YUKON MINING EXPLORATION PROGRAM 2015
Report on the

STU PROPERTY
TARGET EVALUATION 15-065

STU 1-132: YC37770-795, YC40249-276, YC40201-218, YC65256-315
HOO 1-28, 35-46: YF20773-800, 46387-398
CHE 1-30: YF46357-380, 401- 406
KOO 1-12, 21-44, 47-58: YF46501-512, 521-544, 547-558
WC 1-72: YF20701-772
WCF 1-11: YF46407-417
LED 1-5, 9-16: YE1088-100
PEANUT 1-12, 17-28: YE10064-87

Near Carmacks, Yukon
NTS 115I07
Whitehorse Mining District

62° 24’ N and 136° 47’ W

Prepared for:
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1 SUMMARY

This report describes a two part field exploration program completed on the STU property in 2015. The report was prepared to satisfy requirements for Assessment Report filing by the Yukon Mining Recorder, Ministry of Energy, Mines and Resources, Government of Yukon. The work was carried out by Midnight Mining Services Ltd. and funded by Bill Harris, with financial assistance from the Yukon Minerals Exploration Program (YMEP Target Evaluation 15-065). The program consisted of mechanized and hand trenching, rehabilitation of old core, road and trail clearing, camp construction, trench sampling, collection of XRF data on trenches, staking, prospecting, reconnaissance mapping and sampling. Work was done on claims STU 1, 3,5,7,29,31,33,35,36,38 KOO 18, 20, WC 7,8,17,18,39 and WCF 7 and 8.

The STU Property (the "Property") is located approximately 47 km directly northeast of Carmacks, Yukon and 210 km directly northwest of Whitehorse, the capital of the Yukon Territory. The Property consists of 376 contiguous claims which cover approximately 7638 hectares. The claims are registered to or in the process of being transferred to Bill Harris and are located in the Whitehorse Mining District. The claims are in good standing. The centre of the property is located at latitude 62° 23' 38" N and 136° 47' 30" W longitude on NTS map sheet 115I07. Vehicle access to the STU project is along gravel and dirt road and trails from the village of Carmacks, which is a 1.75 hour drive along paved public highways from Whitehorse.

Intensive exploration in the vicinity of the STU property started in the late 1960s following discovery of the Casino porphyry copper deposit in the Dawson Range, 100 km northwest of the STU property. Prior to this time, copper showings had been staked close to the Yukon River in the late 1890s. Following the Casino discovery a staking rush in the area found the Williams Creek (now Carmacks Copper) and Minto properties in 1970. The STU claims were worked aggressively from 1971 to 1982 and in 1989. Unfortunately most of the vital trenching and drilling results from this time period are not available.

The Carmacks Copper Belt is a 180km long by 60 km wide belt of intrusion hosted Cu-Au-Ag mineralization in the Dawson Range. Centered on the Minto Mine the belt extends from north of the Yukon/Pelly River confluence southeast to the community of Carmacks. The occurrences are hosted in, or close to the contacts of, intermediate to felsic intrusive and meta-intrusive rocks of the Early Jurassic Minto Suite. Minto Suite members the Granite Mountain Batholith (GMB) and the Minto Pluton host the Minto, STU and Carmacks Copper occurrences. On the STU property the GMB is the dominant rock type. It is cut by aplite, microganite and pegmatite dykes and contains lenses of foliated to gneissic quartz-feldspar-hornblende-biotite granodiorite which contain most of the mineralization. The foliation strikes northwest and dips from moderate to steep to the southwest or northeast.

Copper mineralization is contained in the foliated to gneissic granodiorite, probably formed as shear zones, similar to the Minto mine and the Carmacks Copper deposit. There are 3 trenched and drilled zones of mineralization on the northern part of the property and showings and anomalies on the southern part of the claim block. Copper sulphides occur within the foliated

granodiorite and gneiss where they replace mafic minerals. Copper oxides have in turn replaced the copper sulphides where the mineralization has been exposed to oxidation. The highest gold and silver values are associated with bornite-rich sections.

The deposit type at the STU is a variation of that seen at Minto and Carmacks Copper although there is no agreement on the classification for those deposits. The deposits formed at crustal levels deeper than 20 km, there is a strong structural control on mineralization and the deposits are a variant of the porphyry model.

Approximately 4000m of core from the 1980 diamond drilling program at Zone A was rehabilitated. Three holes were relogged, one was resampled, and historic sections were digitized to produce a drill database combining historic and new information. Further relogging and sampling of old holes will improve the database, but it has been used to create new sections and a simple 3D model of Zone A. There are at least 4 mineralized zones dipping 30-40^{o} to the northeast. Values in drillholes seem to be higher than surface values in trenches. The longest body is at least 200m long from north to south, extends 80m downdip and ranges in width from 10-15m. Other mineralized bodies have an interpreted downdip extent of 85 to 160m and range in thickness from 2 to 20m wide. The deepest intersection is at 550m elevation, 380m below surface. Copper grades of 2.8 to 3.5% analysed over 12 to 14m widths in drill core equate to surface grades less than 0.4% over similar widths. Oxidation (malachite vs bornite and chalcopyrite) increases southwards, but holes are shallower here (not reaching below 800m elevation) and did not get below oxidation.

The 2015 program on the STU claims has advanced the project to the next stage which is drilling. Further work is recommended and a two phase program costing $600,000 is laid out. If funding and market conditions do not allow for drilling, then phase 1 alone will move the project ahead and prepare it for drilling.

There are multiple exploration targets on the STU project and depending on the time and budget available they can be advanced separately or simultaneously. Drilling and trenching are the main activities in the proposed program, but early stage exploration outside the main zones is also recommended.

More old trenches should be cleared of overburden and deepened or extended where required. Systematic chip sampling, geological mapping and magnetic susceptibility measurements should be carried out. A 2007 assessment report (Casselman) contains a compilation of historic geophysics on the Williams Creek/Carmacks Copper property, covering the STU project. This information should be reviewed by a geophysicist and geologist to determine geophysical responses over known zones and that response used to search for new targets. Following extraction of information from previous surveys, more ground geophysics may be required.

2 INTRODUCTION

This report describes a two part field exploration program completed on the STU property in 2015. The report was prepared to satisfy requirements for Assessment Report filing by the Yukon Mining Recorder, Ministry of Energy, Mines and Resources, Government of Yukon. The work was carried out by Midnight Mining Services Ltd. and funded by Bill Harris, with financial assistance from the Yukon Minerals Exploration Program (YMEP Target Evaluation 15-065).

This report is based on the writer's observations collected during a field program on the STU property, observations and information collected by other geologists and technicians during the program, and information from previous reports and publications listed under References. In the preparation of this report, the author used Government of Yukon and Government of Canada geological maps, geological reports, and claim maps as well as the mineral assessment work reports from the Carmacks Copper Belt area that have been filed with the Yukon Mining Recorder by various companies. The history of exploration and historic exploration results on the STU claims portion of the STU Property were discussed in a 2013 assessment report by this author. The same material will not be covered in such detail in this report, but is incorporated and compared with new results and findings. The results of historic exploration and reports from other operators will be relied upon in the sections about the HOO, CHE, KOO, WC and WCF claims which were staked in 2014 and added to STU project.

The author reserves the right, but will not be obliged, to revise the report and conclusions if additional information becomes known subsequent to the date of this report.

2.1 UNITS AND MEASUREMENTS

g	Grams
kg	Kilograms
g/t	Grams per metric tonne
oz	Troy ounces
oz/st	Ounces per short tonne
ppb	Parts per billion
ppm	Parts per million
st	Short ton
t	Metric tonne

mm	Millimeters
m	Meters
km	Kilometers
ha	Hectares
‘	Feet
‘’	Inch

°C	Celsius Degree
$	Canadian Dollars

1 oz (troy)	=	31.103	g
1 oz (troy)/st	=	34.286	g/t
1 pound (lb)	=	0.454	kg
1 pound (lb)	=	1.215	troy pound
1 short ton	=	0.907	t
1 g	=	0.03215	oz (troy)

1 short ton = 2000 pounds (lb) = 0.907 tonne
1 pound = 16 oz = 0.454 kg = 14.5833 troy ounces

1 inch	=	2.54	cm
1 foot	=	0.3048	m
1 mile	=	1.6	km
1 ha	=	0.01	km^2

1 square mile = 640 acres = 259 hectares

The information, opinions, and conclusions contained herein are based on:

- Information available to the author at the time of preparation of this report;
- Field data collected by the author and other qualified individuals supervised by the author or working independently.
- Assumptions, conditions, and qualifications as set forth in this report; and
- Data, reports, and other information supplied by Bill Harris and other third party sources.

3 PROPERTY DESCRIPTION AND LOCATION

The STU Property (the “Property”) is located approximately 47 km directly northeast of Carmacks, Yukon and 210 km directly northwest of Whitehorse, the capital of the Yukon Territory. The Property consists of 376 contiguous claims which cover approximately 7638 hectares (Figure 1).

The claims are registered to or in the process of being transferred to Bill Harris and are located in the Whitehorse Mining District. The claims are in good standing. The centre of the property is located at latitude 62° 23’ 38” N and 136° 47’ 30” W longitude on NTS map sheet 115I07. Claim data is summarized in Table 1, a map showing the claims is presented in Figure 2. The list of claims from the Whitehorse Mining Recorder is attached as Appendix 1.

The northern part of the project, consisting of the STU claims has received considerably more work than the southern HOO, CHE, KOO, WC, WCF, LED and Peanut claims. The term” STU project” is used to describe all 376 claims, the term “STU claims” refers to just the northern part of the project and HOO, CHE, KOO, WC, WCF (HCKW) claims refers to the southern part of the project.

Table 1: Claim Data

Grant Number	Owner	Claim label	No. of claims	Expiry date	New expiry date*
YC37770-779	Bill Harris	STU 1-10	10	Dec 13, 2014	Dec 13, 2020
YC40249-258	Bill Harris	STU 11-20	10	Sep 19, 2015	Dec 13, 2019
YC37788-795	Bill Harris	STU 21-28	8	Jun 21, 2015	Jun 21, 2020
YC40259-260	Bill Harris	STU 29-30	2	Sep 19, 2015	Dec 13, 2019
YC37780-787	Bill Harris	STU 31-38	8	Dec 13, 2014	Dec 13, 2020
YC40261-276	Bill Harris	STU 39-54	16	Sep 19, 2015	Dec 13, 2019

YC40201-218	Bill Harris	STU 55-72	18	Nov 29, 2015	Dec 13, 2019
YC65256-315	Bill Harris	STU 73-132	60	Jul 9, 2015	Jul 9, 2020
YF20773-800, 46387-398	stakers	HOO 1-28, 35-46	40	Jul 29, 2015	Jul 29, 2020
YF46357-380, 401-406	stakers	CHE 1-30	30	Jul 29, 2015	Jul 29, 2020
YF46501-512, 515-544, 547-556	stakers	KOO 1-12, 15-44, 47-58	54	Jul 29, 2015	Jul 29, 2020
YF20701-772	stakers	WC 1-72	72	Jul 29, 2015	Jul 29, 2020
YF46407-417	stakers	WCF 1-11	11	Jul 31, 2015	Jul 31, 2020
YE10088-100	Bill Harris	LED 1-5, 9-16	13	Nov 12, 2016	na
YE10064-87	Bill Harris	PEANUT 1-12, 17-28	24	Nov 12, 2016	na
		TOTAL	**376**		

*not yet finalized

The STU project lies within the traditional territories of the Little Salmon-Carmacks and Selkirk First Nations. Land claims are settled with both nations and Figure 1 shows the location of settlement lands closest to the STU property.

Bill Harris has obtained a five year, Class 3 Mining Land Use Permit (MLU LQ00413) from Mining Land Use, Government of Yukon for the STU claims which is valid until December 11, 2018. A similar permit application has been made for the HOO, CHE, KOO, WC and WCF claims. At time of writing the permit will be granted pending transfer of claims registered to stakers to Bill Harris.

4 ACCESSIBILITY, CLIMATE, PHYSIOGRAPHY, LOCAL RESOURCES & INFRASTRUCTURE

4.1 ACCESS

Vehicle access to the STU project is along gravel and dirt road and trails from the village of Carmacks, which is a 1.75 hour drive along paved public highways from Whitehorse. At Carmacks the government maintained gravel Freegold road leads northwest into the Dawson Range. At 35km along the Freegold road the access road to the Carmacks Project branches off. This Carmacks Project access road is passable for 25 km by 4WD vehicle past the Carmacks Project camp to Hoocheekoo Creek in the middle of the STU property. Cat and ATV trails on the property lead from the access road to zones. The STU property can also be accessed by helicopter from Carmacks. Landing pads have been cleared on the STU claims in the 3 zones.

A camp is located close to Zone A on the STU claims, consisting of a kitchen trailer, outhouse, wooden tent frames and core racks. The camp is accessible by a 4 km ATV trail from the end of the 4WD road near Hoocheekoo Creek. The camp was upgraded for use during the 2015 field program.

4.2 CLIMATE

The Carmacks area has a northern interior climate with warm summers (+20º C), long cold winters (-20º C) and low to moderate precipitation (25-30 cm), most of which falls in summer. Mean annual temperatures are near -4^{o}C. The dry climate leads to frequent forest fires. Snow cover remains from mid-October to mid-April at lower elevations and a month longer at higher elevations. The typical exploration season is from April to October.

4.3 PHYSIOGRAPHY

The property is part of the Yukon Plateau-Central Ecoregion which is characterized by a dry climate and extensive grasslands on south aspect slopes. The west boundary of the ecoregion sits at the limit of Cordilleran Pleistocene glaciation and glacial deposits. Glacial cover was partial, valley glaciers extended along major valleys and tributaries depositing glacial drift on lower slopes and valley bottoms. Colluvium blankets steep slopes and uplands.

The property covers an area bisected by Hoocheekoo Creek within the northeastern edge of the Dawson Range of the Yukon Plateau. Elevations range from a low of 600m in the eastern part of the project up to 1075m in the western portion. Most slopes are gentle except along the north side of Hoocheekoo Creek. North-facing slopes are heavily timbered with black spruce and generally have a thick moss cover. Some north facing slopes and low lying wet areas are covered by dense alder and willow. South facing slopes are better drained and have a cover of poplar or pine. Some parts of the claims have been burnt by forest fires in 1995 and 2004.

Outcrop exposure on the property is <1% with float covering approximately 8%. Large areas of the property are covered by thick overburden and all of the known mineralization is found on hill tops or along ridge slopes where the overburden is thin or absent.

Several small streams flow in broad swampy valleys between 400 m and 800m wide. The streams drain to the northeast and southeast into Hoocheekoo Creek and Nancy Lee Creek, a tributary of Williams Creek. Northerly flowing tributaries of Big Creek drain the northwestern property area.

Figure 1: Regional Location Map

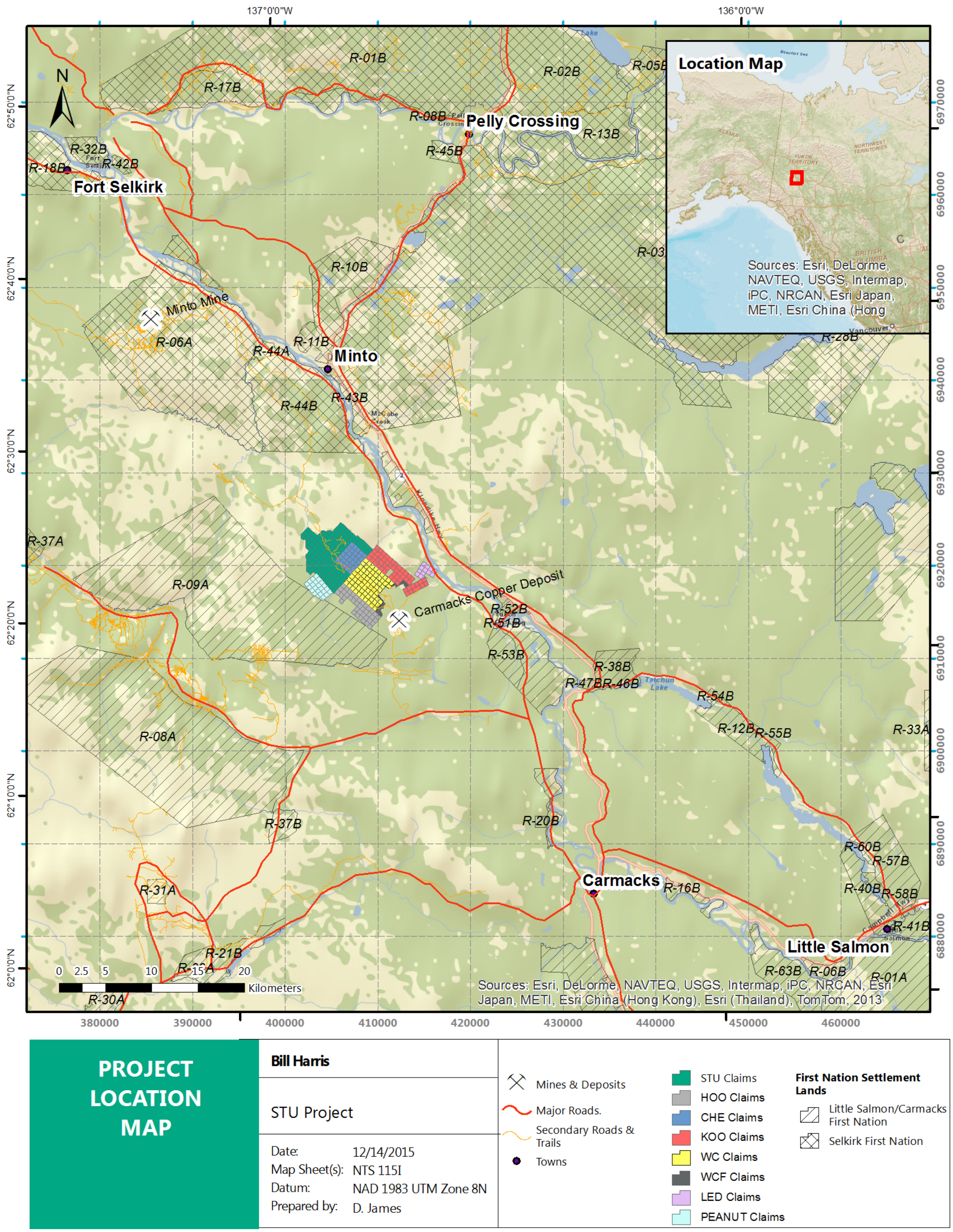
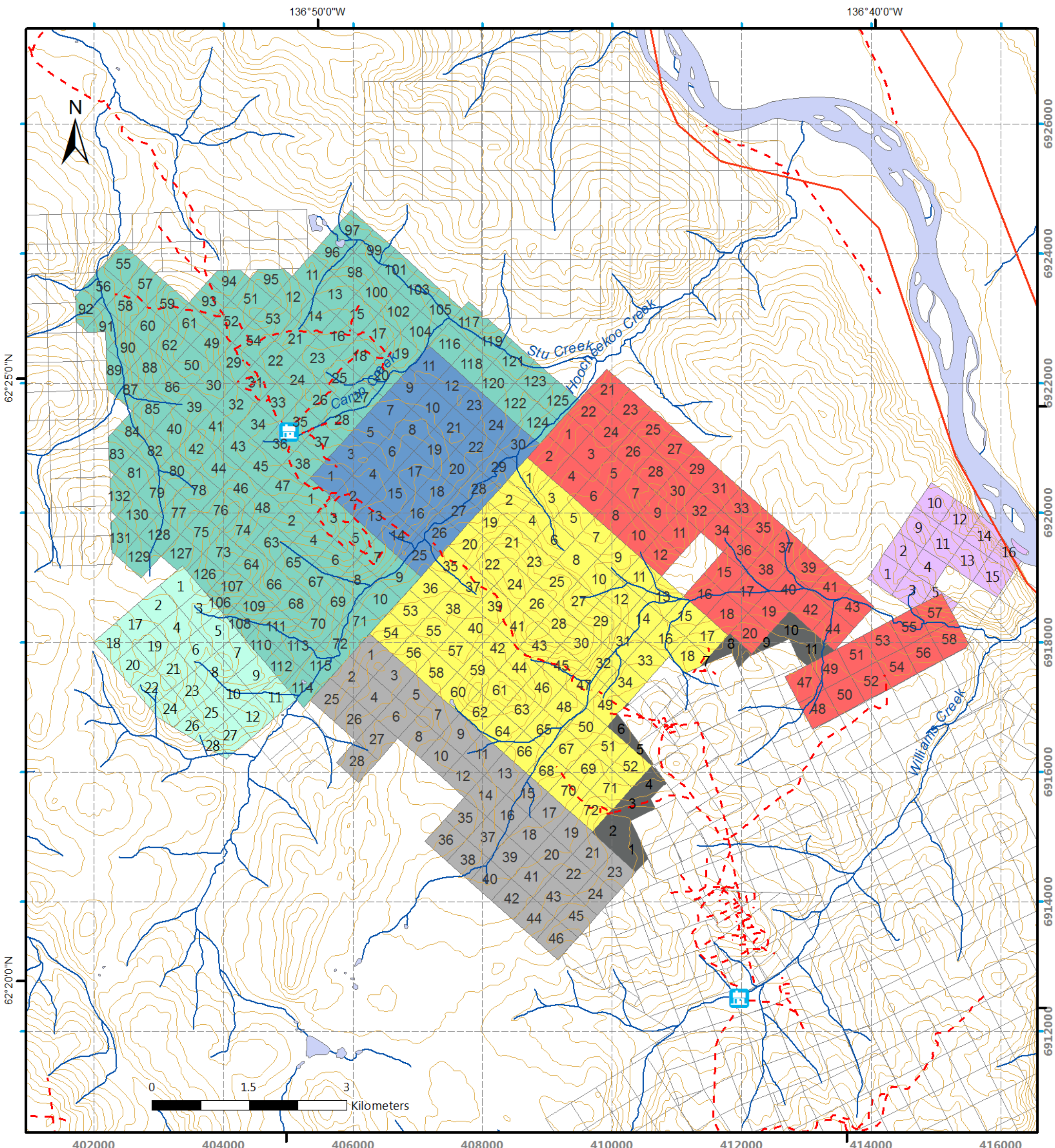


Figure 2: STU Property Claim Map



STU PROJECT CLAIM MAP

Bill Harris

STU Project

Date:	11/27/2015
Map Sheet(s):	NTS 115I07
Datum:	NAD 1983 UTM Zone 8N
Prepared by:	D. James

Legend

- Camp
- Major Roads.
- Secondary Roads & Trails
- creeks
- lakes
- contours
- STU Claims
- HOO Claims
- CHE Claims
- KOO Claims
- WC Claims.
- WCF Claims
- LED Claims
- PEANUT Claims
- Quartz Claims

4.4 LOCAL RESOURCES AND INFRASTRUCTURE

The nearest community to the project area is Carmacks, 60 km by road and trail or 47 km directly. Carmacks is incorporated as a village and covers 37 square kilometres. The economic base is government and services. There is seasonal work in mining and exploration, tourism, firefighting and construction.

Services in the village include:

- Nursing station with doctors' consultations by appointment.
- Tantalus School offering classes for K-12. Yukon College provides GED, upgrading, computer training and occupational courses.
- Recreation Centre with attached curling rink.
- Airport and helicopter within city limits, No scheduled flights.
- Landfill site at south end of town. Recycling services once a week at landfill.
- A community water system, although some residents have private wells, and there is a water delivery service.
- Electricity from the Yukon electrical grid.
- Cell service, internet and telephone available.

Carmacks has a population of 503 people, an increase of 78 people since 2006. The age group distribution is: 0-14, 125 people, 14-64, 345 people and over 65, 35 people. There are 195 private households, 100 of them married or common law families, and 35 are lone parent families. English is the dominant language with a few aboriginal speakers and some French. (All information from Statistics Canada. 2012. GeoSearch 2012).

5 HISTORY

Intensive exploration in the vicinity of the STU property started in the late 1960s following discovery of the Casino porphyry copper deposit in the Dawson Range, 100 km northwest of the STU property. Prior to this time, copper showings had been staked close to the Yukon River in the late 1890s. Following the Casino discovery a staking rush in the area found the Williams Creek (now Carmacks Copper) and Minto properties in 1970. The STU claims were worked aggressively from 1971 to 1982 and in 1989. Unfortunately most of the vital trenching and drilling results from this time period are not available.

The HOO, CHE, KOO, WC, WCF and Peanut claims were worked by United Keno Hills Mines (UKHM) in the 1980s, Western Copper from 1990-2013, and BC Gold from 2006-2012 but have seen little drilling or systematic trenching. The LED claims were staked by Northern Tiger and cover copper bearing vein showings and workings from the early 1900s.

Exploration history and ownership of the STU property and pertinent adjacent properties is summarized below. References to reports on STU work programs are listed.

5.1 CHRONOLOGY

1887

- G.M. Dawson discovers copper at Hoocheekoo Bluff on the Yukon River.

1898

- Claims staked on copper bearing veins in the canyons of Merrice and Williams Creek, near LED and KOO claims.

1917

- Smelter shipment from Bonanza King (near LED and KOO claims) with average grade of 5.26% Cu, 66.9 g/t Ag, 4.4 g/t Au from 5.9 tonnes of ore *(YGS minfile 115I010)*

1960s

- Staking rush in the Dawson Range following discovery of Casino deposit.

1970

- Dawson Range Joint Venture (Straus Exploration Inc., Great Plains Development of Canada, Trojan Consolidated Minerals Ltd., and Molybdenum Corporation of Canada Ltd.) options Williams Creek property which had been staked by G. Wing and A. Arsenault. Discovery of Zones 1 and 2 *(Archer, 1971).*
- Dawson Syndicate (Silver Standard Mines Ltd. And Asarco) carries out stream sediment survey around Minto area.

1971

- Hudson's Bay Oil & Gas Company Ltd. stake Bay claims which cover east side of present day STU claims. Program of line cutting, grid soil sampling and magnetometer survey. *(Burgan and Mitchell, 1971).*
- Extensive exploration including drilling, trenching, road construction, ground geophysics surveys, mapping and sampling on the Williams Creek property. Some of this work is close to the south boundary of the STU claims. After 1971, no significant work was performed on this property until 1990.
- Minto claims staked based on stream sediment anomalies, followed by drilling, sampling, geophysics and hand trenching.
- DEF claims (now part of Minto) staked by United Keno Hill Explorations (United Keno Hill Mines, Falconbridge Nickel and Canadian Superior Explorations. Program of ground geophysics, soil sampling and mapping.

1973

- Main mineralized body found at Minto.

1974

- Hudson's Bay completed IP and VLF-EM surveys over the Bay claims. Follow-up detailed soil sampling over geophysics anomalies. Most of the work is southeast of current STU claims but there is an EM anomaly around the present day C Zone and just to the north of the STU claims. Anomalies are oriented northwest. (*Olson, 1975*)

1976

- Reconnaissance soil sampling between Minto and Williams Creek by United Keno Hill Mines Ltd. (UKHM) In the vicinity of the Bay claims.
- Following feasibility studies, significant work ceases on the Minto claims until 1984.

1977

- UKHM stake the STU claims in the area of the expired Bay claims. UKHM felt that Hudson's Bay soil samples had failed to penetrate the ash layer as had occurred previously at Williams Creek. UKHM had also found foliated rocks and copper mineralization beside the Bay claims, in what could have been the Zone A.
- UKHM carry out grid soil sampling, geological mapping and ground geophysics surveys and stake more claims. Three zones of foliated, copper-bearing rock are outlined. (*Watson and Joy, 1977*).

1978

- UKHM carry out an IP survey on the STU claims (*Smith, 1979*).

1979

- UKHM excavate 16 trenches in with a bulldozer over four anomalies. No results available (*Ouellette, 1989*).

1980

- UKHM stake more STU claims, then drill 28 diamond drill holes (4504m) in the A and C Zones. Most of this information is not in the public record but 3 holes returned intersections exceeding 2.5% copper. The UKHM 1981 report contains no text, just assays for hole 80-17 and drill logs for holes 80-17, 80-25, 80-27 and 80-28. *Ouellette, 1989* summarizes the work and states that some high grade mineralization was encountered.
- UKHM stake the NOON claims to the south of the STU claims. Program of geological mapping and grid soil sampling over the NOON claims. The NOON claims overlapped the present day HOO, CHE, KOO, WC and ACF claims. (*Newman and Joy, 1980*).
- UKHM stake the MOON claims to cover favourable ground NW of STU. Program of geological mapping and grid soil sampling. (*Leblanc and Joy, 1980*)

1981

- UKHM flies regional airborne EM and magnetic surveys over their holdings in the area.
- Soil sampling and mapping on the NOON claims (*Coughlan and Joy, 1981*).
- Reconnaissance geological mapping and soil sampling on MOON claims (*Joy, 1981*).

1982

- UKHM excavate 13 trenches on five areas over geochemical anomalies in the SW corner (Zone B) of the claim block. No results available (*Ouellette, 1989*). UKHM excavate 8 trenches on the NOON claims *(YGS minfile 115I126).*

1984

- Drilling on the Minto and DEF claims.

1989

- UKHM drilled 30 percussion holes (1823 m) in Zone B. Partial results are available in drill sections and assay certificates. The best hole was SB-6 which returned 0.71% Cu. (*Ouellette, 1989*).

1993

- First feasibility study at Carmacks Copper deposit. Western Copper flies airborne geophysics and discover the 4000N zone.

1994

- Western Copper survey extensive grid over WC claims for magnetics and VLF and collect soil samples. Strong geophysics and coincident geochemical anomaly over the 4000N zone. Weak magnetic anomaly and anomalous soils over the NW extension of Gran/Zone 3.

1995

- Feasibility study completed on Minto deposit.

2001

- Regional airborne magnetic and radiometric survey carried out by Yukon Government (*Shives et al, 2001*).

2002

- Regional program of prospecting and silt sampling over 8 alkalic porphyry-copper-gold targets in the area by B. Kreft. 17 samples of rock and previously unsampled core were collected at STU. Staked 24 claims and recommended further soil sampling and follow up of any anomalies (even single point) with prospecting or trenching. (*Kreft, 2002*).

2004

- Carmacks Copper deposit enters permitting process.

2005

- STU claims 1-54 restaked by B. Harris. Reconnaissance prospecting and property examination program. Soil sampling, examination and sampling of core and trenches. (*Robertson, 2006*).

2006

- Program of GPS surveying of old drill holes and trenches, examination of showings and rock sampling. Limited magnetic susceptibility testing of drill core. (*Pautler, 2007*).
- S. Ryan stakes Bread, Butter, Peanut, Copper, Sleep and Jam claims over and around the STU, NOON and MOON claims. Claims optioned to BC Gold after limited soil sampling. (*Ryan, 2006*).

2007

- BC Gold staked more Bread claims and flew a regional airborne magnetic and radiometric survey over their claims in the area.
- B. Harris stakes additional STU claims.
- Commercial production starts at Minto mine.

2008

- B. Harris did geological mapping, rock and soil sampling, a petrographic study and a compilation report on STU claims (*Pautler, 2009*).
- BC gold collected MMI soil samples across the entire Bread claim block *(Newton, 2008).*
- BC gold did MMI soil sampling and IP over 2 areas on the Copper claims *(Sidhu, 2009)*

2010

- Rock sampling and mapping on areas of the STU claims outside of the main three zones (*Pautler, 2011*).

2012

- Property examination, magnetic susceptibility and petrographic study of mineralized rocks on STU claims (*Pautler 2012*).

2013

- B. Harris completes a program of trail clearing and sampling of trenches, soils and rocks in Zone B *(James, 2014).*

2014

- B. Harris conducts a program of upgrading access, clearing old trenches, hand trenching and sampling a new showing, an overview archaeological survey, XRF test survey, mapping and sampling on the STU claims. 201 HOO, CHE, KOO, WC, WCF claims were staked. *(Pautler, 2015).*

5.2 HISTORIC WORK

Work on the STU claims prior to 2005 is discussed in this section and work after 2005 when the claims were owned by B. Harris is discussed in Section 8. Work on the HOO, CHE, KOO, WC, WCF (abbreviated as HCKW) claims since 2006 is discussed in Section 8 and older work is discussed in this section. Historic work on the STU claims was sourced from assessment reports and from UKHM maps and sections housed in the Alexco archives.

Claims in the area were called Bay when first staked in 1971 and later STU since 1977. The STU claims have stayed in the same general area, but have changed in number over the years. The current CHE claims were part of the STU claim block before 2005. STU is documented by the Yukon Geological Survey as Minfile Number 115I011, covering all 3 zones.

The HCKW claims, which were staked in 2014 by Bill Harris, cover ground recently held by Copper North and BC Gold. In the 1980s much of the ground was held by UKHM as the NOON claims, staked to cover prospective ground between STU and Carmacks Copper. Three Yukon Geological Survey minfile occurrences are located on the claims, the Gran/Zone 3 (115I128) on the WC claims, the Butter (115I126) on the KOO claims and the Hooche (115I127) on the Peanut claims. The 4000N anomaly, discovered by Western Copper in 1993, is located on the WC claims, the South Butter showing is located on the WC and WCF claims and extends southeast onto Copper North's property. The Sleep showing is located on the easternmost KOO claim. The Bonanza Creek (115I010) minfile occurrence is adjacent to the KOO and LED claims on the east and the Lookout showing is located on the LED claims. The CHE claims host soil anomalies that may be extensions of the zones on the STU claims. None of the showings have received much work and many are still geochemical or geophysical anomalies.

5.2.1 Soil and Stream Sediment Samples

5.2.1.1 STU Claims

A deep (0.9m average) soil sampling program was undertaken by UKHM in 1977 after they staked the STU claims. Samples were taken on a grid over the entire property at 30 m intervals along lines 100m apart. 8,958 samples were collected and copper in soil results plotted. Three main zones were outlined along with northwest trending anomalies in the south and east section of the property.

The 1977 soil survey is not documented to current standards; there are no laboratory analysis certificates, and no documentation of QAQC. However; the reported methodology is sound, samplers were aware of the detrimental effects of volcanic ash and collected samples in B horizon soils below the ash. The value of a survey can be judged on whether it locates mineralization, and under this criterion the survey was successful; the 3 zones were found. UKHM used 15 ppm copper as background and 50 ppm copper as a threshold value for soil anomalies over granodiorite. The Carmacks Group volcanics contain more copper and have a higher threshold at ~75 ppm. Statistical analysis on the digitized 1977 soil data produced a median value of 15 ppm and a mean of 20 ppm copper which concurs with the previous background value.

In 1977, a stream sediment survey was carried out along Stu, Camp and Hoocheekoo Creeks. 362 active inorganic and quiet water organic samples were taken at 100m intervals. Both UKHM surveys have been digitized.

5.2.1.2 HOO, CHE, KOO, WC, WCF (HCKW) Claims

In 1970 the Dawson Range Joint Venture carried out reconnaissance geochemical sampling over the Williams Creek property which located two mineralized outcrops – Carmacks Copper's Zones 1 and 2. Additional claims were staked north towards Hoocheekoo Creek, bordering onto the Bay claims and covering parts of the present day WC, WCF and KOO claims. Soil geochemical samples and reconnaissance geological mapping was undertaken over an 800' by 400' (244m by 122m) grid covering 14 square miles (3626 ha). None of this information has been digitized. Of interest is that the report author (Archer, 1971) felt that the soil sampling was only partly successful. The widespread reconnaissance sampling failed to locate either zone, while the grid sampling picked up Zone 1 but not Zone 2. Also noted is that Cu in soil values above 35 ppm were considered anomalous.

In 1971 Hudson's Bay soil sampled the Bay claims on a property wide grid which covered the northern sections of the WC and KOO claims along with part of the STU claims. Later workers criticised the quality of the sampling, suggesting the samplers did not consistently sample below the volcanic ash layer so prevalent over the property. This survey has not been digitised but is worth further inspection before it is rejected, because it detected Zone C on the STU claims. The survey also picked up soil anomalies southwest of the Butter showing and southwest of the 4000N anomaly.

The 1981 UKHM soil survey of the NOON claims covers all of the WC claims and parts of KOO and HOO claims. UKHM delineated five separate northwest trending, moderate to strong copper anomalies over Area “A” at the headwaters of Nancy Lee Creek. The area covered was 500m long by 230-330m wide (Coughlan and Joy 1981) and is in the same location as Gran/Zone 3. The other significant anomaly, Area “B” is equivalent to the South Butter showing and there are spot anomalies in the area of the Butter showing. Polygons containing soil points >30 ppm have been digitized from this survey, but the point data has not been digitized.

In 1994, Western Copper cleared a baseline through the centre of the WC claims (historic and present day WC claims cover the same area). Survey lines were put in at 500m intervals and stations were spaced along each line at 25m intervals. Soil samples were collected at each station, with every other sample sent in for analysis. Moderate to highly anomalous copper in soil values were found northwest of Gran/Zone 3 and spotty soil geochemical values up to 323 ppm Cu over the 4000N anomaly. Copies of assay certificates are available for 421 soils samples analysed for Au, Ag, Co, Cu, Fe, Mn, Mo, Ni, Pb, Zn using ICP-AES at Chemex in Vancouver, B.C. No detailed maps are available, but it may be possible to reconstruct a digital version of the grid if this information is to be digitised.

5.2.2 Geophysical Surveys

5.2.2.1 Regional Surveys

The Government of Yukon and the Geological Survey of Canada contracted Fugro Canada Corp. to carry out airborne gamma ray spectrometer and magnetometer surveys over the Minto area in September 2001. Five hundred metre space lines were flown at an azimuth of 45^{o}. Gridded data from the survey is presented as colour interval maps overlain with topography.

This data has not been interpreted but some general observations were made on two of the map products most relevant to the STU property:

Potassium:
Potassium levels appear to be controlled by topography and underlying rock type. The Carmacks volcanics and the northern section of the Povas formation close to Minto have consistently high levels (1.3-1.8%). The Minto Pluton has high levels along ridges and low (0.4-0.95) and moderate (0.96-1.3%) levels in valleys. The GMB shows variation with a dissected high zone running east through STU to an area south of Hoocheekoo Creek. South of Hoocheekoo Creek values are low to moderate with the exception of isolated highs around Carmacks Copper and along Merrice Creek. At STU, Zone B has the highest values.

Residual Total Field:
Minto sits on the south edge of a 7.8 X 12km area of high magnetism up to 1700nT. This area is underlain by the Minto Pluton and Povas Formation. A much smaller linear high of similar

magnitude is located in Povas Formation south of Minto along the Yukon River. The Carmacks volcanics have a distinctive mottled pattern of high, low and moderate values. Again topography is a factor with ridges tending to have higher values than valleys; magnetism is moderate around Carmacks Copper. Zone C at STU is mostly high while Zones A and B are situated in areas of moderate magnetism along the shoulders of magnetic highs.

5.2.2.2 STU Claims

Hudson's Bay carried out a magnetometer survey in 1971 over the Bay claims. Prominent magnetic highs were mapped over the granodiorite-volcanics contact (east of the present STU claims), prominent narrow highs were mapped over dykes in the granodiorite and less prominent highs occurred over increased magnetite in the porphyritic granodiorite.

Further magnetometer and electromagnetic surveys by UKHM outlined five zones of which the best four were followed up with an IP survey prior to trenching. None of these surveys have been digitized. Smith (1978) concludes following the 1978 IP survey over Zones A, B and C that there was little or no direct correlation between geochemical anomalies and IP anomalies. IP anomalies were generally very weak and poorly defined. Anomalies were usually complex, resulting mainly from variations in resistivity, a response expected over weathered sulphides.

In 1993, Western Copper flew an airborne electromagnetic survey that covers all three zones. The data is available in a 2007 report (see 5.2.2.2).

5.2.2.3 HCKW Claims

The 1974 Bay claims VLF-EM and IP geophysical surveys covered the northern sections of the WC and KOO claims. Linear geophysical anomalies were found between Hoocheekoo and Nancy Lee Creeks, over the Butter showing and southwest towards the 4000N zone.

In 1993, Western Copper flew an airborne electromagnetic survey along the eastern side of the WC claims (historic and present WC claims cover the same area) and found the 4000N anomaly which stretched from lines 3000E to 4000E. The next year, Western Copper cleared a baseline through the centre of the WC claims with cross lines at 500m spacing and stations along each line at 25m intervals. The entire grid was surveyed for total field magnetics, magnetic gradient and VLF-EM. The northwest extension of Gran/Zone 3 occurrence showed up as a weak magnetic anomaly associated with moderate to highly anomalous copper in soil values. It averaged 300-500m in width and 1500m in length. The 4000N zone showed possible narrow extensions onto lines 2500E and 4500E. (McNaughton, 1994)

A 2007 assessment report by Casselman contains a compilation of historic geophysics from a 1991 ground total magnetic and VLF-EM survey and the 1993 airborne total magnetic and VLF-EM survey over the Carmacks Copper property, covering much of the current HCKW claims and extending over the three main zones on STU. The 1994 ground surveys were not incorporated because digital information was not available.

5.2.3 Trenching

5.2.3.1 Stu Claims

The soil, stream sediment and geophysical surveys identified four areas of geological importance on the STU claims. UKHM carried out bulldozer trenching programs in 1979 and 1982 over four anomalies. Complete assay results are not available, but trench maps with geology and some results were sourced from the Alexco archives. See section 8 for results of ongoing trench resampling.

In 1979, nine bulldozer trenches were dug in Zone A to expose 900m of strike length. No results are available but the best trench intersection was 0.19% copper over 15m (*Ouellette, 1989*). Similar results were returned from the 2015 resampling program.

In Zone B 14 bulldozer trenches were excavated in 1979 and 1982 and up to 2% malachite over 0.5m in gneiss was observed. Trench resampling is ongoing and similar narrow zones of malachite have been observed and sampled. Of note is a comment by Ouellette (1989) regarding sampling "No malachite was noted in the trench at this location and the material was not sampled (p.7)." This comment refers to trench 7400E which was later drilled and returned a copper intersection of 0.71%. This comment raises the possibility than the trenches were only sampled in areas of visible mineralization.

Three trenches over 350m of strike length were excavated in Zone C in 1979. Recent sampling has produced encouraging results.

On the northwest edge of the STU claims the Northwest Zone is a mystery. There are 3 short trenches but no soil anomaly or outcrop mapped nearby.

5.2.3.2 HCKW Claims

The Gran/Zone 3 occurrence is a weak magnetic anomaly associated with moderate to highly anomalous copper in soil values. Eight or nine trenches are located in the general area, either from work by the Dawson Range Joint Venture in the 1970s or UKHM in the 1980s. No results or mapping are available from this time. There is some exposure of weakly altered granodiorite but no mineralization was encountered. The remainder of the trenches are sloughed and overgrown (Pautler, 2015c).

In the South Butter bulldozer trenching has exposed mafic intrusive rocks but no mineralization was observed (Pautler, 2015c). The data of trenching is not known but probably occurred in the early 1980s as a follow-up to the soil anomaly from 1981.

5.2.4 Drilling

5.2.4.1 STU claims

Approximately 4500 metres of diamond drilling was done in 1980 in the A and C Zones. Core from the program is stored near the camp and in 2015 the racks were disassembled and the majority of the core rehabilitated (see Section 9). Complete results are available for one hole (80-17) and high grade intersections are reported for 3 holes.

Templeman-Kuit (1981) reports three high grade intersections:

- 80-09 3.44% Cu, 1.87 g/t Au, 13.37 g/t Ag over 13.5m
- 80-14 3.51% Cu, 2.49 g/t Au, 18.35 g/t Ag over 13.5 m
- 80-18 2.80% Cu, 4.04 g/t Au, 17.42 g/t Ag over 12.5m.

He notes that the remainder of the mineralized rock ran between trace and 0.49% Cu over 17m. Although they have not been resampled, all three intersections were rehabilitated.

80-17 was a deep hole (426m), drilled behind and beneath hole 80-14, presumably to test the depth of mineralization beneath the high grade intersection in hole 80-14. From 376-401m the hole intersected 25m of 0.155% copper, 6.2 g/t silver and trace gold. This intersection is 380m below surface.

In 1989, 30 percussion drill holes were drilled along trenches in the B Zone. Most holes were oriented at 225^{o} azimuth, with dips ranging from -49^{o} to -63^{o}. Three holes were oriented at 45^{o}. Two to three holes were drilled 3 to 20m apart in each trench. Hole depths are 27 to 88m and the entire length of each hole was sampled at 1.5m intervals. Copper results were plotted onto sections. Most holes intersected multiple zones with anomalous copper values ranging from 100-500 ppm. The zones can be traced from hole to hole in about half of the sections but they do not always coincide with malachite occurrences in the trenches. The best results are:

- hole SB-4 in trench 7600E 10 feet (3m) of 0.135% Cu
- hole SB-6 in trench 7400E 5 feet (1.5m) of 0.71% Cu
- hole SB-8 in trench B-1 5 feet (1.5m) of 0.11% Cu
- hole SB-9 in trench B-1 5 feet (1.5m) of 0.23% Cu
- hole SB-10 in trench B-1 5 feet (1.5m) of 0.16% Cu

The three intersections in trench B-1 are of interest because they suggest continuity.

Three holes were drilled in the C Zone; drill logs are available for 2 of them. No mineralization was logged.

5.2.4.2 HCKW Claims

Gran/Zone 3 is the only area on the HCKW claims where there is any evidence of drilling. Two to three drill pads are located in the general area, either from the 1960s or the 1980s. There is no record of drilling in publically available reports, but McNaughton (1994) suggests the holes are from the 1960s. Conversely, UKHM reports from the 1980s make no mention of finding drillholes. Archer, 1973 comments on the need for drilling in Zone 3 because of a depth of glacial till from 15-48m.

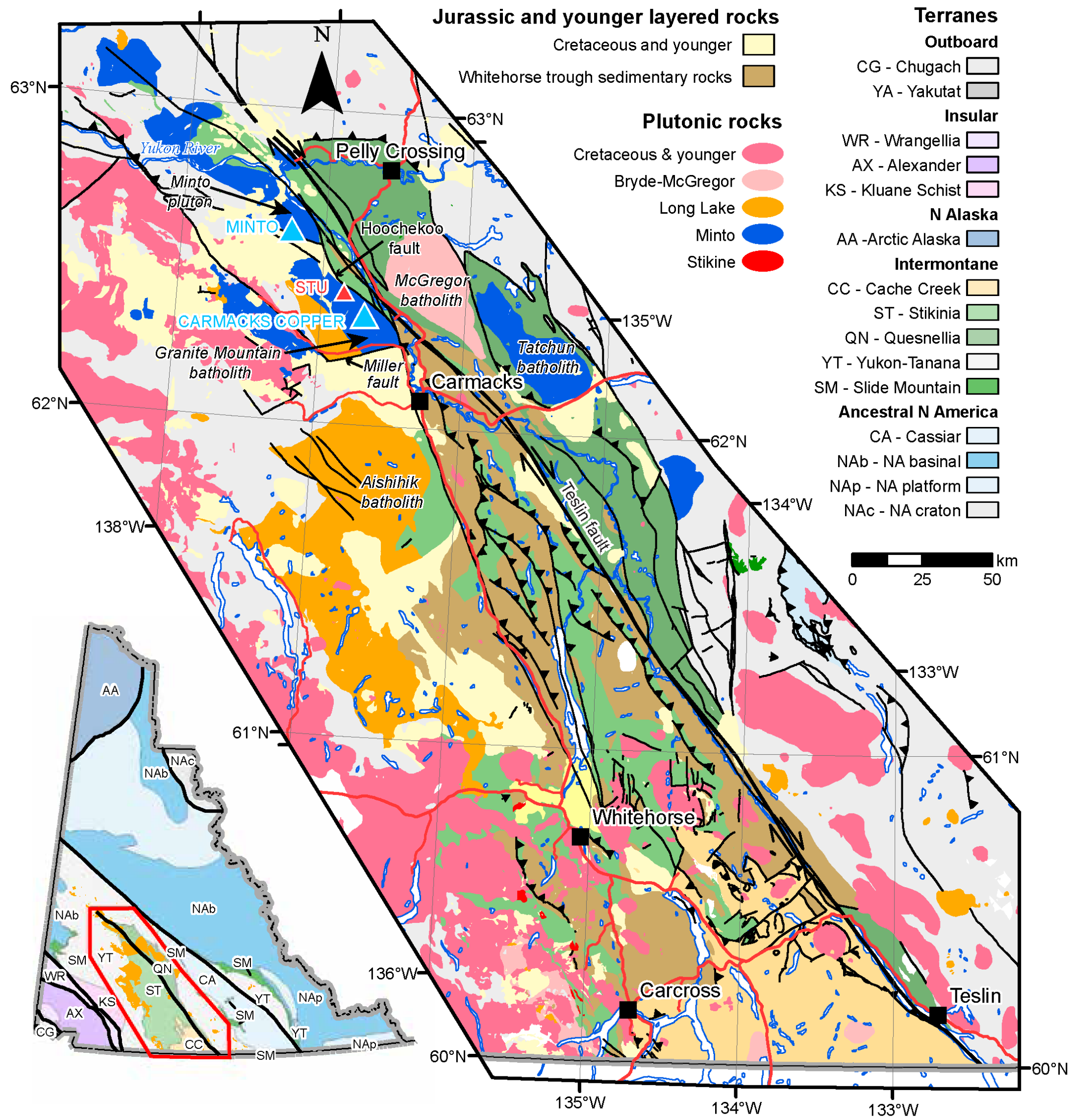


Figure 3. Simplified geology of south central Yukon with emphasis on Late Triassic to Jurassic plutonic suites as described in text. Significant Early Jurassic Cu – gold ± silver mineral occurrences shown by triangles. Main map coloured by terrane with Whitehorse trough and younger cover sequences in brown and yellow, respectively. Inset Yukon terrane map to lower left shows the area of the main map with Late Triassic to Jurassic plutonic rocks in orange. Map, data and caption from Yukon Geological Survey (2015).

Figure 3: Regional Geology

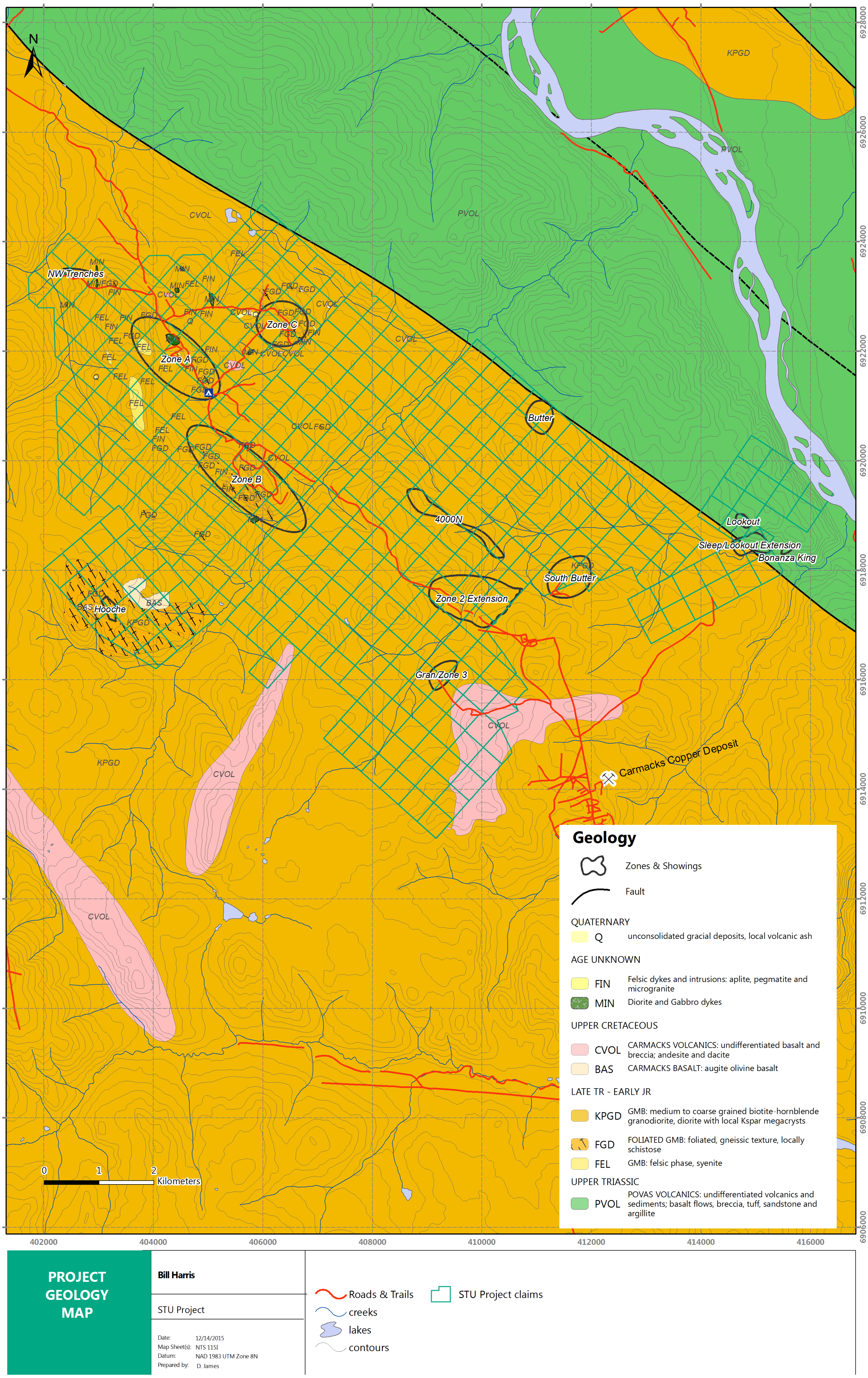


Figure 4: Property Geology

6 GEOLOGICAL SETTING AND MINERALIZATION

6.1 REGIONAL GEOLOGY

The Carmacks Copper Belt is a 180km long by 60 km wide belt of intrusion hosted Cu-Au-Ag mineralization in the Dawson Range. Centered on the Minto Mine the belt extends from north of the Yukon/Pelly River confluence southeast to the community of Carmacks. The occurrences are hosted in, or close to the contacts of, intermediate to felsic intrusive and meta-intrusive rocks of the Early Jurassic Minto Suite. Minto Suite plutons suite are of biotite-hornblende granodiorite to quartz monzonite composition and lie between Stikinia and the Yukon Tanana Terrane (YTT). Recent work by the Yukon Geological Survey on the Late Triassic to Jurassic plutons will be released this year. Some of that work and terminology will be used in this report (**Figure 3**).

Minto Suite members the Granite Mountain Batholith (GMB) and the Minto Pluton host the Minto, STU and Carmacks Copper occurrences. The GMB is composed of two different igneous suites: the Early Jurassic Long Lake Suite on the western side and the older Minto Suite on the east side, where the deposits occur. Younger volcanic rocks of the Carmacks Group and Quaternary Selkirk Group overlie the GMB. The south end of the Minto pluton is separated from the rest of the GMB by an east-west normal fault. South of the fault lie basalts of the Upper Cretaceous Carmacks Group which stretch south where they unconformably overlie the GMB.

On its west side the GMB intrudes Paleozoic metamorphic rocks of the Yukon Tanana Terrane. To the east the batholith is in fault contact with upper Triassic or older mafic volcanic rocks of the Lewes River Group (specifically basal Povas Formation) overlain by Jurassic age Laberge Group sediments. South of Williams Creek the GMB is in normal fault contact with more Carmacks Group basalts along the Miller Fault.

The Hoocheekoo Fault runs northwest from near Minto along the northeast side of STU and Carmacks Copper parallel to the regional strike slip Teslin Fault which forms the valley of the Yukon River.

6.2 PROPERTY GEOLOGY

On the STU property the GMB is the dominant rock type. It is cut by aplite, microganite and pegmatite dykes and contains lenses of foliated to gneissic quartz-feldspar-hornblende-biotite granodiorite which contain most of the mineralization. Locally outcrops of Carmacks volcanics overlie or intrude the other rock types. A few mafic dykes cut the GMB (**Figure 4**).

The Hoocheekoo Fault runs down the east side of the property separating the GMB from the Povas Formation. Smaller east-west cross structures are expressed as creeks such as Camp, Nancy Lee and Hoocheekoo.

Geology of the HCKW claims is not as well known, but is assumed to be similar to STU with the exception of more Carmacks volcanics. On the southeastern portions of the HOO, WC and WCF claims a large outcropping of Carmacks volcanics overlies the GMB. The eastern KOO claims extend across the Hoocheekoo Fault into Povas Formation. Compilation of historic work for the claims is ongoing.

6.2.1 Table of Formations

A range of rock codes have been used for the property and are in the process of being consolidated.

Q – Quaternary	Unconsolidated alluvium, colluvium and glacial deposits. Local volcanic ash.
Upper Cretaceous Carmacks Group volcanics uKC1, CVOL, BAS	Occur on the property as a few outcrop and float or debris. Rocks are greenish-brown to brown, basic to intermediate flows and tuff breccias. Porphyritic and aphanetic varieties are found.
Unknown age (possibly upper Cretaceous) Diorite and Gabbro MIN	Dark coloured, fine to medium grained rock that appears to be a separate unit from the granodiorite and not a mafic phase because contacts are sharp and trend northeast. The diorite contains up to 50% biotite and hornblende, the gabbro 70% mafics with hornblende>> biotite and occasional pyroxene. Close to contacts the diorite locally shows a reduction in grain size and a weak foliation parallel to the contact. This unit may be associated with the Carmacks volcanics, the two units occur in close proximity.
Unknown age Aplite, Pegmatite and Microgranite Dikes FIN, APL, PEG, MGR	Felsic intrusions cutting both foliated and non-foliated granodiorite. Aplite dykes are white to pinkish white, with a mafic content < 1% biotite which may show a preferred orientation. Fine to medium grained and sucrosic. Pinkish white to white pegmatite dikes are coarse grained and composed of 70-80% large feldspar crystals, quartz and biotite. The aplite and pegmatite typically occur in swarms, are less than 1 m thick and are found proximal to contacts between foliated and unfoliated granodiorite. Casselman et al (2015) find the dikes to be of similar composition to the quartz monzonite on the southwest portion of the property. Microgranite is white to grey white and fine grained with 2-8% biotite aligned parallel to contact with the granodiorite. Sharp contacts with the granodiorite, may grade into the aplite.
Latest Triassic to earliest Jurassic Granite Mountain Batholith Felsic phase FEL, QM	Closely associated with the granodiorite. Mafic poor, fine to medium grained and syenitic in composition, occurs along the southwestern portion of the STU claims. Historically mapped as felsite (FEL) and had rarely been found in trenches.
GMB Granodiorite KPGD, PGDM, GDM, BGD	Potassium feldspar megacrystic granodiorite and quartz-phyric granodiorite to quartz monzonite. Minor diorite to quartz diorite It is medium grained with lesser fine grained or coarse grained occurrences and is typically porphyritic.
GMB Mafic phase QD, HBL, DIO, DQD	Mafic phases of the GMB. Limited in extent.

GMB Granodiorite, foliated, gneissic textures FGD, GN	Foliated, gneissic and locally schistose granodiorite. When foliated it has a slightly higher mafic content. Foliation is weak to strong. Gneissic texture is fine to medium grained with a moderate to strong foliation or banding, may display extreme variation in mafic content. Hosts copper mineralization. Historic mapping separated foliated, gneissic and schistose textures.
uTrP Upper Triassic or older Povas Formation PVOL	Andesitic basalt flows, breccia, tuff, sandstone and argillite. Separated from GMB by Hoocheekoo Fault. Hosts showings on the KOO claims.

6.2.1.1 *GMB Granodiorite*

The most common phase of the granodiorite is dark grey to grey on weathered surfaces and grey white to grey on fresh surfaces. It is medium grained with lesser fine grained or coarse grained occurrences and is typically porphyritic with 5-15% potassium feldspar phenocrysts.

When foliated it has a slightly higher mafic content and foliation is weak to strong. The gneissic phase is fine to medium grained with a moderate to strong foliation or banding. An extreme variation in mafic content has been observed. The genesis of the foliation or gneissic texture is unclear. It may be a shear zone, a partially metamorphosed phase of the GMB or an inclusion of older metamorphic or volcanic rocks that have been partly assimilated. Both the foliated and gneissic phases host copper mineralization. In trenches and outcrop, resistant reefs of silicified gneiss or foliated granodiorite occur which have more chalcopyrite and bornite compared to non-siliceous sections. These reefs are resistant to weathering and form outcropping ridges in Zones A, B and C and low ridges along trench floors.

A similar suite of igneous rocks is found at Minto and Carmacks Copper although there are some differences. At Carmacks Copper quartz diorite and diorite phases of the GMB are more common than at Minto. A fine grained biotite schist or amphibolite is an additional rock type that host mineralization. The biotite schists have very low quartz content and a high mafic content which is attributed to their origin from assimilated rafts of Povas Formation andesitic to basaltic pyroclastic tuffs, agglomerates or breccias. It is expected that more of the schists or amphibolites will be encountered on the HCKW claims, especially in the South Butter showing and close to Zone 2.

6.2.2 Petrography

In 2008 a petrographic study (Foncesca) of 6 samples of strongly foliated, medium-grained black and white, equigranular granodiorite determined an average composition of 25-35% quartz, 35% plagioclase, <10% potassium feldspar, up to 15% biotite and 5% hornblende. Accessory minerals are sphene, epidote, apatite and zircon. Magnetite is the dominant opaque at 2-4% and is weakly replaced by hematite along micro fissures. The granodiorite is divided into two domains, a leucocratic domain of quartz and feldspar and a melanocratic domain of biotite>hornblende-epidote-apatite-sphene-magnetite and zircon. The melanocratic domain foliation is defined by brown, elongate lather of biotite up to 3mm. Hornblende is closely associated with biotite and locally partially converted to metamorphic biotite. Hornblende is absent in samples containing the highest amount of supergene copper minerals. Metamorphism was upper greenschist facies biotite zone. A very well developed penetrative fabric is defined by the melanocratic domain and a second less developed foliation is defined by biotite. Tabular zones of severe grain boundary reduction affect leucocratic domains and results in formation of mosaics of quartz and feldspars with polygonal texture and intensely developed granophyric texture. Myrmekitic textures and elongated quartz grains are common.

In 2012, a petrographic study classified an unmineralized sample of country rock as an orthoclase megacrystic hornblende-biotite monzogranite. Hornblende and biotite make up 15% of the sample. Accessory sphene and sulphides were clustered with the amphibole similar to the melanocratic domain of the foliated granodiorite. A high grade sample from Zone B had only faint foliation but a similar composition to the granodiorite. Garnet, sphene, topaz and fluorite were accessory minerals.

6.2.3 Structural Geology and Metamorphism

The dominant structural direction in the Carmacks Copper Belt is northwest, parallel to the Teslin Fault. Foliation, fractures, structural zones and contacts tend to parallel this direction which appears to control mineralization. The exception is the diorite and gabbro intrusions that have north-easterly trending contacts with the granodiorite. In Zone C foliation in the GMB trends northwest and dips steeply southwest, in Zones A and B it trends 130 and dip on average 70^{o} northeast. The Hoocheekoo Fault runs northwest just off the east side of the STU claims. Feldspar phenocrysts, mafic minerals and mafic schlieren in the GMB are aligned parallel to the dominant direction.

Easterly to north-easterly trending younger, post-mineralization brittle faults such as the DEF fault north of Minto, the normal fault south of Minto and the Miller Fault south of Carmacks Copper have down dropped and rotated large blocks of ground. This block faulting may have caused the difference between flatter ore zones at Minto and steeper zones at Carmacks Copper. Block faulting can cause large degrees of rotation within a short distance as shown by younger sedimentary units at Minto that have been tilted up to 60^{o}. At STU, Hoocheekoo Creek and possibly Camp and Nancy Lee Creeks could be surface expressions of these structures.

The degree of metamorphism determined from petrographic study is upper greenschist facies biotite zone. Igneous hornblende is locally converted to metamorphic prograde biotite. Two penetrative foliations are present; the first is the melanocratic domain and the second is less well defined and dominantly made up of biotite. Metamorphism has caused severe grain boundary reductions up to 1 cm wide in quartz and feldspar grains.

Hood (2012) observed two types of rock fabrics within the Minto pluton at Minto; magmatic flow fabrics and solid-state recrystallization fabrics. Magmatic flow features observed at Minto and STU are mafic magmatic enclaves, mafic mineral accumulations (schlieren), igneous emplacement contacts and magmatic lineation. Solid-state deformation features range from recrystallization microtextures up to shear zones metres wide. A penetrative foliation dips northeast or southwest with variable dips, but averages near horizontal. The shear zones contain internal folds or may be folded with hinges plunging at shallow northwest to southeast angles.

Hood interprets the Minto ore as being hosted within granitoid rocks that were sheared by ductile deformation during emplacement of the GMB. Multiple intrusions were emplaced into an actively deforming environment with the variably sheared host rock separated by weakly deformed barren granodiorites. The shear zones may have controlled fluid flow resulting in concentration of alteration and sulphide deposition. Sulphides may have been further remobilized and concentrated as deformation continued.

Recrystallization microtextures such as elongated quartz grains, grain size reduction along linear zones, myrmekitic and granophyric textures and mosaics of quartz and feldspar were observed in STU thin sections. Hand sample and outcrop scale features such as foliation and shear zones are seen in trenches and core. Weak foliation at Minto is defined by fractures in potassium feldspars, discontinuous biotite wrapping feldspars and the development of lenticular plagioclase and quartz grains formed by recrystallization. Moderate foliation is defined by Kspar megacrysts deformed to kspar augens, an overall grainsize reduction, and biotite forming continuous layers and anastomosing around larger feldspars. The degree of biotite foliation depends on its relative abundance, but hornblende is not typically observed in deformed rocks. These features are observed in hand samples at STU.

At Minto a mylonitic foliation caused by strong deformation is observed. It is identified by an abrupt grainsize reduction at the transition from fine grained mylonite to coarser grained less deformed rocks. Mylonites form within larger deformed or foliated zones, usually paralleling the foliation. At STU, biotite-rich, finer grained intensely foliated rocks in trenches that were mapped historically as schists may be mylonites.

6.2.4 Alteration

Like Minto, alteration at STU is biotite-rich potassic. Airborne radiometric and residual total field maps (Shives et al., 2002) show zones of increased potassium values and higher magnetic field levels proximal to the Minto mine. A slightly weaker and dissected version of this pattern is repeated at STU. The main alteration mineral is biotite, followed by magnetite, quartz and secondary potassium feldspar overgrowths on plagioclase. Late propylitic alteration is typically controlled by brittle fractures. Alteration assemblages are chlorite +/- epidote +/- calcite +/- hematite dusting of feldspars +/- hematite veining. Hematite dusting of plagioclase is common and the resulting pink colour may lead to misidentification as K-feldspar. (Hood, 2012)

At Carmacks Copper no alteration minerals related to mineralization have been identified. Epidote and potassium feldspar are related to the intrusion of post-mineralization pegmatite dykes. Clay and sericite are attributed to weathering. Silicification in the form of veinlets is rare. Alteration of mafics to chlorite, hornblende to biotite, rare garnets, carbonate and anhydrite appear related to assimilation and metasomatism of gneiss units. (Casselman and Arseneau, 2011).

A north trending zone of intense alteration is mapped through Zone A. Two lineaments along aeromagnetic lows intersect at Zone A, one north trending and the other northwest trending. In trenches and core, zones of intensely clay altered granitoids may be the surface expression of the lineaments. Whether the clay zones are caused by faulting or alteration is yet to be determined.

At the Lookout Showing (KOO claims) two northwest trending zones of epidote-chlorite-hematite altered, silicified coarse grained granodiorite occur just north of KOO 57. The alteration hosts a copper-gold showing. The nearby Bonanza Creek prospect contains bornite and chalcopyrite bearing veins and siliceous zones over a 2 km strike extent. Alteration minerals are silica and chlorite. (Pautler, 2015a, 2015b)

6.2.5 Mineralization

Copper mineralization is contained in foliated to gneissic granodiorite, probably formed as shear zones, similar to the Minto mine and the Carmacks Copper deposit. There are 3 zones of mineralization on the STU claims: Zone A in the center, Zone B in the southwest and Zone C in the north. The foliation strikes northwest in all three zones and dips steeply to the southwest in Zone C and northeast in Zones A and B. Copper sulphides occur within the foliated granodiorite and gneiss where they replace mafic minerals. Copper oxides have in turn replaced the copper sulphides where the mineralization has been exposed to oxidation. Copper bearing minerals malachite, azurite, chalcopyrite, bornite, chalcocite and tenorite (copper wad) have been observed in hand samples and drill core. Magnetite is locally abundant in both mineralized and unmineralized rock. The highest gold and silver values are associated with bornite-rich sections.

Deformed sulphides seen at Minto have not been observed at STU while the replacement of mafic minerals by sulphides has not been seen at Minto. At Minto sulphides are variably deformed, forming disseminated grains, thin discontinuous veinlets, elongate blebs, and massive net textures enveloping other minerals.

6.2.5.1 Hypogene Mineralization

In hand samples and thin sections disseminated chalcopyrite is the most common copper sulphide. Bornite is seen in drill core, but rarely on the surface. In high grade drillhole 80-14 bornite and chalcopyrite replace mafic minerals. This is also seen in thin sections from surface samples. Possible gold grains <0.5 microns were observed in two thin sections.

Primary copper minerals at Carmacks Copper are bornite and chalcopyrite with a zoning from bornite on the north through chalcopyrite to pyrite and pyrrhotite on the south. Other sulphides and opaques are magnetite, gold <5 microns, pyrite and pyrrhotite. Molybdenite, native bismuth, bismuthinite, arsenopyrite, and visible gold are rare. Primary sulphides at Minto are: chalcopyrite, bornite, minor pyrite and rare chalcocite. A silver telluride is observed in polished sections and native gold and electrum form inclusions in bornite grains. Coarse free gold is sometimes observed on chloritic fractures cross-cutting sulphide mineralization and may be caused by secondary enrichment. At Minto copper mineral zoning is from bornite on the west towards thicker and lower grade chalcopyrite on the east. The bornite zone contains more magnetite and chalcopyrite than bornite, and has higher grades of copper and precious metals. In the chalcopyrite zone the mineral assemblage is chalcopyrite-pyrite, very minor bornite and no magnetite.

6.2.5.2 Supergene Mineralization

In hand samples and thin sections, malachite is the dominant supergene copper mineral with lesser tenorite, chalcocite, azurite, chrysocolla and possible brochantite. The minerals display textures indicative of transport and open space fill. In sample 82527 (1.07% Cu and 106 ppb Au) malachite and Fe-oxihydroxides were interpreted to have replaced primary Cu-sulphides that had previously replaced mafic grains. Hornblende was absent in samples with the highest supergene copper mineralization.

At Carmacks Copper much of the exposed portion of the deposit is oxidized and the rock is weathered and permeable. Copper minerals in the oxide layer are malachite, cuprite, azurite and tenorite with lesser covellite, digenite, djurlite and native copper. They occur as cavity fill, irregular masses, fractures fill and rims on sulphides. A few primary sulphides are found in the oxide zone and form disseminations or narrow massive bands. Secondary mineralization is not restricted to a single rock type.

Supergene copper minerals are rare at Minto and are assumed to be the eroded remnants of foliated horizons or remobilized copper along brittle faults and fractures. Malachite is most common, followed by chalcocite, azurite and native copper. Earthy hematite indicates oxidation zones.

6.2.5.3 Mineralized Zones – STU Claims

Zone A in the centre of the STU claims is the largest zone and has had the most work done; bulldozer trenching and diamond drilling (figure 5). Historically Zone A extended for 1 km based on trench and drillhole locations, though the lack of historic assay results cannot confirm if there was mineralization in all trenches and drillholes. The underlying soil anomaly is 2 km long, reaching beyond the trenches to the edge of the claim block boundary. North of the zone the soil anomaly swings from a northwest to northerly trend. The intersection of two north-northwest trending magnetic lineaments is coincident with this anomaly. Patchy copper in soil anomalies are found on the west side of the Zone A trenches and the number of soil anomalies decreases rapidly west of the magnetic lineaments. East of Zone A trenches, soil anomalies continue towards the east, thinning out as they approach Zone C.

In 2015, three old trenches were deepened and two new trenches were dug over a 350m area at the north end of the zone. See section 8.3 for details. Surface work has confirmed 350m of mineralization from trench 400W to trench 2015A. Mineralization is open ended and further trenching (infill trenches, deepening old trenches and extending old trenches) is required to extend the mineralization to the 1 km extent reported in historic reports.

Copper grades of 2.8 to 3.5% were returned over 12 to 14m widths in drill core. On surface, Cu grades over similar widths are less than 0.4%. A similar relationship is seen with Ag and Au. Increased amounts of bornite and chalcopyrite below the oxidized layer may account for the higher subsurface grades when compared to surface grades.

The Nic showing, found in 2014, is an eastward extension of Zone A, located 100m from the end of the closest trench. The best sample from hand trenching assayed of 0.55% Cu, 1.9 g/t Ag and 0.27 g/t Au over 6m. A mechanized trench was dug south of the showing in 2015, but failed to intersect significant mineralization. No samples were collected, but a silicified reef was observed in the trench along strike from mineralization uncovered in the hand trenches. The northernmost hand trench did not intersect mineralization but the trench was short and may not have reached bedrock. There is a possibility that the mineralization continues east of the trench.

Zone B is located in the southwest part of the property on a dry ridge; it has the most rock exposure and the largest mapped extent of foliated and gneissic granodiorite of the three zones (figure 6). Mineralization in Zone B is locally high grade but appears to be over narrow widths and has not yet shown consistency below surface. In 2015 selected trenches were deepened and 2 new trenches were dug. See section 8.3 for details. To date sampling has confirmed the narrow high grade mineralization.

Zone C was first discovered by Hudson's Bay in 1971 as a copper in soil anomaly coincident with electromagnetic anomalies. It is the smallest zone with 110m of mineralization between trenches 9+50E and 14+50E reaching a width of 25-30m in trench 14+50E. The zone is open at both ends. Mineralization is significant with values up to 1.59% Cu and 3.7 g/t Au along northwest trending fractures (figure 7).

Prior to trenching, there were 2 separate showings of malachite in Zone c, one at the northwest end measuring 150m by 60m and a smaller showing 30m by 45m at the southeast end close to Camp Creek. The dominant host rock in the northwest showing is a medium grained quartz-feldspar biotite gneiss with >50% mafic zones. At the southeast showing, malachite is hosted in a strongly foliated, fine-grained granitoid. Three trenches over 350m of strike length were excavated in 1979 over the northwest showing, but none over the southeast showing. No results are available and no new trenching has been done in this zone. Three holes were drilled in 1980 but did not intersect mineralization. All holes were drilled to the southeast, which may be parallel to the orientation of the foliated zones.

Rotational block faulting is observed along regional east trending normal fault. At the property scale, steep-sided Hoocheekoo Creek and possibly Camp and Nancy Lee Creeks may also be normal faults with down dropped south sides consistent with the regional pattern. At STU, Zone B may be down dropped and potentially rotated from Zones A and C, exposing a higher level of the mineralized system, prone to more oxidation and migration of copper minerals similar to Carmacks Copper.

6.2.5.4 Mineralized Zones – HCKW Claims

The Gran/Zone 3 occurrence is a weak magnetic anomaly associated with moderate to highly anomalous copper in soil values. It averages 300-500m in width and 1500m in length (McNaughton, 1994). UKHM delineated five separate northwest trending, moderate to strong copper anomalies over a similar area (Area A) covering 500m by 230-330m wide (Coughlan and Joy 1981). The anomalies were open to the southeast off the claim boundary. In 2008, BC Gold delineated an MMI copper in soil anomaly associated with magnetic and IP chargeability anomalies over the same ground. Two to three drill pads and nine trenches are located in the general area, most likely from work by UKHM in 1982.

The Butter showing is a 450m long MMI copper in soil anomaly on the northeast side of the KOO claims. It is in the same location as a set of copper in soil anomalies from the NOON claims that correlated with a northwest trending magnetic anomaly attributed to the presence of amphibolite (Coughlan and Joy, 1981).

The South Butter is located near the edge of the WCF claims and continues onto Copper North's ground. It overlaps with northwest trending anomalous copper in soil values from UKHM's soil programs, when it was referred to as Area B. In 2009 BC Gold found malachite bearing aplite with weak epidote and muscovite alteration trending 315°. A grab sample from a 0.5m subcrop exposure assayed 0.33% Cu (Pautler, 2015c).

The 4000N zone is a 2km long coincident copper in soil and geophysics anomaly that was detected by airborne geophysics in 1993 and followed up in 1994. The highest copper in soil value was 323 ppm (MacNaughton, 1994). Prospecting in 1994 did not locate any outcrop, but the area has been burnt since that time which may expose some outcrop. There is no record of further surface work on the zone, but an overgrown road/trail leads to within 1 km of the zone.

The Bonanza Creek minfile occurrence is located north of the confluence of Nancy Lee Creek with Williams Creek close to the LED and KOO claims. It consists of multiple bornite and chalcopyrite bearing quartz veins and siliceous zones cutting GMB rocks over a 2 km strike extent. An old trench (Sleep) in the northeast corner of KOO 57 returned 6.82% Cu, 2.33 g/t Au and 65.5 g/t Ag from quartz vein material (Pautler, 2015b), a similar value to assays obtained from Bonanza Creek samples. A smelter shipment from the nearby Bonanza King adit produced an average grade of 5.26% Cu, 66.9 g/t Ag, 4.4 g/t Au from 5.9 tonnes of ore (YGS minfile).

A new copper-gold showing, the Lookout Zone, was discovered 400m north off the edge of KOO 57. Malachite, chalcocite, +/- bornite occur in northwest trending zones of epidote-chlorite-hematite altered, silicified GMB rocks, returning values in the range of 0.63% Cu, 340 ppb Au and 35 g/t Ag (Pautler, 2015b). An open 150m diameter copper in soil anomaly in located in the area of Lookout. Although little work has been done on the Lookout it is similar to Carmacks copper-gold belt mineralization and there is potential for similar mineralization to extend southward onto the KOO claims.

Zone 2 is located on Copper North's ground about 200m south of the WC claim boundary. Zone 2 was one of the discovery outcrops found in 1970 during the staking rush in the Dawson Range. Archer (1971) described the extent of Zone 2 as 125m on surface with a true width of 30m. The zone is hosted in monzonite porphyry and strikes N65^{o}W. Samples over the zone in the trench averaged 1.0% Cu over 45.7m. Trenching on strike did not encounter mineralization, nor did the zone show up in soil samples (Archer, 1971). In 2014 Copper North returned to Zone 2 and expanded the strike length to 500m to the southeast through trenching and drilling. The zone was traced by following up on IP chargeability anomalies. Trenching on the north extension uncovered a cross fault which truncates the zone 20m northeast of the discovery outcrop (Copper North website).

Although Zone 2 is on Copper North's ground, and appears to be truncated, an offset extension of the zone may continue onto the WC claims. At Carmacks Copper some of the mineralized zones are offset by cross faults and that pattern may continue north of Zone 2. There is a possibility that one of the 4000N, South Butter or Gran/Zone 3 showings could be the offset. Another area of interest is a northwest trending magnetic lineament on the WC claims in line with Zone 2. There are 4 historic short trenches or pits dug along the lineament.

The CHE claims (recently BC Gold's Butter claims) have been part of the STU claims in the past. The claims are located adjacent to Zone B and separated from Zone C by a possible fault along Camp Creek. The CHE potentially could host the southeast extension of Zone C. A strong north to north northwest trending aeromagnetic lineament bisects the claims and is a target. It runs parallel to the productive lineament in Zone A and correlates with anomalous MMI copper in soil samples collected by BC Gold. Limited digitizing of 1977 UKHM copper in soil samples on the CHE shows a similar pattern to the BC Gold soil anomalies.

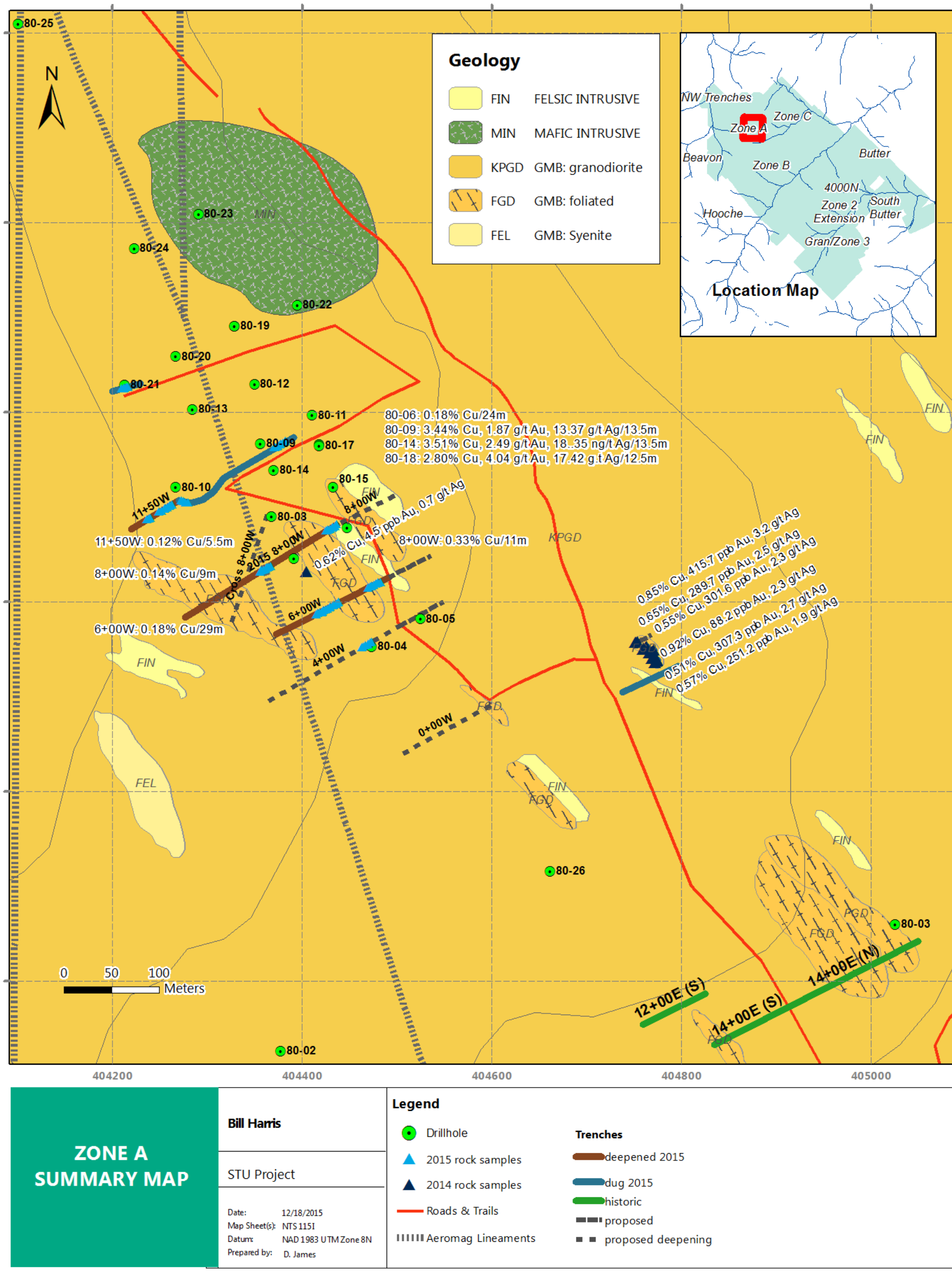


Figure 5: Zone A Detail

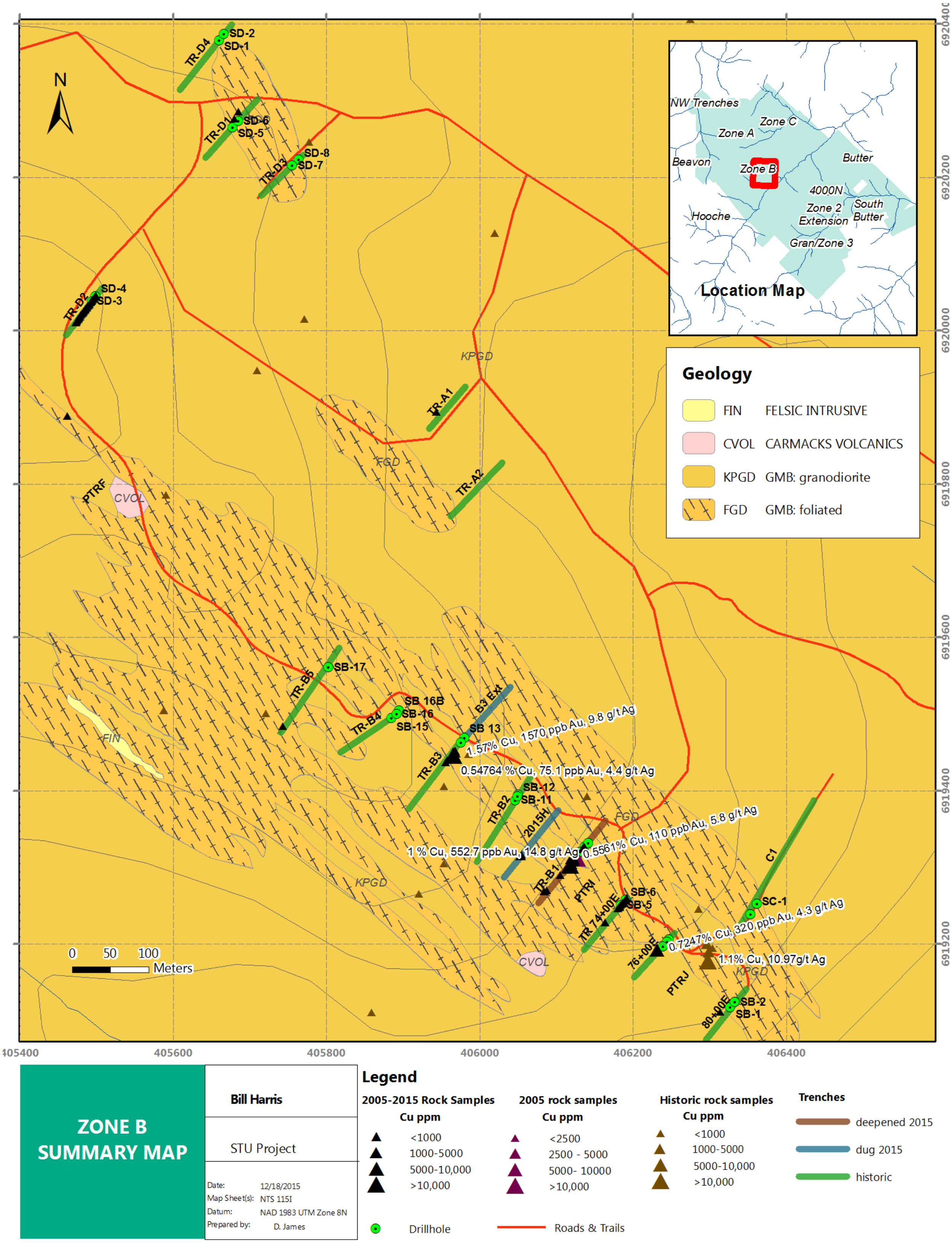


Figure 6: Zone B Detail

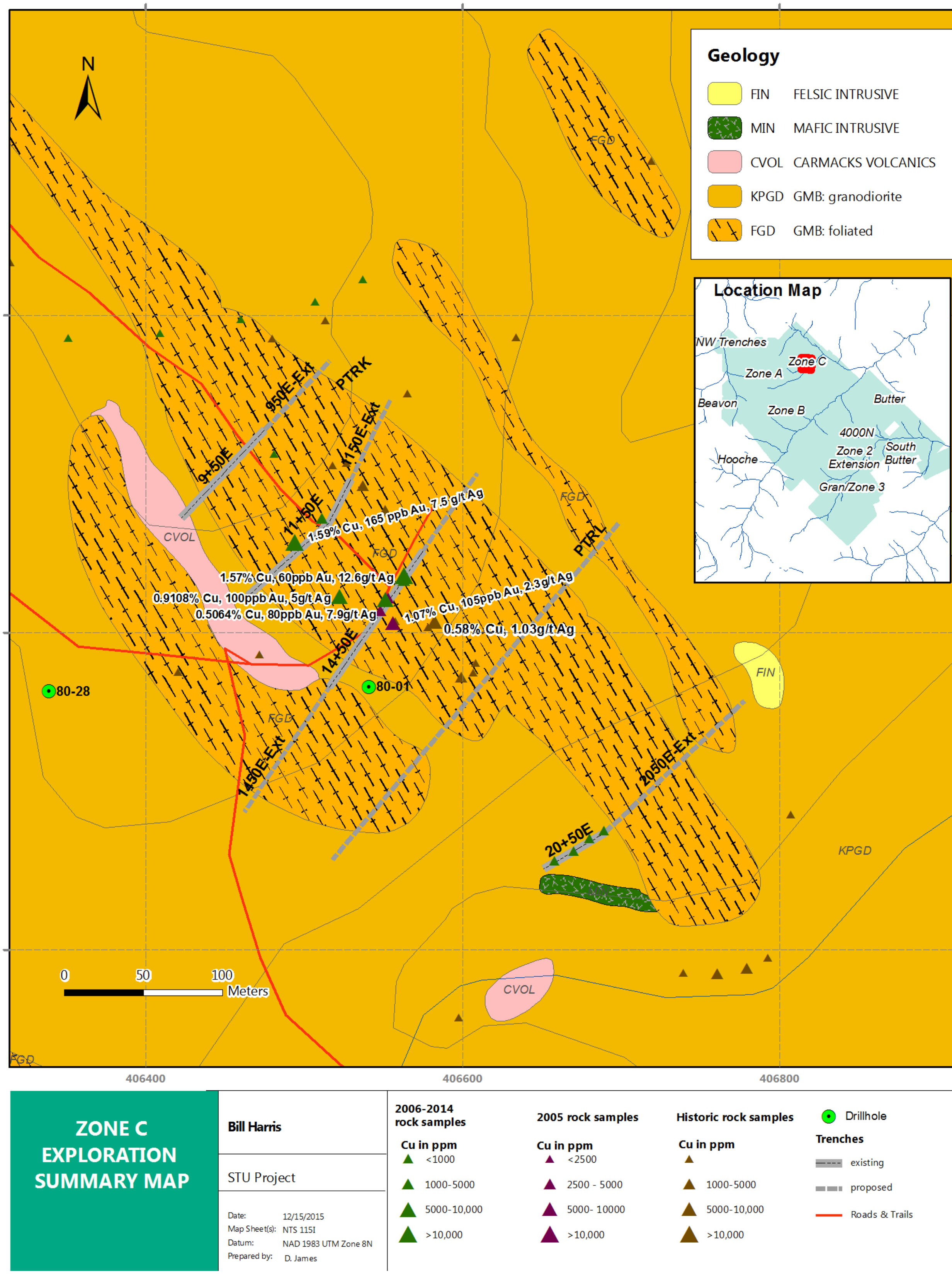


Figure 7: Zone C Detail

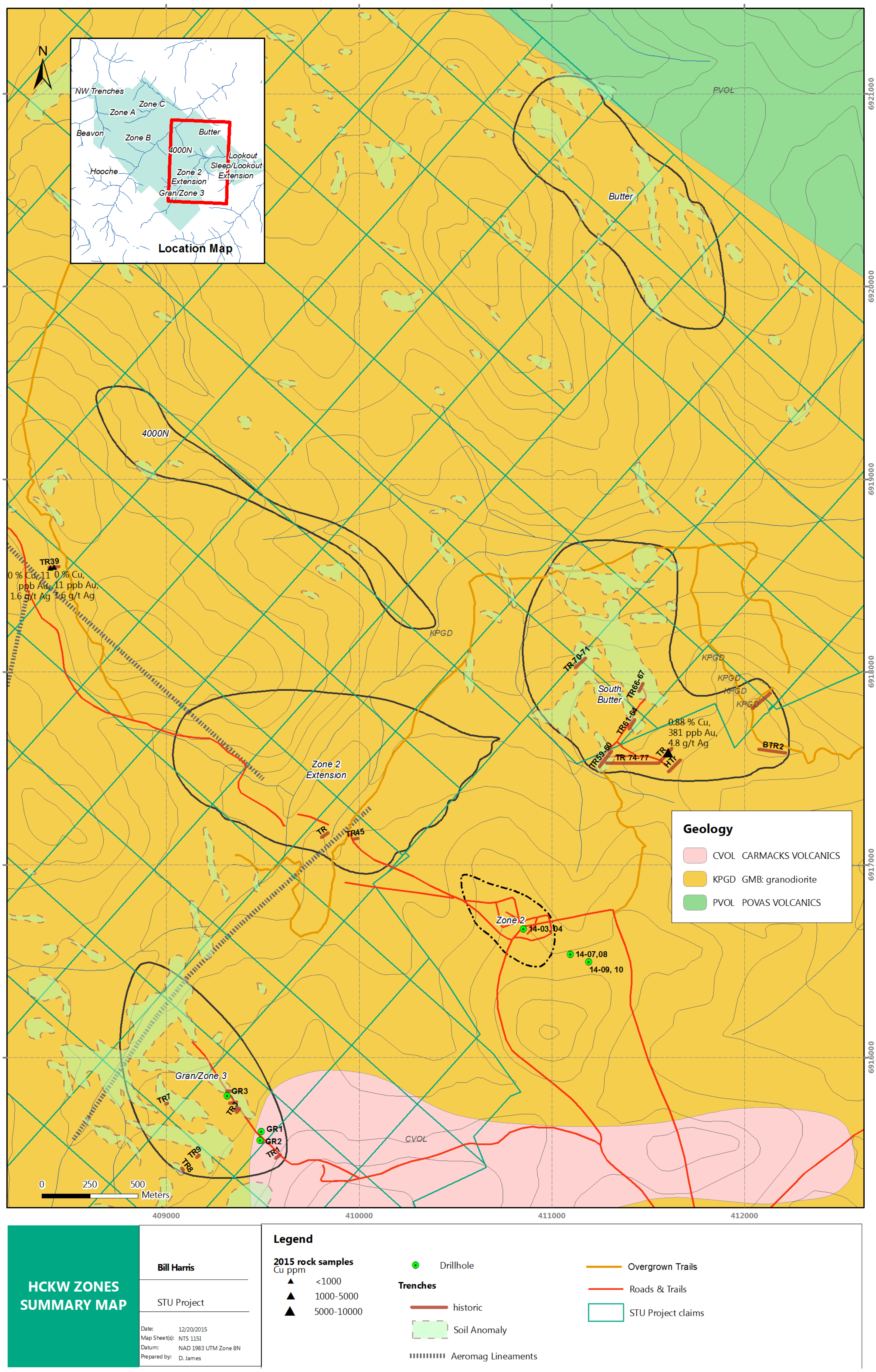


Figure 8: HCKW zones

7 DEPOSIT TYPES

The deposit type at the STU is a variation of that seen at Minto and Carmacks Copper although there is no agreement on the classification for those deposits.

Over its history, the Minto deposit has been classified as a metamorphosed or digested redbed copper deposit metamorphosed volcanogenic massive sulphide deposit, deformed copper-gold porphyry, magnetite skarn, iron oxide copper gold and a shear-hosted deep porphyry.

Casselman and Arseneau do not assign a deposit type to Carmacks Copper other than to state it is similar to Minto but with fewer sulphides. They believe that it was formed by assimilation of older, copper-bearing volcano-sedimentary rocks of the Povas formation into the younger Jurassic Granite Batholith. These rafts of mineralized rock were metamorphosed and partially to fully assimilated by the granodiorite. Additionally, the rafts would have peeled apart along bedding planes to form large tabular sheets. Later, sulphide mineralization was re-mobilized out of the rafts into the surrounding granodiorite. Following uplift and erosion, the rafts were exposed and the sulphide mineralization was oxidized and precipitated as oxide minerals.

Tafti and Mortensen, 2004 argue the deposits are a variant of typical copper (-gold) porphyries whose formation can be explained using the ‘arrested porphyry” model. In this model a typical porphyry deposit under development was rapidly buried to depths greater than 9km which arrested formation of the deposit. The late stage typical porphyry hypogene mineralization and broad phyllic and argillic alteration zones with widespread pyrite did not have time to develop.

Hood (2012) stays with a deep porphyry model, but believes that deformation of the intrusion as it was emplaced is the cause of the foliated host rocks. Deformation caused grain size reduction and left space for deposition of hydrothermal mineralization. The increase in biotite caused continued deformation of the shear zones and remobilization of sulphides.

Pautler (2014) has done considerable work in the region and believes that mineralization within the Carmacks Copper (-Gold) Belt is hosted by schlieren zones (including some volcanic xenoliths) within Jurassic granodiorite and is consistent with a calc-alkaline porphyry copper-gold model which formed at a deep crustal level. Similar deposits are the Kemess Mine and Kemess North deposits in northwestern B.C. which have similar age, chemistry and deposit characteristics; lacking only the foliated rocks associated with mineralization.

Regardless of the label, there is a consensus that the deposits formed at crustal levels deeper than 20 km, that there is a strong structural control on mineralization and that the deposit is a variant of the a porphyry model. An MSc thesis is underway at Carmacks Copper and work by the YGS on Jurassic plutons in the Carmacks Copper belt should add to understanding of the deposits.

8 EXPLORATION

8.1 PROGRAMS

This section covers exploration undertaken on the STU project by Bill Harris from 2005-2015 and work on the HCKW claims by various operators since 2006.

8.1.1 2015

Midnight Mining Services Ltd carried out the program in 2015 for Bill Harris, with the exception of a heritage overview survey that was carried out by Yukon Government over the HCKW claims. The program was funded by Bill Harris with assistance from the Yukon Mineral Exploration Program YMEP Target Evaluation 15-065. The program consisted of mechanized and hand trenching, rehabilitation of old core, road and trail clearing, camp construction, trench sampling, collection of XRF data on trenches, staking, prospecting, reconnaissance mapping and sampling. Work was done on claims STU 1, 3,5,7,29,31,33,35,36,38 KOO 18, 20, WC 7,8,17,18,39 and WCF 7 and 8.

The Midnight Mining Services crew spent 32 days on the project over four time periods: July 3rd to July 6th, July 12th to July 31st, September 24th to September 29th and October 13-14th. The field crew consisted of: Geologist and Project Manager Debbie James, Geologists Bill Mann and Jean Pautler, Prospector Bill Harris, Field Technicians, Mike Linley, Andrew Robinson and Howard Coyne, and Equipment Operators Mark Pierson and Danny Coyne. Between July 23rd and 28th Yukon Geological Survey (YGS) geologists Scott Casselman and Patrick Sack and student Josh Pillsbury visited the site daily and provided assistance in rehabilitating core, core logging and trench mapping. On July 26th, Nicolette Kovacs, a MSc. candidate, visited the site for 0.5 day. Nicolette's thesis topic is the Carmacks Copper deposit. The purpose of the YGS work was to write a paper for the YEG yearly report which is included as appendix 5. The YGS crew's assistance, observations and ideas were invaluable to the STU project and moved it forward considerably both in amount of work accomplished in a short time and in interpreting data.

8.1.2 2005-2014

Complete information on programs on the STU claims from 2005-2014 can be found in assessment reports by R. Robertson, J. Pautler and D. James. Programs have been short and consisted of examination and inspection of the property, rock sampling, surveying of trenches and drill holes, petrography, data compilation, collection of magnetic susceptibility measurements, claim staking and a limited amount of chip sampling of trenches. The information and results from these programs partially confirmed missing surface information from the UKHM work.

BC Gold undertook airborne magnetic surveys, geological mapping, prospecting, MMI soil sampling and IP ground geophysical programs over parts of the HCKW claims from 2006 to 2008.

8.2 TRENCHING & SAMPLING

8.2.1 2015

Between July 23 and 31st, a Hitachi 33 ton excavator was used to clean and deepen 630m in 7 old trenches and dig 5 new trenches over 385m in Zones A and B on the STU claims. Mineralized zones in trenches were chip sampled, and XRF readings were taken at 5m intervals along the length of the trench. Entire trenches were not sampled because of limited time and funding, but XRF readings were used to estimate the presence and magnitude of copper mineralization. Sample intervals were chosen where there was visual evidence of mineralization such as copper minerals, increased biotite, silicification, foliation or anomalous values on the XRF (values >100 ppm). Samples were located using a GPS to locate the trench endpoints, then a measuring tape was strung along the trench in order to record sample start and endpoints. In all, 97 samples were collected, 6 grab samples and 91 chip samples between 0.5-3m long, averaging 1.8 m long. See the sample database in Appendix 2 for complete results and trench maps in figures 9 and 10.

2015 Trenching Summary Table

Zone	Trench	Type	Length (m)	# Samples	Selected results	Length sampled (m)	comments
A	2015A	New	30	5	0.11% Cu 4 other samples >100ppm Cu	Grab samples over 10m	Permafrost and deep overburden. Filled in
A	1150W	Deepened	58	11	0.27% Cu/1.1m 4 other samples >100ppm Cu	23	
A	1150WExt	New	143	13	0.12% Cu/5.5m 8 other samples >100ppm Cu	23.5	Permafrost and deep overburden. Partly filled in.
A	2015 800W	Deepened	187	17	0.14% Cu/9m, 0.33% Cu/10.8m 3 other samples >100ppm Cu	29.8m	
A	600W	Deepened	133	23	0.18% Cu/29m 5 other samples >100ppm Cu	45.5	
A	400W	Cleaned by hand	48	7	All 7 samples >100ppm Cu	13	Cleared to start of deep overburden
A	2015C	New	64	0		0	XRF only, not sampled
B	B3Ext	New	91	0		0	XRF only, not sampled
B	2015H	New	118	3	All 3>100ppm	4 (plus 1 grab)	Only 51m dug
B	B1	Deepened	82	6	0.12% Cu/2m 2 other samples >100ppm	13	Zone chip sampled in 2013
B	7400E	Cleaned by hand	18	12	6 samples>100ppm	18	
Totals			**972**	**97**		**536**	

When trenches were cleaned by hand one of the trench walls (or the floor) was dug out with shovels and mattocks to expose bedrock and granular, weathered bedrock (rock flour) in place below the soil layer.

Deep overburden and permafrost were encountered in trenches 2015A and 1150WExt at the northern end of Zone A. To avoid these areas, the excavator dug where the ground was softer or bedrock closer, resulting in pits separated by undisturbed permafrost along the length of each trench. Trench 2015A and a deep pit at the end of 1150W Ext were filled in after being sampled because the trenches were unstable. 2015H in Zone B was only excavated in 2 locations along its proposed length. It was the last trench dug before the end of the program finished and there was not enough time to finish the entire trench. The remaining trenches are stable, relatively shallow and sloped at both ends to allow wildlife to escape, so were left open for further work.

No trenching occurred on the HCKW claims in 2015. Three samples were collected from prospecting and reconnaissance visits to trenched areas on the HCKW claims (figure 8).

8.2.2 2005-2014

In 2014, systematic hand trenching was done over the Nic showing 200m east of the eastern side of Zone A. Four 2-8m long northeast trending hand trenches were dug about 10m apart and 19 rock samples were collected. Significant results were obtained from 3 of the 4 trenches. The northernmost trench (14-03) intersected a 5m zone of unmineralized granodiorite cut by a 1m wide diorite dyke. Three short lines of soil samples were taken around the showing.

- Trench 14-01 returned 0.55% Cu, 1.9 g/t Ag and 0.27 g/t Au over 6m
- Trench 14-02 returned 0.49% Cu, 2.2 g/t Ag, 0.33 g/t Au over 3.5m
- Trench 14-03 no significant results, 3 samples all under 100 ppm Cu
- Trench 14-04 returned 0.36% Cu, 1.3 g/t Ag, 0.16 g/t Au over 4.0m

In 2013, 38 chip samples were collected in Zone B. Samples were collected from the D2, B1 and B3 trenches where bedrock was close to the surface or previous sample results had been good. Chip samples were taken between 0.5 and 2.0m long on good bedrock exposures. Where exposure was poor samples were either taken at a single location or pieces of rock were collected over a length.

2013 Trench Samples in Zone B

Trench	Length (m) sampled	# of samples	results
D2 (or 1978 trench)	36.5	23	16 > 100ppm copper
B1	6.3	10	>1.0% Cu (the sample was over limit but not assayed), 14.8 g/t Ag and 553 ppb Au over 0.5m. Three other samples >100ppm Cu
B3	22	8	0.55% Cu, 4.4 g/t Ag and 75 ppb Au over 2 metres. Three other samples >100 ppm Cu

Between 1982 and 2014 no mechanized trenching had been done on the STU claims. A few trenches had been partly cleared by hand and 50 grab samples collected between 2005 and 2014. Samples were collected from trenches in all three zones and most of the samples were malachite bearing foliated granodiorite. No consistent sampling along trenches was done due to poorly exposed bedrock in sloughed and overgrown trenches. Results are included in the sample database and are shown on maps.

There are no reports or evidence of trenching on the HCKW claims since the 1980s.

8.2.3 XRF Survey

An XRF was first used on the STU project in 2014. It was not deemed successful, because although there was a rough correlation between higher XRF readings and higher assay results, a visual estimate was deemed to be more accurate (Pautler, 2015). The XRF was used after the samples had been collected in an attempt to replicate known assay results.

In 2015 the XRF was used before samples were collected as an exploration tool to assist in locating areas to sample in trenches. Once a trench had been cleared, a single 90 second reading was taken at 5 intervals along the trench. Copper values were recorded in a field notebook along with information about the sample site. Full spectrum readings were stored on the XRF and downloaded later. The table below and figures 9 and 10 compare XRF readings along trenches with analytical values from the lab. The table contains the point location of the XRF reading, the analysed sample start and finish locations, the analytical result from the analysed sample and the XRF value. In summary, the XRF is a fast way to determine the presence and order of magnitude of the mineralization but is not a substitute for laboratory analysis. Of practical note is that the field crew enjoyed using the XRF. Some of the enjoyment is linked to seeing instant element values scroll up the screen, but part of the pleasure is derived from the instrument's resemblance to Star Trek phasers and the transmogrifier from the Calvin and Hobbes cartoon.

Table comparing XRF and analysed sample results

Trench	XRF reading location along trench (m)	Analysed sample start (m)	Analysed sample end (m)	Analysed Sample result (Cu ppm)	XRF reading in Cu ppm	Analysed sample number
1150W	10	9.0	10.5	671.7	726	615606
1150W	15	15.0	17.2	276.9	210	615609
1150W	20	20.0	22.5	48.8	540	615612
1150W	25	22.5	25.0	87.7	189	615613
1150W	35	34.0	35.7	98.7	368	615614
1150W-Ext	5	4.5	5.8	1024.3	1641	615602
1150W-Ext	10	7.5	10.0	1550.8	455	615604
1150W-Ext	120	120.0	122.0	74.6	0	615617
1150W-Ext	125	124.0	126.0	345.8	0	615621
1150W-Ext	130	128.0	130.0	457.6	5304	615623
1150W-Ext	135	134.0	136.0	664.5	2050	615626

Trench	XRF reading location along trench (m)	Analysed sample start (m)	Analysed sample end (m)	Analysed Sample result (Cu ppm)	XRF reading in Cu ppm	Analysed sample number
2015-800w	0	0.0	2.0	1934.4	323	615627
2015-800w	5	4.0	6.5	4980.4	2125	615629
2015-800w	10	9.2	10.8	2906.8	992	615633
2015-800w	80	80.0	82.5	201.0	0	615635
2015-800w	85	84.0	85.5	1874.5	3969	615637
2015-800w	90	88.0	90.0	1349.9	1190	615641
2015-800w	95	93.0	95.0	105.0	85	615644
2015H	75	74.0	76.0	174.4	370	615723
400W	35	35.0	37.0	371.2	406	615701
400W	40	39.0	40.5	262.2	488	615703
400W	45	44.0	46.0	738.3	677	615706
400W	47	46.0	48.0	952.8	460	615707
600w	10	8.5	10.5	50.8	197	615645
600w	15	14.0	15.5	480.9	922	615648
600w	25	22.5	25.0	66.5	925	615653
600w	60	59.0	60.7	1788.8	1404	615661
600w	65	64.3	66.0	1987.9	10800	615664
600w	70	68.5	71.0	1884.0	3079	615666
600w	75	74.5	76.5	3442.5	1272	615669
600w	80	78.5	80.0	1795.9	996	615672
600w	85	84.0	86.0	906.9	1570	615675
7400E	0	0.0	0.6	248.8	413	615709
7400E	10	9.1	10.5	47.3	0	615716
7400E	15	14.5	15.5	151.9	1548	615719
7400E	18	16.5	18.0	153.5	278	615722
B1	43	42.0	44.0	351.1	2344	615676
B1	45	44.0	46.0	1223.2	444	615677
B1	76	76.0	78.0	39.3	407	615679
B1	80	78.0	80.0	23.7	0	615681

8.3 MAGNETIC SUSCEPTIBILITY

Magnetic susceptibility measurements on samples have been collected since 2012. Multiple readings were taken from different pieces of rock in each sample and either recorded immediately or stored in the data recorder prior to being downloaded onto a computer. Readings were taken through the Kraft bag when measuring soil samples. Readings are recorded in the sample database and can be directly compared to assay results.

There is no correlation between grade and magnetic susceptibility but there is a tendency for samples with high copper values to have either high (>10) or low (<2) magnetic susceptibility. The two populations may represent hypogene mineralization with magnetite and supergene malachite-dominant mineralization where magnetite has been destroyed by alteration and weathering.

Magnetic susceptibility measurements should be collected regularly on STU samples and will assist in identifying magnetite in weathered samples and mapping alteration.

8.4 GPS SURVEYING

The locations of 14 rotary holes and 22 diamond drill holes have been GPS surveyed. Diamond drill collars were marked in 1980 with a log placed in the collar and a metal tag with the hole number inscribed nailed to the log. The logs have since fallen out of the collar hole and rotted or been burnt, but in some cases part of the log and the metal tag have survived. At other locations the tag has been attached to a nearby tree. RAB holes are identified by a pile of cuttings and in some cases a metal tag had been attached to a rock and placed on the pile.

8.5 SOIL SAMPLING

Minimal soil sampling has been done since Bill Harris staked the STU claims in 2005. Other that a small grid over the Nic showing in 2014 and two short lines along roads, most soil samples were collected to supplement rock samples in trenches or areas with no outcrop.

In 2014 three 150m soils line northeast trending were collected around the NIC showing, an eastward extension of Zone A. Thirty nine samples were collected at a spacing of 11-12m. The highest copper value was 30.4 ppm and molybdenum 1.1 ppm. The author (Pautler, 2015) felt that thick overburden and volcanic ash lowered thresholds and suggested that copper values >12.5 ppm are significant and >19 ppm are anomalous.

In 2008, BC Gold collected 107 MMI soil samples over grids in two areas on the Copper claims (present HOO and WC claims). The strongest anomaly was south of the Gran/Zone 3 and may connect with that zone. BC Gold also collected 270 MMI soil samples on the CHE claims in 2008 and 106 MMI soil samples around the Butter showing. Their surveys confirmed or extended anomalies previously delineated in historic work. The MMI soil anomalies have been incorporated into a polygon shapefile but the raw data has not been digitized.

8.6 PETROGRAPHY

Two petrographic studies by different authors were done on trench samples from all three zones in 2008 and 2012. In the 2008 study, 6 malachite stained samples from all three zones were inspected. In 2012, 3 samples of higher grade bornite-bearing specimens from the B and C zones and one sample of nonmineralized granodiorite from the B zone were studied. The sample suite was biased towards oxide mineralization. Findings from the petrography are discussed in section 6.

8.7 GEOPHYSICAL SURVEYS

No geophysical surveys have been done on the STU claims since the 1980s.

In 2007, BCGold carried out an airborne magnetic and radiometric regional survey over the area. Images of the magnetic data are available and lineaments have been interpreted from the survey and used in this report. In 2008, BC gold carried out 12.8 line km of IP surveying on the Copper claims (close to the Gran/Zone 3) and 18 line km over the Peanut claims. Digital data for the IP surveys is included with the assessment reports. Anomalous apparent resistivity and apparent chargeability correlate well on the Copper and may be caused by changes in lithology (Barrios and Newton, 2009).

8.8 STAKING

Thirty seven new claims were staked in 2015, 24 Peanut claims on the west side of the property and 13 LED claims on the east side of the property bordering the Yukon River. The Peanut claims had been held by BC Gold and host Yukon Minfile occurrence 115I127, Hooche which covers a MMI copper in soil anomaly, IP geophysical anomaly and is coincident with the margins of a linear magnetic high (YG minfile). The LED claims were previously held by Golden Predator and cover vein showings.

8.9 HERITAGE POTENTIAL STUDY

During the permitting process for the HCKW claims, a Yukon government archaeologist completed an overview archaeology survey. Small areas having high potential to host heritage sites were identified and provided as shapefiles. Such areas can be managed by avoidance, or by carrying out a ground survey if the area cannot be avoided.

9 DRILLING

No new holes have been drilled since 1989 (see historic work in Section 5), but in 2015 core from the 1980 program was rehabilitated. Three holes were relogged, one was resampled, and historic sections were digitized to produce a drill database combining historic and new information.

Information about the RAB holes was taken from page size drill sections in a 1989 report. No sample numbers are plotted on the sections but copies of original assay certificates are provided and all values >0.01% Cu are plotted. No information on lithology or alteration was collected.

Diamond drill sections with geology, alteration, mineralization and structure were recovered from Alexco in 2013. The information from these sections has been entered into a drill database and converted into metric. The database is still in need of cleaning because it contains multiple rock codes for the same rock type. Further relogging and sampling of old holes will improve the database, but it has been used to create new sections and a simple 3D model of Zone A. See drill sections in appendix 4 and the YGS paper in appendix 5. Interpreted mineralized bodies are drawn on the sections. They were derived from assays or mineralization noted in the UKHM logs.

Preliminary observations can be made from the sections:

1. There are at least 4 mineralized bodies exposed in the trenches and drillholes
2. Mineralization dips 30-40^{o} to the northeast.
3. The longest body is at least 200m long from north to south, extends 80m downdip and ranges in width from 10-15m.
4. Other larger mineralized bodies have an interpreted downdip extent of 85 to 160m and range in thickness from 2 to 20m wide.
5. The deepest intersection is at 550m elevation, 380m below surface.
6. Values in drillholes so far are higher than surface values in trenches. Cu grades of 2.8 to 3.5% analysed over 12 to 14m widths in drill core. On surface, Cu grades over similar widths are less than 0.4%. A similar relationship is seen with Ag and Au.
7. Oxidation (malachite vs bornite and chalcopyrite) increases southwards, but holes are shallower here (not reaching below 800m elevation) and did not get below oxidation.

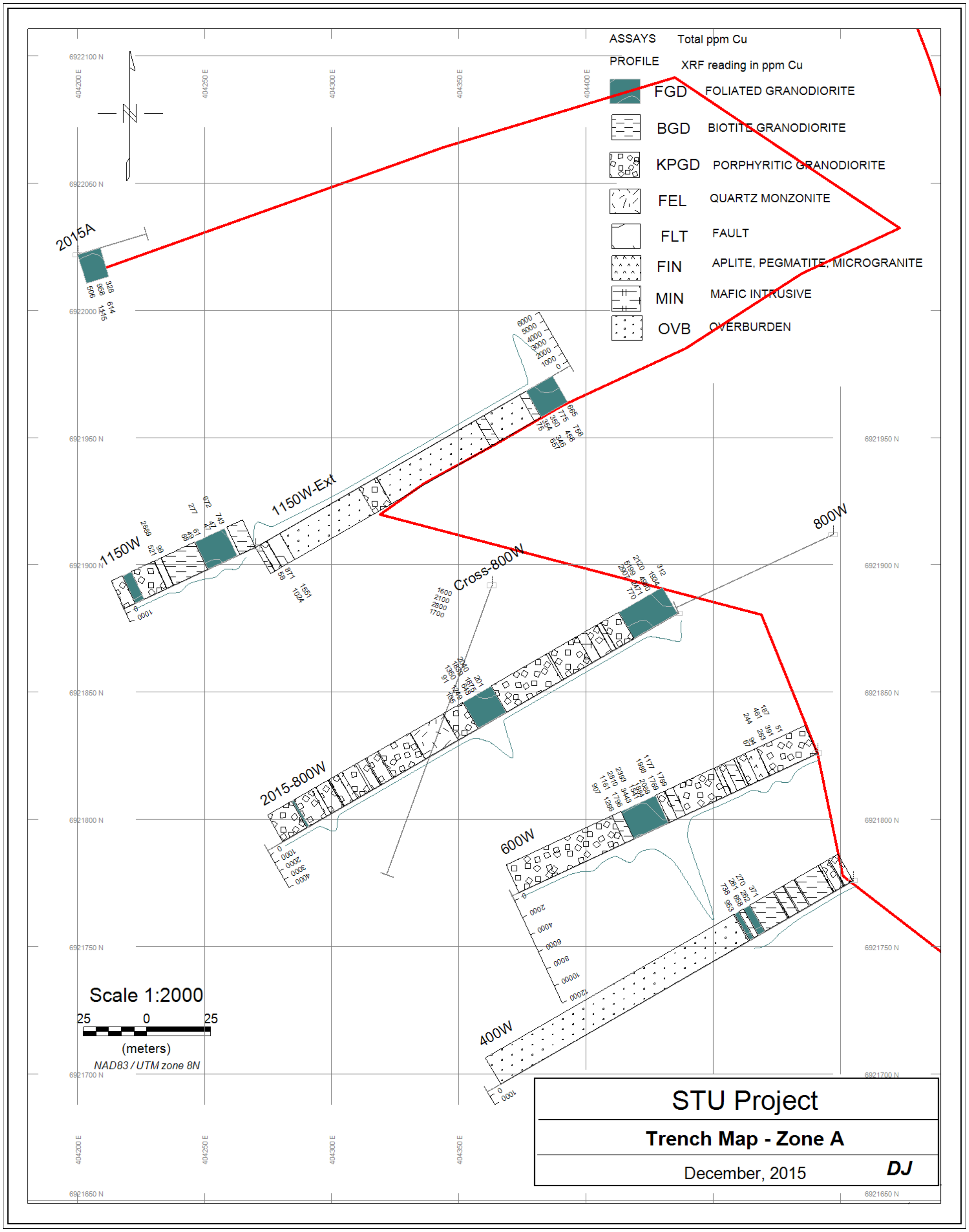


Figure 9: Trench Map Zone A

Map shows trenches that were mapped and sampled in 2015. Profiles along trenches are XRF results in ppm Cu. Chip sample results in ppm Cu are listed opposite profiles. All samples are shown.

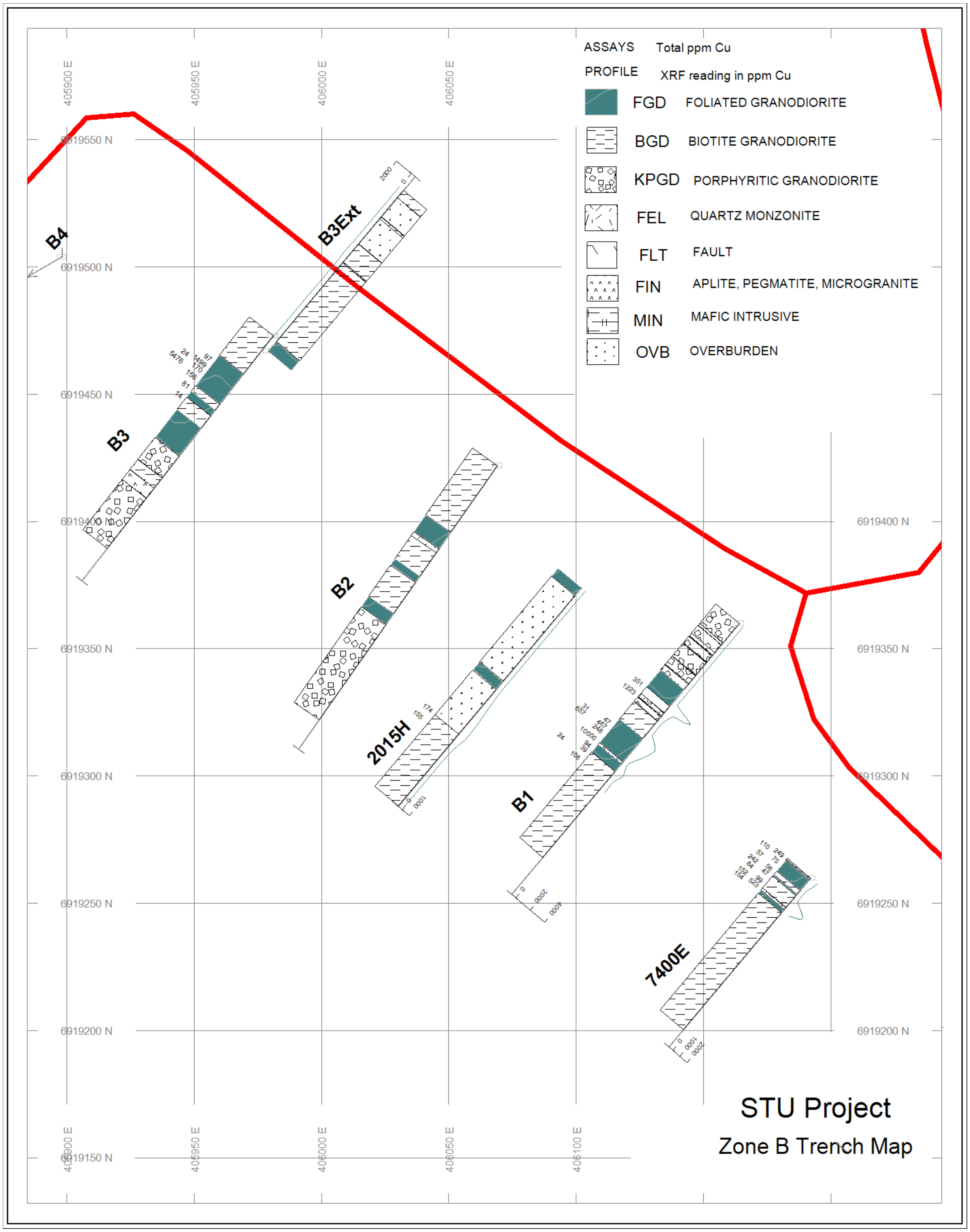


Figure 10: Trench Map Zone B

Map shows trenches that were mapped and sampled in 2015 except for B2 and B3 which were sampled in 2013. Profiles along trenches are XRF results in ppm Cu. Chip sample results in ppm Cu are listed opposite profiles. All samples are shown. Geological units are a combination of historic and 2015 work.

10 ADJACENT PROPERTIES

Golden Predator's DEL claims sit on the east side of the Hoocheekoo Fault across from the STU property in Povas Formation volcanics and sediments. This is not a favourable setting for Carmacks Copper Belt mineralization, but could provide information on the eastern side of KOO claims and the LED claims.

Adjoining the southern claims of the STU Project is Copper North Mining Corp's Carmacks Project. Based on the Preliminary Economic Assessment from June 2014 the deposit has mineral resources of 11.98 million tonnes (measured and indicated) of 0.86% oxide Cu, 0.21% Sulphide Cu, 0.456 g/t au and 4.578 g/t Ag A new prefeasibility study is in progress and will supersede the PEA. (www.coppernorthminingcom November 29, 2015).

Capstone Mining Corp. Minto mine is located north of the STU project. Estimated mineral reserves as at December 31, 2014 are 7,659,000 tonnes proven and probable, grading 1.71% Cu, 6 g/t silver, 0.74 g/t gold. Estimated mineral resources inclusive of reserves are 47,958,000 tonnes of measured and indicated, grading 1.08% copper, 4 g/t silver, 0.40 g/t gold. The mine has an estimated 7 years remaining mine life. (www.capstonemining.com, January 18, 2015)

11 SAMPLING PREPARATION, ANALYSIS AND SECURITY

The 2015 work program resulted in the collection of 99 rock samples by Midnight Mining Services and 31 core samples by the YGS. The rock samples were mostly chip samples from trenches collected from potential mineralized locations and other areas of geological interest. Core samples were 23 from 80-06 for geochemical analysis, 4 from 80-14 and 4 from 80-07 for petrographic analysis.

The rock chip samples collected by Midnight Mining Services during 2015 were placed in marked poly bags, sealed with zap straps, placed into marked rice bags, sealed with zap straps, and delivered directly to the Bureau Veritas preparation facility in Whitehorse. There 1kg of sample was crushed to 70% passing 2mm, then a 250g split was pulverized to 85% passing 75 microns (preparation code PRP70-250). The split was shipped to Bureau Veritas in Vancouver, B.C. for analysis by method MA270, which involves digestion of a 0.5g sample split in a multi acid solution followed by analysis using ICP-ES or ICP-MS. Gold was analysed by method FA430, fire assay fusion, and read using AAS. Nonsulphide copper oxide values were determined using method GC921in which the sample is leached with 5% sulfuric acid for 1 hour at room temperature, filtered, then measured using AAS. Total copper values were taken from MA270 and nonsulphide copper oxide values from GC921. The latter is an analysis method used at Carmacks copper to determine the amount of copper in oxides versus copper in sulphides.

Core samples collected by the YGS were also sent to Bureau Veritas and prepared and analysed using the same methods as those used by Midnight Mining Services.

Bureau Veritas is an independent accredited laboratory located in Vancouver, B.C with a preparation facility in Whitehorse, YT. Both the laboratory and the Whitehorse preparation facility comply with the requirements of ISO 9001:2008 (certificate Number FM 63007).

All sample pulps were discarded after 90 days and rejects were returned to Bill Harris for storage. All of the samples are recorded in MS Excel spreadsheets and the data is exported to GIS programs for viewing and map production.

QAQC samples were inserted on sample tags ending in zero. During sampling, the tag was reserved and the QAQC samples were inserted after collection of the samples. Six standards, 3 blanks and 1 duplicate sample were inserted into the sample stream. A copper gold standard (CDN-CGS-13) was the only standard used. See appendix 2 for information sheets on the standard and analysis techniques.

12 INTERPRETATION AND CONCLUSIONS

12.1 DISCUSSION OF DRILLING

The 2015 program on the STU claims has advanced the project to next stage which is drilling. Although drilling new holes would be the best method, some resampling of the rehabilitated core combined with continued trenching could be used to supplement a smaller drill program.

Resampling of the old core would be a cost efficient method of carrying out a drill program, but there are some concerns.

- Not all of the collars have been located so there is some doubt on the exact hole locations.
- Historic core is BQ and was split when sampled previously so in some intersections there is not much material remaining to sample.
- If all of the remaining half intersections are completely sampled they will be no physical record of the intersections. Partially resampling the intersections is a workaround but is not completely satisfactory.
- The rehabilitated core is in good condition and pieces appear to be in order, but there will always be some question especially in intersections where the core is looser and able to shift around.
- The historic holes alone may not be reliable enough for a resource calculation, mainly for the reasons stated in the previous points; at least some new holes would be required.

New holes should not replicate the old drilling by twinning holes, but should be strategically located between old holes to both confirm historic results and generate new information. In general, new holes should be deeper than historic holes, reaching down to 750-800 m. If possible, oriented core should be used for at least some of the holes, especially those nearest the high grade historic holes. Depending on results of early holes, further drilling should be conducted both to the east and west of old holes. If a model of multiple lenses similar to Carmacks Copper or Minto is followed, there should be more lenses outside of the 4 found so far. The strength of soil anomalies suggests that east is the more favourable direction.

The old core should be relogged and photographed and susceptibility measurements and XRF readings should be collected. Previously unsampled sections, especially any that are mineralized can be resampled.

12.2 DISCUSSION OF TRENCHING

12.2.1 STU Claims

More old trenches should be cleared of overburden and deepened or extended where required. Systematic chip sampling, geological mapping and magnetic susceptibility measurements should be carried out. Proposed new trenches and extended or deepened trenches are listed in the tables below.

Zone A

Zone A historically had the best results of the three zones and recent sampling has confirmed this. The ground north and east of trenches 11+50W is not suitable for trenching. Overburden is deep and permafrost makes digging difficult. This area would be better tested through drilling. Further north where the ground slopes up should be suitable for trenching if anomalies are present.

Proposed trenches in Zone A

Trench	SW coordinate (NAD83 Z8N)	NE coordinate (NAD 83 Z8N)	Length (m)	Comments
PTRM	404096, 6922579	403922, 6922559	175	New
Cross 800W			~150	Deepen and extend NE depending on overburden depth
14-03 (Nic)			20	Deepen and extend
800W			68	Deepen to NE, continuing on from 2015 work.
600W			50	Extend to NE
400W			50	Deepen and extend past 50m mark where hand trenching ended.
000W			~100	Deepen, depending on overburden
		Total	**613**	

Zone C

This zone has received the least work perhaps because the access trail passes through a wet area making regular access difficult and limiting the amount of work. There are only 4 trenches and the second outcrop showing near Camp Creek does not appear to have been trenched. Although small the zone has high copper values along with gold up to 3.7 g/t (sample 526140) and silver up to 15.09 g/t (historic sample 2512). Repeated rock sampling in trenches 11+50E and 14+50E has returned samples in the 0.3-1.6% copper range. UKHM mapping shows that foliated granodiorite continues on either side of the trenched area. Trench extensions and a new trench are listed in the table below.

Proposed trenches in Zone C

Trench	SW coordinate (NAD83 Z8N)	NE coordinate (NAD 83 Z8N)	Length (m)	Comment
950E			60	Extend NE
1150E			60	Extend NE
1450E			155	Extend 60 m to NE and 95m to SW
2050E			120	Extend to NE
PTRL	406518, 6922257	6406698, 6922469	280	
		Total	**319**	

Zone B

Zone B is a lower priority target. More of an understanding of the geometry of mineralization needs to be better understood before advanced work continues. Old trenches should be mapped and XRF readings collected. A few deep exploratory drillholes would be interesting in this area, but more information is needed before they can be planned.

12.2.2 HCKW Claims

Compilation and interpretation of previous work needs to be finished and the showings require prospecting before trenching can occur on the HCKW claims. At some of the zones, Gran/Zone 3 in particular, deep overburden (>15m) makes it difficult to reach bedrock.

12.3 DISCUSSION OF SOIL SAMPLES

12.3.1 STU Claims

Historic soil sampling has been undertaken over most of the STU claims. That information is being used to characterize the footprint of soil anomalies and as an indicator of targets outside the main zones. The survey was carried out over multiple mineralized areas allowing the copper geochemical signature to be recognized. Fifty ppm was the original threshold to characterize an anomaly, but the author suggests that a lower threshold should be used. Similar conclusions were reached by other operators; Archer (1970) recommends values >35 ppm Cu as being anomalous and Pautler (2015) recommends values >19 where deeper overburden and volcanic ash are present.

Soil anomalies in the mineralized zones are not distinct linear highs that can be traced for some distance. Instead they are clusters of >30 ppm with an occasional >50 ppm value that have an overall northwest to north trend. There are thirteen zones at Minto ranging from 1-60m wide and up to 100m apart and 11 zones at Carmacks Copper up to 50m wide and 20-400m apart. That adds up to a lot of potential zones and soil anomalies if STU has a similar geometry to either of those deposits which it appears to have.

Property wide soil sampling on a grid, essentially reproducing the 1977 work, is not recommended at this time. Additional and infill sampling should be considered in certain areas.

1. Areas of the current STU claim configuration that were not covered in the 1977 grid. This is especially important on the southwest side where prospecting uncovered foliated granodiorite and in areas underlain by magnetic lineaments.
2. Low lying areas or places where a number of 1977 samples could not be taken could be resampled using alternate material or analysis methods.
3. The burns that swept through part of the property may have uncovered new outcrop or thawed permafrost and this area could be revisited.

When sampling these areas, samples should be collected that overlap the 1977 grid so that the two surveys can be levelled. MMI soil sampling has been successfully used in the area and Ah horizon sampling has proven success over buried porphyries in BC (assuming a sufficient amount of Ah horizon is present). On north aspect slopes and in valleys were permafrost is an issue vegetation sampling may be suitable. When any resampling occurs it should be analyzed for multiple elements.

12.3.2 HCKW Claims

The HCKW claims have been soil sampled by multiple operators, including recent small MMI surveys, so no more soil sampling is recommended until all possible information has been recovered from the historic work.

An initial compilation of soil anomalies from historic work and recent MMI surveys suggest that the Gran/Zone 3 is surrounded by a significant soil anomaly approx. 2 km long and at least 1 km wide with a possible extension to the southwest (figure 12). Previously, the zone had been split between different operators and was truncated by claim boundaries. The zone is also situated along strike to zones at Carmacks Copper.

12.4 DISCUSSION OF GEOPHYSICS

Casselman's (2007) assessment report contains a compilation of historic geophysics on the Williams Creek/Carmacks Copper property, covering much of the current HCKW claims. This information should be reviewed by a geophysicist and geologist to determine geophysical responses over known zones and that response used to search for new targets. Additionally, assessment reports on 2000 era geophysical surveys by BCGold on their Carmacks properties contain digital geophysical data which can be added to the older information. Following extraction of information from previous surveys, more ground geophysics may be required.

There is some disagreement over the ability of IP surveys to locate mineralization on the STU claims. Following an IP survey over the STU claims in 1978, Smith concluded that the IP anomalies were weak and poorly defined and generally did not coincide with geochemical anomalies over Zones A, B and C. Resistivity anomalies were more common than chargeability anomalies. On the other hand, Casselman (2007) reports on the success Western Copper had in tracing mineralization using IP, though he notes that over a few zones IP did not work and VLF-EM surveys were a better choice.

12.5 EXPLORATION TARGETS

There are multiple exploration targets on the STU project and depending on the time and budget available they can be advanced separately or simultaneously. Advanced targets (mechanized trenching, drilling) are Zones A, B and C on the STU claims and are discussed above. The next most advanced targets are extensions of Zones A and C. These targets would be ready for hand and mechanized trenched after prospecting and possible ground geophysics. There are three early stage targets outside of the three main zones requiring prospecting, mapping, sampling and geophysics prior to trenching. They are listed below and shown in figure 11.

12.5.1 STU Claims

Extension of Zone A. There are soil anomalies north of Zone A coincident with two magnetic lineaments and soil anomalies east of Zone A extending past the Nic showing. These areas are candidates for possible ground geophysics and trenching.

Extension of Zone C. Soil anomalies on the Che claims may cover an extension of Zone C. This area is a candidate for ground geophysics and trenching following compilation of historic data and prospecting.

Early Stage Targets

- Coincident stream, soil and magnetic lineament northeast of Zone C close to the confluence of Camp and Stu Creeks.
- The southwest side of the STU claims where the claims extend past the limit of 1977 soil sampling. A program of grid soil sampling and stream sediment sampling should be undertaken over this area. The first soil samples should be taken to cover the ridge parallel to Zone B where there is both foliated granodiorite and a magnetic lineament. Work in this area can link up to the newly staked Peanut claims.
- Soil anomaly associated with junction of two magnetic lineaments on the west side of the property south of the NW Trenches.

12.5.2 HCKW Claims

The zones on the HCKW claims have not been systematically tested nor are results available for the limited trenching and drilling that have been done. The general elongate structure of the zones and the results from limited sampling indicate that there is potential for the zones to host mineralization similar in geometry and mineralization to the Carmacks Copper deposit and the STU zones. Targets are listed in order of precedence, incorporating ease of access. Should the exploration budget include substantial helicopter time, then work on outlying zones may be moved forward. Further compilation work will be needed prior to starting fieldwork.

Gran/Zone 3. An initial compilation of soil sampling indicates that this zone may be larger than originally thought. Deep overburden will be a concern as will Carmacks volcanics rock that cover the south end of the zone. Few of the historic trenches reached bedrock and the drillholes may have failed to do so as well. A prospecting and trenching target in areas of shallower overburden. Also a geophysical target.

South Butter. Existing trenches could be cleaned and deepened with follow up mapping and prospecting.

Zone 2 Ext. There are no soil anomalies in this area, but Zone 2 did not show up as soil anomaly, so the lack of an anomaly does not mean there is no mineralization. This area is probably the best candidate for ground IP which was used successfully to trace the southern extension of Zone 2 on

Carmacks Copper's ground. Prospecting should be done prior to the survey and as a follow-up to check on any anomalies.

Lookout & Sleep. Soil sampling, mapping and prospecting (initial ridge and spur with follow-up grid sampling) should be carried out in this area. Helicopter access at present, but an overgrown trail reaches to within 1 km. Trail upgrading to allow ATV access would greatly facilitate work on these showings. Compilation work needed prior to further fieldwork.

4000N. A difficult target to tackle. Soil anomalies are spotty, a recent burn makes access difficult and there is little outcrop. A creek draw and a moderate ridge just north of the creek near the middle of the anomaly may be the best place to start prospecting and mapping. An overgrown road reaches close to the zone and it might be most efficient to create a cutline along the spine of the geophysics anomaly with a bulldozer to create access.

Butter. The Butter zone has a smaller soil anomaly than Gran/Zone 3 or South Butter and is not accessible by road. It is a target for hand trenching depending on helicopter availability and depth of overburden. The area has been burnt and no outcrop was detected from the air in 2008 (Pautler, 2015c)

Hooche. No work recommended at this time unless a significant helicopter budget is available. Foliated granodiorite has been mapped in the area, but at present the occurrence is only accessible by helicopter.

13 RECOMMENDATIONS

This section outlines a 2 phase program of geophysics, trenching, resampling old core and prospecting, followed up by diamond drilling. Phase 1 starts at Zone A, then moves to other zones to allow time for results to be received and interpreted before drilling starts in phase 2. If funding and market conditions do not allow for drilling, then phase 1 alone will move the project ahead and prepare it for drilling.

Pre – Program (~ 2 weeks)

- Compile geophysics surveys from 1970s
- Compile HCKW historic data and refine prospecting and trenching targets
- Continue to approach Alexco (owners of UKHM archives) in case there is more information in their archives, namely assay results.
- Research showings and work done on newly staked LED and Peanut claims
- Review past geophysical results with a geophysicist to determine if ground geophysics might be suitable for some of the targets, and if so, what type of geophysics

Field Program Phase 1- ground geophysics, trenching, core resampling, prospecting (1 month)

- Ground geophysics surveys if required
- mobe excavator onto site, upgrading existing roads and trails along the way to allow 4WD access to the STU camp.
- Trenching in zone A
- complete reboxing of old core
- log, photograph and collect magnetic susceptibility and XRF measurements on old core
- resample some of the old core
- trenching in zone C
- prospecting on HCKW targets
- trenching on HCKW targets

Field Program Phase 2 – diamond drilling (1 month)

- Plan drillholes
- Upgrade camp to accommodate drill crew
- Drill program minimum 1000m (depends on budget)

Budget

Where a range of costs are given, the amount used in the total is the middle of the range. It is not possible to know how much (if any) ground geophysics will be required. The budget assumes that a substantial amount of old core will be resampled, but if more new drilling is planned, then less of the old core will be resampled.

Pre-program	
Geologist 7 days @ $500/day	$3,500
Geophysicist 4 days @ $600/day	$2,400
GIS/Database support 7 days @$350/day	$2,450
Pre-program total	$8,350
Field program – phase 1 (1 month)	
Program preparation	$3,000
Linecutting	$5,000-$10,000
Ground Geophysics	$10,000-$30,000
Geologist 30 days @ $500/day	$15,000
2 Junior Geologists 60 days @$400/day	$24,000
Machine Operator 20 days @ $400/day	$10,000
Camp Person/Cook 30 days @ $400/day	$12,000
2 Field Technicians 60@ $350/day	$21,000
Office Support	$1,000
Helicopter –10 hours @ $1500/hour	$15,000
Rock and core sample analysis, 300-600 samples@ $60/sample	$27,000
Soil samples – 400 @ $30/sample	$12,000
Sample standards	$500
Camp costs, (food, fuel, equipment) 200 person days @ $120/day	$24,000
Truck rental, 2 @ $150/day each	$9,000
ATV rental, 3 @ $50/day each	$4,500
Field gear (bags, flagging, tools, cameras, packs, etc.)	$3,000
Excavator rental, 20 days @ $2,300/day	$46,000
Excavator fuel	$7,000
Vehicle fuel (travel and field)	$2,000
Pre-program & Phase 1 Subtotal	$263,500
Contingency (15%)	$39,500
Phase 1 Total	**$303,000**
Field program – phase 2 (20-25 days, 1000m drilled)	
Program preparation	$3,000
Camp upgrading	$10,000
Geologist 25 days @ $500/day	$12,500
Junior Geologist 20 days @$400/day	$8,000
First Aid/Cook 25 days @ $500/day	$12,500
Field Technician 25 days@ $350/day	$8,750
Drilling costs 1,000 m @$120/m	$120,000
Office Support	$1,000
Rock and core sample analysis, 200 samples@ $60/sample	$12,000

Sample standards		$500
Camp costs, (food, fuel, equipment) 175 person days @ $120/day		$21,000
Expediting		$5,000
Truck rental, 2 @ $150/day each		$7,500
ATV rental, 2 @ $50/day each		$2,500
Field gear (bags, flagging, tools, cameras, packs, etc.)		$3,000
Bulldozer rental, 10 days @$1800/day		$18,000
Bulldozer fuel		$4,000
Vehicle fuel (travel and field)		$2,000
	Phase 2 Subtotal	$251,250
	Contingency (15%)	$37,690
	Phase 2 Total	$288,940

Report & Data Management

Report writing, 10 days @ $500/day		$3,500
GIS, digitizing, database compilation, 7 days @ 350/day		$2,450
	Report Subtotal	$5,950
	All phases Total	**$597,890**

Figure 11: Early Stage and Extension Exploration Targets STU and CHE Claims

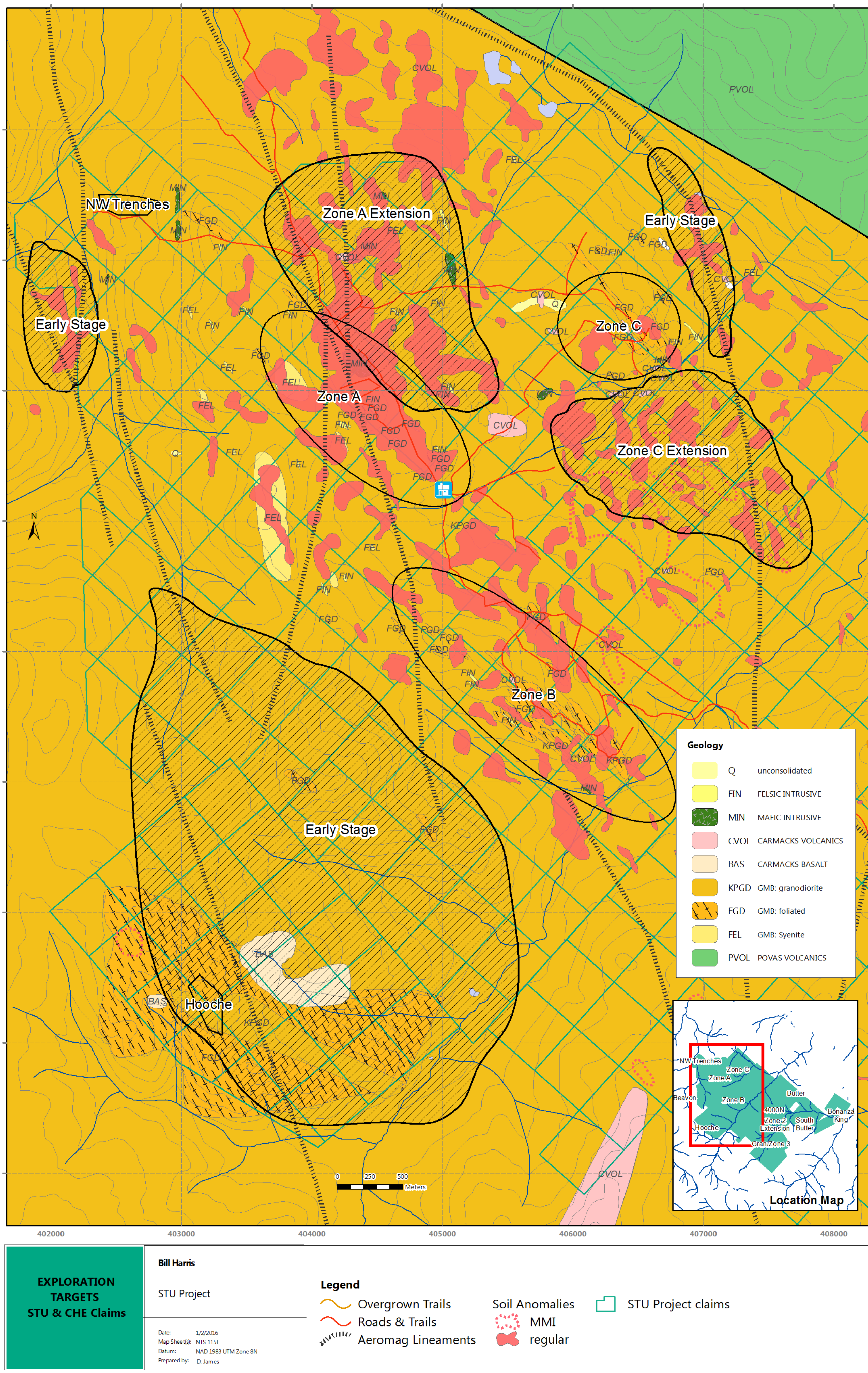
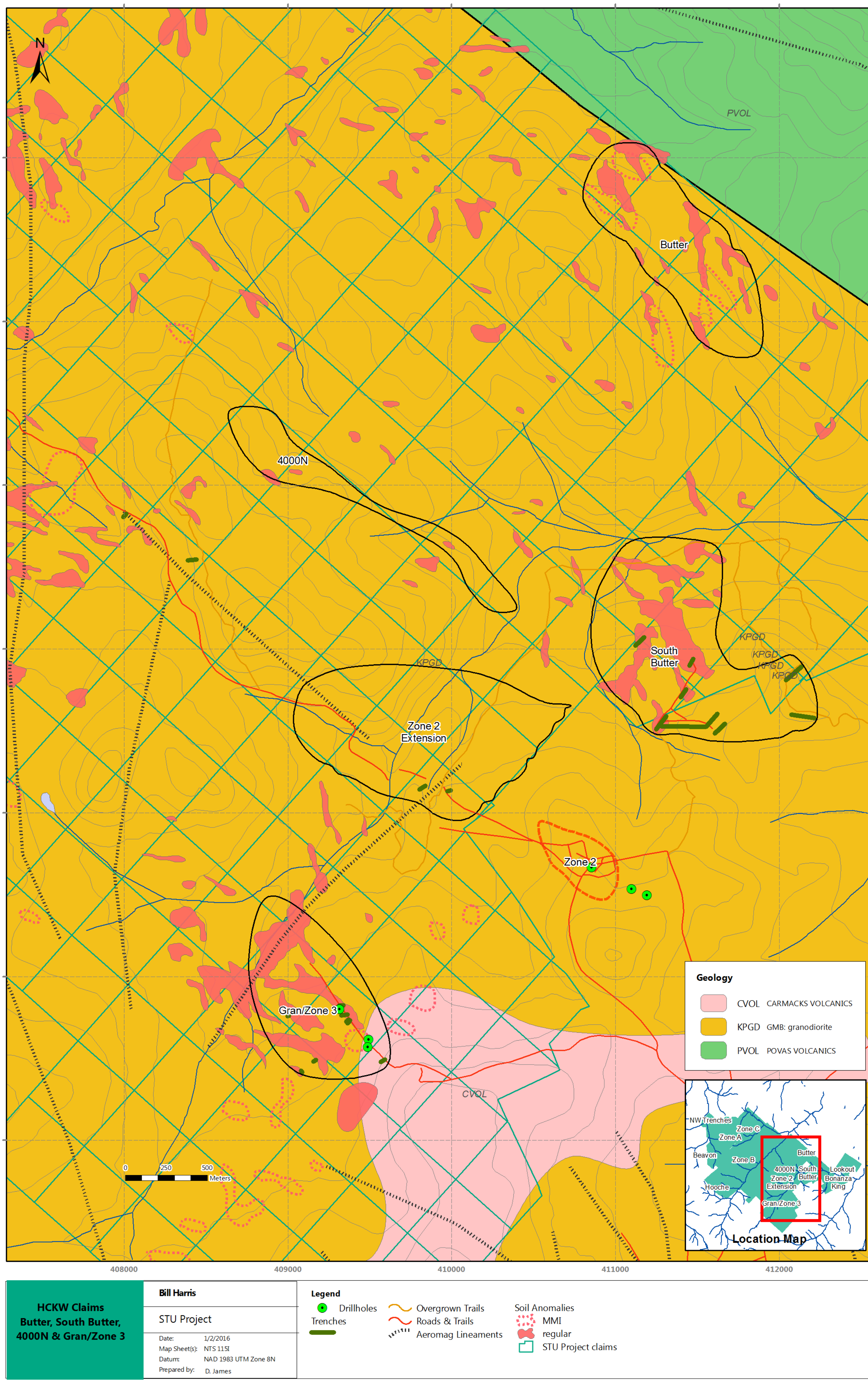


Figure 12: Exploration Targets HCKW Claims



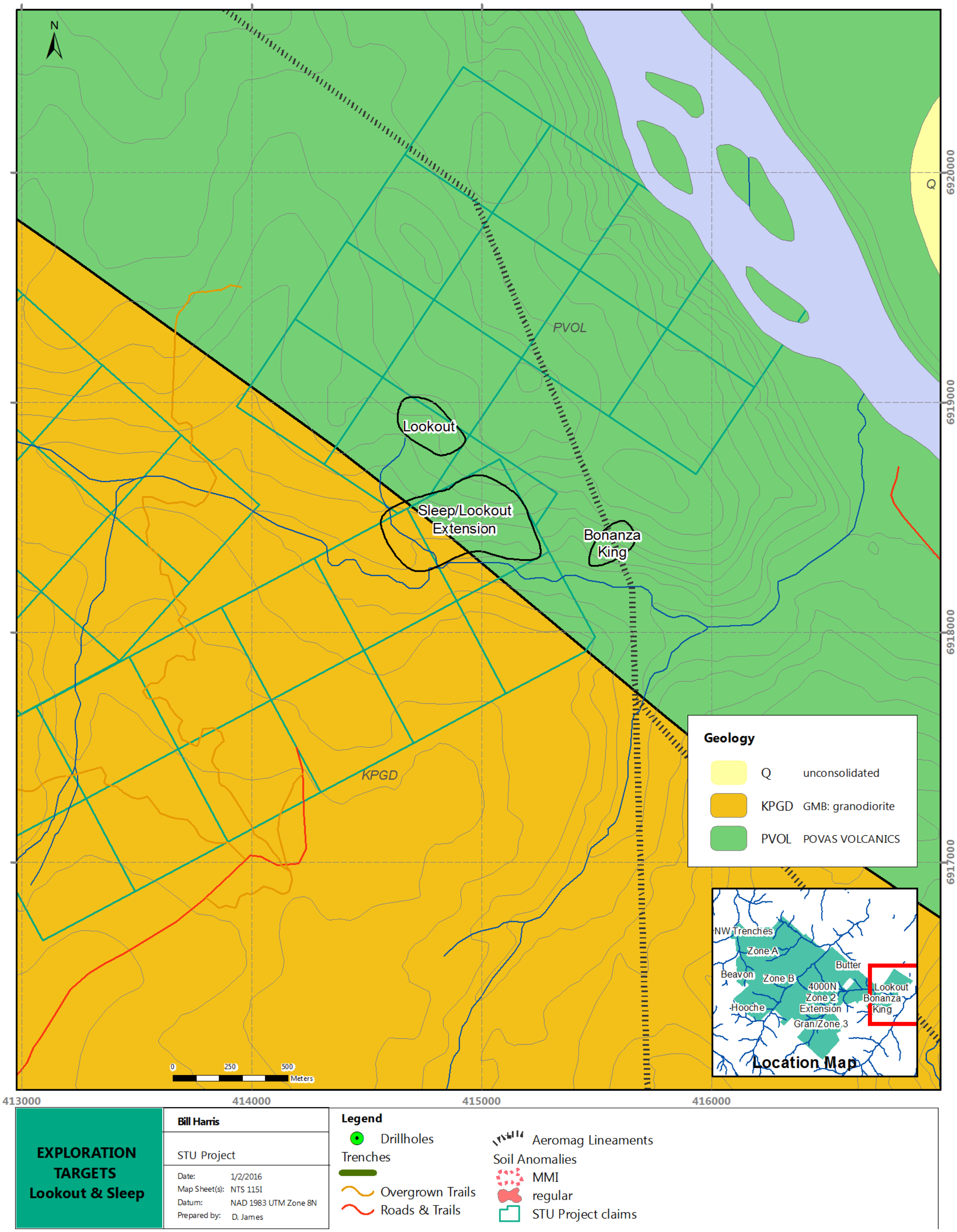


Figure 13: Exploration Targets HCKW Claims (cont.)

12 REFERENCES

Archer, A.R., 1971. Geology and Geochemistry of the Williams Creek property, Yukon. Assessment report #060203.

Archer, A. R. 1973. Report on 1972 geochemical diamond drilling and trenching program, Williams creek Property. Report for Dawson Creek Joint Venture. Assessment report #060114.

Barrios, A. and Newton, G., 2009. 2009 geophysical report on the Copper property. Report for BCGold Corporation. Assessment report #095198.

Casselman, S.G., 2008. 2007 Assessment report for the Carmacks Copper project. 2 Volumes. Report for Western Copper Corporation. Assessment report #094996.

Casselman, S. and Arseneau, G., 2011. 2011 Qualifying report for the Carmacks Copper Deposit, Yukon Territory. Report for Copper North Mining Corp. and Carmacks Mining Corp. SEDAR.

Coughlan, L.L. and Joy, R.J., 1981. 1981 geological and geochemical report on the NOON claim group, Hoocheekoo Creek area. Report for United Keno Hill Mines Ltd. Assessment report #090929.

Deklerk, R. and Traynor, S. (compilers), 2004. "Yukon Minfile 2004 – a database of mineral occurrences", Yukon Geological Survey (website and CD-ROM).

Doherty, A., 2008. Yukon Mining Incentive Program report on the Peanut claims: Focused regional program Carmacks area, Yukon. Report for BCGold Corp. YMIP 07-

Fisher, J, 1981: "United Keno Hill Mines Ltd., Hoocheekoo Creek area, Yukon", Assessment report # 090729 on diamond drilling.

Gordey, S. P. and Makepeace, A.J., 2000. "Yukon Digital Geology", Geological Survey of Canada, Open File D3826, and Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Open File 1999-1(D).

Hart, C. J. R., 2002. "The Geological Framework of the Yukon Territory", in Yukon Geological Survey website.

Hood, S. et al., 2009. High-grade hydrothermal copper-gold mineralization in foliated granitoids at the Minto mine, central Yukon. *In*: Yukon Exploration and Geology 2008, L.H. Weston et al. (eds), Yukon Geological Survey, p. 137-146.

Huss, C. et al. Carmacks Copper Project, NI 43-101 technical report, feasibility study, Vol. 1, Yukon Territory, Canada. Report for Copper North. SEDAR.

James, D., 2014. Assessment report on the STU property. Report for Bill Harris. Asseement report #TBD.

Joy, R.J., 1981. 1981 geological and geochemical report on the MOON claim group, Hoocheekoo Creek area, Whitehorse mining district. Report for United Keno Hill Mines Ltd. Assessment report #090930.

Kreft, B., 2002. Report on phase #1 alkalic porphyry copper gold recce project. YMIP Focused Regional Module 2002-9.

Leblanc, E. and Joy, R.J., 1980. 1980 geological and geochemical report on the MOON claim group, Hoocheekoo Creek area, Whitehorse mining district. Report for United Keno Hill Mines Limited. Assessment report #090771.

Mitchell, D.C., 1971. Report on geochemical soil and magnetometer surveys. Report for Hudson's Bay Oil and Gas Company Limited. Assessment report #061111.

McNaughton, K. 1994. Carmacks Copper Project 1994 Exploration Program. Report for Western Copper Holdings Limited. YMIP 94-029.

Mortensen, J. K. and Tafti, R., 2002. "Nature and origin of copper-gold mineralization at the Minto and Williams Creek deposits, west-central Yukon: Preliminary investigations", in Yukon Exploration and Geology 2002, D. S. Emond and L. L. Lewis (eds.), Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, p. 165-174.

Newman. D. and Joy, R.J., 1980. 1980 geological and geochemical report on the NOON claim group, Hoocheekoo Creek area, Whitehorse mining district. Report for United Keno Hill Mines Limited. Assessment report #090775.

Newton, G., 2008. 2008 Geochemical report on the BREAD property. Report for BCGold Corporation. Assessment report #095208.

Newton, G., 2008. 2008 geochemical report on the BUTTER property. Report for BCGold Corporation. Assessment report #095209.

Olsen, D.P., 1974. Geophysical and geochemical report on the Bay claims, Hoocheekoo Creek area, Yukon Territory. Report for Hudson's Bay Oil and Gas Company Limited. Assessment report #061099.

Ouellette, D., 1989. "Report on the 1989 percussion drilling of the STU property". Report for United Keno Hill Mines Limited. Assessment report # 0902854.

Pautler, J., 2007. Geological, geochemical and geophysical assessment report on the STU Property. Report for Bill Harris. Assessment report #094737.

Pautler, J. 2009. Geological, geochemical, petrographic and compilation assessment report on the STU Property. Report for Bill Harris. Assessment report # 095195.

Pautler, J., 2011. Geological and geochemical assessment report on the STU property. Report for Bill Harris. Assessment report #095273.

Pautler, J., 2012. "Petrographic and Geophysical assessment report on the STU property in the Carmacks Copper-Gold Belt, Yukon". Report for Northern Tiger Resources Inc. Assessment report #096165.

Pautler, J., 2015. Geological, geochemical, trenching and archaeological report on the STU project in the Carmacks copper-Gold Blet, Yukon. Report for Bill Harris. YMEP Project no. 14-081.

Pearson, W. N. and Clark, A. H., 1979. "The Minto copper deposit, Yukon Territory: A metamorphosed orebody in the Yukon Crystalline Terrane". Economic Geology, vol. 74, p.1577-1599.

Robertson, R., 2006. 2005 assessment report on the STU Property. Report for Midnight Mines Ltd. Assessment report #094592.

Ryan, S., 2007a. Geochemical report JAM 1-24. Assessment report #094843.

Ryan, S., 2007b. Geochemical report BREAD 1-24. Assessment report #094842.

Sidhu, Gary., 2009. Technical report for Copper claims: target evaluation program, Carmacks area, Yukon. Report for BCGold Corp. YEIP report 2008-036.

Smith, C.A.S., Meikle, J.C., and Roots, C.F. (editors), 2004. Ecoregions of the Yukon Territory: Biophysical properties of Yukon landscapes; Agriculture and Agri-Food Canada, PARC Technical Bulletin No. 04-01, Summerland, British Columbia, 313 p.

Smith, Paul A., 1979. Report on the induced polarization & resistivity survey on the STU & HI claim groups. Report for United Keno Hill Mines Limited. Assessment report #090428.

Schulze, C., 2008. Geological and Geochemical Surveying on the DEL claim block. Assessment report #095064.

Shives, R.B.K, et al., 2002. Airborne multisensor geophysical survey, Minto, Yukon. GSC Open File 4333, EGSD 2002-20D.

SRK Consulting, 2008. Technical Report Minto Mine, Yukon. Report for Minto Explorations Ltd. SEDAR.

Smith, P.A., 1979. Report on the induced polarization & resistivity survey on the STU & HI claim groups. Report for United Keno hill Mines Limited. Assessment report #090428.

Tafti, R. and Mortensen, J. K. 2003. "Early Jurassic porphyry (?) copper (-gold) deposits at Minto and Williams Creek, Carmacks Copper Belt, western Yukon", in Yukon Exploration and Geology 2003, Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, p. 289-303.

Tempelman-Kluit, D. J., 1981, Description of the Stu property, Yukon Geology and Exploration 1979-80: Whitehorse, Yukon, Geology Section, Department of Indian and Northern Affairs, p. 262-263.

Tempelman-Kluit, D. J., 1984. "Geology of the Laberge and Carmacks map sheets", Geological Survey of Canada Open File 1101.

Thompson, A.J.B and Thompson, J.F.H (eds), 1996. *Atlas of Alteration: A Field and petrographic guide to hydrothermal alteration minerals*. Geological Association of Canada, Mineral Deposits Division.

Watson, K.W. and Joy, R.J., 1977. "1977 Geological, geochemical and geophysical report on the STU claim group, Hoocheekoo Creek area, Whitehorse Mining District", Assessment report # 090248.

Websites

BC Gold Corporation. www.bcgoldcompany.com.

Capstone Mining Corp. www.capstonemining.com

Copper North Mining Corp. www.coppernorthmining.com

13 CERTIFICATE OF AUTHOR

I, Deborah Ann Rachel James, do hereby certify that:

1) I, Deborah Ann Rachel James of 11-3194 Gibbins Road, Duncan, British Columbia am self-employed as a consultant geologist and have authored this report.

2) I am a graduate of the University of British Columbia with a B.Sc. degree in Geological Sciences

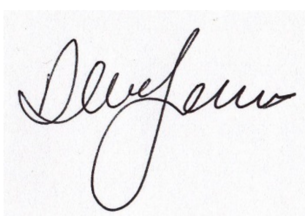
3) I am a geologist with more than ten years of experience in the Canadian Cordillera and ten years of experience in Yukon.

4) I am registered as a professional geoscientist with the Association of Professional Engineers and Geoscientists of B.C. #094996.

5) I was the senior geologist and project manager on the 2015 program on the STU Project.

6) I have no direct or indirect interest in the STU Project, which is the subject of this report.

DATED at Duncan, British Columbia, this 29th day of December, 2015



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Debbie James
Suite 11, 3194 Gibbins Road
Duncan, BC, V9L 1G8

Appendix 1
CLAIM LIST

GRANT NUMBER	CLAIM LABEL	OWNER	RECORDED DATE	EXPIRY DATE	NEW EXPIRY DATE
YC37770	STU 1	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37771	STU 2	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37772	STU 3	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37773	STU 4	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37774	STU 5	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37775	STU 6	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37776	STU 7	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37777	STU 8	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37778	STU 9	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37779	STU 10	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37780	STU 31	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37781	STU 32	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37782	STU 33	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37783	STU 34	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37784	STU 35	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37785	STU 36	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37786	STU 37	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37787	STU 38	Bill Harris - 100%	12/13/2004	12/13/2014	12/13/2020
YC37788	STU 21	Bill Harris - 100%	12/21/2004	6/21/2015	6/21/2020
YC37789	STU 22	Bill Harris - 100%	12/21/2004	6/21/2015	6/21/2020
YC37790	STU 23	Bill Harris - 100%	12/21/2004	6/21/2015	6/21/2020
YC37791	STU 24	Bill Harris - 100%	12/21/2004	6/21/2015	6/21/2020
YC37792	STU 25	Bill Harris - 100%	12/21/2004	6/21/2015	6/21/2020
YC37793	STU 26	Bill Harris - 100%	12/21/2004	6/21/2015	6/21/2020
YC37794	STU 27	Bill Harris - 100%	12/21/2004	6/21/2015	6/21/2020
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YC40202	STU 56	Bill Harris - 100%	8/29/2005	11/29/2015	12/13/2019
YC40203	STU 57	Bill Harris - 100%	8/29/2005	11/29/2015	12/13/2019
YC40204	STU 58	Bill Harris - 100%	8/29/2005	11/29/2015	12/13/2019
YC40205	STU 59	Bill Harris - 100%	8/29/2005	11/29/2015	12/13/2019
YC40206	STU 60	Bill Harris - 100%	8/29/2005	11/29/2015	12/13/2019
YC40207	STU 61	Bill Harris - 100%	8/29/2005	11/29/2015	12/13/2019
YC40208	STU 62	Bill Harris - 100%	8/29/2005	11/29/2015	12/13/2019
YC40209	STU 63	Bill Harris - 100%	8/29/2005	11/29/2015	12/13/2019
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YC40213	STU 67	Bill Harris - 100%	8/29/2005	11/29/2014	12/13/2019
YC40214	STU 68	Bill Harris - 100%	8/29/2005	11/29/2014	12/13/2019
YC40215	STU 69	Bill Harris - 100%	8/29/2005	11/29/2014	12/13/2019
YC40216	STU 70	Bill Harris - 100%	8/29/2005	11/29/2014	12/13/2019
YC40217	STU 71	Bill Harris - 100%	8/29/2005	11/29/2014	12/13/2019
YC40218	STU 72	Bill Harris - 100%	8/29/2005	11/29/2014	12/13/2019
YC40249	STU 11	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40250	STU 12	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40251	STU 13	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40252	STU 14	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40253	STU 15	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40254	STU 16	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40255	STU 17	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40256	STU 18	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40257	STU 19	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40258	STU 20	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40259	STU 29	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019

GRANT NUMBER	CLAIM LABEL	OWNER	RECORDED DATE	EXPIRY DATE	NEW EXPIRY DATE
YC40260	STU 30	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
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YC40262	STU 40	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40263	STU 41	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40264	STU 42	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40265	STU 43	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40266	STU 44	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40267	STU 45	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40268	STU 46	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40269	STU 47	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40270	STU 48	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40271	STU 49	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40272	STU 50	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40273	STU 51	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40274	STU 52	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40275	STU 53	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
YC40276	STU 54	Bill Harris - 100%	9/19/2005	9/19/2015	12/13/2019
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YC65259	STU 76	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
YC65260	STU 77	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
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YC65279	STU 96	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
YC65280	STU 97	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
YC65281	STU 98	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
YC65282	STU 99	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
YC65283	STU 100	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
YC65284	STU 101	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
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GRANT NUMBER	CLAIM LABEL	OWNER	RECORDED DATE	EXPIRY DATE	NEW EXPIRY DATE
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YC65297	STU 114	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
YC65298	STU 115	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
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YC65307	STU 124	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
YC65308	STU 125	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
YC65309	STU 126	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
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YC65312	STU 129	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
YC65313	STU 130	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
YC65314	STU 131	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
YC65315	STU 132	Bill Harris - 100%	7/9/2007	7/9/2015	7/9/2020
YE10064	PEANUT 1	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10065	PEANUT 2	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10066	PEANUT 3	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10067	PEANUT 4	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10068	PEANUT 5	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10069	PEANUT 6	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10070	PEANUT 7	Bill Harris - 100%	11/12/2015	11/12/2016	
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YE10074	PEANUT 11	Bill Harris - 100%	11/12/2015	11/12/2016	
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YE10076	PEANUT 17	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10077	PEANUT 18	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10078	PEANUT 19	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10079	PEANUT 20	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10080	PEANUT 21	Bill Harris - 100%	11/12/2015	11/12/2016	
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YE10082	PEANUT 23	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10083	PEANUT 24	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10084	PEANUT 25	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10085	PEANUT 26	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10086	PEANUT 27	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10087	PEANUT 28	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10088	LED 1	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10089	LED 2	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10090	LED 3	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10091	LED 4	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10092	LED 5	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10093	LED 9	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10094	LED 10	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10095	LED 11	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10096	LED 12	Bill Harris - 100%	11/12/2015	11/12/2016	

GRANT NUMBER	CLAIM LABEL	OWNER	RECORDED DATE	EXPIRY DATE	NEW EXPIRY DATE
YE10097	LED 13	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10098	LED 14	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10099	LED 15	Bill Harris - 100%	11/12/2015	11/12/2016	
YE10100	LED 16	Bill Harris - 100%	11/12/2015	11/12/2016	
YF20701	WC 1	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20702	WC 2	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20703	WC 3	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20704	WC 4	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20705	WC 5	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20706	WC 6	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20707	WC 7	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20708	WC 8	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20709	WC 9	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20710	WC 10	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20711	WC 11	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20712	WC 12	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20713	WC 13	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20714	WC 14	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20715	WC 15	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20716	WC 16	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20717	WC 17	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20718	WC 18	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20719	WC 19	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20720	WC 20	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20721	WC 21	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20722	WC 22	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20723	WC 23	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20724	WC 24	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20725	WC 25	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20726	WC 26	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20727	WC 27	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20728	WC 28	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20729	WC 29	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20730	WC 30	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20731	WC 31	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20732	WC 32	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20733	WC 33	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20734	WC 34	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20735	WC 35	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20736	WC 36	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20737	WC 37	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20738	WC 38	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20739	WC 39	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20740	WC 40	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20741	WC 41	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20742	WC 42	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20743	WC 43	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20744	WC 44	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20745	WC 45	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20746	WC 46	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20747	WC 47	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20748	WC 48	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20749	WC 49	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20750	WC 50	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20751	WC 51	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020

GRANT NUMBER	CLAIM LABEL	OWNER	RECORDED DATE	EXPIRY DATE	NEW EXPIRY DATE
YF20752	WC 52	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20753	WC 53	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20754	WC 54	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20755	WC 55	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20756	WC 56	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20757	WC 57	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20758	WC 58	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20759	WC 59	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20760	WC 60	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20761	WC 61	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20762	WC 62	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20763	WC 63	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20764	WC 64	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20765	WC 65	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20766	WC 66	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20767	WC 67	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20768	WC 68	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20769	WC 69	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20770	WC 70	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20771	WC 71	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20772	WC 72	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF20773	HOO 1	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20774	HOO 2	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20775	HOO 3	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20776	HOO 4	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20777	HOO 5	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20778	HOO 6	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20779	HOO 7	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20780	HOO 8	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20781	HOO 9	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20782	HOO 10	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20783	HOO 11	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20784	HOO 12	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20785	HOO 13	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20786	HOO 14	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20787	HOO 15	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20788	HOO 16	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20789	HOO 17	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20790	HOO 18	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20791	HOO 19	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20792	HOO 20	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20793	HOO 21	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20794	HOO 22	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20795	HOO 23	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20796	HOO 24	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF20797	HOO 25	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20798	HOO 26	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20799	HOO 27	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF20800	HOO 28	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF46357	CHE 1	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46358	CHE 2	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46359	CHE 3	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46360	CHE 4	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46361	CHE 5	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46362	CHE 6	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020

GRANT NUMBER	CLAIM LABEL	OWNER	RECORDED DATE	EXPIRY DATE	NEW EXPIRY DATE
YF46363	CHE 7	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46364	CHE 8	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46365	CHE 9	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46366	CHE 10	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46367	CHE 11	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46368	CHE 12	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46369	CHE 13	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46370	CHE 14	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46371	CHE 15	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46372	CHE 16	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46373	CHE 17	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46374	CHE 18	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46375	CHE 19	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46376	CHE 20	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46377	CHE 21	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46378	CHE 22	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46379	CHE 23	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46380	CHE 24	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46387	HOO 35	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46388	HOO 36	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46389	HOO 37	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46390	HOO 38	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46391	HOO 39	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46392	HOO 40	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46393	HOO 41	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46394	HOO 42	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46395	HOO 43	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46396	HOO 44	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46397	HOO 45	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46398	HOO 46	Conor O'Donovan - 100%	7/29/2014	7/29/2015	7/29/2020
YF46399	KOO 57	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46400	KOO 58	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46401	CHE 25	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF46402	CHE 26	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF46403	CHE 27	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF46404	CHE 28	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF46405	CHE 29	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF46406	CHE 30	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF46407	WCF 1	Nicolai Goeppel - 100%	7/31/2014	7/31/2015	7/31/2020
YF46408	WCF 2	Nicolai Goeppel - 100%	7/31/2014	7/31/2015	7/31/2020
YF46409	WCF 3	Nicolai Goeppel - 100%	7/31/2014	7/31/2015	7/31/2020
YF46410	WCF 4	Nicolai Goeppel - 100%	7/31/2014	7/31/2015	7/31/2020
YF46411	WCF 5	Nicolai Goeppel - 100%	7/31/2014	7/31/2015	7/31/2020
YF46412	WCF 6	Nicolai Goeppel - 100%	7/31/2014	7/31/2015	7/31/2020
YF46413	WCF 7	Nicolai Goeppel - 100%	7/31/2014	7/31/2015	7/31/2020
YF46414	WCF 8	Nicolai Goeppel - 100%	7/31/2014	7/31/2015	7/31/2020
YF46415	WCF 9	Nicolai Goeppel - 100%	7/31/2014	7/31/2015	7/31/2020
YF46416	WCF 10	Nicolai Goeppel - 100%	7/31/2014	7/31/2015	7/31/2020
YF46417	WCF 11	Nicolai Goeppel - 100%	7/31/2014	7/31/2015	7/31/2020
YF46501	KOO 1	Colby Knowler - 100%	7/29/2014	7/29/2015	7/29/2020
YF46502	KOO 2	Colby Knowler - 100%	7/29/2014	7/29/2015	7/29/2020
YF46503	KOO 3	Colby Knowler - 100%	7/29/2014	7/29/2015	7/29/2020
YF46504	KOO 4	Colby Knowler - 100%	7/29/2014	7/29/2015	7/29/2020
YF46505	KOO 5	Colby Knowler - 100%	7/29/2014	7/29/2015	7/29/2020
YF46506	KOO 6	Colby Knowler - 100%	7/29/2014	7/29/2015	7/29/2020

GRANT NUMBER	CLAIM LABEL	OWNER	RECORDED DATE	EXPIRY DATE	NEW EXPIRY DATE
YF46507	KOO 7	Colby Knowler - 100%	7/29/2014	7/29/2015	7/29/2020
YF46508	KOO 8	Colby Knowler - 100%	7/29/2014	7/29/2015	7/29/2020
YF46509	KOO 9	Colby Knowler - 100%	7/29/2014	7/29/2015	7/29/2020
YF46510	KOO 10	Colby Knowler - 100%	7/29/2014	7/29/2015	7/29/2020
YF46511	KOO 11	Colby Knowler - 100%	7/29/2014	7/29/2015	7/29/2020
YF46512	KOO 12	Colby Knowler - 100%	7/29/2014	7/29/2015	7/29/2020
YF46515	KOO 15	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF46516	KOO 16	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF46517	KOO 17	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF46518	KOO 18	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF46519	KOO 19	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF46520	KOO 20	Nicolai Goeppel - 100%	7/29/2014	7/29/2015	7/29/2020
YF46521	KOO 21	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46522	KOO 22	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46523	KOO 23	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46524	KOO 24	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46525	KOO 25	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46526	KOO 26	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46527	KOO 27	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46528	KOO 28	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46529	KOO 29	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46530	KOO 30	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46531	KOO 31	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46532	KOO 32	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46533	KOO 33	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46534	KOO 34	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46535	KOO 35	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46536	KOO 36	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46537	KOO 37	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46538	KOO 38	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46539	KOO 39	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46540	KOO 40	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46541	KOO 41	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46542	KOO 42	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46543	KOO 43	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46544	KOO 44	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46547	KOO 47	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46548	KOO 48	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46549	KOO 49	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46550	KOO 50	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46551	KOO 51	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46552	KOO 52	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46553	KOO 53	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46554	KOO 54	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46555	KOO 55	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020
YF46556	KOO 56	Tyler Quock - 100%	7/29/2014	7/29/2015	7/29/2020

Appendix 2
2015 samples (pdf and xls files)
Sample Database (xls file)
Drill Database (xls files)

Appendix 3
Work Summary & Cost Statements

Appendix 4
Cross Sections (pdf files)

Appendix 5
YGS Paper

Appendix 6
PDF versions of maps included in body of report

MINERAL LABORATORIES
Canada

www.bureauveritas.com/um

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

Client: **Midnight Mining**
Box 31347
Whitehorse YT Y1A 5P7 CANADA

Submitted By:	Debbie James
Receiving Lab:	Canada-Whitehorse
Received:	August 03, 2015
Report Date:	September 18, 2015
Page:	1 of 4

CERTIFICATE OF ANALYSIS WHI15000130.1

CLIENT JOB INFORMATION

Project:	STU
Shipment ID:	STU1
P.O. Number	
Number of Samples:	81

SAMPLE DISPOSAL

DISP-PLP	Dispose of Pulp After 90 days
RTRN-RJT	Return

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

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	75	Crush, split and pulverize 250 g rock to 200 mesh			WHI
FA430	81	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	VAN
MA270	81	4 Acid Digestion Analysis by ICP-ES/ICP-MS	0.5	Completed	VAN
GC921	81	Cu in oxide form, 5% H2SO4	1	Completed	VAN

ADDITIONAL COMMENTS

Invoice To: Midnight Mining
Box 31347
Whitehorse YT Y1A 5P7
CANADA

CC: Sue Craig
Bill Harris

BRITISH COLUMBIA CERTIFIED ASSAYER
MARCUS LAU
Geochemical Laboratory Manager

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

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

Client: **Midnight Mining**
Box 31347
Whitehorse YT Y1A 5P7 CANADA

Project: STU
Report Date: September 18, 2015

CERTIFICATE OF ANALYSIS WHI15000130.1

	Method	WGHT	FA430	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
	Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	0.005	0.5	0.5	0.5	5	0.5	0.5	1	5	0.01	5	0.5	0.5	5	0.5	0.5	0.5	10	0.01
615601	Rock	1.57	<0.005	<0.5	57.7	11.8	64	<0.5	3.2	7	724	3.07	<5	0.9	2.9	871	<0.5	<0.5	<0.5	84	1.90
615602	Rock	2.40	0.063	<0.5	1024.3	15.0	86	<0.5	3.6	9	839	3.83	<5	0.9	5.5	749	<0.5	<0.5	<0.5	108	1.45
615603	Rock	1.87	0.070	<0.5	870.5	11.9	85	0.7	2.9	9	842	3.51	<5	0.9	5.1	648	<0.5	<0.5	<0.5	99	1.04
615604	Rock	1.93	0.113	<0.5	1550.8	13.6	82	1.7	3.2	9	670	3.81	<5	1.0	6.3	519	<0.5	<0.5	0.9	112	0.78
615605	Rock	3.10	0.007	0.7	743.0	15.1	70	<0.5	3.6	8	603	3.37	<5	1.0	5.5	835	<0.5	<0.5	<0.5	86	2.30
615606	Rock	2.35	<0.005	<0.5	671.7	11.8	86	<0.5	5.2	14	802	4.57	<5	0.8	5.5	902	<0.5	<0.5	<0.5	114	3.00
615607	Rock	2.61	<0.005	<0.5	47.4	10.4	84	<0.5	3.4	9	943	3.60	<5	0.7	3.3	991	<0.5	<0.5	<0.5	92	3.55
615608	Rock	4.08	<0.005	<0.5	47.2	11.6	76	<0.5	2.3	8	872	3.24	<5	0.8	3.0	980	<0.5	<0.5	<0.5	78	3.02
615609	Rock	4.70	0.007	<0.5	276.9	11.4	86	<0.5	3.3	8	898	3.35	<5	0.8	5.0	940	<0.5	<0.5	<0.5	87	2.75
615610	Rock Pulp	0.11	1.065	235.2	3341.4	139.2	178	3.0	15.0	15	361	4.51	55	7.0	13.6	182	2.4	36.0	6.2	87	0.90
615611	Rock	6.04	<0.005	<0.5	61.2	16.1	56	<0.5	2.1	5	589	2.16	<5	1.1	2.9	673	<0.5	<0.5	<0.5	45	1.58
615612	Rock	3.49	<0.005	<0.5	48.8	12.2	74	<0.5	2.7	7	839	2.99	<5	0.7	2.6	933	<0.5	<0.5	<0.5	77	2.73
615613	Rock	4.31	<0.005	<0.5	87.7	12.8	75	<0.5	2.8	8	716	3.24	<5	1.3	3.7	582	<0.5	<0.5	<0.5	81	1.35
615614	Rock	3.17	<0.005	<0.5	98.7	23.1	150	<0.5	2.8	9	935	3.16	<5	0.5	3.9	935	<0.5	<0.5	<0.5	78	2.83
615615	Rock	2.91	0.054	<0.5	2689.0	31.4	109	0.7	2.5	8	589	3.17	<5	1.2	8.5	688	<0.5	<0.5	<0.5	87	1.37
615616	Rock	5.78	0.012	<0.5	520.5	16.3	56	<0.5	2.4	6	594	2.46	<5	1.2	6.2	352	<0.5	<0.5	<0.5	71	0.81
615617	Rock	1.68	<0.005	0.5	74.6	13.3	103	<0.5	2.7	8	979	3.10	<5	0.8	3.5	857	<0.5	0.8	<0.5	79	2.07
615618	Rock	2.93	0.009	<0.5	656.8	19.5	185	<0.5	2.0	10	726	2.91	<5	0.9	7.1	710	<0.5	<0.5	<0.5	88	2.03
615619	Rock	3.06	0.007	<0.5	354.2	16.0	105	<0.5	1.8	8	694	3.17	<5	0.7	8.0	789	<0.5	<0.5	<0.5	85	2.19
615620	Rock Pulp	0.06	<0.005	1.1	4.3	22.1	58	<0.5	5.3	6	916	2.73	<5	3.6	8.2	843	<0.5	<0.5	<0.5	56	2.76
615621	Rock	4.47	0.007	<0.5	345.8	15.6	94	<0.5	8.6	10	710	2.92	<5	1.0	6.9	669	<0.5	0.5	<0.5	86	1.94
615622	Rock	3.86	0.010	<0.5	350.2	20.6	170	<0.5	7.7	8	861	2.99	<5	1.1	9.5	622	<0.5	<0.5	<0.5	78	1.87
615623	Rock	4.02	0.008	0.6	457.6	21.6	128	<0.5	7.2	10	828	3.41	<5	1.1	8.5	685	<0.5	0.6	<0.5	93	2.17
615624	Rock	4.43	0.013	0.7	774.8	21.8	147	<0.5	7.1	13	940	3.78	<5	1.2	9.5	679	<0.5	<0.5	<0.5	100	2.10
615625	Rock	3.43	0.008	0.6	756.4	27.6	290	<0.5	3.8	13	1320	4.21	<5	1.2	9.2	770	<0.5	0.8	<0.5	111	2.60
615626	Rock	3.79	0.006	1.3	664.5	23.9	130	<0.5	3.5	10	916	3.68	<5	1.0	7.4	739	<0.5	0.6	<0.5	95	2.16
615627	Rock	5.02	0.048	<0.5	1934.4	12.8	93	0.6	2.3	6	691	2.62	<5	0.7	3.8	820	<0.5	<0.5	<0.5	68	2.05
615628	Rock	2.84	0.135	<0.5	2120.2	12.5	88	1.4	2.5	8	678	3.29	<5	0.7	6.5	757	<0.5	<0.5	1.1	87	2.16
615629	Rock	5.42	0.243	<0.5	4980.4	18.0	83	2.4	3.0	7	797	2.82	<5	0.9	6.2	725	<0.5	<0.5	1.6	80	1.94
615630	Rock Pulp	0.12	0.999	236.8	3360.9	138.5	198	4.2	15.5	15	364	4.46	54	7.3	14.1	181	3.2	36.6	6.1	86	0.91

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Client: **Midnight Mining**
Box 31347
Whitehorse YT Y1A 5P7 CANADA

Project: STU
Report Date: September 18, 2015

CERTIFICATE OF ANALYSIS WHI15000130.1

	Method	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
	Analyte	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Ce	Sn	Y	Nb	Ta	Be	Sc	Li	S
	Unit	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	0.5	1	0.01	5	0.001	0.01	0.01	0.01	0.5	0.5	5	0.5	0.5	0.5	0.5	5	1	0.5	0.05
615601	Rock	0.08	12.7	3	0.79	1895	0.242	8.81	3.53	1.80	<0.5	7.9	28	1.2	11.2	7.0	<0.5	<5	7	9.9	<0.05
615602	Rock	0.14	23.0	5	1.07	1535	0.318	8.62	3.09	1.79	<0.5	7.7	50	1.1	7.4	8.3	0.5	<5	9	11.9	<0.05
615603	Rock	0.11	21.0	5	1.00	833	0.289	8.83	3.54	1.55	<0.5	7.8	44	1.1	7.5	7.4	<0.5	<5	9	11.9	<0.05
615604	Rock	0.13	18.7	5	0.93	333	0.338	8.67	3.43	1.42	<0.5	8.4	45	1.1	8.1	8.7	<0.5	<5	9	11.5	<0.05
615605	Rock	0.09	18.2	5	0.76	2396	0.248	8.17	2.95	2.26	<0.5	19.5	33	0.6	10.8	6.4	<0.5	<5	6	8.4	<0.05
615606	Rock	0.12	24.2	6	1.04	2072	0.319	8.73	3.12	1.70	<0.5	11.0	42	1.3	13.9	8.1	<0.5	<5	10	10.1	<0.05
615607	Rock	0.09	16.3	5	0.98	961	0.269	8.97	3.68	1.17	<0.5	10.6	34	1.1	14.6	6.5	<0.5	<5	11	11.4	<0.05
615608	Rock	0.08	13.7	5	0.83	1494	0.234	8.60	3.59	1.50	<0.5	9.6	28	1.1	13.6	6.4	<0.5	<5	9	8.2	<0.05
615609	Rock	0.10	19.4	4	0.93	1429	0.265	8.82	3.50	1.60	<0.5	8.9	38	1.3	12.4	6.4	<0.5	<5	9	11.1	<0.05
615610	Rock Pulp	0.07	45.9	95	0.76	915	0.176	7.42	0.61	4.38	23.8	26.2	72	5.8	11.9	4.4	<0.5	<5	10	11.9	1.58
615611	Rock	0.05	13.1	3	0.52	1539	0.149	8.10	3.37	2.40	<0.5	19.6	24	0.7	9.2	5.4	<0.5	<5	6	7.4	<0.05
615612	Rock	0.08	14.1	5	0.78	1914	0.232	8.19	3.38	1.68	<0.5	8.8	27	1.2	13.9	6.9	<0.5	<5	8	9.2	<0.05
615613	Rock	0.08	18.3	4	0.73	643	0.247	9.11	3.79	1.61	<0.5	19.8	33	1.2	10.5	8.4	0.5	<5	9	12.0	<0.05
615614	Rock	0.08	17.1	4	0.86	1369	0.253	8.80	3.57	1.40	<0.5	8.1	29	1.0	19.6	7.5	0.6	<5	8	12.0	<0.05
615615	Rock	0.11	31.0	4	0.84	1732	0.269	8.33	2.75	2.94	<0.5	10.6	45	1.6	15.9	9.0	0.5	<5	9	11.8	<0.05
615616	Rock	0.07	19.7	3	0.52	679	0.205	8.16	2.87	2.41	<0.5	15.9	31	0.8	12.2	7.2	<0.5	<5	7	9.5	<0.05
615617	Rock	0.09	21.1	6	0.54	1863	0.261	9.11	3.42	1.91	<0.5	12.8	39	1.4	17.8	7.8	0.6	<5	9	10.9	<0.05
615618	Rock	0.10	22.8	2	0.82	1401	0.260	7.90	2.66	2.58	<0.5	12.7	39	1.4	13.6	8.4	0.5	<5	7	11.8	<0.05
615619	Rock	0.10	18.3	4	0.80	2263	0.243	7.97	2.66	3.02	<0.5	22.0	35	1.0	11.4	7.2	<0.5	<5	7	11.2	<0.05
615620	Rock Pulp	0.09	28.6	39	0.72	1124	0.257	8.39	2.79	3.22	<0.5	8.6	55	1.7	14.8	20.7	1.4	<5	6	38.2	<0.05
615621	Rock	0.09	17.7	16	0.73	1755	0.255	7.65	2.59	2.73	<0.5	19.9	33	1.1	12.1	6.8	<0.5	<5	8	10.5	<0.05
615622	Rock	0.09	18.7	13	0.70	1578	0.246	7.55	2.55	2.57	<0.5	25.9	34	0.9	10.8	6.8	<0.5	<5	8	11.8	<0.05
615623	Rock	0.10	22.5	11	0.79	1410	0.271	7.75	2.67	2.31	<0.5	20.9	41	1.6	14.1	8.1	<0.5	<5	8	12.4	<0.05
615624	Rock	0.12	27.0	13	0.83	1488	0.303	7.94	2.63	2.47	<0.5	26.3	46	1.4	18.0	8.6	<0.5	<5	9	12.4	<0.05
615625	Rock	0.13	30.7	5	1.00	1519	0.317	8.38	2.70	2.54	<0.5	13.7	52	1.7	19.2	9.5	0.5	<5	9	11.4	<0.05
615626	Rock	0.11	18.7	7	0.80	1501	0.272	7.75	2.76	2.43	<0.5	15.6	37	1.4	13.3	8.3	<0.5	<5	8	12.2	<0.05
615627	Rock	0.08	16.2	5	0.58	2201	0.238	8.67	3.21	2.24	<0.5	8.3	35	0.6	7.0	6.1	<0.5	<5	5	8.6	<0.05
615628	Rock	0.10	11.1	6	0.79	1639	0.270	8.11	2.90	2.31	<0.5	14.9	30	0.8	8.0	7.1	<0.5	<5	7	10.3	<0.05
615629	Rock	0.10	16.0	8	0.67	1852	0.276	8.26	2.73	2.69	<0.5	12.3	33	0.7	8.3	7.7	<0.5	<5	7	10.0	<0.05
615630	Rock Pulp	0.06	46.6	95	0.75	890	0.179	7.42	0.60	4.31	24.1	27.4	75	5.3	11.9	3.3	<0.5	<5	12	12.1	1.55

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Client: **Midnight Mining**
Box 31347
Whitehorse YT Y1A 5P7 CANADA

Project: STU
Report Date: September 18, 2015

CERTIFICATE OF ANALYSIS WHI15000130.1

	Method	MA270	MA270	MA270	GC921
	Analyte	Rb	Hf	Se	Cu/Ox
	Unit	ppm	ppm	ppm	%
	MDL	0.5	0.5	5	0.001
615601	Rock	46.5	<0.5	<5	0.002
615602	Rock	43.7	<0.5	<5	0.041
615603	Rock	45.2	<0.5	<5	0.056
615604	Rock	44.3	<0.5	<5	0.131
615605	Rock	64.2	0.7	<5	0.026
615606	Rock	58.2	0.5	<5	0.018
615607	Rock	29.6	<0.5	<5	0.002
615608	Rock	32.7	<0.5	<5	0.002
615609	Rock	48.9	<0.5	<5	0.009
615610	Rock Pulp	164.5	0.9	<5	0.085
615611	Rock	60.0	0.8	<5	0.003
615612	Rock	35.1	<0.5	<5	0.002
615613	Rock	62.3	0.6	<5	0.004
615614	Rock	38.2	<0.5	<5	0.006
615615	Rock	80.1	<0.5	<5	0.231
615616	Rock	74.7	0.8	<5	0.033
615617	Rock	56.3	<0.5	<5	0.003
615618	Rock	78.8	0.5	<5	0.045
615619	Rock	75.5	0.6	<5	0.021
615620	Rock Pulp	126.9	0.6	<5	<0.001
615621	Rock	71.7	0.9	<5	0.013
615622	Rock	75.8	0.8	<5	0.016
615623	Rock	72.0	0.7	<5	0.019
615624	Rock	85.3	0.8	<5	0.034
615625	Rock	88.9	0.6	<5	0.034
615626	Rock	73.7	0.7	<5	0.029
615627	Rock	57.6	<0.5	<5	0.123
615628	Rock	64.3	0.6	<5	0.166
615629	Rock	77.5	<0.5	<5	0.420
615630	Rock Pulp	171.1	1.0	<5	0.085

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Client: **Midnight Mining**
Box 31347
Whitehorse YT Y1A 5P7 CANADA

Project: STU
Report Date: September 18, 2015

CERTIFICATE OF ANALYSIS WHI15000130.1

Method		WGHT	FA430	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
Analyte		Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca
Unit		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
MDL		0.01	0.005	0.5	0.5	0.5	5	0.5	0.5	1	5	0.01	5	0.5	0.5	5	0.5	0.5	0.5	10	0.01
615631	Rock	4.76	0.314	1.0	5199.4	30.5	141	3.0	2.7	7	1497	3.18	<5	1.2	8.7	656	<0.5	<0.5	2.0	85	1.96
615632	Rock	2.25	0.117	<0.5	2470.9	18.6	73	1.4	2.0	7	554	3.00	<5	1.0	8.4	746	<0.5	<0.5	0.6	80	2.15
615633	Rock	2.04	0.140	<0.5	2906.8	15.4	106	1.4	2.3	8	588	3.54	<5	0.8	6.7	749	<0.5	<0.5	0.9	89	1.91
615634	Rock	4.60	0.016	<0.5	770.3	14.5	70	<0.5	2.9	7	683	2.47	<5	1.5	3.6	774	<0.5	<0.5	<0.5	62	2.06
615635	Rock	4.25	<0.005	0.5	201.0	11.7	69	<0.5	4.2	8	739	2.63	<5	0.8	2.4	1028	<0.5	<0.5	<0.5	73	2.40
615636	Rock	5.13	0.024	1.5	2040.1	9.7	98	0.9	4.1	11	658	3.51	<5	0.9	4.5	973	<0.5	<0.5	0.5	108	2.40
615637	Rock	3.57	0.028	1.6	1874.5	9.4	89	0.9	3.5	11	633	3.56	<5	0.9	4.9	783	<0.5	<0.5	<0.5	109	2.34
615638	Rock	3.45	0.021	1.4	1838.5	8.7	71	0.7	3.4	9	563	3.00	<5	0.5	4.4	580	<0.5	<0.5	<0.5	95	2.36
615639	Rock	4.20	0.008	2.0	647.5	10.0	74	<0.5	3.2	9	645	3.03	<5	0.8	4.4	738	<0.5	<0.5	<0.5	85	2.25
615640	Rock Pulp	0.06	<0.005	0.8	6.5	21.7	57	<0.5	4.9	5	839	2.41	<5	4.1	8.3	789	<0.5	<0.5	<0.5	52	2.51
615641	Rock	3.64	0.017	1.8	1349.9	9.1	83	<0.5	4.0	12	666	3.56	<5	0.8	5.3	794	<0.5	<0.5	<0.5	100	2.19
615642	Rock	3.93	0.010	1.8	1248.5	8.4	58	<0.5	2.7	13	439	3.40	<5	1.0	6.5	469	<0.5	<0.5	<0.5	94	2.24
615643	Rock	5.68	<0.005	1.9	90.6	11.9	57	<0.5	2.0	6	601	2.25	<5	1.1	3.4	427	<0.5	<0.5	<0.5	61	3.00
615644	Rock	3.55	<0.005	1.8	105.0	11.1	64	<0.5	2.2	8	633	2.56	<5	0.8	2.7	573	<0.5	<0.5	<0.5	73	3.30
615645	Rock	3.41	<0.005	<0.5	50.8	11.2	64	<0.5	3.2	8	826	3.00	<5	1.2	2.7	884	<0.5	<0.5	<0.5	78	2.88
615646	Rock	3.11	<0.005	<0.5	187.3	12.9	67	<0.5	2.2	6	729	2.58	<5	1.3	4.0	853	<0.5	<0.5	<0.5	68	2.23
615647	Rock	3.13	<0.005	<0.5	390.5	11.8	78	<0.5	3.1	9	960	3.24	<5	1.1	2.4	905	<0.5	<0.5	<0.5	82	2.87
615648	Rock	4.05	0.005	<0.5	480.9	11.6	74	<0.5	2.8	8	859	2.92	<5	1.3	3.2	882	<0.5	<0.5	<0.5	77	2.63
615649	Rock	4.89	<0.005	<0.5	263.3	12.2	64	<0.5	2.2	8	817	2.83	<5	1.1	3.0	869	<0.5	<0.5	<0.5	74	2.81
615651	Rock	2.20	<0.005	<0.5	244.4	19.8	43	<0.5	1.7	5	566	1.93	<5	1.8	2.5	516	<0.5	<0.5	<0.5	49	1.86
615652	Rock	4.35	<0.005	<0.5	93.5	22.9	21	<0.5	1.0	2	297	0.99	<5	1.2	1.5	338	<0.5	<0.5	<0.5	17	0.95
615653	Rock	3.93	<0.005	<0.5	66.5	24.1	9	<0.5	<0.5	<1	212	0.45	<5	1.3	1.4	203	<0.5	<0.5	<0.5	<10	0.41
615654	Rock	2.40	0.008	<0.5	505.5	12.3	79	<0.5	2.5	9	619	2.78	<5	1.2	7.1	617	<0.5	<0.5	<0.5	79	1.97
615655	Rock	3.15	0.015	<0.5	1115.4	11.7	78	<0.5	3.7	10	710	2.89	<5	1.2	7.4	671	<0.5	<0.5	<0.5	87	1.99
615656	Rock	4.32	0.016	<0.5	958.3	9.1	64	<0.5	3.5	10	701	3.28	<5	1.1	8.0	683	<0.5	<0.5	<0.5	82	1.83
615657	Rock	3.40	0.010	<0.5	613.5	9.7	72	<0.5	4.6	8	666	2.82	<5	0.8	5.2	757	<0.5	<0.5	<0.5	68	2.02
615658	Rock	3.62	0.006	<0.5	328.2	9.7	96	<0.5	3.3	13	1056	4.17	<5	0.9	7.0	855	<0.5	<0.5	<0.5	114	3.46
615659	Rock	3.92	0.030	<0.5	936.0	11.8	77	<0.5	2.7	8	659	3.09	<5	0.7	5.3	844	<0.5	<0.5	<0.5	93	2.73
615660	Rock	3.26	0.038	0.5	1871.2	12.0	65	0.6	3.1	7	508	2.60	<5	0.7	5.8	782	<0.5	<0.5	0.6	88	2.14
615661	Rock	5.93	0.029	<0.5	1788.8	11.4	109	0.7	4.2	13	1058	4.28	<5	1.1	5.3	924	<0.5	<0.5	<0.5	137	3.39

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Client: **Midnight Mining**
Box 31347
Whitehorse YT Y1A 5P7 CANADA

Project: STU
Report Date: September 18, 2015

CERTIFICATE OF ANALYSIS WHI15000130.1

	Method	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
	Analyte	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Ce	Sn	Y	Nb	Ta	Be	Sc	Li	S
	Unit	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	0.5	1	0.01	5	0.001	0.01	0.01	0.01	0.5	0.5	5	0.5	0.5	0.5	0.5	5	1	0.5	0.05
615631	Rock	0.10	11.7	4	0.78	1211	0.265	7.83	2.47	3.19	<0.5	17.0	28	0.8	9.2	9.0	<0.5	<5	7	10.4	<0.05
615632	Rock	0.09	9.3	4	0.76	1536	0.259	8.33	2.75	3.04	<0.5	16.2	28	0.7	9.1	8.8	0.5	<5	8	9.9	<0.05
615633	Rock	0.11	13.1	5	0.70	1894	0.276	8.33	2.67	2.65	<0.5	14.3	29	0.9	9.0	7.4	<0.5	<5	8	8.7	<0.05
615634	Rock	0.06	14.3	3	0.60	2159	0.205	8.41	3.29	2.18	<0.5	10.0	31	1.0	11.4	7.6	0.8	<5	7	9.0	<0.05
615635	Rock	0.07	11.0	6	0.87	1018	0.210	9.26	4.06	1.41	<0.5	9.3	20	1.1	12.6	5.0	<0.5	<5	8	14.0	<0.05
615636	Rock	0.14	20.1	7	1.21	1463	0.395	9.35	3.63	1.95	<0.5	6.7	37	1.1	8.3	8.5	<0.5	<5	4	14.8	<0.05
615637	Rock	0.13	22.9	6	1.23	1203	0.367	9.25	3.35	1.86	<0.5	8.7	39	1.6	12.7	9.3	0.5	<5	7	15.3	<0.05
615638	Rock	0.11	21.5	5	0.99	1296	0.310	8.09	2.50	1.70	<0.5	6.8	37	0.9	8.8	6.6	<0.5	<5	4	13.7	<0.05
615639	Rock	0.09	18.8	7	0.91	1381	0.263	8.73	3.35	1.57	<0.5	7.4	31	0.8	9.6	5.8	<0.5	<5	8	11.5	<0.05
615640	Rock Pulp	0.08	30.6	36	0.67	1071	0.239	8.15	2.69	3.08	<0.5	8.2	58	1.2	15.1	20.6	1.4	<5	7	35.6	<0.05
615641	Rock	0.12	23.0	7	1.12	1428	0.345	8.67	3.13	1.74	<0.5	7.4	38	1.4	9.1	8.5	<0.5	<5	5	13.9	<0.05
615642	Rock	0.09	20.3	4	0.70	1771	0.251	7.86	2.25	1.49	<0.5	8.4	37	1.3	9.9	7.3	<0.5	<5	7	10.5	<0.05
615643	Rock	0.06	13.0	4	0.41	2099	0.183	7.82	2.66	1.54	<0.5	8.3	27	0.7	10.2	5.1	<0.5	<5	7	9.6	<0.05
615644	Rock	0.08	10.2	5	0.46	1596	0.228	7.84	3.31	1.57	<0.5	6.9	22	1.0	11.0	6.0	<0.5	<5	9	7.2	<0.05
615645	Rock	0.08	13.6	5	0.86	1753	0.237	8.63	3.42	1.72	<0.5	8.5	28	1.0	14.2	7.2	<0.5	<5	9	10.1	<0.05
615646	Rock	0.07	14.0	7	0.68	2299	0.222	8.70	3.25	2.14	<0.5	15.6	32	1.3	12.2	6.8	0.6	<5	9	9.5	<0.05
615647	Rock	0.10	13.4	6	0.78	1273	0.256	9.14	3.81	1.48	<0.5	9.6	28	1.5	16.2	8.5	0.7	<5	12	9.5	<0.05
615648	Rock	0.08	16.5	5	0.66	1590	0.244	9.07	3.49	1.65	<0.5	7.9	35	1.1	10.8	6.8	<0.5	<5	9	10.2	<0.05
615649	Rock	0.08	14.1	5	0.79	1910	0.220	8.59	3.46	1.81	<0.5	7.8	31	1.5	12.1	5.7	<0.5	<5	8	10.3	<0.05
615651	Rock	0.05	8.7	3	0.47	947	0.147	7.81	3.18	2.59	<0.5	31.2	20	0.8	11.1	6.6	0.5	<5	6	6.8	<0.05
615652	Rock	0.01	4.6	2	0.18	1071	0.061	7.06	2.77	3.42	<0.5	22.7	10	<0.5	5.2	4.2	<0.5	<5	3	3.2	<0.05
615653	Rock	<0.01	4.3	<1	0.04	884	0.025	6.18	2.38	3.70	<0.5	29.8	8	<0.5	5.2	5.1	0.7	<5	1	1.7	<0.05
615654	Rock	0.09	19.9	7	0.82	1218	0.222	7.98	3.38	1.80	<0.5	15.4	32	0.9	10.6	7.1	<0.5	<5	6	9.6	<0.05
615655	Rock	0.11	28.9	7	1.06	1658	0.273	8.16	3.30	2.21	<0.5	12.9	45	1.3	15.2	8.7	0.8	<5	8	13.4	<0.05
615656	Rock	0.10	26.7	7	1.04	1454	0.243	8.12	3.35	1.92	<0.5	13.6	45	1.2	14.2	7.9	<0.5	<5	8	14.2	<0.05
615657	Rock	0.07	19.2	7	0.79	1333	0.200	8.03	3.38	1.77	<0.5	17.5	32	1.0	10.5	6.1	<0.5	<5	8	10.3	<0.05
615658	Rock	0.13	32.1	8	1.54	1131	0.358	8.57	3.12	1.64	<0.5	26.5	57	1.3	16.4	7.2	<0.5	<5	12	11.8	<0.05
615659	Rock	0.11	22.6	5	1.01	1623	0.267	8.50	3.10	2.17	<0.5	8.7	40	1.2	13.3	6.9	<0.5	<5	9	13.3	<0.05
615660	Rock	0.11	26.6	5	0.94	1848	0.263	8.09	2.85	2.48	<0.5	10.3	43	1.2	12.3	7.9	<0.5	<5	7	10.7	<0.05
615661	Rock	0.16	27.9	9	1.50	1230	0.388	9.31	3.34	1.94	<0.5	10.8	47	1.7	18.1	8.6	<0.5	<5	13	14.4	<0.05

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Client: **Midnight Mining**
Box 31347
Whitehorse YT Y1A 5P7 CANADA

Project: STU
Report Date: September 18, 2015

CERTIFICATE OF ANALYSIS WHI15000130.1

	Method	MA270	MA270	MA270	GC921
	Analyte	Rb	Hf	Se	Cu/Ox
	Unit	ppm	ppm	ppm	%
	MDL	0.5	0.5	5	0.001
615631	Rock	92.9	0.5	<5	0.464
615632	Rock	88.0	0.8	<5	0.215
615633	Rock	75.5	<0.5	<5	0.240
615634	Rock	62.1	<0.5	<5	0.047
615635	Rock	42.7	<0.5	<5	0.011
615636	Rock	81.2	<0.5	<5	0.174
615637	Rock	79.5	<0.5	<5	0.174
615638	Rock	60.2	<0.5	<5	0.168
615639	Rock	58.0	<0.5	<5	0.044
615640	Rock Pulp	123.8	0.6	<5	<0.001
615641	Rock	68.7	<0.5	<5	0.120
615642	Rock	52.4	<0.5	<5	0.101
615643	Rock	43.5	<0.5	<5	0.006
615644	Rock	42.5	<0.5	<5	0.005
615645	Rock	43.1	<0.5	<5	0.003
615646	Rock	52.8	0.6	<5	0.011
615647	Rock	41.2	<0.5	<5	0.022
615648	Rock	44.3	<0.5	<5	0.023
615649	Rock	43.2	<0.5	<5	0.013
615651	Rock	69.6	1.2	<5	0.010
615652	Rock	80.4	0.9	<5	0.004
615653	Rock	89.3	1.4	<5	0.004
615654	Rock	57.6	0.7	<5	0.031
615655	Rock	81.2	0.6	<5	0.067
615656	Rock	63.5	0.5	<5	0.040
615657	Rock	56.2	0.8	<5	0.029
615658	Rock	62.6	0.8	<5	0.010
615659	Rock	66.1	<0.5	<5	0.073
615660	Rock	78.2	<0.5	<5	0.146
615661	Rock	80.1	0.5	<5	0.114

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Client: **Midnight Mining**
Box 31347
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Project: STU
Report Date: September 18, 2015

CERTIFICATE OF ANALYSIS WHI15000130.1

Method		WGHT	FA430	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
Analyte		Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca
Unit		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
MDL		0.01	0.005	0.5	0.5	0.5	5	0.5	0.5	1	5	0.01	5	0.5	0.5	5	0.5	0.5	0.5	10	0.01
615662	Rock	3.99	0.030	0.6	1177.4	11.2	71	0.6	3.9	8	705	3.06	<5	0.8	4.1	839	<0.5	<0.5	<0.5	97	2.78
615663	Rock	4.08	0.023	0.7	1769.1	11.1	82	<0.5	4.4	10	749	3.49	<5	1.2	33.3	852	<0.5	<0.5	0.5	115	2.93
615664	Rock	4.72	0.040	1.0	1987.9	12.6	62	0.8	2.5	7	473	2.47	<5	1.1	32.3	750	<0.5	<0.5	0.6	84	1.91
615665	Rock	5.72	0.036	0.9	2089.0	11.7	86	0.8	4.7	10	702	3.35	<5	1.0	8.6	740	<0.5	<0.5	0.6	111	2.09
615666	Rock	5.98	0.053	1.6	1884.0	15.0	70	1.0	2.9	8	556	2.51	<5	0.9	7.8	631	<0.5	<0.5	0.7	79	1.40
615667	Rock	3.47	0.035	1.3	1541.1	11.9	73	0.8	3.1	9	585	2.85	<5	0.8	6.4	841	<0.5	<0.5	0.5	93	2.21
615668	Rock	5.15	0.045	7.9	2392.7	13.5	58	0.8	3.3	8	476	2.73	<5	1.1	7.0	806	<0.5	<0.5	0.5	94	2.21
615669	Rock	3.85	0.061	8.2	3442.5	13.2	101	1.1	3.9	9	562	2.86	<5	0.9	6.7	801	<0.5	<0.5	0.7	103	2.13
615670	Rock Pulp	0.11	0.959	252.8	3329.2	148.2	195	3.3	14.8	14	360	4.19	62	7.3	13.9	176	2.6	39.8	7.6	92	0.83
615671	Rock	4.49	0.054	3.5	2809.7	12.3	116	1.2	4.4	11	742	3.51	<5	1.0	7.0	794	<0.5	<0.5	0.8	123	2.36
615672	Rock	4.46	0.037	7.2	1795.9	14.8	115	0.7	4.1	9	685	3.29	6	1.0	6.5	777	<0.5	<0.5	<0.5	107	2.29
615673	Rock	3.95	0.021	3.5	1161.4	20.2	100	<0.5	2.3	6	488	2.73	6	0.9	5.3	717	<0.5	<0.5	<0.5	83	1.71
615674	Rock	4.36	0.022	2.8	1266.1	22.3	169	<0.5	4.0	10	805	3.43	<5	1.1	6.9	701	<0.5	<0.5	<0.5	97	2.11
615675	Rock	4.38	0.007	2.3	906.9	12.6	90	<0.5	3.6	7	718	2.62	<5	0.7	3.1	858	<0.5	<0.5	<0.5	71	2.66
615676	Rock	1.50	0.014	1.2	351.1	23.4	100	<0.5	2.2	9	1022	3.01	8	2.5	5.5	435	<0.5	<0.5	<0.5	97	2.04
615677	Rock	1.37	0.082	2.0	1223.2	22.0	132	1.1	2.4	10	1182	2.89	12	2.7	5.9	425	<0.5	<0.5	0.7	77	2.11
615678	Rock	4.30	<0.005	0.8	93.7	19.5	151	<0.5	2.8	8	975	3.12	<5	1.7	6.4	743	<0.5	<0.5	<0.5	78	2.25
615679	Rock	1.31	<0.005	1.2	39.3	12.6	54	<0.5	2.5	9	789	3.16	<5	2.2	7.5	766	<0.5	<0.5	<0.5	83	2.29
615680	Rock Pulp	0.12	1.064	228.9	3216.5	143.0	182	3.5	15.9	14	331	4.02	55	7.0	13.4	169	2.9	35.5	6.7	86	0.84
615681	Rock	2.36	<0.005	1.2	23.7	15.8	57	<0.5	4.8	7	706	2.60	<5	2.0	5.4	465	<0.5	<0.5	<0.5	79	2.53
615682	Rock	2.17	<0.005	1.8	108.1	16.3	82	<0.5	3.9	10	1028	3.01	<5	1.8	7.5	325	<0.5	<0.5	<0.5	74	2.40

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Project: STU
Report Date: September 18, 2015

CERTIFICATE OF ANALYSIS WHI15000130.1

	Method	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
	Analyte	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Ce	Sn	Y	Nb	Ta	Be	Sc	Li	S
	Unit	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	0.5	1	0.01	5	0.001	0.01	0.01	0.01	0.5	0.5	5	0.5	0.5	0.5	0.5	5	1	0.5	0.05
615662	Rock	0.10	19.8	5	1.04	1580	0.280	8.69	3.20	1.86	<0.5	8.1	35	1.1	15.1	7.7	<0.5	<5	9	10.2	<0.05
615663	Rock	0.14	31.7	5	1.23	1657	0.359	8.37	3.05	2.17	<0.5	9.2	55	1.6	19.4	10.5	0.5	<5	11	12.0	<0.05
615664	Rock	0.11	30.2	4	0.96	1707	0.265	8.29	2.90	2.63	<0.5	10.5	47	0.6	10.6	7.1	<0.5	<5	6	11.4	<0.05
615665	Rock	0.14	33.9	6	1.23	1823	0.343	8.60	2.74	2.59	<0.5	10.6	55	1.2	13.3	8.7	<0.5	<5	9	15.1	<0.05
615666	Rock	0.10	27.5	6	0.80	2606	0.251	8.08	2.07	3.19	<0.5	9.9	44	0.7	8.7	5.5	<0.5	<5	5	9.3	<0.05
615667	Rock	0.13	20.2	6	1.11	1674	0.299	8.90	3.09	2.30	<0.5	11.0	38	0.9	10.3	7.5	<0.5	<5	6	11.5	<0.05
615668	Rock	0.12	27.2	6	1.04	1613	0.289	8.42	2.89	2.49	<0.5	12.4	44	1.2	13.2	8.2	<0.5	<5	7	11.7	<0.05
615669	Rock	0.13	28.0	5	1.17	2368	0.325	8.38	2.70	2.86	<0.5	8.3	47	1.3	14.0	7.7	<0.5	<5	8	11.8	<0.05
615670	Rock Pulp	0.07	48.3	91	0.74	1011	0.176	7.30	0.61	4.29	25.2	25.8	75	7.7	11.7	3.8	<0.5	<5	10	13.4	1.54
615671	Rock	0.15	27.3	6	1.30	1783	0.380	8.74	3.08	2.33	<0.5	8.1	46	1.4	13.8	9.7	<0.5	<5	9	14.6	<0.05
615672	Rock	0.12	26.7	8	1.11	1495	0.324	8.53	3.19	2.25	<0.5	11.5	46	1.3	12.2	9.2	<0.5	<5	9	14.4	<0.05
615673	Rock	0.09	17.1	4	0.78	1919	0.229	8.13	2.73	3.15	<0.5	11.5	33	1.2	9.7	6.8	<0.5	<5	6	9.6	<0.05
615674	Rock	0.11	22.9	6	0.98	1444	0.300	8.25	3.05	2.34	<0.5	16.8	40	1.3	10.0	8.7	<0.5	<5	7	13.7	<0.05
615675	Rock	0.07	19.2	6	0.75	2012	0.231	8.60	3.50	1.74	<0.5	7.6	31	0.8	13.0	6.5	<0.5	<5	8	10.2	<0.05
615676	Rock	0.08	24.8	5	0.88	1448	0.227	8.41	3.20	2.71	1.2	15.6	44	1.5	14.5	9.6	0.7	<5	7	19.5	<0.05
615677	Rock	0.09	18.6	5	0.68	1607	0.232	8.46	3.32	2.54	0.7	13.7	33	1.2	13.4	8.3	0.5	<5	7	16.8	<0.05
615678	Rock	0.10	16.6	<1	0.77	1696	0.237	7.43	2.86	2.92	<0.5	18.7	33	1.0	10.8	8.2	0.6	<5	8	12.8	<0.05
615679	Rock	0.10	18.8	1	0.87	1603	0.248	7.88	2.93	3.01	<0.5	12.2	38	0.8	14.1	9.0	0.6	<5	7	11.6	<0.05
615680	Rock Pulp	0.06	46.0	96	0.72	914	0.164	7.30	0.59	4.19	23.8	23.3	74	6.1	11.6	3.1	<0.5	<5	11	12.5	1.44
615681	Rock	0.10	12.1	3	0.40	1401	0.235	7.38	2.72	2.74	0.7	14.9	29	1.1	11.0	9.2	0.6	<5	7	14.9	<0.05
615682	Rock	0.09	21.6	6	0.49	1013	0.224	7.84	2.27	2.19	0.8	14.0	35	0.9	14.6	8.4	0.5	<5	7	21.5	<0.05

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Client: **Midnight Mining**
Box 31347
Whitehorse YT Y1A 5P7 CANADA

Project: STU
Report Date: September 18, 2015

CERTIFICATE OF ANALYSIS WHI15000130.1

	Method	MA270	MA270	MA270	GC921
	Analyte	Rb	Hf	Se	Cu/Ox
	Unit	ppm	ppm	ppm	%
	MDL	0.5	0.5	5	0.001
615662	Rock	52.2	<0.5	<5	0.082
615663	Rock	71.9	<0.5	<5	0.132
615664	Rock	84.3	0.5	<5	0.166
615665	Rock	96.0	<0.5	<5	0.165
615666	Rock	93.4	<0.5	<5	0.153
615667	Rock	75.9	<0.5	<5	0.132
615668	Rock	86.5	<0.5	<5	0.205
615669	Rock	88.4	<0.5	<5	0.306
615670	Rock Pulp	173.7	0.9	<5	0.083
615671	Rock	86.6	<0.5	<5	0.227
615672	Rock	84.2	<0.5	<5	0.142
615673	Rock	91.5	<0.5	<5	0.088
615674	Rock	89.6	0.6	<5	0.080
615675	Rock	45.1	<0.5	<5	0.048
615676	Rock	95.7	0.7	<5	0.023
615677	Rock	78.1	0.6	<5	0.109
615678	Rock	73.2	0.8	<5	0.004
615679	Rock	76.0	0.7	<5	0.002
615680	Rock Pulp	165.6	0.8	<5	0.082
615681	Rock	73.8	0.6	<5	<0.001
615682	Rock	73.6	0.7	<5	0.003

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Whitehorse YT Y1A 5P7 CANADA

Project: STU
Report Date: September 18, 2015

QUALITY CONTROL REPORT WHI15000130.1

	Method	WGHT	FA430	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
	Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	0.005	0.5	0.5	0.5	5	0.5	0.5	1	5	0.01	5	0.5	0.5	5	0.5	0.5	0.5	10	0.01
Pulp Duplicates																					
615613	Rock	4.31	<0.005	<0.5	87.7	12.8	75	<0.5	2.8	8	716	3.24	<5	1.3	3.7	582	<0.5	<0.5	<0.5	81	1.35
REP 615613	QC			<0.5	85.5	12.3	72	<0.5	3.0	8	667	3.25	<5	1.3	3.7	577	<0.5	<0.5	<0.5	81	1.34
615624	Rock	4.43	0.013	0.7	774.8	21.8	147	<0.5	7.1	13	940	3.78	<5	1.2	9.5	679	<0.5	<0.5	<0.5	100	2.10
REP 615624	QC		0.011																		
615627	Rock	5.02	0.048	<0.5	1934.4	12.8	93	0.6	2.3	6	691	2.62	<5	0.7	3.8	820	<0.5	<0.5	<0.5	68	2.05
REP 615627	QC																				
615649	Rock	4.89	<0.005	<0.5	263.3	12.2	64	<0.5	2.2	8	817	2.83	<5	1.1	3.0	869	<0.5	<0.5	<0.5	74	2.81
REP 615649	QC			<0.5	248.0	11.3	58	<0.5	3.3	7	794	2.83	<5	1.0	2.7	780	<0.5	<0.5	<0.5	70	2.61
615663	Rock	4.08	0.023	0.7	1769.1	11.1	82	<0.5	4.4	10	749	3.49	<5	1.2	33.3	852	<0.5	<0.5	0.5	115	2.93
REP 615663	QC		0.021																		
615681	Rock	2.36	<0.005	1.2	23.7	15.8	57	<0.5	4.8	7	706	2.60	<5	2.0	5.4	465	<0.5	<0.5	<0.5	79	2.53
REP 615681	QC			1.0	21.5	15.8	55	<0.5	3.0	8	713	2.62	6	1.1	4.9	453	<0.5	<0.5	<0.5	83	2.48
615682	Rock	2.17	<0.005	1.8	108.1	16.3	82	<0.5	3.9	10	1028	3.01	<5	1.8	7.5	325	<0.5	<0.5	<0.5	74	2.40
REP 615682	QC			1.6	103.2	15.0	81	<0.5	3.1	9	965	2.90	<5	1.8	7.0	310	<0.5	<0.5	<0.5	72	2.30
Core Reject Duplicates																					
615655	Rock	3.15	0.015	<0.5	1115.4	11.7	78	<0.5	3.7	10	710	2.89	<5	1.2	7.4	671	<0.5	<0.5	<0.5	87	1.99
DUP 615655	QC		0.015	<0.5	1019.2	11.7	80	<0.5	4.4	10	727	3.02	<5	1.2	7.0	675	<0.5	<0.5	<0.5	87	2.00
Reference Materials																					
STD CPZO-1_5PER	Standard																				
STD CPZO-1_5PER	Standard																				
STD CPZO-1_5PER	Standard																				
STD GBM398-4-MA	Standard			909.3	3809.3	11006.8	5265	48.1	4028.7	1896	5240	4.70	<5	0.9	1.1	50	7.9	10.6	11.6	71	1.25
STD GBM398-4-MA	Standard			882.8	4012.3	11854.6	5524	49.9	4166.8	1895	5417	4.85	8	0.9	1.3	53	8.6	10.4	12.2	75	1.31
STD GBM398-4-MA	Standard			946.9	4018.6	11437.4	5624	48.9	4184.8	2068	5777	5.27	7	1.0	1.3	55	7.3	11.0	12.1	62	1.37
STD GBM398-4-MA	Standard			888.6	3994.4	11289.5	5691	49.4	4111.8	1983	5497	5.11	9	0.7	1.2	55	8.9	10.0	11.3	64	1.32
STD OREAS901	Standard																				
STD OREAS901	Standard																				
STD OREAS901	Standard																				

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Client: **Midnight Mining**
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Whitehorse YT Y1A 5P7 CANADA

Project: STU
Report Date: September 18, 2015

QUALITY CONTROL REPORT WHI15000130.1

	Method	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
	Analyte	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Ce	Sn	Y	Nb	Ta	Be	Sc	Li	S
	Unit	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	0.5	1	0.01	5	0.001	0.01	0.01	0.01	0.5	0.5	5	0.5	0.5	0.5	0.5	5	1	0.5	0.05
Pulp Duplicates																					
615613	Rock	0.08	18.3	4	0.73	643	0.247	9.11	3.79	1.61	<0.5	19.8	33	1.2	10.5	8.4	0.5	<5	9	12.0	<0.05
REP 615613	QC	0.08	17.7	5	0.73	649	0.244	9.02	3.75	1.59	<0.5	18.9	32	1.1	10.9	8.0	<0.5	<5	9	10.9	<0.05
615624	Rock	0.12	27.0	13	0.83	1488	0.303	7.94	2.63	2.47	<0.5	26.3	46	1.4	18.0	8.6	<0.5	<5	9	12.4	<0.05
REP 615624	QC																				
615627	Rock	0.08	16.2	5	0.58	2201	0.238	8.67	3.21	2.24	<0.5	8.3	35	0.6	7.0	6.1	<0.5	<5	5	8.6	<0.05
REP 615627	QC																				
615649	Rock	0.08	14.1	5	0.79	1910	0.220	8.59	3.46	1.81	<0.5	7.8	31	1.5	12.1	5.7	<0.5	<5	8	10.3	<0.05
REP 615649	QC	0.08	13.7	7	0.81	1984	0.229	8.94	3.20	1.87	<0.5	8.1	29	1.0	11.7	6.0	<0.5	<5	8	9.4	<0.05
615663	Rock	0.14	31.7	5	1.23	1657	0.359	8.37	3.05	2.17	<0.5	9.2	55	1.6	19.4	10.5	0.5	<5	11	12.0	<0.05
REP 615663	QC																				
615681	Rock	0.10	12.1	3	0.40	1401	0.235	7.38	2.72	2.74	0.7	14.9	29	1.1	11.0	9.2	0.6	<5	7	14.9	<0.05
REP 615681	QC	0.09	10.5	2	0.40	1426	0.236	6.78	2.71	2.74	0.6	16.5	27	1.4	10.1	8.6	0.7	<5	6	14.5	<0.05
615682	Rock	0.09	21.6	6	0.49	1013	0.224	7.84	2.27	2.19	0.8	14.0	35	0.9	14.6	8.4	0.5	<5	7	21.5	<0.05
REP 615682	QC	0.09	20.5	5	0.47	964	0.214	7.49	2.17	2.11	0.8	15.0	33	1.1	14.2	8.2	0.5	<5	8	23.9	<0.05
Core Reject Duplicates																					
615655	Rock	0.11	28.9	7	1.06	1658	0.273	8.16	3.30	2.21	<0.5	12.9	45	1.3	15.2	8.7	0.8	<5	8	13.4	<0.05
DUP 615655	QC	0.10	27.9	8	1.06	1614	0.270	8.19	3.35	2.16	<0.5	12.7	45	1.2	14.5	8.8	0.7	<5	8	11.8	<0.05
Reference Materials																					
STD CPZO-1_5PER	Standard																				
STD CPZO-1_5PER	Standard																				
STD CPZO-1_5PER	Standard																				
STD GBM398-4-MA	Standard	0.05	3.7	1533	0.54	42	0.224	5.02	1.47	3.14	4.2	116.1	9	6.2	7.4	2.1	<0.5	<5	7	7.5	0.89
STD GBM398-4-MA	Standard	0.05	4.1	1575	0.56	47	0.235	5.26	1.56	3.26	4.4	112.2	9	6.8	7.9	2.1	<0.5	<5	8	6.7	0.90
STD GBM398-4-MA	Standard	0.05	4.6	1751	0.57	47	0.244	5.19	1.57	3.34	4.4	225.2	9	6.0	7.9	2.2	<0.5	<5	8	7.6	0.97
STD GBM398-4-MA	Standard	0.05	3.5	1556	0.56	43	0.235	4.86	1.55	3.32	4.4	78.0	9	5.8	7.3	1.9	<0.5	<5	7	7.6	0.95
STD OREAS901	Standard																				
STD OREAS901	Standard																				
STD OREAS901	Standard																				

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Client: **Midnight Mining**
Box 31347
Whitehorse YT Y1A 5P7 CANADA

Project: STU
Report Date: September 18, 2015

QUALITY CONTROL REPORT WHI15000130.1

	Method	MA270	MA270	MA270	GC921
	Analyte	Rb	Hf	Se	Cu/Ox
	Unit	ppm	ppm	ppm	%
	MDL	0.5	0.5	5	0.001
Pulp Duplicates					
615613	Rock	62.3	0.6	<5	0.004
REP 615613	QC	62.7	0.9	<5	
615624	Rock	85.3	0.8	<5	0.034
REP 615624	QC				
615627	Rock	57.6	<0.5	<5	0.123
REP 615627	QC				0.120
615649	Rock	43.2	<0.5	<5	0.013
REP 615649	QC	42.5	<0.5	<5	
615663	Rock	71.9	<0.5	<5	0.132
REP 615663	QC				0.131
615681	Rock	73.8	0.6	<5	<0.001
REP 615681	QC	72.3	0.9	<5	
615682	Rock	73.6	0.7	<5	0.003
REP 615682	QC	71.1	0.6	<5	0.003
Core Reject Duplicates					
615655	Rock	81.2	0.6	<5	0.067
DUP 615655	QC	77.4	<0.5	<5	0.062
Reference Materials					
STD CPZO-1_5PER	Standard				0.263
STD CPZO-1_5PER	Standard				0.260
STD CPZO-1_5PER	Standard				0.259
STD GBM398-4-MA	Standard	698.1	2.4	<5	
STD GBM398-4-MA	Standard	750.2	1.9	<5	
STD GBM398-4-MA	Standard	786.7	2.2	<5	
STD GBM398-4-MA	Standard	751.5	1.9	<5	
STD OREAS901	Standard				0.084
STD OREAS901	Standard				0.085
STD OREAS901	Standard				0.083

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QUALITY CONTROL REPORT WHI15000130.1

		WGHT	FA430	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
		Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca
		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.01	0.005	0.5	0.5	0.5	5	0.5	0.5	1	5	0.01	5	0.5	0.5	5	0.5	0.5	0.5	10	0.01
STD OREAS927-MA	Standard			1.0	10640.2	226.3	781	3.2	33.6	30	1307	8.10	8	2.9	14.9	25	0.8	2.0	59.0	79	0.36
STD OREAS927-MA	Standard			1.9	10859.0	241.3	830	5.3	33.6	31	1284	8.11	12	2.9	15.8	32	1.3	3.6	62.4	82	0.39
STD OREAS927-MA	Standard			0.8	10731.4	245.8	805	3.6	33.4	31	1318	8.61	10	2.9	16.0	26	1.0	1.8	62.3	81	0.40
STD OREAS927-MA	Standard			1.1	10900.2	226.5	827	4.0	29.8	30	1229	8.29	9	2.6	12.2	30	0.8	1.8	60.5	79	0.39
STD OXD108	Standard		0.418																		
STD OXD108	Standard		0.420																		
STD OXI121	Standard		1.887																		
STD OXI121	Standard		1.830																		
STD OXN117	Standard		7.534																		
STD OXN117	Standard		7.789																		
STD CPZO-1_5PER																					
STD OREAS901 Expected																					
STD OXD108 Expected			0.414																		
STD OXN117 Expected			7.679																		
STD OXI121 Expected			1.834																		
STD GBM398-4-MA				900	3930	11645	5212	49.7	4110	2000	5300	5.05	7	0.8	1.1	53	7.9	9.52	10.9	61	1.27
STD OREAS927-MA				1.06	10800	231	798	4.6	33.3	31	1217	8.56	9.2	2.7	14.4	29.3	1.1	1.9	62.7	77	0.4
BLK	Blank		<0.005																		
BLK	Blank		<0.005																		
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank		<0.005																		
BLK	Blank		<0.005																		
BLK	Blank			<0.5	1.2	<0.5	<5	<0.5	<0.5	<1	<5	<0.01	<5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<10	<0.01
BLK	Blank			<0.5	1.1	<0.5	<5	<0.5	<0.5	<1	<5	<0.01	<5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<10	<0.01
BLK	Blank			<0.5	2.5	1.5	<5	<0.5	0.6	<1	<5	<0.01	<5	1.0	<0.5	<5	<0.5	<0.5	<0.5	<10	<0.01
Prep Wash																					
ROCK-WHI	Prep Blank		<0.005	0.7	7.5	5.1	53	<0.5	1.1	4	314	2.13	<5	1.3	3.2	212	<0.5	<0.5	<0.5	38	1.62

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Project: STU
Report Date: September 18, 2015

QUALITY CONTROL REPORT WHI15000130.1

		MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
		P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Ce	Sn	Y	Nb	Ta	Be	Sc	Li	S
		%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.01	0.5	1	0.01	5	0.001	0.01	0.01	0.01	0.5	0.5	5	0.5	0.5	0.5	0.5	5	1	0.5	0.05
STD OREAS927-MA	Standard	0.05	40.9	63	2.13	306	0.303	6.35	0.18	1.78	8.1	90.2	77	23.1	18.0	10.0	0.8	<5	10	34.4	1.52
STD OREAS927-MA	Standard	0.05	42.6	62	2.18	322	0.316	6.48	0.17	1.86	7.9	92.8	78	25.4	20.1	10.8	0.9	<5	11	33.1	1.54
STD OREAS927-MA	Standard	0.05	42.2	58	2.11	314	0.309	6.33	0.19	1.89	8.3	89.7	77	22.9	18.8	10.4	0.9	<5	11	38.3	1.64
STD OREAS927-MA	Standard	0.05	31.7	58	2.08	286	0.311	6.09	0.18	1.82	7.3	92.7	67	21.2	17.1	9.8	0.9	<5	9	34.4	1.55
STD OXD108	Standard																				
STD OXD108	Standard																				
STD OXI121	Standard																				
STD OXI121	Standard																				
STD OXN117	Standard																				
STD OXN117	Standard																				
STD CPZO-1_5PER																					
STD OREAS901 Expected																					
STD OXD108 Expected																					
STD OXN117 Expected																					
STD OXI121 Expected																					
STD GBM398-4-MA		0.047	4	1570	0.55	45	0.229	5.08	1.54	3.26	4	113	9	5.8	7.5	2	0.2		7.16	7	0.92
STD OREAS927-MA		0.053	40.2	63	2.11	314	0.314	6.45	0.173	1.87	8.1	94	76	22.3	19.2	11	0.86	1.8	11	35.1	1.54
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<0.01	<0.5	<1	<0.01	<5	<0.001	<0.01	<0.01	<0.01	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<5	<1	<0.5	<0.05
BLK	Blank	<0.01	<0.5	<1	<0.01	<5	<0.001	<0.01	<0.01	<0.01	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<5	<1	<0.5	<0.05
BLK	Blank	<0.01	<0.5	<1	<0.01	<5	<0.001	<0.01	<0.01	<0.01	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<5	<1	<0.5	<0.05
Prep Wash																					
ROCK-WHI	Prep Blank	0.05	15.7	<1	0.54	864	0.206	6.85	3.30	1.77	0.5	58.6	29	<0.5	16.4	5.6	<0.5	<5	8	3.4	<0.05

Client: **Midnight Mining**
Box 31347
Whitehorse YT Y1A 5P7 CANADA

BUREAU VERITAS MINERAL LABORATORIES Canada

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

Project: STU
Report Date: September 18, 2015

QUALITY CONTROL REPORT WHI15000130.1

		MA270	MA270	MA270	GC921
		Rb	Hf	Se	Cu/Ox
		ppm	ppm	ppm	%
		0.5	0.5	5	0.001
STD OREAS927-MA	Standard	118.9	2.2	18	
STD OREAS927-MA	Standard	125.8	2.5	18	
STD OREAS927-MA	Standard	114.5	2.7	16	
STD OREAS927-MA	Standard	92.2	2.7	17	
STD OXD108	Standard				
STD OXD108	Standard				
STD OXI121	Standard				
STD OXI121	Standard				
STD OXN117	Standard				
STD OXN117	Standard				
STD CPZO-1_5PER					0.26
STD OREAS901 Expected					0.083
STD OXD108 Expected					
STD OXN117 Expected					
STD OXI121 Expected					
STD GBM398-4-MA		731	2.8		
STD OREAS927-MA		121	2.73	16	
BLK	Blank				
BLK	Blank				
BLK	Blank				<0.001
BLK	Blank				<0.001
BLK	Blank				<0.001
BLK	Blank				
BLK	Blank				
BLK	Blank	<0.5	<0.5	<5	
BLK	Blank	<0.5	<0.5	<5	
BLK	Blank	<0.5	<0.5	<5	
Prep Wash					
ROCK-WHI	Prep Blank	35.8	2.0	<5	<0.001

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Box 31347
Whitehorse YT Y1A 5P7 CANADA

Project: STU
Report Date: September 18, 2015

QUALITY CONTROL REPORT WHI15000130.1

		WGHT	FA430	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
		Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca
		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.01	0.005	0.5	0.5	0.5	5	0.5	0.5	1	5	0.01	5	0.5	0.5	5	0.5	0.5	0.5	10	0.01
ROCK-WHI	Prep Blank		<0.005	<0.5	6.2	7.4	48	<0.5	1.3	4	734	2.13	<5	1.4	3.1	210	<0.5	<0.5	<0.5	36	1.50

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Box 31347
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Report Date: September 18, 2015

QUALITY CONTROL REPORT WHI15000130.1

		MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
		P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Ce	Sn	Y	Nb	Ta	Be	Sc	Li	S
		%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.01	0.5	1	0.01	5	0.001	0.01	0.01	0.01	0.5	0.5	5	0.5	0.5	0.5	0.5	5	1	0.5	0.05
ROCK-WHI	Prep Blank	0.04	16.5	<1	0.49	922	0.203	6.88	3.33	1.90	<0.5	60.3	29	0.5	15.8	5.8	<0.5	<5	7	2.7	<0.05

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Project: STU
Report Date: September 18, 2015

QUALITY CONTROL REPORT WHI15000130.1

		MA270	MA270	MA270	GC921
		Rb	Hf	Se	Cu/Ox
		ppm	ppm	ppm	%
		0.5	0.5	5	0.001
ROCK-WHI	Prep Blank	37.7	2.1	<5	<0.001

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Client: **Midnight Mining**
Box 31347
Whitehorse YT Y1A 5P7 CANADA

Submitted By:	Debbie James
Receiving Lab:	Canada-Whitehorse
Received:	October 02, 2015
Report Date:	October 17, 2015
Page:	1 of 2

CERTIFICATE OF ANALYSIS WHI15000213.1

CLIENT JOB INFORMATION

Project:	STU
Shipment ID:	STU2
P.O. Number	
Number of Samples:	30

SAMPLE DISPOSAL

DISP-PLP	Dispose of Pulp After 90 days
RTRN-RJT	Return

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

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	28	Crush, split and pulverize 250 g rock to 200 mesh			WHI
FA430	30	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	VAN
MA270	28	4 Acid Digestion Analysis by ICP-ES/ICP-MS	0.5	Completed	VAN
AQ300	2	1:1:1 Aqua Regia digestion ICP-ES analysis	0.5	Completed	VAN
GC921	28	Cu in oxide form, 5% H2SO4	1	Completed	VAN
MA371	1	4 Acid digestion ICP-ES analysis	0.1	Completed	VAN
FA530	3	Lead collection fire assay 30G fusion - Grav finish	30	Completed	VAN

ADDITIONAL COMMENTS

Invoice To: Midnight Mining
Box 31347
Whitehorse YT Y1A 5P7
CANADA

CC: Sue Craig

BRITISH COLUMBIA CERTIFIED ASSAYER
MARCUS LAU
Geochemical Laboratory Manager

BUREAU VERITAS MINERAL LABORATORIES Canada

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Client: **Midnight Mining**
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Project: STU
Report Date: October 17, 2015

CERTIFICATE OF ANALYSIS WHI15000213.1

	Method	WGHT	FA430	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
	Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	0.005	0.5	0.5	0.5	5	0.5	0.5	1	5	0.01	5	0.5	0.5	5	0.5	0.5	0.5	10	0.01
615701	Rock	3.04	<0.005	<0.5	371.2	15.1	77	<0.5	2.9	8	824	3.00	5	1.2	3.0	781	<0.5	<0.5	<0.5	75	2.21
615702	Rock	2.19	<0.005	<0.5	270.4	14.2	54	<0.5	2.3	5	518	2.17	<5	1.1	2.8	655	<0.5	<0.5	<0.5	55	1.67
615703	Rock	1.63	<0.005	<0.5	262.2	15.8	59	<0.5	2.8	6	635	2.56	<5	1.2	2.5	755	<0.5	<0.5	<0.5	68	2.31
615704	Rock	2.12	0.006	<0.5	261.2	13.2	64	<0.5	2.8	8	827	2.87	<5	1.1	3.0	831	<0.5	<0.5	0.7	76	2.54
615705	Rock	4.23	<0.005	<0.5	658.1	11.7	94	<0.5	2.2	8	844	3.22	<5	0.8	2.5	796	<0.5	<0.5	<0.5	77	2.96
615706	Rock	2.53	0.007	<0.5	738.3	12.8	101	<0.5	2.2	8	940	3.39	<5	0.7	3.1	674	<0.5	<0.5	<0.5	85	2.83
615707	Rock	3.19	0.006	<0.5	952.8	18.0	62	<0.5	3.5	8	556	2.89	<5	0.8	4.9	647	<0.5	<0.5	<0.5	87	2.14
615708	Rock	3.27	<0.005	<0.5	311.8	11.6	63	<0.5	1.4	5	456	2.17	<5	0.7	1.9	643	<0.5	<0.5	<0.5	50	1.71
615709	Rock	1.63	<0.005	<0.5	248.8	37.2	195	<0.5	4.8	12	1146	3.53	<5	1.2	8.8	720	<0.5	<0.5	<0.5	93	2.15
615710	Rock Pulp	0.12	0.950	222.1	3208.1	123.8	183	3.0	13.5	14	308	4.31	52	6.7	13.5	162	3.2	31.6	5.4	86	0.82
615711	Rock	2.85	<0.005	<0.5	109.7	15.8	64	<0.5	2.6	6	702	2.41	<5	0.9	6.2	621	<0.5	<0.5	<0.5	65	1.98
615712	Rock	4.34	<0.005	0.5	74.5	17.5	71	<0.5	2.9	7	636	2.38	<5	1.2	6.2	669	<0.5	<0.5	<0.5	61	1.49
615713	Rock	3.37	<0.005	1.0	56.5	49.0	209	<0.5	4.0	8	1305	2.77	<5	2.0	7.8	730	<0.5	<0.5	<0.5	71	2.27
615714	Rock	3.30	<0.005	<0.5	55.5	18.1	48	<0.5	2.6	5	510	1.73	<5	1.0	5.1	795	<0.5	<0.5	<0.5	42	1.66
615715	Rock	1.43	0.007	0.6	242.4	18.4	79	<0.5	3.3	10	833	2.68	<5	1.0	6.5	639	<0.5	<0.5	<0.5	73	1.97
615716	Rock	2.95	<0.005	0.5	47.3	17.7	50	<0.5	3.0	7	642	2.41	<5	1.2	5.6	651	<0.5	<0.5	<0.5	64	1.98
615717	Rock	4.40	<0.005	1.0	84.2	23.9	185	<0.5	3.6	9	1214	2.97	<5	1.4	5.3	680	<0.5	<0.5	<0.5	83	2.28
615718	Rock	3.52	<0.005	0.7	99.3	19.4	76	<0.5	3.8	9	909	2.77	<5	1.6	6.7	663	<0.5	0.7	<0.5	75	1.83
615719	Rock	2.05	<0.005	0.8	151.9	14.3	94	<0.5	4.1	9	928	2.72	<5	1.9	8.5	664	<0.5	<0.5	<0.5	75	1.99
615720	Rock Pulp	0.06	<0.005	<0.5	3.1	19.1	52	<0.5	5.0	5	762	2.43	<5	3.7	9.8	792	<0.5	<0.5	<0.5	54	2.73
615721	Rock	1.75	0.009	1.1	523.3	14.6	86	0.9	2.9	11	805	2.72	<5	1.3	9.0	678	<0.5	<0.5	<0.5	72	1.85
615722	Rock	3.27	<0.005	0.6	153.5	14.2	57	<0.5	4.2	7	587	2.17	5	1.0	5.9	526	<0.5	<0.5	<0.5	57	0.66
615723	Rock	4.94	<0.005	1.3	174.4	16.3	51	<0.5	3.0	8	714	2.78	5	1.5	5.7	644	<0.5	<0.5	<0.5	74	1.75
615724	Rock	4.05	<0.005	0.8	155.3	11.5	59	<0.5	3.0	8	798	3.50	<5	1.0	7.3	556	<0.5	<0.5	<0.5	99	1.52
615725	Rock	2.95	0.029	1.0	932.0	19.0	106	1.1	3.0	21	879	3.20	7	1.4	7.0	639	<0.5	0.8	<0.5	89	2.11
116227	Rock	1.15	0.580	1.4	6436.4	60478.1	73316	>300	10.2	6	86240	23.85	310	1.2	0.7	61	1456.8	6834.3	1.3	12	0.36
116228	Rock	0.96	1.352	1.1	8971.3	61669.6	109427	>300	10.7	5	83340	22.46	264	0.8	<0.5	12	1898.6	9153.0	1.0	22	0.43
116229	Rock	1.00	8.331	1.1	232.1	>100000	2383	>300	1.2	<1	69	5.85	60395	15.6	1.5	17	365.6	38810.7	12.5	<10	0.02
1501039	Rock	1.27	0.011																		
1501040	Rock	0.83	0.381																		

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Client: **Midnight Mining**
Box 31347
Whitehorse YT Y1A 5P7 CANADA

Project: STU
Report Date: October 17, 2015

CERTIFICATE OF ANALYSIS WHI15000213.1

	Method	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
	Analyte	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Ce	Sn	Y	Nb	Ta	Be	Sc	Li	S
	Unit	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	0.5	1	0.01	5	0.001	0.01	0.01	0.01	0.5	0.5	5	0.5	0.5	0.5	0.5	5	1	0.5	0.05
615701	Rock	0.08	16.0	4	0.65	1934	0.242	8.22	3.40	1.96	<0.5	9.4	31	1.0	13.6	7.9	0.6	<5	8	8.6	<0.05
615702	Rock	0.06	10.2	<1	0.47	2551	0.166	7.46	3.28	2.13	<0.5	17.6	22	0.7	8.6	5.5	0.9	<5	5	8.3	<0.05
615703	Rock	0.07	12.0	3	0.58	2093	0.199	8.07	3.30	2.22	<0.5	21.2	24	1.0	11.5	6.6	0.7	<5	8	8.1	<0.05
615704	Rock	0.07	13.8	4	0.72	2009	0.224	7.74	3.38	1.83	<0.5	12.9	27	0.9	15.2	10.0	1.1	<5	8	10.0	<0.05
615705	Rock	0.11	14.1	4	0.81	1980	0.272	8.53	3.33	1.86	<0.5	8.8	32	1.0	19.8	9.4	0.8	<5	9	9.0	<0.05
615706	Rock	0.12	13.3	1	0.82	1569	0.290	7.10	3.29	1.82	<0.5	11.8	28	1.1	20.6	8.8	0.6	<5	10	10.8	<0.05
615707	Rock	0.12	13.9	5	0.73	1458	0.261	5.88	2.99	2.24	<0.5	12.7	28	1.4	11.3	9.3	0.6	<5	6	10.3	<0.05
615708	Rock	0.07	7.1	<1	0.37	2008	0.181	7.35	3.51	1.96	<0.5	11.1	19	0.6	4.5	5.6	<0.5	<5	3	7.9	<0.05
615709	Rock	0.10	13.7	4	0.84	1664	0.263	8.32	2.97	2.51	1.1	17.3	43	1.1	11.6	9.3	0.7	<5	8	10.4	<0.05
615710	Rock Pulp	0.07	45.5	94	0.74	1103	0.165	7.13	0.60	4.16	19.7	24.2	74	5.9	10.7	3.2	<0.5	<5	10	12.3	1.55
615711	Rock	0.07	11.9	2	0.58	1521	0.180	7.06	3.00	2.81	0.9	16.6	31	0.5	10.1	7.0	<0.5	<5	5	6.6	<0.05
615712	Rock	0.06	12.6	4	0.56	2056	0.193	7.55	2.50	3.55	0.8	16.5	31	<0.5	7.9	7.3	0.6	<5	4	8.6	<0.05
615713	Rock	0.09	13.3	5	0.69	1609	0.213	8.15	2.97	3.16	0.6	15.0	32	0.7	11.3	8.0	0.6	<5	6	7.5	<0.05
615714	Rock	0.05	8.8	1	0.45	1979	0.133	7.98	3.23	3.18	<0.5	17.1	24	<0.5	7.5	5.7	<0.5	<5	3	7.2	<0.05
615715	Rock	0.08	10.0	4	0.56	1521	0.197	6.56	3.06	2.76	<0.5	13.2	32	0.8	8.4	7.9	<0.5	<5	6	8.6	<0.05
615716	Rock	0.08	8.9	3	0.56	1636	0.187	7.25	2.83	3.26	0.6	14.6	26	0.7	9.3	7.4	0.5	<5	5	7.9	<0.05
615717	Rock	0.09	9.6	5	0.72	1743	0.232	6.35	2.97	3.06	1.9	16.3	32	0.9	11.6	9.4	0.8	<5	7	7.9	<0.05
615718	Rock	0.09	10.3	4	0.70	1637	0.223	6.73	3.15	2.99	2.0	14.4	30	0.9	9.5	8.5	0.6	<5	6	10.9	<0.05
615719	Rock	0.10	14.0	4	0.76	1750	0.238	7.89	3.05	3.28	1.1	15.6	39	0.9	11.5	8.7	<0.5	<5	7	9.8	<0.05
615720	Rock Pulp	0.09	29.4	41	0.71	1098	0.241	8.50	2.88	3.20	<0.5	7.6	56	0.9	15.4	20.1	1.2	<5	6	34.0	<0.05
615721	Rock	0.09	17.3	5	0.82	1409	0.237	8.05	3.10	2.63	1.2	12.9	41	0.8	9.4	8.5	<0.5	<5	6	14.2	<0.05
615722	Rock	0.06	11.7	3	0.47	1961	0.184	6.68	3.42	2.89	1.2	21.0	30	<0.5	5.3	6.8	<0.5	<5	4	10.3	<0.05
615723	Rock	0.07	17.6	5	0.52	1687	0.217	7.47	2.91	2.90	<0.5	17.1	32	0.6	11.9	8.3	0.5	<5	7	10.8	<0.05
615724	Rock	0.13	33.5	5	0.55	1519	0.269	8.22	2.58	2.30	<0.5	15.4	48	0.8	17.2	9.6	<0.5	<5	8	12.4	<0.05
615725	Rock	0.11	11.7	5	0.82	1559	0.251	7.14	2.95	3.05	<0.5	17.6	31	0.9	9.2	8.5	<0.5	<5	7	14.0	<0.05
116227	Rock	<0.01	2.1	14	0.62	52	0.029	0.42	0.02	0.14	1.3	3.1	<5	26.5	19.3	<0.5	<0.5	<5	9	1.4	3.84
116228	Rock	<0.01	1.2	24	0.98	34	0.075	0.59	0.01	0.19	4.7	1.6	<5	30.3	11.3	0.5	<0.5	<5	5	1.6	6.19
116229	Rock	<0.01	3.3	9	0.01	113	0.010	0.43	0.01	0.13	<0.5	3.1	<5	13.4	<0.5	<0.5	<0.5	<5	<1	1.6	5.22
1501039	Rock																				
1501040	Rock																				

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Client: **Midnight Mining**
Box 31347
Whitehorse YT Y1A 5P7 CANADA

Project: STU
Report Date: October 17, 2015

CERTIFICATE OF ANALYSIS WHI15000213.1

	Method	MA270	MA270	MA270	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Rb	Hf	Se	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.5	0.5	5	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
615701	Rock	58.5	<0.5	<5																	
615702	Rock	54.3	0.7	<5																	
615703	Rock	54.8	0.7	<5																	
615704	Rock	46.2	<0.5	<5																	
615705	Rock	50.9	<0.5	<5																	
615706	Rock	45.5	0.5	<5																	
615707	Rock	52.5	0.8	<5																	
615708	Rock	40.9	<0.5	<5																	
615709	Rock	78.6	0.7	<5																	
615710	Rock Pulp	168.5	0.9	<5																	
615711	Rock	69.9	0.7	<5																	
615712	Rock	105.5	0.6	<5																	
615713	Rock	83.5	0.8	<5																	
615714	Rock	85.3	0.6	<5																	
615715	Rock	60.4	0.6	<5																	
615716	Rock	76.9	0.7	<5																	
615717	Rock	70.1	0.7	<5																	
615718	Rock	71.1	0.7	<5																	
615719	Rock	106.4	0.7	<5																	
615720	Rock Pulp	134.6	<0.5	<5																	
615721	Rock	99.1	<0.5	<5																	
615722	Rock	90.7	0.8	<5																	
615723	Rock	77.0	0.8	<5																	
615724	Rock	75.5	0.6	<5																	
615725	Rock	86.1	0.8	<5																	
116227	Rock	11.9	<0.5	9																	
116228	Rock	25.2	<0.5	19																	
116229	Rock	9.3	<0.5	60																	
1501039	Rock				<1	3	100	62	1.6	2	6	612	2.05	49	<2	157	1.4	13	<3	84	6.91
1501040	Rock				113	8767	161	16	4.8	3	5	99	1.21	60	2	17	0.7	33	<3	32	0.34

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Client: **Midnight Mining**
Box 31347
Whitehorse YT Y1A 5P7 CANADA

Project: STU
Report Date: October 17, 2015

CERTIFICATE OF ANALYSIS WHI15000213.1

	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	GC921	MA371	FA530
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc	Cu/Ox	Pb	Ag
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	%	gm/t
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5	0.001	0.02	50
615701	Rock																	0.014		
615702	Rock																	0.011		
615703	Rock																	0.011		
615704	Rock																	0.011		
615705	Rock																	0.023		
615706	Rock																	0.025		
615707	Rock																	0.029		
615708	Rock																	0.012		
615709	Rock																	0.005		
615710	Rock Pulp																	0.084		
615711	Rock																	0.002		
615712	Rock																	0.001		
615713	Rock																	<0.001		
615714	Rock																	<0.001		
615715	Rock																	0.007		
615716	Rock																	0.001		
615717	Rock																	0.002		
615718	Rock																	0.003		
615719	Rock																	0.003		
615720	Rock Pulp																	<0.001		
615721	Rock																	0.018		
615722	Rock																	0.003		
615723	Rock																	0.005		
615724	Rock																	0.005		
615725	Rock																	0.081		
116227	Rock																	0.075		4277
116228	Rock																	0.049		6435
116229	Rock																	0.001	14.38	326
1501039	Rock	0.071	8	3	0.51	46	0.102	<20	5.03	0.03	0.04	<2	<0.05	<1	<5	31	<5			
1501040	Rock	0.046	3	7	0.15	25	0.039	<20	0.39	0.07	0.05	<2	<0.05	<1	<5	<5	<5			

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Project: STU
Report Date: October 17, 2015

QUALITY CONTROL REPORT WHI15000213.1

	Method	WGHT	FA430	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
	Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	0.005	0.5	0.5	0.5	5	0.5	0.5	1	5	0.01	5	0.5	0.5	5	0.5	0.5	0.5	10	0.01
Pulp Duplicates																					
615706	Rock	2.53	0.007	<0.5	738.3	12.8	101	<0.5	2.2	8	940	3.39	<5	0.7	3.1	674	<0.5	<0.5	<0.5	85	2.83
REP 615706	QC																				
615718	Rock	3.52	<0.005	0.7	99.3	19.4	76	<0.5	3.8	9	909	2.77	<5	1.6	6.7	663	<0.5	0.7	<0.5	75	1.83
REP 615718	QC			0.9	98.4	17.8	77	<0.5	3.5	9	909	2.84	<5	1.7	6.8	688	<0.5	<0.5	<0.5	76	1.89
116229	Rock	1.00	8.331	1.1	232.1	>100000	2383	>300	1.2	<1	69	5.85	60395	15.6	1.5	17	365.6	38810.7	12.5	<10	0.02
REP 116229	QC																				
Reference Materials																					
STD AGPROOF	Standard																				
STD CCU-1D	Standard																				
STD CPZO-1_5PER	Standard																				
STD CZN-4	Standard																				
STD DS10	Standard																				
STD GBM398-4-MA	Standard			888.4	3925.5	12069.1	5440	51.5	4229.3	1921	5310	5.12	7	0.8	1.2	51	9.9	10.4	9.9	61	1.28
STD GBM997-6	Standard																				
STD OREAS45EA	Standard																				
STD OREAS901	Standard																				
STD OREAS927-MA	Standard			1.3	10881.2	218.1	761	4.0	32.0	31	1175	8.73	9	2.7	16.0	25	0.8	1.6	57.4	78	0.39
STD OXD108	Standard		0.421																		
STD OXI121	Standard		1.790																		
STD OXN117	Standard		7.743																		
STD PTC-1A	Standard																				
STD SP49	Standard																				
STD SQ70	Standard																				
STD OXD108 Expected			0.414																		
STD OXN117 Expected			7.679																		
STD OXI121 Expected			1.834																		
STD CPZO-1_5PER																					
STD OREAS901 Expected																					

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Project: STU
Report Date: October 17, 2015

QUALITY CONTROL REPORT WHI15000213.1

	Method	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
	Analyte	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Ce	Sn	Y	Nb	Ta	Be	Sc	Li	S
	Unit	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	0.5	1	0.01	5	0.001	0.01	0.01	0.01	0.5	0.5	5	0.5	0.5	0.5	0.5	5	1	0.5	0.05
Pulp Duplicates																					
615706	Rock	0.12	13.3	1	0.82	1569	0.290	7.10	3.29	1.82	<0.5	11.8	28	1.1	20.6	8.8	0.6	<5	10	10.8	<0.05
REP 615706	QC																				
615718	Rock	0.09	10.3	4	0.70	1637	0.223	6.73	3.15	2.99	2.0	14.4	30	0.9	9.5	8.5	0.6	<5	6	10.9	<0.05
REP 615718	QC	0.09	11.2	4	0.73	1650	0.226	7.42	3.14	3.03	2.0	15.9	32	0.6	10.2	8.7	0.7	<5	6	10.4	<0.05
116229	Rock	<0.01	3.3	9	0.01	113	0.010	0.43	0.01	0.13	<0.5	3.1	<5	13.4	<0.5	<0.5	<0.5	<5	<1	1.6	5.22
REP 116229	QC																				
Reference Materials																					
STD AGPROOF	Standard																				
STD CCU-1D	Standard																				
STD CPZO-1_5PER	Standard																				
STD CZN-4	Standard																				
STD DS10	Standard																				
STD GBM398-4-MA	Standard	0.05	4.2	1552	0.57	46	0.226	5.07	1.55	3.23	3.6	82.8	9	5.9	7.5	2.0	<0.5	<5	7	7.0	0.95
STD GBM997-6	Standard																				
STD OREAS45EA	Standard																				
STD OREAS901	Standard																				
STD OREAS927-MA	Standard	0.05	37.5	56	2.11	287	0.321	6.49	0.16	1.87	8.2	91.6	69	21.6	20.5	12.1	0.9	<5	12	32.3	1.67
STD OXD108	Standard																				
STD OXI121	Standard																				
STD OXN117	Standard																				
STD PTC-1A	Standard																				
STD SP49	Standard																				
STD SQ70	Standard																				
STD OXD108 Expected																					
STD OXN117 Expected																					
STD OXI121 Expected																					
STD CPZO-1_5PER																					
STD OREAS901 Expected																					

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Project: STU
Report Date: October 17, 2015

QUALITY CONTROL REPORT WHI15000213.1

	Method	MA270	MA270	MA270	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Rb	Hf	Se	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.5	0.5	5	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
Pulp Duplicates																					
615706	Rock	45.5	0.5	<5																	
REP 615706	QC																				
615718	Rock	71.1	0.7	<5																	
REP 615718	QC	76.6	0.7	<5																	
116229	Rock	9.3	<0.5	60																	
REP 116229	QC																				
Reference Materials																					
STD AGPROOF	Standard																				
STD CCU-1D	Standard																				
STD CPZO-1_5PER	Standard																				
STD CZN-4	Standard																				
STD DS10	Standard				12	151	152	369	1.5	73	12	889	2.73	45	7	65	2.4	9	11	42	1.07
STD GBM398-4-MA	Standard	742.7	2.1	5																	
STD GBM997-6	Standard																				
STD OREAS45EA	Standard				2	709	14	26	<0.3	400	56	412	22.87	6	10	4	<0.5	9	<3	312	0.03
STD OREAS901	Standard																				
STD OREAS927-MA	Standard	118.3	2.4	15																	
STD OXD108	Standard																				
STD OXI121	Standard																				
STD OXN117	Standard																				
STD PTC-1A	Standard																				
STD SP49	Standard																				
STD SQ70	Standard																				
STD OXD108 Expected																					
STD OXN117 Expected																					
STD OXI121 Expected																					
STD CPZO-1_5PER																					
STD OREAS901 Expected																					

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QUALITY CONTROL REPORT WHI15000213.1

Method		AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	GC921	MA371	FA530
Analyte		P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc	Cu/Ox	Pb	Ag
Unit		%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	%	gm/t
MDL		0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5	0.001	0.02	50
Pulp Duplicates																				
615706	Rock																	0.025		
REP 615706	QC																	0.025		
615718	Rock																	0.003		
REP 615718	QC																			
116229	Rock																	0.001	14.38	326
REP 116229	QC																		14.59	317
Reference Materials																				
STD AGPROOF	Standard																			95
STD CCU-1D	Standard																		0.32	
STD CPZO-1_5PER	Standard																	0.261		
STD CZN-4	Standard																		0.19	
STD DS10	Standard	0.076	15	52	0.78	417	0.075	<20	1.04	0.07	0.33	3	0.29	<1	<5	<5	<5			
STD GBM398-4-MA	Standard																			
STD GBM997-6	Standard																		24.05	
STD OREAS45EA	Standard	0.031	7	906	0.10	152	0.101	<20	3.32	0.03	0.05	<2	<0.05	<1	<5	9	86			
STD OREAS901	Standard																	0.081		
STD OREAS927-MA	Standard																			
STD OXD108	Standard																			
STD OXI121	Standard																			
STD OXN117	Standard																			
STD PTC-1A	Standard																		0.06	
STD SP49	Standard																			59
STD SQ70	Standard																			157
STD OXD108 Expected																				
STD OXN117 Expected																				
STD OXI121 Expected																				
STD CPZO-1_5PER																		0.26		
STD OREAS901 Expected																		0.083		

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Project: STU
Report Date: October 17, 2015

QUALITY CONTROL REPORT WHI15000213.1

		WGHT	FA430	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
		Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca
		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.01	0.005	0.5	0.5	0.5	5	0.5	0.5	1	5	0.01	5	0.5	0.5	5	0.5	0.5	0.5	10	0.01
STD DS10 Expected																					
STD OREAS45EA Expected																					
STD GBM398-4-MA				900	3930	11645	5212	49.7	4110	2000	5300	5.05	7	0.8	1.1	53	7.9	9.52	10.9	61	1.27
STD OREAS927-MA				1.06	10800	231	798	4.6	33.3	31	1217	8.56	9.2	2.7	14.4	29.3	1.1	1.9	62.7	77	0.4
STD AGPROOF Expected																					
STD SP49 Expected																					
STD SQ70 Expected																					
STD CZN-4 Expected																					
STD PTC-1A Expected																					
STD CCU-1D Expected																					
STD GBM997-6 Expected																					
BLK	Blank		<0.005																		
BLK	Blank		<0.005																		
BLK	Blank																				
BLK	Blank																				
BLK	Blank			<0.5	<0.5	<0.5	<5	<0.5	<0.5	<1	<5	<0.01	<5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<10	<0.01
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
ROCK-WHI	Prep Blank		<0.005	0.9	4.1	3.7	41	<0.5	0.8	4	667	1.93	<5	1.1	2.6	157	<0.5	<0.5	0.6	34	1.28
ROCK-WHI	Prep Blank		<0.005	0.6	26.5	5.1	121	<0.5	0.7	4	602	2.03	<5	1.3	2.8	210	0.9	<0.5	<0.5	37	1.58

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Project: STU
Report Date: October 17, 2015

QUALITY CONTROL REPORT WHI15000213.1

		MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270	MA270
		P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Ce	Sn	Y	Nb	Ta	Be	Sc	Li	S
		%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.01	0.5	1	0.01	5	0.001	0.01	0.01	0.01	0.5	0.5	5	0.5	0.5	0.5	0.5	5	1	0.5	0.05
STD DS10 Expected																					
STD OREAS45EA Expected																					
STD GBM398-4-MA		0.047	4	1570	0.55	45	0.229	5.08	1.54	3.26	4	113	9	5.8	7.5	2	0.2		7.16	7	0.92
STD OREAS927-MA		0.053	40.2	63	2.11	314	0.314	6.45	0.173	1.87	8.1	94	76	22.3	19.2	11	0.86	1.8	11	35.1	1.54
STD AGPROOF Expected																					
STD SP49 Expected																					
STD SQ70 Expected																					
STD CZN-4 Expected																					
STD PTC-1A Expected																					
STD CCU-1D Expected																					
STD GBM997-6 Expected																					
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<0.01	<0.5	<1	<0.01	<5	<0.001	<0.01	<0.01	<0.01	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<5	<1	<0.5	<0.05
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
ROCK-WHI	Prep Blank	0.03	10.2	<1	0.44	774	0.189	4.01	3.34	1.60	<0.5	54.7	18	0.6	12.9	6.1	<0.5	<5	4	1.5	0.07
ROCK-WHI	Prep Blank	0.05	13.8	<1	0.46	886	0.198	6.08	3.48	1.65	<0.5	49.5	26	0.5	14.1	5.5	<0.5	<5	6	1.5	<0.05

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Project: STU
Report Date: October 17, 2015

QUALITY CONTROL REPORT WHI15000213.1

		MA270	MA270	MA270	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
		Rb	Hf	Se	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.5	0.5	5	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
STD DS10 Expected					13.6	154.61	150.55	370	2.02	74.6	12.9	875	2.7188	46.2	7.5	67.1	2.62	9	11.65	43	1.0625
STD OREAS45EA Expected					1.6	709	14.3	31.4	0.26	381	52	400	23.51	10	10.7	3.5				303	0.036
STD GBM398-4-MA		731	2.8																		
STD OREAS927-MA		121	2.73	16																	
STD AGPROOF Expected																					
STD SP49 Expected																					
STD SQ70 Expected																					
STD CZN-4 Expected																					
STD PTC-1A Expected																					
STD CCU-1D Expected																					
STD GBM997-6 Expected																					
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank				<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1	<0.01
BLK	Blank	<0.5	<0.5	<5																	
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
ROCK-WHI	Prep Blank	29.8	1.8	<5																	
ROCK-WHI	Prep Blank	35.0	1.7	<5																	

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Client: **Midnight Mining**
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Whitehorse YT Y1A 5P7 CANADA

Project: STU
Report Date: October 17, 2015

QUALITY CONTROL REPORT WHI15000213.1

		AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	GC921	MA371	FA530
		P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc	Cu/Ox	Pb	Ag
		%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	%	gm/t
		0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5	0.001	0.02	50
STD DS10 Expected		0.0765	17.5	54.6	0.775	412	0.0817		1.0259	0.067	0.338	3.32	0.29	0.3	5.1	4.3	2.8			
STD OREAS45EA Expected		0.029	7.06	849	0.095	148	0.0984		3.13	0.02	0.053		0.036			12.4	78			
STD GBM398-4-MA																				
STD OREAS927-MA																				
STD AGPROOF Expected																				94
STD SP49 Expected																				60.2
STD SQ70 Expected																				159.5
STD CZN-4 Expected																			0.1861	
STD PTC-1A Expected																			0.05	
STD CCU-1D Expected																			0.262	
STD GBM997-6 Expected																			23.75	
BLK	Blank																			
BLK	Blank																			
BLK	Blank																	<0.001		
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5			
BLK	Blank																			
BLK	Blank																			<50
BLK	Blank																		<0.02	
Prep Wash																				
ROCK-WHI	Prep Blank																	<0.001		
ROCK-WHI	Prep Blank																	<0.001		

600-55 Metcalfe Street
Ottawa, ON K1P 6L5
Canada

55, rue Metcalfe, bureau 600
Ottawa, ON K1P 6L5
Canada

SCOPE OF ACCREDITATION

Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St
Vancouver, BC
V6P 6E5

Accredited Laboratory No. 720
(Conforms with requirements of CAN-P-1579 , CAN-P-4E (ISO/IEC 17025:2005))

CONTACT: Terri-Lynn Ferguson
TEL: +1-604-253-3158
FAX: +1-604-253-1716
EMAIL: Terri-Lynn.Ferguson@acmelab.com

CLIENTS SERVED: Mining, Exploration and other interested parties

FIELDS OF TESTING: Chemical/Physical

PROGRAM SPECIALTY AREA: Mineral Analysis

SCOPE ISSUED ON: 2015-10-26

ACCREDITATION VALID TO: 2019-10-07

Note 1: The physical sample preparation involving accredited test methods as listed on the scope of accreditation maybe performed at Bureau Veritas Commodities Canada Ltd. or at off site sample preparation locations that are monitored regularly for quality control and quality assurance practices.
These off site locations are as follows:

Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St, Vancouver, BC V6P 6E5 Canada
3470B Highway 16, Smithers BC V0J 2NO Canada
77 Collins Lane, Whitehorse, YT Y1A 0A8 Canada
669 Moneta Avenue, Timmins, ON P4N 2H9 Canada

Inspectorate America Corporation:
Suite 101 - 605 Boxington Way Sparks, NV 89434 USA
2175 Wildwood Way Suite B Elko, NV 89801 USA
5312 Commercial Blvd, Juneau, AK USA99801 USA

Inspectorate de Mexico S.A. de C.V.
Blvd. El Sahuaro Nave Industrial No. 1, Parque Industrial de Caborca, Caborca Sonora 83690 Mexico
Calle Cedros No. 9-B Col. Libertad, Hermosillo, Sonora 83220 Mexico
Antiguo Camino a Contreras 116, Fracc. Industrial Scorpio Durango, Durango 34020 Mexico

Acme Analitik Laboratuar Hizmetleri Limited Sirketi:
Samsun Karayolu, Bahçelievler Mahallesi, Üçyol Sokak No: 27, Elmadag, Ankara 06850 Turkey

METALLIC ORES AND PRODUCTS

Mineral Analysis Testing

(see Note 1 (above) concerning off-site physical sample preparation)

Mineral Assaying

FA330/FA350	Determination of Au Pt and Pd by Lead Collection Fire Assay with ICP Emission Spectrometry Finish
FA430/FA450	Determination of Au by Lead Collection Fire Assay with Atomic Adsorption Spectrometry Finish
FA530/FA550	Determination of Au by Lead Collection Fire Assay with Gravimetric Finish
MA401/MA404	Determination of Ag, Cu, Pb and Zn by Multi Acid Digestion with Atomic Adsorption Spectrometry Finish
TC000	Determination of Total Carbon and Total Sulfur by Leco

Notes:

CAN-P-4E (ISO/IEC 17025:2005): General Requirements for the Competence of Testing and Calibration Laboratories (ISO/IEC 17025: 2005)
CAN-P-1579: Requirements for the Accreditation of Mineral Analysis Testing Laboratories

Chantal Guay, ing., P. Eng.
Vice President, Accreditation Services

Date: 2015-10-26

Number of Scope Listings: 5
SCC 1003-15/895
Partner File #0
Partner:

FA100, FA300, FA400 & FA500

Package Description:	Precious Metals by Lead Collection Fire Assay
Sample Digestion:	Lead-collection fire assay fusion
Instrumentation Method:	ICP-MS (FA100), ICP-ES (FA300), AAS (FA400), Gravimetric (FA500)
Legacy Codes	3B, G6
Applicability:	Rock, Drill Core

METHOD DESCRIPTION

Prepared sample is custom-blended with fire-assay fluxes, PbO litharge and a silver inquart. Firing the charge at 1050^{o}C liberates Ag, Au and PGEs that report to the molten Pb-metal phase. After cooling the Pb button is recovered, placed in a cupel and fired at 950^{o}C to render a Ag, Au and PGEs dore bead. The bead is then either digested with nitric and hydrochloric acids for instrumentation determination or weighed and parted with nitric acid to dissolve Ag leaving gold which is weighed directly. Ag is determined by difference of the dore bead from the gold in gravimetric analysis.

Element	Detection Limit	Upper Limit
FA100 – ICP-MS		
Au	1 ppb	1 ppm
Pt	0.1 ppb	1 ppm
Pd	0.5 ppb	1 ppm
FA300 – ICP-ES		
Au	2 ppb	10 ppm
Pt	3 ppb	10 ppm
Pd	2 ppb	10 ppm
FA400 – AAS		
Au	5 ppb	10 ppm
FA500-Gravimetric		
Au	0.9 ppm	
Ag	50 ppm	

Note:

*Sulphide-rich samples require a 15g or smaller sample for proper fusion.

GC921

Package Description: Copper – Non-Sulphide CuO
Sample Digestion: Classical Wet Assay
Instrumentation Method: Sulfuric Acid Leach / AA
Legacy Codes G801
Applicability: Rock, Drill Core

METHOD DESCRIPTION:

A prepared sample is leached at room temperature with 5% sulfuric acid and agitated in a mechanical shaker for one hour then made up to volume with demineralized water. Solution is filtered then analyzed by AA. This method requires a minimum of 1g of sample pulp.

MA370 & MA270

Package Description	Multi acid digestion
Sample Digestion	HF-HNO_3-$HClO_4$ acid digestion
Instrumentation Method	ICP-ES (MA370, MA270), ICP-MS (MA270)
Legacy Code	7TD, 7TX
Applicability	Rock and Drill Core

METHOD DESCRIPTION

0.5g sample split is digested to complete dryness with an acid solution of H2O-HF-HClO4-HNO3. 50% HCl is added to the residue and heated using a mixing hot block. After cooling the solutions are made up to volume with dilute HCl in class A volumetric flasks. Sample split of 0.1g may be necessary for very high-grade samples to accommodate analysis up to 100% upper limit.

Element	MA370 Detection	MA270 Detection	Upper Limits	Element	MA370 Detection	MA270 Detection	Upper Limits
Ag	2 g/t	0.5 ppm	300 g/t	**P**	0.01%	0.01%	
Al*	0.01%	0.01%		**Pb**	0.02%	0.5 ppm	10%
As	0.02%	5 ppm		**Rb**	-	0.5 ppm	
Ba*	-	5 ppm		**S***	0.05%	0.05%	
Be	-	5 ppm		**Sb**	0.01%	0.5 ppm	
Bi	0.01%	0.5 ppm		**Sc**	-	1 ppm	
Ca*	0.01%	0.01%		**Sn***	-	0.5 ppm	
Cd	0.001%	0.5 ppm		**Sr**	0.01%	5 ppm	
Ce	-	5 ppm		**Ta***	-	0.5 ppm	
Co	0.001%	1 ppm		**Th**	-	0.5 ppm	
Cr*	0.001%	1 ppm		**Ti***	-	0.001%	
Cu	0.001%	0.5 ppm		**U**	-	0.5 ppm	
Fe*	0.01%	0.01%		**V**	-	10 ppm	
Hf*	-	0.5 ppm		**W***	0.01%	0.5 ppm	
K	0.01%	0.01%		**Y**	-	0.5 ppm	
La	-	0.5 ppm		**Zn**	0.01%	5 ppm	40%
Li	-	0.5 ppm		**Zr***	-	0.5 ppm	
Mg	0.01%	0.01%					
Mn*	0.01%	5 ppm					
Mo	0.001%	0.5 ppm					
Na	0.01%	0.01%					
Nb*	-	0.5 ppm					
Ni	0.001%	0.5 ppm					

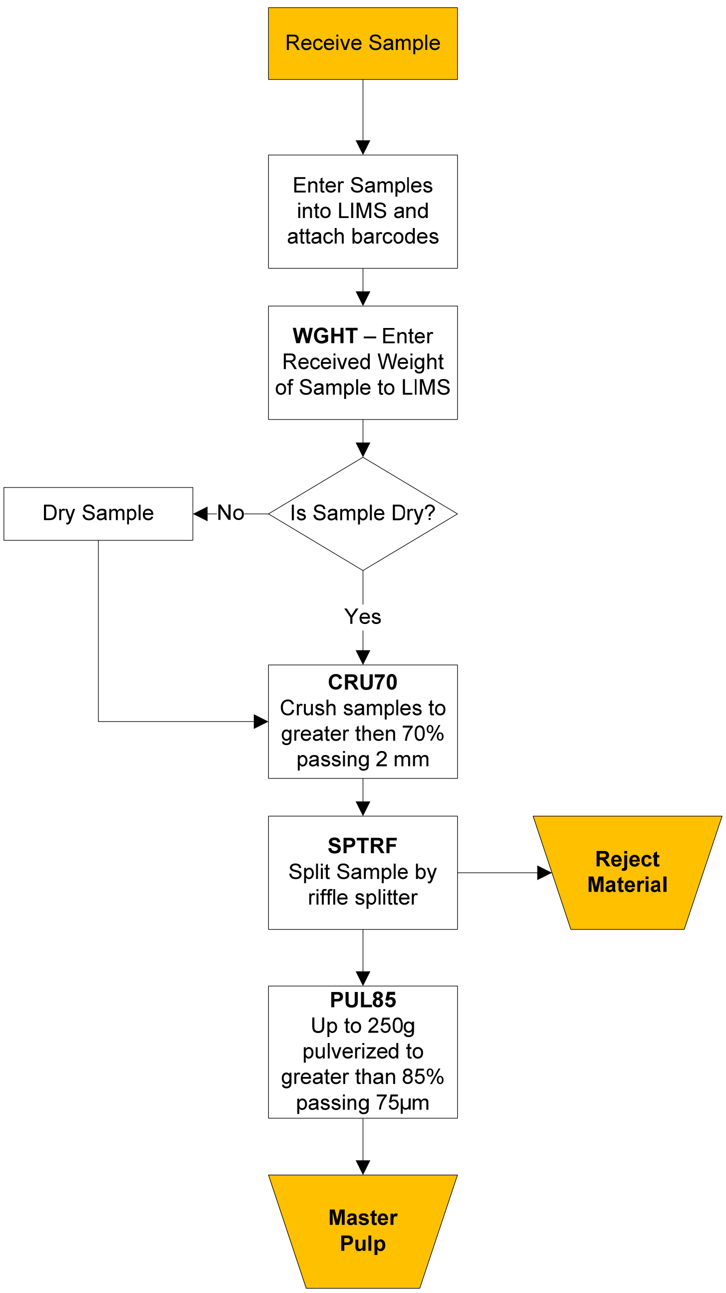
Limitations:

*This digestion is only partial for some Cr and Ba minerals and some oxides of Al, Fe, Hf, Mn, Nb, S, Sn, Ta, Ti, W and Zr if refractory minerals are present.

PRP70-250

Package Description | Sample Preparation of Rock and Drill Core

FLOW CHART



Received samples are entered into the Laboratory Information Management System (LIMS), weighed, dried and crushed to ensure that greater than 70% pass a 2mm sieve. A split of the crushed material is then pulverized to greater than 85% passing a 75µm sieve.

At random intervals and at the start of each shift QC testing is completed on both crushed and pulverized material to ensure that the above specifications are met.

The flowchart to the left describes the standard practice. Additional splits of the pulp or reject may be taken at client request and to prepare internal Prep QC duplicates.

By default if clients have not specified otherwise Master Pulps are retained and storage charges apply. Rejects are stored for 90 days and are then disposed of at the client's cost.

CDN Resource Laboratories Ltd.

Unit 2 - 20148, 102nd Avenue, Langley, B.C., Canada, V1M 4B4, Ph: 604-882-8422 Fax: 604-882-8466
(www.cdnlabs.com)

ORE REFERENCE STANDARD: CDN-CGS-13

Recommended values and the "Between Lab" Two Standard Deviations

Copper concentration: 0.329 ± 0.018 %
Gold concentration 1.01 ± 0.11 g/t

PREPARED BY: CDN Resource Laboratories Ltd.
CERTIFIED BY: Duncan Sanderson, B.Sc., Licensed Assayer of British Columbia
INDEPENDENT GEOCHEMIST: Dr. Barry Smee., Ph.D., P. Geo.
DATE OF CERTIFICATION: April 12, 2007

METHOD OF PREPARATION:

Reject ore material was dried, crushed, pulverized and then passed through a 200 mesh screen. The +200 material was discarded. The -200 material was mixed for 7 days in a double-cone blender. Splits were taken and sent to 12 laboratories for round robin assaying.

ORIGIN OF REFERENCE MATERIAL:

The ore was supplied by Pacific Sentinel from the Casino Property in British Columbia. Copper-gold-molybdenum mineralization is genetically related to a breccia and microbreccia pipe of fine grained quartz monzonites, intrusion breccias, and plagioclase-porphyritic intrusions that may be subvolcanic in origin, comprising part of the 72-74 Ma Casino Intrusive Complex. Roughly centred on the microbreccia pipe, both the alteration and mineralization are zoned. Innermost is the potassic alteration suite consisting of K-feldspar, biotite, magnetite, anhydrite, gypsum, and pyrite, chalcopyrite, molybdenite, and gold.

Standard CDN-CGS-13 was prepared using 723 kg of Casino ore and 2 kg of a high grade gold ore.

Approximate chemical composition is as follows:

	Percent			Percent
SiO2	64.7		MgO	1.4
Al2O3	14.6		K2O	5.1
Fe2O3	6.1		TiO2	0.5
CaO	1.3		LOI	5.0
Na2O	0.3		S	1.6

Statistical Procedures:

The mean and standard deviation for all data was calculated. Outliers were defined as samples beyond the mean ± 2 Standard Deviations from all data. These outliers were removed from the data and a new mean and standard deviation was determined. This method is different from that used by Government agencies in that the actual "between-laboratory" standard deviation is used in the calculations. This produces upper and lower limits that reflect actual individual analyses rather than a grouped set of analyses. The limits can therefore be used to monitor accuracy from individual analyses, unlike the Confidence Limits published on other standards.

STANDARD REFERENCE MATERIAL   CDN-CGS-13

Results from round-robin assaying:

Assay Procedures: **Au:** Fire assay pre-concentration, AA or ICP finish (30g sub-sample).
Cu: 4-acid digestion, AA or ICP finish.

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12
	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)
CGS-13-1	1.050	1.065	1.05	0.942	0.92	0.980	0.95	0.965	1.041	0.95	1.14	1.010
CGS-13-2	0.999	1.145	0.93	1.090	1.02	1.010	0.93	0.930	1.017	0.93	1.02	1.010
CGS-13-3	0.958	0.966	1.07	0.988	1.06	1.025	0.92	0.748	1.011	1.05	0.99	0.956
CGS-13-4	1.070	1.030	1.02	1.010	0.98	1.073	1.02	0.878	1.005	1.06	1.12	0.971
CGS-13-5	1.020	0.948	0.93	1.020	0.86	0.984	1.14	0.974	1.015	0.97	1.09	0.954
CGS-13-6	0.983	0.950	0.92	1.100	0.91	1.074	1.03	0.960	1.066	0.98	1.00	0.958
CGS-13-7	0.989	0.973	0.92	1.110	1.00	1.072	0.94	0.890	1.077	0.99	0.98	0.976
CGS-13-8	0.992	1.040	0.90	0.984	1.11	1.011	1.00	0.992	1.107	1.07	1.03	1.010
CGS-13-9	1.000	0.901	1.07	1.140	0.95	1.037	0.95	1.070	1.056	1.07	0.96	1.000
CGS-13-10	1.030	0.956	0.90	0.971	1.07	1.071	1.00	0.860	1.033	0.95	1.07	1.020
Mean	1.009	0.997	0.971	1.036	0.988	1.040	0.992	0.922	1.043	1.008	1.028	0.984
Std. Dev.	0.034	0.072	0.072	0.069	0.079	0.034	0.069	0.092	0.035	0.055	0.053	0.026
%RSD	3.32	7.21	7.43	6.62	8.02	3.29	6.92	10.00	3.39	5.45	5.15	2.66
	Cu (%)	Cu (%)	Cu (%)	Cu (%)	Cu (%)	Cu (%)	Cu (%)	Cu (%)	Cu (%)	Cu (%)	Cu (%)	Cu (%)
CGS-13-1	0.325	0.340	0.351	0.342	0.319	0.338	0.329	0.32	0.335	0.321	0.331	0.315
CGS-13-2	0.314	0.334	0.351	0.350	0.323	0.336	0.331	0.33	0.343	0.314	0.327	0.322
CGS-13-3	0.318	0.340	0.341	0.342	0.325	0.339	0.331	0.32	0.329	0.315	0.331	0.320
CGS-13-4	0.323	0.341	0.346	0.342	0.323	0.340	0.336	0.32	0.336	0.322	0.336	0.319
CGS-13-5	0.316	0.333	0.341	0.335	0.325	0.339	0.333	0.32	0.327	0.319	0.332	0.315
CGS-13-6	0.322	0.334	0.341	0.343	0.322	0.339	0.338	0.32	0.338	0.323	0.328	0.318
CGS-13-7	0.324	0.330	0.351	0.338	0.323	0.340	0.339	0.32	0.338	0.316	0.334	0.323
CGS-13-8	0.330	0.330	0.341	0.343	0.322	0.339	0.331	0.32	0.335	0.315	0.326	0.313
CGS-13-9	0.323	0.318	0.346	0.334	0.319	0.336	0.333	0.32	0.335	0.322	0.329	0.317
CGS-13-10	0.325	0.328	0.341	0.331	0.317	0.341	0.333	0.32	0.338	0.310	0.339	0.309
Mean	0.322	0.333	0.345	0.340	0.322	0.339	0.333	0.321	0.335	0.318	0.331	0.317
Std. Dev.	0.005	0.007	0.005	0.006	0.003	0.002	0.003	0.003	0.005	0.004	0.004	0.004
%RSD	1.48	2.08	1.33	1.63	0.83	0.48	0.98	0.99	1.37	1.36	1.24	1.34

Note: "Au" data from laboratory 8 were excluded from the calculations for failing the "t" test.

STANDARD REFERENCE MATERIAL   CDN-CGS-13

Participating Laboratories:
(not in same order as listed in table of results)

Acme Analytical Laboratories Ltd., Vancouver
Actlabs, Ancaster, Ontario
Assayers Canada Ltd., Vancouver
ALS Chemex Laboratories, North Vancouver
Alex Stewart Assayers, Argentina
EcoTech Laboratory, Kamloops, B.C.
Genalysis Laboratory Services Pty. Ltd., Australia
GTK Laboratory, (Geological Survey of Finland)
International Plasma Labs. Ltd., Vancouver
OMAC Laboratories Ltd., Ireland
Skyline Assayers & Laboratories, Tucson, USA
Teck Cominco - Global Discovery Laboratory, Vancouver
TSL Laboratories, Saskatoon

Legal Notice:

This certificate and the reference material described in it have been prepared with due care and attention. However CDN Resource Laboratories Ltd. or Barry Smee accept no liability for any decisions or actions taken following the use of the reference material. Our liability is limited solely to the cost of the reference material.

Certified by

Duncan Sanderson, Certified Assayer of B.C.

Geochemist

Dr. Barry Smee, Ph.D., P. Geo.

trench	XRF reading location (m)	Depth_cm	Material	XRFCuppm	XRF reading #
600w	0		rock	163	130
600w	5		rock	85	136
600w	10		rock	197	139
600w	15		rock	922	141
600w	20		rock	317	143
600w	25		rock	925	144
600w	30		rock	51	145
600w	35		rock	115	146
600w	40		rock	96	147
600w	45		rock	79	148
600w	50		rock	0	149
600w	55		rock	0	149
600w	60		rock	1404	152
600w	65		rock	10800	153
600w	70		rock	3079	155
600w	75		rock	1272	156
600w	80		rock	996	157
600w	85		rock	1570	158
600w	90		rock	258	159
600w	95		rock	310	160
600w	100		rock	685	161
600w	105		rock	204	164
600w	110		rock	0	166
600w	115		rock	0	168
600w	120		rock	0	169
600w	125		rock	0	170
2015-800w	0		rock	323	172
2015-800w	5		rock	2125	173
2015-800w	10		rock	992	174
2015-800w	15		rock	55	175
2015-800w	20		rock	0	176
2015-800w	25		rock	0	177
2015-800w	30		rock	0	179
2015-800w	35		rock	0	181
2015-800w	40		rock	0	182
2015-800w	45		rock	0	183
2015-800w	50		rock	0	184
2015-800w	55		rock	0	185
2015-800w	60		rock	0	186
2015-800w	65		rock	0	187
2015-800w	70		rock	0	188
2015-800w	75		rock	0	189
2015-800w	80		rock	0	190

2015-800w	85		rock	3969	191
2015-800w	90		rock	1190	195
2015-800w	95		rock	85	196
2015-800w	100		rock	0	197
2015-800w	105		rock	0	198
2015-800w	110		rock	0	199
2015-800w	115		rock	0	200
2015-800w	120		rock	0	201
2015-800w	125		rock	0	202
2015-800w	130		rock	0	203
2015-800w	135		rock	0	204
2015-800w	140		rock	0	205
2015-800w	145		rock	0	206
2015-800w	150		rock	0	207
2015-800w	155		rock	0	208
2015-800w	160		rock	1284	209
2015-800w	165		rock	0	213
2015-800w	170		rock	0	214
2015-800w	175		rock	0	215
2015-800w	180		rock	0	216
1150W-Ext	0		rock	79	241
1150W-Ext	5		rock	1641	240
1150W-Ext	10		rock	455	239
1150W-Ext	45		rock	0	238
1150W-Ext	50		rock	0	236
1150W-Ext	55		rock	0	237
1150W-Ext	104		rock	0	270
1150W-Ext	120		rock	0	271
1150W-Ext	125		rock	0	272
1150W-Ext	130		rock	5304	273
1150W-Ext	135		rock	2050	274
1150W	5		rock	0	245
1150W	10		rock	726	247
1150W	15		rock	210	248
1150W	20		rock	540	249
1150W	25		rock	189	250
1150W	30		rock	0	251
1150W	35		rock	368	255
1150W	40		rock	0	261

1150W	45		rock	0	262
1150W	50		rock	0	263
1150W	55		rock	0	264
B1	0		rock	0	287
B1	5		rock	0	288
B1	10		rock	0	290
B1	15		rock	0	293
B1	25		rock	0	294
B1	30		rock	0	295
B1	35		rock	0	296
B1	40		rock	0	297
B1	43		rock	2344	298
B1	45		rock	444	299
B1	50		rock	0	300
B1	55		rock	0	301
B1	60		rock	1300	302
B1	65		rock	792	303
B1	70		rock	81	304
B1	76		rock	407	305
B1	80		rock	0	306
B1	85		rock	81	307
1400E-N	10	100	rock	0	67
1400E-N	30	100	rock	0	71
1400E-N	40	90	rock	0	74
1400E-N	50	150	rock	221	76
1400E-N	60	150	rock	69	79
1400E-N	70	150	rock	92	81
1400E-N	80	60	rock	0	83
1400E-N	90	100	rock	0	85
1400E-N	100	80	rock	0	87
1400E-S	10	120	rock	0	90
1400E-S	20	100	rock	0	93
1400E-S	30	110	rock	0	96
1400E-S	40	150	rock	0	98
1400E-S	50	120	rock	32	101
1400E-S	60	150	rock	0	105
1400E-S	70	250	rock	52	107
1400E-N	20	100	rock	0	69
600w	130		rock?	0	171
400W	0		rock	105	330
400W	5		rock	45	331
400W	10		rock	34	332
400W	15		rock	55	333

400W	20		rock	85	334
400W	25		rock	93	335
400W	30		rock	232	336
400W	35		rock	406	338
400W	40		rock wall	1035	341
400W	40		rock floor	488	342
400W	45		rock	677	339
400W	47		rock	460	344
2015C	5		rock	0	351
2015C	10		rock	121	355
2015C	15		rock	919	356
2015C	20		rock	0	357
2015C	25		rock	0	358 or 359
2015C	30		rock	0	360
2015C	35		rock	0	361
2015C	40		rock	0	363
2015C	45		rock	0	367
2015C	50		roc k	0	368
2015C	55		rock	0	370
2015C	60		rock	0	371
2015C	64		rock	0	372
7400E	0		rock	413	376
7400E	5		rock	54	377
7400E	10		rock	0	380
7400E	15		rock	1548	381
7400E	18		rock	278	382
B3Ext	0		rock	123	410
B3Ext	5		rock	0	
B3Ext	10		rock	0	
B3Ext	15		rock	0	
B3Ext	20		rock	0	416
B3Ext	25		rock	0	419
B3Ext	30		rock	0	421
B3Ext	35		rock	0	
B3Ext	40		rock	0	
B3Ext	45		rock	0	426
B3Ext	50		rock	69	427
B3Ext	55		ovb or rock	0	

B3Ext	69		rock	0	
B3Ext	80		rock	0	
B3Ext	84		rock	0	
2015H	0		rock	0	455
2015H	4		rock	0	456
2015H	50		rock	0	457
2015H	75		rock/ovb	370	470
2015H	80		rock	146	471
2015H	85		rock	0	475
2015H	90		rock	0	476
2015H	95		rock	0	477
2015H	100		rock	0	506
2015H	105		rock	0	507
2015H	110		rock	0	509
2015H	115		rock	0	510
2015H	118		rock	0	512

description	Easting_NAD83_Z8	Northing_NAD83_Z8	mag susc	mag susc r
granodiorite	404491	6921826		
granodiorite	404487	6921823		
granodiorite	404482	6921821		
granodiorite	404479	6921819		
pegmatite under granodirite rubble	404473	6921817		
reduced readings to 90 sec	404470	6921814		
pegmatite, lots of kspar	404464	6921812		
granodiorite grus	404461	6921810		
	404455	6921808		
	404451	6921805		
	404447	6921803		
	404442	6921800		
granodiorite with lots of biotite	404438	6921799		
foliated with malachite	404433	6921796		
reading on weakly foliated rock adjacent to malachite	404429	6921794		
reading perpendicular to mal on foliation	404424	6921791		
biotite rich granodiorite with malachite specks	404420	6921789		
	404415	6921787		
	404411	6921785		
	404407	6921782		
green alteration zone	404402	6921780		
rotten Porphyritic granodiorite	404398	6921778		
rotten porphyritic granodiorite (altered?)	404393	6921776		
yellow brown, rotten granodiorite	404389	6921773		
rotten bedrock mixed with overburden	404384	6921771		
rotten bedrock mixed with overburden	404380	6921769		
	404436	6921881		
biotite	404432	6921878		
foliated, biotite, malachite specks	404427	6921876		
granodiorite with biotite	404423	6921873		
	404419	6921871		
crumbly granodiorite	404415	6921867		
	404410	6921865		
	404406	6921862		
	404402	6921860		
	404398	6921857		
biotite rich granodiorite	404393	6921855		
crumbled granodiorite, limonite	404389	6921852		
crumbled granodiorite, limonite	404385	6921850		
silicified granodiorite, fine-med grained	404381	6921847		
brown clay - fault gouge	404376	6921845		
	404372	6921842		
	404368	6921839		

green altered granodiorite, limionite, hemaetite, malachite. Reef of foliated granodiorte at 83m	404364	6921836		
weakly foliated granodiorite with malachite specks	404359	6921834		
crumbled granodiorte, minor limonite	404355	6921831		
crumbled granodiorite, argillic	404351	6921829		
chlorite and hemaetite altered granodiorite	404346	6921826		
black stained granodiorite?	404342	6921824		
clay altered granodiorite	404338	6921821		
clay altered granodiorite	404334	6921819		
crumbled granodiorite, hemaetite staining	404329	6921816		
crumbled granodiorte. Porphyrytic?	404325	6921813		
crumbled granodiorite	404321	6921810		
crumbed, yellow-brown granodiorite by felsic dyke	404316	6921808		
crumbled granodiorte, limonite stain	404312	6921805		
granodiorite, no staining	404308	6921803		
granodiorite, minor limonite	404304	6921800		
granodiorite, incerased biotite, small seam, no malachite visible, foliated	404299	6921798		
granodiorite, crumbly, limonite stained	404295	6921795		
crumbly, minor limonite	404291	6921793		
crumbly, minor limonite	404287	6921790		
crumbly, no staining	404282	6921787		
	404270	6921907	1.51	2-4.5
	404275	6921906	0.75	4.5-5.8
	404280	6921905		
could be rock or push pile	404309	6921921		
kspar granite	404312	6921924		
kspar granite	404314	6921929		
105m station is buried	404357	6921954		
rotten diorite? Hard to tell. 105-120m permafrost	404371	6921962		
foliated, silicified diorite with malachite along fractures	404375	6921965		
	404379	6921967		
	404383	6921970		
equigranular qtz diorite	404266	6921905		
foliated qtz diorite	404261	6921902		
foliated diorite? More kspar around in veins, fracture coatings	404257	6921899		
weakly foliated	404253	6921897		
shattered qtz diorite	404249	6921894		
equigranular qtz diorite	404244	6921892		
equigranular qtz diorite	404240	6921889		
kspar granite	404236	6921886		

kspar granite	404232	6921883
weakly foliated diorite	404227	6921881
kspar granite	404223	6921878
kspar granite	406164	6919360
kspar granite	406161	6919356
kspar granite	406158	6919353
	406155	6919348
	406149	6919341
	406145	6919337
	406142	6919333
	406139	6919329
	406137	6919327
	406136	6919325
	406133	6919322
	406130	6919318
sampled 2013	406126	6919314
	406123	6919310
	406120	6919306
	406116	6919302
	406113	6919299
boulder past end of fresh digging	406111	6919295
bedrock starting to firm up, blocky	404922	6921377
weathered granite below loose C horizon	404940	6921386
weathered granite	404948	6921391
weakly foliated mafic granitic rock outcrop	404957	6921395
weakly foliated granodioritic outcrop	404966	6921400
weakly foliated gd outcrop	404975	6921405
weathered granitic rock subcrop	404984	6921409
weathered gd outcrop	404993	6921414
weathered gd outcrop	405002	6921418
weathered gd outcrop	404904	6921368
weathred gd outcrop	404895	6921364
weathered gd outcrop	404886	6921359
weathered gd, more mafic	404877	6921355
weathered gd, limonitic	404868	6921350
pegmatite subcrop/float, round boulder in soil above	404859	6921346
grd subcrop/float, fresh	404850	6921341
	404931	6921382
	404375	6921769
kspar porphyritic grn grus. Seems to contain more mica than normal, kspar phenos not large.	404505	6921776
Same as 0m but with larger kspar phenos.	404501	6921773
kspar gran grus. Phenos obvious, stiull abundant mica.	404496	6921771
qt diorite or kspar grn? Increased bio, no obvious phenos. Grus	404492	6921768

Qtz dio? But a few small phenos (maybe plag). Grus. Peg dyke 10cm above reading location.	404488	6921766
qtz diorite ? Grus, with <10cm wide aplites. Poss phenos or pieces of aplite.	404483	6921763
Weathered grus. Difficult to tell if diorite or grn. Peg at 29m.	404479	6921761
qtz diorite? Grus. Lim stained.	404475	6921758
soil mixed with rock? Qtz diorite	404470	6921756
floor slightly raised (subdued reef). Qtz diorite.	404470	6921756
Bio schlieren? Foliated, friable, abundant bio, 1.5-2.0m wide. Other possis that it is a foliated diorite dyke.	404466	6921753
Foliated qtz dio with lots of biotite.	404464	6921752
kspar grn	404743	6921707
qtz diorite	404747	6921709
fractured qtz diorite with lim. Increase in bio, rextallized qtz.	404752	6921711
qtz dio? Abundant lim.	404756	6921713
qtz diorite. Rextallized qtz, abundant bio.	404761	6921716
29-30.5m, diorite dyke. Fine grained, dark grey, sharp cotact with qtz dio.	404765	6921718
qtz diorite	404770	6921720
kspar grn reef	404774	6921722
kspar grn	404779	6921724
kspar grn.	404783	6921726
kspar grn	404792	6921730
kspar grn	404796	6921732
kspar grn	404796	6921732
rotten qtz diorite. Hem and lim.	406192	6919260
qtz diorite. Magnetite	406189	6919256
magnetite.	406186	6919252
	406183	6919248
end of dug out section.	406181	6919246
o/c of diorite with weak foliation.	405979	6919467
friable qtz diorite with minor lim and hem.	405982	6919471
friable and weathered qtz diorite. Aplite above.	405986	6919474
qtz diorite	405989	6919478
qtz diorite	405992	6919482
qtz diorite with plag phenos	405996	6919486
friable qtz diorite	405999	6919489
qtz diorite	406002	6919493
friable qtz diorite	406006	6919497
friable qtz diorite	406009	6919500
qtz diorite	406012	6919504
overburden or rotten o/c	406016	6919508

qtz diorite	406026	6919519
friable qtz diorite	406032	6919527
friable qtz diorite	406035	6919530
	406102	6919374
	406099	6919370
qtz diorite, weak foliation	406070	6919335
rotten qtz diorite?	406055	6919316
	406501	6919312
	406048	6919308
	406045	6919304
qtz dio with kspar phenos? Or kspar grn with too many mafics?	406042	6919300
	406039	6919297
kspar grn or kspar dio?	406036	6919293
qtz diorite?	406032	6919289
fault or clay alteration	406031	6919287
qtz diorite. End of trench.	406030	6919286

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Hole_ID	From_m	To_m	Alteration_UKHM	Alteration_relog	description	comments	relogger
80-27	21.3	24	bio to 100 %chl				
80-27	24	28	bio to 10% chl				
80-27	28	30	bio to 100% chl				
80-27	30	35	bio to 15% chl				
80-27	35	35.5	yel-grn-pk				
80-27	35.5	55	occassional epi fractures with pink envelopes				
80-27	67	67.5	15% epi				
80-27	109	111	mafics to 50% chl				
80-27	127	128	mafics to 100% chl, pink staind				
80-27	130	146	weakly altered mafics to 15-50% chl, 3		few pink envelopes associated wit		
80-27	146	146.5	chl, k-spar		more altered sections		
80-27	148	148.5	chl, hem				
80-27	152	152.5	chl, k-spar, lm				
80-27	153	162	mafics to 100% chl in sections				
80-27	162	166	mafics to 20% chl				
80-27	166	169	mafics to 50% chl				
80-27	169	179	few gyp +/- carb veinlets				
80-1	9.8	41.8	hem +/- lim, laum, coated frac surfaces			laumontite? Not clear	
80-1	41.8	43.3	mafics to 90% chl, +/- epi, hem				
80-1	43.3	47.5	1% bio, 1-2% epi				
80-1	47.5	50.2	mafics 30-50% chl				
80-1	59.9	60	qtz		also mal		
80-1	64.6	65.9	mafics to 15% chl				
80-1	65.9	89.9	few hem & epi frs with pink envelopes			Length not clear	
80-1	74.2	89.9	mafics to 5% chl				
80-1	97.5	98.4	mafics to 50% chl				
80-1	98.4	104.6	mafics to 10-30% chl				
80-3	19.5	26.7	mafics to 50% chl				
80-3	42.2	45.5	mafics 20%, 0-60% to chl				
80-3	51.6	56.9	mafics 355, 10% to chl				
80-3	71.4	76.3	mafics to 10% chl				
80-3	83.2	102.7	mafics to 5-10% chl				
80-3	104.3	120.3	mafics to 10% chl				
80-3	141.7	148.2	mafics to 50-70% chl				
80-4	18.1	27	mafics to 10% chl, lim on frcs				
80-4	27	31.2	lim, laum, hem on fracs				
80-4	31.2	42.5	kspar, laum assoc. with fracs(+/- epi, hem, lim)				
80-4	42.5	48.3	few hem/lim fracs and altered (epi, chl, laum, clay) shears				
80-4	48.3	52.8	mod-strong alteration associated with fracs				
80-4	52.8	65.5	epi-chl alteration assoicated with fracs and gouge zones; hem, lim on frac				
80-4	65.5	67.3	mafics to 100% chl, spars to moderate clay				
80-4	67.3	93.1	strong epi, chl altn associated with fracs and gouge zones, in places, spars				
80-4	93.1	120.5	narrow mod-strong (epi, chl, clay) associated with fracs or narrow gouge z				
80-4	120.5	121	gouge, epi, chl, clay				
80-5	7.62	9.1	bio to 20% chl				
80-5	25.2	25.3	mafic rich				

80-5	29.2	29.3	mafic rich
80-5	9.1	51.1	minor hem veinlets and gouge zones. Kspar envelopes associated with sor
80-5	55.9	56	mafic rich
80-5	56.1	59.5	lim & hem on fracs. Bio to 30-40% chl.
80-5	63.3	63.7	lim, hem, epi, chl, clay, kspar assoc. with fracs.
80-5	65.8	80	minor lim, hem on fracs. Few epi +/- chl veinlets or shears with kspar enve
80-5	80	85.7	lim
80-5	85.7	106.4	lim +/- hem on fracs. Few epi +/- chl veinlets or shears with ksapr envelop
80-5	125.1	151.8	lim & hem on fracs. Epi, chl, kspar envelopes assoc. with fracs. Clay assoc
80-5	151.8	152.8	fg mafic rich
80-5	154.1	155.8	fg mafic rich
80-6	11.6	36	hem and lim on fracs. S epi & chl assoc. with fracs. Bio to 100% chl in som
80-6	36	53	mafics to 70% chl. Weak - strong hem, lim, epi, chl, kspar assoc with fracs.
80-6	58.9	64.6	mafics to 60-100% chl
80-6	64.6	65.5	spars to 40% clay
80-6	65.5	91.4	green & orange (pink) colour with mod-strong epi, chl, clay, pink stain, ksp
80-7	6.1	26.4	Mafics to 20-30% chl. Mod lim & hem on fracs.
80-7	26.4	29.3	bio to 20-30% chl
80-7	33	40.3	Weak lim & hem on fracs. Minor kspar and chl assoc with fracs.
80-7	40.3	55.6	weak -strong epi, chl, kspar, clay assoc with fracs and narrow gouge zones
80-7	55.6	55.7	mod hem & lim along fracs.
80-7	64.3	71	bio to 30% chl with lim along fracs. Few epi veinlets.
80-7	84.5	85.5	mod-strong chl & kspar assoc with fracs. Weak-strong lim +/- hem alpong
80-7	104.5	111.6	spars to 100% caly. Hem & epi veinlets. Mafics to 100% chl +/- epi.
80-8	7.85	19.4	weak to mod lim & hem on fracs. Weak epi & clay (after spars). Moderate
80-8	19.4	21.6	bio to 20-100% chl, spars 60% clay in sections
80-8	21.6	39.6	mafics to 80-100% chl. Weak epi & kspar assoc with fracs. Weak -mod lim
80-8	39.6	42.4	narrow sects of chl and clay-rich material. not clear what metera
80-8	44.5	60.8	bio to 30% chl. Weak-mod lim & hem on fracs. Weak-mod chl & clay assoc
80-8	60.8	62.1	bio to 100% chl
80-8	62.1	75.9	bio to 100% chl. Mafics to 100% chl. Spars to 100% clay in sections.
80-8	75.9	77.2	8-10% gypsum stringers. Mod kspar +/- pink stain a not clear what metera
80-8	77.2	77.9	hem rich
80-8	77.9	92	Mod hem & lim on fracs. Highly altered. Hem stringers. Mafics to 100% ch
80-8	92	94.5	moderately altered, grey qtz blebs
80-8	94.5	97.1	25-80% chl (altered bio schl?),
80-8	97.1	102.1	spars to ser (clay). Mafics to 100% chl (dark green)
80-8	110.8	120.1	mafics 30-40% chl
80-15	10.2	18.8	mod lim & hem on fracs. Mafics to 10-20% chl.
80-15	18.8	23.7	Weak lim & hem on fracs.
80-15	23.7	27.9	Mod - strong lim +/- hem on fracs.
80-15	27.9	36.3	Weak lim +/- hem on fracs.
80-15	51.4	52.7	bio schl. (w-m chl & kspar). Mod-strong lim & hem on fracs.
80-15	52.7	78.4	Spars to 80% clay in secions (assoc with fracs or narrow gouge zones). Bio
80-15	78.4	94.3	10% ser or msc. Section completely altered to clay, ser, chl. Few epi & hen
80-15	94.3	108.3	few gypsum veinlets. Mafics to 60-100% chl.
80-15	109.5	114.2	numerous narrow gouge zones and fracs with assoc strong chl, clay, epi al

80-15	1158	122.1	weak-strong hem as stringers and along fracs.
80-15	122.1	141.2	mafics to 50% chl. Spars to 10-60% ser (clay).
80-15	146	147.6	Bio to 10% chl, spars to 20% ser (clay)
80-15	147.6	154.8	mafics to 20% chl
80-15	154.8	155.5	spars to 10-20% ser (clay)
80-15	155.5	166.4	pale pink, spar rich with lt green blotches (chl?). Qtz varies from 20% at to
80-15	176.1	178.1	several chl +/- hem +/- clay fracs or gouge zones.
80-15	178.1	181.5	phenos to 30-50% ser (clay), yellow-green spars
80-15	181.5	182.1	phenos to 50% ser (clay)
80-15	182.1	183.3	phenos to 10% ser (clay)
80-15	183.3	190.8	8% bio to 80% chl, spars to 50% ser (clay), pink stain (kspar?) assoc with fr
80-10	13.9	29.5	weak - strong lim & hem on fracs.
80-10	38.6	52.7	mafic rich. Few narrow gouge (chl, epi, +/- hem) zones
80-10	54.2	75.1	few hem-gypsum veinlets. Few epi or epi +/- hem fracs with ksapr envelop
80-10	79.5	96.4	Weak-mod lim & hem on fracs.
80-10	106	125	Weak-mod lim & hem on fracs. Weak-mod kspar envelopes assoc with fra
80-9	7.92	40.9	Weak-mod lim & hem on fracs. Some clay-rich crumbly sections. Mod-stro
80-9	40.9	47.3	bio to 20% chl. Spars 10-40% clay, ser.
80-9	47.3	51.8	Bio to 100% chl. Cloudy spar phe3nos through most of section.,
80-9	51.8	57.3	Cloudy spar phenos through most of section.
80-9	57.3	60.4	siliceous (dk grey qtz to 80%)
80-9	60.4	90.1	mafics to 50% CHL. Numerous clay/gouge zones with mod-strong clay, chl
80-9	90.1	120.6	Texture becomes unrecognizable. 8% hem is stringers. Extremely altered.
80-9	120.6	134	Texture more apparent. Spars to 10-70% clay, ser.
80-9	134	135.33	Mafics to 100% chl.
80-11	87.3	108.9	Strong alteration. Mafics to 100% hem,chl. Spars to 50-100% clay. Hem +/
80-11	108.9	172.1	Relatively unaltered. Mafics to 10-100% chl (approx 10% hbl still apparent
80-11	172.1	179.2	hbl to 100% chl. Spars to 10-30% ser & clay.
80-11	179.2	181.5	many hem stringers and fracs, few gypsum veinlets.
80-11	185.8	189.8	Mod-strong pervasive kspar alt
80-11	189.8	192.6	narrow section of pale green clay (gouge)
80-11	192.6	198.2	Mafics to 50-100% chl +/- cpy & bn. Few gypsum veinlets.
80-11	198.2	204.8	Mafics to 100% chl (+/- ser). Spars to 50-100% ser & clay
80-13	16.9	32.4	Spars to 5-20% clay. Mafics to 30-60% chl. Mod-strong hem +/- lim on frac
80-13	32.4	33.3	mafics to 100% chl
80-13	33.3	54.8	narrow chl, hem, +/- epi gouge zones. Kspar envelopes assoic with fracs. F
80-13	56.4	58.8	strong lim on fracs
80-13	58.8	62.6	mafics to 50-80% chl
80-13	62.6	96.5	strongly altered with numerous epi, chl, clay, +/- hem gouge zones. Spars
80-13	96.5	108.3	narrow kspar envelopes assoc with fracs & epi veinlets
80-13	108.3	111.9	mafics to 60-100% chl. Spars to 0-90% clay(Iin gouge section)
80-13	115.8	123.1	Mod-strong hem +/- lim on fracs. Still mod-strong altered with several nar
80-13	123.1	126.7	spars to 100% clay, ser
80-13	126.7	132.6	spars to 30-90% clay, ser. Mafics to 100% chl. Several chl, hem, clayu +/- g
80-13	132.6	141.7	chl, hem, clay +/- gypsum gouge zones. Spars to 20-60% clay, ser. Mafics t
80-13	141.7	152.4	becoming less altered. Few hem-clay +/- gypsum zones. Strong lim on few
80-12	27.6	54.3	Mod-strong lim & hem on fracs

80-12	55.9	86	spars to 20-100% clay, ser. Mafics to 100% hem, chl. Few gypsum +/- hem
80-12	86	100	Strong pervasive kspar (+/- laum). Feathery hem & chl stringers.
80-12	100	110.6	Spar to 100% clay (white). Mafics to 100% chl. Original texture not appare
80-12	110.6	126.1	Strong pervasive kspar (pink-orange stain?). Few gypsum veinlets. Many c
80-12	126.1	130.6	Spars 50-80% clay, ser (greensih-white) with somew pinkish (kspar) sectio
80-12	132.9	139	Spars to 50% clay, ser, phenos-pale pink
80-12	142.2	153.8	Overall pinkish colour with greensih sections (spars to 60-100% clay)
80-12	153.8	157.4	spars 50-80% clay. Mod lim on fracs.
80-12	157.4	160.3	mafics to 100% pale grn chl-ser
80-14	7.7	14.1	mafics to 10-30% chl
80-14	17.3	20.4	relic phenos. Bio to 100% chl.
80-14	20.4	26.6	few relic phenos
80-14	26.6	28.2	mafics? To 100% bn & cp
80-14	46.4	47.4	mafics 60-80% chl
80-14	50	81.1	spars to 20-80% clay (ser). Many epi, chl, clay-rich gouge zones. Weak=str
80-14	85.7	91.7	bio to 20% chl, weak kspar assoc with fracs.
80-14	93.6	94.2	spars to 50% clay, mafics to 100% chl
80-14	94.2	101.5	bio to 10% chl
80-14	101.5	108.8	spars to 10-30% clay(ser). Clay commonly assoc with fracs. Mafics to 50-9
80-14	108.8	118	spars to 30-60% clay (ser). Mafics to 70-100% chl.
80-14	118	122.5	spars orange colour
80-14	122.5	131.4	spars 60-100% clay. Narrow siliceous sections. Mafics to 90-100% chl.
80-14	131.4	137.3	spars - orange colour. Few gypsum veinlets.
80-14	137.3	138.8	numerous qtz-hem stringers.
80-14	138.8	154.8	strong clay, epi, chl & hem assoc with fracs and gouge zones.
80-16	23.3	37.3	mod-strong lim & hem assoc with fracs.
80-16	37.3	46.3	weak-strong lim & hem on fracs.
80-16	46.3	64.6	Mod-strong lim & hem on fracs
80-16	64.6	182.6	few gypsum stringers. Mod-strong chl, clay, epi, hem assoc with fracs & g
80-16	182.6	186.6	strong pervasive kspar. Spar to 70% clay, ser (white, yellow).
80-16	186.6	197.8	mod-strong pervasive kspar. Bio to 50-90% chl.
80-16	197.8	200	strong chl & hem, mod epi
80-16	200	205.1	strong pervasive kspar (qtz). 5% chl or ser (5-20% hem stringers)
80-16	205.1	206.9	3-5% hem stringers
80-16	206.9	213.1	Mafics to 100% hem (black specks). Yellow-green p Difficult to understand
80-16	213.1	216.8	spar to 100% clay, ser, kspar green:pink (70:30)
80-16	216.8	220.8	mod-strong chl & clay
80-16	223.6	225.1	10% chl, to 10-15% hem stringers
80-17	23.2	50.1	few narrow alt (chl, clay, hem) sects. Few gypsum veinlets (+/- hem & lim)
80-17	50.1	51.4	bio to 60-80% chl
80-17	51.4	60.7	bio to 20-50% chl
80-17	68.3	75.2	start of lateration. Mod kspar assoc with fracs. Strong clay +/- ser (after sp
80-17	75.2	78	mod chl & weak epi
80-17	78	91.2	few gypsum veinlets. Alteration minerals are generally assoc with fracs or
80-17	91.2	91.8	strong kspar & chl
80-17	91.8	122.8	weak-mod lim & hem on fracs. hem stringers. Numerous hem, chl, clay +/
80-17	151	152.8	mod-strong chl, clay and epi

80-17	152.8	211.6	hem, kspar, epi, chl, clay alteration assoc with fracs or narrow gouge zone
80-17	211.6	214.1	mafics 20-100% chl, frac related alteration as above
80-17	220	226.1	gypsum stringers
80-17	228	241.7	weak-strong hem, gypsum, chl, epi, kspar assoc with fracs
80-17	253.9	260.1	weak-strong hem, kspar, chl, epi, +/- gypsum assoc with fracs. Light colour
80-17	273.2	331	Spars to 30-100% clay (+/- ser). Mafics to 50-80% chl (+/- hem). Weak-strc
80-17	331	370	weak-mod chl, epi, kspar, hem assoc with fracs.
80-17	370	394.8	mod kspar (stain) & chl assoc with fracs. Few gypsum stringers. Mafics 50-
80-17	394.8	426.1	strongly altered sections (usually assoc with fracs)
80-21	12.2	41.8	bio to 20% chl (up to 70% insections)
80-21	41.8	68.4	10% mafics to 10-20% chl. Mafics to 100% chl in envelopes around fracs. S
80-21	68.4	69.4	Spars to 20-60% clay.
80-21	69.4	86.1	Mafics to 50-100% chl. Spars to 20-60% ser, clay
80-21	86.1	86.2	dark grey siliceous band
80-21	86.2	90	spars to 0-10% ser, clay
80-20	24.8	36	mod-strong lim staining
80-20	36	58.1	mafics to 80-100% sulphides?. Mod pervasive kspar.
80-20	58.1	70.5	mafics to 100% chl. Spars to 30-60% ser, clay
80-20	70.5	118.5	mafics to 100% chl. Spars to 20-50% ser, clay
80-20	118.5	122.5	Few gypsum stringers. Mafics to 80-100% dark green chl, 0-20% black bio.
80-18	54.8	60.9	mod pervasive kspar
80-18	64.2	73.5	spars to 20-100% ser, clay. Mafics to 100% chl, sulphides?
80-18	78.2	84.4	spars to 100% ser, clay. Mafics to 100% chl. Hem on fracs.
80-18	84.4	108.6	spars to 20-80% ser, clay. Mafics to 100% chl.
80-18	126.2	132.3	2% bio, 8% pale chl. Feathery hem stringers. Some fine grained siliceous s
80-18	132.3	153.5	15-20% mafics to 100% chl.
80-18	153.5	157.6	low mafics (7% chl after bio)
80-18	157.6	183.5	20-23% mafics to 50-90% chl.
80-19	27.4	32.6	30% hem as stringers and blebs.
80-19	32.6	54.6	mod-strong lim & hem assoc with fracs. Mod-strong kspar assoc with fracs
80-19	54.6	58	white clay with feathery hem stringers
80-19	64	67.1	lim stained kspar & qtz grains.
80-19	71.7	77.1	more clay rich
80-19	77.1	88.2	mafics to 100% chl. Spars to 20-80% ser, clay.
80-19	89.3	92.6	gypsum veinlets. Strong hem in stringers.
80-22	27.1	80.4	mafics to 20-30% chl (max 80%). Spars to 0-10% ser, clay.
80-22	80.4	117.9	mafics to 50% chl.
80-22	117.9	127.8	mafics to 100% chl, +/- hem. Spars to 50-60% clay, ser. Spars 50:50 orange
80-22	128.9	143	numerous hem stingers in some sections. Few gypsum veinlets.
80-22	143	148.8	hem stringers make up 15% of section.
80-22	152.4	155.8	Pink-orange spars within massive light green chl (+/- epi) & purple hem-ric
80-22	155.8	158.4	Spar 60-100% clay (50% core receovery(
80-22	158.4	174.5	scattered hem stringers.
80-22	174.5	179.7	spars 60:40 orange-pink:pale yellow. Mod-strong pervasive kspar assoc wi
80-22	179.7	182.3	several hem stringers
80-22	182.3	184	spars to 60-100% clay (crushed material)
80-22	184	193.1	spars to 30-60% clay, ser. Mafics to 100% chl.

80-22	202	208.8	spars to 10-30% ser, clay. Mafics to 80% chl.
80-22			

relog_date

:h fracs.

length of interval

s

to 100% clay and sericite. Hem and lim associated with fracs,.
:ones. Weak -mod kspar envelopes associated with some fracs. Weak-mod hem and lim associated with fracs.

me fracs. Epi and chl alteration also assoc. with fracs.

elopes

es. Clay minerals in gouge zones.
with narrow gouge zones. Texture somewhat variable.

e shears. Many fracs have kspar envelopes.
Spars to 80% clay minerals in narrow sections. Mod-strong epi, chl, clay, pink stain assoc. with fracs.

par assoc with fracs and narrow gouge zones. Mafics to 80% chl. Mode hem & lim on fracs.

. Mafics to 30% chl.

fracs. Few fracs & gouge zones with assoc kspar, epi, chl, clay

chl (after mafics)

& hem on fracs.
ge this applies to.
c with fracs and narrow gouge zones.

ge kspar belongs with.

l. Spars to 100% clay in about half the section. Pink green colour.

to 70-100% chl & hem. Pinkish white colour (pink stain or kspar assoc with fracs.)
n stringers. Kspar envelopes assoc with some fracs.

teration.

›p of section to 10% at base. Chl & hem rich sections. 15% chl at base of section.

·acs.

›es.

cs (+/- epi).
›ng chl, epi assoc with some fracs or shears. Mafic s to 10-80% chl.

, epi, +/- hem
Spars to 50-100% clay, ser. Mafics to 100% chl, hem. Hem-gypsum veinlets.

- chl stringers. Narrow gouge zones.
:). Many narrow epi, chl, clay +/- hem gouge zones. Hem +/- lim along fracs and few stringers.

:s.

'ew gypsum veinlets.

30-90% clay. Mafics to 100% chl. Few gypsum veinlets.

·row gouge zones, few hem-gypsum stringers. Spars to 80% clay, ser, mafics to 100% chl

;ypsum gouge zones
o 100% chl.
· fracs.

veinlets. Many clay, chl, hem +/- epi gouge zones

nt.
hl, clay, +/- hem gouge zones.
ns.

ong lim & hem on fracs. Few hem & gypsum stringers.

0% chl.

ouge zones. Spars to 10-90% chl. Mafics to 10-100% chl. Hem, gypsum stringers.

description.

. Mod lim & hem on fracs.

pars).

narrow gouge zones.

- gypsum coated fracs (stringers) or gouge zones.

s.

r (pale yellow - light green). Mafics to 50-70% chl, spars to 0-50% clay (ser).
ong kspar assoc with fracs. Many narrow gouge zones with assoc chl, clay, epi, hem and kspar.

-100% chl & hem.

Spars to 0-15% clay, ser.

Spars to 10-60% ser, clay.

ections.

s. Few gypsum veinlets.

e-pink:pale yellow. Mod pervasive kspar assoc with fracs.

ch material (silicified gouge).

ith fracs.

Hole_ID	Zone	Year	elevation_m	azimuth	dip	depth_ft	depth_m	type	accuracy	comments	easting_UTMZ8	northing_U	Nearest Tr	UKHM Section	
80-01	c	1980	785	25	-50	343	104.55	diamond	good		406541	6922366	14+50E	14+75E	
80-02	a	1980	815	210	-50	228	69.50	diamond	poor	collar not found, used old grid cords from section.	404377	6921326	12+00N	7+75E	
80-03	a	1980	850	209	-50	550	167.60	diamond	moderate	collar not found, but drill pad and metal tags on trees were	405026	6921460	14+00E	13+20E	
80-04	a	1980	914	252	-50	400	121.90	diamond	good		404474	6921753	4+00W	4+00W	
80-05	a	1980	911	240	-50	515	156.40	diamond	moderate	not located	404525	6921790	4+00W	4+00W	
80-06	a	1980	919	238	-50	300	91.40	diamond	good		404392	6921846	8+00W	7+92W	
80-07	a	1980	917	241	-50	366	111.50	diamond	good		404448	6921878	8+00W	7+92W	
80-08	a	1980	919	242	-50	394	120.10	diamond	moderate	not located	404368	6921890	Cross 8+00	9+47w	
80-09	a	1980	933	241	-50	444	135.30	diamond	good		404356	6921967	11+50W Ex	12+00W	
80-10	a	1980	940	211	-50	452	137.80	diamond	good		404267	6921921	11+50W	12+00W	
80-11	a	1980	929	239	-50	672	204.80	diamond	good		404411	6921997	11+50W Ex	12+00W	
80-12	a	1980	933	242	-50	526	160.30	diamond	moderate	not located	404350	6922030	2015-A	14+00W	
80-13	a	1980	940	240	-50	500	152.40	diamond	good		404285	6922003	2015-A	14+00W	
80-14	a	1980	932	241	-50	507	154.50	diamond	good		404370	6921939	11+50W Ex	10+90w	
80-15	a	1980	927	237	-50	626	190.80	diamond	good		404433	6921921	8+00W	9+47W	
80-16	a	1980	928	240	-50	763	232.60	diamond	good		404418	6921966	11+50W Ex	10+90W	
80-17	a	1980	928	240	-72	1398	426.10	diamond	good		404418	6921965	11+50W Ex	10+90W	
80-18	a	1980	933	240	-48	602	183.50	diamond	good		404329	6922091	2015-A	16+00W	
80-19	a	1980	933	240	-57	304	92.70	diamond	good		404329	6922091	2015-A	16+00W	
80-20	a	1980	940	285	-89	402	122.50	diamond	good		404267	6922059	2015-A	16+00W	
80-21	a	1980	948	0	-90	300	91.40	diamond	good		404213	6922029	2015-A	16+00W	
80-22	a	1980	926	240	-50	685	208.80	diamond	moderate	collar not located	404395	6922112	2015-A	16+00W	
80-23	a	1980	930	240	-50	610	185.90	diamond	good		404291	6922209	2015-A	20+00W	
80-24	a	1980	938	240	-49	502	153.00	diamond	good		404223	6922173	2015-A	20+00W	
80-25	a	1980	931	220	-50	531	161.80	diamond	good		404101	6922410		28+82W	
80-26	a	1980	893	240	-50	642	195.70	diamond	good		404662	6921516	0+00W	6+02E	
80-28	c	1980	822	30	-50	602	183.50	diamond	good	Hole locations for 27 and 28 swapped on UKHM plan maps. Sections are consistent with GPS survey.	406339	6922363		10+06E	

80-27	c	1980	794	28	-50	616	187.80	diamond	good		406093	6922513		0+26E	
SD-4	b	1989	975	225	-53	250	76.20	rotary	located on g	1978 trench	405494	6920049	D2	SD-3, SD-4	
SB-17	b	1989	920	45	-63	290	88.39	rotary	located on ground		405803	6919561	B5	SB-17	
SB-16B	b	1989	914	225	-49	240	73.15	rotary	located on ground		405895	6919505	B4	SB-15, 16, 16B	
SB-15	b	1989	914	225	-45	160	48.80	rotary	located on ground		405855	6919495	B4	SB-15, 16, 16B	
SB-13	b	1989	884	225	-49	160	48.80	rotary	located on ground		405980	6919469	B3	SB-13 & Sb-14	
SB-14	b	1989	884	225	-53	260	79.24	rotary	moderate		405976	6919463	B3	SB-13 & Sb-14	
SB-12	b	1989	876	225	-56	90	27.40	rotary	located on ground		406050	6919395	B2	SB-11, 12, 12A	
SB-11	b	1989	876	225	-59	160	48.80	rotary	located on ground		406047	6919388	B2	SB-11, 12, 12A	
SB-6	b	1989	835	225	-47	275	68.60	rotary	moderate		406190	6919258	74+00	SB-5 & SB-6	
SB-7	b	1989	853	225	-50	160	48.80	rotary	moderate		406127	6919314	B1	SB-7 to SB-10	
SB-10	b	1989	853	225	-55	200	60.96	rotary	good		406142	6919332	B1	SB-7 to SB-10	
SC-1	b	1989	811	45	-54	250	76.20	rotary	found tag		406362	6919252	C1	SC-1 & SC-2	
SC-2	b	1989	811	45	-53	250	76.20	rotary	good	found pile on ground	406354	6919239	C1	SC-1 & SC-2	
SB-16	B	1989	914	225	-50	230	70.10	rotary	found on ground		405892	6919500	B4	SB-15, 16, 16B	
1150W	A	1979	942	245	10		58	trench			404270	6921907			
Cross-800W	A	1979	930	200	0		121	trench			404363	6921892			
800W	A	1979	917	245	0		68	trench			404497	6921912			
SB-5	B	1989	833	225	-45	170	52	rotary	good		406184	6919251	74+00	SB-5 & SB-6	
2015-800W	A	1979	917	240	5		187	trench	good		404436	6921881			
E1	B		689	220	0		128	trench			405724	6920689			
600W	A	1979	920	245	5		133	trench			404491	6921826			
400W	A	1979	914	240	0		166	trench			404505	6921776			
000W	A	1979	910	240	0		108	trench			404601	6921692			
1200E-N	A	1979	884	240	0		113	trench			404947	6921457			
1400E-N	A	1979	872	62	0		153	trench			404913	6921373			
B3	B		884	218	0		122	trench			405981	6919473			
B5	B		920	215	0		134	trench			405816	6919586			
B4	B		914	240	0		97	trench			405898	6919504			
B2	B		876	215	0		136	trench			406069	6919422			
B1	B		853	220	0		139	trench			406164	6919360			
7400E	B	1979	835	220	-10		88	trench			406192	6919260			
8000E	B	1979	792	220	-5		85	trench		also called B6	406348	6919141			
C1	B		811	210	0		199	trench			406436	6919387			
NWTR1	NW		830	250	0		33	trench			402593	6923394			
NWTR1A	NW		830	135	0		8	trench			402562	6923382			
NWRT2	NW		823	290	0		47	trench			402551	6923385			
2050E	C		745	250	0		45	trench			406690	6922274			
1150E	C		847	220	0		100	trench			406529	6922497			
1450E	C		800	215	0		105	trench			406575	6922452			
950E	C		829	225	0		77	trench			406475	6922528			

2015A	A	2015	950	73	-20		30	trench			404200	6922022			
1150W-Ext	A	2015	939	60	-3		143	trench			404270	6921907			
1400E-S	A	1979	872	242	0		88	trench			404913	6921373			
SB-12A	A	1989	876	225	-56	230	70.10	rotary			406050	6919393	*B2*	SB-11, 12, 12A	
SD-1	B	1989	914	225	-53	180	54.90	rotary			405660	6920379	D4	SD-1, SD-2	
SD-2	B	1989	914	225	-56	160	48.80	rotary			405666	6920388	D4	SD-1, SD-2	
SD-3	B	1989	975	225	-45	180	54.90	rotary			405494	6920039	D2	SD-3, SD-4	
SD-5	B	1989	914	225	-45	180	54.90	rotary			405678	6920267	D1	SD-5, SD-6	
SD-6	B	1989	914	225	-47	210	64.00	rotary			405685	6920274	D1	SD-5, SD-6	
SD-8	B	1989	914	225	-55	230	70.10	rotary			405763	6920224	D3	SD-7, SD-8	
SD-7	B	1989	914	225	-55	180	54.90	rotary			405756	6920215	D3	SD-7, SD-8	
SB-4A	B	1989	823	225	-54	220	67.10	rotary			406245	6919203	76+00E	SB-3, 4 & 4A	
SB-8	B	1989	853	225	-52	230	70.10	rotary			406132	6919320	B1	SB-7 to SB-10	
SB-9	B	1989	853	225	-57	170	51.82	rotary			406137	6919327	B1	SB-7 to SB-10	
SB-1	B	1989	792	225	-57	160	48.77	rotary			406327	6919117	80+00	SB-1 & SB-2	
SB-2	B	1989	792	225	-57	230	70.10	rotary			406334	6919124	80+00	SB-1 & SB-2	
SB-3	B	1989	823	225	-57	160	48.77	rotary			406239	6919197	76+00	SB-3, 4 & 4A	
SB-4	B	1989	823	225	-53	170	51.82	rotary			406247	6919206	76+00	SB-3, 4 & 4A	
2015C	A	2015	905	65	0		64.00	trench			404738	6921705			
1200E-S	A	1979	880	240	-5		73.00	trench			404825	6921387			
D4	B		914	220	0		109.00	trench			405676	6920399			
D1	B		914	220	0		102.00	trench			405710	6920302			
D3	B		914	220	0		77.00	trench			405770	6920229			
D2	B		975	220	0		78.00	trench			405507	6920056			
A1	B		859	220	5		72.00	trench			405981	6919927			
A2	B		853	220	0		97.00	trench			406029	6919828			
B3Ext	B	2015	884	40	-10		91.00	trench			405979	6919467			
2015H	B	2015	869	220	0		112.00	trench			406102	6919374			
7600E	B	1979	823	220	-10		79.00	trench			406254	6919214			
14-01	A	2014	907	52	0		6.00	trench			404767	6921746			
14-02	A	2014	907	52	0		5.00	trench			404760	6921750			
14-03	A	2014	907	62	0		4.00	trench			404752	6921757			
14-04	A	2014	907	35	0		4.00	trench			404773	6921736			

SAMPLE	TYPE	START_ m	END	LENGTH_ m	OCCURRENCE	easting	northing	date	sampler	Hole-Trench	ROCK	DESCRIPTION	FOLIATION	COMMENTS	MAG_SUSC (10^{-3} SI units)	Wgt_KG	Au_ppm
615601	chip	2.5	4.5	2	TRENCH	404273	6921907	27-Jul-15		1150W-Ext	kspar grn		no		1.510	1.57	0
615602	chip	4.5	5.8	1.3	TRENCH	404275	6921906	27-Jul-15		1150W-Ext	kspar grn and fault		yes		0.750	2.4	0.063
615603	chip	5.8	7.5	1.7	TRENCH	404277	6921905	27-Jul-15		1150W-Ext	fault in kspar grn		no		0.592	1.87	0.07
615604	chip	7.5	10	2.5	TRENCH	404280	6921905	27-Jul-15		1150W-Ext	fault in kspar grn		no		0.261	1.93	0.113
615605	chip	7	9	2	TRENCH	404263	6921903	27-Jul-15		1150W	qtz diorite	equigranualr, increased biotite at 7m, foliated at 8m	no		1.880	3.1	0.007
615606	chip	9	10.5	1.5	TRENCH	404261	6921902	27-Jul-15		1150w	qtz diorite	foliated	yes		1.920	2.35	0
615607	chip	10.5	13	2.5	TRENCH	404260	6921901	27-Jul-15		1150w	qtz diorite	foliated	yes		1.710	2.61	0
615608	chip	13	15	2	TRENCH	404258	6921900	27-Jul-15		1150w	qtz diorite	foliated. At 15m more kspar in veins and fracture coatings	yes		1.740	4.08	0
615609	chip	15	17.2	2.2	TRENCH	404256	6921899	27-Jul-15		1150w	qtz diorite	foliated, more kspar in veins and fractures	weak		2.200	4.7	0.007
615611	chip	17.2	20	2.8	TRENCH	404255	6921898	27-Jul-15		1150w	qtz diorite	foliated	weak		2.380	6.04	0
615612	chip	20	22.5	2.5	TRENCH	404252	6921896	27-Jul-15		1150w	qtz diorite	foliated	weak		1.630	3.49	0
615613	chip	22.5	25	2.5	TRENCH	404249	6921895	27-Jul-15		1150w	qtz diorite	foliated. Shattered at 25m.	weak		1.550	4.31	0
615614	chip	34	35.7	1.7	TRENCH	404240	6921889	27-Jul-15		1150w	qtz diorite	equigranular	no		0.986	3.17	0
615615	chip	35.7	36.8	1.1	TRENCH	404239	6921888	27-Jul-15		1150w	qtz diorite	equigranular	no		0.807	2.91	0.054
615616	chip	36.8	39	2.2	TRENCH	404237	6921887	27-Jul-15		1150w	fault in ?	36-39m fault or contact or alteration	no		0.746	5.78	0.012
615617	chip	120	122	2	TRENCH	404371	6921963	27-Jul-15		1150W-Ext	diorite?	rotten diorite? Difficult to tell	no		1.350	1.68	0
615618	chip	122	123	1	TRENCH	404372	6921963	27-Jul-15		1150W-Ext	diorite?	rotten diorite? Difficult to tell	no		1.230	2.93	0.009
615619	chip	123	124	1	TRENCH	404374	6921964	27-Jul-15		1150W-Ext	qtz diorite	At 123 - 135m foliated, silicified qtz diorite with malachite on fractures	yes		1.430	3.06	0.007
615621	chip	124	126	2	TRENCH	404375	6921965	27-Jul-15		1150W-Ext	qtz diorite	At 123 - 135m foliated, silicified qtz diorite with malachite on fractures	yes		2.090	4.47	0.007
615622	chip	126	128	2	TRENCH	404377	6921966	27-Jul-15		1150W-Ext	qtz diorite	At 123 - 135m foliated, silicified qtz diorite with malachite on fractures	yes		2.210	3.86	0.01
615623	chip	128	130	2	TRENCH	404378	6921967	27-Jul-15		1150W-Ext	qtz diorite	At 123 - 135m foliated, silicified qtz diorite with malachite on fractures	yes		3.150	4.02	0.008
615624	chip	130	132	2	TRENCH	404380	6921968	27-Jul-15		1150W-Ext	qtz diorite	At 123 - 135m foliated, silicified qtz diorite with malachite on fractures	yes		2.620	4.43	0.013
615625	chip	132	134	2	TRENCH	404382	6921969	27-Jul-15		1150W-Ext	qtz diorite	At 123 - 135m foliated, silicified qtz diorite with malachite on fractures	yes		3.700	3.43	0.008
615626	chip	134	136	2	TRENCH	404383	6921970	27-Jul-15		1150W-Ext	qtz diorite	At 123 - 135m foliated, silicified qtz diorite with malachite on fractures	yes		2.280	3.79	0.006
615627	chip	0	2	2	TRENCH	404435	6921880	27-Jul-15		2015-800W			yes		0.957	5.02	0.048
615628	chip	2	4	2	TRENCH	404433	6921879	27-Jul-15		2015-800W			yes		1.650	2.84	0.135
615629	chip	4	6.5	2.5	TRENCH	404432	6921878	27-Jul-15		2015-800W	qtz diorite	Biotite at 5m	yes		0.547	5.42	0.243
615631	chip	6.5	8	1.5	TRENCH	404430	6921877	27-Jul-15		2015-800W			yes		0.688	4.76	0.314
615632	chip	8	9.2	1.2	TRENCH	404428	6921876	27-Jul-15		2015-800W			yes		2.060	2.25	0.117
615633	chip	9.2	10.8	1.6	TRENCH	404427	6921876	27-Jul-15		2015-800W	qtz diorite	At 10m foliated with bio and mal specks	yes		1.640	2.04	0.14
615634	chip	10.8	12.8	2	TRENCH	404426	6921875	27-Jul-15		2015-800W			yes		1.910	4.6	0.016
615635	chip	80	82.5	2.5	TRENCH	404367	6921838	27-Jul-15		2015-800W					0.351	4.25	0

SAMPLE	TYPE	START_m	END	LENGTH_m	OCCURRENCE	**easting**	**northing**	**date**	**sampler**	**Hole-Trench**	**ROCK**	**DESCRIPTION**	**FOLIATION**	**COMMENTS**	**MAG_SUSC (10^{-3} SI units)**	Wgt_KG	Au_ppm
615636	chip	82.5	84	1.5	TRENCH	404365	6921837	27-Jul-15		2015-800W	qtz diorite	Reef of foliated diorite with mal specks at 83m	yes		0.368	5.13	0.024
615637	chip	84	85.5	1.5	TRENCH	404364	6921836	27-Jul-15		2015-800W	qtz diorite	At 85, green altered diorite with lim, hem, mal			0.510	3.57	0.028
615638	chip	85.5	86.2	0.7	TRENCH	404363	6921836	27-Jul-15		2015-800W					0.204	3.45	0.021
615639	chip	86.2	88	1.8	TRENCH	404362	6921835	27-Jul-15		2015-800W					0.605	4.2	0.008
615641	chip	88	90	2	TRENCH	404360	6921834	27-Jul-15		2015-800W	qtz diorite	weakly foliated diorite with mal specks	weak		0.837	3.64	0.017
615642	chip	90	91.5	1.5	TRENCH	404358	6921833	27-Jul-15		2015-800W	qtz diorite	weakly foliated diorite with mal specks	weak		0.212	3.93	0.01
615643	chip	91.5	93	1.5	TRENCH	404357	6921833	27-Jul-15		2015-800W					0.342	5.68	0
615644	chip	93	95	2	TRENCH	404356	6921832	27-Jul-15		2015-800W	qtz diorite	95m - crumbled diorite, argillic alteration			0.351	3.55	0

2013 Rock Samples

SAMPLE	Mo_ppm	Total Cu_ppm	GC921_Cu/Ox_pct	Cu/Ox_ppm	Cu/Other_ppm	Pb_ppm	Zn_ppm	Ag_ppm	Ni_ppm	Co_ppm	Mn_ppm	Fe_pct	As_ppm	U_ppm	Th_ppm	Sr_ppm	Cd_ppm	Sb_ppm	Bi_ppm	V_ppm
615601	0	57.7	0.002	20	37.7	11.8	64	0	3.2	7	724	3.07	0	0.9	2.9	871	0	0	0	84
615602	0	1024.3	0.041	410	614.3	15	86	0	3.6	9	839	3.83	0	0.9	5.5	749	0	0	0	108
615603	0	870.5	0.056	560	310.5	11.9	85	0.7	2.9	9	842	3.51	0	0.9	5.1	648	0	0	0	99
615604	0	1550.8	0.131	1310	240.8	13.6	82	1.7	3.2	9	670	3.81	0	1	6.3	519	0	0	0.9	112
615605	0.7	743	0.026	260	483	15.1	70	0	3.6	8	603	3.37	0	1	5.5	835	0	0	0	86
615606	0	671.7	0.018	180	491.7	11.8	86	0	5.2	14	802	4.57	0	0.8	5.5	902	0	0	0	114
615607	0	47.4	0.002	20	27.4	10.4	84	0	3.4	9	943	3.6	0	0.7	3.3	991	0	0	0	92
615608	0	47.2	0.002	20	27.2	11.6	76	0	2.3	8	872	3.24	0	0.8	3	980	0	0	0	78
615609	0	276.9	0.009	90	186.9	11.4	86	0	3.3	8	898	3.35	0	0.8	5	940	0	0	0	87
615611	0	61.2	0.003	30	31.2	16.1	56	0	2.1	5	589	2.16	0	1.1	2.9	673	0	0	0	45
615612	0	48.8	0.002	20	28.8	12.2	74	0	2.7	7	839	2.99	0	0.7	2.6	933	0	0	0	77
615613	0	87.7	0.004	40	47.7	12.8	75	0	2.8	8	716	3.24	0	1.3	3.7	582	0	0	0	81
615614	0	98.7	0.006	60	38.7	23.1	150	0	2.8	9	935	3.16	0	0.5	3.9	935	0	0	0	78
615615	0	2689	0.231	2310	379	31.4	109	0.7	2.5	8	589	3.17	0	1.2	8.5	688	0	0	0	87
615616	0	520.5	0.033	330	190.5	16.3	56	0	2.4	6	594	2.46	0	1.2	6.2	352	0	0	0	71
615617	0.5	74.6	0.003	30	44.6	13.3	103	0	2.7	8	979	3.1	0	0.8	3.5	857	0	0.8	0	79
615618	0	656.8	0.045	450	206.8	19.5	185	0	2	10	726	2.91	0	0.9	7.1	710	0	0	0	88
615619	0	354.2	0.021	210	144.2	16	105	0	1.8	8	694	3.17	0	0.7	8	789	0	0	0	85
615621	0	345.8	0.013	130	215.8	15.6	94	0	8.6	10	710	2.92	0	1	6.9	669	0	0.5	0	86
615622	0	350.2	0.016	160	190.2	20.6	170	0	7.7	8	861	2.99	0	1.1	9.5	622	0	0	0	78
615623	0.6	457.6	0.019	190	267.6	21.6	128	0	7.2	10	828	3.41	0	1.1	8.5	685	0	0.6	0	93
615624	0.7	774.8	0.034	340	434.8	21.8	147	0	7.1	13	940	3.78	0	1.2	9.5	679	0	0	0	100
615625	0.6	756.4	0.034	340	416.4	27.6	290	0	3.8	13	1320	4.21	0	1.2	9.2	770	0	0.8	0	111
615626	1.3	664.5	0.029	290	374.5	23.9	130	0	3.5	10	916	3.68	0	1	7.4	739	0	0.6	0	95
615627	0	1934.4	0.123	1230	704.4	12.8	93	0.6	2.3	6	691	2.62	0	0.7	3.8	820	0	0	0	68
615628	0	2120.2	0.166	1660	460.2	12.5	88	1.4	2.5	8	678	3.29	0	0.7	6.5	757	0	0	1.1	87
615629	0	4980.4	0.42	4200	780.4	18	83	2.4	3	7	797	2.82	0	0.9	6.2	725	0	0	1.6	80
615631	1	5199.4	0.464	4640	559.4	30.5	141	3	2.7	7	1497	3.18	0	1.2	8.7	656	0	0	2	85
615632	0	2470.9	0.215	2150	320.9	18.6	73	1.4	2	7	554	3	0	1	8.4	746	0	0	0.6	80
615633	0	2906.8	0.24	2400	506.8	15.4	106	1.4	2.3	8	588	3.54	0	0.8	6.7	749	0	0	0.9	89
615634	0	770.3	0.047	470	300.3	14.5	70	0	2.9	7	683	2.47	0	1.5	3.6	774	0	0	0	62
615635	0.5	201	0.011	110	91	11.7	69	0	4.2	8	739	2.63	0	0.8	2.4	1028	0	0	0	73

2013 Rock Samples

SAMPLE	Mo_ppm	Total Cu_ppm	GC921_Cu/Ox_pct	Cu/Ox_ppm	Cu/Other_ppm	Pb_ppm	Zn_ppm	Ag_ppm	Ni_ppm	Co_ppm	Mn_ppm	Fe_pct	As_ppm	U_ppm	Th_ppm	Sr_ppm	Cd_ppm	Sb_ppm	Bi_ppm	V_ppm
615636	1.5	2040.1	0.174	1740	300.1	9.7	98	0.9	4.1	11	658	3.51	0	0.9	4.5	973	0	0	0.5	108
615637	1.6	1874.5	0.174	1740	134.5	9.4	89	0.9	3.5	11	633	3.56	0	0.9	4.9	783	0	0	0	109
615638	1.4	1838.5	0.168	1680	158.5	8.7	71	0.7	3.4	9	563	3	0	0.5	4.4	580	0	0	0	95
615639	2	647.5	0.044	440	207.5	10	74	0	3.2	9	645	3.03	0	0.8	4.4	738	0	0	0	85
615641	1.8	1349.9	0.12	1200	149.9	9.1	83	0	4	12	666	3.56	0	0.8	5.3	794	0	0	0	100
615642	1.8	1248.5	0.101	1010	238.5	8.4	58	0	2.7	13	439	3.4	0	1	6.5	469	0	0	0	94
615643	1.9	90.6	0.006	60	30.6	11.9	57	0	2	6	601	2.25	0	1.1	3.4	427	0	0	0	61
615644	1.8	105	0.005	50	55	11.1	64	0	2.2	8	633	2.56	0	0.8	2.7	573	0	0	0	73

SAMPLE	Ca_pct	P_pct	La_ppm	Cr_ppm	Mg_pct	Ba_ppm	Ti_pct	Al_pct	Na_pct	K_pct	W_ppm	Zr_ppm	Ce_ppm	Sn_ppm	Y_ppm
615601	1.9	0.08	12.7	3	0.79	1895	0.242	8.81	3.53	1.8	0	7.9	28	1.2	11.2
615602	1.45	0.14	23	5	1.07	1535	0.318	8.62	3.09	1.79	0	7.7	50	1.1	7.4
615603	1.04	0.11	21	5	1	833	0.289	8.83	3.54	1.55	0	7.8	44	1.1	7.5
615604	0.78	0.13	18.7	5	0.93	333	0.338	8.67	3.43	1.42	0	8.4	45	1.1	8.1
615605	2.3	0.09	18.2	5	0.76	2396	0.248	8.17	2.95	2.26	0	19.5	33	0.6	10.8
615606	3	0.12	24.2	6	1.04	2072	0.319	8.73	3.12	1.7	0	11	42	1.3	13.9
615607	3.55	0.09	16.3	5	0.98	961	0.269	8.97	3.68	1.17	0	10.6	34	1.1	14.6
615608	3.02	0.08	13.7	5	0.83	1494	0.234	8.6	3.59	1.5	0	9.6	28	1.1	13.6
615609	2.75	0.1	19.4	4	0.93	1429	0.265	8.82	3.5	1.6	0	8.9	38	1.3	12.4
615611	1.58	0.05	13.1	3	0.52	1539	0.149	8.1	3.37	2.4	0	19.6	24	0.7	9.2
615612	2.73	0.08	14.1	5	0.78	1914	0.232	8.19	3.38	1.68	0	8.8	27	1.2	13.9
615613	1.35	0.08	18.3	4	0.73	643	0.247	9.11	3.79	1.61	0	19.8	33	1.2	10.5
615614	2.83	0.08	17.1	4	0.86	1369	0.253	8.8	3.57	1.4	0	8.1	29	1	19.6
615615	1.37	0.11	31	4	0.84	1732	0.269	8.33	2.75	2.94	0	10.6	45	1.6	15.9
615616	0.81	0.07	19.7	3	0.52	679	0.205	8.16	2.87	2.41	0	15.9	31	0.8	12.2
615617	2.07	0.09	21.1	6	0.54	1863	0.261	9.11	3.42	1.91	0	12.8	39	1.4	17.8
615618	2.03	0.1	22.8	2	0.82	1401	0.26	7.9	2.66	2.58	0	12.7	39	1.4	13.6
615619	2.19	0.1	18.3	4	0.8	2263	0.243	7.97	2.66	3.02	0	22	35	1	11.4
615621	1.94	0.09	17.7	16	0.73	1755	0.255	7.65	2.59	2.73	0	19.9	33	1.1	12.1
615622	1.87	0.09	18.7	13	0.7	1578	0.246	7.55	2.55	2.57	0	25.9	34	0.9	10.8
615623	2.17	0.1	22.5	11	0.79	1410	0.271	7.75	2.67	2.31	0	20.9	41	1.6	14.1
615624	2.1	0.12	27	13	0.83	1488	0.303	7.94	2.63	2.47	0	26.3	46	1.4	18
615625	2.6	0.13	30.7	5	1	1519	0.317	8.38	2.7	2.54	0	13.7	52	1.7	19.2
615626	2.16	0.11	18.7	7	0.8	1501	0.272	7.75	2.76	2.43	0	15.6	37	1.4	13.3
615627	2.05	0.08	16.2	5	0.58	2201	0.238	8.67	3.21	2.24	0	8.3	35	0.6	7
615628	2.16	0.1	11.1	6	0.79	1639	0.27	8.11	2.9	2.31	0	14.9	30	0.8	8
615629	1.94	0.1	16	8	0.67	1852	0.276	8.26	2.73	2.69	0	12.3	33	0.7	8.3
615631	1.96	0.1	11.7	4	0.78	1211	0.265	7.83	2.47	3.19	0	17	28	0.8	9.2
615632	2.15	0.09	9.3	4	0.76	1536	0.259	8.33	2.75	3.04	0	16.2	28	0.7	9.1
615633	1.91	0.11	13.1	5	0.7	1894	0.276	8.33	2.67	2.65	0	14.3	29	0.9	9
615634	2.06	0.06	14.3	3	0.6	2159	0.205	8.41	3.29	2.18	0	10	31	1	11.4
615635	2.4	0.07	11	6	0.87	1018	0.21	9.26	4.06	1.41	0	9.3	20	1.1	12.6

2013 Rock Samples

SAMPLE	Ca_pct	P_pct	La_ppm	Cr_ppm	Mg_pct	Ba_ppm	Ti_pct	Al_pct	Na_pct	K_pct	W_ppm	Zr_ppm	Ce_ppm	Sn_ppm	Y_ppm
615636	2.4	0.14	20.1	7	1.21	1463	0.395	9.35	3.63	1.95	0	6.7	37	1.1	8.3
615637	2.34	0.13	22.9	6	1.23	1203	0.367	9.25	3.35	1.86	0	8.7	39	1.6	12.7
615638	2.36	0.11	21.5	5	0.99	1296	0.31	8.09	2.5	1.7	0	6.8	37	0.9	8.8
615639	2.25	0.09	18.8	7	0.91	1381	0.263	8.73	3.35	1.57	0	7.4	31	0.8	9.6
615641	2.19	0.12	23	7	1.12	1428	0.345	8.67	3.13	1.74	0	7.4	38	1.4	9.1
615642	2.24	0.09	20.3	4	0.7	1771	0.251	7.86	2.25	1.49	0	8.4	37	1.3	9.9
615643	3	0.06	13	4	0.41	2099	0.183	7.82	2.66	1.54	0	8.3	27	0.7	10.2
615644	3.3	0.08	10.2	5	0.46	1596	0.228	7.84	3.31	1.57	0	6.9	22	1	11

Hole_ID	From_m	To_m	Major_lith	Minor_lith	Major_lith	Minor_lith
80-27	0	21.3	OVB			
80-27	21.3	32	PGDM			
80-27	32	32.5	VOL			
80-27	32.5	91	PGDM			
80-27	91	91.5	PEG			
80-27	91.5	128	PGDM			
80-27	128	130	GDM			
80-27	130	169	PGDM			
80-27	169	188	BRX			
80-01	0	9.8	OVB			
80-01	9.8	41.8	PGDM			
80-01	41.8	43.3	PGDM			
80-01	43.3	47.5	QFGN			
80-01	47.5	50.2	FGDM			
80-01	50.2	51.2	APL			
80-01	51.2	64.2	FGDM			
80-01	64.2	65.9	APL			
80-01	65.9	74.2	PGDM			
80-01	74.2	74.3	APL			
80-01	74.3	89.9	PGDM			
80-01	89.9	90	APL			
80-01	90	104.6	PGDM			
80-02	0	69.5	OVB			
80-03	0	12.8	OVB			
80-03	12.8	19.5	DIO-GDM			
80-03	19.5	26.7	PGDM			
80-03	26.7	38.3	FGDM			
80-03	38.3	42.2	PGDM			
80-03	42.2	45.5	FGDM			
80-03	45.5	46.2	GDM			
80-03	46.2	51.6	FGDM			
80-03	51.6	56.9	FGDM			
80-03	56.9	57.5	GDM			
80-03	57.5	61.8	FGDM			
80-03	61.8	67.9	PGDM			
80-03	67.9	70.2	PGDM	APL		
80-03	70.2	71.4	FMGR			
80-03	71.4	75.3	PGDM			
80-03	75.3	75.4	PEG			
80-03	75.4	76.3	PGDM			
80-03	76.3	77	FMGR			
80-03	77	89.6	PGDM			
80-03	89.6	102.7	PGDM	FPDGM		
80-03	102.7	104.3	GDM	QFBGN		
80-03	104.3	125.8	PGDM			
80-03	125.8	125.9	PEG			
80-03	125.9	129.6	PGDM			
80-03	129.6	129.7	APL			
80-03	129.6	142.9	FGDM			

80-03	142.9	143	PEG	
80-03	143	152.4	FGDM	
80-03	152.4	152.5	QFBGN	
80-03	152.5	156.6	FGDM	
80-03	156.6	158.1	BQFGN	
80-03	158.1	167.6	FGDM	
80-04	0	9.75	OVB	
80-04	9.75	13.9	GDM	
80-04	13.9	15.3	FGDM	
80-04	15.3	17.3	GDM	diorite
80-04	17.3	18.1	PGDM	
80-04	18.1	18.2	APL	
80-04	18.2	27	PGDM	
80-04	27	31.2	FGDM	
80-04	31.2	42.5	PGDM	
80-04	42.5	48.3	FGDM	
80-04	48.3	52.8	PGDM	
80-04	52.8	65.5	FGDM	GDM
80-04	65.5	67.3	GDM	
80-04	67.3	93.1	FGDM	
80-04	93.1	121.9	PGDM	FGDM
80-05	0	7.62	OVB	
80-05	7.62	9.1	SFGD	
80-05	9.1	51.1	PGDM	
80-05	51.1	59.5	FGDM	
80-05	59.5	61	PGDM	
80-05	61	63.3	FGDM	
80-05	63.3	65.8	FGDM	
80-05	65.8	80	PGDM	
80-05	80	85.7	FGDM	
80-05	85.7	106.4	PGDM	
80-05	106.4	108.2	FGDM	
80-05	108.2	109.5	FGDM	
80-05	109.5	111.2	FGDM	
80-05	111.2	116.8	FGDM	
80-05	116.8	119.6	PGDM	
80-05	119.6	121.1	FGDM	
80-05	121.1	122	PEG	
80-05	122	125.1	PGDM	
80-05	125.1	151.8	FGDM	
80-05	151.8	156.36	FGDM	
80-08	0	7.85	OVB	
80-08	7.85	19.4	PGDM	
80-08	19.4	21.6	FGDM	
80-08	21.6	39.6	PGDM	
80-08	39.6	40.8	FGDM	
80-08	40.8	41.7	PGDM	
80-08	41.7	42.4	FMGR	
80-08	42.4	44.5	PGDM	
80-08	44.5	60.8	FGDM	

80-08	60.8	62.1	FGDM	
80-08	62.1	94.5	PGDM?	GDM?
80-08	94.5	97.1	PGDM	
80-08	97.1	102.1	GDM	
80-08	102.1	110.8	FGDM	GDM
80-08	110.8	120.1	PGDM	
80-15	0	10.2	OVB	
80-15	10.2	18.8	PGDM	
80-15	18.8	23.7	FGDM	
80-15	23.7	27.9	PGDM	
80-15	27.9	36.3	FGDM	moderate to strong
80-15	36.3	39.2	GDM	FGDM
80-15	39.2	78.4	PGDM	
80-15	78.4	94.3	FGDM	
80-15	94.3	108.3	PGDM	
80-15	108.3	109.5	FGDM	
80-15	109.5	114.2	PGDM	
80-15	114.2	115	FGDM	
80-15	115	141.2	PGDM	
80-15	141.2	143	FGDM	
80-15	143	146	PGDM	
80-15	146	147.6	FGDM	
80-15	147.6	154.8	PGDM	
80-15	154.8	155.5	PEG	
80-15	155.5	166.4	PGDM	
80-15	166.4	175.1	QFGN	
80-15	175.1	176.1	FGDM	
80-15	176.1	178.1	QFGN	
80-15	178.1	183.3	FPGDM	
80-15	183.3	190.8	GDM	
80-10	0	7.16	OVB	
80-10	7.16	12.7	PGDM	
80-10	12.7	13.9	MGR	
80-10	13.9	29.5	PGDM	
80-10	29.5	33.8	FPGDM	
80-10	33.8	38.6	PGDM	
80-10	38.6	52.7	FPGDM	
80-10	52.7	54.2	FGDM	
80-10	54.2	75.1	FPGDM	
80-10	75.1	79.5	FGDM	QFBGN
80-10	79.5	96.4	PGDM	
80-10	96.4	97.4	MGR	
80-10	97.4	106	PGDM	
80-10	106	125	FGDM	QFBGN
80-10	125	137.8	PGDM	
80-09	0	7.62	OVB	
80-09	7.62	40.9	PGDM	
80-09	40.9	51.8	FGDM	QFBGN
80-09	51.8	57.3	QFBGN	
80-09	57.3	60.4	FQGN	

80-09	60.4	90.1	PGDM	
80-09	90.1	120.6	PGDM?	
80-09	120.6	134	GDM	
80-09	134	135.33	PGDM	
80-11	0	11	OVB	
80-11	11	47.8	PGDM	
80-11	47.8	49.2	FPGDM	
80-11	49.2	57.4	PGDM	
80-11	57.4	70.1	FGDM	FQGN
80-11	70.1	87.3	PGDM	
80-11	87.3	108.9	PGDM	
80-11	108.9	179.2	PGDM	
80-11	179.2	181.5	FPGDM	
80-11	181.5	183.4	QFGN	
80-11	183.4	185.8	FGDM	
80-11	185.8	189.8	QFGN	
80-11	189.8	192.6	FGDM	
80-11	192.6	198.2	QFGN	
80-11	198.2	204.8	PGDM	
80-13	0	16.9	OVB	
80-13	16.9	54.8	PGDM	
80-13	54.8	56.4	GDM	FGDM
80-13	56.4	58.8	APL?	PEG?
80-13	58.8	62.6	GDM	FGDM
80-13	62.6	74.8	PGDM?	
80-13	74.8	75.6	FGDM	
80-13	75.6	96.5	PGDM?	
80-13	96.5	108.3	FGDM	
80-13	108.3	111.9	PGDM	
80-13	111.9	115.8	FGDM	
80-13	115.8	123.1	PGDM	
80-13	123.1	126.7	UNK	
80-13	126.7	132.6	PGDM?	
80-13	132.6	140.5	FGDM	
80-13	140.5	152.4	PGDM	
80-12	0	27.6	OVB	
80-12	27.6	54.3	PGDM	
80-12	54.3	55.9	BRX	
80-12	55.9	100	PGDM	
80-12	100	110.6	PGDM?	
80-12	110.6	130.6	PGDM	
80-12	130.6	132.9	FGDM?	
80-12	132.9	139	PGDM	
80-12	139	141.7	GDM	
80-12	141.7	141.9	BRX	
80-12	141.9	153.8	GDM?	FGDM?
80-12	153.8	157.4	APL?	
80-12	157.4	158.6	FGDM	
80-12	158.6	160.3	GDM	
80-16	0	14.1	OVB	

80-16	14.1	23.3	PGDM	
80-16	23.3	37.3	FGDM	
80-16	37.3	46.3	PGDM	
80-16	46.3	64.6	FGDM	
80-16	64.6	182.6	PDGM	
80-16	182.6	185.5	FGDM	FPGDM
80-16	185.5	187.3	QFGN	
80-16	187.3	197.8	FGDM	FPGDM
80-16	197.8	208.9	GDM	
80-16	208.9	213.1	FGDM	
80-16	213.1	220.8	GDM	
80-16	220.8	222.3	FGDM	
80-16	222.3	228	GDM	
80-16	228	228.8	QFGN	
80-16	228.8	232.6	GDM	
80-17	0	11.6	OVB	
80-17	11.6	16.4	PGDM	
80-17	16.4	21.5	FGDM	
80-17	21.5	23.2	BIO SCHL	
80-17	23.2	50.1	FGDM	
80-17	50.1	51.4	FGDM	
80-17	51.4	60.7	FGDM	
80-17	60.7	75.2	PGDM	
80-17	75.2	78	FGDM	
80-17	78	122.8	PGDM	
80-17	122.8	123.6	PEG	
80-17	123.6	211.6	PGDM	
80-17	211.6	214.1	FPGDM	
80-17	214.1	220	PGDM	
80-17	220	226.1	FPGDM	
80-17	226.1	227	BIO SCHL	
80-17	227	241.7	FGDM	
80-17	241.7	264.3	FGDM	GDM
80-17	264.3	269.2	FGDM	
80-17	269.2	370	PGDM	
80-17	370	394.8	FGDM	
80-17	394.8	426.1	PGDM	
80-21	0	12.2	OVB	
80-21	12.2	41.8	FGDM	FPGDM
80-21	41.8	91.4	PGDM	
80-20	0	24.8	OVB	
80-20	24.8	36	PGDM	
80-20	36	58.1	FGDM	
80-20	58.1	70.5	PGDM	FPGDM
80-20	70.5	118.5	FGDM	FPGDM
80-20	118.5	122.5	PGDM	FPGDM
80-18	0	30.3	OVB	
80-18	30.3	54.8	PGDM	
80-18	54.8	60.9	FGDM	
80-18	60.9	61.7	APL	

80-18	61.7	63.1	FGDM	
80-18	63.1	64.2	APL	
80-18	64.2	73.5	FGDM	FQGN
80-18	73.5	78.2	QGN	
80-18	78.2	84.4	PGDM?	QGN
80-18	84.4	108.6	FGDM	
80-18	108.6	126.2	PGDM	FPGDM
80-18	126.2	183.5	PGDM	
80-19	0	27.4	OVB	
80-19	27.4	54.6	PGDM	
80-19	54.6	58	UNK	
80-19	58	64	UNK	
80-19	64	67.1	UNK	
80-19	67.1	88.2	FGDM	
80-19	88.2	92.6	PGDM	
80-22	0	27.1	OVB	
80-22	27.1	127.8	PGDM	
80-22	127.8	128.9	PEG	
80-22	128.9	184	PGDM	
80-22	184	193.1	FGDM	FPGDM
80-22	193.1	208.8	PGDM	
80-06	0.00	11.58	OVB	
80-06	11.58	25.79	QD	
80-06	25.79	26.18	AND	
80-06	26.18	36.42	QD	
80-06	36.42	36.79	QD	
80-06	36.79	49.16	KPGD	
80-06	49.16	49.83	APL	PEG
80-06	49.83	50.44	QD	
80-06	50.44	50.54	PEG	
80-06	50.54	52.36	KPGD	
80-06	52.36	58.83	QD	
80-06	58.83	61.57	KPGD	
80-06	61.57	66.45	QD	
80-06	66.45	80.92	KPGD	
80-06	80.92	81.53	MIN	
80-06	81.53	90.01	KPGD	
80-06	90.01	90.62	MIN	
80-06	90.62	91.14	KPGD	
80-06	91.14	91.44	MIN	
80-07	0.00	6.40	OVB	

80-07	6.40	24.75	KPGD
80-07	24.75	25.24	APL
80-07	25.24	31.33	KPGD
80-07	31.33	31.49	MIN
80-07	31.49	42.73	KPGD
80-07	42.73	43.71	MD
80-07	43.71	43.86	PEG
80-07	43.86	44.56	MD
80-07	44.56	62.21	KPGD
80-07	62.21	63.12	IIN
80-07	63.12	64.77	KPGD
80-07	64.77	68.31	QD
80-07	68.31	111.56	KPGD
80-14	0.00	7.62	OVB
80-14	7.62	13.11	KPGD
80-14	13.11	17.25	QD
80-14	17.25	19.90	KPGD
80-14	19.90	26.12	QD
80-14	26.12	27.83	QD
80-14	27.83	31.24	QD
80-14	31.24	32.55	QD
80-14	31.64	31.79	APL
80-14	31.79	35.42	QD
80-14	32.55	34.81	QD
80-14	34.81	46.15	KPGD
80-14	35.42	44.93	KPGD
80-14	44.93	45.00	APL
80-14	45.00	47.43	KPGD
80-14	46.15	46.94	QD

80-14	46.94	48.46	KPGD
80-14	47.43	48.77	PEG
80-14	48.46	49.90	QD
80-14	48.77	50.75	KPGD
80-14	49.90	81.47	KPGD
80-14	50.75	50.83	MD
80-14	50.83	53.64	KPGD
80-14	53.64	53.74	MD
80-14	53.74	61.84	KPGD
80-14	61.84	61.92	MD
80-14	61.92	73.64	KPGD
80-14	73.64	75.16	MIN
80-14	75.16	80.41	KPGD
80-14	80.41	82.30	QD
80-14	82.30	85.92	KPGD
80-14	85.92	90.13	QD
80-14	90.13	90.43	MIN
80-14	90.43	94.18	KPGD
80-14	94.18	130.15	QD
80-14	94.73	118.72	QD
80-14	118.72	123.26	KPGD
80-14	123.26	130.15	KPGD
80-14	130.15	132.89	IIN
80-14	132.89	134.42	QD
80-14	134.42	134.81	IIN
80-14	134.81	142.04	QD
80-14	138.38	139.78	KPGD
80-14	139.78	142.04	KPGD
80-14	142.04	144.48	IIN
80-14	144.48	144.93	QD
80-14	144.93	145.24	IIN
80-14	145.24	154.53	QD
80-23	0.00	38.56	OVB
80-23	38.56	120.03	KPGD
80-23	120.03	123.14	QD
80-23	123.14	134.51	KPGD
80-23	134.51	150.11	QD
80-23	150.11	151.18	QD
80-23	151.18	152.31	QD
80-23	152.31	154.84	KPGD
80-23	154.84	155.63	KPGD
80-23	155.63	157.28	KPGD
80-23	157.28	164.81	QD
80-23	164.81	179.92	KPGD
80-23	179.92	180.84	BIO SCHL

80-23	180.84	185.93	KPGD	
80-24	0.00	28.04	OVB	
80-24	28.04	50.60	KPGD	
80-24	50.60	51.82	MIN	
80-24	51.82	101.13	KPGD	
80-24	101.13	107.50	KPGD	
80-24	107.50	122.99	QD	
80-24	122.99	153.01	KPGD	
80-25	0.00	19.81	OVB	
80-25	19.81	22.56	KPGD	
80-25	22.56	24.69	QD	
80-25	24.69	43.59	KPGD	
80-25	43.59	50.11	QD	
80-25	50.11	68.21	KPGD	
80-25	68.21	69.19	QD	
80-25	69.19	95.83	KPGD	
80-25	95.83	99.79	KPGD	
80-25	99.79	141.03	KPGD	
80-25	141.03	156.61	KPGD	
80-25	156.61	161.85	KPGD	
80-26	0.00	50.60	OVB	
80-26	50.60	52.12	KPGD	
80-26	52.12	52.73	KPGD	
80-26	52.73	61.57	KPGD	
80-26	61.57	62.48	APL	PEG
80-26	62.48	74.98	KPGD	
80-26	74.98	75.90	APL	PEG
80-26	75.90	88.39	KPGD	
80-26	88.39	91.44	KPGD	
80-26	91.44	94.18	KPGD	
80-26	94.18	106.07	QD	
80-26	106.07	128.63	KPGD	
80-26	128.63	132.59	KPGD	
80-26	132.59	166.12	KPGD	
80-26	166.12	168.86	QD	
80-26	168.86	195.68	KPGD	
600W	0.00	21.00	KPGD	
600W	21.00	26.00	APL	PEG
600W	26.00	30.00	KPGD	
600W	30.00	31.00	PEG	
600W	31.00	35.00	QD	
600W	35.00	37.50	KPGD	
600W	37.50	39.50	MD	
600W	39.50	57.50	KPGD	
600W	57.50	61.00	QD	
600W	61.00	64.50	KPGD	
600W	64.50	65.00	PEG	
600W	65.00	84.00	QD	
600W	84.00	95.00	KPGD	
600W	95.00	98.50	KPGD	

600W	98.50	102.50	KPGD	
600W	102.50	115.00	KPGD	
600W	115.00	130.00	KPGD	
2015-800W	0.00	20.00	QD	
2015-800W	20.00	28.00	KPGD	
2015-800W	28.00	30.00	MIN	
2015-800W	30.00	35.00	KPGD	
2015-800W	35.00	39.00	MIN	
2015-800W	39.00	52.00	KPGD	
2015-800W	52.00	53.00	APL	PEG
2015-800W	53.00	78.00	KPGD	
2015-800W	78.00	91.00	QD	
2015-800W	91.00	100.00	KPGD	
2015-800W	100.00	115.00	Monz	
2015-800W	115.00	129.50	KPGD	
2015-800W	129.50	130.00	APL	PEG
2015-800W	130.00	135.00	KPGD	
2015-800W	135.00	135.50	APL	PEG
2015-800W	135.50	139.00	KPGD	
2015-800W	139.00	140.00	APL	PEG
2015-800W	140.00	146.00	KPGD	
2015-800W	146.00	148.00	APL	PEG
2015-800W	148.00	152.00	KPGD	
2015-800W	152.00	152.40	APL	PEG
2015-800W	152.40	158.00	KPGD	
2015-800W	158.00	160.00	APL	PEG
2015-800W	160.00	168.00	KPGD	
2015-800W	168.00	169.00	KPGD	
2015-800W	169.00	180.00	KPGD	
400W	0.00	4.00	KPGD	
400W	4.00	4.50	PEG	
400W	4.50	8.00	KPGD	
400W	8.00	9.00	APL	
400W	9.00	19.50	QD	
400W	19.50	20.00	PEG	
400W	20.00	24.50	QD	
400W	24.50	25.00	APL	
400W	25.00	29.00	QD	
400W	29.00	29.50	PEG	
400W	29.50	40.00	QD	
400W	40.00	43.00	FQD	
400W	43.00	45.00	QD	
400W	45.00	47.00	BIO SCHL	
400W	47.00	47.50	APL	
400W	47.50	160.00	OVB	
1150w	0.00	7.00	QD	
1150w	8.00	21.00	FQD	
1150w	21.00	36.00	QD	
1150w	36.00	39.00	FLT	
1150w	39.00	49.00	KPGD	

1150w	49.00	53.00	FQD	
1150w	53.00	60.00	KPGD	
1150W-Ext	11.00	47.00	OVB	
1150W-Ext	47.00	55.00	KPGD	
1150W-Ext	55.00	100.00	OVB	
1150W-Ext	100.00	104.00	QD	
1150W-Ext	104.00	120.00	OVB	
1150W-Ext	120.00	123.00	QD	
1150W-Ext	123.00	135.00	FQD	
B3	0.00	19.00	BGD	FGD
B3	19.00	27.00	FGD	
B3	27.00	34.00	FGD	
B3	34.00	37.00	BGD	
B3	37.00	40.00	FGD	
B3	40.00	46.00	BGD	
B3	46.00	60.00	FGD	
B3	60.00	71.00	KPGD	
B3	71.00	76.00	BGD	
B3	76.00	81.00	PEG	
B3	81.00	106.00	KPGD	
B3Ext	0.00	5.00	FGD	
B3Ext	5.00	46.00	BGD	
B3Ext	46.00	46.50	PEG	
B3Ext	46.50	56.00	BGD	
B3Ext	56.00	69.00	OVB	
B3Ext	69.00	70.00	BGD	
B3Ext	70.00	80.00	OVB	
B3Ext	80.00	84.00	BGD	
B2	0.00	32.00	BGD	
B2	32.00	40.00	FGD	
B2	40.00	41.80	APL	
B2	41.80	53.00	BGD	FGD
B2	53.00	56.00	FGD	
B2	56.00	71.00	BGD	
B2	71.00	76.00	FGD	
B2	76.00	122.00	KPGD	
B1	0.00	10.00	KPGD	
B1	10.00	11.00	FLT	
B1	11.00	15.00	KPGD	
B1	15.00	16.50	FLT	
B1	16.50	16.70	APL	
B1	16.70	20.00	KPGD	
B1	20.00	20.20	APL	
B1	20.20	26.50	KPGD	
B1	26.50	26.80	MIN	
B1	26.80	31.00	KPGD	
B1	31.00	31.20	APL	
B1	31.20	34.00	KPGD	
B1	34.00	42.50	FGD	
B1	42.50	46.00	FLT	

B1	46.00	47.50	KPGD	
B1	47.50	47.70	PEG	
B1	47.70	50.00	KPGD	
B1	50.00	59.00	BGD	FGD
B1	59.00	71.00	FGD	
B1	71.00	72.00	APL	
B1	72.00	76.00	FGD	
B1	76.00	82.00	BGD	
B1	82.00	120.00	BGD	
7400E	0.00	0.60	BGD	
7400E	0.60	1.10	PEG	
7400E	1.10	6.50	FGD	
7400E	6.50	8.40	BGD	
7400E	8.40	9.10	FGD	
7400E	9.10	15.50	BGD	
7400E	15.50	16.50	KPGD	
7400E	16.50	18.00	FGD	
7400E	18.00	34.00	BGD	FGD
7400E	34.00	79.00	BGD	
2015H	0.00	4.00	FGD	
2015H	4.00	48.00	OVB	
2015H	48.00	52.00	FGD	
2015H	52.00	75.00	OVB	
2015H	75.00	115.00	BGD	
2015H	115.00	116.00	FLT	
2015H	116.00	118.00	BGD	

description	comments
porphyritic bio-hbl-granodiorite	
volcanic	eTCv
pegmatite	
porphyritic bio-hbl-granodiorite	
bio-hbl granodiorite	
volc-Pgdm breccia	
decomposed granodiorite	
transition zone	
weak to moderate	
siliceous dykes	not coded
weak to moderate foliation. Porphyritic at 58.8m	
3 dykes	host rock unknown
hole did not reach bedrock	
weathered	
moderate to strong	
weak to moderate	
weak	
moderate	
moderate	
sections of bio schl and apl	
few sections of wf PDGM	
weak to moderate	

weak to moderate
strong
weak to moderate
moderate
weak to moderate

moderate to strong
(diorite) gdm

weak to moderate

strong

weak to moderate fdgm with narrow gdm sections
altered
moderate

strong

weak to moderate

weak
moderate

weak

weak
strong
weak
no code given, but foliation symbol

weak to moderate

weak to moderate
weak to moderate fine grained, mafic rich

moderate to strong

moderate

moderate to strong

weak
Pgdm & gdm (?)

weak

weak to moderate

weak foliation. Mafic rich & poor bands (3-8" wide)
pinkish-white colour (pink stain or kspar assoc with fracs)
moderate to strong

weak to moderate

weak

weak to moderate

moderate to strong

pale pink, spar rich with lt green blotches (chl?). Qtz varies from 20% at top of sect to 10% at base
composition ~ 80% spar, 15% qtz, 5% chl (& ser?). Orange coloured spars (Kspar?)
moderate

strong

not clear what lithology

moderate

weak
moderate to strong
weak

moderate to strong. Few narrow sections of QFBGN.

strong
Cloudy spar phenos through most of section.
siliceous (dk grey qtz to 80%)

pgdm? Texture becomes unregognisable.	
weak	
moderate. A few narrow sections of FQGN with abundant (+/- 10%) py.	
porphyritix texture is apparent in places.	
weak	
moderate	
moderate	
weak	GDM-WFGDM
both ?	
weak	GDM-WFGDM
moderate	
weak to moderate	
weak to moderate	
pale green orange gouge?	no rock type listed
moderate	
breccia - qtz grains in fg matrix.	
weak	
brecciated (white clay)	
weak	
strong	

moderate

moderate

moderate. mfPgdm sections

moderate. mfPgdm sections

weak to moderate

weak

weak
strong
moderate

weak

weak

moderate to strong
weak. Fine grained dark coloured (mafic rich). Numerous siliceous-felsic bands (med grained)
weak to moderate
269.2-273.2 gradational contact zone.
weak to moderate

weak to strong

weak to moderate
wfPGDM in sections
weak

weak to moderate

weak to moderate

weak to moderate fqgn-qgn sections

weak to moderate

few sections wfPgdm

white clay with feathery hem stringers
qtz and kspar pebbles in whitish clay (65% core recovery)
sand lim stained kspar & qtz gramins (15% core recovery)
weak to moderate
gradational contact

peg dykes

wfgdm-wfPgdm

Overburden, no recovery

Hbl-Bio Qtz Diorite - mg (1-2 mm), equigranular, mafics = 5%, Hbl>Bio (Bio partly chl alt), felsics Q<5%, K$\leq$10%, P$\geq$ 75% -- Diorite. Mal 1-2% along foliation, few kspar and hem veinlets
Hbl-Bio Andesite dyke, weak plag porph
Equi Qtz Diorite (mg)
FG Qtz Dio

Kspar Porphyritic Granodiorite - mg (2-4 mm), kspr porphyritic, mafics =20%, Hbl=Bio (Bio partly chl alt), felsics: Q=25%, K=15%, P=60% (incl kspar phenos) -- Granodiorite.
Aplite/Pegmatite
Qtz Diorite
Pegmatite
Kspar Porphyritic Granodiorite -contact irreg, marked blast kspar phenos, sharp?
Qtz Diorite
Kspr Porph Granodiorite
Qtz Diorite
Kspr Porph Granodiorite
Mafic Dyke - faulted; faultingyounger than dyking
Kspar Porph Granodiorite
Mafic Dyke
Kspr Porph Granodiorite
Mafic Dyke
Overburden, no recovery

Kspr Porphyritic Granodiorite - mg (2-4mm), porphyritic (kspar 5-20 mm, avg 10 mm), unfoliated, mafics=30%, Hbl=Bio, Hbl 2-3 mm, euhedral to subhedral, Chl + Ep alt on margins, Bio ≤ 1mm anhedral, partly replace Hbl?, flesics: Q=20%, K=25%, P=55% -- Granodiorite - heavy depend on pheno [ ]

Aplite

Kspr Porphyritic Granodiorite - as in 6.40 m to 24.75 m

Mafic Dyke - fg, intermediate to mafic, Qtz eyes? Pale green (Ep alt?)

Kspr Porphyritic Granodiorite - as in 6.40 m to 24.75 m, malachite at 35.05 to 38.10

Microdiorite - fg (≤ 1 mm), equigranular, weakly fol, mag replacing mafics. Upper contact is sharp, intrusive contact

Pegmatite

Microdiorite - as in 42.73 to 43.71 m

Kspar Porphyritic Granodiorite - same as intervals above. Upper contact banded to nearly gneissic at 20 deg TCA

Intermediate Dyke

Kspar Porphyritic Granodiorite,. Same as intervals above

Qtz Diorite. Mg (1-2 mm), foliated, equigranular. Mafics=30%, Bio>>Hbl. Felsics: Q=15%, K=10%, P=75% -- Qtz Diorite

Kspr Porphyritic Granodiorite - same as intervals above, from 76.2 m to 99.06 m pegmatite swarm averaging 1 per 1.5 m 1 cm to 60 cm wide

Kspr Porphyritic Granodiorite

Qtz Diorite - mg (1-2mm) equigranular, weakly foliated (~70 TCA), mafics = 25% Bio>Hbl (Bio ~ 1mm anhedral & partly replacing Hbl, Hbl 1-2 mm, few fresh, most replaced by Bio), Felsics: Q=25%, K<10%, P>65% -- Qtz Diorite. At 27.83 m decrease to <5% mafics

Aplite

Qtz Diorite - as above

Kspr Porphyritic Granodiorite - mg (2-4 mm) porphyritic, unfoliated, mafics=15%, hbl>Bio (Hbl <1 to 3 mm, anhedral to euhedral, chl + Ep alt on rims, some Bio replacement)

Aplite

Kspr Porphyritic Granodiorite - same as above, at 45.72 gradual transition over 1 m from unfol to weakly foliated als drop in pheno abundance

Granitic Pegmatite

Kspr Porphyritic Granodiorite - same as above. Foliation gone at 47.85 m.

Microdiorite
Kspr Porphyritic Granodiorite - same as above.
Microdiorite
Kspr Porphyritic Granodiorite - same as above.
Microdiorite
Kspr Porphyritic Granodiorite - same as above.
Mafic Dyke
Kspr Porphyritic Granodiorite - same as above.
Qtz Diorite - dissem cpy
Kspr Porphyritic Granodiorite - foliation gradually increses at 87.78 m to moderate foliation over 2 mm and reduces gradually over 2 m at 91.44 m. At 98.45 m to 113.69 m have gradual increase of Bn and Cpy and from 110.64 sulphides replacing mafics.

Mafic Dyke
Kspr Porphyritic Granodiorite - same as above.
Qtz Diorite

Intermediate Dyke
Qtz Diorite
Intermediate Dyke - red - brown, Carmacks Group?
Qtz Diorite

Intermediate Dyke
Qtz Diorite
Intermediate Dyke
Qtz Diorite

Kspr Porphyritic Granodiorite
Aplite/Pegmatite
Kspr Porphyritic Granodiorite
Pegmatite
Qtz Diorite
Kspr Porphyritic Granodiorite
microdiorite
Kspr Porphyritic Granodiorite
Qtz Diorite
Kspr Porphyritic Granodiorite
Pegmatite
Qtz Diorite
Kspr Porphyritic Granodiorite
Kspr Porphyritic Granodiorite

Kspr Porphyritic Granodiorite
Kspr Porphyritic Granodiorite
Kspr Porphyritic Granodiorite
Qtz Diorite
Kspr Porphyritic Granodiorite
Mafic Dykes
Kspr Porphyritic Granodiorite
Mafic Dykes
Kspr Porphyritic Granodiorite
Aplite/Pegmatite
Kspr Porphyritic Granodiorite
Qtz Diorite
Kspr Porphyritic Granodiorite
Monzonite
Kspr Porphyritic Granodiorite
Aplite/Pegmatite
Kspr Porphyritic Granodiorite
Aplite/Pegmatite
Kspr Porphyritic Granodiorite
Aplite/Pegmatite
Kspr Porphyritic Granodiorite
Aplite/Pegmatite
Kspr Porphyritic Granodiorite
Aplite/Pegmatite
Kspr Porphyritic Granodiorite
Aplite/Pegmatite
Kspr Porphyritic Granodiorite
Foliated Biotite rich
Kspr Porphyritic Granodiorite

UKHm maps as foliated, shallow reef seen in floor of trench.

increased bio at 7 m

fault or contact or alteration

Hole_ID	From_m	To_m	Min1	Min1_pct	Min1_occu	Min2	Min2_pct	Min2_occu	Min3
80-27	179	179.1	pyr		diss				
80-27	181	181.1	pyr		diss				
80-27	187.9	188	pyr		diss				
80-1	43.3	47.5	cp	0.01	diss	lim		veinlets	
80-1	59.9	60	mal			qtz			
80-1	62	62.1	bn		vein	mal		vein	bn
80-3	30	30.1	mal						
80-3	103.7	104.3	mal	0.01					
80-4	25.8	25.9	mal		fracs				
80-4	27	31.2	mal			az			pyr
80-4	33.5	33.6	mal	0.01					
80-4	42.5	48.3	mal			cpy			mt
80-4	52.8	52.9	mal						
80-4	59	59.1	mal						
80-4	67.3	93.1	mal		diss				
80-5	56.1	59.5	mal	0.01	fracs				
80-5	61	63.3	mal						
80-5	80	85.7	mal	0.01		cpy	0.01		
80-5	108.2	109.5	pyr	0.01		cpy	0.01		
80-5	113.1	116.8	mal			cpy			
80-5	119.6	121.1	mal			cpy			
80-6	11.6	11.7	mal						
80-6	11.7	36	pyr	0.01		cpy	0.01		moly
80-7	26.4	29.3	mal		diss	pyr	0.01		
80-7	64.3	71	mal		diss	cpy	0.01		
80-8	41.7	41.8	mal		fracs				
80-8	44.5	60.8	cpy		diss				
80-8	106.8	106.9	cpy	0.01					
80-15	18.8	23.7	mal		diss	cpy	0.01		
80-15	27.9	36.3	mal		diss	cpy			
80-15	36.3	39.2	mal		diss				
80-15	78.4	78.5	cpy		diss	bn		diss	
80-15	78.4	94.3	cpy		diss	bn		diss	
80-15	141.2	143	cpy	0.01					
80-15	156.1	156.2	cpy			bn			
80-15	166.4	175.1	cpy			bn			
80-10	52.7	54.2	cpy			mal			
80-10	75.1	79.5	cpy			mal			
80-9	93	93.1	cpy			bn			
80-11	57.4	70.1	pyr			cpy			mal
80-11	181.5	183.4	cpy			bn			
80-13	54.8	56.4	mal			cpy	0.01		pyr
80-13	74.8	75.6	mal						
80-13	96.5	108.3	mal			cpy			
80-13	123.1	125	cpy	0.01		pyr	0.01		
80-13	125	125.025	gn						

80-13	125.025	126.7	cpy	0.01		pyr	0.01		
80-13	132.6	140.5	cpy	0.01		mt	0.01		
80-12	100	110.6	bn	0.01	diss				
80-12	130.6	132.9	sul	0.01					
80-12	142.2	153.8	bn		diss	cpy			
80-12	158.6	160.3	bn		diss				
80-14	17.3	20.4	mal		fracs	az		fracs	
80-14	20.4	26.6	cpy		diss	bn		diss	
80-14	28.2	35.2	bn		diss	cpy		diss	
80-14	85.7	91.7	cp		diss				
80-14	124	12.1	gn	0.01					
80-16	25.4	25.5	mal						
80-16	46.3	64.6	mal		fol				
80-16	216.8	220.8	bn		diss	cpy		diss	
80-17	51.4	60.7	cpy	0.01	diss	pyr	0.01	diss	mte
80-17	75.2	78	cpy	0.01					
80-17	228	228.02	mte	30	band	pyr	30	band	cpy
80-17	228.02	241.7	cpy		diss				
80-17	244.7	244.8	pyr						
80-17	244.8	253.9	pyr	0.01		cpy	0.01		
80-17	264.3	269.2	pyr			cpy			
80-17	346	346.1	mte	0.01		pyr	0.01		cpy
80-17	370	394.8	cpy			pyr			
80-21	12.2	41.8	mte	0.01		pyr	0.01		cpy
80-21	78.7	78.71	pyr	0.01	fracs				
80-20	36	58.1	sul		foliation				
80-20	101.7	101.71	gn		vein				
80-18	54.8	60.9	mal			bn			
80-18	61.7	63.1	cpy						
80-18	64.2	73.5	sul?						
80-18	73.5	84.4	bn			cpy			
80-19	58	64	gn						
80-19	58	64	gn		blebs				
80-19	77.1	88.2	mte						
80-19	89.3	92.6	mte						
80-22	184	193.1	cpy		diss	bn		rims	
80-22									
80-22									
80-22									
80-22									
80-22									

Min3_pct	Min3_occu	Min4	Min4_pct	Min4_occu	description	comments
					trace cp di:	trace=.01%
	vein	mt		vein	qtz vein	no width given
0.01						
		pyr				
0.01						
					mal also along fracs	
					mal also on fracs	
					mal also on fracs	
					bn(?). Both mins in felsic band.	
					bn described as black specks	
					bn as black specsk and rims on cpy grains	
					few narrow sections of FQGN with aboundant (+/- 10% p	
					cpy +/- bn rims define foliation	
					(+/- pyr)	
					galena in 0.5" qtz vein	

				black specks
				black specks, bn?
				diss black specs (bn). Some fresh cpy and bn grains, bn ri
				black specks (bn?)
				both also diss
				mafics? To 100% bn and cpy
				gn?
				mal along foliation
0.01				
	band			1" felsic ba vein?
				pyr +/- cpy
				tr mte, pyr +/- cp, gypsum
0.01		mal	fracs	minor mal of fracs
				sulphide define foliation. Mafics to 60-100% sulphides.
				galena in qtz vein
				cpy+/- bn(as black rims on cpy & individual grains) dissem

yr)

ms on cpy grains. Black specks and sulphides define foliation in places.

n along foliation

Hole_ID	From_m	To_m	structure1	structure2	foliation_ir	description	comments	relogger	relog_date
80-27	55	55.05	gouge			0.5" epi gouge			
80-27	76	76.1	bio schl						
80-27	109	109.1	gouge						
80-01	12	12.1	bio schl						
80-01	43.3	47.5	gneiss		7				
80-01	47.5	62	foliation		3	weak to moderate			
80-01	62	65.9	foliation		2	weakly foliated porphyritic			
80-03	21.7	21.8	bio schl						
80-03	26.7	38.3	foliation		5	moderate to strong			
80-03	42.2	45.5	foliation		3	weak to moderate			
80-03	46.2	51.6	foliation		2	weak			
80-03	51.6	56.9	foliation		4	moderate			
80-03	57.5	61.8	foliation		4	moderate			
80-03	70.2	71.4	foliation		1				
80-03	76.3	77	foliation		1				
80-03	83.2	83.3	bio schl						
80-03	89.6	102.7	foliation		2	weak	few sections of wfPdgm		
80-03	102.7	104.3	gneiss		7				
80-03	120.3	120.4	bio schl						
80-03	122.6	122.7	bio schl						
80-03	132.4	132.5	bio schl						
80-03	129.6	132.4	foliation		3	weak to moderate			
80-03	132.5	135.3	foliation		6	strong			
80-27	135.3	141.7	foliation		2	weak			
80-27	141.7	148.2	foliation		6	strong			
80-27	148.2	152.4	foliation		4	moderate			
80-27	152.4	152.5	gneiss		7				
80-27	152.5	156.6	foliation		3	weak to moderate			
80-27	156.6	158.1	gneiss		4	moderate foliation			
80-27	158.1	162	foliation		2	weak			
80-27	162	167.64	foliation		4	moderate			
80-04	13.9	15.3	foliation		5	moderate to strong			
80-04	27	31.2	foliation		3	weak to moderate			
80-04	35.5	35.6	foliation		6	strong			
80-04	42.5	48.3	foliation		6	strong			
80-04	52.8	65.5	foliation		3	weak to mo	with narrow gdm sections		
80-04	67.3	93.1	foliation		4	moderate			
80-04	99.8	99.9	foliation						
80-04	120.5	120.7	gouge						
80-05	7.62	9.1	foliation		4	moderate			
80-05	21.9	25.2	foliation		2	weak			
80-05	56.1	59.5	foliation		3	weak to moderate			
80-05	61	63.3	foliation		2	weak			
80-05	63.7	65.8	foliation		4	moderate			
80-05	80	85.7	foliation		2	weak			
80-05	106.4	108.2	foliation		2	weak			

80-05	108.2	109.5	foliation		6	strong	
80-05	109.5	111.2	foliation		2	weak	
80-05	113.1	116.8	foliation				no code provided
80-05	119.6	121.1	foliation		3	weak to moderate	
80-05	125.1	151.8	foliation		3	weak to moderate	
80-06	11.6	36	foliation		3	weak to moderate	
80-06	53	58.9	foliation		3	weak to moderate	
80-07	26.4	29.3	foliation		6	strong	
80-07	30.2	30.7	foliation		6	strong	
80-07	33	40.3	foliation		6	strong	
80-07	47.3	47.4	gneiss		7	qfbgn	first letter looks more like a g
80-07	55.6	55.7	bio schl				
80-07	64.3	71	foliation		5	moderate to strong	
80-07	93.6	93.7	foliation		6	strong	
80-08	19.4	21.6	foliation		5	moderate to strong	
80-08	39.6	40.8	foliation		4	moderate	
80-08	41.7	42.4	foliation		1		
80-08	44.5	60.8	foliation		4	moderate t	also narrow gouge zones
80-08	102.1	110.8	foliation		2	weak	
80-15	18.8	23.7	foliation		3	weak to moderate	
80-15	27.9	36.3	foliation		5	moderate to strong	
80-15	36.3	39.2	foliation		2	weak	
80-15	51.4	52.7	bio schl				
80-15	108.3	109.5	foliation		3	weak to moderate	
80-15	109.5	114.2	gouge			numerous narrow gouge zones and fracs.	
80-15	114.2	15	foliation		2	weak	
80-15	141.2	143	foliation		3	weak to moderate	
80-15	146	147.6	foliation		5	moderate to strong	
80-15	166.4	175.1	gneiss		7		
80-15	175.1	176.1	foliation		4	moderate	
80-15	176.1	178.1	gneiss		7		
80-15	178.1	183.3	foliation		6	strong	
80-10	29.5	33.8	foliation		4	moderate	
80-10	38.6	52.7	gouge			few narrow gouge zones	
80-10	52.7	54.2	foliation		5	moderate to strong	
80-10	54.2	75.1	foliation		2	weak	
80-10	75.1	79.5	foliation	gneiss	6	strong	
80-10	106	125	foliation	gneiss	5	moderate to strong	
80-09	40.9	51.8	foliation	gneiss	6	strong	
80-09	51.8	57.3	gneiss		7		
80-09	57.3	60.4	gneiss		7		
80-09	60.4	60.45	contact			sheared	
80-09	60.4	90.1	gouge			numerous clay/gouge zones	
80-11	47.8	49.2	foliation		2	weak	
80-11	57.4	70.1	foliation	gneiss	4	moderate	
80-11	87.3	108.9	gouge			narrow gouge zones	
80-11	108.9	172.1	gouge			many narrow gouge zones	

80-11	179.2	181.5	foliation		2	weak	
80-11	181.5	183.4	gneiss		7		
80-11	183.4	185.8	foliation		4	moderate	
80-11	185.8	189.8	gneiss		7		
80-11	189.9	192.6	foliation	gouge	4	moderate	narrow section of pale green clay
80-11	192.6	198.2	gneiss		7		
80-13	16.9	54.8	gouge			narrow gouge zones	
80-13	62.6	96.5	gouge			stronglyh altered with numerous gouge zones	
80-13	111.9	115.8	gouge			several narrow gouge zones	
80-13	126.7	132.6	gouge			several gouge zones	
80-12	54.3	55.9	breccia			qtz grains in fg matrix	
80-12	55.9	86	gouge			many gouge zones	
80-12	110.6	126.1	gouge			many gouge zones	
80-12	141.7	142.2	breccia			white clay	
80-14	14.1	20.4	foliation		4	moderate	
80-14	20.4	26.6	foliation		6	strong	
80-14	26.6	35.2	gneiss		7		
80-14	46.4	47.4	foliation		3	weak-moderate	
80-14	48.5	50	foliation		2	weak	
80-14	55	55.1	bio schl				
80-14	55.1	81.1	gouge			many gouge zones	
80-14	81.1	82	foliation		2	weak	
80-14	85.7	118	foliation		3	weak to moderate	
80-16	23.3	37.3	foliation		4	moderate	
80-16	46.3	64.6	foliation		4	moderate	
80-16	64.6	182.6	foliation	gouge	2	weak	(+/- wfgdm)
80-16	182.6	186.6	foliation		4	moderate	
80-16	186.6	187.3	gneiss		7		
80-16	187.3	197.8	foliation		4	moderate	
80-16	208.9	213.1	foliation		3	weak to moderate	
80-16	220.8	222.3	foliation				
80-16	225.1	226	gneiss		7		
80-16	226.5	227	gneiss		7		
80-16	228	228.8	gneiss		7		
80-17	16.4	21.5	foliation		2	weak	
80-17	21.5	23.2	bio schl				
80-17	50.1	51.4	foliation		2	weak	
80-17	51.4	60.7	foliation		4	moderate	
80-17	75.2	78	foliation		2	weak	
80-17	78	60.7	gouge			narrow gouge zones	
80-17	91.8	122.8	gouge			numerous fracs or gouge zones	
80-17	152.8	211.6	gouge			fracs or narrow gouge zones	
80-17	211.6	214.1	foliation		2	weak	
80-17	220	226.1	foliation		2	weak	
80-17	226.1	227	bio schl				
80-17	227	241.7	foliation		5	moderate to strong	
80-17	241.7	264.3	foliation		2	weak	

80-17	264.3	269.2	foliation	3	weak to moderate
80-17	269.2	273.2	contact		gradational contact zone
80-17	273.2	331	gouge		many fracs & narrow gouge zones
80-17	370	394.8	foliation	3	weak to moderate
80-21	12.2	41.8	foliation	1	weak to strong
80-21	86.1	86.2	contact		dark grey siliceous band
80-20	36	58.1	foliation	3	weak to moderate
80-20	58.1	70.5	foliation	1	sections of weak foliation
80-20	70.5	118.5	foliation	2	weak
80-20	118.5	122.56	foliation	1	sections of weak foliation
80-18	54.8	73.5	foliation	3	weak to moderate
80-18	84.4	108.6	foliation	3	weak to moderate
80-18	108.6	126.2	foliation	1	sections of weak foliation
80-19	54.6	64	gouge		white clay
80-19	64	67.1	sand		15% core recovery
80-19	67.1	88.2	foliation	3	weak to moderate
80-19	88.2	89.3	contact		gradational contact zone
80-22	184	193.1	foliation	2	weak

(gouge)

;

trench	XRF reading location (m)	Depth_cm	Material	XRFCuppm	XRF reading #
600w	0		rock	163	130
600w	5		rock	85	136
600w	10		rock	197	139
600w	15		rock	922	141
600w	20		rock	317	143
600w	25		rock	925	144
600w	30		rock	51	145
600w	35		rock	115	146
600w	40		rock	96	147
600w	45		rock	79	148
600w	50		rock	0	149
600w	55		rock	0	149
600w	60		rock	1404	152
600w	65		rock	10800	153
600w	70		rock	3079	155
600w	75		rock	1272	156
600w	80		rock	996	157
600w	85		rock	1570	158
600w	90		rock	258	159
600w	95		rock	310	160
600w	100		rock	685	161
600w	105		rock	204	164
600w	110		rock	0	166
600w	115		rock	0	168
600w	120		rock	0	169
600w	125		rock	0	170
2015-800w	0		rock	323	172
2015-800w	5		rock	2125	173
2015-800w	10		rock	992	174
2015-800w	15		rock	55	175
2015-800w	20		rock	0	176
2015-800w	25		rock	0	177
2015-800w	30		rock	0	179
2015-800w	35		rock	0	181
2015-800w	40		rock	0	182
2015-800w	45		rock	0	183
2015-800w	50		rock	0	184
2015-800w	55		rock	0	185
2015-800w	60		rock	0	186
2015-800w	65		rock	0	187
2015-800w	70		rock	0	188
2015-800w	75		rock	0	189
2015-800w	80		rock	0	190

2015-800w	85		rock	3969	191
2015-800w	90		rock	1190	195
2015-800w	95		rock	85	196
2015-800w	100		rock	0	197
2015-800w	105		rock	0	198
2015-800w	110		rock	0	199
2015-800w	115		rock	0	200
2015-800w	120		rock	0	201
2015-800w	125		rock	0	202
2015-800w	130		rock	0	203
2015-800w	135		rock	0	204
2015-800w	140		rock	0	205
2015-800w	145		rock	0	206
2015-800w	150		rock	0	207
2015-800w	155		rock	0	208
2015-800w	160		rock	1284	209
2015-800w	165		rock	0	213
2015-800w	170		rock	0	214
2015-800w	175		rock	0	215
2015-800w	180		rock	0	216
1150W-Ext	0		rock	79	241
1150W-Ext	5		rock	1641	240
1150W-Ext	10		rock	455	239
1150W-Ext	45		rock	0	238
1150W-Ext	50		rock	0	236
1150W-Ext	55		rock	0	237
1150W-Ext	104		rock	0	270
1150W-Ext	120		rock	0	271
1150W-Ext	125		rock	0	272
1150W-Ext	130		rock	5304	273
1150W-Ext	135		rock	2050	274
1150W	5		rock	0	245
1150W	10		rock	726	247
1150W	15		rock	210	248
1150W	20		rock	540	249
1150W	25		rock	189	250
1150W	30		rock	0	251
1150W	35		rock	368	255
1150W	40		rock	0	261

1150W	45		rock	0	262
1150W	50		rock	0	263
1150W	55		rock	0	264
B1	0		rock	0	287
B1	5		rock	0	288
B1	10		rock	0	290
B1	15		rock	0	293
B1	25		rock	0	294
B1	30		rock	0	295
B1	35		rock	0	296
B1	40		rock	0	297
B1	43		rock	2344	298
B1	45		rock	444	299
B1	50		rock	0	300
B1	55		rock	0	301
B1	60		rock	1300	302
B1	65		rock	792	303
B1	70		rock	81	304
B1	76		rock	407	305
B1	80		rock	0	306
B1	85		rock	81	307
1400E-N	10	100	rock	0	67
1400E-N	30	100	rock	0	71
1400E-N	40	90	rock	0	74
1400E-N	50	150	rock	221	76
1400E-N	60	150	rock	69	79
1400E-N	70	150	rock	92	81
1400E-N	80	60	rock	0	83
1400E-N	90	100	rock	0	85
1400E-N	100	80	rock	0	87
1400E-S	10	120	rock	0	90
1400E-S	20	100	rock	0	93
1400E-S	30	110	rock	0	96
1400E-S	40	150	rock	0	98
1400E-S	50	120	rock	32	101
1400E-S	60	150	rock	0	105
1400E-S	70	250	rock	52	107
1400E-N	20	100	rock	0	69
600w	130		rock?	0	171
400W	0		rock	105	330
400W	5		rock	45	331
400W	10		rock	34	332
400W	15		rock	55	333

400W	20		rock	85	334
400W	25		rock	93	335
400W	30		rock	232	336
400W	35		rock	406	338
400W	40		rock wall	1035	341
400W	40		rock floor	488	342
400W	45		rock	677	339
400W	47		rock	460	344
2015C	5		rock	0	351
2015C	10		rock	121	355
2015C	15		rock	919	356
2015C	20		rock	0	357
2015C	25		rock	0	358 or 359
2015C	30		rock	0	360
2015C	35		rock	0	361
2015C	40		rock	0	363
2015C	45		rock	0	367
2015C	50		roc k	0	368
2015C	55		rock	0	370
2015C	60		rock	0	371
2015C	64		rock	0	372
7400E	0		rock	413	376
7400E	5		rock	54	377
7400E	10		rock	0	380
7400E	15		rock	1548	381
7400E	18		rock	278	382
B3Ext	0		rock	123	410
B3Ext	5		rock	0	
B3Ext	10		rock	0	
B3Ext	15		rock	0	
B3Ext	20		rock	0	416
B3Ext	25		rock	0	419
B3Ext	30		rock	0	421
B3Ext	35		rock	0	
B3Ext	40		rock	0	
B3Ext	45		rock	0	426
B3Ext	50		rock	69	427
B3Ext	55		ovb or rock	0	

B3Ext	69		rock	0	
B3Ext	80		rock	0	
B3Ext	84		rock	0	
2015H	0		rock	0	455
2015H	4		rock	0	456
2015H	50		rock	0	457
2015H	75		rock/ovb	370	470
2015H	80		rock	146	471
2015H	85		rock	0	475
2015H	90		rock	0	476
2015H	95		rock	0	477
2015H	100		rock	0	506
2015H	105		rock	0	507
2015H	110		rock	0	509
2015H	115		rock	0	510
2015H	118		rock	0	512

description	Easting_NAD83_Z8	Northing_NAD83_Z8	mag susc	mag susc n
granodiorite	404491	6921826		
granodiorite	404487	6921823		
granodiorite	404482	6921821		
granodiorite	404479	6921819		
pegmatite under granodirite rubble	404473	6921817		
reduced readings to 90 sec	404470	6921814		
pegmatite, lots of kspar	404464	6921812		
granodiorite grus	404461	6921810		
	404455	6921808		
	404451	6921805		
	404447	6921803		
	404442	6921800		
granodiorite with lots of biotite	404438	6921799		
foliated with malachite	404433	6921796		
reading on weakly foliated rock adjacent to malachite	404429	6921794		
reading perpendicular to mal on foliation	404424	6921791		
biotite rich granodiorite with malachite specks	404420	6921789		
	404415	6921787		
	404411	6921785		
	404407	6921782		
green alteration zone	404402	6921780		
rotten Porphyritic granodiorite	404398	6921778		
rotten porphyritic granodiorite (altered?)	404393	6921776		
yellow brown, rotten granodiorite	404389	6921773		
rotten bedrock mixed with overburden	404384	6921771		
rotten bedrock mixed with overburden	404380	6921769		
	404436	6921881		
biotite	404432	6921878		
foliated, biotite, malachite specks	404427	6921876		
granodiorite with biotite	404423	6921873		
	404419	6921871		
crumbly granodiorite	404415	6921867		
	404410	6921865		
	404406	6921862		
	404402	6921860		
	404398	6921857		
biotite rich granodiorite	404393	6921855		
crumbled granodiorite, limonite	404389	6921852		
crumbled granodiorite, limonite	404385	6921850		
silicified granodiorite, fine-med grained	404381	6921847		
brown clay - fault gouge	404376	6921845		
	404372	6921842		
	404368	6921839		

green altered granodiorite, limionite, hemaetite, malachite. Reef of foliated granodiorte at 83m	404364	6921836		
weakly foliated granodiorite with malachite specks	404359	6921834		
crumbled granodiorte, minor limonite	404355	6921831		
crumbled granodiorite, argillic	404351	6921829		
chlorite and hemaetite altered granodiorite	404346	6921826		
black stained granodiorite?	404342	6921824		
clay altered granodiorite	404338	6921821		
clay altered granodiorite	404334	6921819		
crumbled granodiorite, hemaetite staining	404329	6921816		
crumbled granodiorte. Porphyrytic?	404325	6921813		
crumbled granodiorite	404321	6921810		
crumbed, yellow-brown granodiorite by felsic dyke	404316	6921808		
crumbled granodiorte, limonite stain	404312	6921805		
granodiorite, no staining	404308	6921803		
granodiorite, minor limonite	404304	6921800		
granodiorite, incerased biotite, small seam, no malachite visible, foliated	404299	6921798		
granodiorite, crumbly, limonite stained	404295	6921795		
crumbly, minor limonite	404291	6921793		
crumbly, minor limonite	404287	6921790		
crumbly, no staining	404282	6921787		
	404270	6921907	1.51	2-4.5
	404275	6921906	0.75	4.5-5.8
	404280	6921905		
could be rock or push pile	404309	6921921		
kspar granite	404312	6921924		
kspar granite	404314	6921929		
105m station is buried	404357	6921954		
rotten diorite? Hard to tell. 105-120m permafrost	404371	6921962		
foliated, silicified diorite with malachite along fractures	404375	6921965		
	404379	6921967		
	404383	6921970		
equigranular qtz diorite	404266	6921905		
foliated qtz diorite	404261	6921902		
foliated diorite? More kspar around in veins, fracture coatings	404257	6921899		
weakly foliated	404253	6921897		
shattered qtz diorite	404249	6921894		
equigranular qtz diorite	404244	6921892		
equigranular qtz diorite	404240	6921889		
kspar granite	404236	6921886		

kspar granite	404232	6921883
weakly foliated diorite	404227	6921881
kspar granite	404223	6921878
kspar granite	406164	6919360
kspar granite	406161	6919356
kspar granite	406158	6919353
	406155	6919348
	406149	6919341
	406145	6919337
	406142	6919333
	406139	6919329
	406137	6919327
	406136	6919325
	406133	6919322
	406130	6919318
sampled 2013	406126	6919314
	406123	6919310
	406120	6919306
	406116	6919302
	406113	6919299
boulder past end of fresh digging	406111	6919295
bedrock starting to firm up, blocky	404922	6921377
weathered granite below loose C horizon	404940	6921386
weathered granite	404948	6921391
weakly foliated mafic granitic rock outcrop	404957	6921395
weakly foliated granodioritic outcrop	404966	6921400
weakly foliated gd outcrop	404975	6921405
weathered granitic rock subcrop	404984	6921409
weathered gd outcrop	404993	6921414
weathered gd outcrop	405002	6921418
weathered gd outcrop	404904	6921368
weathred gd outcrop	404895	6921364
weathered gd outcrop	404886	6921359
weathered gd, more mafic	404877	6921355
weathered gd, limonitic	404868	6921350
pegmatite subcrop/float, round boulder in soil above	404859	6921346
grd subcrop/float, fresh	404850	6921341
	404931	6921382
	404375	6921769
kspar porphyritic grn grus. Seems to contain more mica than normal, kspar phenos not large.	404505	6921776
Same as 0m but with larger kspar phenos.	404501	6921773
kspar gran grus. Phenos obvious, stiull abundant mica.	404496	6921771
qt diorite or kspar grn? Increased bio, no obvious phenos. Grus	404492	6921768

Qtz dio? But a few small phenos (maybe plag). Grus. Peg dyke 10cm above reading location.	404488	6921766
qtz diorite ? Grus, with <10cm wide aplites. Poss phenos or pieces of aplite.	404483	6921763
Weathered grus. Difficult to tell if diorite or grn. Peg at 29m.	404479	6921761
qtz diorite? Grus. Lim stained.	404475	6921758
soil mixed with rock? Qtz diorite	404470	6921756
floor slightly raised (subdued reef). Qtz diorite.	404470	6921756
Bio schlieren? Foliated, friable, abundant bio, 1.5-2.0m wide. Other possis that it is a foliated diorite dyke.	404466	6921753
Foliated qtz dio with lots of biotite.	404464	6921752
kspar grn	404743	6921707
qtz diorite	404747	6921709
fractured qtz diorite with lim. Increase in bio, rextallized qtz.	404752	6921711
qtz dio? Abundant lim.	404756	6921713
qtz diorite. Rextallized qtz, abundant bio.	404761	6921716
29-30.5m, diorite dyke. Fine grained, dark grey, sharp cotact with qtz dio.	404765	6921718
qtz diorite	404770	6921720
kspar grn reef	404774	6921722
kspar grn	404779	6921724
kspar grn.	404783	6921726
kspar grn	404792	6921730
kspar grn	404796	6921732
kspar grn	404796	6921732
rotten qtz diorite. Hem and lim.	406192	6919260
qtz diorite. Magnetite	406189	6919256
magnetite.	406186	6919252
	406183	6919248
end of dug out section.	406181	6919246
o/c of diorite with weak foliation.	405979	6919467
friable qtz diorite with minor lim and hem.	405982	6919471
friable and weathered qtz diorite. Aplite above.	405986	6919474
qtz diorite	405989	6919478
qtz diorite	405992	6919482
qtz diorite with plag phenos	405996	6919486
friable qtz diorite	405999	6919489
qtz diorite	406002	6919493
friable qtz diorite	406006	6919497
friable qtz diorite	406009	6919500
qtz diorite	406012	6919504
overburden or rotten o/c	406016	6919508

qtz diorite	406026	6919519
friable qtz diorite	406032	6919527
friable qtz diorite	406035	6919530
	406102	6919374
	406099	6919370
qtz diorite, weak foliation	406070	6919335
rotten qtz diorite?	406055	6919316
	406501	6919312
	406048	6919308
	406045	6919304
qtz dio with kspar phenos? Or kspar grn with too many mafics?	406042	6919300
	406039	6919297
kspar grn or kspar dio?	406036	6919293
qtz diorite?	406032	6919289
fault or clay alteration	406031	6919287
qtz diorite. End of trench.	406030	6919286

n

Progress Report

Date	20-Sep	21-Sep	22-Sep	23-Sep	24-S
Activity			Deb to Whitehorse. Arrived 2:30 om. Visit with Scott Casselman.	Prepping for STU. Working on dril database.	Mobbed in Left Whitel 2:30 pm.
Soil Samples					
Rock Samples					

ep	25-Sep	26-Sep	27-Sep	28-Sep	29-
to STU. horse at	In camp until 2pm. Put lathe around wall tent, set up woodstove, collected firewood, moved gear from trailer, brought stuff from Landing Zone. From 2-5pm in Trench 400W digging for outcrop. Showed Howard	In camp until after lunch. Collected firewood, made trip to Landing Zone. Worked in 400 W trench. Ran XRf survey, mapped and samp;led from 35-48m. Moved onto 8+00W, did quick check with XRF then sampled.	In camp until 10:00 a.m. Collected firewood, burnt garbage, etc. Bill and Peter arrived at 10:00 for a brief property visit. Toured Peter to the A Zone then he and Bill rushed back so Peter could catch a flight. Switched quads with	Deb and Howard in B Zone. Trenches B3Ext, 2015H, 7600E mapped, XRF, sampling. Prospected lower B trenches. Jean prospecting around Zone 2 Ext, South Butter. Joined by Bill around midday.	Camp shut a.m. Howar remained i finish. Jean South Butt prospecting back to car Demobe ea evening.
		8	12		

Sep	30-Sep	1-Oct	2-Oct	3-Oct
down in rd and Deb n camp to and Bill to er for g, then np. arly	Deb and Bill unpacking, sample management			

4-Oct	**5-Oct**

YMEP Expense Claim Form - Client Copy

YMEP no: 15- 065	project name:	Stu	Applicant name	Bill Harris	
Expense Claim no: final	program type:	hard rock	program module:	target evaluation	
date submitted 31-Jan-16	phone:	778-837-4334	email:	bill@yukonbill.ca	
address	Box 31347, Whitehorse, Yukon Y1A 5P7				
Start/ end dates of fieldwork for this claim:	30-Jul-15 (start)	29-Oct-15 (end)	no of field days/ this claim:	7	

eligible expenses item	*Please refer to rate guidelines. Provide photocopy of receipts.*	unit/days	rate	total
daily field expenses	no persons: see attached invoice		$100/day	
Personnel	*Name (supply statement of qualifications)*			
	see attached Midnight Mining invoice			

equipment (rental)	private or commercial	unit/days	rate	total
	private			
	private			
	private			
	private			
	private			
	private			
	private			
	private			
	private			
	private			
	private			
other	*please provide details*			
			Grand total this claim:	$0.00

Midnight Mining Services Ltd.

Box 31347
Whitehorse, YT
Y1A 5P7

Invoice

16-01

29-Jan-16

To:	Bill Harris 214 Squanga Ave. Whtiehorse Yukon Y1A 3Y4
Re:	Stu Property

Description		Amount
Prospecting/Trenching/Mapping		
Geologist	10 days @$500/day	$ 5,000.00
Geologist	4 days @$500/day	$ 2,000.00
Geotech	1 days @ $350/day	$ 350.00
Labourer	7 days @ $350/day	$ 2,450.00
Prospector	6 days @ $500/day	$ 2,100.00
Equipment Operator	1 days @ $350/day	$ 350.00
Trucks	13 days @$100/day	$ 1,300.00
ATV (2)	15 days @$75/day	$ 1,125.00
Trailers (2)	6 days @$55/day	$ 330.00
Excavator	1 days @ $2,400/day	$ 2,400.00
Daily field expenses	25 man days @$100/man day	$ 2,500.00
Niton rental	5 days @ $200/day	$ 1,000.00
Demob equipment		$ 2,700.00
3rd Party Consultants/bills		
Assays	Bureau Vertias*	$ 7,611.00
Fuel	Sunrise **	$ 449.00
Report Writing		
Geologist	7 days @$500/day	$ 3,500.00
Staking		
Staker	2 days @ $350/day	$ 700.00
Trucks	2 days@ $100/day	$ 200.00
Daily field expenses	2 days @ $100/man day	$ 200.00
		$ 1,100.00
Total		$ 36,265.00

"Bill Harris"

*3 samples from the second invoice were not Stu, so removed $274.05 from invoice
** traveling and receipts not with us - will submit as soon as can

Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St.
Vancouver, BC Canada V6P 6E5
Phone 604 253 3158 Fax 604 253 1716
GST # 843013921 RT
QST # 1219972641

Invoice Date:	September 21, 2015
Invoice Number:	**VANI236067**
Submitted by:	Debbie James
Email:	debbiejames25@gmail.com
Job Number:	WHI15000130
Order Number:	
Project Code:	STU
Shipment ID:	STU1
Quote Number:	

Bill To: Midnight Mining
Box 31347
Whitehorse, YT Y1A 5P7
CANADA

Item	Package	Description	Sample No.	Unit Price	Amount
1	PRP70-250	Crush and Pulverize 250 g	75	$7.20	$540.00
2	PRP70-250	Overweight prep charges per 100g	2057	$0.07	$143.99
3	FA430	30g Fire Assay for Au, AAS	81	$16.00	$1,296.00
4	MA270	0.5g 4 Acid Digestion ICP-ES/ICP-MS	81	$25.45	$2,061.45
5	GC921	Copper Oxide	81	$17.30	$1,401.30
6	DRPLP	Dispose or return handling of pulps	81	$0.10	$8.10
7	DRRJT	Dispose or return handling of reject	75	$0.35	$26.25
			Net Total		$5,477.09
			Canadian GST		$273.85
			Grand Total	**CAD**	**$5,750.94**

Invoice Stated In Canadian Dollars

Payment Terms:

Due upon receipt of invoice. Please pay the last amount shown on the invoice.

For **cheque payments**, please remit payable to:
Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St.
Vancouver BC, V6P 6E5

Please specify invoice number on cheque remittance.

For **electronic payments**, please please contact AccountReceivable.VAN@acmelab.com for banking details.

For any enquiries please contact us at AccountReceivable.VAN@acmelab.com

Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St.
Vancouver, BC Canada V6P 6E5
Phone 604 253 3158 Fax 604 253 1716
GST # 843013921 RT
QST # 1219972641

Invoice Date: October 20, 2015
Invoice Number: **VANI238350**
Submitted by: Debbie James
Email: debbiejames25@gmail.com
Job Number: WHI15000213
Order Number:
Project Code: STU
Shipment ID: STU2
Quote Number:

Bill To: Midnight Mining
Box 31347
Whitehorse, YT Y1A 5P7
CANADA

Item	Package	Description	Sample No.	Unit Price	Amount
1	PRP70-250	Crush and Pulverize 250 g	28	$7.20	$201.60
2	PRP70-250	Overweight prep charges per 100g	477	$0.07	$33.39
3	FA430	30g Fire Assay for Au, AAS	30	$16.00	$480.00
4	MA270	0.5g 4 Acid Digestion ICP-ES/ICP-MS	28	$25.45	$712.60
5	AQ300	0.5g Aqua Regia Digestion ICP-ES	2	$9.40	$18.80
6	GC921	Copper Oxide	28	$17.30	$484.40
7	DRPLP	Dispose or return handling of pulps	30	$0.10	$3.00
8	DRRJT	Dispose or return handling of reject	28	$0.35	$9.80
9	FA530	Au and/or Ag by 30g Fire Assay Grav	3	$19.60	$58.80
10	SHIP	Collect shipment charges	30	$1.00	$30.00
			Net Total		$2,032.39
			Canadian GST		$101.62
			Grand Total	**CAD**	**$2,134.01**

Invoice Stated In Canadian Dollars

Payment Terms:

Due upon receipt of invoice. Please pay the last amount shown on the invoice.

For **cheque payments**, please remit payable to:
Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St.
Vancouver BC, V6P 6E5

Please specify invoice number on cheque remittance.

For **electronic payments**, please please contact AccountReceivable.VAN@acmelab.com for banking details.

For any enquiries please contact us at AccountReceivable.VAN@acmelab.com

YMEP Expense Claim Form - Client Copy

YMEP no: 15- 065	project name:	Stu	Applicant name	Bill Harris	
Expense Claim no: 2015-01	program type:	hard rock	program module:	target evaluation	
date submitted 29-Jul-15	phone:	778-837-4334	email:	bill@yukonbill.ca	
address	Box 31347, Whitehorse, Yukon Y1A 5P7				
Start/ end dates of fieldwork for this claim:	3-Jul-15	29-Jul-15	no of field days/ this claim:	21	

eligible expenses *Please refer to rate guidelines. Provide photocopy of receipts.*

item		unit/days	rate	total
daily field expenses	no persons: see attached invoice		$100/day	
Personnel	*Name (supply statement of qualifications)*			
	see attached Midnight Mining invoice			

equipment (rental)	private or commercial	unit/days	rate	total
see Attached midnight mining invoice	private			
see Attached H Coyne & sons invoice	private			
	private			
	private			
	private			
	private			
	private			
	private			
	private			
	private			
	private			
other	*please provide details*			
			Grand total this claim:	$0.00

Midnight Mining Services Ltd.

Invoice

Box 31347
Whitehorse, YT
Y1A 5P7

15-05

29-Jul-15

To:	Bill Harris 214 Squanga Ave. Whtiehorse Yukon Y1A 3Y4
Re:	Stu Property

Description		Amount
Prospecting/Trenching/Mapping		
Geologist	10 days @$500/day	$ 5,000.00
Geologist	12 days @$500/day	$ 6,000.00
Geotech	18 days @ $350/day	$ 6,300.00
Labourer	18 days @ $350/day	$ 6,300.00
Prospector	8 days @ $500/day	$ 2,800.00
Equipment Operator	7 days @ $350/day	$ 2,450.00
Truck	18 days @$100/day	$ 1,800.00
Truck	12 days @$100/day	$ 1,200.00
ATV (2)	32 days @$75/day	$ 2,400.00
ATV	7 days @$75/day	$ 525.00
Trailers (2)	32 days @$55/day	$ 1,760.00
Excavator	9 days @ $2,400/day	$ 21,600.00
Daily field expenses	62 man days @$100/man day	$ 6,200.00
Niton rental	12 days @ $200/day	$ 2,400.00
3rd Party Consultants/bills		
D6N LGP & mob	Coynes & Sons	$ 11,413.49
Core boxes	reboxing/organizing core	$ 4,249.35

Total $ 82,397.84

"Bill Harris"

GST # 852268341

CLIENT: **BILL HARRIS**
CONT #

CAMP, PUMP MAN, FOREMAN, EQUIPMENT

H. Coyne & Sons Ltd.
14 MacDonald Rd., Whitehorse, Yukon Y1A 4L2
Tel: (867) 633-4800 Fax: (867) 633-3641
kluanedrilling@northwestel.net

HOURLY CHARGABLES

DESCRIPTION	TOTAL HOURS	RATE P/H	TOTAL
OPERATOR -A.S.	0.00	50.00 /HR	**0.00**
OPERATOR- D.C.	0.00	50.00 /HR	**0.00**
WELDER- Luc	0.00	65.00 /HR	**0.00**
			0.00
TOTAL HOURLY CHARGEABLES	0.00		**0.00**

EQUIPMENT CHARGES

DESCRIPTION	UNITS	UNIT PRICE	TOTAL
320 HOE		190.00 /HR	**0.00**
Loader 950		140.00 /HR	**0.00**
Trip 1			
Danny time to fix and walk Hoe	4.00 HRS	50.00 /HR	**200.00**
Hauling D6N with lowboy	8.00 HRS	185.00 /HR	**1,480.00**
Pilot car - Hauling D6N	6.00 HRS	85.00 /HR	**510.00**
Walk Cat to Freegold road	4.00 HRS	125.00 /HR	**500.00**
AFD - tidy tank fuel			**1,284.71**
3 Drums of diesel-			**779.57**
100 lbs propane-			**104.76**
Pails of hydraulic oil - 10 pails			**602.64**
Sunrise fuel for one ton			**54.00**
Super A- food			**91.49**
Locksmith -Keys for hoe			**9.50**
Trip 2			
Danny Time travel to property and back to Whitehorse	6.00 HRS	50.00 /HR	**300.00**
D6N	21.50 HRS	185.00 /HR	**3,977.50**
Walk Hoe in from property	10.00 HRS	50.00 /HR	**500.00**
AFD- diesel			**1,019.32**
ATV, trailer rental			
Satellite phone			
TOTAL EQUIPMENT CHARGES			**11,413.49**

SUMMARY OF CHARGEABLES

HOURLY CHARGABLES	**0.00**
EQUIPMENT CHARGES	**11,413.49**
TOTAL BEFORE TAXES	**11,413.49**

Career Industries Ltd.
1148 First Avenue
WHITEHORSE, Y.T. Y1A 1A6
Tel. (867) 668-4360
Fax. (867) 667-4337
YUKON MADE...CANADIAN OWNED
A DIVISION OF CHALLENGE-CVA

DELIVERY SLIP

2597

SOLD TO Midnight Mining Services
Box 31397
Whitehorse

SHIP TO

DATE	CLERK	CUSTOMER ORDER NO.	DATE SHIPPED	SHIPPED VIA	OUR NUMBER
	Rick	Bill Harris	July 17/15	P/U	

QTY. ORDERED	QTY. SHIPPED	BACK ORDERED	DESCRIPTION/STOCK NUMBER	UNIT PRICE	TOTAL PRICE
	300		Core Trays - BQ - 5ft	13 49	4047 00
			" " Lids " " Included		
			GST		202 35
	Paid Visa				
			Total		4249 35

NO. CARTONS	TOTAL WEIGHT	ORDER COMPLETE	BALANCE TO FOLLOW	PAID	CHG	C.O.D.	RECEIVED IN GOOD ORDER BY

THANK YOU

HOLES PLOTTED

TOTAL 3

400W 80-04 80-05

TOPOGRAPHY

115I07 topo grid.GRD

ROCK CODES	PAT	LABEL	DESCRIPTION
Major_lith_UKHM		KPGD	FOLIATED GRANODIORITE
		BGD	QUARTZ DIORITE
		KPGD	GRANODIORITE
		FIN	aplite
		FGD	FOLIATED QUARTZ DIORITE
		KPGD	PORPHYRITIC GRANODIORITE
		KPGD	PORPHYRITIC GRANODIORITE
		OVB	OVERBURDEN
		PEG	pegmatite

ASSAYS	L/R	TEXT
Cu_ppm	L	-------
Total Cu_ppm	L	-------
foliation_intensity	R	-------

SECTION SPECS:

REF. PT. E, N	404447 m	6921752 m
EXTENTS	234.9 m	160.6 m
SECTION TOP, BOT	936.1 m	775.5 m
TOLERANCE +/-	15 m	

SCALE 1 : 750

(m)

-5 0 5 10 15 20 25

NAD83 / UTM zone 8N

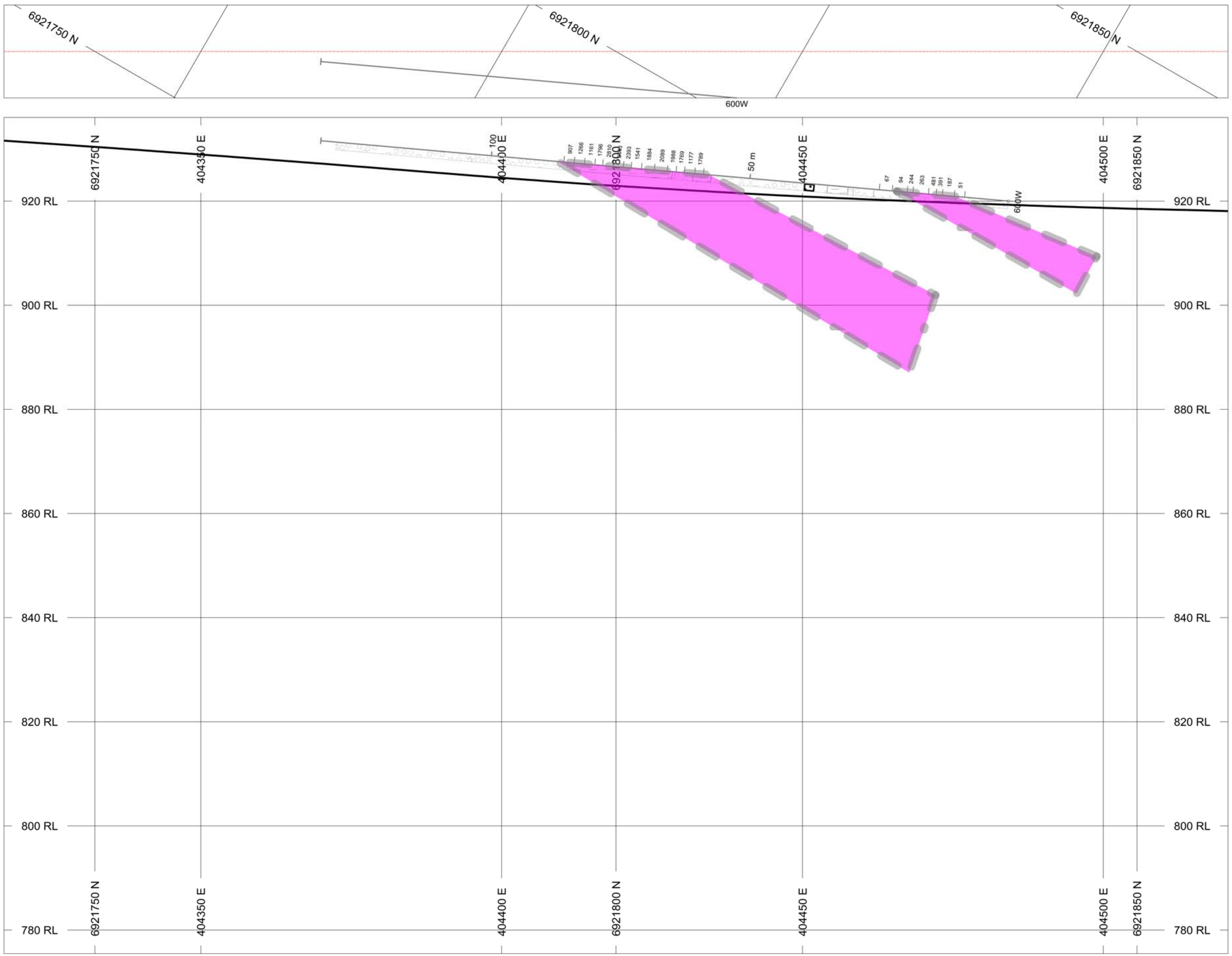
AZIMUTH = 60°

N W E S

Section 6921750

STU Project - Zone A

December 2015 - DJ



HOLES PLOTTED

TOTAL 1

600W

TOPOGRAPHY

115I07 topo grid.GRD

ROCK CODES	PAT	LABEL	DESCRIPTION
Major_lith_UKHM		BGD	QUARTZ DIORITE
		FIN	aplite
		KPGD	PORPHYRITIC GRANODIORITE
		PEG	pegmatite
		MIN	MICRODIORITE

ASSAYS	L/R	TEXT
Cu_ppm	L	-------
Total Cu_ppm	L	-------
foliation_intensity	R	-------

SECTION SPECS:

REF. PT. E, N	404419 m	6921800 m
EXTENTS	234.9 m	160.6 m
SECTION TOP, BOT	936.1 m	775.5 m
TOLERANCE +/-	15 m	

SCALE 1 : 750

(m)

-5 0 5 10 15 20 25

NAD83 / UTM zone 8N

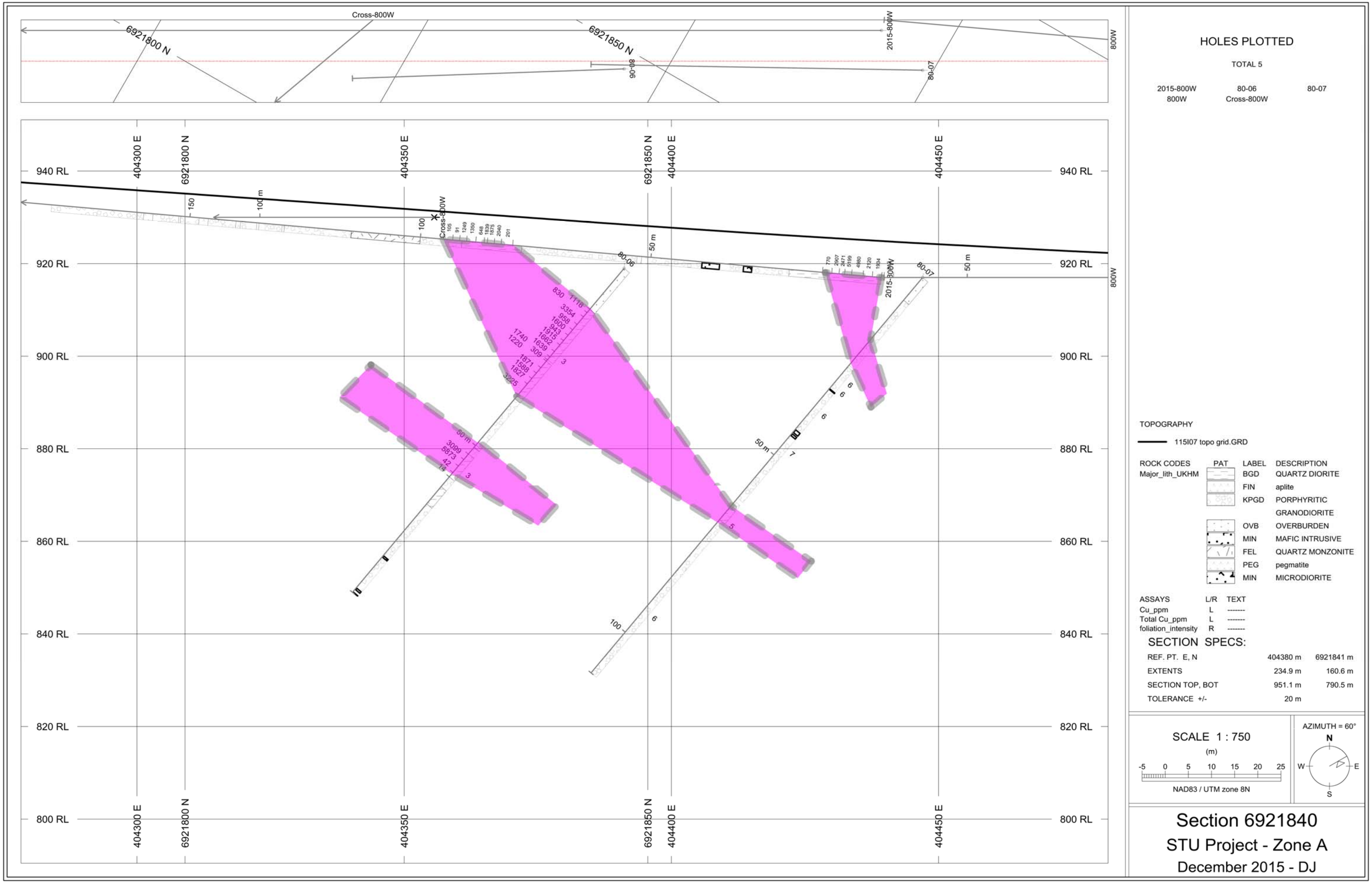
AZIMUTH = 60°

N E S W

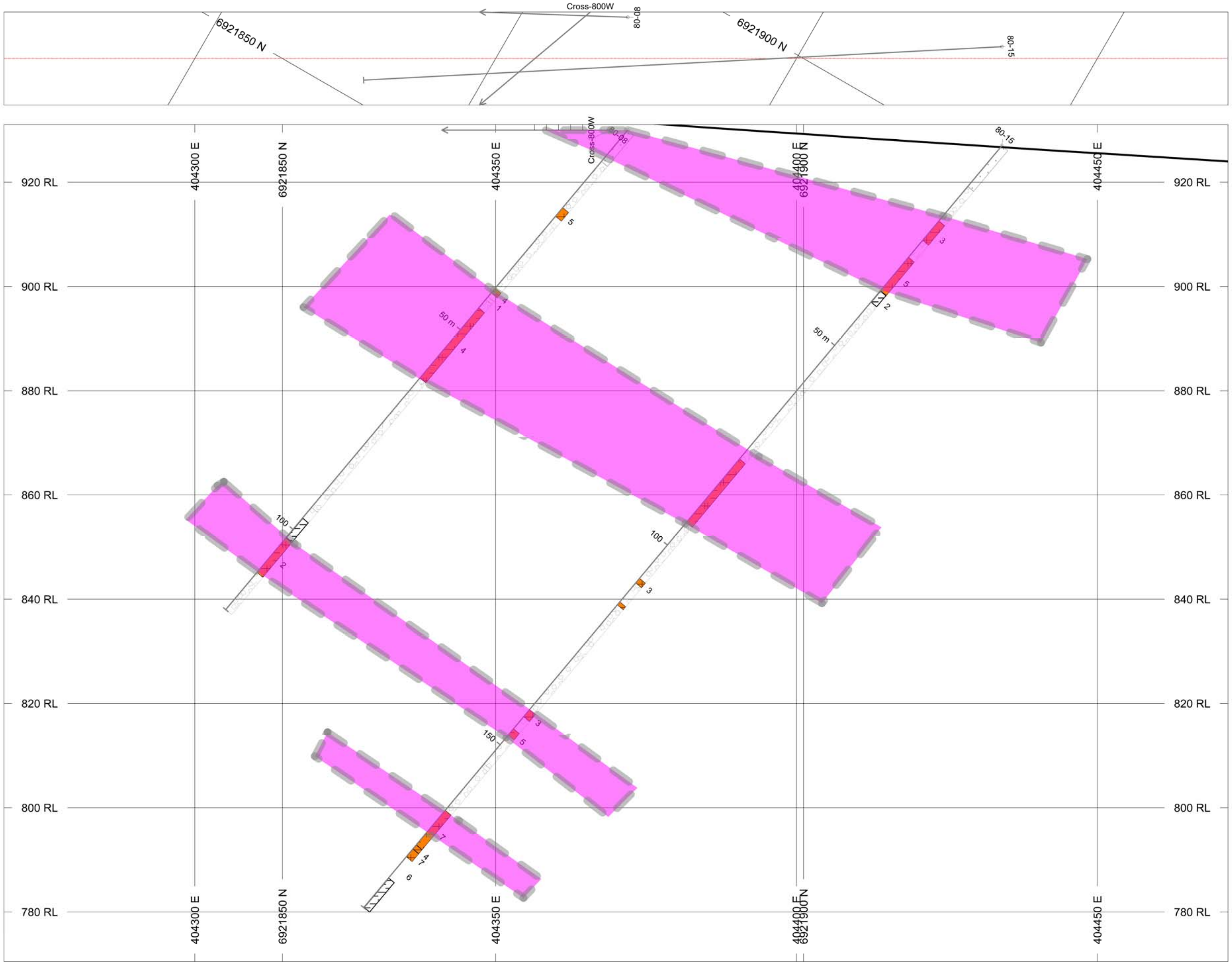
Section 6921800

STU Project - Zone A

December 2015 - DJ



Cross-800W
6921800 N
6921850 N
2015-800W
80-08
80-07
800W
940 RL
920 RL
900 RL
880 RL
860 RL
840 RL
820 RL
800 RL
404300 E
6921800 N
404350 E
6921850 N
404400 E
404450 E
80-06
50 m
100 m
150
100
HOLES PLOTTED
TOTAL 5
2015-800W
800W
80-06
Cross-800W
80-07
TOPOGRAPHY
115I07 topo grid.GRD
ROCK CODES
Major_lith_UKHM
PAT
LABEL
DESCRIPTION
BGD QUARTZ DIORITE
FIN aplite
KPGD PORPHYRITIC GRANODIORITE
OVB OVERBURDEN
MIN MAFIC INTRUSIVE
FEL QUARTZ MONZONITE
PEG pegmatite
MIN MICRODIORITE
ASSAYS L/R TEXT
Cu_ppm L
Total Cu_ppm L
foliation_intensity R
SECTION SPECS:
REF. PT. E, N 404380 m 6921841 m
EXTENTS 234.9 m 160.6 m
SECTION TOP, BOT 951.1 m 790.5 m
TOLERANCE +/- 20 m
SCALE 1 : 750
(m)
-5 0 5 10 15 20 25
NAD83 / UTM zone 8N
AZIMUTH = 60°
N
W
E
S
Section 6921840
STU Project - Zone A
December 2015 - DJ



HOLES PLOTTED

TOTAL 3

80-08 80-15 Cross-800W

TOPOGRAPHY

115I07 topo grid.GRD

ROCK CODES	PAT	LABEL	DESCRIPTION
Major_lith_UKHM		FGD	GNEISS
		KPGD	FOLIATED GRANODIORITE
		KPGD	GRANODIORITE
		KPGD	PORPHYRITIC GRANODIORITE
		OVB	OVERBURDEN
		PEG	pegmatite
		FIN	FOLIATED MICROGRANITE
		PGDM?	PORPHYRITIC GRANODIORITE?

ASSAYS	L/R	TEXT
Cu_ppm	L	-------
Total Cu_ppm	L	-------
foliation_intensity	R	-------

SECTION SPECS:

REF. PT. E, N	404370 m	6921882 m
EXTENTS	234.9 m	160.6 m
SECTION TOP, BOT	931.1 m	770.5 m
TOLERANCE +/-	15 m	

SCALE 1 : 750

(m)

-5 0 5 10 15 20 25

NAD83 / UTM zone 8N

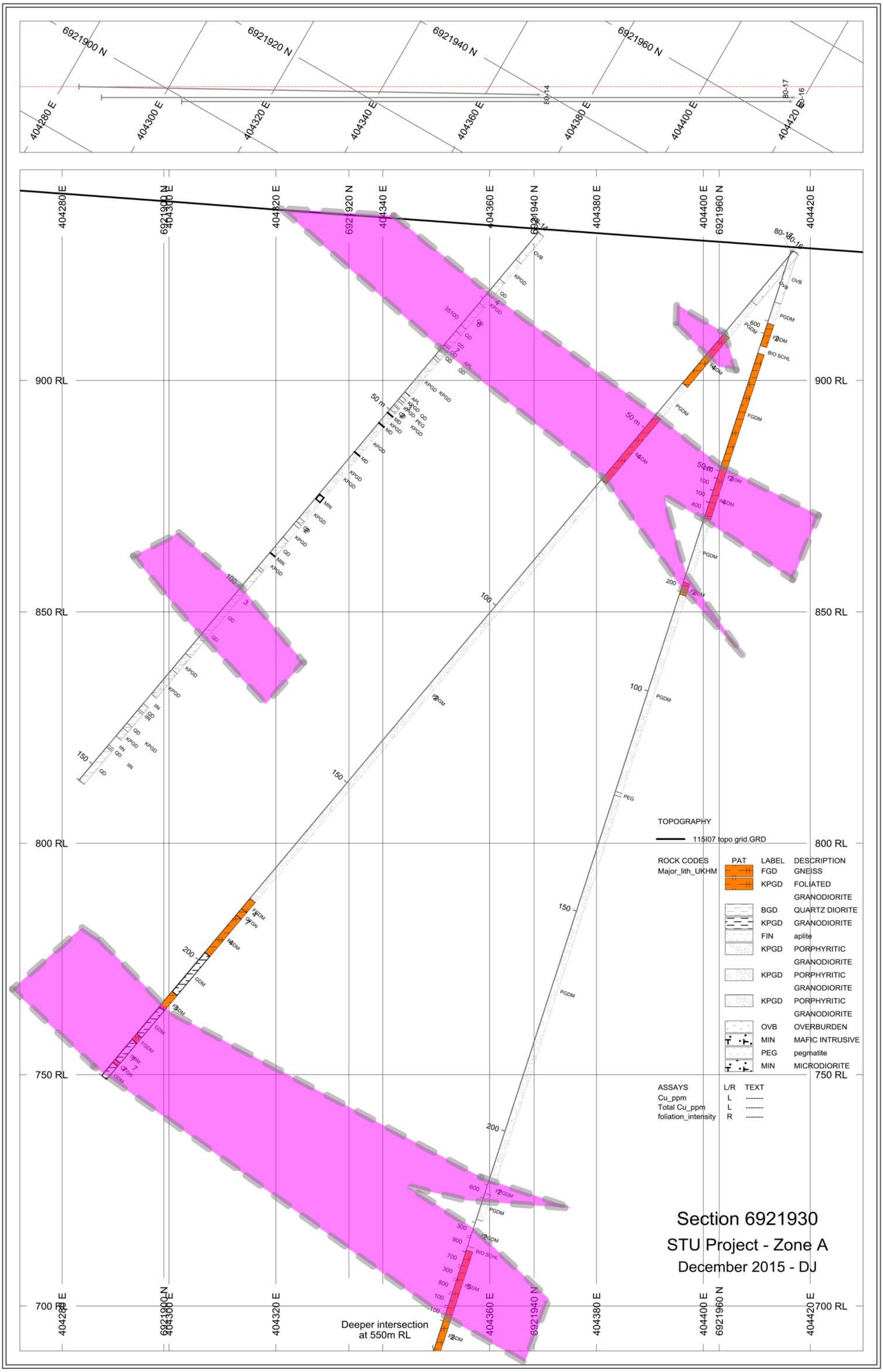
AZIMUTH = 60°

N W E S

Section 6921880

STU Project - Zone A

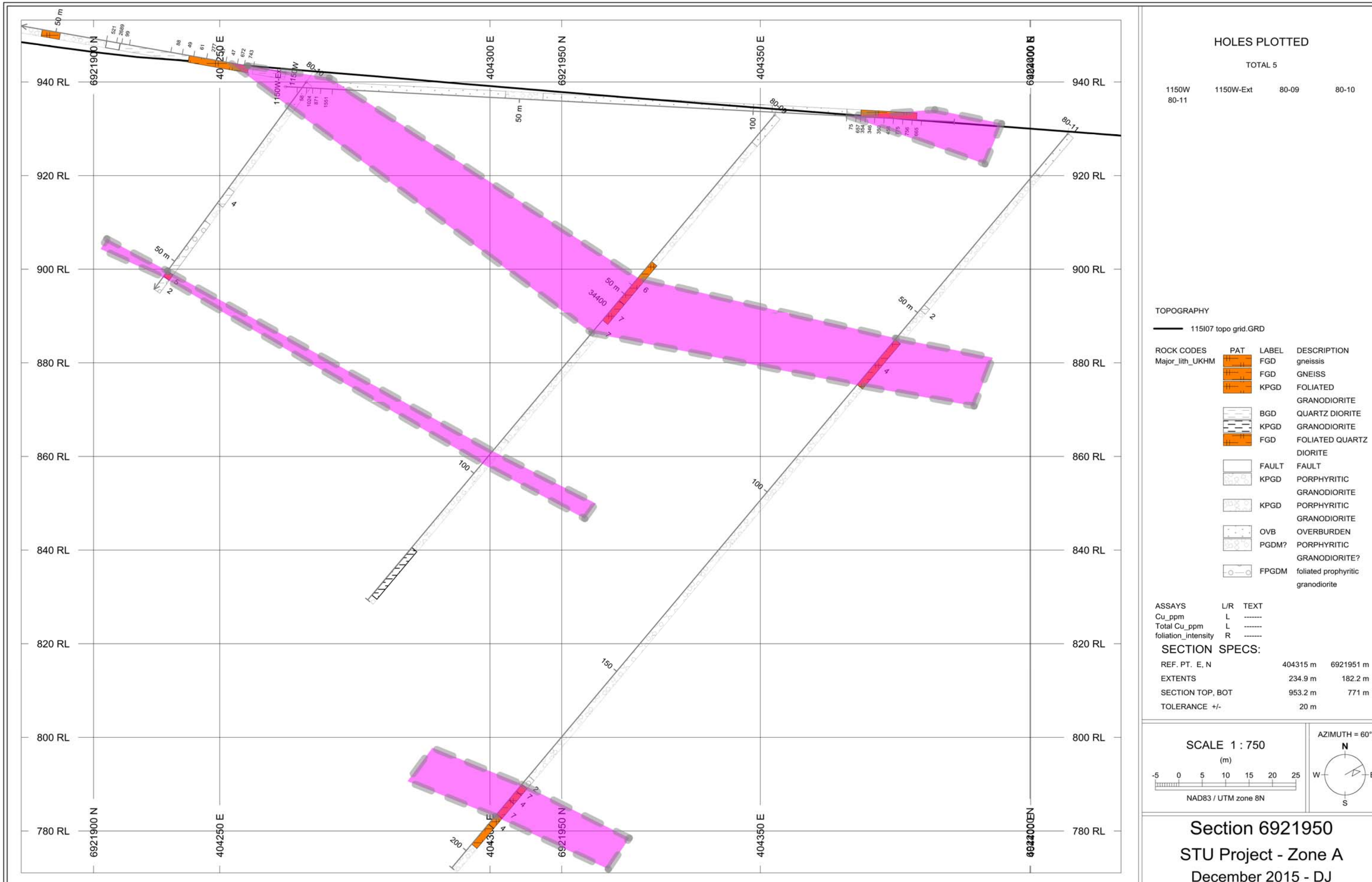
December 2015 - DJ



Section 6921930

STU Project - Zone A

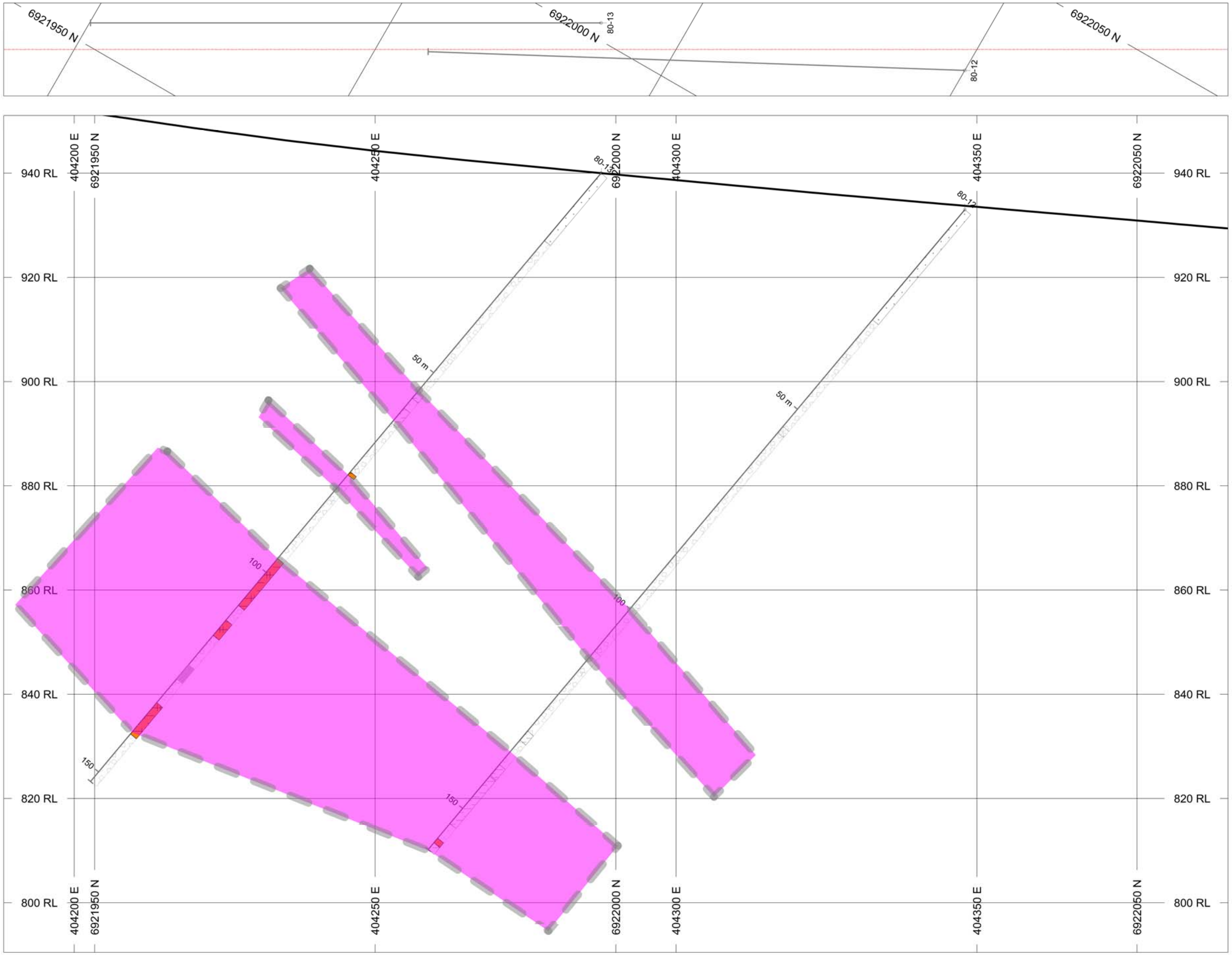
December 2015 - DJ



Section 6921950

STU Project - Zone A

December 2015 - DJ



HOLES PLOTTED

TOTAL 2

80-12 80-13

TOPOGRAPHY

115I07 topo grid.GRD

ROCK CODES	PAT	LABEL	DESCRIPTION
Major_lith_UKHM		KPGD	FOLIATED GRANODIORITE
		KPGD	GRANODIORITE
		KPGD	PORPHYRITIC GRANODIORITE
		OVB	OVERBURDEN
		BRX	breccia
		PGDM?	PORPHYRITIC GRANODIORITE?
		GDM?	granodiorite/monzonite?
		APL?	aplite?
		UNK	unknown
		FGDM?	foliated granodiorite/monzonite?

ASSAYS	L/R	TEXT
Cu_ppm	L	-------
Total Cu_ppm	L	-------
foliation_intensity	R	-------

SECTION SPECS:

REF. PT. E, N	404290 m	6922000 m
EXTENTS	234.9 m	160.6 m
SECTION TOP, BOT	951.1 m	790.5 m
TOLERANCE +/-	20 m	

SCALE 1 : 750

(m)

-5 0 5 10 15 20 25

NAD83 / UTM zone 8N

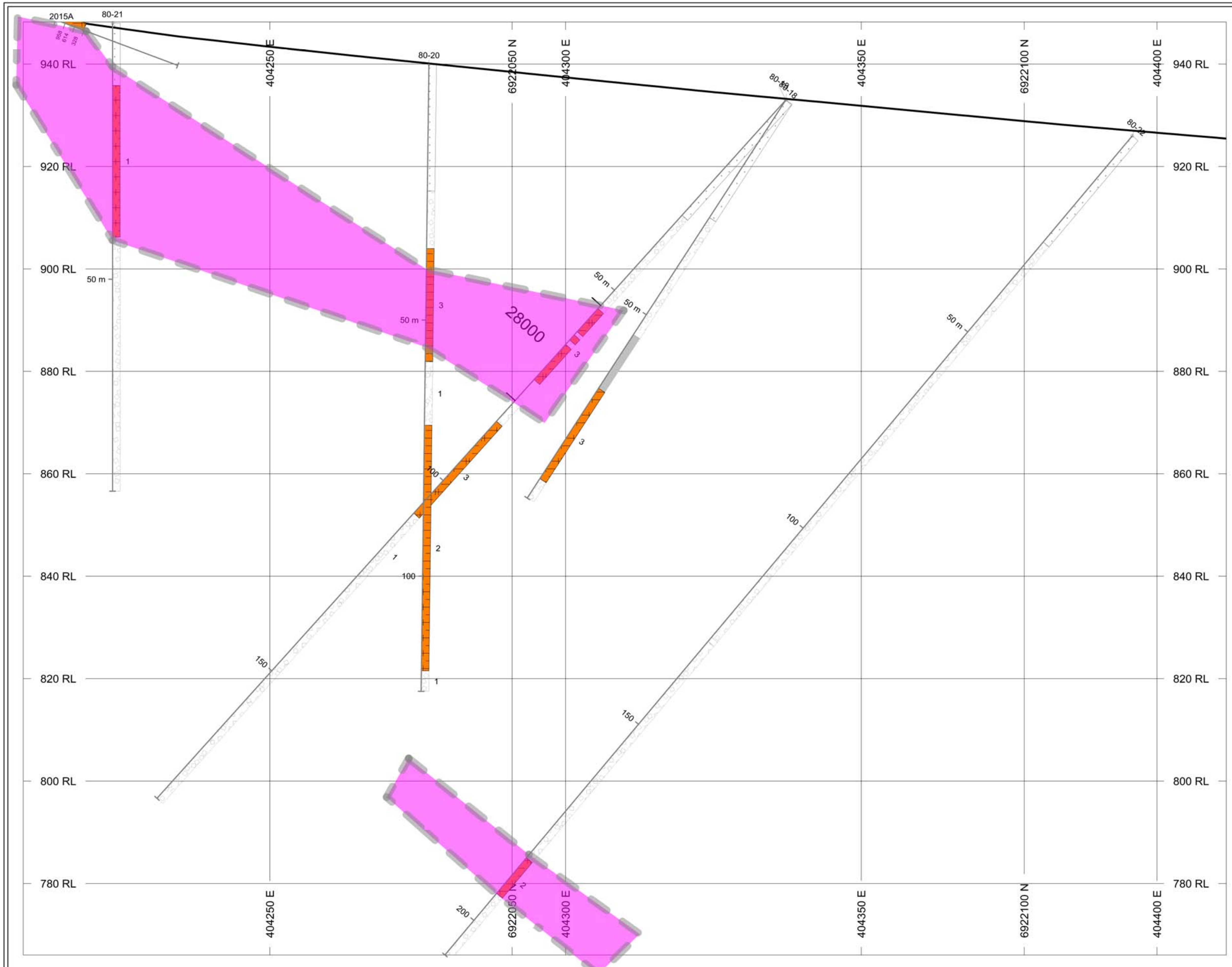
AZIMUTH = 60°

N W E S

Section 6922000

STU Project - Zone A

December 2015 - DJ



HOLES PLOTTED

TOTAL 6

2015A 80-18 80-19 80-20 80-21
80-22

TOPOGRAPHY

115I07 topo grid.GRD

ROCK CODES	PAT	LABEL	DESCRIPTION
Major_lith_UKHM		KPGD	FOLIATED GRANODIORITE
		FIN	aplite
		KPGD	PORPHYRITIC GRANODIORITE
		OVB	OVERBURDEN
		PEG	pegmatite
		FGD	FOLIATED GRANODIORITE
		PGDM?	PORPHYRITIC GRANODIORITE?
		UNK	unknown

ASSAYS	L/R	TEXT
Cu_ppm	L	-------
Total Cu_ppm	L	-------
foliation_intensity	R	-------

SECTION SPECS:

REF. PT. E, N	404310 m	6922061 m
EXTENTS	234.9 m	182.2 m
SECTION TOP, BOT	948.2 m	766 m
TOLERANCE +/-	25 m	

SCALE 1 : 750

(m)

-5 0 5 10 15 20 25

NAD83 / UTM zone 8N

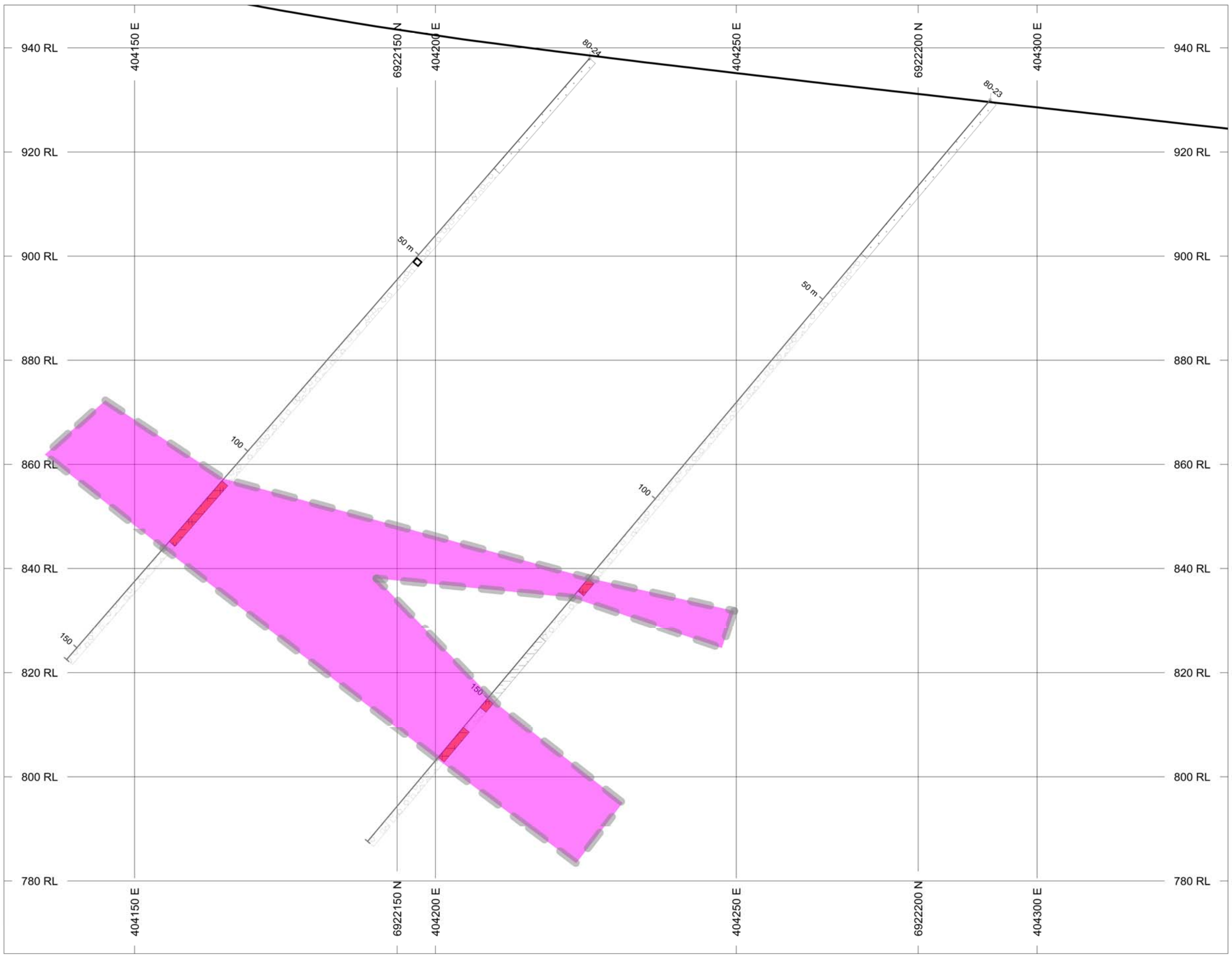
AZIMUTH = 60°

N W E S

Section 6922060

STU Project - Zone A

December 2015 - DJ



HOLES PLOTTED

TOTAL 2

80-23 80-24

TOPOGRAPHY

115I07 topo grid.GRD

ROCK CODES	PAT	LABEL	DESCRIPTION
Major_lith_UKHM		KPGD	FOLIATED GRANODIORITE
		BGD	QUARTZ DIORITE
		KPGD	PORPHYRITIC GRANODIORITE
		OVB	OVERBURDEN
		MIN	MAFIC INTRUSIVE

ASSAYS	L/R	TEXT
Cu_ppm	L	-------
Total Cu_ppm	L	-------
foliation_intensity	R	-------

SECTION SPECS:

REF. PT. E, N	404230 m	6922171 m
EXTENTS	234.9 m	182.2 m
SECTION TOP, BOT	948.2 m	766 m
TOLERANCE +/-	25 m	

SCALE 1 : 750

(m)

-5 0 5 10 15 20 25

NAD83 / UTM zone 8N

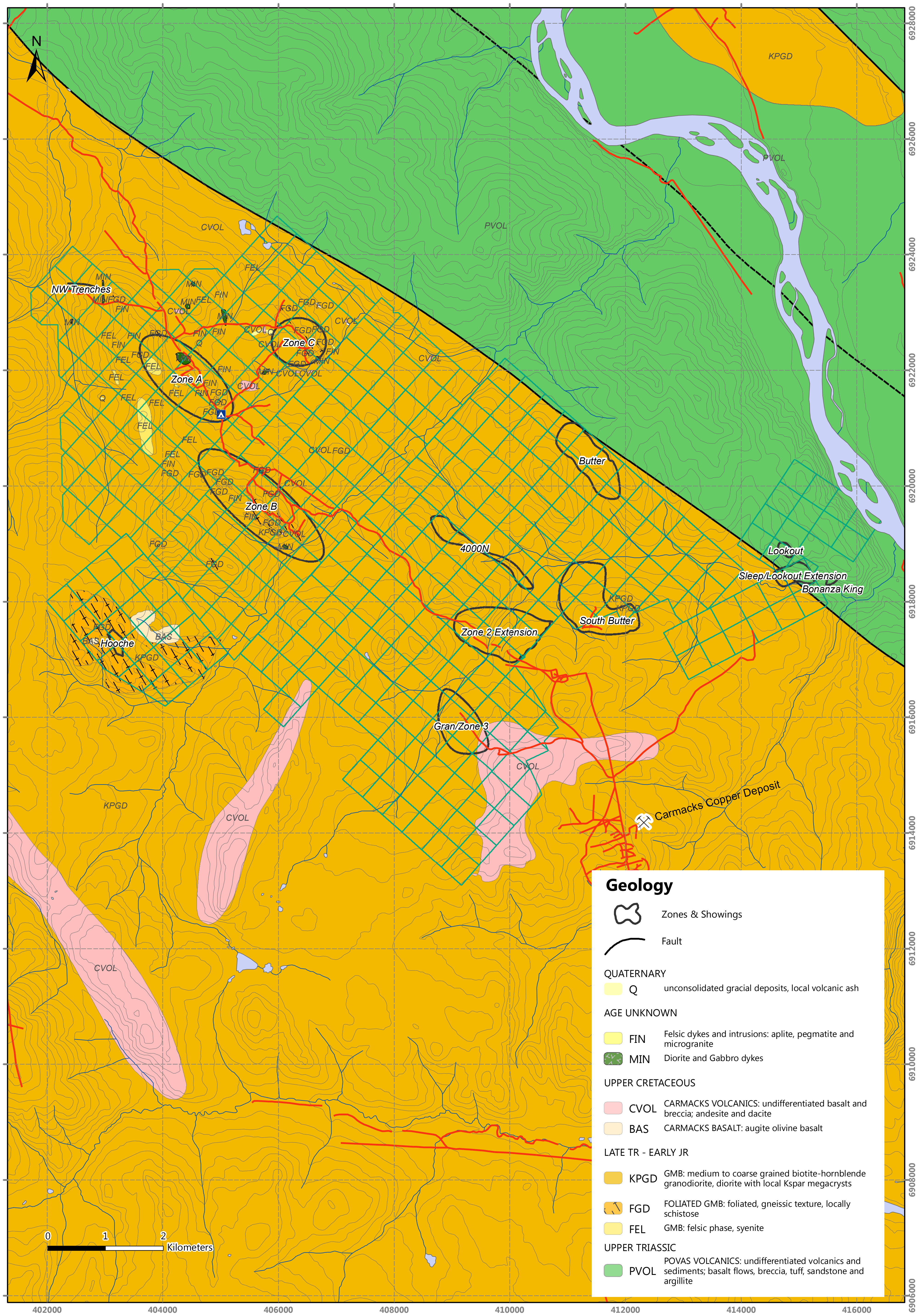
AZIMUTH = 60°

N W E S

Section 6922170

STU Project - Zone A

December 2015 - DJ

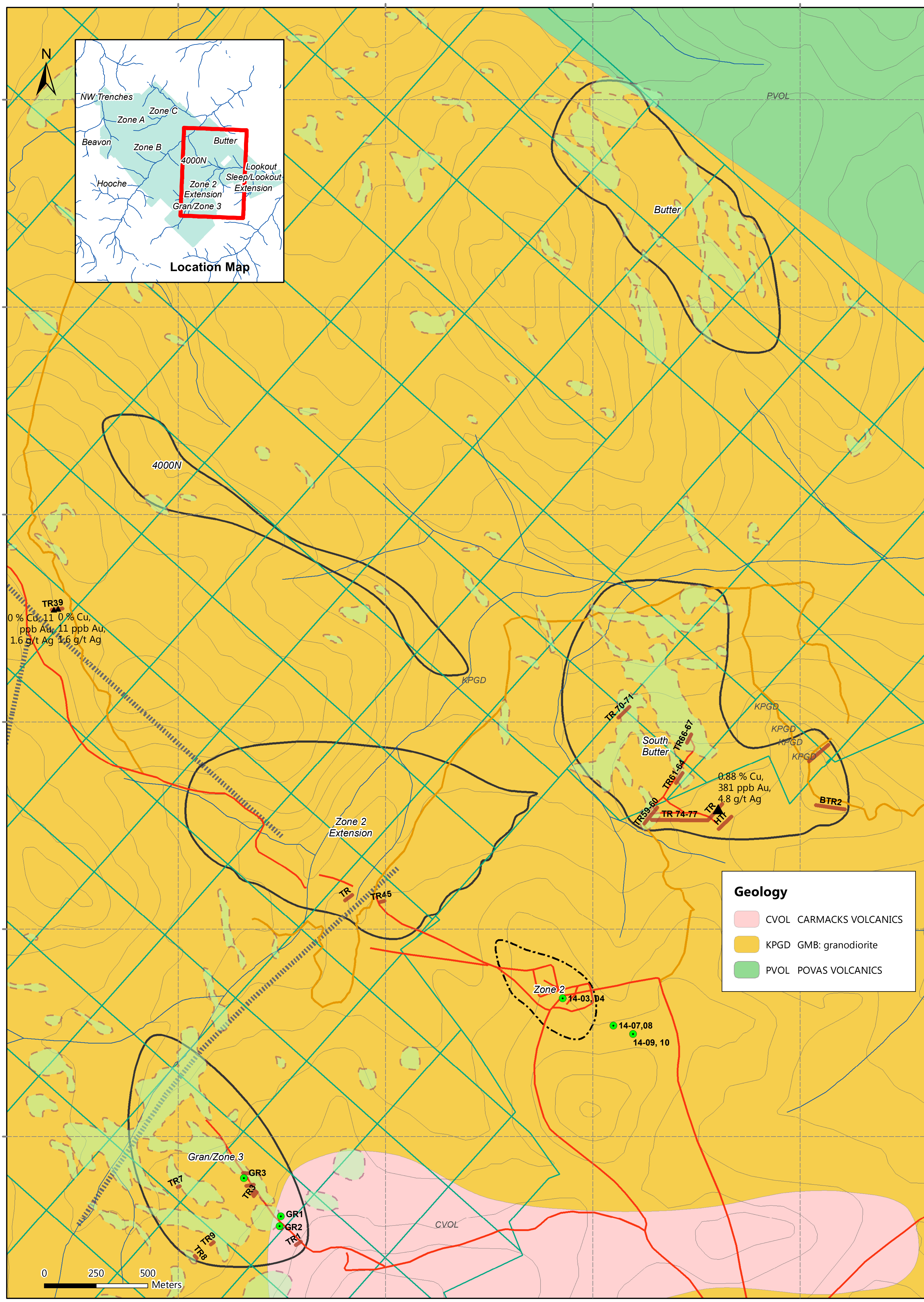


PROJECT GEOLOGY MAP

Bill Harris

STU Project

Date: 1/31/2016
Map Sheet(s): NTS 115I
Datum: NAD 1983 UTM Zone 8N
Prepared by: D. James



HCKW ZONES SUMMARY MAP

Bill Harris

STU Project

Date: 1/31/2016
Map Sheet(s): NTS 115I
Datum: NAD 1983 UTM Zone 8N
Prepared by: D. James

Legend

2015 rock samples
Cu ppm
- <1000
- 1000-5000
- 5000-10000

Drillhole

Trenches
- historic

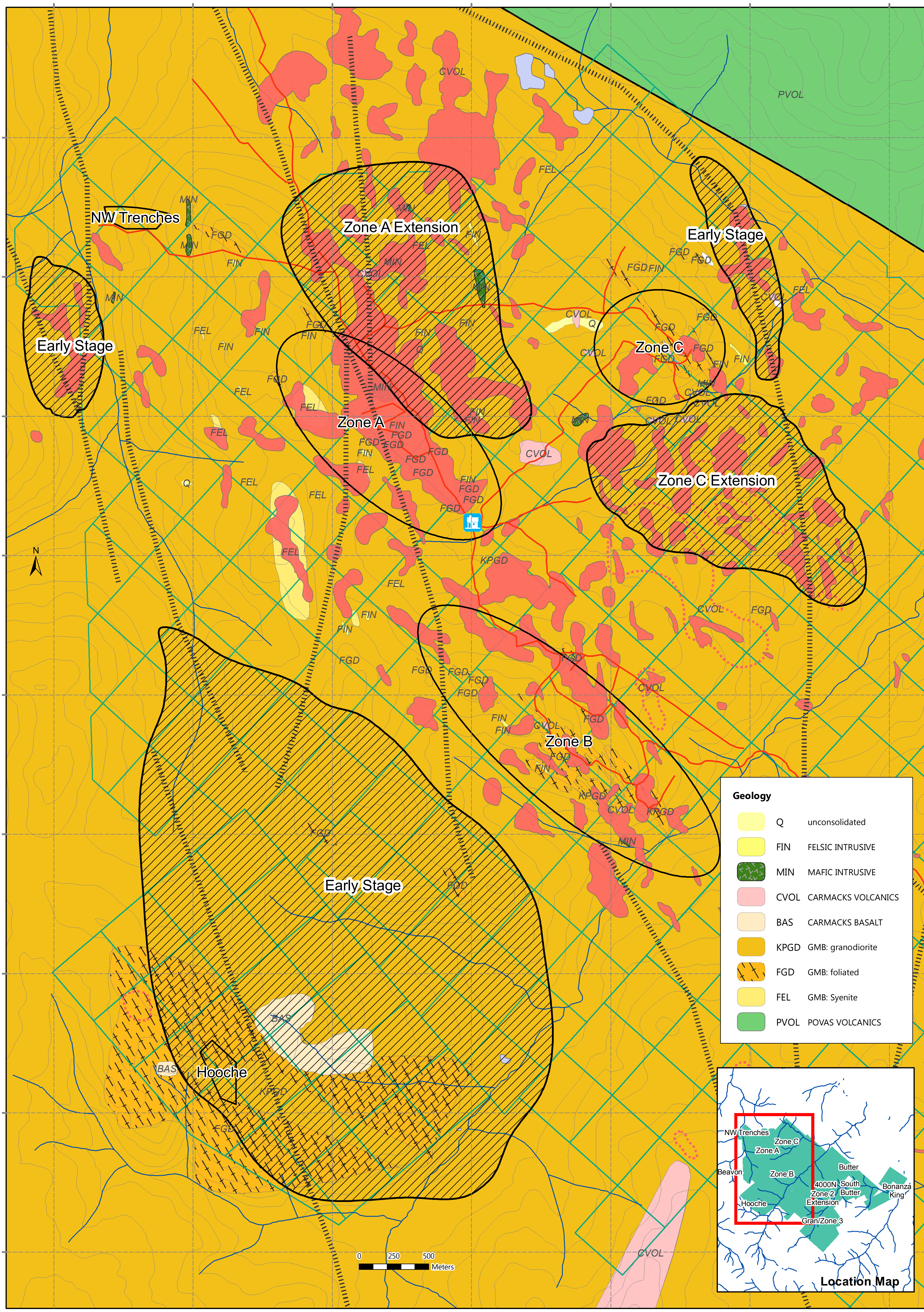
Soil Anomaly

Aeromag Lineaments

Overgrown Trails

Roads & Trails

STU Project claims



EXPLORATION TARGETS STU & CHE Claims

Bill Harris

STU Project

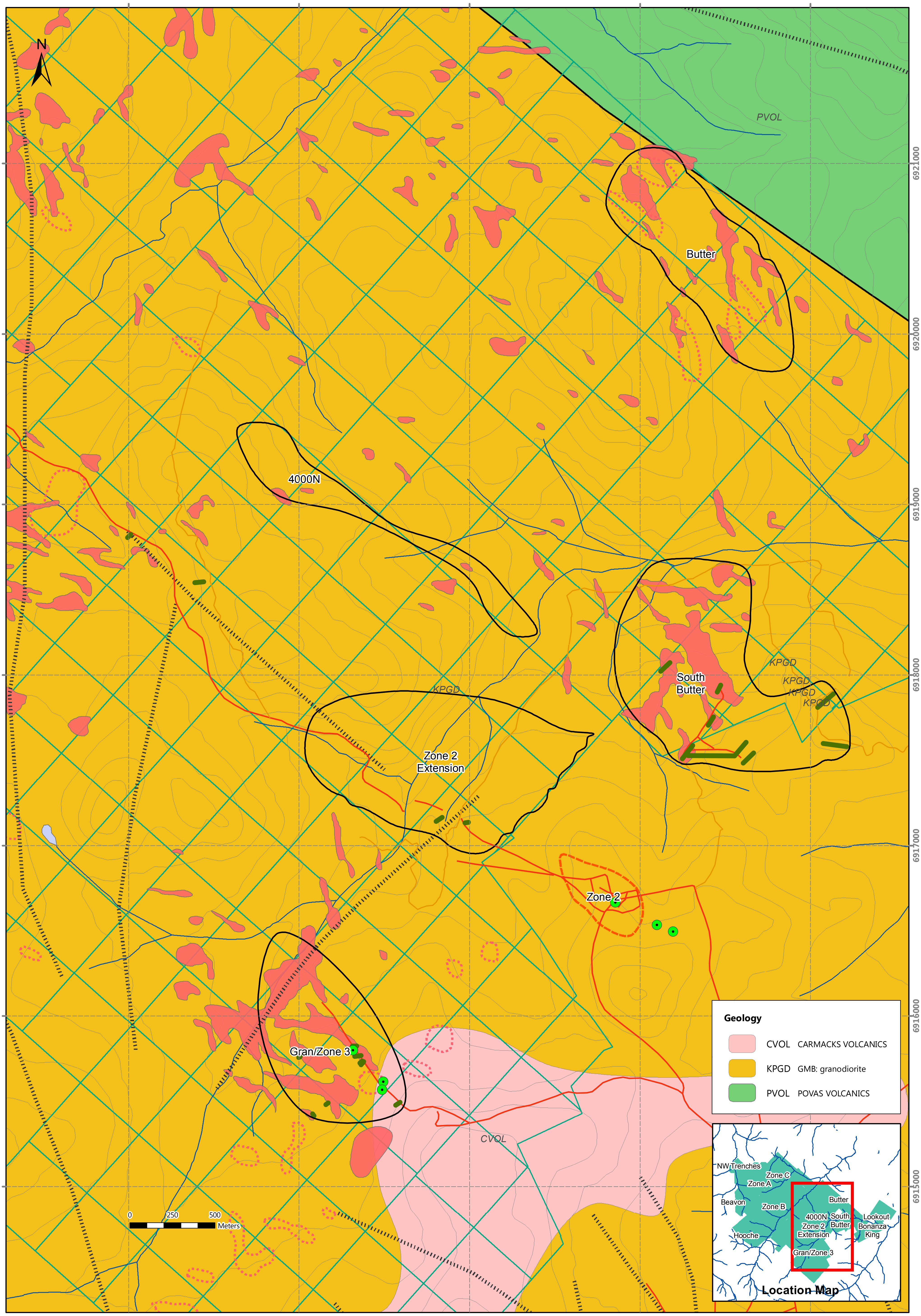
Date: 1/31/2016
Map Sheet(s): NTS 115I
Datum: NAD 1983 UTM Zone 8N
Prepared by: D. James

Legend

Overgrown Trails
Roads & Trails
Aeromag Lineaments

Soil Anomalies
MMI
regular

STU Project claims



HCKW Claims
Butter, South Butter,
4000N & Gran/Zone 3

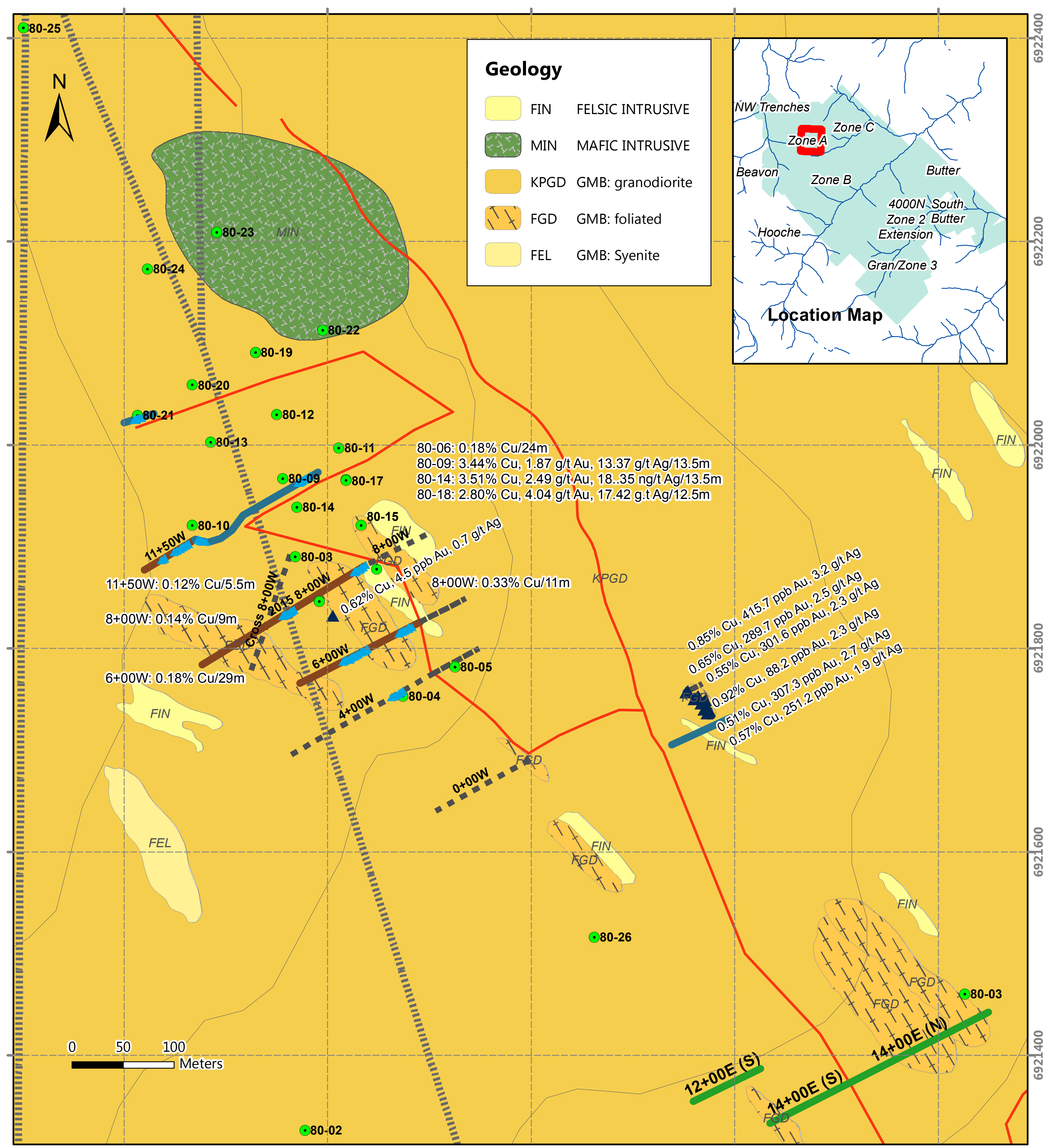
Bill Harris

STU Project

Date: 1/31/2016
Map Sheet(s): NTS 115I
Datum: NAD 1983 UTM Zone 8N
Prepared by: D. James

Legend

Drillholes
Trenches
Overgrown Trails
Roads & Trails
Aeromag Lineaments
Soil Anomalies
MMI
regular
STU Project claims



ZONE A SUMMARY MAP

Bill Harris

STU Project

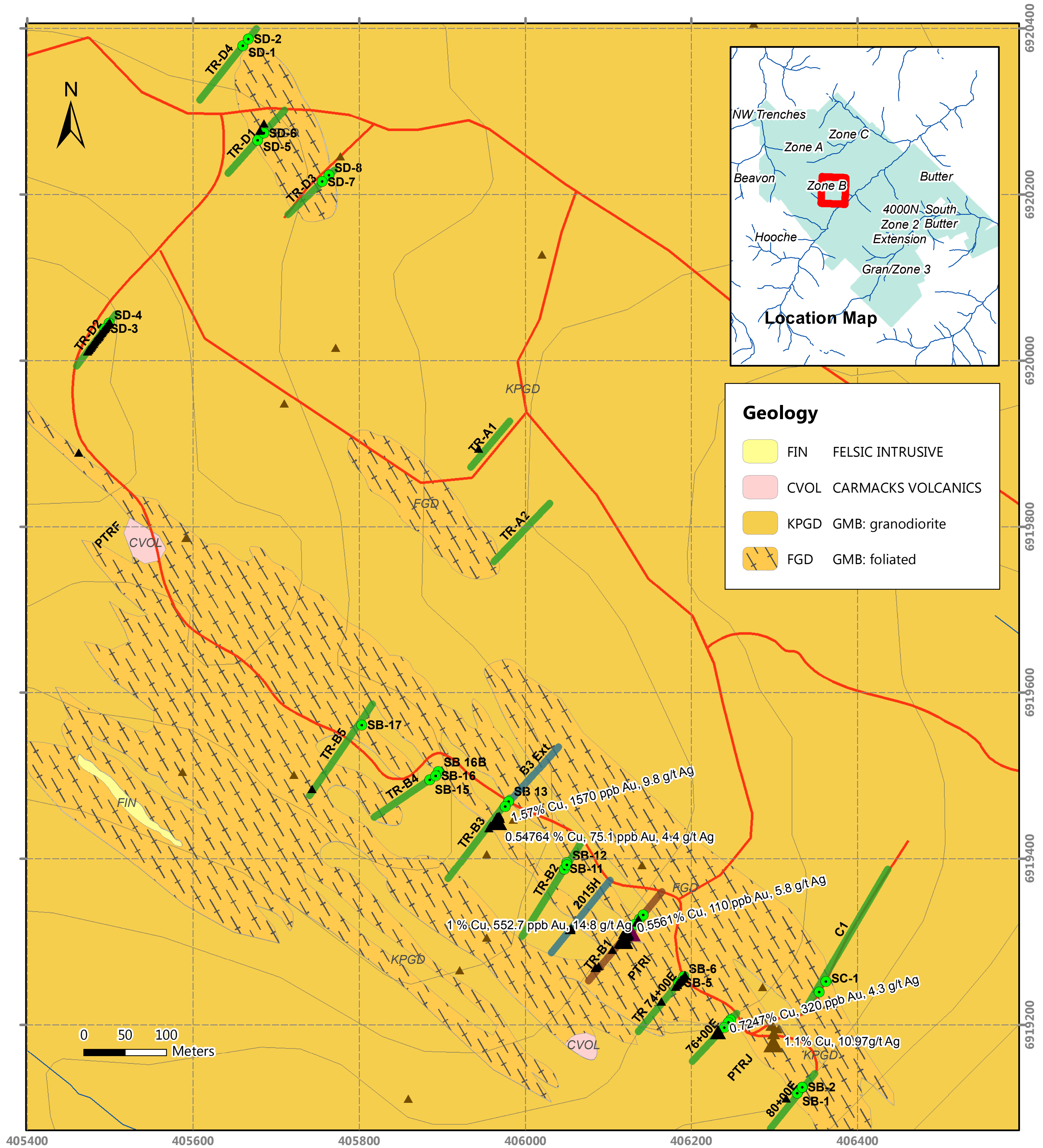
Date: 1/31/2016
Map Sheet(s): NTS 115I
Datum: NAD 1983 UTM Zone 8N
Prepared by: D. James

Legend

- Drillhole
- 2015 rock samples
- 2014 rock samples
- Roads & Trails
- Aeromag Lineaments

Trenches

- deepened 2015
- dug 2015
- historic
- proposed
- proposed deepening



ZONE B SUMMARY MAP

Bill Harris

STU Project

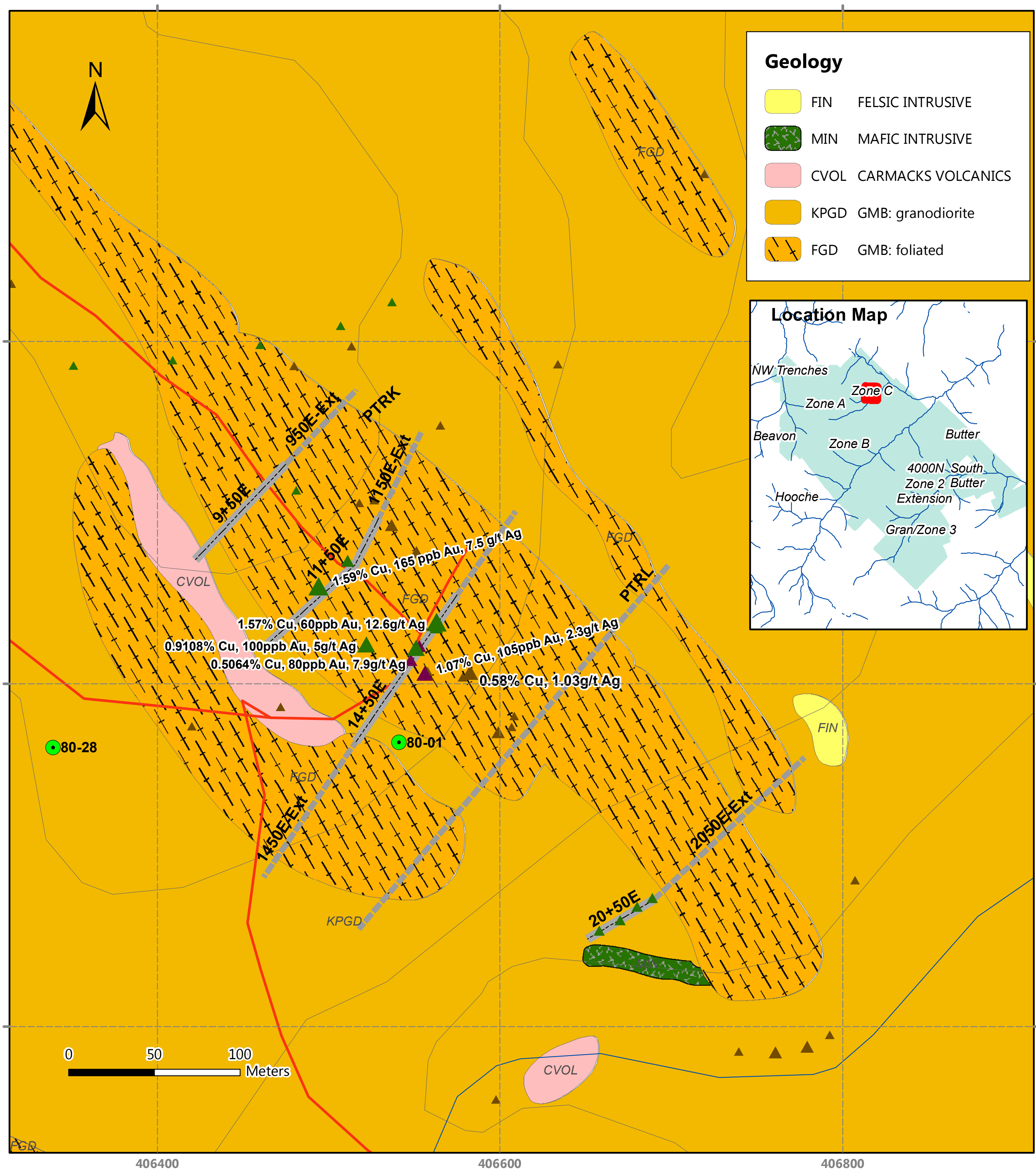
Date: 1/31/2016
Map Sheet(s): NTS 115I
Datum: NAD 1983 UTM Zone 8N
Prepared by: D. James

Legend

2005-2015 Rock Samples Cu	2005 rock samples Cu	Historic rock samples CuPPM
<1000	<2500	<1000
1000-5000	2500 - 5000	1000-5000
5000-10,000	5000- 10000	5000-10,000
>10,000	>10,000	>10,000

Drillhole

Trenches
- deepened 2015
- dug 2015
- historic
- Roads & Trails



ZONE C EXPLORATION SUMMARY MAP

Bill Harris

STU Project

Date: 1/31/2016
Map Sheet(s): NTS 115I
Datum: NAD 1983 UTM Zone 8N
Prepared by: D. James

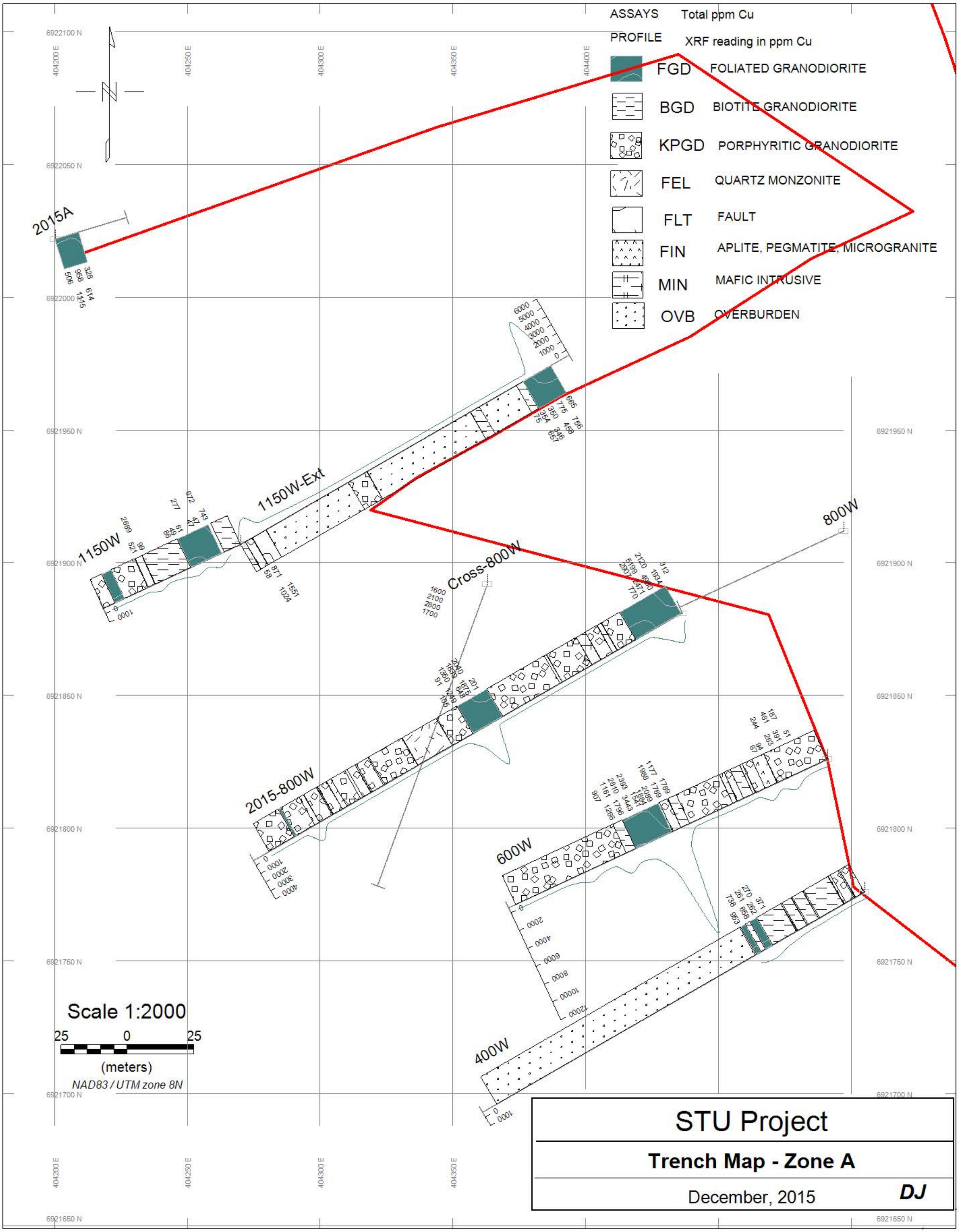
2006-2014 rock samples
Cu in ppm
- <1000
- 1000-5000
- 5000-10,000
- >10,000

2005 rock samples
Cu in ppm
- <2500
- 2500 - 5000
- 5000- 10000
- >10,000

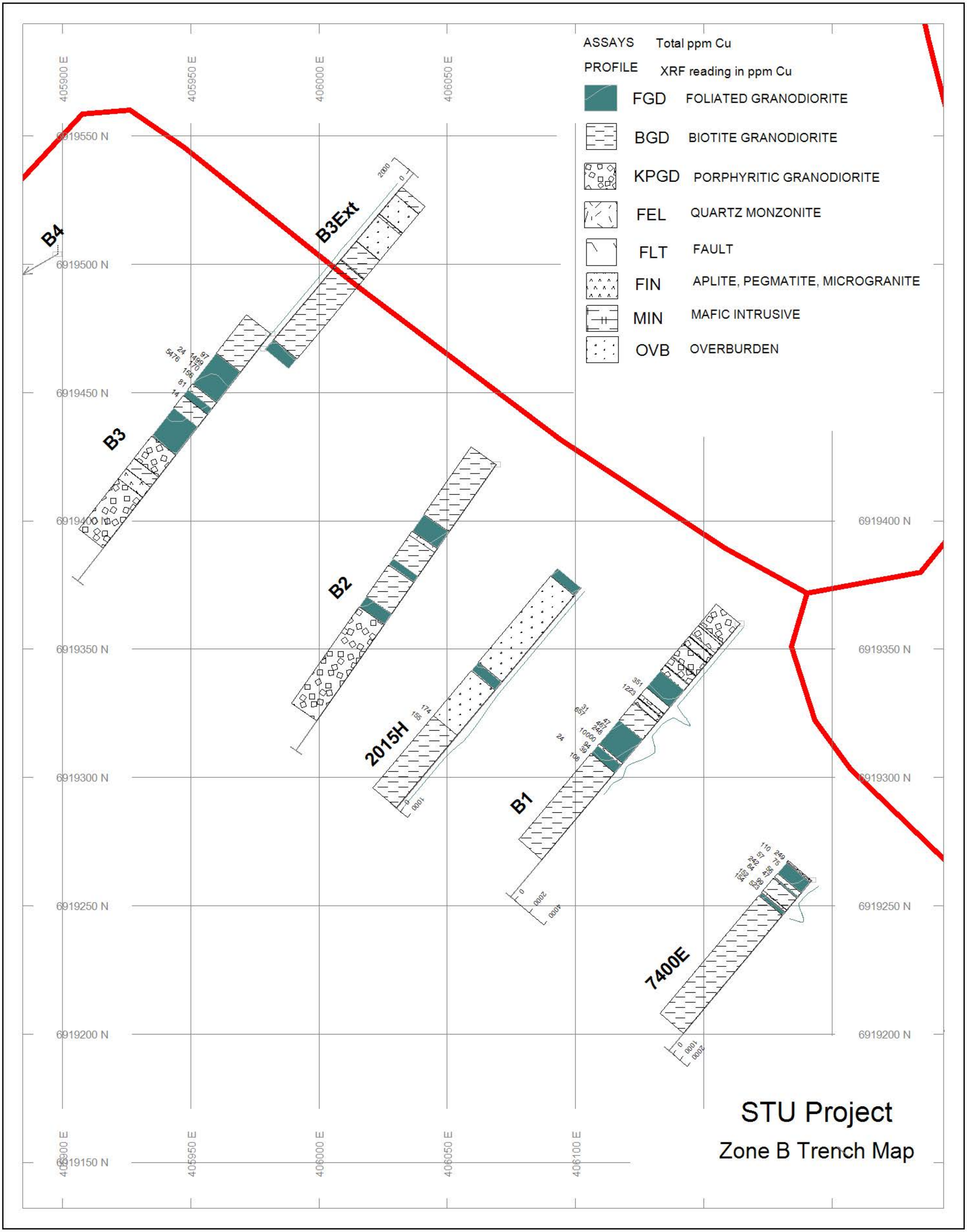
Historic rock samples
Cu in ppm
- <1000
- 1000-5000
- 5000-10,000
- >10,000

Drillhole

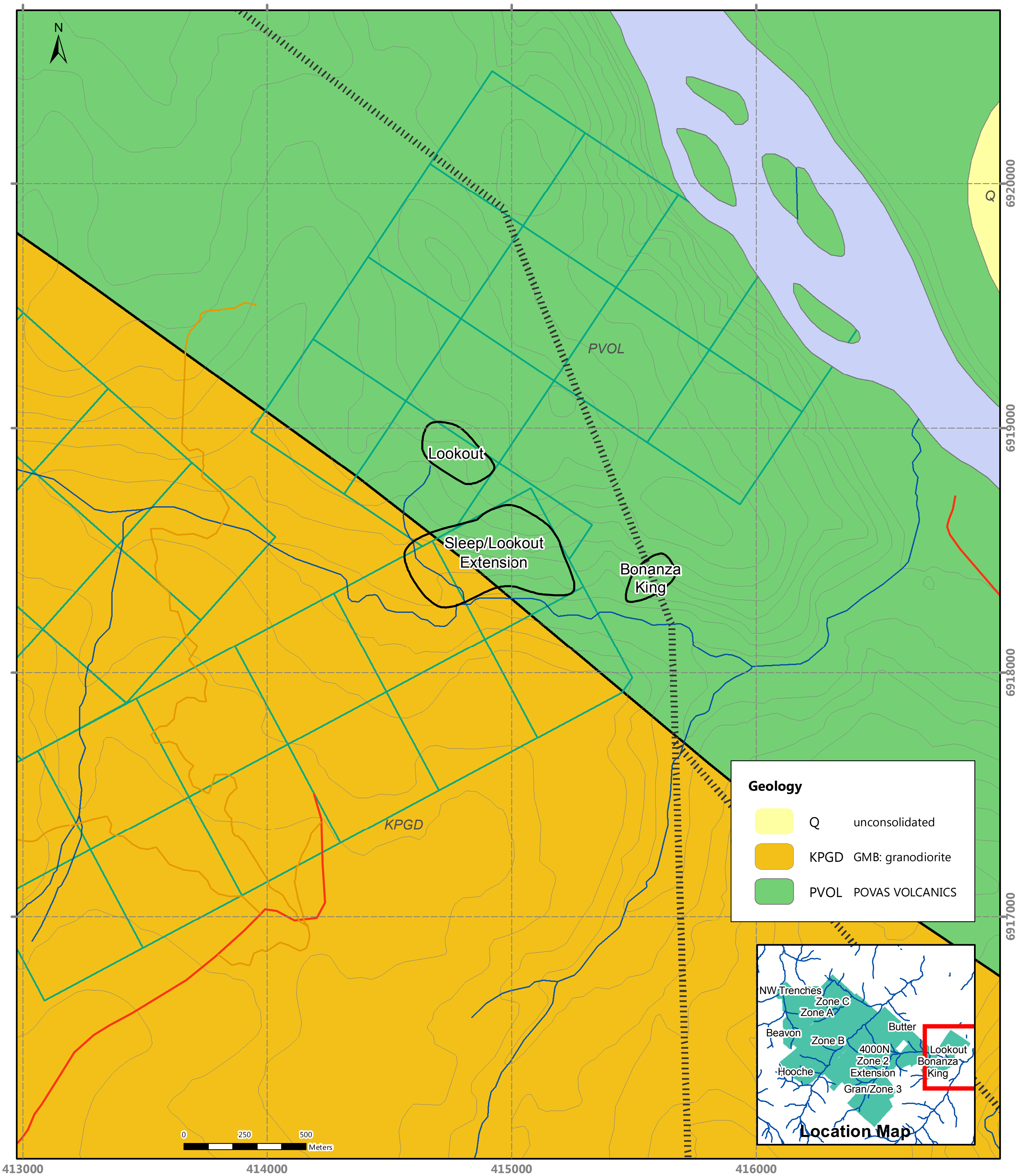
Trenches
- existing
- proposed
- Roads & Trails



ASSAYS Total ppm Cu
PROFILE XRF reading in ppm Cu
FGD FOLIATED GRANODIORITE
BGD BIOTITE GRANODIORITE
KPGD PORPHYRITIC GRANODIORITE
FEL QUARTZ MONZONITE
FLT FAULT
FIN APLITE, PEGMATITE, MICROGRANITE
MIN MAFIC INTRUSIVE
OVB OVERBURDEN
2015A
1150W-Ext
1150W
800W
Cross-800W
2015-800W
600W
400W
Scale 1:2000
25 0 25
(meters)
NAD83 / UTM zone 8N
STU Project
Trench Map - Zone A
December, 2015
DJ



ASSAYS Total ppm Cu
PROFILE XRF reading in ppm Cu
FGD FOLIATED GRANODIORITE
BGD BIOTITE GRANODIORITE
KPGD PORPHYRITIC GRANODIORITE
FEL QUARTZ MONZONITE
FLT FAULT
FIN APLITE, PEGMATITE, MICROGRANITE
MIN MAFIC INTRUSIVE
OVB OVERBURDEN
405900 E
405950 E
406000 E
406050 E
406100 E
6919550 N
6919500 N
6919450 N
6919400 N
6919350 N
6919300 N
6919250 N
6919200 N
6919150 N
B4
B3Ext
B3
B2
2015H
B1
7400E
STU Project
Zone B Trench Map



EXPLORATION TARGETS
Lookout & Sleep

Bill Harris

STU Project

Date:	1/31/2016
Map Sheet(s):	NTS 115I
Datum:	NAD 1983 UTM Zone 8N
Prepared by:	D. James

Legend

- Drillholes
- Trenches
- Overgrown Trails
- Roads & Trails
- Aeromag Lineaments
- Soil Anomalies
  - MMI
  - regular
- STU Project claims

YMEP FINAL SUBMISSION FORM

	Date submitted:
submit by January 31st to: *(winter placer projects may submit at pre-approved date)*	YMIP- EMR/ YTG Street address: 102-300 Main Street — YMEP@gov.yk .ca Mailing address: Box 2703, K-102 — phone: 867-456-3828 Whitehorse, Yt, Y1A 2C6 — fax: 867-667-3198

CONTACT INFO		***PROJECT INFO***	
Name:	Debbie James	YMEP no:	15-065
Address:	11-3194 Gibbins Rd, Duncan, B.C. V9L 1G8	Project name:	Stu
		Project type:	Hard Rock
email	bill@yukonbill.ca	Project module:	Target Evaluation
Phone:	250-709-1346		

Is the final report enclosed? ☑ yes ☐ no — ☑ hard copy ☑ pdf copy ☐ digital spreadsheet of station location data

Comment: hard copy to follow by mail. Spreadsheet of rock sample and assay results

PROJECT SUMMARY

Total project expenditures: 118,663

Number of new claims since March 31st: 37

Has an option resulted since March 31? ☐ yes ☑ no ☐ in negotiation

Number of calendar field days: 28

Number of person-days of employment: 102 paid ____ days of unpaid work

Total no. of samples: 97 rocks ____ silts ____ soils ____ other

Total length/volume of trenching/ shafting: 630m deepened, 385m new trenching

Total number of line-km of geophysics 0

Total meters drilled 0 diamond drill 0 RC drill 0 auger/percussion drill

Other products (provide details): Geophysics interpretation

FINANCIAL SUMMARY

This is not an expense claim form.To request reimbursement of expenses, please submit a separate detailed expense claim form.

Total daily field allowance	8900.00	Total contractor costs	4249.00 (boxe
Total field air transportation costs (helicopter/plane)	na	Total excavating/ heavy equipment costs	38,113.00
Total truck/ mileage costs	4500.00	Total assay/analyses costs	7611.00
Total wages paid	41,800.00	Total reclamation costs	na
Total light equipment rental costs	6140.00	Total report writing cost	3500.00
Other (please specify)	XRF rental 3400.00	Total staking costs	incl. in above
Other (please specify)	fuel 449.00		

 (see reverse)

Your feedback on any aspect of the program:

The Department of Energy, Mines and Resources may verify all statements related to and made on this form, in any previously submitted reports, interim claims and in the Summary or Technical Report which accompanies it.

I certify that;

1. I am the person, or the representative of the company or partnership, named in the Application for Funding and in the Contribution Agreement under the Yukon Mining Incentives Program.

2. I am a person who is nineteen years of age or older, and I have complied with all the requirements of the said program.

3. I hereby apply for the final payment of a contribution under the Yukon Mineral Exploration Program (YMEP) and declare the information contained within the Summary or Technical Report and this form to be true and accurate.

Date January 31, 2016

Signature of Applicant ____________________

Name (print) Debbie James

(see reverse)