
KMT-18100	563,212	6,043,611	Gb	Prominent fracture zone with numerous quartz veins/veinlets and abundant epidote, incipient shearing, in greenish andesite porphyry (flow?); no visible sulphides
KMT-18101	563,178	6,043,572	Gb	Maroon andesite with regular joints dipping NW at shallow angle (layering), epidote-rich zone (distal hornfels zone), locally small pods of reddish jasperoid
KMT-18102	563,155	6,043,628	Gb	Distinct fracture zone in andesite(?) volcanics, strong shearing and locally incipient quartz veining; tr. Mal
KMT-18103	563,135	6,043,627	Gb	Distinct shear zone in greenish andesite(?) volcanics, incipient tectonic brecciation and development of a fault gouge; mal stringer 0.5-1%
KMT-18104	563,121	6,043,621	Gb	Splay of a shear zone in greenish andesite(?) volcanics, quartz-carbonate veins; Py, Cpy and Mal 1-2%
KMT-18105	563,434	6,045,647	Fl	Light greenish-grey andesite(?) LT/TBx with very common diffuse light green epidote zones and quartz-epidote veins; Mal 2%
KMT-18106	563,558	6,045,414	Fl	Slightly hornfelsed (epidote) andesite(?) volcanic rock with a few blebs rich in epidote-quartz; tr. Mal

Abbreviations: Bor - bornite, Chalc - chalcocite, Cpy - chalcopyrite, Mal - malachite, Az - azurite, Py - pyrite, Po - pyrrhotite, Cpy - chalcopyrite, Ga-galena, Sph-Sphalerite, alt'n-alteration, LT-lapilli tuff, TBx-tuff breccia

Sample Label	UTM Coordinates		Sample Type	Description
	Easting	Northing		
KMT-18107	563,399	6,045,416	Fl	Greenish-grey andesite(?) volcanic rock, slightly hornfelsed with abundant epidote, especially along fractures; tr. Mal along fractures
KMT-18108	563,370	6,045,430	Gb	Irregular zone of abundant epidote-quartz in greenish-grey andesite(?), strong fracturing; tr.-2% Mal, tr. Diss Bor, Chalc
KMT-18109	563,342	6,045,432	Gb	Greenish-grey, crudely layered andesite(?), slightly hornfelsed, epidote very common along fractures, accompanied by quartz and pink-orange carbonate-quartz pods
KMT-18110	563,234	6,045,403	Fl	Greenish-grey andesite locally rich in epidote (hornfelsed); tr. Mal + Az
KMT-18111	563,234	6,045,403	Gb	Dark grey fine-to-medium grained andesite/basalt with 15 cm thick vein/zone of epidote-quartz subparallel to dominant fractures; Bor + Chalc 1% (locally Chalc up to 5-10%) and Mal 1-2%
KMT-18112F	563,234	6,045,403	Gb	Greenish footwall andesite approximately 60 cm north of the chalcocite rich vein of sample KMT-18111, few epidote-quartz veinlets; tr. Mal
KMT-18112H	563,234	6,045,403	Gb	Direct hangingwall andesite of the chalcocite-rich vein of KMT-18111, dark greenish-grey; no visible mineralization
KMT-18113	563,130	6,045,408	Gb	Approximately 5-7 cm thick splay/vein of semimassive chalcocite-malachite with some epidote and minor quartz
KMT-18114	563,135	6,045,406	Gb	Epidote-quartz enrichment along fractures in greenish andesite(?); tr. Mal
KMT-18115	563,110	6,045,406	Sc	Epidote-malachite enrichment at the western projected extension of the vein KMT-18111; Chalc-Bor 7-15%
KMT-18116	563,102	6,045,401	Gb	Approximately 15 cm thick vein of quartz-epidote in greenish andesite(?); no visible mineralization
KMT-18117	563,092	6,045,382	Sc	Subcrop of epidote-quartz enrichment ( along fractures?) in greenish-grey andesite(?); Bor-Chalc - 0.5%, Mal - 1-2%
KMT-18201	564,108	6,038,733	Gb	Maroon andesite LT to coarse LT , thick bedded; no visible mineralization
KMT-18202	564,019	6,038,600	Gb	Light reddish-brown andesite tuff, locally with thick diffuse lamination, and LT, strong dark-green zeolite alteration
KMT-18203	563,540	6,039,146	Gb	Brownish-reddish-grey andesite coarse tuff to LT with pinkish-orange (quartz-carbonate) infills of amygdules; no visible sulphides
KMT-18204	563,373	6,039,360	Gb	Contact between maroonish-grey andesite-basalt tuff and andesite-basalt lava flow, moderately fractured (fault contact?), distinctly layered; no visible mineralization
KMT-18205	563,235	6,039,368	Gb	Contact between pale reddish-beige andesite-dacite and darker andesite-basalt significantly siliceous lava flow, quartz veinlets

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Sample Label	UTM Coordinates		Sample Type	Description
	Easting	Northing		
KMT-18206	563,228	6,039,372	Gb	Top contact of the andesite-basalt flow unit with the overlying pale reddish-brown, common fractures and quartz veinlets; no visible sulphides
KMT-18207	563,173	6,039,362	Gb	Pale reddish-brown andesite with some quartz veins/veinlets; no visible mineralization
KMT-18208	563,693	6,037,164	Gb	Pale reddish-brown fine silty tuff (andesite?), siliceous, slightly fractured, locally laminated; no visible mineralization
KMT-18209	563,216	6,037,310	Gb	Dark maroon lsrge-lath plagioclase porphyry, silicified?; no visible mineralization, apparently no alteration
KMT-18210	563,376	6,037,035	Gb	Reddish-brown andesite(?) tuff near the intrusive contact with greyish large-lath porphyry, calcite veins
KMT-18211	563,348	6,036,986	Gb	Dark maroon tuff (andesite/basalt?) with numerous veinlets of quartz, some of them light greenish, locally reddish-orange quartz-calcite
KMT-18212	563,345	6,036,937	Gb	maroon to reddish-grey andesite(?) tuff, slightly fractured, with a few quartz veinlets and lenses; no sulphides
KMT-18213	563,380	6,036,903	Gb	Maroon andesite/basalt(?) tuff with numerous irregular quartz pods, steep fracture cleavage striking NE-SW; no visible sulphides
KMT-18214	563,407	6,036,883	Gb	Dark maroonish-grey andesite/basalt(?) with few thin veins and veinlets of quartz; no visible sulphides
KMT-18215	563,710	6,036,900	Gb	Reddish-brown andesite(?) tuff, slightly siliceous, few quartz veinlets, subvertical fracture cleavage striking NW-SE; no visible sulphides
KMT-18216	564,114	6,041,335	Gb	beige andesite(?) LT to TBx, matrix of the rock is slightly lighter in colore and more siliceous than the fragments; no visible mineralization
KMT-18217	564,040	6,041,650	Gb	Reddish-beige andesite/dacite(?), strongly fractured (cross cutting subvertical cleavage surfaces), fine porphyritic (lava flow?); no visible sulphides
KMT-18218	564,015	6,041,720	Gb	dark brownish-grey andesite/basalt(?) tuff with some irregular quartz lenses and pods, locally orange-pink quartz-calcite-feldspar(?) pods, locally slightly gossaneous; no visible sulphides
KMT-18219	564,086	6,041,703	CGb	Light reddish-brown, medium grained andesite porphyry, moderately silicified; no visible mineralization; (composite grab sample from aluminum tagged test pits labelled DANEE 2007#36 and # 37
KMT-18220	564,134	6,041,743	Gb	Reddish andesite LT with a few thin quartz veins; from historic test pit labelled DANEE 2007#35
KMT-18221	564,159	6,041,810	Fl	Brownish andesite(?) LT/TBx with numerous sub-parallel veins of white quartz; no visible sulphides
KMT-18222	564,700	6,041,971	Gb	Thin (0.5-2 cm) quartz veins white to rusty in moderately hornfensed andesite(?) tuff; diss. Py 1-3% [near old(?) shaft]
KMT-18223	564,700	6,041,971	Gb	Greenish, moderately hornfensed andesite(?) tuff, faulted zone; tr. diss. Py {near old(?) shaft]
KMT-18224	564,375	6,041,997	Gb	Irregular veins of white quartz to quartz breccia in greenish-grey andesite(?) tuff wallrock, locally abundant iron hydroxides

Abbreviations: Bor - bornite, Chalc - chalcocite, Cpy - chalcopyrite, Mal - malachite, Az - azurite, Py - pyrite, Po - pyrrhotite, Cpy - chalcopyrite, Ga-galena, Sph-Sphalerite, alt'n-alteration, LT-lapilli tuff, TBx-tuff breccia

Sample Label	UTM Coordinates		Sample Type	Description
	Easting	Northing		
KMT-18225	564,079	6,042,075	Gb	Interbedded greenish-grey plagioclase-phyric andesite and fine-grained andesite(?) tuff; no visible sulphides
KMT-18226	564,115	6,042,122	Sc	Subcrop: dark greyish, fine-grained andesite/basalt(?) epiclastic tuff with banded calcite-carbonate veins, rusty; tr. Diss. Py
KMT-18227	561,984	6,043,085	Gb	2-5 cm wide quartz-epidote-rich shear zone cutting through the dark maroon andesite/basalt(?) coarse tuff/LT; Mal tr.-1.5 % along the shear zone
KMT-18228	561,984	6,043,087	Gb	Slightly sheared density loaded contact between greenish epidotized lava flow to pillow-lava breccia and underlying maroon tuff; tr.-0.5% Mal
KMT-18229	561,993	6,043,119	Gb	Fracture zone filled with epidote, quartz and pinkish mineral (K-spar?, rhodochrosite?) along its footwall, wallrock andesite/dacite LT/TBx; novisible mineralization
KMT-18230	561,946	6,043,161	Gb	Pinkish sugary aplite (quartz-rich) with some epidote; no visible mineralization
KMT-18231	561,937	6,043,176	Gb	Hangingwall alteration zone of reddish andesite(?) TBx along the contact thin diabase/intermediate dyke (internal dyke contacts are chilled), quartz-rich (stringers); tr. Mal and Chalc
KMT-18232	561,930	6,043,104	Gb	Narrow (5-15 cm) subvertical shear zone rich in epidote and quartz cutting through the brownish-maroon andesite to polymictic LT, shear strikes E-W; 1-3% Mal along the shear, tr. Chalc(?)
KMT-18233	561,924	6,042,838	Gb	Greenish-grey, slightly hornfelsed (epidote) andesite(?) tuff with a few thin diabase dykes; tr-1% diss. Py
KMT-18234	561,630	6,043,001	Gb	Light brownish-beige polymictic TBx to volcanic breccia with subrounded fragments, slightly hornfelsed; no visible mineralization
KMT-18235	561,582	6,043,048	CGb	Approximately 4 m wide zone of an intense epidote alteration with steep quartz veins striking E-W; no visible sulphides
KMT-18236	561,415	6,043,101	Gb	Beige TBx/LT with numerous fragments of dacite composition, weak clay alteration of feldspar-rich matrix, some epidote along fractures
KMT-18237	566,898	6,036,524	Gb	Brownish-red to maroon coarse tuff/LT of andesite(?) composition, regularly but sparsely fractured; no visible alt'n and mineralization
KMT-18238	566,670	6,036,436	Gb	Reddish andesite(?) tuff to LT with fractures dipping moderately to WNW; no visible evidence of alteration/mineralization
KMT-18239	566,315	6,036,223	Gb	Maroon tuff and LT, slightly silicified, crudely layered; no visible mineralization
KMT-18240	566,141	6,036,274	Gb	Beige siliceous andesite/dacite ILP to tuff with few irregular quartz calcite veinlets; dark green patches of weak zeolite alteration; tr. Mal(?)
KMT-18241	566,132	6,036,230	Gb	Pale reddish-beige, distinctly layered (dips toward ESE), epiclastic tuff, slightly siliceous; no visible mineralization

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**APPENDIX II**  
**ASSAY RESULTS**



**Final Report**  
**Activation Laboratories**

Report Number: A18-07637

Report Date: 13/7/2018

Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
KMT 1801	< 5	< 0.2	< 0.5	4	3860	< 1	< 1	4	32	1.13	< 2	< 10	802	< 0.5	< 2	8.62	< 1	2
KMT 1802	< 5	< 0.2	< 0.5	2	565	1	< 1	< 2	33	0.46	4	< 10	305	0.5	< 2	0.26	< 1	11
KMT 1803	< 5	< 0.2	< 0.5	2	657	< 1	1	< 2	39	0.43	< 2	< 10	879	< 0.5	< 2	0.41	< 1	6
KMT 1804	< 5	< 0.2	0.6	< 1	641	1	< 1	9	43	0.84	3	< 10	75	0.6	< 2	1.34	< 1	8
KMT 1805	< 5	< 0.2	< 0.5	< 1	493	2	< 1	3	15	0.33	< 2	< 10	68	< 0.5	< 2	0.4	< 1	24
KMT 1806	6	< 0.2	< 0.5	2	285	1	1	2	18	0.48	2	< 10	448	< 0.5	< 2	0.08	< 1	12
KMT 1807	< 5	< 0.2	< 0.5	1	423	< 1	< 1	< 2	20	0.34	< 2	< 10	27	< 0.5	< 2	0.04	< 1	9
KMT 1808	< 5	< 0.2	< 0.5	1	469	< 1	< 1	< 2	24	0.32	< 2	< 10	68	< 0.5	< 2	0.05	< 1	6
KMT 1809	< 5	< 0.2	< 0.5	3	474	1	1	8	31	0.56	< 2	< 10	87	< 0.5	< 2	0.12	1	13
KMT 1810	< 5	< 0.2	< 0.5	28	656	< 1	26	< 2	72	1.61	4	< 10	95	< 0.5	< 2	2.62	13	38
KMT 1811	6	< 0.2	< 0.5	5	411	< 1	12	< 2	43	1.62	2	< 10	56	< 0.5	< 2	4.18	9	21
KMT 1812	< 5	< 0.2	< 0.5	6	605	< 1	13	< 2	62	1.88	< 2	< 10	93	< 0.5	< 2	9.94	11	11
KMT 1813	< 5	< 0.2	< 0.5	7	603	1	20	< 2	68	1.75	2	< 10	31	0.6	< 2	1.85	15	31
KMT 1814	< 5	< 0.2	< 0.5	24	706	< 1	11	< 2	54	2.64	< 2	< 10	54	0.5	< 2	1.02	13	21
KMT 1815	< 5	9.3	< 0.5	7460	1170	1	2	7	111	2.97	< 2	< 10	45	0.8	< 2	4.98	11	8
KMT 1816	9	8	0.8	5000	1320	< 1	10	5	79	2.27	< 2	< 10	33	< 0.5	10	4.62	14	9
KMT 1817	< 5	< 0.2	< 0.5	43	604	< 1	11	< 2	41	1.13	4	< 10	15	< 0.5	< 2	2.46	9	24
KMT 1818	< 5	1.2	< 0.5	4390	618	2	20	4	36	4.2	< 2	< 10	79	1	8	5.08	8	27
KMT 1819	< 5	< 0.2	< 0.5	31	531	< 1	14	2	34	0.72	< 2	< 10	19	< 0.5	< 2	2.25	10	23
KMT 1820	< 5	< 0.2	< 0.5	18	521	< 1	12	2	44	0.7	3	< 10	12	< 0.5	< 2	0.48	10	23
KMT 1821	< 5	< 0.2	< 0.5	29	1440	< 1	4	< 2	64	2.02	< 2	< 10	66	< 0.5	< 2	2.98	6	11
KMT 1822	< 5	< 0.2	< 0.5	38	969	< 1	9	4	84	1.67	3	< 10	49	0.5	< 2	0.88	11	17
KMT 1823	< 5	4.4	< 0.5	2700	482	1	2	< 2	30	1	4	< 10	74	< 0.5	< 2	1.32	3	17
KMT 1824	8	< 0.2	< 0.5	9	529	< 1	1	3	20	0.49	< 2	< 10	222	< 0.5	< 2	2.67	1	10
KMT 1825	< 5	< 0.2	< 0.5	7	3300	1	< 1	7	89	0.54	3	< 10	1480	< 0.5	< 2	> 10.0	3	9
KMT 1826	< 5	< 0.2	< 0.5	51	915	< 1	4	< 2	74	1.89	< 2	< 10	146	0.7	< 2	3.15	15	7
KMT 1827	< 5	< 0.2	< 0.5	5	549	2	< 1	9	49	0.5	< 2	< 10	91	< 0.5	< 2	0.27	2	10
KMT 1828	< 5	< 0.2	< 0.5	5	1510	< 1	1	3	90	1.3	< 2	< 10	56	0.6	3	2.13	5	3
KMT 1829	< 5	< 0.2	< 0.5	7	500	< 1	< 1	< 2	44	2.33	6	< 10	34	< 0.5	< 2	2.8	2	3
KMT 1830	189	14.2	< 0.5	6930	583	< 1	2	2	168	0.48	< 2	< 10	54	< 0.5	2	0.34	4	10
KMT 1831	591	1.5	< 0.5	663	366	2	2	< 2	33	0.38	< 2	< 10	43	< 0.5	< 2	0.93	2	15

**Final Report**  
**Activation Laboratories**

Report Number: A18-07637

Report Date: 13/7/2018

Analyte Symbol	Fe	Ga	Hg	K	La	Mg	Na	P	S	Sb	Sc	Sr	Ti	Th	Te	U	V	W	
Unit Symbol	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	
Detection Limit	0.01	10	1	0.01	10	0.01	0.001	0.001	0.01	2	1	1	0.01	20	1	10	1	10	
Analysis Method	AR-ICP AR-ICP AR-ICP AR-ICP AR-ICP AR-ICP AR-ICP AR-ICP AR-ICP AR-ICP AR-ICP AR-ICP AR-ICP AR-ICP AR-ICP AR-ICP AR-ICP AR-ICP AR-ICP																		
KMT 1801	1.07	< 10	< 1	0.36	18	0.16	0.055	0.028	0.03	< 2	4	131	0.02	< 20	< 1	< 10	12	< 10	
KMT 1802	1.26	< 10	< 1	0.28	19	0.06	0.098	0.012	< 0.01	< 2	4	25	0.03	< 20	1	< 10	3	< 10	
KMT 1803	1.19	< 10	< 1	0.23	20	0.03	0.107	0.01	0.03	< 2	5	45	0.02	< 20	1	< 10	2	< 10	
KMT 1804	1.22	< 10	< 1	0.52	16	0.12	0.086	0.011	< 0.01	< 2	4	21	0.02	< 20	< 1	< 10	2	< 10	
KMT 1805	0.88	< 10	< 1	0.23	15	0.02	0.06	0.014	< 0.01	< 2	3	23	0.02	< 20	< 1	< 10	4	< 10	
KMT 1806	0.85	< 10	< 1	0.28	15	0.03	0.062	0.011	0.03	< 2	3	15	0.01	< 20	< 1	< 10	3	< 10	
KMT 1807	0.88	< 10	< 1	0.17	17	0.02	0.077	0.01	< 0.01	< 2	3	12	0.02	< 20	< 1	< 10	2	< 10	
KMT 1808	0.94	< 10	< 1	0.15	14	0.03	0.093	0.01	< 0.01	< 2	3	8	0.03	< 20	< 1	< 10	2	< 10	
KMT 1809	1.54	< 10	< 1	0.2	22	0.09	0.092	0.03	< 0.01	2	4	10	0.04	< 20	< 1	< 10	12	< 10	
KMT 1810	3.01	< 10	< 1	0.28	< 10	1.2	0.07	0.066	< 0.01	2	6	103	0.25	< 20	5	< 10	96	< 10	
KMT 1811	1.23	< 10	< 1	0.24	< 10	1.17	0.045	0.049	< 0.01	< 2	4	209	0.18	< 20	4	< 10	76	< 10	
KMT 1812	1.95	< 10	< 1	0.48	< 10	2.07	0.031	0.045	< 0.01	< 2	3	31	0.14	< 20	< 1	< 10	55	< 10	
KMT 1813	4.28	< 10	< 1	0.06	< 10	1.22	0.134	0.084	< 0.01	2	14	105	0.37	< 20	6	< 10	162	< 10	
KMT 1814	4.81	< 10	< 1	0.29	< 10	1.43	0.066	0.036	< 0.01	2	7	20	0.03	< 20	< 1	< 10	137	< 10	
KMT 1815	4.19	10	< 1	0.25	< 10	0.93	0.038	0.132	0.27	4	11	132	0.4	< 20	3	< 10	175	< 10	
KMT 1816	5.38	10	< 1	0.19	< 10	1.64	0.069	0.107	0.09	< 2	13	365	0.48	< 20	5	< 10	188	< 10	
KMT 1817	3.1	< 10	< 1	0.02	< 10	0.85	0.167	0.065	< 0.01	< 2	10	232	0.29	< 20	3	< 10	83	< 10	
KMT 1818	1.89	20	< 1	0.06	< 10	1.05	0.031	0.06	< 0.01	< 2	6	354	0.24	< 20	< 1	< 10	131	< 10	
KMT 1819	2.66	< 10	< 1	0.02	< 10	1	0.182	0.058	< 0.01	2	9	44	0.26	< 20	2	< 10	124	< 10	
KMT 1820	2.38	< 10	< 1	< 0.01	< 10	1.01	0.139	0.047	< 0.01	2	8	44	0.23	< 20	3	< 10	67	< 10	
KMT 1821	1.94	< 10	< 1	0.2	12	0.42	0.068	0.065	0.06	< 2	9	112	0.07	< 20	1	< 10	47	< 10	
KMT 1822	3.56	< 10	< 1	0.14	11	1.1	0.103	0.077	< 0.01	< 2	12	118	0.24	< 20	2	< 10	79	< 10	
KMT 1823	1.75	< 10	< 1	0.05	20	0.3	0.13	0.056	0.02	< 2	9	182	0.26	< 20	5	< 10	55	< 10	
KMT 1824	0.93	< 10	< 1	0.09	< 10	0.06	0.046	0.021	0.01	< 2	3	50	0.03	< 20	< 1	< 10	5	< 10	
KMT 1825	1.34	< 10	< 1	0.04	< 10	0.11	0.043	0.016	0.05	< 2	5	175	0.01	< 20	< 1	< 10	16	< 10	
KMT 1826	4.03	< 10	< 1	0.71	< 10	0.46	0.035	0.055	< 0.01	< 2	10	43	0.04	< 20	< 1	< 10	66	< 10	
KMT 1827	1.26	< 10	< 1	0.17	14	0.13	0.111	0.037	< 0.01	< 2	7	5	0.14	< 20	< 1	< 10	16	< 10	
KMT 1828	3.82	< 10	< 1	0.15	19	0.29	0.064	0.123	< 0.01	2	12	36	0.06	< 20	1	< 10	29	< 10	
KMT 1829	0.7	< 10	< 1	0.12	< 10	0.2	0.045	0.016	< 0.01	< 2	3	117	0.08	< 20	< 1	< 10	15	< 10	
KMT 1830	2.53	< 10	< 1	0.14	27	0.03	0.147	0.104	0.14	3	10	16	0.05	< 20	< 1	< 10	17	< 10	
KMT 1831	2.48	< 10	< 1	0.19	24	0.25	0.128	0.095	< 0.01	2	7	23	0.04	< 20	< 1	< 10	19	< 10	

**Final Report  
Activation Laboratories**

Report Number: A18-07637

Report Date: 13/7/2018

Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
KMT 1832	< 5	< 0.2	< 0.5	37	880	< 1	2	4	66	0.45	< 2	< 10	46	< 0.5	< 2	0.61	7	10
KMT 1833	6	14.1	3	4460	1220	< 1	1	2	174	0.96	< 2	< 10	60	< 0.5	< 2	0.55	10	8
KMT 1834	< 5	< 0.2	< 0.5	19	1590	< 1	< 1	4	192	1.31	< 2	< 10	45	0.6	< 2	2.55	9	5
KMT 1835	< 5	< 0.2	< 0.5	14	2170	< 1	7	5	480	1.77	7	< 10	39	0.7	< 2	3.38	20	10
KMT 1836	< 5	< 0.2	< 0.5	29	1000	< 1	2	2	134	0.81	3	< 10	35	0.5	< 2	1.76	7	7
KMT 1837	< 5	16.9	0.7	7820	2110	< 1	2	4	347	1.7	< 2	< 10	23	0.7	< 2	1.09	13	3
KMT 1838	< 5	15.3	< 0.5	6230	1350	< 1	2	5	224	1.23	< 2	< 10	39	0.6	< 2	2.99	7	6
KMT 1839	< 5	< 0.2	< 0.5	32	1450	1	3	4	107	0.53	< 2	< 10	55	< 0.5	2	0.13	6	8
KMT 1840	< 5	< 0.2	< 0.5	60	1270	< 1	5	3	139	1.29	4	< 10	53	< 0.5	< 2	0.53	16	10
KMT 1841	< 5	< 0.2	< 0.5	891	694	< 1	4	2	52	3.71	3	12	42	0.6	< 2	4.53	5	7
KMT 1842	< 5	< 0.2	< 0.5	59	228	< 1	31	< 2	41	6.41	< 2	< 10	34	< 0.5	< 2	4.57	14	20

**Final Report**  
**Activation Laboratories**

Report Number: A18-07637

Report Date: 13/7/2018

Analyte Symbol	Fe	Ga	Hg	K	La	Mg	Na	P	S	Sb	Sc	Sr	Ti	Th	Te	U	V	W
Unit Symbol	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.01	10	1	0.01	10	0.01	0.001	0.001	0.01	2	1	1	0.01	20	1	10	1	10
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
KMT 1832	3.22	< 10	< 1	0.09	18	0.18	0.13	0.097	< 0.01	< 2	11	28	0.09	< 20	< 1	< 10	22	< 10
KMT 1833	3.77	< 10	< 1	0.13	16	0.35	0.12	0.227	0.02	< 2	11	10	0.06	< 20	< 1	< 10	84	< 10
KMT 1834	4.45	10	< 1	0.13	13	1.1	0.11	0.172	< 0.01	< 2	18	22	0.44	< 20	2	< 10	114	< 10
KMT 1835	6.68	10	< 1	0.07	13	1.99	0.102	0.165	< 0.01	3	21	40	0.54	< 20	3	< 10	275	< 10
KMT 1836	3.9	< 10	< 1	0.07	12	0.67	0.138	0.165	< 0.01	2	16	49	0.46	< 20	2	< 10	52	< 10
KMT 1837	5.83	10	< 1	0.04	16	1.71	0.094	0.192	0.22	2	20	28	0.55	< 20	5	< 10	109	< 10
KMT 1838	3.81	< 10	< 1	0.11	10	0.97	0.091	0.146	0.24	3	14	37	0.45	< 20	2	< 10	163	< 10
KMT 1839	3.02	< 10	< 1	0.08	13	0.04	0.137	0.076	< 0.01	3	14	9	0.06	< 20	2	< 10	44	< 10
KMT 1840	4.91	< 10	< 1	0.07	16	1.16	0.136	0.14	< 0.01	3	18	15	0.28	< 20	< 1	< 10	103	< 10
KMT 1841	2.26	20	< 1	0.22	< 10	0.48	0.079	0.058	< 0.01	< 2	5	118	0.17	< 20	< 1	< 10	109	< 10
KMT 1842	3.24	10	< 1	0.18	< 10	0.2	0.027	0.028	< 0.01	3	8	108	0.1	< 20	1	< 10	144	< 10

**Final Report**  
**Activation Laboratories**

Report Number: A18-09855

Report Date: 10/8/2018

Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
A18 1	< 5	< 0.2	< 0.5	4	1750	< 1	< 1	4	351	1.71	< 2	< 10	25	0.7	< 2	2.13	10	2
A18 2	< 5	< 0.2	< 0.5	3	1400	< 1	33	4	147	1.7	3	< 10	236	0.5	2	1.48	29	67
A18 3	< 5	3.6	< 0.5	8470	429	< 1	6	3	7	5.5	15	11	< 10	0.6	< 2	8.55	1	14
A18 4	< 5	< 0.2	< 0.5	3	468	< 1	2	3	35	0.39	3	< 10	1000	< 0.5	< 2	0.63	2	6
A18 5	< 5	< 0.2	< 0.5	28	986	< 1	< 1	5	83	1.05	< 2	< 10	62	1.1	< 2	0.89	5	2
A18 6	< 5	< 0.2	< 0.5	4	352	< 1	2	3	17	0.44	4	< 10	32	< 0.5	< 2	1.2	< 1	4
A18 11	< 5	0.7	< 0.5	547	1240	< 1	2	6	183	0.63	< 2	< 10	64	0.5	< 2	0.22	2	4
A18 12	7	16.2	0.8	5190	1290	< 1	2	6	154	0.32	< 2	< 10	58	0.5	< 2	0.13	2	9
A18 13	5	18.6	2.5	7430	1910	< 1	3	5	341	1.24	< 2	< 10	18	< 0.5	< 2	2.18	13	5
A18 14	< 5	0.6	< 0.5	259	1090	1	2	3	154	0.58	5	< 10	17	< 0.5	< 2	1.91	7	21
A18 15	6	1.3	< 0.5	615	2390	< 1	5	4	406	1.61	< 2	< 10	19	0.6	< 2	1.98	15	9
A18 16	< 5	< 0.2	< 0.5	47	2390	< 1	5	5	418	1.59	4	< 10	22	0.6	< 2	0.96	14	12
A18 17	< 5	82	3.8	19200	1080	< 1	3	7	85	1.83	< 2	< 10	31	< 0.5	< 2	2.48	5	5
A18 18	< 5	122	0.6	50200	1360	< 1	< 1	4	142	0.31	2	< 10	28	< 0.5	< 2	0.2	7	6
A18 19	20	21.2	0.6	13400	1960	< 1	47	5	168	2.77	< 2	< 10	216	< 0.5	< 2	3.16	19	69
A18 20	50	2.7	< 0.5	5560	1190	< 1	34	4	152	3.13	< 2	< 10	18	0.6	< 2	6.75	18	45
A18 21	10	3.3	< 0.5	157	1070	< 1	15	5	50	2.31	3	< 10	< 10	0.9	< 2	> 10.0	10	17
A18 22	< 5	0.5	< 0.5	700	3540	< 1	111	< 2	353	2.44	< 2	< 10	36	0.5	< 2	1.72	29	152
A18 23	< 5	6	< 0.5	14100	541	< 1	8	6	13	4.89	24	14	< 10	0.5	< 2	8.46	3	16
A18 24	8	1.4	< 0.5	4790	425	< 1	26	< 2	47	2.59	< 2	< 10	1710	0.5	< 2	2.38	15	33
A18 36	< 5	0.3	< 0.5	161	1180	< 1	1	5	95	1.03	< 2	< 10	94	< 0.5	< 2	2.19	2	6
A18 47	< 5	< 0.2	< 0.5	751	1120	< 1	11	< 2	77	1.71	7	< 10	173	< 0.5	< 2	5.48	19	6
A18 48	< 5	< 0.2	0.6	14	930	< 1	7	9	139	0.38	< 2	< 10	1140	< 0.5	< 2	0.67	13	12
A18 49	< 5	< 0.2	< 0.5	5	439	< 1	2	2	86	0.22	< 2	< 10	1180	< 0.5	< 2	0.06	3	8
A18 50	< 5	< 0.2	< 0.5	33	990	< 1	11	2	62	1.77	< 2	< 10	223	0.6	< 2	1.5	11	11
A18 51	16	19.3	< 0.5	21300	1140	< 1	13	44	314	1.9	2	< 10	408	< 0.5	< 2	0.46	22	11
A18 52	57	11.1	0.9	11400	1300	< 1	17	23	174	1.88	3	< 10	204	0.7	< 2	2.38	24	13
A18 53	< 5	10.6	< 0.5	16200	1190	< 1	1	3	213	1.68	< 2	< 10	108	0.7	< 2	0.57	5	7
A18 54	6	1.9	< 0.5	1660	503	1	2	9	102	0.69	< 2	< 10	104	< 0.5	< 2	0.4	5	16
A18 55	17	27	< 0.5	14000	584	< 1	12	< 2	83	2.14	< 2	< 10	47	< 0.5	< 2	0.79	13	10
A18 56	87	59.4	< 0.5	18900	864	< 1	27	< 2	148	2.73	< 2	< 10	309	< 0.5	< 2	0.22	22	22
A18 57	43	116	1	44100	497	1	3	2	63	1.47	< 2	< 10	42	< 0.5	< 2	0.33	8	2

**Final Report**

**Activation Laboratories**

Report Number: A18-0985E

Report Date: 10/8/2018

Analyte Symbol	Fe	Ga	Hg	K	La	Mg	Na	P	S	Sb	Sc	Sr	Ti	Th	Te	U	V	W
Unit Symbol	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.01	10	1	0.01	10	0.01	0.001	0.001	0.01	2	1	1	0.01	20	1	10	1	10
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
A18 1	5.24	10	< 1	0.02	12	1.83	0.123	0.164	< 0.01	2	19	13	0.47	< 20	< 1	< 10	133	< 10
A18 2	5.71	< 10	< 1	0.02	11	2.38	0.089	0.142	< 0.01	< 2	19	83	0.41	< 20	5	< 10	175	< 10
A18 3	3.15	30	< 1	< 0.01	< 10	0.06	0.026	0.06	< 0.01	< 2	4	10	0.12	< 20	< 1	< 10	343	< 10
A18 4	1.64	< 10	< 1	0.07	< 10	0.05	0.041	0.03	0.03	< 2	3	23	0.04	< 20	3	< 10	8	< 10
A18 5	3.64	< 10	< 1	0.24	19	0.63	0.115	0.103	< 0.01	< 2	17	21	0.32	< 20	< 1	< 10	39	< 10
A18 6	1.15	< 10	< 1	0.11	18	0.08	0.066	0.024	< 0.01	< 2	2	17	0.02	< 20	< 1	< 10	14	< 10
A18 11	2.85	< 10	< 1	0.11	23	0.27	0.118	0.042	< 0.01	< 2	14	7	0.05	< 20	< 1	< 10	21	< 10
A18 12	2.9	< 10	< 1	0.09	22	0.02	0.076	0.052	0.07	< 2	14	13	0.04	< 20	< 1	< 10	28	< 10
A18 13	5.8	< 10	< 1	< 0.01	< 10	1.13	0.108	0.134	0.08	2	16	74	0.38	< 20	< 1	< 10	143	< 10
A18 14	3.93	< 10	< 1	0.02	< 10	0.44	0.122	0.093	< 0.01	< 2	12	21	0.29	< 20	< 1	< 10	68	< 10
A18 15	4.87	< 10	< 1	0.02	< 10	1.54	0.093	0.122	< 0.01	4	15	58	0.34	< 20	1	< 10	117	< 10
A18 16	7.31	< 10	2	0.02	10	1.56	0.097	0.088	< 0.01	2	17	45	0.21	< 20	< 1	< 10	232	< 10
A18 17	4.98	< 10	< 1	< 0.01	< 10	0.51	0.094	0.122	0.26	3	11	393	0.37	< 20	2	< 10	104	< 10
A18 18	3.55	< 10	< 1	< 0.01	13	0.04	0.072	0.117	0.82	< 2	7	6	0.07	< 20	2	< 10	53	< 10
A18 19	4.39	< 10	< 1	0.03	< 10	2.16	0.056	0.086	0.22	4	11	163	0.45	< 20	6	< 10	210	< 10
A18 20	5.01	10	< 1	0.09	< 10	1.43	0.066	0.133	0.03	3	11	64	0.5	< 20	< 1	< 10	224	< 10
A18 21	4.72	10	< 1	0.02	< 10	0.48	0.081	0.158	< 0.01	< 2	7	70	0.33	< 20	< 1	< 10	201	< 10
A18 22	6.69	< 10	< 1	0.08	17	3.41	0.061	0.184	< 0.01	3	12	22	0.56	< 20	6	< 10	256	< 10
A18 23	2.61	30	1	0.01	< 10	0.15	0.027	0.09	< 0.01	< 2	5	14	0.17	< 20	< 1	< 10	753	< 10
A18 24	2	< 10	< 1	0.11	< 10	1.42	0.066	0.065	< 0.01	< 2	6	236	0.29	< 20	3	< 10	99	< 10
A18 36	1.6	< 10	< 1	0.29	15	0.44	0.053	0.054	< 0.01	< 2	2	23	< 0.01	< 20	< 1	< 10	10	< 10
A18 47	6.06	< 10	< 1	0.2	13	1.48	0.116	0.166	< 0.01	2	16	100	0.06	< 20	< 1	< 10	159	< 10
A18 48	2.74	< 10	< 1	0.16	< 10	0.17	0.053	0.097	0.03	< 2	11	49	0.02	< 20	< 1	< 10	101	< 10
A18 49	0.78	< 10	< 1	0.11	< 10	0.02	0.037	0.013	0.04	< 2	3	103	< 0.01	< 20	< 1	< 10	25	< 10
A18 50	3.36	< 10	< 1	0.54	14	0.94	0.063	0.055	< 0.01	< 2	9	44	0.05	< 20	< 1	< 10	56	< 10
A18 51	7.36	10	< 1	0.02	11	2.01	0.135	0.184	0.16	2	11	13	0.08	< 20	< 1	< 10	355	< 10
A18 52	8.53	10	< 1	0.06	15	1.97	0.096	0.172	0.19	3	22	14	0.46	< 20	< 1	< 10	637	< 10
A18 53	3.41	< 10	< 1	0.27	21	1.01	0.131	0.099	0.49	2	10	12	0.34	< 20	2	< 10	100	< 10
A18 54	2.82	< 10	< 1	0.18	16	0.39	0.074	0.087	0.01	< 2	10	6	0.26	< 20	< 1	< 10	137	< 10
A18 55	3.48	< 10	< 1	0.26	12	1.2	0.029	0.071	0.36	< 2	7	25	< 0.01	< 20	< 1	< 10	90	< 10
A18 56	4.34	< 10	< 1	0.24	< 10	2.11	0.038	0.077	0.22	< 2	9	12	< 0.01	< 20	< 1	< 10	92	< 10
A18 57	2.59	< 10	< 1	0.36	12	0.61	0.048	0.13	1.01	< 2	6	8	< 0.01	< 20	< 1	< 10	60	< 10

**Final Report**  
**Activation Laboratories**

Report Number: A18-09855

Report Date: 10/8/2018

Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
A18 58	73	76.6	< 0.5	24400	737	< 1	19	< 2	125	2.3	< 2	< 10	162	< 0.5	< 2	0.82	18	24
A18 59	866	218	1.7	130600	743	< 1	7	4	69	1.26	< 2	< 10	29	< 0.5	< 2	5.98	9	7
A18 60	21	142	1.2	34200	897	< 1	18	32	150	2.46	< 2	< 10	19	< 0.5	< 2	0.82	20	17
A18 61	458	18.3	< 0.5	21400	303	< 1	12	< 2	30	1.75	3	< 10	20	< 0.5	< 2	1.76	10	19
KMT 1851	< 5	0.2	< 0.5	17	1640	< 1	4	3	181	1.31	< 2	< 10	37	0.9	< 2	1.36	19	6
KMT 1852	9	0.4	< 0.5	123	742	< 1	4	3	52	0.5	< 2	< 10	25	< 0.5	< 2	2.64	6	13
KMT 1853	< 5	< 0.2	< 0.5	26	192	3	4	< 2	16	0.08	< 2	< 10	17	< 0.5	< 2	0.54	< 1	46
KMT 1854	< 5	38.3	0.5	14100	1500	< 1	5	2	181	1.42	< 2	< 10	24	0.5	< 2	1.2	16	8
KMT 1855	< 5	0.2	< 0.5	31	807	1	2	4	115	0.27	< 2	< 10	63	< 0.5	< 2	0.74	1	18
KMT 1861	16	3.3	< 0.5	2740	1010	6	2	17	122	1.53	9	< 10	37	< 0.5	< 2	0.73	13	7
KMT 1862	< 5	0.2	< 0.5	20	149	< 1	5	< 2	38	3.05	< 2	< 10	26	< 0.5	< 2	2.75	4	18
KMT 1863	< 5	< 0.2	< 0.5	4	1530	< 1	1	3	85	1.26	< 2	< 10	42	1	< 2	4.15	3	4
KMT 1864	< 5	< 0.2	< 0.5	33	2290	< 1	4	< 2	290	2.64	< 2	< 10	53	< 0.5	< 2	1.36	13	7
KMT 1865	8	< 0.2	< 0.5	6	344	< 1	2	4	48	0.43	< 2	< 10	63	< 0.5	< 2	0.08	2	8
KMT 1866	< 5	0.4	< 0.5	35	1300	< 1	11	< 2	70	2.21	2	< 10	30	< 0.5	< 2	> 10.0	17	18
KMT 1867	< 5	< 0.2	< 0.5	13	1200	< 1	2	2	87	1.64	3	< 10	95	0.6	< 2	1.51	6	5
KMT 1871	< 5	3.7	< 0.5	1240	1250	< 1	1	3	86	0.49	< 2	< 10	375	< 0.5	< 2	0.88	4	3
KMT 1872	< 5	< 0.2	< 0.5	6	426	< 1	< 1	8	30	0.77	3	< 10	137	0.9	< 2	2.22	1	3
KMT 1873	< 5	0.4	< 0.5	33	48	< 1	< 1	< 2	7	0.4	< 2	< 10	426	< 0.5	< 2	0.02	< 1	5
KMT 1874	< 5	< 0.2	< 0.5	3	319	5	< 1	5	32	0.85	< 2	< 10	133	< 0.5	< 2	0.54	4	4
KMT 1875	39	46.8	1.6	9780	905	< 1	< 1	19	146	1.46	< 2	< 10	119	< 0.5	< 2	0.42	8	5
KMT 1876	< 5	< 0.2	< 0.5	73	879	< 1	21	4	74	1.35	5	< 10	136	0.6	2	2.08	16	16
KMT 1877	< 5	< 0.2	< 0.5	22	1170	< 1	48	5	125	0.95	5	< 10	233	< 0.5	< 2	3.95	27	37
KMT 1878	< 5	< 0.2	< 0.5	5	1820	< 1	10	7	228	0.41	4	< 10	71	< 0.5	3	5.6	21	6
KMT 1879	75	10.8	< 0.5	5180	741	< 1	20	< 2	59	1.16	< 2	< 10	38	< 0.5	4	1.2	15	36
KMT 1880	55	0.5	< 0.5	551	602	< 1	8	4	45	1.05	< 2	< 10	58	< 0.5	< 2	2.29	8	15
KMT 1881	< 5	0.8	< 0.5	2430	1340	< 1	27	< 2	103	2.06	3	< 10	23	< 0.5	< 2	1.73	18	16
KMT 1882	< 5	< 0.2	< 0.5	28	737	< 1	6	< 2	72	2.01	7	< 10	85	< 0.5	< 2	0.65	17	6
KMT 1883	7	< 0.2	< 0.5	67	491	< 1	10	< 2	47	1.17	< 2	< 10	31	< 0.5	< 2	0.69	12	13
KMT 1884	< 5	< 0.2	< 0.5	131	1410	< 1	10	6	272	1.22	< 2	< 10	55	< 0.5	< 2	0.28	15	13
KMT 1885	< 5	< 0.2	< 0.5	26	3780	< 1	24	11	191	1.64	< 2	< 10	48	< 0.5	< 2	> 10.0	14	28
KMT 1886	< 5	< 0.2	< 0.5	16	179	< 1	1	< 2	23	0.51	< 2	< 10	44	< 0.5	< 2	0.07	< 1	6

**Final Report**  
**Activation Laboratories**

Report Number: A18-0985E

Report Date: 10/8/2018

Analyte Symbol	Fe	Ga	Hg	K	La	Mg	Na	P	S	Sb	Sc	Sr	Ti	Th	Te	U	V	W
Unit Symbol	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.01	10	1	0.01	10	0.01	0.001	0.001	0.01	2	1	1	0.01	20	1	10	1	10
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
A18 58	3.63	< 10	< 1	0.12	< 10	1.57	0.094	0.085	0.27	< 2	10	97	0.1	< 20	< 1	< 10	97	< 10
A18 59	2.21	< 10	< 1	0.04	< 10	0.8	0.027	0.074	1.72	< 2	4	115	0.15	< 20	12	< 10	55	< 10
A18 60	4.97	< 10	< 1	0.08	< 10	1.97	0.059	0.109	0.62	< 2	7	44	0.32	< 20	3	< 10	97	< 10
A18 61	3.09	< 10	< 1	0.12	< 10	0.7	0.179	0.058	0.4	< 2	4	86	0.23	< 20	2	< 10	107	< 10
KMT 1851	6.82	10	< 1	0.08	13	1.24	0.115	0.138	< 0.01	< 2	20	7	0.48	< 20	< 1	< 10	236	< 10
KMT 1852	3.83	< 10	< 1	0.05	< 10	0.44	0.081	0.089	< 0.01	< 2	15	15	0.39	< 20	6	< 10	194	< 10
KMT 1853	0.35	< 10	< 1	0.02	< 10	0.06	0.018	< 0.001	< 0.01	< 2	< 1	5	< 0.01	< 20	< 1	< 10	3	< 10
KMT 1854	6.2	10	< 1	0.03	24	1.5	0.091	0.131	0.25	< 2	22	22	0.53	< 20	6	< 10	330	< 10
KMT 1855	2.11	< 10	< 1	0.07	20	0.07	0.079	0.033	< 0.01	< 2	5	12	0.04	< 20	< 1	< 10	38	< 10
KMT 1861	3.33	< 10	< 1	0.26	11	0.73	0.064	0.066	0.69	2	4	15	< 0.01	< 20	< 1	< 10	32	< 10
KMT 1862	1.73	< 10	< 1	0.12	< 10	0.27	0.404	0.071	< 0.01	< 2	3	93	0.27	< 20	3	< 10	88	< 10
KMT 1863	1.92	< 10	< 1	0.45	18	0.41	0.043	0.052	< 0.01	< 2	3	51	< 0.01	< 20	< 1	< 10	10	< 10
KMT 1864	4.49	< 10	< 1	0.22	< 10	1.17	0.046	0.071	< 0.01	< 2	14	60	0.3	< 20	< 1	< 10	67	< 10
KMT 1865	1.03	< 10	< 1	0.15	15	0.04	0.071	0.023	< 0.01	< 2	3	4	0.04	< 20	1	< 10	13	< 10
KMT 1866	4	< 10	< 1	0.04	< 10	1.29	0.048	0.055	< 0.01	< 2	15	74	0.31	< 20	4	< 10	125	< 10
KMT 1867	4.09	< 10	< 1	0.09	14	1.01	0.099	0.123	< 0.01	3	14	108	0.24	< 20	8	< 10	30	< 10
KMT 1871	0.9	< 10	< 1	0.21	< 10	0.05	0.1	0.016	0.01	< 2	7	11	< 0.01	< 20	< 1	< 10	23	< 10
KMT 1872	0.93	< 10	< 1	0.38	< 10	1.1	0.05	0.003	< 0.01	< 2	3	57	< 0.01	< 20	< 1	< 10	12	< 10
KMT 1873	0.4	< 10	< 1	0.23	< 10	0.02	0.079	0.004	0.01	< 2	1	12	< 0.01	< 20	< 1	< 10	6	< 10
KMT 1874	1.31	< 10	< 1	0.3	< 10	0.3	0.034	0.054	0.4	< 2	3	24	0.21	< 20	4	< 10	13	< 10
KMT 1875	3.88	< 10	< 1	0.26	12	0.84	0.039	0.133	0.15	< 2	10	6	0.08	< 20	< 1	< 10	107	< 10
KMT 1876	4.39	< 10	< 1	0.56	10	0.79	0.055	0.095	< 0.01	< 2	14	66	0.06	< 20	4	< 10	89	< 10
KMT 1877	4.75	< 10	< 1	0.33	< 10	1.2	0.073	0.106	< 0.01	< 2	27	62	0.01	< 20	< 1	< 10	176	< 10
KMT 1878	6.43	< 10	< 1	0.12	< 10	2.5	0.074	0.095	< 0.01	3	9	66	0.04	< 20	< 1	< 10	190	< 10
KMT 1879	2.14	< 10	< 1	0.08	< 10	1.47	0.047	0.03	0.07	< 2	7	20	0.14	< 20	< 1	< 10	130	< 10
KMT 1880	2.34	< 10	< 1	0.13	< 10	0.97	0.056	0.041	0.01	< 2	8	11	0.19	< 20	4	< 10	163	< 10
KMT 1881	3.8	< 10	< 1	0.01	< 10	2.04	0.093	0.071	0.1	< 2	12	56	0.34	< 20	< 1	< 10	140	< 10
KMT 1882	2.42	< 10	< 1	0.34	< 10	1.97	0.054	0.051	< 0.01	< 2	6	22	0.23	< 20	2	< 10	41	< 10
KMT 1883	3.41	< 10	< 1	0.02	12	0.89	0.138	0.076	< 0.01	< 2	11	29	0.23	< 20	4	< 10	173	< 10
KMT 1884	4.8	< 10	< 1	0.11	16	1.16	0.068	0.096	< 0.01	3	11	9	0.09	< 20	< 1	< 10	212	< 10
KMT 1885	3.6	< 10	< 1	0.24	< 10	1.3	0.035	0.079	< 0.01	2	7	145	0.26	< 20	4	< 10	97	< 10
KMT 1886	0.84	< 10	< 1	0.28	25	0.03	0.048	0.011	< 0.01	< 2	2	3	< 0.01	< 20	< 1	< 10	34	< 10



**Final Report**  
**Activation Laboratories**

Report Number: A18-09855

Report Date: 10/8/2018

Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
KMT 1887	< 5	2.4	< 0.5	1930	932	< 1	1	< 2	151	1.11	< 2	< 10	392	< 0.5	< 2	0.31	5	6
KMT 1888	< 5	34.8	< 0.5	25700	595	< 1	2	4	166	1.15	< 2	< 10	77	0.7	< 2	0.23	4	5
KMT 1889	5	0.9	< 0.5	1670	641	1	2	8	119	0.7	< 2	< 10	184	< 0.5	< 2	0.4	6	14
KMT 1890	< 5	0.9	< 0.5	1670	700	< 1	3	7	128	0.68	< 2	< 10	83	< 0.5	< 2	0.85	5	16
KMT 1891	7	17.2	< 0.5	16200	565	1	2	6	219	0.68	< 2	< 10	118	0.6	< 2	0.4	7	11
KMT 1892	9	< 0.2	< 0.5	59	1540	< 1	52	6	204	1.72	< 2	< 10	63	< 0.5	< 2	0.34	32	37
KMT 1893	102	2.4	< 0.5	3790	447	4	8	17	40	1.89	< 2	< 10	26	< 0.5	< 2	1.49	8	16
KMT 1894	13	2.8	< 0.5	3170	543	< 1	7	4	29	2.36	< 2	< 10	15	< 0.5	3	3.16	5	13
KMT 1895	10	1.2	< 0.5	866	794	< 1	10	5	66	2.58	< 2	< 10	17	< 0.5	< 2	3.04	8	14
KMT 1896	15	1.9	< 0.5	2860	883	< 1	14	< 2	70	2.37	< 2	< 10	60	< 0.5	< 2	2.88	17	16
KMT 1897	34	0.3	< 0.5	96	488	< 1	11	11	32	3.43	5	< 10	89	< 0.5	< 2	4.5	11	11
KMT 1898	72	8.3	< 0.5	7110	681	< 1	15	2	58	2.55	< 2	< 10	12	< 0.5	< 2	2.24	15	15
KMT 1899	1630	10.3	< 0.5	6720	675	< 1	8	< 2	43	2.23	< 2	< 10	35	< 0.5	< 2	1.48	10	10
KMT 18100	15	1.4	< 0.5	961	997	< 1	13	39	75	2.08	< 2	< 10	95	< 0.5	< 2	5.63	12	14
KMT 18101	15	< 0.2	< 0.5	97	1290	< 1	20	5	210	2.7	3	< 10	40	< 0.5	< 2	2.74	22	23
KMT 18102	5	1.2	< 0.5	659	847	< 1	14	4	89	2.59	< 2	< 10	181	< 0.5	< 2	6.44	12	16
KMT 18103	46	76.7	< 0.5	28700	861	< 1	16	12	113	2.21	< 2	< 10	24	0.5	< 2	4.59	15	8
KMT 18104	21	3.1	< 0.5	3680	874	< 1	5	6	39	1.36	< 2	< 10	31	< 0.5	5	> 10.0	6	6
KMT 18105	8	1.5	< 0.5	2590	394	< 1	10	< 2	47	1.67	2	< 10	171	< 0.5	< 2	3.68	11	9
KMT 18106	12	0.5	< 0.5	1030	496	< 1	4	< 2	8	2.31	< 2	< 10	11	< 0.5	< 2	4.26	3	22
KMT 18107	89	1.5	< 0.5	6850	518	< 1	19	10	40	2.69	3	< 10	< 10	< 0.5	< 2	4.17	8	31
KMT 18108	437	4.8	0.7	6800	831	1	10	16	64	2.81	129	< 10	< 10	< 0.5	< 2	4.34	11	20
KMT 18109	31	< 0.2	< 0.5	48	470	< 1	15	4	59	2.35	4	< 10	25	< 0.5	< 2	2.56	14	24
KMT 18110	< 5	0.3	< 0.5	838	433	< 1	11	< 2	33	2.71	< 2	< 10	23	< 0.5	< 2	2.09	12	17
KMT 18111	517	17.6	0.7	37700	472	< 1	1	5	8	2.45	4	< 10	< 10	< 0.5	< 2	4.07	2	8
KMT 18112F	15	0.2	< 0.5	419	510	< 1	6	< 2	30	2.52	< 2	< 10	28	< 0.5	< 2	3.22	9	12
KMT 18112H	11	< 0.2	< 0.5	497	546	< 1	10	< 2	50	2.14	< 2	< 10	61	< 0.5	< 2	1.34	17	13
KMT 18113	412	29.3	2.6	85300	378	< 1	6	9	28	1.99	4	< 10	14	< 0.5	< 2	2.5	9	9
KMT 18114	7	< 0.2	< 0.5	93	641	< 1	9	4	46	2.97	2	< 10	< 10	< 0.5	< 2	3.85	11	14
KMT 18115	224	4.9	< 0.5	6930	349	1	5	< 2	24	2.18	11	< 10	< 10	< 0.5	< 2	2.42	7	9
KMT 18116	34	4.4	< 0.5	10500	548	< 1	5	< 2	28	2.45	4	< 10	< 10	< 0.5	< 2	3	7	12
KMT 18117	149	4.6	< 0.5	6230	327	< 1	3	< 2	11	1.81	3	< 10	< 10	< 0.5	< 2	2.65	2	13

**Final Report**  
**Activation Laboratories**

Report Number: A18-0985E

Report Date: 10/8/2018

Analyte Symbol	Fe	Ga	Hg	K	La	Mg	Na	P	S	Sb	Sc	Sr	Ti	Th	Te	U	V	W
Unit Symbol	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.01	10	1	0.01	10	0.01	0.001	0.001	0.01	2	1	1	0.01	20	1	10	1	10
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
KMT 1887	2.44	< 10	< 1	0.1	15	0.66	0.126	0.085	0.17	< 2	7	14	0.15	< 20	< 1	< 10	38	< 10
KMT 1888	2.97	< 10	< 1	0.37	18	0.54	0.081	0.063	0.51	< 2	6	8	0.1	< 20	1	< 10	48	< 10
KMT 1889	2.58	< 10	< 1	0.19	21	0.45	0.093	0.083	0.02	< 2	10	8	0.26	< 20	3	< 10	108	< 10
KMT 1890	2.52	< 10	< 1	0.13	22	0.48	0.106	0.089	0.01	< 2	9	7	0.24	< 20	< 1	< 10	104	< 10
KMT 1891	3.64	< 10	< 1	0.18	16	0.35	0.072	0.075	0.33	< 2	9	6	0.26	< 20	< 1	< 10	216	< 10
KMT 1892	7.31	< 10	< 1	0.14	< 10	1.85	0.09	0.12	< 0.01	3	13	9	0.15	< 20	< 1	< 10	185	< 10
KMT 1893	2.65	< 10	< 1	0.11	< 10	0.87	0.174	0.054	0.13	< 2	5	81	0.18	< 20	< 1	< 10	56	< 10
KMT 1894	2.05	< 10	< 1	< 0.01	< 10	0.34	0.036	0.058	0.04	3	6	281	0.19	< 20	2	< 10	108	< 10
KMT 1895	2.48	< 10	< 1	0.02	< 10	0.66	0.054	0.079	< 0.01	< 2	8	167	0.31	< 20	2	< 10	116	< 10
KMT 1896	3.98	< 10	< 1	0.31	< 10	1.75	0.034	0.084	0.03	< 2	7	23	0.24	< 20	< 1	< 10	79	< 10
KMT 1897	2.82	< 10	< 1	0.19	< 10	0.84	0.571	0.063	0.46	< 2	5	129	0.22	< 20	4	< 10	93	< 10
KMT 1898	3.71	10	< 1	0.03	< 10	1.62	0.073	0.096	0.04	< 2	10	169	0.3	< 20	3	< 10	143	< 10
KMT 1899	2.16	< 10	< 1	0.18	< 10	1.05	0.02	0.052	0.01	< 2	4	134	0.13	< 20	3	< 10	57	< 10
KMT 18100	3.02	< 10	< 1	0.19	< 10	1.3	0.035	0.065	0.05	< 2	5	81	0.11	< 20	< 1	< 10	67	< 10
KMT 18101	4.55	< 10	< 1	0.1	< 10	2.25	0.076	0.101	< 0.01	< 2	13	101	0.21	< 20	< 1	< 10	158	< 10
KMT 18102	3.27	< 10	< 1	0.2	< 10	1.22	0.027	0.053	0.04	2	4	143	0.07	< 20	< 1	< 10	83	< 10
KMT 18103	4.77	< 10	< 1	0.44	< 10	0.99	0.023	0.107	1.28	< 2	7	43	< 0.01	< 20	< 1	< 10	49	< 10
KMT 18104	2.07	< 10	< 1	0.2	< 10	0.74	0.02	0.037	0.39	< 2	3	118	0.02	< 20	2	< 10	50	< 10
KMT 18105	3.01	< 10	< 1	0.36	< 10	0.3	0.022	0.088	0.03	< 2	9	34	< 0.01	< 20	< 1	< 10	86	< 10
KMT 18106	2.65	< 10	< 1	< 0.01	< 10	0.19	0.017	0.083	0.02	< 2	10	189	0.23	< 20	< 1	< 10	103	< 10
KMT 18107	2.85	< 10	< 1	0.03	< 10	0.72	0.032	0.08	0.15	2	8	271	0.32	< 20	2	< 10	133	< 10
KMT 18108	4.01	< 10	< 1	0.01	< 10	0.77	0.022	0.078	0.07	28	10	190	0.26	< 20	2	< 10	158	< 10
KMT 18109	2.95	< 10	< 1	0.37	< 10	1.15	0.117	0.093	< 0.01	< 2	9	123	0.33	< 20	< 1	< 10	128	< 10
KMT 18110	3.14	< 10	< 1	0.47	< 10	1.25	0.162	0.078	0.02	< 2	8	98	0.26	< 20	4	< 10	134	< 10
KMT 18111	2.6	< 10	< 1	0.02	< 10	0.13	0.019	0.036	0.86	< 2	3	258	0.13	< 20	4	< 10	106	< 10
KMT 18112F	4.21	10	< 1	0.15	< 10	0.74	0.078	0.087	< 0.01	< 2	6	220	0.27	< 20	< 1	< 10	197	< 10
KMT 18112H	5.08	< 10	< 1	0.59	< 10	1.27	0.307	0.089	< 0.01	< 2	7	56	0.36	< 20	< 1	< 10	206	< 10
KMT 18113	3.16	< 10	< 1	0.12	< 10	0.7	0.038	0.065	1.72	< 2	5	195	0.19	< 20	8	< 10	117	< 10
KMT 18114	3.62	10	< 1	0.09	< 10	1.03	0.039	0.087	< 0.01	< 2	8	273	0.27	< 20	2	< 10	121	< 10
KMT 18115	3.29	< 10	< 1	0.07	< 10	0.57	0.032	0.064	0.13	3	5	185	0.22	< 20	< 1	< 10	91	< 10
KMT 18116	2.97	< 10	< 1	0.11	< 10	0.63	0.027	0.045	0.22	3	5	194	0.17	< 20	4	< 10	93	< 10
KMT 18117	2.35	< 10	< 1	0.04	< 10	0.19	0.024	0.045	0.14	< 2	4	176	0.19	< 20	3	< 10	97	< 10

**Final Report**  
**Activation Laboratories**

Report Number: A18-10367

Report Date: 13/9/2018

Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
A18-101	< 5	< 0.2	< 0.5	21	1420	< 1	4	10	76	1.27	< 2	< 10	288	< 0.5	< 2	0.21	12	5
A18-102	< 5	< 0.2	0.9	16	847	< 1	87	8	102	1.82	< 2	< 10	85	0.7	2	2.4	27	107
A18-103	< 5	< 0.2	0.7	33	3800	< 1	136	< 2	586	2.48	4	< 10	1250	0.5	< 2	3.4	32	174
A18-104	< 5	< 0.2	< 0.5	73	1140	< 1	37	< 2	100	2.92	< 2	< 10	62	0.6	< 2	2.46	30	41
A18-105	< 5	< 0.2	< 0.5	306	441	< 1	4	6	5	2.94	< 2	< 10	72	< 0.5	< 2	8.53	1	17
A18-106	< 5	< 0.2	< 0.5	7	366	< 1	2	3	28	0.23	2	< 10	23	< 0.5	< 2	0.05	4	16
A18-107	< 5	< 0.2	< 0.5	463	968	< 1	39	7	66	4.76	< 2	13	18	0.7	< 2	8.18	11	46
A18-108	< 5	< 0.2	0.7	4	1170	< 1	15	5	58	2.54	3	< 10	87	< 0.5	< 2	2.72	22	13
A18-109	< 5	< 0.2	< 0.5	21	615	< 1	< 1	9	30	1.12	2	< 10	101	1.4	2	0.59	< 1	1
A18-110	< 5	< 0.2	< 0.5	2	525	< 1	2	< 2	45	1.61	4	< 10	185	< 0.5	< 2	0.85	3	4
A18-111	< 5	< 0.2	< 0.5	17	704	< 1	5	< 2	76	3.73	< 2	< 10	80	< 0.5	< 2	1.25	17	1
A18-112	10	0.4	< 0.5	61	122	13	9	< 2	30	1.19	< 2	< 10	12	< 0.5	3	0.12	13	3
A18-113	97	3.4	< 0.5	3320	615	< 1	1	5	5	3.61	5	17	23	< 0.5	< 2	4.69	1	13
A18-114	13	14.4	< 0.5	33800	444	< 1	2	4	2	2.62	110	< 10	10	< 0.5	13	3.81	< 1	13
A18-115	< 5	2.4	< 0.5	10000	253	1	1	2	3	3.88	50	< 10	< 10	< 0.5	5	5.56	< 1	20
A18-116	< 5	< 0.2	< 0.5	91	31	2	2	3	< 2	0.03	6	< 10	< 10	< 0.5	8	0.03	< 1	23
A18-117	6	2.2	< 0.5	29	26	1	2	3	< 2	0.03	< 2	< 10	10	< 0.5	25	0.02	< 1	17
A18-118	266	50.7	1	53800	485	< 1	17	10	77	2.46	3	< 10	18	< 0.5	25	3.02	11	25
A18-119	133	3.2	< 0.5	6650	536	< 1	8	3	25	2.81	4	< 10	25	< 0.5	5	3.31	9	11
A18-120	< 5	< 0.2	0.5	80	4650	< 1	< 1	8	47	0.32	2	< 10	88	< 0.5	< 2	> 10.0	3	< 1
KMT18201	< 5	< 0.2	0.8	107	1110	< 1	7	3	102	3.11	< 2	< 10	45	0.6	< 2	2.47	8	6
KMT18202	5	< 0.2	2.4	72	453	< 1	3	3	40	0.91	< 2	< 10	21	< 0.5	< 2	0.77	5	5
KMT18203	< 5	< 0.2	< 0.5	47	970	< 1	9	3	78	3.93	< 2	< 10	59	< 0.5	< 2	2.69	13	8
KMT18204	< 5	< 0.2	< 0.5	12	1430	< 1	1	6	80	0.73	2	< 10	84	< 0.5	< 2	0.6	7	5
KMT18205	< 5	< 0.2	< 0.5	240	1060	< 1	4	7	116	0.42	2	< 10	79	< 0.5	< 2	1.52	6	14
KMT18206	< 5	< 0.2	< 0.5	167	638	< 1	2	8	51	0.56	< 2	< 10	389	< 0.5	< 2	0.19	3	8
KMT18207	6	8.4	< 0.5	762	1220	< 1	6	29	100	0.47	43	< 10	106	< 0.5	< 2	1.06	10	10
KMT18208	< 5	< 0.2	< 0.5	18	1200	< 1	10	< 2	105	1.96	3	< 10	60	1.1	2	2.62	24	8
KMT18209	< 5	0.6	< 0.5	32	1270	< 1	19	15	91	5.55	3	40	34	1	< 2	7.81	8	43
KMT18210	6	< 0.2	< 0.5	85	1160	< 1	61	< 2	75	4.11	< 2	< 10	135	< 0.5	< 2	1.95	32	100
KMT18211	< 5	< 0.2	< 0.5	222	987	< 1	65	< 2	73	3.16	< 2	< 10	70	0.5	2	3.26	29	86

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Analyte Symbol	Fe	Ga	Hg	K	La	Mg	Na	P	S	Sb	Sc	Sr	Ti	Th	Te	U	V	W
Unit Symbol	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.01	10	1	0.01	10	0.01	0.001	0.001	0.01	2	1	1	0.01	20	1	10	1	10
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
A18-101	4	< 10	< 1	0.63	< 10	0.17	0.076	0.068	< 0.01	< 2	12	12	0.05	< 20	4	< 10	69	< 10
A18-102	7.34	< 10	2	0.28	20	1.75	0.106	0.069	< 0.01	4	23	26	0.61	< 20	6	< 10	549	< 10
A18-103	7.33	10	< 1	0.11	17	2.63	0.099	0.236	0.04	3	18	99	0.08	< 20	3	< 10	246	< 10
A18-104	8.24	10	3	0.11	11	3.04	0.075	0.154	< 0.01	3	26	37	0.42	< 20	7	< 10	303	< 10
A18-105	1.15	10	< 1	0.01	< 10	0.09	0.025	0.016	< 0.01	< 2	3	48	0.07	< 20	2	< 10	133	< 10
A18-106	0.82	< 10	< 1	0.06	< 10	0.03	0.019	0.004	< 0.01	< 2	2	2	< 0.01	< 20	2	< 10	31	< 10
A18-107	3.99	20	2	0.02	< 10	0.9	0.059	0.063	< 0.01	< 2	10	23	0.28	< 20	6	< 10	278	< 10
A18-108	5.29	< 10	< 1	0.29	< 10	2.4	0.054	0.072	< 0.01	< 2	13	92	0.07	< 20	4	< 10	82	< 10
A18-109	0.27	< 10	< 1	0.45	< 10	0.08	0.082	0.008	< 0.01	< 2	1	20	< 0.01	< 20	2	< 10	2	< 10
A18-110	1.38	< 10	< 1	0.23	< 10	0.46	0.095	0.038	< 0.01	< 2	1	63	0.08	< 20	1	< 10	25	< 10
A18-111	3.89	< 10	< 1	0.12	< 10	1.92	0.047	0.097	< 0.01	< 2	5	59	0.05	< 20	3	< 10	54	< 10
A18-112	4.38	< 10	< 1	0.46	< 10	0.53	0.033	0.091	2.93	< 2	2	13	< 0.01	< 20	< 1	< 10	35	< 10
A18-113	3.51	10	< 1	0.06	< 10	0.06	0.021	0.032	0.02	3	3	325	0.06	< 20	5	< 10	65	< 10
A18-114	2.04	< 10	< 1	0.01	< 10	0.04	0.018	0.071	< 0.01	< 2	7	803	0.2	< 20	5	< 10	89	< 10
A18-115	1.48	< 10	< 1	< 0.01	< 10	0.03	0.021	0.018	< 0.01	< 2	2	245	0.05	< 20	< 1	< 10	88	< 10
A18-116	0.33	< 10	< 1	< 0.01	< 10	< 0.01	0.021	< 0.001	< 0.01	< 2	< 1	4	< 0.01	< 20	4	< 10	< 1	< 10
A18-117	0.34	< 10	< 1	0.01	< 10	< 0.01	0.021	< 0.001	< 0.01	< 2	< 1	1	< 0.01	< 20	16	< 10	1	< 10
A18-118	2.33	< 10	< 1	0.02	< 10	0.75	0.021	0.083	1.14	< 2	9	380	0.31	< 20	9	< 10	127	< 10
A18-119	2.28	< 10	1	0.08	< 10	0.74	0.023	0.083	0.12	2	7	386	0.4	< 20	9	< 10	109	< 10
A18-120	0.75	< 10	2	0.05	< 10	0.37	0.017	0.003	< 0.01	< 2	< 1	245	< 0.01	< 20	< 1	< 10	3	< 10
KMT18201	2.74	< 10	3	0.08	< 10	0.85	0.095	0.056	< 0.01	< 2	11	98	0.26	< 20	8	< 10	80	< 10
KMT18202	1.79	< 10	< 1	0.04	< 10	0.35	0.104	0.02	< 0.01	< 2	8	33	0.19	< 20	7	< 10	41	< 10
KMT18203	4.07	10	< 1	0.13	< 10	1.22	0.046	0.074	< 0.01	< 2	13	124	0.25	< 20	9	< 10	89	< 10
KMT18204	4.59	< 10	< 1	0.04	11	0.27	0.078	0.147	< 0.01	< 2	9	11	0.09	< 20	< 1	< 10	146	< 10
KMT18205	3.47	< 10	< 1	0.14	< 10	0.61	0.096	0.05	< 0.01	< 2	10	44	0.04	< 20	4	< 10	112	< 10
KMT18206	1.41	< 10	< 1	0.22	< 10	0.07	0.049	0.021	< 0.01	< 2	3	13	< 0.01	< 20	2	< 10	43	< 10
KMT18207	3.67	< 10	< 1	0.16	< 10	0.43	0.072	0.108	< 0.01	2	9	43	0.04	< 20	< 1	< 10	123	< 10
KMT18208	7.8	10	3	0.13	19	1.74	0.08	0.1	< 0.01	2	19	35	0.36	< 20	10	< 10	258	< 10
KMT18209	3.5	20	< 1	0.04	< 10	0.68	0.046	0.096	< 0.01	< 2	8	35	0.25	< 20	6	< 10	293	< 10
KMT18210	6.63	10	1	0.18	< 10	3.78	0.169	0.084	0.09	3	23	82	0.39	< 20	10	< 10	225	< 10
KMT18211	7.07	10	< 1	0.08	< 10	2.87	0.135	0.138	< 0.01	3	17	64	0.45	< 20	3	< 10	298	< 10

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Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
KMT18212	< 5	< 0.2	< 0.5	84	1360	< 1	3	2	39	1.23	< 2	< 10	28	< 0.5	< 2	> 10.0	8	3
KMT18213	< 5	< 0.2	< 0.5	34	1180	< 1	40	< 2	188	1.13	< 2	< 10	16	< 0.5	< 2	0.97	21	61
KMT18214	9	< 0.2	< 0.5	158	2030	< 1	29	3	298	2.64	< 2	< 10	31	< 0.5	< 2	2.11	20	41
KMT18215	< 5	< 0.2	< 0.5	10	1040	< 1	31	7	166	0.87	12	< 10	49	< 0.5	< 2	1.04	26	32
KMT18216	5	< 0.2	< 0.5	11	776	< 1	6	3	56	0.35	< 2	< 10	29	< 0.5	2	1.13	10	6
KMT18217	8	0.3	< 0.5	116	584	< 1	11	4	43	1.75	< 2	< 10	33	< 0.5	2	2.36	9	14
KMT18218	9	< 0.2	< 0.5	308	1520	< 1	23	9	105	1.38	< 2	< 10	74	< 0.5	< 2	2.98	14	12
KMT18219	< 5	< 0.2	< 0.5	144	850	< 1	5	< 2	79	0.53	< 2	< 10	65	< 0.5	< 2	1.05	11	6
KMT18220	< 5	< 0.2	< 0.5	31	702	< 1	9	3	42	1.7	6	< 10	75	< 0.5	< 2	0.2	14	9
KMT18221	< 5	< 0.2	< 0.5	8	281	< 1	3	12	56	0.76	< 2	< 10	53	< 0.5	< 2	0.06	5	10
KMT18222	7	< 0.2	< 0.5	78	612	< 1	12	4	77	0.98	3	< 10	32	< 0.5	< 2	0.29	11	10
KMT18223	10	< 0.2	< 0.5	125	840	< 1	26	3	109	1.86	< 2	< 10	48	< 0.5	5	0.53	17	16
KMT18224	36	1.4	< 0.5	31	375	105	12	26	38	1.49	9	< 10	467	< 0.5	2	0.14	9	12
KMT18225	5	< 0.2	< 0.5	507	1030	< 1	17	< 2	75	3.35	3	< 10	323	0.5	< 2	1.54	17	11
KMT18226	17	< 0.2	< 0.5	55	1020	< 1	13	3	59	1.84	2	< 10	165	< 0.5	< 2	8.08	13	11
KMT18227	19	3.5	< 0.5	3050	582	< 1	20	3	51	2.07	< 2	< 10	231	< 0.5	< 2	1.17	14	13
KMT18228	404	0.3	< 0.5	615	921	< 1	39	< 2	95	3.44	< 2	< 10	79	< 0.5	< 2	2.37	27	20
KMT18229	26	0.2	< 0.5	1160	476	< 1	19	4	47	2.04	< 2	< 10	54	< 0.5	< 2	0.86	13	27
KMT18230	< 5	< 0.2	< 0.5	10	882	< 1	2	4	6	3.63	4	< 10	18	< 0.5	< 2	4.68	2	6
KMT18231	< 5	0.4	< 0.5	1030	886	< 1	26	4	52	2.83	< 2	< 10	25	< 0.5	3	3.32	14	38
KMT18232	752	3	< 0.5	7830	1000	< 1	29	< 2	69	3.41	< 2	< 10	129	< 0.5	8	3	24	45
KMT18233	< 5	< 0.2	< 0.5	245	882	< 1	17	< 2	126	4.31	< 2	< 10	20	0.6	< 2	4.04	18	11
KMT18234	< 5	< 0.2	< 0.5	10	538	< 1	< 1	5	5	4.21	7	< 10	3390	0.6	< 2	3.93	2	10
KMT18235	< 5	< 0.2	< 0.5	147	729	< 1	41	4	75	4.26	< 2	< 10	41	< 0.5	< 2	5.64	18	63
KMT18236	< 5	< 0.2	< 0.5	14	555	< 1	17	< 2	65	3.31	< 2	< 10	3130	< 0.5	< 2	2.61	14	35
KMT18237	< 5	< 0.2	< 0.5	2	543	2	< 1	12	44	1.94	52	< 10	121	0.8	< 2	1.09	< 1	1
KMT18238	< 5	< 0.2	< 0.5	5	886	< 1	5	9	73	0.54	6	< 10	927	< 0.5	< 2	0.81	2	3
KMT18239	< 5	< 0.2	< 0.5	6	2460	< 1	3	8	169	0.9	2	< 10	57	< 0.5	4	1.22	17	6
KMT18240	< 5	< 0.2	< 0.5	18	169	< 1	< 1	< 2	18	0.61	< 2	< 10	33	< 0.5	< 2	0.03	2	3
KMT18241	< 5	< 0.2	< 0.5	7	2690	< 1	3	3	89	0.74	2	< 10	996	< 0.5	8	4.84	7	3

**Final Report**  
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Report Date: 13/9/2018

Analyte Symbol	Fe	Ga	Hg	K	La	Mg	Na	P	S	Sb	Sc	Sr	Ti	Th	Te	U	V	W
Unit Symbol	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.01	10	1	0.01	10	0.01	0.001	0.001	0.01	2	1	1	0.01	20	1	10	1	10
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
KMT18212	2.91	< 10	1	0.13	< 10	0.77	0.024	0.065	< 0.01	< 2	5	146	0.13	< 20	< 1	< 10	96	< 10
KMT18213	4.82	< 10	< 1	0.03	< 10	1.71	0.103	0.092	< 0.01	< 2	13	11	0.43	< 20	7	< 10	154	< 10
KMT18214	4.18	10	< 1	0.02	< 10	2.96	0.082	0.069	< 0.01	4	14	14	0.31	< 20	5	< 10	248	< 10
KMT18215	6.52	< 10	< 1	0.04	< 10	1.55	0.147	0.093	< 0.01	3	20	20	0.52	< 20	9	< 10	90	< 10
KMT18216	3.61	< 10	< 1	0.1	< 10	0.6	0.104	0.052	< 0.01	< 2	9	64	0.06	< 20	3	< 10	82	< 10
KMT18217	2.78	< 10	< 1	0.06	< 10	0.05	0.058	0.035	< 0.01	2	5	22	0.03	< 20	< 1	< 10	173	< 10
KMT18218	3.13	< 10	< 1	0.08	< 10	2.03	0.075	0.041	0.03	< 2	7	63	0.01	< 20	1	< 10	93	< 10
KMT18219	3.4	< 10	< 1	0.11	< 10	0.44	0.08	0.053	< 0.01	< 2	6	33	0.02	< 20	3	< 10	117	< 10
KMT18220	4.8	< 10	< 1	0.47	< 10	0.29	0.068	0.087	< 0.01	< 2	9	19	0.05	< 20	< 1	< 10	96	< 10
KMT18221	1.69	< 10	< 1	0.05	< 10	0.47	0.084	0.037	0.07	< 2	4	3	< 0.01	< 20	< 1	< 10	53	< 10
KMT18222	2.32	< 10	< 1	0.04	< 10	0.24	0.075	0.042	0.49	< 2	6	5	< 0.01	< 20	< 1	< 10	56	< 10
KMT18223	3.54	< 10	< 1	0.02	< 10	1.24	0.108	0.065	0.24	< 2	7	6	0.01	< 20	< 1	< 10	100	< 10
KMT18224	2.77	< 10	< 1	0.23	< 10	0.69	0.027	0.034	0.1	< 2	3	21	0.08	< 20	3	< 10	65	< 10
KMT18225	4.67	10	< 1	0.28	12	2.38	0.047	0.096	< 0.01	< 2	10	24	0.02	< 20	< 1	< 10	116	< 10
KMT18226	4.07	< 10	< 1	0.12	< 10	2.88	0.026	0.053	0.07	< 2	10	119	< 0.01	< 20	5	< 10	95	< 10
KMT18227	2.47	< 10	< 1	0.37	< 10	1.16	0.039	0.065	0.03	< 2	6	57	0.18	< 20	3	< 10	66	< 10
KMT18228	4.19	< 10	< 1	0.3	< 10	2.84	0.036	0.118	< 0.01	< 2	9	58	0.37	< 20	5	< 10	153	< 10
KMT18229	2.81	< 10	< 1	0.36	< 10	0.93	0.026	0.057	0.03	< 2	5	83	0.24	< 20	4	< 10	114	< 10
KMT18230	1.65	< 10	< 1	0.05	< 10	0.05	0.179	0.07	< 0.01	< 2	6	373	0.26	< 20	8	< 10	55	< 10
KMT18231	3.03	< 10	< 1	0.02	< 10	1.61	0.064	0.053	0.01	< 2	9	228	0.31	< 20	8	< 10	152	< 10
KMT18232	2.99	< 10	< 1	0.15	< 10	2.1	0.055	0.083	0.16	< 2	11	269	0.45	< 20	7	< 10	123	< 10
KMT18233	4.2	10	< 1	0.04	< 10	1.97	0.079	0.103	< 0.01	2	9	57	0.36	< 20	4	< 10	160	< 10
KMT18234	1.27	< 10	< 1	0.03	< 10	0.06	0.234	0.046	< 0.01	< 2	3	422	0.18	< 20	5	< 10	48	< 10
KMT18235	3.33	< 10	< 1	< 0.01	< 10	1.71	0.027	0.054	< 0.01	< 2	7	174	0.27	< 20	9	< 10	195	< 10
KMT18236	2.03	< 10	< 1	0.02	< 10	1.43	0.11	0.053	< 0.01	< 2	5	299	0.22	< 20	< 1	< 10	68	< 10
KMT18237	0.97	< 10	2	0.51	20	0.14	0.033	0.011	< 0.01	< 2	6	88	0.08	< 20	5	< 10	14	< 10
KMT18238	1.39	< 10	< 1	0.18	16	0.09	0.089	0.016	0.02	< 2	4	42	0.03	< 20	< 1	< 10	9	< 10
KMT18239	6.52	< 10	< 1	0.02	< 10	1.36	0.107	0.087	< 0.01	< 2	27	11	0.5	< 20	12	< 10	159	< 10
KMT18240	0.74	< 10	< 1	0.2	15	0.04	0.07	0.011	< 0.01	< 2	1	6	< 0.01	< 20	< 1	< 10	12	< 10
KMT18241	1.89	< 10	< 1	0.25	< 10	1.67	0.075	0.024	0.03	< 2	4	174	0.01	< 20	2	< 10	19	< 10

**APPENDIX III**

**PETROGRAPHIC REPORT**

# **PETROGRAPHIC REPORT TREASURE MOUNTAIN PROPERTY**

**Report for:  
Decade Resources  
Stewart, BC**

September 25, 2018

**Report by:  
Alojzy A. Walus, P. Geo  
Surrey, BC**

## **SUMMARY AND CONCLUSIONS**

This report is based on microscopic examination of 9 thin and 5 polished thin sections derived from different parts of Treasure Mountain property. Seven samples were stained with sodium cobaltinitrite for easy K-feldspar identification.

Mineralized samples collected from DF zone were identified as basalt (samples A18-319 and 322) and andesite or andesite tuff (sample A-18-321). They contain chalcopyrite, covellite and bornite. Part of these minerals were converted to goethite and malachite. Copper sulphides are associated with quartz and chlorite.

Mineralized samples collected from Clore River area (samples A18-55, 100, 140 and KMT-1833) were identified as basalt. Copper minerals present in these samples we identified as covellite and malachite. They are mostly associated with quartz and in sample A18-55 carbonate. Sample KMT-1818 which returned 0.44% is a quartz-epidote replaced rock.

Mineralized float sample KMT-1875 collected in the Trail Showing area was identified as massive basalt. The sample contains 2-3 % bornite associated with quartz.

Sample A18-450 is a quartz-epidote replaced flow (?)

Respectfully Submitted  
Alojzy A. Walus



# MICROSCOPIC DESCRIPTIONS

## Samples from Clore River area

### **Sample 55, Silicified basalt flow, minor covellite.**

<u>Mineral Composition:</u>			
Plagioclase phenocrysts	7-10%	Epidote	3-5%
Plagioclase (groundmass)	40-50%	Sericite	0.5-1.0%
Quartz (secondary)	25-30%	Covellite	<0.5%
Carbonate	7-10%	Malachite	<0.5%
Opaque	10-15%		

The sample consists of 7-10% plagioclase phenocrysts 0.2 to 1.0 mm in size set in a fine-grained groundmass dominated by plagioclase. Plagioclase phenocrysts are weakly to moderately clay altered. Quartz forms patches comprised of mosaic of anhedral grains. Most of quartz along with part of carbonate fill numerous vesicles in basalt. The remaining carbonate forms large irregular patches up to 2.0 mm across. Epidote form anhedral to subhedral grains up to 0.7 cm in size concentrated in one irregular patch 1.2 cm across. Covellite forms several small grains 0.02 to 0.07 mm across associated with malachite and carbonate.

### **Sample 100, Plagioclase porphyritic basalt.**

<u>Mineral Composition:</u>	
Plagioclase phenocrysts	7-10%
Plagioclase (groundmass)	70-80%
Carbonate	2-3%
Sericite	0.5-1.0%
Opaque	10-15%

The sample consists of 7-10% plagioclase phenocrysts set in a extremely fine-grained groundmass dominated by plagioclase. Plagioclase phenocrysts are weakly to moderately sericite and clay altered. Carbonate forms discontinuous veins and patches. Opaque form numerous tiny grains and patches scattered throughout the sample.

### **Sample 106, Plagioclase porphyritic diabase (diabase porphyry)**

<u>Mineral Composition:</u>	
Plagioclase (phenocrysts)	25-30%
Plagioclase (groundmass)	60-65%
Chlorite	10-15%
Sericite	1-2%
Zeolites	0.5-1.0%
Opaque	10-15%

The sample consists of plagioclase phenocrysts 3 to 8 mm long set in a groundmass dominated by smaller plagioclase laths 0.05 to 0.2 mm long. All plagioclase crystals are weakly to moderately sericite lesser clay altered. Locally, the rock displays ophitic texture with opaque minerals and chlorite occurring in interstices between plagioclase laths. Part of chlorite replaces grains of primary mafic minerals forming homogenous chlorite pseudomorphs ranging in size from 0.2 to 0.4 mm across. The remainder of chlorite forms irregular patches up to 1.5 mm across composed of extremely fine grained crystals. The rock contains a few miarolitic cavities ranging in size from 0.5 to 3.0 mm filled with zeolites and chlorite.

**Sample 140, Silicified basalt flow, trace covellite and malachite.**

Mineral Composition:

Plagioclase phenocrysts	5-7%
Plagioclase (groundmass)	45-50%
Quartz (secondary)	15-20%
Chlorite	5-7%
Epidote	2-3%
Covellite	1 small patch
Malachite	1 small patch
Opaque	15-20%

The sample consists of 5-7% plagioclase phenocrysts 0.2 to 1.0 mm in size set in a fine-grained groundmass composed of plagioclase and opaque. Plagioclase phenocrysts are weakly to moderately sericite and clay altered. The rock contains numerous vesicles filled with quartz chlorite and epidote. Opaque form numerous tiny grains and patches scattered throughout the sample. Tiny grains of hematite comprise large part of opaque minerals. Covellite forms one patch 0.3 mm across associated with concentration of malachite.

**Sample KMT 1818, Epidote-quartz replaced rock**

Mineral composition:

Epidote	65-70%
Quartz	30-35%
Chalcedony	2-3%
Opaque	2-3%

The sample consists of intercalated crystals of epidote and quartz.

**Sample KMT 1833, Strongly silicified basalt flow**

Mineral composition:

Plagioclase phenocrysts	2-3%
Plagioclase groundmass	25-30%

Secondary quartz	50-60%
Opaque	10-15%

The rock contains very irregular patches of primary basalt which comprise 40-45% of the sample. The basalt consists of moderately clay altered plagioclase phenocrysts 0.2 to 0.7 mm in size, which comprise 2-3% of the sample. They are set in a groundmass dominated by plagioclase laths 0.03 to 0.05 mm long. The groundmass also contains abundant opaque minerals. The primary basalt was in large part replaced by quartz which forms irregular patches composed of anhedral grain ranging in size from 0.03 to 0.3 mm. Some of the smaller patches represent quartz filled vesicles in basalt.

**Sample KMT 1898, Plagioclase porphyritic andesite**

Mineral composition:

Plagioclase phenocrysts	50-60%
Plagioclase (groundmass)	30-40%
Chlorite	5-10%
Epidote	2-3%
Carbonates	2-3%
Opaque	3-5%

The rock display typical seriate texture with size of plagioclase phenocrysts ranging from 0.2 to 2.0 mm. They are weakly to moderately clay altered, some grains are partly replaced by carbonates and epidote. The phenocrysts are set in a fine grained plagioclase dominated groundmass. Plagioclase in groundmass are from 0.02 to 0.05 mm long. Chlorite forms irregular patches up to 2.0 mm across, some larger patches contains also carbonate. Opaque minerals form particles ranging from dust size to grains 0.4 mm across.

**Samples from DF zone**

**Sample 319; Basalt flow, minor chalcopyrite and malachite, weak biotite hornfels.**

Mineral Composition:

Plagioclase phenocrysts	1-2%	Secondary biotite	2-3%
Groundmass	70-75%	Chlorite	1-2%
Quartz	10-15%	Malachite	1-2%
Opaque	10-15%	Chalcopyrite	0.2-0.5%
Goethite	1-2%		

The rock contains 1-2% plagioclase phenocrysts ranging in size from 0.3 to 1.5 mm. The phenocrysts are set in fine grained groundmass dominated by plagioclase laths ranging in length from 0.03 to 0.05 mm. The groundmass also contains 10-15 % fine grained opaque minerals. Tiny grains of hematite comprise large part of opaque minerals. The sample contains 10-15% amygdules ranging in size from 0.2 to 3.0 mm. They are filled mostly with quartz with lesser

chlorite and malachite. The rock is cut by several veins 0.02 to 1.0 mm wide composed of quartz, chlorite and malachite. Part of malachite occurs as intensely green elongated crystals which form radiating aggregates. Chalcopyrite forms patches ranging in size from 0.05 to 0.4 mm in size associated with quartz and chlorite. Part of chalcopyrite was altered to goethite and malachite. The rock contains 2-3% secondary biotite which originated during hornfels formation.

**Sample 321, Silicified andesite or andesite crystal tuff with minor bornite, covellite and chalcopyrite; incipient biotite hornfels.**

<u>Mineral Composition:</u>			
Plagioclase phenocrysts	7-10%	Secondary biotite	0.5-1.0%
Groundmass	70-75%	Opaque	10-15%
Quartz (secondary)	10-15%	Bornite	0.5-1.0%
Chlorite	5-7%	Covellite	0.5-1.0%
Epidote	3-5%	Chalcopyrite	<0.1%
		Pyrite	<0.1%

The rock contains 7-10% plagioclase phenocrysts ranging in size from 0.1 to 1.0 mm. They are moderately to strongly kaolinized. The phenocrysts are set in fine grained groundmass dominated by plagioclase with lesser quartz and epidote. Quartz comprising the groundmass is secondary, it forms very fine grained, anhedral interlocking grains. Epidote form small grains 0.01 to 0.03 mm scattered throughout the rock. Some of plagioclase phenocrysts are to various degree replaced by groundmass. Bornite and covellite form very irregular patches and veins associated with quartz. Covellite formed replacing part of bornite. Chalcopyrite and pyrite form several small grains 0.02-0.04 mm across. Secondary biotite forms diffused patched 0.1 0.3 mm across comprised of extremely fine grained crystals. Biotite originated due to incipient hornfels formation.

**Sample 322, Feldspar porphyritic basalt, trace chalcopyrite**

<u>Mineral Composition:</u>	
Plagioclase phenocrysts	5-7%
Groundmass	80-85%
Chlorite	2-3%
Opaque	10-15%
Quartz	2-3%
Goethite	0.5-1.0%
Chalcopyrite	<0.1%

The rock contains 5-7% plagioclase phenocrysts 1-2 mm in size which are kaolinized and to much lesser degree sericitized and chloritized. The sample also contain 2-3% remnants of mafic phenocrysts 0.5-1.0 mm in size which are completely replaced by chlorite and opaque minerals. The phenocrysts are set in extremely fine grained groundmass composed of plagioclase and possibly secondary quartz. Precise mineral composition of the groundmass can not be established due to small size of grains and the presence of abundant dusty opaque. The rock is cut by several

veins 0,1 to 1.0 mm wide composed of mosaic of anhedral quartz grains. The sample contains several small grains of chalcopyrite 0.02 to 0.05 mm across. They are associated with quartz and chlorite. Part of chalcopyrite was replaced by goethite.

**Sample SW-BA, Plagioclase porphyritic diabase (diabase porphyry)**

Mineral Composition:

Plagioclase (phenocrysts)	15-20%
Plagioclase (groundmass)	70-75%
Chlorite	3-5%
Carbonate	1-2%
Zeolites	1-2%
Quartz (secondary)	1-2%
Sericite	1-2%
Goethite pseudomorphs	7-10%
Opaque	7-10%

The sample consists of plagioclase phenocrysts 0.7 to 1.8 cm long set in a groundmass dominated by smaller plagioclase laths 0.2 to 0.4 mm long. All plagioclase crystals are weakly to moderately clay and sericite altered. The rocks often displays ophitic texture with opaque minerals occurring in interstices between plagioclase laths instead of pyroxene. The rock contains 5-7% miarolitic cavities ranging in size from 1 to 10 mm filled with chlorite, carbonate, zeolites and quartz. Zeolites form fibrous, radiating aggregates. The sample contains 7-10% goethite pseudomorphs after pyrite.

**Samples from Trail Showing area**

**Sample KMT 1875, Silicified basalt with copper mineralization**

Mineral composition:

Plagioclase	60-65%
Quartz (secondary)	25-30%
Chlorite	10-15%
Epidote	2-3%
Opaque minerals	3-5%
Bornite	2-3%
Malachite	<0.5%

The primary rock is a massive basalt composed of fine grained plagioclase crystals ranging in length from 0.02 to 0.08 mm. No primary mafic minerals were noted. The primary rock is in large part replaced by quartz, chlorite and epidote, and bornite. Quartz forms veins and patches comprised of anhedral grains ranging in size from 0.2 to 2.0 mm in size. Bornite form numerous grains and patches ranging in size from 0.02 to 2.0 mm across. Some of them are associated with quartz filling interstices between quartz crystals but most are scattered within basalt.

### **Sample KMT 1877, Plagioclase porphyritic diabase (diabase porphyry)**

#### Mineral Composition:

Plagioclase (phenocrysts)	25-30%
Plagioclase (groundmass)	60-65%
Carbonate	3-5%
Fuchsite ?	2-3%
Sericite	1-2%
Quartz	1-2%
Opaque	10-15%

The rock display typical seriate texture with size of plagioclase phenocrysts ranging from 0.2 to 7.0 mm. They are moderately sericite and clay altered. The phenocrysts are set in a fine-grained groundmass dominated by plagioclase. The length of plagioclase grains in groundmass averages 0.1 to 0.2 mm. Locally, the rock displays ophitic texture with opaque minerals occurring in interstices between plagioclase laths. The rock contains several miarolitic cavities ranging in size from 0.5 to 3.0 mm filled with carbonates, fuchsite (?), sericite, and quartz.

### **Samples from other areas**

#### **Sample 450, Quartz-epidote replaced flow (?)**

#### Mineral Composition:

Plagioclase	3-5%
Quartz (secondary)	50-60%
Carbonate	0.5%
Epidote	40-50%
Chlorite	2-3%
Opaque	3-5%

Due to very strong alteration the primary rock cannot be determined. Some of quartz patches resemble infilled vesicles indicating the primary rock was a flow. The sample contains 3-5% of moderately to strongly altered plagioclase crystals. They most likely represent remnants of primary rock. The primary rock was replaced by mosaic of intimately intergrown quartz, epidote and chlorite.