Ministry of Energy and Mines
BC Geological Survey

Assessment Report
Title Page and Summary

TYPE OF REPORT [type of survey(s)]: Diamond Drilling and Geophysics

TOTAL COST: 1,472,208.22

AUTHOR(S): M. Seabrook and D.L. Pighin

SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): MX-5-758

YEAR OF WORK: 2017

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5671601

PROPERTY NAME: Vine

CLAIM NAME(S) (on which the work was done): 380413, 380421, 380410, 380418, 380419, 938676, 506175, 506174, 506177, 506173

COMMODITIES SOUGHT: Lead, Zinc, Silver, Gold

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 082GSW050

MINING DIVISION: Fort Steele

NTS/BCGS: 082G/5

LATITUDE: 49 ° 25 '18N " **LONGITUDE:** -115 ° 49 '40W " **(at centre of work)**

OWNER(S):

1) PJX Resources Inc.

2)

MAILING ADDRESS:

5600 - 100 King Street West
Toronto, Ontario, M5X 1C9

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

1) PJX Resources Inc.

2)

MAILING ADDRESS:

5600 - 100 King Street West
Toronto, Ontario, M5X 1C9

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):

Aldridge, Purcell Supergroup, SEDEX, Proterozoic, Moyie Fault, Quartzite, Granofels, Strataform, Lead, Zinc, Galena, Sphalerite

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 36347, 35806, 34937, 34339, 33874, 32855, 29479, 28728, 28201, 27624, 23740, 20518, 17899, 16456, 10221, 10220, 07677, 06936, 06863, 06543, 06498

Next Page

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic	Borehole and loop TDEM (4.7km)	380413, 380421, 380410 and others	12,908.00
Induced Polarization			
Radiometric			
Seismic			
Other	analysis of geophysical data		60,885.00
Airborne			
GEOCHEMICAL (number of samples analysed for...)			
Soil			
Silt			
Rock			
Other	72 Core	380413, 380421, 380410 and others	2,759.00
DRILLING (total metres; number of holes, size)			
Core	7,124.78m	380413, 380421, 380410 and others	1,256,543.43
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY / PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
		TOTAL COST:	1,333,092,43

BC Geological Survey
Assessment Report
37242

Diamond Drilling and Geophysics on the Vine Property
Southeastern British Columbia

Mineral Tenure:
380410 *et al.*

NTS map sheet 082G
1:20,000 trim map sheets 082G031, 082G032, 082G041, 082G042,
Centered at UTM NAD83, 585000E, 5475000N
-115º49”40”W, 49º25’18”N

Fort Steele Mining Division

By

Michael Seabrook, P.Geo., BSc.
6028 Lakeview Dr. SW, Calgary, AB, T3E 5S8

And

David L. Pighin, P.Geo.
301-8th Street S, Cranbrook, B.C., V1C 1P2

Claim owner and operator:
PJX Resources Inc.
5600 - 100 King Street West
Toronto, Ontario
M5X 1C9

February 25, 2018

Diamond Drilling and Geophysics on the Vine Property
Southeastern British Columbia
Mineral Tenure: 380410 *et al.*

Table of Contents

Introduction..... 4
Location, Access and Physiography..... 5
Exploration History..... 6
Claims..... 8
Regional Geology..... 8
Local Geology..... 10
Diamond Drilling..... 12
Gravity, Magnetic and Electric Sounding Geophysics..... 15
- Introduction..... 15
- Magnetic and VTEM analysis 15
- Gravity analysis..... 16
- Borehole EM and Surface TDEM..... 17

Summary and Recommendations..... 18
References..... 19

List of Figures

1. Regional map of PJX Resources Inc. Cranbrook properties..... 4
2. Location map of the Vine Property with outline of the 2014-2015 drilling area..... 5
3. Mineral claim map with outline of the Vine property..... 7
4. Geological setting of the Vine property in the central Purcell Mountains..... 9
5. Local geology map of the Vine property in the vicinity of the 2015-2016 drilling program.. 11
6. Diamond drill hole location map..... 13
7. Drill hole VA17-32 with intersection through the Vine Vein..... 14
8. 1.2km residual gravity map from 2014..... 16
9. 1.2km residual gravity map from 2017..... 17

Table

1. Diamond drilling collar data..... 12
2. VA17-32 lead concentrations for intervals of the Vine Vein..... 15

Appendices

1. Statement of Costs..... 22
2. Statement of Qualifications (Michael Seabrook)..... 24
3. Statement of Qualifications (David L. Pighin)..... 25
4. Vine properties mineral claim list..... 26
5. Diamond drill hole logs..... 28
6. Drill sections with lithology and sampling..... 199
7. Sample assay certificates for diamond drilling..... 212
8. Reports on analysis of magnetic and VTEM data by Salt Spring Imaging Ltd..... 233
9. Map and sections of processed VTEM data by GeoSource Earthscience Consulting..... 264
10. Report on borehole and surface TDEM by SJ Geophysics Ltd..... 271
11. Foldout Maps..... 312

Introduction

Exploration on the Vine property by PJX Resources Inc. has been ongoing since the company first acquired the property in 2012. The Vine project is a continuation of previous efforts to evaluate geophysical anomalies and investigate geological targets. The projects primary method of exploration has been diamond drilling as target depths to prospective horizons are relatively deep. Geophysical surveys have assisted in establishing prospective zones within the geological horizons through modeling. This report describes the efforts undertaken in 2017 to discover a stratigraphically controlled massive sulphide deposit on the Vine property.

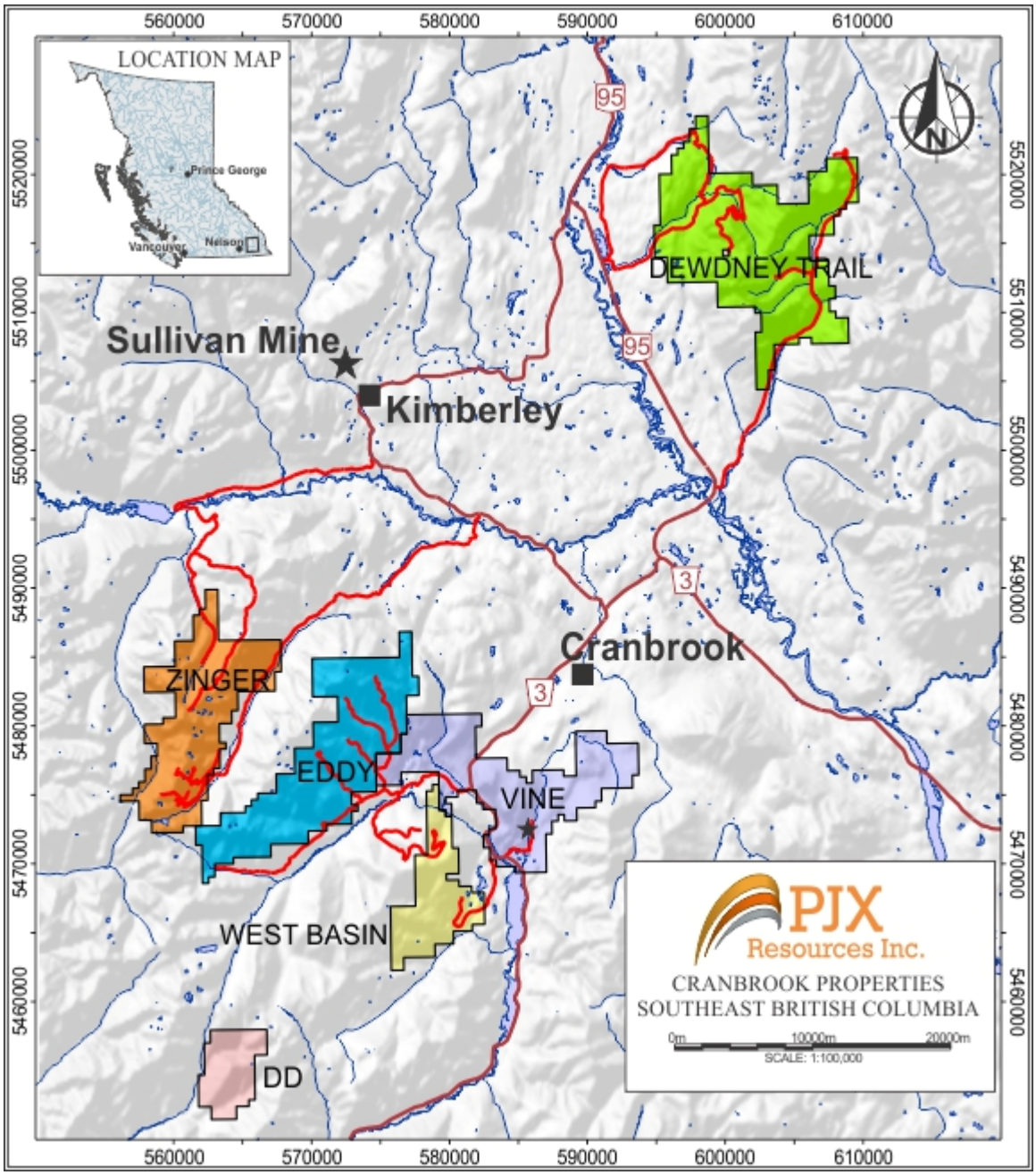


Figure 1: Regional map of PJX Resources Inc. Cranbrook properties

Location, Access, and Physiography.

The Vine property is located 12km south by southwest of Cranbrook, due north of Moyie Lake. To access the property from Cranbrook, travel 20.1km south on Highway 3 (Crow's Nest Hwy). Turn left on Hidden Valley Rd. and travel 3km to enter the southern claim boundary. 4x4 is not necessary to access most of the property although several forest service roads and mine access roads are not suitable for two wheel drive vehicles and some of these roads are not drivable in the winter months without plowing.

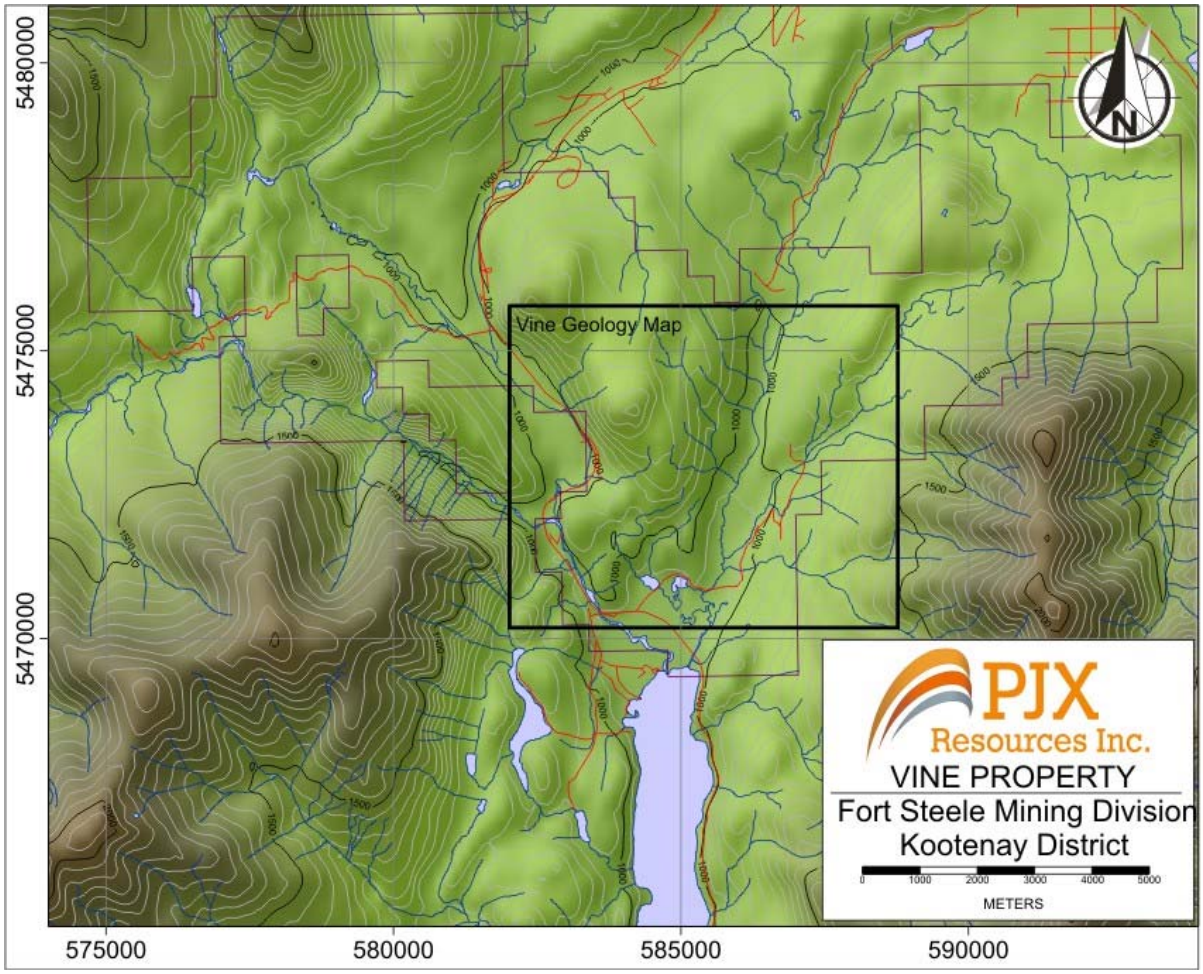


Figure 2: Location map of the Vine Property with outline of the 2014-2015 drilling area.

The property is within the Purcell Mountain Range west of the Rocky Mountain Trench. Topographic relief throughout the property is low to moderate. The area of the 2015-2016 drilling lies on the hill west of Peavine Cr. and in in the valley bottom. The elevation ranges from 1705m along the southeast slope of the Hidden Valley to 930m at Moyie Lake.

The Hidden Valley is home to several agricultural land owners with livestock grazing land, and in several areas of topographically depressed regions, wetlands are present. The hillsides are highly forested with mostly spruce, pine and fir northern species and lesser larch. Bedrock exposure is sparse and thick glacial gravels cover large areas of the Vine property though excellent access offsets the relative lack of outcrops.

Exploration History

In the late 1970's massive sulphide boulders containing lead, zinc and silver were discovered on a forestry road in the Peavine Cr. drainage. Cominco Ltd. began exploring by airborne electromagnetic and magnetic survey in 1976 and identified anomalies that were believed to be bedrock conductors (Webber, 1977a), in the same year, four soil geochemical survey grids were sampled by Cominco Limited (Batchelor, 1977a,b,c; Webber, 1977b). The Vine Vein (Minfile #082GSW050) was drilled in 1977 from four diamond drill holes (Webber, 1978a) and by 1988 Cominco Ltd. had drilled 11 diamond drill holes and 2 percussion drill holes on the property for a total of 4658m (Webber, 1978b,c, 1979; Pighin, 1981, 1982; Hagen, 1987, 1988).

The vein portion of the Vine property was acquired by Kokanee Exploration Ltd. in 1989 who drilled an additional four holes into the vein (Stephenson, 1990). Before Consolidated Ramrod Gold Corp. acquired Kokanee Exploration a pre-NI43-101 compliant resource evaluation was conducted resulting in 264,000 tons proven at 5.2% Pb, 2.24% Zn, 1.96 oz/t Ag and 0.056oz/t Au. A probable resource calculation was 337,000 tons at 4.22% Pb, 2.51% Zn, 1.16oz/t Ag, and 0.05oz/t Au.

During the exploration of the Vine vein, drilling by Cominco and Kokanee Exploration intersected quartzites down section from the LMC (Lower/ Middle Aldridge Contact) which are believed to be correlative with the Footwall Quartzite (FWQ) unit that lie beneath the Sullivan ore body. Kokanee Exploration drilled additional holes in 1990 and discovered a mineralized zone at the base of the FWQ (internal document). Drill hole KV90-41 intersected 3.5m of massive sulphides consisting of mainly pyrrhotite with lesser galena, sphalerite, and chalcopyrite. Sampling of the 3.5m zone indicated grades of 4.34% lead, 2.08% zinc, 42 g/t silver, 0.11 g/t gold and 0.41% copper. Though the footwall contact of the intersection was highly distorted, the upper contact was clearly bedding parallel. The bedded contact suggests that the mineralization at the base of the FWQ is potentially SEDEX in origin.

After acquiring Kokanee Exploration Ltd, Consolidated Ramrod intersected mineralization at the base of the FWQ approximately 200m down dip of the initial discovery by Kokanee. Drill hole KV94-57 intersected massive sulphides at the base of the FWQ; though the zone is thinner than that of KV90-41, and highly distorted by tectonism (Pighin, 1995). No recorded work was conducted between 1995 and 2000 in which time the claims lapsed and were staked by Supergroup Holdings Ltd.

Ruby Red Resources Inc., explored the Vine Property by ground EM surveys (Klewchuck, 2004, 2006a), soil geochemistry sampling (Klewchuck, 2007) and five short diamond drill holes (Klewchuck, 2006b) in an effort to discover cross-cutting mineralized structures on the Vine Vein known as "avenues". The results did not intersect cross-cutting avenues in the drilling, and in 2010 the property was acquired by PJX Resources Inc. from the renamed Ruby Red Resources Inc. now known as Spirit Gold Inc.

In 2011 PJX Resources Inc. began exploring the Vine property by airborne VTEM survey which suggested subsurface conductive bodies were present on the property (Klewchuck, 2012). All historical drill holes were consolidated into a digital database and ground geochemistry

sampling was conducted in the following year (Gallagher, 2012). These efforts were undertaken to explore both the Vine vein as well as the soil geochemical profile over the LMC (Sullivan Horizon) to the northeast of the Vine vein. In 2013, PJX Resources Inc. extended a 1978 drill hole an additional 403m to intersect the base of the Footwall Quartzite some 704m down hole (Anderson, 2013). The hole was successfully located and extended, however a normal fault displaced the prospective horizon off hole.

PJX Resources began a large program of gravity geophysical surveys to detect dense subsurface features (Jones, 2014). Geophysical interpretation of the gravity data suggested a single massive sulphide body at the base of the FWQ to the northeast of the Vine vein. Mineralization intersected, by former operators, approximately 750m below surface at the base of the FWQ lies along the western edge of a gravity anomaly referred to as the Eastern Gravity anomaly (Jones, *op. cit.*). The base of the FWQ is about 300 m stratigraphically below the LMC and was the focus of diamond drilling in 2014 to 2015. 15 Drilling in the 2014 – 2015 program indentified the FWQ, and potential mineralization appeared to be deformed in the hanging-wall zone of the Moyie Fault (Seabrook and Pighin, 2016). Additional drilling and gravity geophysics was conducted in 2016- 2017 more accurately defined the geometry of the FWQ and Moyie Fault (Seabrook and Pighin, 2017).

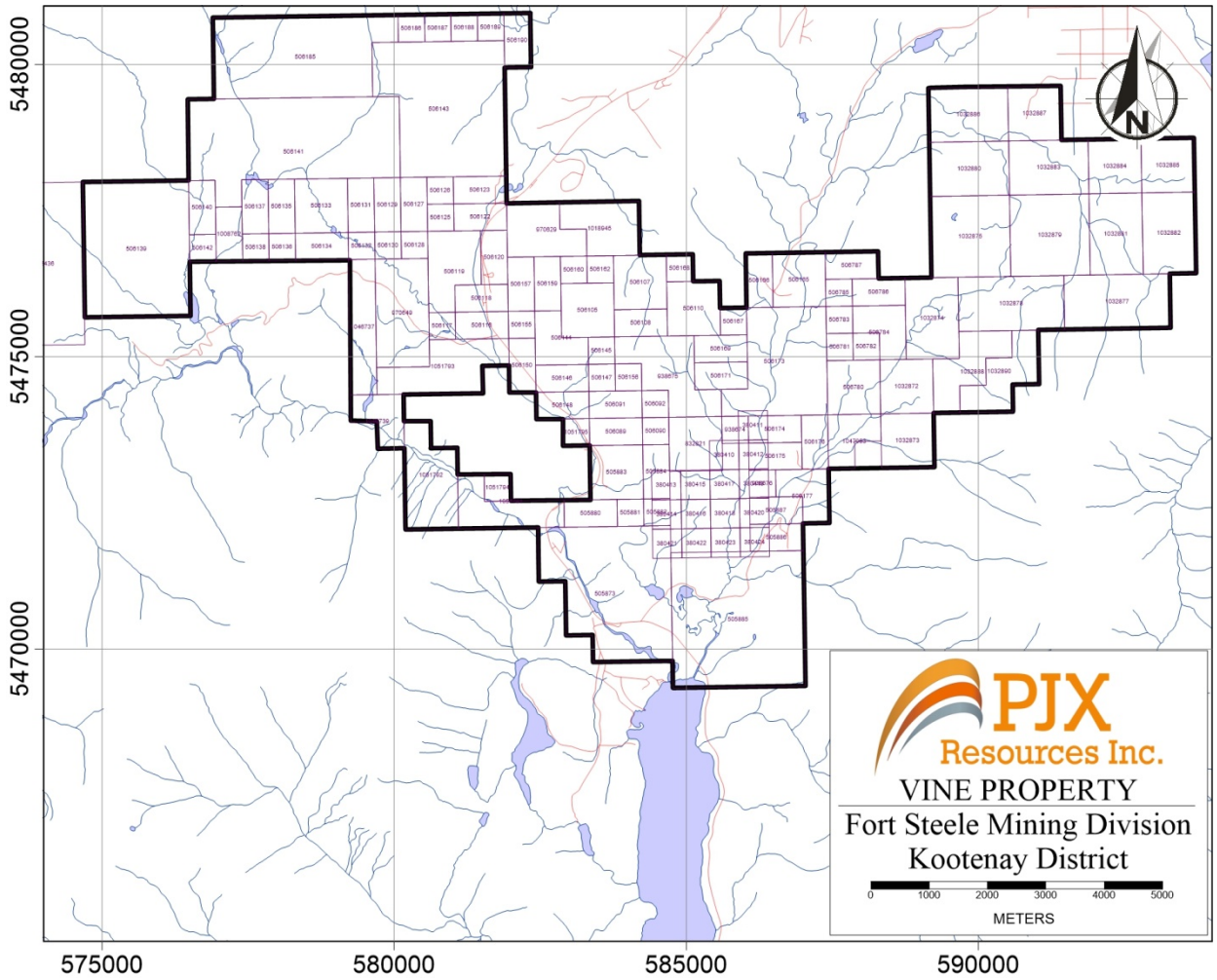


Figure 3: Mineral claim map as of September 09, 2017.

Claims

The Vine property is an amalgamation of three adjoining properties known as the Vine, the Vine Extension, and the Vine East. The combined land package consists of 127mineral tenures, including 15 grandfathered two post claims, covering an area of 10,013ha. All of the mineral tenures on the Vine property are 100% owned and operated by PJX Resources Inc. and is contiguous with the company's adjacent Eddy and West Basin properties to the west and southwest respectively (Figure 1). The land position can be seen in Figure 3 and a complete list of claims for the Vine property can be found in the appendices (Appendix 4).

Regional Geology

The Vine property lies within the Purcell anticlinorium, a generally north plunging structure that is cored by Middle Proterozoic sedimentary and minor volcanic rocks of the Purcell Supergroup and flanked by unconformably overlying Late Proterozoic clastic and carbonate rocks of the Windermere Supergroup (Figure 4). These are generally overlain by either Cambrian or Devonian rocks, part of the North American "miogeoclinal" sequence.

The Purcell Supergroup, and correlative Belt Supergroup in the United States, comprises a syn-rift succession, the Aldridge Formation, and an overlying, generally shallow-water post-rift or rift fill sequence that includes the Creston and Kitchener Formations and younger Purcell rocks (Höy, 1993).

The exposed part of the Aldridge Formation comprises more than 3000 meters of mainly turbidite deposits and numerous, laterally extensive gabbroic sills referred to as the Moyie intrusions. The gabbroic sills are laterally extensive, typically up to several hundred meters thick and can be traced over hundreds of square kilometers. Locally, particularly in areas of growth faulting, they cut across stratigraphy as dykes. Some of the Moyie sills have contact features that suggest intrusion into wet and partially consolidated sediments (Höy, 1993).

The Purcell Supergroup succession is allochthonous, part of the Foreland Thrust and Fold Belt, the most eastern physiographic belt in the Canadian Cordillera (Monger *et al*., 1982). Structures within the Purcell anticlinorium include east verging thrust faults, northeast trending, right lateral reverse faults, and open to tight folds (Höy, 1993). A complex array of normal faults that trend dominantly northward parallel to the Rocky Mountain trench cut the earlier thrust faults and associated folding.

The northeast-trending structures, including the St. Mary and Moyie faults, are within or parallel to a broad structural zone that cuts the Purcell anticlinorium, crosses the Rocky Mountain trench and extends northeastward across the Foreland thrust belt (Kanasewich, 1968). This zone is marked by a conspicuous change in the structural grain, from northerly north of the zone to northwesterly south of the zone (Figure 4), and by pronounced and fundamental changes in the thickness and facies of sedimentary rocks that range in age from Middle Proterozoic to early Paleozoic (Höy, 1993; Höy *et al*., 2000).

The zone, referred to as the Kanasewich rift, and in the central part of the Purcell Mountains including the area of the Vine property, the Cranbrook Gold Belt, is also characterized by a variety of mineral deposits and occurrences of varying ages and tenor. These

include the Sullivan and Kootenay King sedex deposits, the St. Eugene and Vine lead-zinc-silver veins, and the placer gold deposits of the Wildhorse, Moyie and Perry Creek drainages. Farther west along this trend, lead-zinc replacement deposits occur in Cambrian carbonates in the southern Kootenay Arc, and gold-copper vein deposits characterize the Rossland camp in Quesnel terrane.

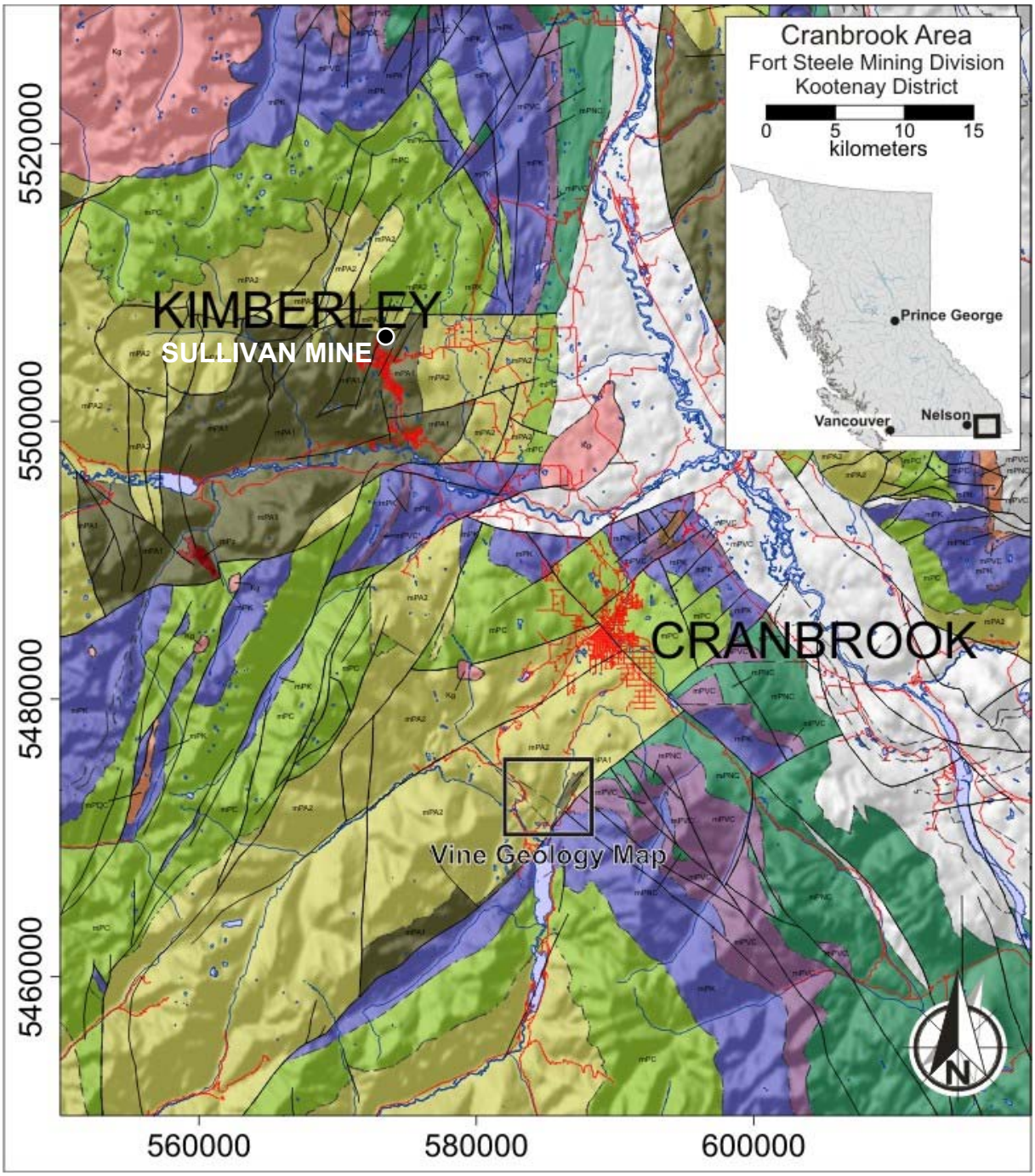


Figure 4: Geological setting of the Vine property in the central Purcell Mountains, southeastern British Columbia; modified from Höy *et al.* (2000).

Local Geology

The Vine property is underlain by clastic and carbonate sedimentary rocks of the Meso Proterozoic Purcell Supergroup. These sedimentary rocks are primarily of the Middle and Lower Aldridge Formation and gabbro intrusions known as Moyie Sills. The stratigraphic section is well understood for Middle and Lower Aldridge Formation rocks across the anticlinorium and excellent stratigraphic controls on the Vine property have been established. The section contains stratigraphic markers of interlayered siltstone that are continuous for kilometers known simply as marker units (Brown *et. al*., 1993). Several marker units have been identified on the Vine property indicating a relative stratigraphic depth to the Middle and Lower Aldridge Formation contact (LMC) across the property.

The Aldirdge Formation is intruded by syntectonic "Moyie" gabbro sills and dikes ranging from a few meters to several hundred meters in width. Typically, the thicker sills maintain stratigraphic location for kilometers and are named for the stratigraphic marker proximal to the sill such as Sundown or Meadowbrook. On the east side of the Vine property, gabbro sills maintain orientation while sedimentary units of the Aldridge formation are offset indication that faulting has taken place prior to the emplacement of the gabbro intrusive. As evidence suggests that the sills are intruded into partially lithofied sediments (Höy, 1989), it is safe to assume that the faulting is syn-sedimentary. The Middle Aldridge Formation is primarily siltstones, silty quartzites and argillites with dolomitic intervals. Soft sediment deformation is mainly in the form of cross-beds, load casts and rip-up clasts particularly where turbidite disturbance has taken place. Trubidites are present throughout the Middle and Lower Aldridige Formation and represent variation in relief of the paleotopography resulting in underwater flows. Sedimentary units representing intense underwater flows are sometimes referred to as fragmentals, or sedimentary fragmentals, where sub-angular clasts of Aldridge Formation are hosted in a mud matrix. The sedimentary fragmentals are attributed to debris shedding off of paleo-escarpments; the surface expression of growth faults. Many fragmental units have been discovered on the Vine property suggesting that paleotopographic lows were present to capture debris fill material in Lower and Middle Aldridge time.

The Lower Aldridge Formation is predominantly thin bedded argillite and siltstone. A subunit within the Lower Aldridge is comprised of mainly siltstone and lesser quartzite. The subunit is thicker bedded and more massive compared to the rest of the Aldridge Formation with interbeds of argillite and siltstone demonstrating soft sediment deformation features attributed to more proximal turbidites. The subunit is known as the Footwall Quartzite and is located stratigraphically below the LMC at the Sullivan deposit, the Vine property, and a few other locations in the belt.

Mapping on the Vine property over several decades by D. Pighin and others has indicated that stratigraphy is gently warping over north to northeast plunging folds. The folds are cut by several northeast trending extensional faults, some of which are Proterozoic in age and many may be reactivations of Proterozoic faults in later tectonic events. The Vine Vein is a northeast trending structure and vein mineralogy suggests a Proterozoic age (Paiement *et. al.*, 2007). The Moyie fault is a broad right-lateral shear structure with several kilometers of throw. A prevalent northeast trending foliation is present distal to the fault, and within the immediate hanging-wall zone, an intense phyllitic foliation and alteration destroys the original texture of the sedimentary and intrusive rock units.

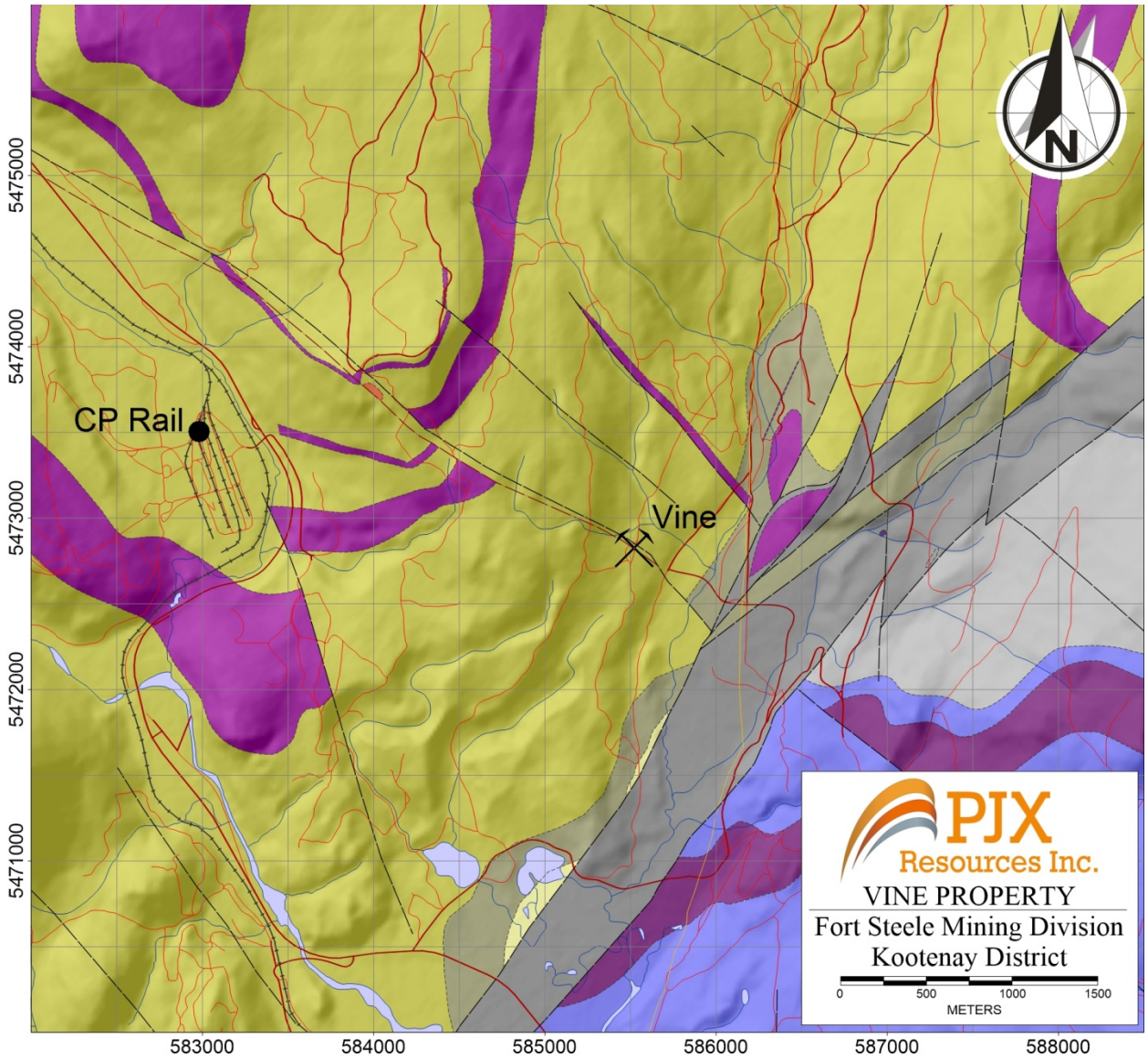


Figure 5: Local geology map of the Vine property (geology by D.L. Pighin and A.S. Hagen). (see foldout for legend and details in Appendix 11).

The Vine Vein is a complex structure of quartz carbonate veining, metal sulphides and gange minerals. Hosted within the shear structure are mafic intrusive rocks, brecciated fragments of wall rock and massive sulphide minerals; pyrrhotite, sphalerite, galena, arsenopyrite, chalcopyrite, pyrite and locally gold (Anderson, 2013). The Vein is exposed at surface and has been drilled to a depth of about 700m. The Vine Vein structure cuts stratigraphy from below the Footwall Quartzite to well into the Middle Aldridge Formation suggesting that the vein postdates those sedimentary intervals. The vein strikes southeasterly with a dip of about 70° to 80° to the southwest. The strike length of the vein has been defined to extend of 700m by drilling, 2km by trenching, and traced on surface by geological mapping, geophysics, and geochemistry for about 5km.

Thin 1mm to <5cm beds of massive sulphides occur throughout the Middle and Lower Aldridge Formation on the Vine property. The sulphide beds are mainly massive pyrrhotite or pyrite with lesser sphalerite and galena. The sulphide beds typically occur in groups and are electrically conductive within the bed but rarely conductive between beds. The massive sulphide beds are not viable deposits but suggest the presence of a paleo-anoxic sub-basin that allows for the accumulation of sulphides without oxidizing the metal minerals. The aforementioned conditions are just some of the requirements for the deposition of SEDEX mineralization such as the nearby Sullivan Deposit (Minfile #082FNE052). Strataform SEDEX deposits have been found in the Aldridge Formation at stratigraphic intervals other than the Sullivan Horizon at LMC, such as the Kootenay King (Minfile #082GNW009) and the nearby Fors (Minfile #082GSW035). Bedding parallel massive sulphides discovered at the base of the FWQ indicate that the paleo-basin represented by the stratigraphic horizon had suitable conditions for SEDEX deposition.

Diamond Drilling

The 2017 diamond drill program was the largest to date for PJX Resources Inc. with 7124.78m drilled. The program included four holes drilled to a depth greater than a kilometer. Three of the holes were extensions of previously drilled holes to intersect deeper stratigraphic horizons. Nine drill holes were newly collared in the program with objectives described below. Collar data and locations can be found in the table and map below (Table 1 and Figure 6).

Drill Hole	Length	Azimuth	Dip	Easting	Northing	Elevation
VA16-24	313.4		-90	586490	5472890	980
VA17-25	821.64		-90	586572	5473372	1010
VA17-26	200	222	-80	586830	5473560	1050
VA17-27	81		-90	586530	5473320	1010
VA17-28	1316.7		-90	584840	5471810	970
VA17-29	1400.8		-90	584850	5472610	1165
VA17-30	538.6		-90	585990	5473025	970
VA17-31	163.7		-90	585905	5473124	980
VA17-32	462.4	32	-75	585788	5472561	955
VA14-01ext	1010.97	279.5	-85.4	586600	5473630	1020
VA15-09ext	886.9		-90	586400	5474025	980
VA15-14ext	1018.6		-90	586439	5473540	980

Table 1: Diamond drilling collar data.

The focus of drilling was primarily localized around the eastern gravity target (Figure 8). The location accounted for all but two of the holes in the program and the majority of holes drilled by PJX Resources Inc. since the property was acquired. The reason for the concentration of efforts on the eastern gravity target is the developing model for mineralization which suggests the greatest potential on the property. In simplest terms, the model for mineralization in the eastern gravity target is described as a SEDEX massive sulphide originally exhaled onto the seafloor within a physiographic sub-basin, synsedimentray with the base of the footwall quartzite described in Seabrook and Pighin (2016). Younger tectonic events deformed and offset the strataform deposit which now lies within the attenuated zone of the Moyie Fault. The model is

based on interpretations of geological and geophysical data collected and compiled from decades of exploration on the property. This type of deposit has similar structural characteristics to that of a Broken Hill type deposit where the sulphide minerals deposited in the sedimentary sequence, at the Sullivan deposit, are deformed within the attenuation zone of a syn-sedimentary fault, like the Moyie fault. The model differs from the Broken Hill type in that the degree of metamorphism would be lower temperature greenschist facies as opposed to the granulite facies at Broken Hill.

The drilling on the eastern gravity anomaly area has yet to intersect a feature that would explain the, now refined, gravity anomaly on the map in Figure 9. Geological interpretations of the subsurface suggest that the base of the footwall quartzite is intruded by a gabbro sill to the north of the East gravity anomaly. To the west of the gravity anomaly the footwall quartzite lies above the thick gabbro package for example in drill holes VA17-28 but further north (VA15-09) is split by gabbro suggesting a ramping of the sill in the immediate area north of the gravity anomaly. This ramping of the gabbro sill is similar to the gabbro arch at the Sullivan deposit.

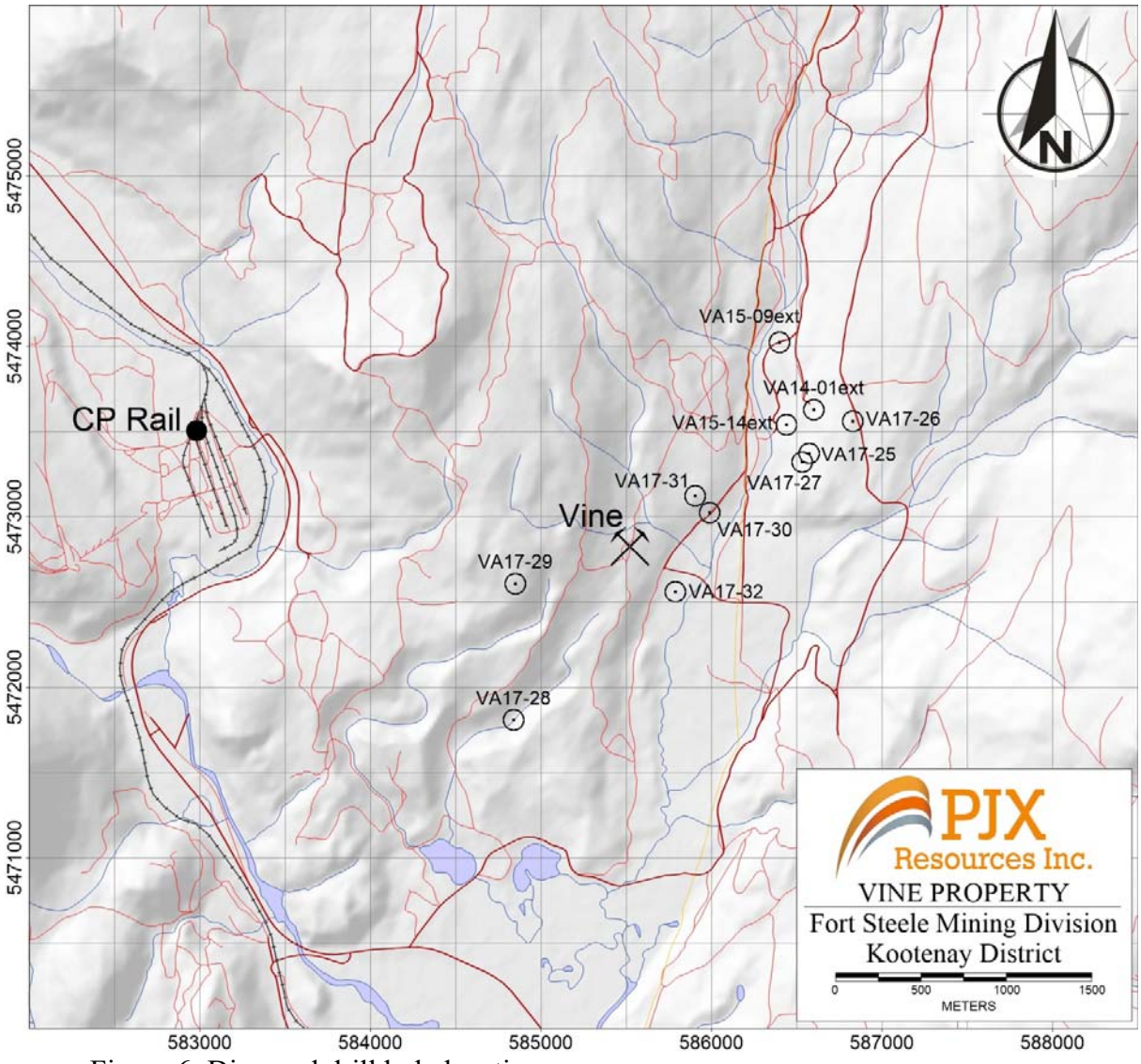


Figure 6: Diamond drill hole location map.

In 2017, PJX Resources Inc. began exploring a new target on the property with similar potential to that of the eastern gravity target. The southern target is similar in that the FWQ is the prospective stratigraphic horizon and it lies along the Moyie Fault. The model for explorations of the southern target is in its infancy and will require further data gathering to establish a more complete model. The purpose of the two holes drilled on the southern target (VA17-28 and 29) were to determine the feature responsible for anomalies indicated indicated in the processed electromagnetic (EM). The EM data was interpreted to have a large sub-horizontal anomaly consistent with a potential bedded massive sulphide, similar to the pyrhotite body found at the Sullivan deposit. Narrow bedded massive pyrrhotite-pyrite sulphides were encountered at Sullivan time and brecciated sediments containing pyrrhotite, pyrite and chlorite were encountered in the Footwall Quartzites in hole VA17-28. Approximately 50cm of massive pyrite with pyrrhotite was also intersected within the attenuation zone of the Moyie Fault. This style of mineralization and alteration is considered to be somewhat distal type mineralization to a massive sulphide deposit.

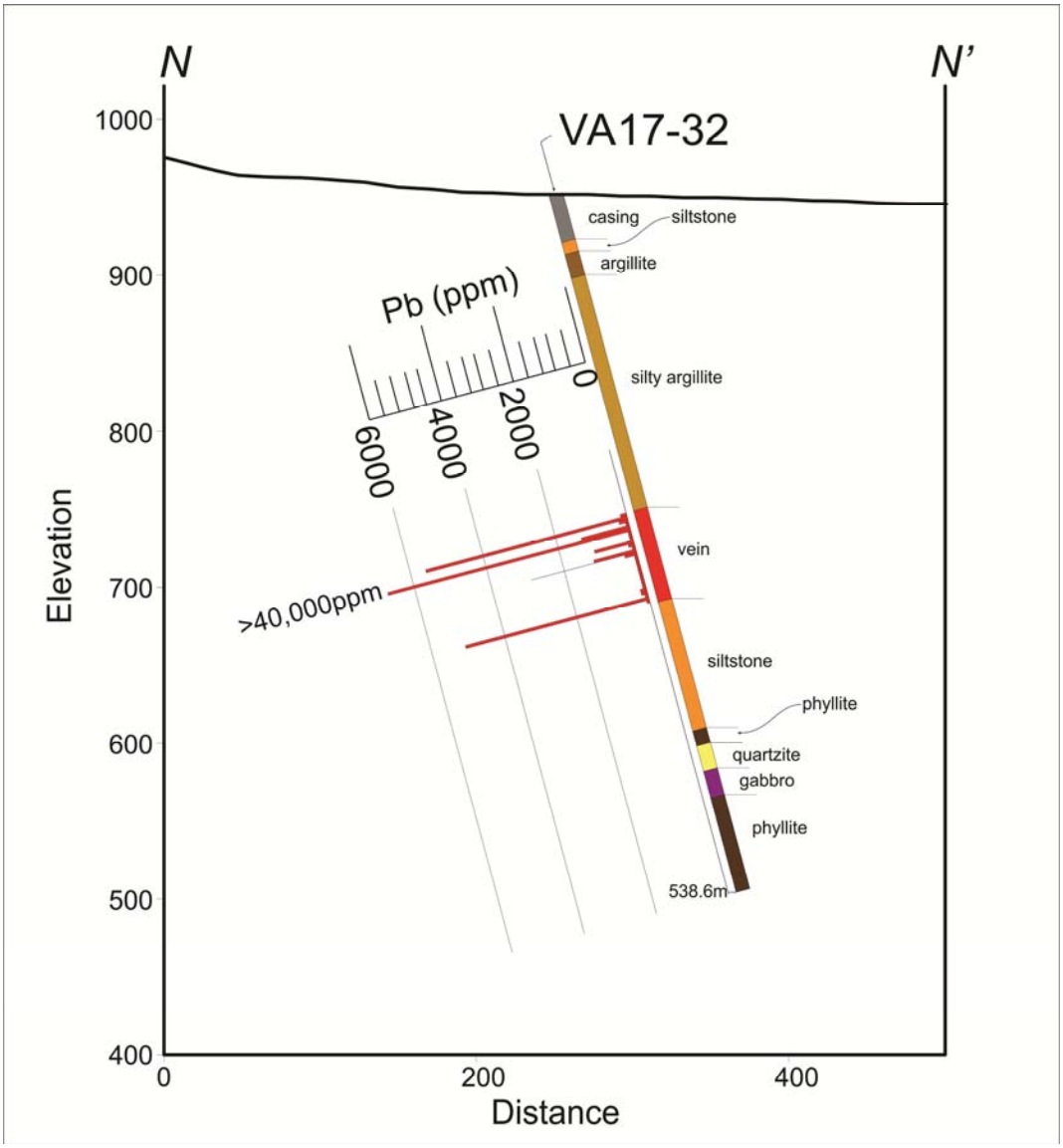


Figure 7: Drill hole VA17-32 with intersection through the Vine Vein.

VA17-32 was designed to intersect the base of the footwall quartzite and the Vine Vein. The hole did intersect the top of the footwall quartzite but did not pass through the entire stratigraphic width to explore the base. The drill hole did however intersect the Vine Vein where 59m of drill core assayed over 1000 ppm lead (Table 2). Within the same interval a narrower section of 12.3m assayed 0ver 4000ppm Pd with one sample (1m interval) assaying greater than 4% lead (Appendix 7). Drill hole VA17-32 is shown in the previous diagram with the individual samples shown in the adjacent histogram (Figure 7). Additional sections can be found in Appendix 6.

From	To	Interval	Weighted Average for Pb (ppm)
207.0	219.3	12.3	4042.6
207.0	266.0	59.0	1070.2

Table 2: VA17-32 lead concentrations for intervals of the Vine Vein.

Geophysics

Introduction

Geophysical surveys are ongoing on the Vine property to support drilling efforts. As the model for mineralization is adapted to incorporate data established by diamond drilling, the extent and resolution of geophysical stations are increased. The 2017geophysical program primarily worked with existing data from previous year's surveys. The two data sets that were reprocessed and interpreted were from an airborne VTEM and magnetic survey (Klewchuck, 2012) and the extensive gravity survey data (Jones, 2014) both conducted by PJX Resources Inc. In addition to the reprocessing, some down-hole EM surveys were conducted to indicate a prospective depth for conductive anomalies.

Magnetic and VTEM analysis

The VTEM and Magnetic survey was analysed by Salt Spring Imaging Ltd. (Appendix 8). The magnetic and VTEM data identified three anomalies in the southern half of the survey area. Analysis of anomaly one indicated that a circular magnetic feature that may dip shallowly to the south-southeast. Anomaly one also has a conductive feature in the EM signal that is proximal to the magnetic anomaly with 120-200m separation. Anomaly two is similar to anomaly one in that part of the feature that produces the magnetic signal appears to be shallow. Anomaly two is near vertical or slightly west dipping and has an adjacent conductivity anomaly at approximately the same depth as the magnetic anomaly. Anomaly three is significantly deeper than one or two and is not believed to be an extension of either of the two magnetic signatures (Appendix 8).

Additional data analysis of the VTEM survey was conducted by Geosource Earthscience Consulting. The results of the analysis indicated that a conductivity anomaly occurs in the northeast corner if the original VTEM survey area (Appendix 9). The northeast anomaly is proximal to a large positive gravity feature and several smaller magnetic anomalies. Apparent conductivity is calculated by assuming a half - space model with a singular value, gridded at each time channel. In this case, channel 1161msec was used to produce the contour maps in Appendix 9. Profiles of calculated resistivity indicate two parallel conductive zones in the Northeast corner of the survey area with responses as high as 3.1millisiemens/m at depth. Line

L4080 of the survey indicated that the set of parallel anomalies lies between 300m and 500m depth (Appendix 9).

Gravity analysis

Gravity data acquisition has been conducted by Excel Geophysics for PJX Resources Inc. for the past several years to cover much of the property and extensively over the prospective areas as they develop. The analysis of this data is ongoing and intended to directly support diamond drilling on the property. Post processing and modeling of the gravity data was conducted in 2017 to further constrain the prospective area for drilling. The maps in Figure 8 and 9 illustrate the refining of the gravity data through post processing from 2014 to 2017. Anomalies in the area for highest station density have higher resolution and are now more clearly defined as features with multiple high response centres in a broader anomalous zone, in particular on the eastern anomaly.

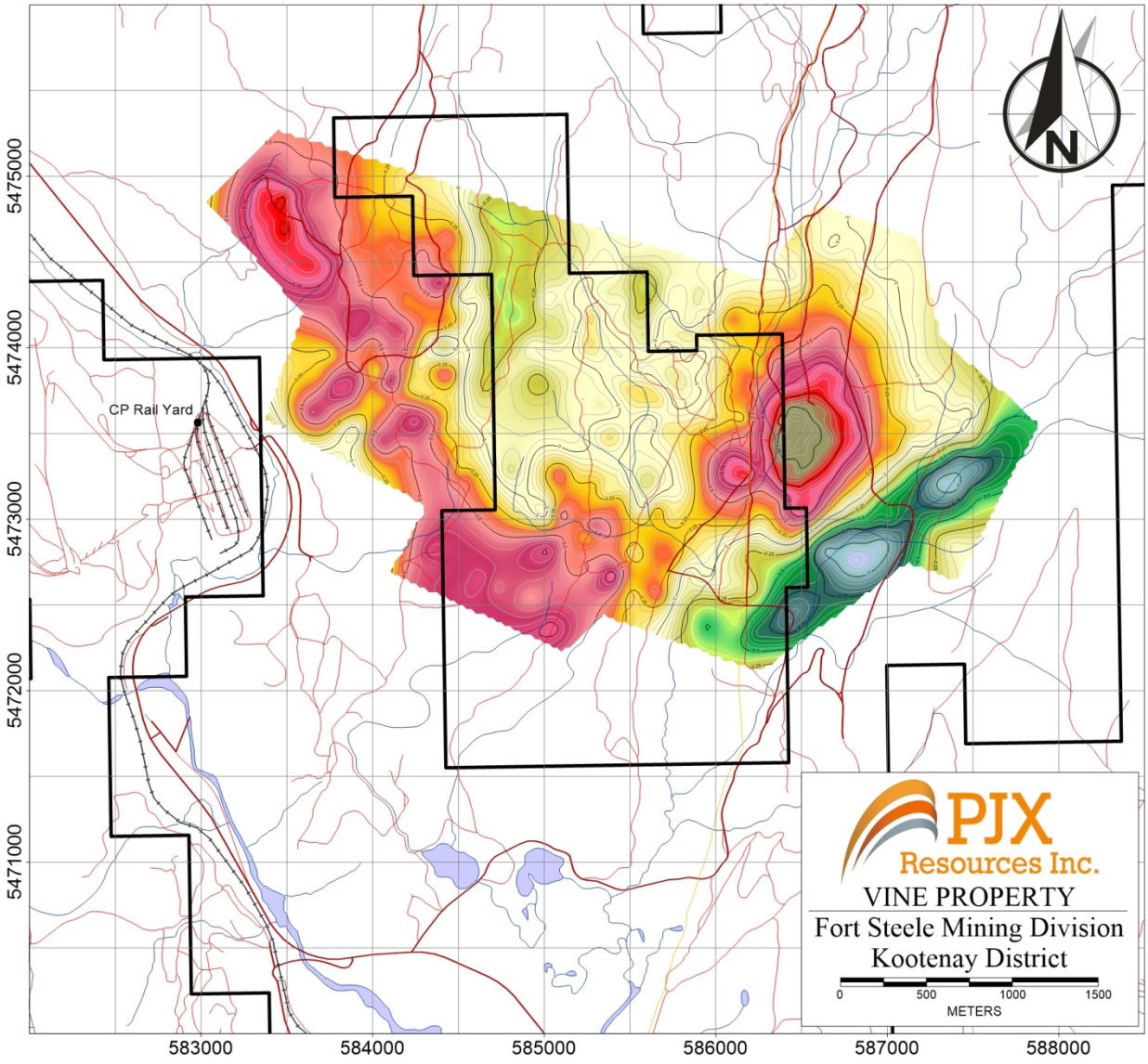


Figure 8: 1.2km residual gravity map from 2014.

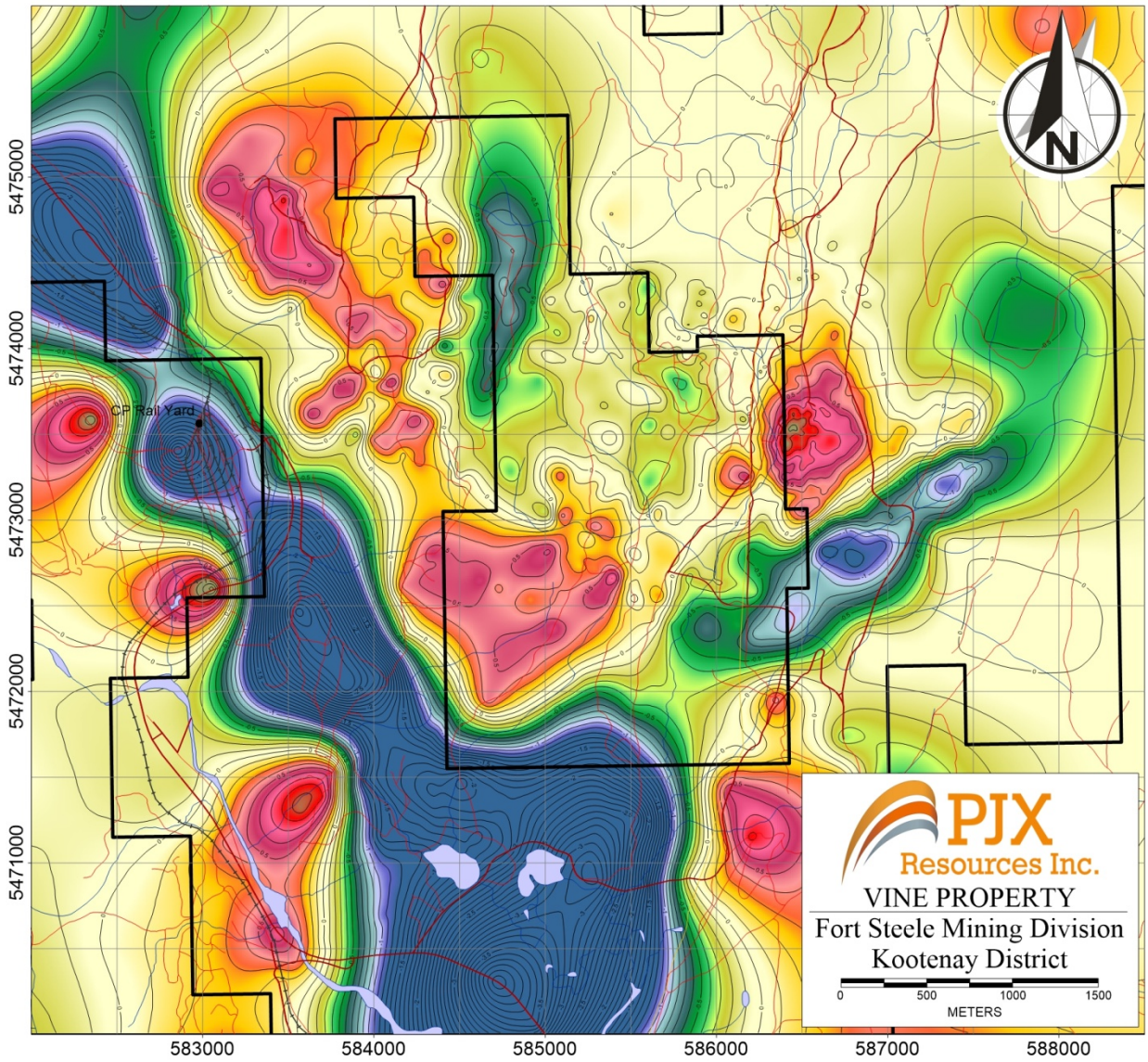


Figure 9: 1.2km residual gravity map from 2017.

Borehole EM and Surface TDEM

PJX Resources Inc. contracted SJ Geophysics Ltd. to conduct borehole magnetic and electromagnetic surveys, and surface loop time domain electromagnetic surveys on the Vine property. The surveys undertook four drill holes and three surface loops, one of which was a time domain EM survey that did not rely on a down hole signal. The purpose of the borehole surveys was to identify a conductive or magnetic anomaly adjacent to the boreholes at a prospective depth such as the Sullivan and footwall quartzite stratigraphic horizon or within the deformation zone of the Moyie Fault. Details of the survey equipment and methods can be found in the included report (Appendix 10) including maps and a discussion of the geophysical features resolved in the surveys.

Summary and Recommendations

In 2017 PJX Resources Inc. continued exploring the Vine property for a massive sulphide deposit along a similar general model to the Sullivan Deposit with a later event deforming the ore body along the Moyie fault zone. PJX Resources Inc. has taken a multi-disciplinary approach to exploring the Vine property with VTEM, Magnetics, Gravity, borehole EM, and diamond drilling. Due to the strataform nature of SEDEX deposits and the depth to the prospective sedimentary horizons on the property, diamond drilling to depths greater than 1,000m has been necessary in several areas.

The 2017 Vine exploration program was primarily a drilling program with over 7,000m of drilling in nine newly drilled holes and three extended drill holes. The program featured geophysical data acquisition of electromagnetic resistivity in borehole and surface loop measurement. In addition to the borehole geophysics, post processing and analysis of gravity, magnetic and VTEM data was contracted to geophysical consultants to refine the anomalies that are prospective targets based on their physical properties.

In personal communication, R. Barlow of Geosource Ltd. suggested that several lines of induced polarization surveys could better indicate the features resolved in the VTEM survey and provide a subsurface target to compare to the geological interpretation. Diamond drilling is ongoing as the geological model constrains the prospective targets and new targets are suggested in geophysical anomalies.

The eastern gravity anomaly remains a priority as both geological and geophysical features in the area have been favourable for a mineralized horizon. Middle Aldridge markers have been found within the attenuation zone of the Moyie Fault. Two such markers were in inverted sequence suggesting an overturning of the stratigraphic sequence in the attenuated zone, or a structural stacking of sedimentary units. In either case, the prospective horizon of the base of the footwall quartzite would be likely folded and moved along the fault deformation zone from its projected stratigraphic position.

Drilling a few kilometres west of the East Gravity anomaly encountered massive iron sulphides, albite and chlorite mineralization within the attenuation zone of the Moyie fault. This style of mineralization and alteration may represent a distal extension of a sulphide deposit. Drilling within the large East Gravity anomaly has encountered sphalerite, galena, albite and chlorite mineralization in the attenuation zone. The mineralization and alteration are considered to be more proximal to a sulphide deposit. With multiple phases of deformation attributed to tectonic events going back to the Proterozoic it is believed that a massive sulphide body has been folded and dragged from the west, along the Moyie fault, to the current position of the East Gravity anomaly. Additional drilling is required to narrow the position of a potential dense folded massive sulphide body considered to be associated with the East Gravity anomaly.

References

Anderson, D. (2013): Diamond Drilling and Geophysical Surveys on the Vine Property; *BC Ministry of Energy and Mines*, Assessment Report 34339, 84 pages.

Batchelor, E.W. (1977a): Report on Geochemical Survey Grid A, Vine Claim Group, Fort Steele Mining Division, BC; *BC Ministry of Energy and Mines*, Assessment Report 06498B, 18 pages.

Batchelor, E.W. (1977b): Report on Geochemical Survey Grid B, Vine Claim Group, Fort Steele Mining Division, BC; *BC Ministry of Energy and Mines*, Assessment Report 06498C, 12 pages.

Batchelor, E.W. (1977c): Report on Grid C Geochemical Survey on Vine 1 Claim, Vine 1, 25, 27 Claim Group, Fort Steele Mining Division, BC; *BC Ministry of Energy and Mines*, Assessment Report 06498D, 16 pages.

Brown, D.A., Bradford, J.A., Melville, D.M., Legun, A.S., and Anderson, D. (1993): Geology and Mineral Deposits of Purcell Supergroup in Yahk Map Area, Southeastern British Columbia (82F/1); *British Columbia Geological Survey Branch*, Geological Fieldwork 1993, 24 pages.

Gallagher, C. (2012): 2012 Assessment Report on Diamond Drill Hole Compilation, Soil and Rock Geochemistry, Volume 1 - Report on the Vine Property; *BC Ministry of Energy and Mines*, Assessment Report 33874, 336 pages.

Hagen, A.S. (1987): Diamond Drilling Report, Vine Property, Vine 54, 56, 58 Claims; *BC Ministry of Energy and Mines*, Assessment Report 16456, 22 pages.

Hagen, A.S. (1988): Diamond Drilling Report, Vine Property, Vine 54, 56, 58 Claims; *BC Ministry of Energy and Mines*, Assessment Report 17899, 25 pages.

Höy, T. (1989): The Age, Chemistry, and Tectonic Setting of the of the Middle Proterozoic Moyie Sills, Purcell Supergroup, Southeastern British Columbia. *Canadian Journal of Earth Sciences*, v. 29, pages 2305-2317.

Höy, T. (1993): Geology of the Purcell Supergroup in the Fernie W-half map area, southeastern B.C.; *B.C. Ministry of Energy and Mines*, Bulletin 84, 157 pages.

Höy, T., Anderson, D., Turner, R.J.W., and Leitch, C.H.B. (2000): Tectonic, magmatic and metallogenic history of the early synrift phase of the Purcell basin, southeastern British Columbia; in The Geological Environment of the Sullivan Deposit, British Columbia; *Geological Association of Canada*, Special Publication No. 1, pp. 32-60.

Jones, B. (2014): Technical Assessment Report, Vine, Vine Ext, and West Basin Properties; *BC Ministry of Energy and Mines*, Assessment Report 34937, 78 pages.

Kanasewich, E.R. (1968): Precambrian rift: genesis of stratabound ore deposits; *Science*, v. 161, pages 1002-1005.

Klewchuk, P. (2004): Assessment Report on Ground EM Geophysics, Vine Property; *BC Ministry of Energy and Mines*, Assessment Report 27624, 32 pages.

Klewchuk, P. (2006a): Assessment Report on Ground EM Geophysics, Vine Property; *BC Ministry of Energy and Mines*, Assessment Report 28201, 12 pages.

Klewchuk, P. (2006b): Assessment Report on Diamond Drilling, Vine Property; *BC Ministry of Energy and Mines*, Assessment Report 28728, 30 pages.

Klewchuk, P. (2007): Assessment Report on Soil Geochemistry, Vine Property; *BC Ministry of Energy and Mines*, Assessment Report 29479, 16 pages.

Klewchuk, P. (2012): Assessment Report on Airborne Geophysics, Vine Claims; *BC Ministry of Energy and Mines*, Assessment Report 32855, 74 pages.

Monger, J.W., Price, R.A. and Tempelman-Kluit, D.J. (1982): Tectonic accretion and the origin of two major metamorphic and plutonic welts in the Canadian Cordillera; *Geology*, v. 10, pp. 70-75.

Paiement, J-P., Beaudoin, G., and Paradis, S. (2007): Geological Setting of Ag-Pb-Zn veins in the Purcell Basin, British Columbia; *Geological Survey of Canada*, Current Research 2007-A4, 10 pages.

Pighin, D.L. (1981): Percussion Drilling Report, Vine No.37 Claim; *BC Ministry of Energy and Mines*, Assessment Report 10221, 9 pages.

Pighin, D.L. (1982): Percussion Drilling Report, Vine No.39 Claim; *BC Ministry of Energy and Mines*, Assessment Report 10220, 9 pages.

Pighin, D.L. (1995): Assessment Report on Diamond Drill Hole KV94-57; *BC Ministry of Energy and Mines*, Assessment Report 23740, 24 pages.

Seabrook, M., and Pighin, D.L. (2016): Drill Hole and Surface Geophysics, Geological Mapping, and Diamond Drilling, Vine Property; *BC Ministry of Energy and Mines*, Assessment Report 35806, 313 pages.

Seabrook, M., and Pighin, D.L. (2017): Diamond Drilling and Geophysics on the Vine Property And Geological Mapping and Chip Sampling on the Zinger and Eddy Properties; *BC Ministry of Energy and Mines*, Assessment Report 36347, 227 pages.

Stephenson, L. (1990): Report on Four Diamond Drill Holes (KV90-36, 37, 38 and 39), Vine Property; *BC Ministry of Energy and Mines*, Assessment Report 20518, 58 pages.

Webber, G.L. (1977a): Report on Geochemical Survey on Vine 3 Claim, Fort Steele Mining Division, BC; *BC Ministry of Energy and Mines*, Assessment Report 06498E, 15 pages.

Webber, G.L. (1977b): Geochemical Survey Report on the South Vine Grid; *BC Ministry of Energy and Mines*, Assessment Report 06543, 21 pages.

Webber, G.L. (1978a): Diamond Drilling Report on the Vine No. 1 Claim; *BC Ministry of Energy and Mines*, Assessment Report 06863, 21 pages.

Webber, G.L. (1978b): Diamond Drilling Report on the Vine No.1 Claim; *BC Ministry of Energy and Mines*, Assessment Report 06863B, 22 pages.

Webber, G.L. (1978c): Diamond Drilling Report on the Vine No.29 Claim; *BC Ministry of Energy and Mines*, Assessment Report 06936, 16 pages.

Webber, G.L. (1979): Diamond Drilling Report on the Vine No.17 Claim; *BC Ministry of Energy and Mines*, Assessment Report 07677, 36 pages.

Appendix 1: Statement of Costs

		Units	Rate	Cost
Geology				
	Data analysis and interpretation	15	550	8,250.00
	Cartography	5	450	2,250.00
			Geology Sub-total	10,500.00
Diamond Drilling				
	Contract drilling		flat	1,062,041.93
	Drill program geologist	172	600	103,200.00
	Permitting	6	450	2,700.00
	Cartography	5	450	2,250.00
	Core geotech	94	250	23,500.00
	Site support		flat	20,828.00
	Archeological assessment		flat	623.50
	Sample Analysis	72	38.32	2,759.00
	Travel	10	850	8,500.00
	Accommodations	100	100	10,000.00
	Food	100	43	4,300.00
	Truck	45	180	8,100.00
			Diamond Drilling Sub-total	1,248,802.43
Geophysics				
	Down hole data acquisition		flat	3,905.00
	Mag and VTEM interpretation		flat	8,305.00
	Gravity geophysics interpretation		flat	9,126.88
	VTEM interpretation		flat	46,908.78
	Down hole EM interpretation		flat	9,003.02
	Geologist	1	450	450.00
			Geophysics Sub-total	73,793.68
Exploration				
	Storage	11	25	275.00
			Sampling Sub-total	275.00
			Exploration Total	1,333,371.11
	Report writing	10	500	5,000.00
			Sub-total	5,000.00
	10% administration fee			133,837.11
			Total	1,472,208.22

Personnel	Start date	End date	Days	Rate	Total
Lead professional geologist	07/12/2016	29/08/2017	172	600	103,200.00
Geologist consultant	15/02/2017	20/03/2017	16.5	450	7,425.00
Drill contract crew	07/12/2016	26/07/2017		flat	1,062,041.93
Core geotechnician	20/07/2017	01/08/2017	67	350	23,450.00
Archeologist consultant	14/12/2016	02/12/2016		flat	623.50
Geophysical Down-hole EM crew	13/02/2017	19/02/2017	7	flat	3,905.00
Geophysicist (Mag, VTEM)	15/09/2016	02/10/2016		flat	4,400.00
Geophysicist (Gravity)	06/01/2017	03/02/2017		flat	9,126.88
Geophysicist (Down-hole EM)	13/02/2017	19/02/2017	6	flat	9,003.02
Geophysicist (VTEM)	22/06/2017	12/07/2017		flat	46,908.78
				Total	1,270,084.11

Appendix 2: Statement of Qualifications – M. Seabrook

I, Michael Seabrook, P.Geo., BSc. do hereby certify that:

1. I am a member of the Association of Professional Engineers and Geoscientists of Alberta (APEGA).

2. I attained the degree of Bachelor of Science (BSc.) in geology from the University of Calgary, Calgary, Alberta in 2008.

3. I have worked in the geological exploration industry for 10 years as an independent contractor.

4. I acted as an exploration geologist for PJX Resources Inc. during this program and have visited the property many times.

1. I, and my co-author, D. Pighin, are responsible for the preparation of this report entitled: **"Diamond Drilling, Geology, and Geophysics on the Vine Property, Southeastern British Columbia",** dated February 25, 2018.

Dated this 25th Day of February, 2018.

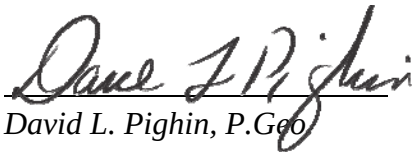
Michael Seabrook, P.Geo.

Appendix 3: Statement of Qualifications – D. L. Pighin

I, David L. Pighin, P. Geo. do hereby certify that:

2. I am a self employed consulting geologist whose office is at Hidden Valley Road, Cranbrook, BC. Mailing address is 301 8th Street S. Cranbrook BC, V1C 1P2.
3. I am a member in good standing of the Association of Professional Engineers and Geoscientists of the province of British Columbia.
4. I have been actively involved in mining and exploration geology, primarily in the Province of British Columbia, for the past 50 years.
5. I was employed by Cominco Ltd. for 24 years, first as a prospector, then as an exploration technician, and finally as an exploration geologist.
6. Since 1989 I have worked for numerous junior exploration companies.
7. I have worked as an exploration geologist in BC, the Yukon, the NWT, New Brunswick, in most of the western United States and Mexico.
8. I have designed numerous diamond drill programs small and large (>2 million dollars)
9. I have planned and managed numerous exploration programs designed to find deposits of base metals, tungsten, molybdenum, gold, diamonds, and rare earth metals.
10. I worked on the Vine property in the Purcell Mountains under contract to PJX Resources Ltd. and acted as exploration supervisor during the program discussed in this report.
11. I, and my co-author, M. Seabrook, are responsible for the preparation of this report entitled: **Diamond Drilling, Geology, and Geophysics on the Vine Property, Southeastern British Columbia",** dated February 25, 2018.

Dated this 25th Day of February, 2018.



David L. Pighin, P.Geo

Appendix 4: Vine property mineral claim list

Tenure Number	Tenure Name	Owner Name	Owner Number	Type	Issue Date	Good To Date	Status	Area (ha)
380410	VP 6	PJX	256589 (100%)	Mineral	2000/SEP/04	2024/NOV/03	GOOD	25
380411	VP 7	PJX	256589 (100%)	Mineral	2000/SEP/04	2024/NOV/03	GOOD	25
380412	VP 8	PJX	256589 (100%)	Mineral	2000/SEP/04	2024/NOV/03	GOOD	25
380413	VP 9	PJX	256589 (100%)	Mineral	2000/SEP/04	2023/NOV/03	GOOD	25
380414	VP 10	PJX	256589 (100%)	Mineral	2000/SEP/04	2023/NOV/03	GOOD	25
380415	VP 11	PJX	256589 (100%)	Mineral	2000/SEP/04	2023/NOV/04	GOOD	25
380416	VP 12	PJX	256589 (100%)	Mineral	2000/SEP/04	2023/NOV/03	GOOD	25
380417	VP 13	PJX	256589 (100%)	Mineral	2000/SEP/04	2023/NOV/04	GOOD	25
380418	VP 14	PJX	256589 (100%)	Mineral	2000/SEP/04	2023/NOV/03	GOOD	25
380419	VP 15	PJX	256589 (100%)	Mineral	2000/SEP/04	2023/NOV/04	GOOD	25
380420	VP 16	PJX	256589 (100%)	Mineral	2000/SEP/04	2023/NOV/03	GOOD	25
380421	VP 17	PJX	256589 (100%)	Mineral	2000/SEP/04	2023/NOV/03	GOOD	25
380422	VP 18	PJX	256589 (100%)	Mineral	2000/SEP/04	2023/NOV/03	GOOD	25
380423	VP 19	PJX	256589 (100%)	Mineral	2000/SEP/04	2023/NOV/03	GOOD	25
380424	VP 20	PJX	256589 (100%)	Mineral	2000/SEP/04	2023/NOV/03	GOOD	25
505873		PJX	256589 (100%)	Mineral	2005/FEB/04	2018/NOV/20	GOOD	434.882
505880		PJX	256589 (100%)	Mineral	2005/FEB/04	2018/NOV/20	GOOD	42.052
505881		PJX	256589 (100%)	Mineral	2005/FEB/04	2018/NOV/20	GOOD	21.026
505882		PJX	256589 (100%)	Mineral	2005/FEB/04	2018/NOV/20	GOOD	21.026
505883		PJX	256589 (100%)	Mineral	2005/FEB/04	2018/NOV/20	GOOD	84.093
505884		PJX	256589 (100%)	Mineral	2005/FEB/04	2018/NOV/20	GOOD	42.046
505885		PJX	256589 (100%)	Mineral	2005/FEB/04	2018/NOV/20	GOOD	509.463
505886		PJX	256589 (100%)	Mineral	2005/FEB/04	2018/NOV/20	GOOD	42.054
505887		PJX	256589 (100%)	Mineral	2005/FEB/04	2018/NOV/20	GOOD	42.05
506089		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	42.041
506090		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	21.02
506091		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/21	GOOD	42.038
506092		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	21.019
506105		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	84.044
506107		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	84.036
506108		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	42.023
506110		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	84.043
506116		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	42.024
506117		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	21.012
506118		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	42.021
506119		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	105.042
506120		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	42.016
506122		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	42.011
506123		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	42.007
506125		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	21.005
506126		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	21.004
506127		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	42.009
506128		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	21.007
506129		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	42.009
506130		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	21.007
506131		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	42.009
506132		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	21.007
506133		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	84.019
506134		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	42.014
506135		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/21	GOOD	42.009
506136		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	21.007
506137		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/21	GOOD	42.009
506138		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	21.007
506139		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/21	GOOD	420.137
506140		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	42.009
506141		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/DEC/01	GOOD	525.013
506142		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/21	GOOD	21.007
506143		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/21	GOOD	461.962
506144		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	63.04
506145		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	21.014
506146		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	42.031
506147		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/21	GOOD	21.015
506148		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	42.038
506150		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	42.029

506155		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	21.012
506156		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/21	GOOD	21.015
506157		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/21	GOOD	42.019
506159		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	42.019
506160		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	21.009
506162		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	21.009
506165		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	84.037
506166		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	42.018
506167		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	21.012
506168		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	21.008
506169		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	42.027
506171		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	42.031
506173		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	273.198
506174		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	42.04
506175		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/21	GOOD	42.043
506176		PJX	256589 (100%)	Mineral	2005/FEB/07	2018/NOV/20	GOOD	42.041
506177		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/21	GOOD	63.072
506185		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	398.91
506186		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	20.993
506187		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	20.993
506188		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	20.993
506189		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	20.993
506190		PJX	256589 (100%)	Mineral	2005/FEB/07	2019/NOV/20	GOOD	41.988
506780		PJX	256589 (100%)	Mineral	2005/FEB/11	2019/NOV/20	GOOD	84.068
506781		PJX	256589 (100%)	Mineral	2005/FEB/11	2019/NOV/20	GOOD	21.014
506782		PJX	256589 (100%)	Mineral	2005/FEB/11	2019/NOV/20	GOOD	21.014
506783		PJX	256589 (100%)	Mineral	2005/FEB/11	2019/NOV/20	GOOD	21.012
506784		PJX	256589 (100%)	Mineral	2005/FEB/11	2019/NOV/20	GOOD	63.04
506785		PJX	256589 (100%)	Mineral	2005/FEB/11	2019/NOV/20	GOOD	21.011
506786		PJX	256589 (100%)	Mineral	2005/FEB/11	2019/NOV/20	GOOD	42.022
506787		PJX	256589 (100%)	Mineral	2005/FEB/11	2019/NOV/20	GOOD	42.018
832821	VINENW	PJX	256589 (100%)	Mineral	2010/SEP/05	2024/NOV/04	GOOD	84.0848
938674		PJX	256589 (100%)	Mineral	2011/DEC/23	2018/APR/24	GOOD	21.0201
938675		PJX	256589 (100%)	Mineral	2011/DEC/23	2018/NOV/25	GOOD	147.1078
938676		PJX	256589 (100%)	Mineral	2011/DEC/23	2018/APR/24	GOOD	21.0235
970629	LUMB 1	PJX	256589 (100%)	Mineral	2012/MAR/23	2018/APR/24	GOOD	105.031
970649	LUMB 2	PJX	256589 (100%)	Mineral	2012/MAR/23	2018/APR/24	GOOD	168.0919
1008762		PJX	256589 (100%)	Mineral	2012/JUN/30	2018/NOV/20	GOOD	42.0123
1018945		PJX	256589 (100%)	Mineral	2013/APR/29	2018/NOV/20	GOOD	105.0288
1032872		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	84.0681
1032873		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	84.0808
1032874		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	126.0777
1032875		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	189.0692
1032877		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	168.11
1032878		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	168.1059
1032879		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	189.0891
1032880		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	126.0184
1032881		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	126.0577
1032882		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	126.0563
1032883		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	126.0344
1032884		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	84.0218
1032885		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	84.021
1032886		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	125.9964
1032887		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	84.0098
1032888		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	105.0813
1032890		PJX	256589 (100%)	Mineral	2014/DEC/22	2019/DEC/22	GOOD	105.0863
1046737		PJX	256589 (100%)	Mineral	2013/APR/30	2018/NOV/20	GOOD	105.0621
1047053		PJX	256589 (100%)	Mineral	2016/OCT/02	2017/OCT/02	GOOD	63.0605
1051791		PJX	256589 (100%)	Mineral	2017/MAY/04	2018/MAY/04	GOOD	105.1278
1051792		PJX	256589 (100%)	Mineral	2017/MAY/04	2018/MAY/04	GOOD	147.1657
1051793		PJX	256589 (100%)	Mineral	2017/MAY/04	2018/MAY/04	GOOD	147.1047
1051794		PJX	256589 (100%)	Mineral	2017/MAY/04	2018/MAY/04	GOOD	21.0241
1051795		PJX	256589 (100%)	Mineral	2017/MAY/04	2018/MAY/04	GOOD	21.0206

Appendix 5: Diamond drill hole logs

Drill core for the 2017 Vine program is stored at the Vine Core Facility.

Vine Core Facility:
Hidden Valley Road.
585860.09m E, 5472650.46m N

Drill Hole Record:

PROPERTY: VINE
LOCATION: east of Peavine Creek.
COMMENCED: May 7, 2014 **COMPLETED:**
COORDS: Long. **Lat.**
COORDS: UTM (E) 586600 **(N)** 5473630 **(EL)**
COORDS: Grid (E) **(N)** **(EL)**
ELEVATION: 1020 Meters **COLLAR Dip:** -85 **Azi:** 292°
OBJECTIVE: TEST OF LARGE GRAVITY ANOMALY

HOLE#: VA 14-01
LENGTH: 401.5 meters

HORI. COMP:
VERT. COMP:
CORR. DIP:
TRUE BEARING:
% RECOVERY:
LOGGED DATE: May 2014
LOGGED BY: D.L. Pighin

DRILL CONTRACTOR: F&B Drilling
CORE SIZE: NQ.
CASING: 4.57 Left in Hole.
CORE STORAGE: VINE PROP.

SURVEYS: Depth: Dip: Azi: TYPE:

Additional Surveys:	Depth:	Dip:	Azi:
	84.48 m.	-85	277.5°
	364.63	-85.4	279.5

From	To
4.57	63.9

LITHOLOGY: Silty Argillite interbedded Lesser Argillite, rare Siltstone Beds. L.A. Beds.

COLOR: Grey Banded, lite gray; to Rosey gray

PRIMARY STRUCTURE: Thin to very Thin Bedded, gen. very finely Parallel laminated Bedding is distinct and flat. Bedding to Core ist 72° @ 13.0, Bedding to @ 65.0 = 74°

TECTONIC STRUCTURE: Fractures at 30° and 60° to Core axis are widely scattered through-out Core. Fractures are commonly lined thinly by Calcite and pyrite,

GENERAL ALTERATION: These Seds are altered mainly to Sericite over the lesser Biotite Bands of Albite and Chlorite are widely scattered through-out Core. 286 to 29.11 Strong zone of Chloritization and Albitization, at the top of Gabbro sill at 63.9 m. intense Silicification & albitization 90cm thick, contain widely scattered Tourmaline Needles

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Small belbs of Sphalerite in albitized Seds @ 21.5m
1 cm thick Band of pyrrhotite at 29.6 Associated with Chlorite and Albite
Patch of Strongly diss. pyrrhotite are scattered through the Core from 4.57 to ?

ADDITIONAL OBSERVATIONS: 44.2 to 45.12 Badly ground-up Core.

Metric ___ Imperial ___

Drill Hole Record:

HOLE #: VA 14-01

From	To	
63.9	401.5	**LITHOLOGY:** Gabbro, approx. 60% amphiboles and 40% plagioclase 91.0 to 94.4 altered Sediments with rare clasts
		COLOR: Generally specked dark green and white.
		~~PRIMARY STRUCTURE~~: TEXTURE: Fine xltn. from 63.9 to 69.2, then becomes, med. xtn generally phaneritic
END		equigranular, with widely scattered finely xtln. Zones, rarely more then a meter thick
OF		
		TECTONIC STRUCTURE: The gabbro is cut through out by numerous and widely scatter Veinlets
HOLE		rarely more Than 1cm. Thick, The dominate fractures cut C/A at 55°+65°, and 80°, with lesser fracture at 12°.
		GENERAL ALTERATION: Calcium carbonate completly alters the gabbro, to light green aphenitic
		Calcite from 245.5 to 246.0 & 339.0 to 340.5

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

75.3 to 75.4 albite zone host heavyly diss. Pyrrhotite with rare Chalcopyrite.

The Veinlet described above are Composed of Mainly Albite, Calcite and minor Quartz, These veins rare host Traces of Chalcopyrite and Pyrrhotite.

IIIII

ADDITIONAL OBSERVATIONS:

DRILL HOLE RECORD

PAGE #: 1 of

PROPERTY: VINE
LOCATION: East of Peanine Crk.
COMMENCED: Jan 24, 2017 COMPLETED: Feb. 10, 2017
COORDS: Long. Lat.
COORDS: UTM (E) 586600 (N) 5473630 (EL)
COORDS: Grid (E) (N) (EL)
ELEVATION: 1020 Meters COLLAR: Dip: -85.4 Azi: 279.5°
OBJECTIVE: NOTE: This Hole is collared of the Bottom of Hole VA14-01, at a depth of 401.5 meters

HORI. COMP: 69.75m
VERT. COMP: 997.56
CORR. DIP:
TRUE BEARING:
% RECOVERY:
LOGGED DATE: Jan. 2017
LOGGED BY: D. J. Pighin

HOLE#: VA14-01 EX
LENGTH: 1010.97 M.

DRILL CONTRACTOR: F&B Drilling
CORE SIZE: NQ
CASING: NIL
CORE STORAGE: Vine Property

SURVEYS: Depth: Dip: Azi: Type:

Additional SURVEYS:

Depth:	Dip:	Azi:
498.9	-85.1°	278.4°
599.69	-85.8°	264.3°
699.69	-87.5°	250.2°
801.71	-87.9	272.1°
907.62	-87.9	272.1

Imperial ☐ Metric ☐

From To	
401.5-434.5	**LITHOLOGY:** Gabbro Sill Contact Parallel to Sebs, cut C/A @ 45°
	COLOR: Green, speckled white
	PRIMARY STRUCTURE: TEXTURE fine grained adjacent to Contacts, but gen. med to Coarsely Xtln.
	TECTONIC STRUCTURE: NIL
	GENERAL ALTERATION: Fresh.
	MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE: Rare diss Pyrrhotite, Very rare specks of Chalcopyrite

SAMPLE#	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 14-01 EX

From	To	
434.5	to 461.1	LITHOLOGY: Meta sediments, mainly altered Lower Aldridge Silty argillite and Siltstone
		COLOR: Mainly Lite green
		PRIMARY STRUCTURE: Thin to very thin bedded, Bedding plans, are present but are gen. indistinct due to Strong alteration
		Bedding to Core Axis @ 435.0 = 65°, @ 445 = 80°, @ 447.0 = 70°, @ 458.0 = 77°
		TECTONIC STRUCTURE: Crackle Breccia with associated Shear zone cut c/a @ 63°
		GENERAL ALTERATION: These Sediments are Strongly Silicified, Sericitized and Chloritized. at 457.0, 10 cm thick Biotite - calcite Concretion; @ 457.0, thin wispy Bands of albitization.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Rare tiny Blebs of Pyrrhotite in Some irregular paper thin Qtz-Pell fracture's				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 14-01-EX

From	To	
461.1	540.4	LITHOLOGY: Gabbro Sill. top Contact is gradational and hard to exactly define, Basal Contact is also gradational.
		COLOR: Green Speckled White
		PRIMARY ~~STRUCTURE~~: Texture: Med. to fine grained.
		TECTONIC STRUCTURE: NIL
		GENERAL ALTERATION: NIL

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

@ 494.2 Calcite Vein 1 cm. thick cuts C/A @ 50° hosts 3 mm laced Massive Pyrrhotite
@ 500.8 Calcite Vein 2 cm. thick host ground diss. Pyrrhotite cuts C/A 51°
@ 515.5, Massive Pyrrhotite Vein 1 cm thick cuts C/A @ 37° has heavy Black Chlorite Salvages.
527.2 to 527.4 Barren Qtz-Calcite Vein cuts C/A @ 40°

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: 14-01-EX

From	To	
540.4	645.2	LITHOLOGY: Silty Argillite interbedded Argillite. Good Lower Aldridge Sediments
		COLOR: Banded, Grey & Lite green & Marroon/Pink Grey.
		PRIMARY STRUCTURE: Thin to Very thin Bedded, Bedding plans are distinct
		Bedding to C/A @ 550 = 60°, @ 563.0 = 67° @ 575.7 = 71°, @ 609 = 75°, @ 621 = 60°, @ 635.0 = 17°, @ 645 = 10°
		TECTONIC STRUCTURE: 540.4 to 544.0 Broken Rubble Core, probably due to Some weak crackle brecciation's From 601.7 to 602.2 & Calcite, Sericite, Biotite phyllitic zone cuts C/A @ 25°, This interval starts to be weakly foliated from 633.4 to 645.2
		GENERAL ALTERATION: Regional fine biotitization & Sericitization, 659.0 to 579. Beds are Banded By late chloritate, Sericite and intense Silicification, @ 559.7, 10cm thick Calcite - garnet - Biotite Concretion, subject is veined by albite, @ 581.0, 5cm Band of late Calcite & Quartz, host large Subhedral Pink garnets, and Biotite

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Pyrrhotite is very weakly diss. in most of the Sed. beds in this interval				
Pyrrhotite & minor Pyrite throughout this interval. occurs in widely Scattered, paper thin fractures that Generally cut C/A @ angles of. 90°, 70° + 65°				
@ 565.3 a 10cm thick interval of Silicified Seds, host late Spheres of intense Silicification, that are veined by diss. Sphalerite, these spheres are no more 2m to 9mm in size				
@ 568.4 Sphalerite is weakly diss. in Silicified, Biotite, Sericite Siltstone				
@ 577.4 Sphalerite is relatively abundantly diss. over 10cm interval hosted in a band of intense Silicification, chloritization & Sericitization of Siltstone				
@ 578.6 Sphalerite weakly diss. over a 10cm interval as described above				
@ 620.5 Sphalerite relatively abund. is diss. in a 5cm thick Band of intense Silicification & Sericitization				
@ 638.6 Sphalerite, is rare in a lite green 1cm thick Intensely Silicified bed				
@ 643.2 2mm thick layer of Massive Sphalerite follows bedding plans.				

ADDITIONAL OBSERVATIONS:

Drill Hole Record: Page # 5 of 658.2

HOLE #: VA14-01-EX

From	To	
645.2	676.1	LITHOLOGY: Phyllite after Argillite & Silty Argillite - Phyllite is composed mainly of Sericite, minor chlorite, Biotite with widely scattered layers of Quartz and rare albite
		COLOR: thinly wispy banded lite grey, lite greenish grey, and dark grey
		PRIMARY STRUCTURE: Phyllite is finely foliated into thin wispy - sensoid layers.
		TECTONIC STRUCTURE: Strongly foliated @ 30° to C/A & 90° to CA., Small Boudins are abundant locally and are developed in the plan of foliation, most of the foliation planes are Slickensided. 672.2 to 672.5 Fault cuts C/A @ 82°, Consists totally of Soft gauge. foliated to C/A @ 669.5 = 25°
		GENERAL ALTERATION: rock is totally altered to Sericite, Chlorite and Biotite and rarely to Quartz, Most all foliation planes a lined with Dark green to Black Chlorite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
@ Abundant Sphalerite in a band of intense Silicification + Sericitization, + lite green Sericite Pyrite + chlorite commonly occur along the plans of foliation. Pyrrhotite as thin irregular wisps and as jagged wavy discontinuous layers with in the plans of foliation. Pyrrhotite also occurs in rare late thin irregular Quartz - Calcite Veins. @ 668.3 1.5 - 2cm Band of Near massive Sphalerite as deposited parallel to foliation. Pyrite in teny stkws and specks weakly diss. in all the Phyllitic Rocks in this interval.				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA14-01-EX

From	To	
676.1	698.4	LITHOLOGY: Gabbro 676.1 to 680.31, Phyllite 680.31 to 681.4, Gabbro 681.4 to 684.2 Phyllite 684.2 to 687.0, Gabbro 687.0 to 698.4, Gabbro Bodies are deposited Parallel to foliation
		COLOR: Gabbro is green with some white specks and blebs.
		PRIMARY STRUCTURE: Texture; gabbro is strongly folicted. and mylonitized
		TECTONIC STRUCTURE: foliation to c/a @ 680.3 = 37°, @ 290.3 = 35°
		GENERAL ALTERATION: Gabbro is altered to Sand sized Quartz grains in a matrix of Sericite & Chlorite with patches of Calcite scattered through out
		MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE: Some diss. Pyrite in gabbro

SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record: 712.9 Page # 7 of

HOLE #: VA 14-01-EX

From	To
698.4	730.6

LITHOLOGY: Phyllite as previous described

COLOR: Banded dark and grey.

PRIMARY STRUCTURE: distroyed by tectonics

TECTONIC STRUCTURE: as previously described, foliation to c/a @ 706.5 = 27°

GENERAL ALTERATION: as previously described, But with local Zones of intense Post foliation Silicification ie: 704 to 705.8

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Widely scattered 1cm to 2cm Qtz veins parallel to foliation. Host minor Pyrite.

Tiny specks & xtls of pyrite are weakly diss. Through-out all the phyllite rocks in this interval.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA14-01-EX

From	To	
730.6	764.1	**LITHOLOGY:** Highly foliated, mylonized Gabbro with included Pyllite intervals, from 756.6 to 758.0, and from 760.3 to 762.7
		COLOR: Dark green with Black lineation
		PRIMARY STRUCTURE: TEXTURE: Gabbro is finely foliated, with rounded grains of Quartz & Feldspar forming a mylonitic Texture
		TECTONIC STRUCTURE: Steeply foliated, at 732. foliation to C/A = 20°, @ 745.8 = 5°, foliation plans are gen wavy due Abundant Bed. Barodins alined along foliation plans, Small scale drag folds also deform foliation Plans @ 731.6 M shaped Drag fold AXIS Parallel to Core AXIS, these drag folds occur from 730.6 to 761.0
		GENERAL ALTERATION: Gabbro is Complitly altered to mainly Biotite, lesser Sericite and chlorite, with rolled grains of remenant Quartz and feldspar, Black chlorite lines most of the foliation plans, From 752.7 to 753.2 Black Chlorite forms band up to 1cm that parallel to foliation, Chlorite here forms up to 25% of Core.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
euhedral and anhedral pyrite is diss. throughout this interval dominately in the altered Gabbro ranges from 2% to locally 5% by Vol, Some rare Specks of Chalcopyrite.				

ADDITIONAL OBSERVATIONS:

amethyst

Drill Hole Record: Page # 9 of

HOLE #: VA14-01-EX

From	To
764.0	774.5

LITHOLOGY: Sericitec Phyllite

COLOR: Lite Silvery grey

~~PRIMARY STRUCTURE~~: Texture: Very finely foliated, Plans of foliation are Strongly Crenulated s, gen. due to very intense developed of very Small scale drag folds.

TECTONIC STRUCTURE: foliation gen cuts C/A @ 5°

GENERAL ALTERATION: Totally altered to Sericite with local developed of Muscovite. Zones of Lole Silicification up to 50cm thick over print, Sericite & foliation, foliation plans are typically Crenulated, by very fine drag folds.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Fine Euhedral and anhedral pyrite is diss throughout this interval range 1% to 5% locally pyrite by Volume.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 14-01-EX

From	To
774.5	781.5

LITHOLOGY: Mylonitized Quartzite

COLOR: Grey with white and lite Blue Quartz clasts

PRIMARY STRUCTURE: Mylonite is clast Supported, Quartz clasts are rounded to elipitical, and range in size from 2mm to 10 mm, clasts have a prefered orientation of 10° to Core Axis.

TECTONIC STRUCTURE: NIL

GENERAL ALTERATION: Mylonite is intensely Silicified, matrix has been altered totally to Sericite and many clasts have been altered to Blue Amethyst.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

rare diss. Pyrite.

SAMPLE #	From	To	Length

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 14-01-EX

From	To	LITHOLOGY: Gabbro, parallel to foliation
781.5	808.0	

COLOR: Green Speckled white

~~PRIMARY STRUCTURE~~: TEXTURE: Med. Grained

TECTONIC STRUCTURE: Gabbro is weakly foliated to 800, 800 to 808. Strongly foliated.

GENERAL ALTERATION: Gabbro is altered to Sericite and chlorite, and is weakly limy in spots irregular Calcite wisps and patches are widely scattered Through out the gabbro. Black chlorite lines all the foliation plans in the gabbro.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

(Pyrite and lessor Pyrrhotite, trace Chalcopyrite are very weakly diss. throughout the Gabbro
806.6 to 808.0 irregular Quartz - Massive chlorite Vein cuts C/A 7° (Barren)

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 14-01-Ext

From	To
808.0	825.5

LITHOLOGY: Chloritic Phyllite

COLOR: Green

PRIMARY ~~STRUCTURE~~: TEXTURE very finely foliated, with abundant Quartz Boudins

TECTONIC STRUCTURE: foliation to C/A = 13° @ 806.0, @ 822.0 = 13°

GENERAL ALTERATION: Rock is totally altered mainly to Chlorite and Lessor Sericite, with some very thin layers of Qtz. grain Mylonite., From 817.66 to 825.0 phyllite is composed mainly of green & Black Chlorite, with lessor Sericite

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Pyrrhotite and Pyrite diss. Throuch-out this unit 1 to 2% by vol.
817.66 to 820.4 abundant Euhedral & Subhedral Pyrite is Strongly diss. approx 5 to 10% By Vol.
823.4 to 825.0 Strongly diss. Euhedral & Subhedral Pyrite from 5 to 15 % by Vol.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 14-01-EX

From	To	LITHOLOGY:
832.0	850.0	Phyllitic gabbro Contact parallel to foliation 829.8 to 832.0 Phyllite after Sediments.

COLOR: Gabbro Dark green, Some scattered white Patchs, 832.0 - 350.0' Gabbro is Lite Green and Speckled Black.

~~PRIMARY STRUCTURE~~: TEXTURE; finely foliated with a mylonitic texture

TECTONIC STRUCTURE: Strongly foliated, but foliation is very indistinct in altered gabbro

GENERAL ALTERATION: Gabbro is altered to Sericite & chlorite, white lite specks and wisps of Calcite.
832.0 - 350: Gabbro is mainly Sericite with lessor Chlorite
832.0 - 832.5 Nearly massive Epidot.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Pyrite is finely to locally Coarsely diss. in Altered Gabbro and Sed. phyllite				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 14-01-EX

From	To
850.0	860.0

LITHOLOGY: Phyllite after Sediments

COLOR: Dark reddish Brown, wispy banded by lite green & lite grey

PRIMARY STRUCTURE: destroyed by tectonism

TECTONIC STRUCTURE: @ 850.2 foliation to C/A = 20°, foliation is intense and distinctive, foliation plans are distorted to strongly distorted by late drag fold (small scale)
@ 860.0 foliation to C/A = 25°

GENERAL ALTERATION: Altered to fine Reddish Black Biotite and lite grey Sericite
853.6 to 854.4 Intensely Silicified zone, Bounded on 1st & Fin. By 90cm of foliated massive chlorite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:
This interval is weakly Pyritic - through - out.

SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA14-01-EX

From	To
860.0	864.0

LITHOLOGY: Calcareous, Chloritic phyllite, Composed nearly totally of Calcite & Chlorite

COLOR: Green finely laminated white

PRIMARY STRUCTURE: Distroyed by Tectonics

TECTONIC STRUCTURE: Strongly Phyllitic @ 13° to C/A

GENERAL ALTERATION: Rock totally altered to chlorite & Calcite., may have Been a bed of Calcareous argillite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE: Rare diss. Pyrite.

SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

HOLE #: VA14-01-EX

From	To	LITHOLOGY:
864.0	873.0	864.0 to 865.0 Sericitic phyllite 865.0 to 869 Marapositic, chlorotic phyllite 869.0 to 871.8 Sericitic, Quartzitic phyllite

COLOR: finely foliated lite green and Bluish Green, and lite grey with irregular Black lineation

PRIMARY STRUCTURE: distroyed by Teclonics.

TECTONIC STRUCTURE: Interval strongly foliated @ 20° to C/A, 871.8 to 873.0, Fault zone consists of soft fault gauge & Breccia Sets., Cut C/A @ 20° to C/A

GENERAL ALTERATION: Generally Strongly Sericitic & chloritic rock from 865.0 to 869.0 totally altered to Chlorite, Sericite & Marapositic, 870.5 to 871.0, Bands of a yellow clay mineral make up 1/4 of this interval.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Pyrite as diss. Throuout out this interval. 1% to 2% pyrite @ 867 10 cm thick Pyrite Zone parallel to foliation 30% Pyrite By Vol.				

ADDITIONAL OBSERVATIONS:

Drill Hole Record: Last Box Feb 6 940.2 extreme) 944 Last Box Feb 3 Page # 17 of

HOLE #: VA14-01-EX

From	To	
873.0	1010.97	LITHOLOGY: Meta Silty Argillite interbedded Siltstone MIDDLE ALDRIDGE SEDs ALD. Fragmental 944.2 to 945.5 Scattered Altered Marker Bed Segments, from 880.5 to 900.0, @ 948.6 distorted Marker Segment
END		COLOR: Grey with thick Bands of lite tan
		PRIMARY STRUCTURE: Bedding is very Rare due to Alteration and Brecciation Bed thickness ?
OF		Bedding @ 880.0 = 33°, @ 886.0 = 76°, @ 898.0 = 38°, @ 914.4 = 65°, @ 948.6 = 16°, @ 957.6 = 15°, @ 995 = 33° to C/A.
HOLE		TECTONIC STRUCTURE: This Section is all weakly crackle Breccia, with local narrow zone (1cm to 0.5m) thick of intense Brecciation, tight fractures show no preferab orientation, 895.4 to 896.1 Fault Consists of gauge & Broken Sets, thin gauge filled shear zones Cut C/A at 942.8 @ 22°, 950.5 to 951 thin gauge filled Shear at 15° to C/A 959.4 - 1010.97 extremely Broken Rubble Core, numerous thin gauge filled shears @ 9°, 10° & 17°,
		GENERAL ALTERATION: approx 30% of this interval is altered to irregular patches of late lite tan Sericitization, the Sericitization overprints intense Silicification.
		986.0 - 989.0 Fault Zone cuts C/A at 17°, Consists of abund. Soft fault gouge, 990.5 to 992.0 Soft fault gouge angle to C/A ?

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
widely Scattered weak diss. Pyrite Through out this Section.				
916.8 - 917.0 Crackle Breccia Quartz - Dolomite Veinlets host minor Galena & Sphalerite as tiny specks and large Belbs				
925.9 - 926.2 Galena, Sphalerite lte & Orange Brown occur rarely in Crackle Breccia Veinlets But only where Crackle Breccia occurs with zone of late Silicification and Sericitization, gangue is gen. Quartz & Dolomite.				
937.4 to 938.4 Galena, lite yellow Sphalerite occur a discribed above				

ADDITIONAL OBSERVATIONS:

DRILL HOLE RECORD — 152 old Boxes — PAGE #: 1 of

PROPERTY: Vine		HORI. COMP:	HOLE#: VA 15-09 EX.
LOCATION: East of Peavine Creek.		VERT. COMP:	LENGTH: 886.9
COMMENCED: Nov. 28, 2016	COMPLETED: Dec. 7, 2016	CORR. DIP: -90	
COORDS: Long.	Lat.	TRUE BEARING:	DRILL CONTRACTOR: F&B
COORDS: UTM (E) 586400	(N) 5474025 (EL)	% RECOVERY:	CORE SIZE: NQ
COORDS: Grid (E)	(N) (EL)	LOGGED DATE: Nov. 2016 & Dec.	CASING: —
ELEVATION: 980.0m	COLLAR: Dip: -90 Azi: —	LOGGED BY: D.L. Pighin	CORE STORAGE: Vine

OBJECTIVE: Collared off the Bottom D.D.H VA15-9

SURVEYS: Depth: Dip: Azi: Type:

Additional SURVEYS:

Depth:	Dip:	Azi:
499.0	-86.8	144.5 Az
402.0	-86.4	148.4 Az
499.0	-86.8	159.5 Az
599.0	-86.6	161.6 Az
700.15	-86.3	171.3 Azi
801.0	-86.3	160.0 Azi
1081.99	-85.4	169.4 Azi

Imperial ☐ Metric ☐

From To 333.53-549.1

LITHOLOGY: Gabbro Sill — 1247.0M -85.8 Dip, 168.2° Az/ Lower Contact Cut C/A @ 70° — 1347.46 -85.8 Dip, 055.1 Az(?)

COLOR: Green Speckled White

~~PRIMARY STRUCTURE~~: TEXTURE: Med. to Coarsely xtln.

TECTONIC STRUCTURE: Breccia Zone 355.7 to 356.3 cuts C/A @ 71°, Breccia Zone Consists of Brecciated Quartz & Gabbro in a dolomite matrix, 370.2 to 370.6 Breccia Zone cuts C/A at 85°, Consists of Brecciated Gabbro, with Some fault gouge, @ 443.2, thin Shear Zone cut C/A @ 55°, @ 456.6 Fault gouge 5cm Thick cuts C/A 30° @ 492.8 Shear Zone cuts C/A @ 12°

GENERAL ALTERATION: Gabbro is dolomitized for 70 cm in H.W. of Breccia Zone and for 30 cm on The F.W. of Breccia Zone from 355.7 to 356.3, 376.2 to 376.45 and 378.6 to 379.0 Carbonatized Zone (mainly Calcite + Dolomite, gen cut C/A @ 70° 541.5 to 541.3 Intensely Silicified and Sericitized

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

at 404.0 m 2 cm thick Calcite Vein hosts large Blebs of Sphalerite. And assoc. galena, Vein cuts C/A at 27° 440.56 to 443.6, abund. 0.5 to 1cm thick very irregular, Calcite Veinslets cut C/A at angles of 24°, 34°, 85°, these veins host abundant Sphalerite, galena, and rare Chalcopyrite. @ 356.7 thin hairline fracture host rare xtl. of galena with Trace of Sphalerite @ 498.1 thin calcite Vein hosts rare Sulphasalt, Bavlangerite?

24° 34° 85°

SAMPLE#	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA15-09 EX

From	To
549.1	630.0

LITHOLOGY: Siltstone, interbedded Silty Argillite

COLOR: (wet) mottled lite grey, lite green, and locally white

PRIMARY STRUCTURE: Med. to Thin Bedded, Bedding plans are flat and locally distinct,

Bedding to Core Axis @ 557.6 = 70°; @ 460.4 = 70°; @ 563.2 = 70°, @ 577.3 = 71°, @ 590.5 = 68°, @ 608.0 = 62°, @ 625. = 75°

TECTONIC STRUCTURE:

Bounded

GENERAL ALTERATION: Interval is gen altered through-out by, Lte Silicification, chloritization and Sericitization 570.6 to 571.17, 30 cm thick Band of intense calcitization, bounded by thin Bands of albitization, with Some tiny Subhedral Pink garnets, 625.7 to 626.0 altered to Calcareous, massive white Sericite, Scattered through-out The Section are thin Beds altered to massive white Sericite These Beds rarely more then 1 cm thick

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

582.5 to 583.5 Silicified, Sericitic, Chloritic Zone host thin irregular Veinlets appox 2 mm to 3 mm thick Composed of Quartz, Chlorite, Pyrrhotite and Sphalerite.

@ 627.0 irregular 1 cm thick Pyrite, pyrrhotite Vein host-interior Sphalerite, Vein cut C/A at 25° Weakly diss. Pyrrhotite occurs locally Through-out this interval.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VIA15-09 EX

From	To	
630.0	717.0	LITHOLOGY: Gabbro Sill upper Contact formed by a healed Breccia Zone 10 cm thick that cuts C/A @ 12°. F.W. Contact is transitional with Seds.
		COLOR: Dark green, to a Banded - Zone of Dark green and white-Speckled green from 651.0 to 667.4
		~~PRIMARY STRUCTURE~~: TEXTURE, From 630.0 to 651.0 finely xtlln, 651.0 to 667.4 medium xtlln, equicrystalline, Rhythmically Banded by layers of unaltered gabbro, and Bands of high sericitized gabbro, these Bands have sharp flat Distinct Contacts. The Sericitic bands are gen. 1 to 3 cm thick, the unaltered bands range in thickness between 1 and 5cm thick 667.4 to 717.0 gabbro is med xtlln. equicrystalline, Normal Gabbro
		TECTONIC STRUCTURE: Late Calcite - Chlorite vein, ranging in thickness between 15cm and [redacted], these veins are [illegible] to Fully Barren and cut C/A at Angles of 52°, 42°, + 30°
		GENERAL ALTERATION: Deuteric Alteration Probably formed the Banded Zone from 651.0 to 667.4, the dark green Bands are Unaltered gabbro, The White - green speckled of Chlorite after Amphibole in a white sericite matrix (after Plagioclase). 696.0 - 711.6 Further deuteric as previously Described (Band are Little thicker) 711.6 Gabbro Becomes finely xtlln. towards it F.W.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
rare diss. Pyrite									

ADDITIONAL OBSERVATIONS:

Drill Hole Record: "Baulangerite" Sulphoselt- Page # 4 of

From	To	LITHOLOGY: Mainly Siltstone minor Silty Argillite "Footwall Quartzites"	HOLE #: VA15-09 EX
717.0	748.5		

COLOR: (wet) dark grey, Mottled lite greenish gray

PRIMARY STRUCTURE: 717.0 to 748.5, thick to med. Bedded, Bedding is indistinct, very rarely distinct, gen fine grained Seds.

Bedding to C/A @ 723.8 = 46°, @ 736.0 = 56°, @ 748.7 = 56°, @ 754.0 = 55°

TECTONIC STRUCTURE: Nil.

GENERAL ALTERATION: Interval is mottled by lite green Sericitization, overprintens Brownish Regional Biotitization, Some scattered Patches of Lite Silicification, 733.5 to 734.1 Calcareous Bed altered to Fine calcite and Black Biotite, argillaceous limestone Bed, at 741.0 10 cm thick Rimed By thin Band of albite, rare finely diss. Sphalerite form 3mm Zone at the Base of the Carbonate Bed, adjacent to albite layer.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length					

Very weak thin Band of Diss. Sphalerite @ 741.0 as described above

Pyrrhotite is rare in this interval, But occurs here & there in paper thin irregular fractures

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA15-09 Ex

From	To	
748.5	824.0	**LITHOLOGY:** Silty Argillite interbedded Siltstone and argillite. LOWER ALDRIDGE Sediments 822.4 to 822.7 Two 7cm thick white limestone Beds.
		COLOR: "Wet" Banded, shades of grey, lite grey and lite greenish grey, rarely lite brownish grey
		PRIMARY STRUCTURE: Mainly thin to very thin Bedded, rare med. beds, Bedding is Gen flat and distinct all very fine grained Sed's, that are commonly very finely Parallel laminated 772.2 - 15cm's of "Marker" like Laminations Bedding to Core Axis as follows @ 758.8 = 67°, @ 776.0 = 65°, @ 785.0 = 64°, @ 798.6 = 62° @ 822.6 = 62°
		TECTONIC STRUCTURE: NIL -
		GENERAL ALTERATION: Mainly Regional Sericitization, and fine Biotitization, rarely altered by late lite green sericitization developed mostly along Shear/fine fractures. 775.2 to 775.4 abundant Subhedral Pink garnets @ 809.9, 5cm thick Band of Albitization with diss. Biotite, @ 823.6 - 4cm thick Band of Albitization with diss. Biotite

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Thin 2mm to 3mm irregular and irregular Magnetitic Pyrrhotite Veinlets are widely Scattered Throughout this interval @ 790.5, cm thick Argillite Bed hosts Magnetic Pyrrhotite & fine diss. Sphalerite @ 810.3 1cm thick Argillite bed host diss. Sphalerite and magnetic Pyrrhotite @ 812.4 a 4cm thick elliptical Bed hosts 60% Sulphide mainly sphalerite lessor Magnetic Pyrrhotite and rare galena (cont'd				

Red Grease.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA15-09 EX.

From To: 824.0–871.0

LITHOLOGY: Tectonized Silty Argillite and Siltstone

COLOR: Shades of lite grey & grey (wet)

PRIMARY STRUCTURE: Thin to Very Thin Bedded, Bedding plans are commonly distorted by tectonics

Bedding @ 827.4 = 40° @ 831.0 = 26, @ 846.6 = 20°, @ 849.0 = 18°, @ 858.6 = 40°

TECTONIC STRUCTURE: 823.8 to 824.0 fault zone consisting of Silt fault gouge and Brecciated Sed's. cuts C/A @ 24°
From 846.6 to 866.0 Bed's are highly deformed, they are locally Boudinaged and Drag folded, with Axis ~ nearly Parallel to core Axis. (see 853.0) 866.0 to 871.0 fault Zone gouge + Breccia Sed's. cut C/A at 65° with Shearing @ 20° to C/A.

GENERAL ALTERATION: As previously discribed @ 837.2 to 837.5 Biotite rich Limestone Bed
853.0 distorted Biotitic Limestone Bed.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

@ 827.4, Small 1cm x 1cm nodual of Boulangerite
@ 853.0 Massive pyrrhotite Bed ½ cm thick deformed by Drag folding.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA15-09 EX

From	To	
871.0	886.9	LITHOLOGY: Siltstone interbedded Silty Argillite Lower Aldridge Seds
		COLOR: "Wet" Shades of lite grey & grey
		PRIMARY STRUCTURE: Thin to very thin bedded, Plans are distinct and gen. flat. Bedding to C/A @ 871.4 = 67°, @ 886.9 = 74.°
		TECTONIC STRUCTURE: NIL.
		GENERAL ALTERATION: Regional Sericitization, Biotitization, Some lole Lite green Sericitization
		MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE: widely scattered irregular veinlets + diss., Zone of Pyrrhotite throughout this interval.
		Hole Continues to Drill Starting Oct. 7, 2017

SAMPLE #	From	To	Length

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

Page # 1 of

PROPERTY: Vine | HORI. COMP: 41.5 m | **HOLE#:** VA 15-14

LOCATION: East of Peak NE CRK | VERT. COMP: | **LENGTH:** 41.5 Meters

COMMENCED: Sept. 18, 2015 **COMPLETED:** Sept 18, 2015 | CORR. DIP:

COORDS: Long. Lat. | TRUE BEARING: | DRILL CONTRACTOR:

COORDS: UTM (E) 586439 (N) 5473540 (EL) | % RECOVERY: | CORE SIZE: NQ

COORDS: Grid (E) (N) (EL) | LOGGED DATE: Sept. 2015 | CASING: 0.6 m Left in hole

ELEVATION: 980 APPROX **COLLAR Dip:** −90° **Azi:** — | LOGGED BY: D.L. Pighin | CORE STORAGE: VINE PROPERTY

OBJECTIVE: Test GRAVITY TARGET

SURVEYS: Depth: Dip: Azi: TYPE: Additional Surveys: Depth: Dip: Azi:

From	To	LITHOLOGY:
0.6	41.5	0.6 to 4.5 Gabbro sill, 4.5 to 26.3 Silty Argillite Lower Aldridge Seds
		26.3 to 41.5 Gabbro Sill

COLOR: Seds gen grey to marronish grey

PRIMARY STRUCTURE: Seds thin to Med. Bedded, Bedding is gen flat and distorted, very fine grain Seds
Bedding to C/A = 80°

TECTONIC STRUCTURE: Nil

See Attached Drill Log VA15-14-Ext.

GENERAL ALTERATION: Regional Biotitization + Sericitization.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:
at 19.1, 10 cm Qtz. Vein, cuts C/A @ 75°
Host Minor Pyrite Min.
@ 28.5 m, Qtz V. 2cm thick cuts C/A @ 15°
Host albeit Pyrite

SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS: NOTE 30 ft. of NQ Rods Left in hole @ 957.0

Metric ___ Imperial ___

148.11
15.0
163.7

DRILL HOLE RECORD — exenolith — PAGE #: 1 of

PROPERTY: VINE		HORI. COMP:	**HOLE#:** VA-15-14 EXT.
LOCATION: East of Pearmine Crk.		VERT. COMP:	**LENGTH:** 1018.6 Meters.
COMMENCED: July 19, 2017	COMPLETED:	CORR. DIP:	
COORDS: Long.	Lat.	TRUE BEARING: —	DRILL CONTRACTOR: F&B
COORDS: UTM (E) 586439	(N) 5473540 (EL)	% RECOVERY:	CORE SIZE: NQ to 951.4 - BQ 951 to END.
COORDS: Grid (E)	(N) (EL)	LOGGED DATE: July 2017	CASING: Left in hole
ELEVATION: 980 approx.	COLLAR: Dip: −90 Azi:	LOGGED BY: D.J. Richan	CORE STORAGE: Vine Property

OBJECTIVE: To test Deep Geophysical target. — NOTE 30 ft of NQ Rod Stuck in Hole @ 951.0 +

SURVEYS: Depth: Dip: — Azi: Type:

Additional SURVEYS:	Depth:	Dip:	Azi:
	141.0	−88.8	155.5
	241.0	−89.3	163.7
	340.0	−88.9	153.4 X
Not correct →	441.0	−88.2	736.0
Redone	447.0	−88.2	169.3
	541.0	−87.1	184.8
	655.0	−87.6	172.0
	741.0	−86.0	161.5
	840.0	−84.8	135.2

Imperial ☐ Metric ☐

From To **LITHOLOGY:** GABBRO Fw of Gabbro cut C/A @ 35°

40.87-360.7 55.6 to 56.2 altered Seds., cuts C/A @ 80°, 122.4 – 125.0 exenolith zone

159.5 to 159.7 altered Sediment.,

COLOR: Green Speckled White

~~**PRIMARY STRUCTURE:**~~ Med. xtlne, 122.4 – 125.0 exenoliths, are altered Sediments

Gen. Small and Sharply Angular; exenolith are totally altered to albite + Chlorite.

TECTONIC STRUCTURE: Clinozoisite Veins gen cut C/A @ 70°, 53°.

at 142.0, 5cm thick Calcite, Quartz - Talc vein cuts C/A 43°, at 203.8 Schear zone cuts C/A @ 20°

GENERAL ALTERATION: 55.6 to 56.2. Seds totally altered to Sericite & Quartz with Some late Black Chlorite Veinlets, Note Some scattered Veinlets of Clinozoisite? these Veinlets rarely more one Cm. thick are abundant from 40.87 to

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

55.6 to 56.2 altered Seds host weakly diss. Pyrite & Arsenopyrite, with Some Chalcopyrite and rare specks of Sphalerite adjacent to Contacts.

@ 125.47 Mass. Pyrrhotite Vein cuts C/A @ 55°, 2 to 4 mm thick mag. & conductive.

The Exenolithic Zone hosts minor diss. pyrrhotite and Some Chalcopyrite.

SAMPLE#	From	To	Length

ADDITIONAL OBSERVATIONS:

221.5/236 154.3 15.0 169.3

Drill Hole Record:

HOLE #: VA15-14-EXT.

From	To	
360.7	to 371.0	LITHOLOGY: Mainly Silty Argillite, with Biotite Limestone from 368.3 to 364.9. and from 568.5 to 568.7

COLOR: Minish grey mottled Lite green.

PRIMARY STRUCTURE: Slumped Stretched Through out this interval, by Soft Sediment deformation

TECTONIC STRUCTURE: —

GENERAL ALTERATION: Regional Biotitization (minish Brown) is mottled by Late lite green Chloritization and Sericitization. Limestone Intervals listed above are altered to 75% Biotite with abundant diss. lite pink ~~garnets~~, with one Band 3 cm thick Band of massive garnet @ 364.8

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
@ 361.0 rare specks of Sphalerite, assoc. with Quartz and Chlorite				
@ 366.0 rare " " " , assoc. with a thin Band of Intense Chloritization				
@ 368.5 rare " " " , " " " Veinlet of chlorite, Calcite & Quartz				

ADDITIONAL OBSERVATIONS:

Drill Hole Record: 397.4 Page # 3 of

HOLE #: VIA15-14_EXT

From	To	LITHOLOGY:
371.0	403.5	Silty Argillite, L.M. Seds

COLOR: Gen. greenish grey mottled lite green, to locally all lite green.

PRIMARY STRUCTURE: Mainly thin to very thin bedded, Bedding is sharp and tabular, all very fine grained sediments, most of the beds are very finely parallel laminated.

Bedding to C/A @ 382.0 = 34°, @ 384.3 = 53°, @ 397.3 = 63°

TECTONIC STRUCTURE: NIL

GENERAL ALTERATION: Regional Biotitization, mottled and Banded by Lite green chloritization, with local zones of intense chloritization.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
379.3 to 383.1, Thin Bands of weakly developed Thin Zones of Crackle breccia are scattered through-out this interval, These crackle breccia zones are strongly chloritic and gen. Silicified and gen. Host weakly diss. Sphalerite and Lesser galena, Best Zone @ 379.3, Pyrrhotite & Pyrite & rare Chalcopyrite is gen Present. @ 392.3 10 cm thick Zone of Silicification & Strong chloritization, Hosts relatively abundant Sphalerite, with minor Pyrite & rare chalcopyrite				

ADDITIONAL OBSERVATIONS:

Drill Hole Record: 466 403

HOLE #: VA15-14-EXT

From	To	LITHOLOGY:
403.5	466.1	Gabbro Sill H.W Contact cuts C/A @ 45° Lower Contact as indistinct & gradual.

COLOR: Dark green, Speckled lt grey and or White

PRIMARY ~~STRUCTURE~~: TEXTURE: Mainly med. xtlline

TECTONIC STRUCTURE: NIL

GENERAL ALTERATION: NIL.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
425.0 to 427.2, thin. less than 1cm thick Veinlets, gen. very irregular, Host calcite, pyrite, & Pyrrhotite				

ADDITIONAL OBSERVATIONS:

Drill Hole Record: 444.7 - 484.4 Hole @ 484.4 July 28, July 29 - 524.0 July 30 569 Page # 5 of

HOLE #: VA15-14-EXT1

From	To	
466.1	562.6	LITHOLOGY: Silty Argillite Good L.A. Sedst. @ 516.2, 5 cm thick Limestone Bed.

COLOR: Gen. Banded, lite grey and dark Wkish grey, mottled by late Bands & Patch of Green.

PRIMARY STRUCTURE: Thin to Very thin Bedded, Bedding as distinct & Sharp. gen. tabular.

Bedding to C/A @ 468.4 = 71°, @ 516.2 = 67, @ 541.6 = 64°, @ 550.7 = 72°

TECTONIC STRUCTURE: 491.7 to 498.1 Breccia Zone cuts C/A @ 51°, composed of Calcite matrix with Black Argillite Clasts and Some pyrite

GENERAL ALTERATION: Mainly Regional Biotitization & Sericitization with Scattered Patches of Late Chloritization at 491.5 · 20cm thick Zone of Albitization & Chloritic, @ 520.0 Large Calcite - Biotite - Albite Concretion

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length

466.1 to 562.0, thin 1mm to 3mm Quartz-chlorite Veinlets cut C/A @ angles of 65° to 45°, and commonly parallel to Bedding, these Veins host pyrite with minor pyrrhotite, and rare Chalcopyrite, these tiny Veins are quite Common throughout this interval.

Sphalerite occurs in this Interval from 535.8 to 562.0, Sphalerite is deposited in 3 distinct modes.

Mode 1 occurs, Weakly in narrow Chloritic Crackle Breccia Zones with Some late Calcite

Mode 2 occurs, Weakly in irregular Chair Line Chloritic Fractures

Mode 3 Occurs weakly disseminated in Silty Argillite beds, with-out Chlorite

at 535.8, Mode 1 - 10 cm thick breccia, @ 552.1, Mode 3, - rare specks of Sphalerite

at 554.7, Mode 3 in Siltstone at Base of 10 cm thick Limestone Bed. @ 554.8 Mode 2,

@ 558.0, Mode 3, 1 cm thick Zone weak diss. Sphalerite, @ 557.3, 1 cm thick Zone weak diss. Sphalerite + (Calc 3)

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA15-14-EXT.

From	To
5626	5648

LITHOLOGY: Silty Argillite interbedded Limestone

COLOR: Lite Brownish Grey Banded Lite grey

PRIMARY STRUCTURE: Thin to Very Thin Bedded, Bedding is distinct and Tabular, Limestone Beds are finely x-lam and rare more then 5cm thick, Silty Argillite beds are gen. finely parallel laminated

TECTONIC STRUCTURE: Nil

GENERAL ALTERATION: Regional - Biotitization + Sericitization, Some, 1cm thick albitized beds.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE: Sphalerite as weakly diss. in the Silt Argillite immediately adjacent Limestone Beds, These Zones gen. less then 1 cm thick.

SAMPLE #	From	To	Length

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA15-14-EXT

From	To	
564.8	582.6	**LITHOLOGY:** Silty argillite Good Lower Aldridge Sediments
		COLOR: Lite grey and dark Winish grey, widely Banded by Thin white interbeds
		PRIMARY STRUCTURE: Thin to Very Thin Bedded, Bedding plans are distinct - sharp & flat These are all - very fine grained Sediments
		Bedding to C/A @ 581.0 = 74°
		TECTONIC STRUCTURE:
		GENERAL ALTERATION: Regional: Sericitization & Biotitization, with 2 Late 5cm thick Bands of Albitization & chlorite at 574.0 & 575.0

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Through out this interval there are widely scattered Thin Quartz - Chlorite - pyrrhotite and Pyrite Veinlets, These Veinlets cut C/A @ Angles of 35° & 73°, they are rarely more then 3mm thick

ADDITIONAL OBSERVATIONS:

Drill Hole Record: 68 Page # 8 of

HOLE #: VA 15-14 EXT.

From	To	LITHOLOGY:
582.6	621.5	Phyllitic Silty Argillite TOP OF Phyllite Zone.

COLOR: Grey to Wenish grey, Mottled green and whitish greens

PRIMARY STRUCTURE: Destroyed by Tectonics

TECTONIC STRUCTURE: This interval is Brecciated, But with Silty Argillite Matrix (Soft Sed. Deformation)
The Breccia is strongly overprinted by finely developed cleavage. @ 34° to C/A @ 590.5, to 50° @ 596.0, to 30° @ 605, to 3° @ 619.5

GENERAL ALTERATION: The Seds are altered to Sericite, Chlorite, with Some Late Patchy Bands of late intense white massive Sericitization.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Pyrrhotite, Pyrite and Chalcopyrite occurs as disseminations, and in thin 2mm to 4mm Veinlets throughout this interval., Sulphide Content in This enterval Ranges from 1% to 2% to Locally 5% patches) This mineralization is Best developed in areas of intense Chloritization
600.0 to 600.7 Weak diss. Sphalerite occurs in widly scattered hair line calcite fractures, and in the chloritic adjacent Seds.
@ 604.2 2 thin Bands (2 to 3mm thick) occur parallel to foliation in Chlorite - Sericitic Seds.
@ 604.4. @ 1mm thick Hair Line Fract. hosts Sphalerite
@ 617.2 @ 2cm thick Band of Silicification, chloritization hosts weak diss. Sphalerite.
618.2 and @ 618.6 thin Bands of Diss. Sphalerite occur parallel to foliation in chloritic - sericitic Seds. (1cm thick each.

ADDITIONAL OBSERVATIONS:

Drill Hole Record: ~~654~~ 684 Page #9 of

HOLE #: VA15-14-EXT:

From	To	
621.5	683.6	**LITHOLOGY:** Sericitic, Chloritic, & Biotitic Phyllite
		Phyllitic Gabbro Sills or Dykes are parallel to foliation from 658.8 + 659.0.
		From 661.0 to 664.3, from 664.6 to 665.0, from 676.7 to 677.3, @ 674.4 = 34°
		COLOR: Streaked, grey, lite grey, green, Black & dark grey
		PRIMARY STRUCTURE: Distroyed by Tectonics
		TECTONIC STRUCTURE: Intensely foliated, plans of foliation are wavy and cut C/A @ 29°, they are all Slicken Sided, Fault Zone 642.0 to 642.6 cut C/A @ 3° consists of Breccia & Soft Gauge.
		Fault Zone cuts C/A 70° at 657.0 m, 10 cm thick mainly Sani-Lithofic & Gauge, cleavage to C/A @ 655.5 = 23°, @ 674.4 = 34°
		@ 677.3 = 58°, @ 668.4 = 37° @ 683.2 = 15°
		GENERAL ALTERATION: The Phyllite is Totally altered into very fine layers of Black + green chlorite, Sericite and Biotite, with scattered and abundant Quartz - Calcite Boudins, All the plans of cleavage are lined By Black Chlorite, Small Lenticular Quartzite Boudins are also, abundant in the Phyllite.
		658 to , abund. Bands of intense Silicification + Chloritization, from 1 cm to 10 cm & rarely 50 cm Thick, are parallel to Foliation.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length					

Pyrite as abundant in this Interval it occurs mainly along the plans of cleavage.
Pyrrhotite + Chalcopyrite occur gen. in the Quartz Boudins.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 15-14 EXT

From	To
693.6	708.0

LITHOLOGY: Muscovitic, Chloritic phyllite

COLOR: Dark Silvery Grey, Streak by dark green, with Some lite green mottling.

PRIMARY STRUCTURE: is destroyed by intense alteration; FABRIC: The Phyllite is formed by thin, parallel, but distorted layers, Muscovite, chlorite, & Quartz, rarely albite. The Quartz layers are commonly micro-folded and Boudinaged,

TECTONIC STRUCTURE: Intensely foliated, is wavy, due to intense small scale drag folds, these are gen. "S" & "Z" and recumbent isoclinal folds, all fold axis are parallel to the phyllitic foliation planes.
Foliation to C/A @ 691.5 = 45°, @ 694.0 = 30°, @ 700 = 12°, @ 703.7 = 27°

GENERAL ALTERATION: This phyllite, is probably after Sediments, The phyllite consists of thin layers of Muscovite, chlorite Quartz and Some rare layers of Quartz, are very rare albite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Euhedral Pyrite occurs Throuch out this Interval finely dis. along the plans of foliation; Pyrite Content is gen 2% to 4%, and Local Zone of up to 25 % by Vol.

ADDITIONAL OBSERVATIONS:

Drill Hole Record: Phyllonites

Page # 11 of

HOLE #: VA15-14 EXT

From	To	
708.0	740.5	**LITHOLOGY:** Sericitic, chloritic, Phyllite
		708.9 to 713.0, Phyllonitic gabbro, contacts parallel to foliation
		723.9 to 728.0 Phyllitic gabbro, " " " "
		COLOR:
		PRIMARY STRUCTURE: – distroyed; FABRIC is as described from 683.6 to 708.0, except that Muscovite layers give way to mostly Sericite layers –. Phyllonitic gabbro has a foliated Biotite, Sericite, Chlorite Matrix and Sand sized grains of quartz & feldspar.
		TECTONIC STRUCTURE: Micro folds as described from 683.6 to 708.0, are still present in this interval but not as abundant, foliation to C/A @ 718.0 = 30°, @ 725.5 = 30° @ 734.5 = 30°, @ 738.2 = 25°
		GENERAL ALTERATION: as previously described but mostly Sericite rather than Muscovite. note all the cleavage planes are lined by waxy Black Chlorite

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record: (777-5) Page #12 of

HOLE #: VA15-14 EXT

From	To	
740.5	788.5	**LITHOLOGY:** Mainly Phyllonitic Gabbro, with interlayered Bands of Phyllite after Sediments ie: 760.5 to 762.9, 768.1 to 775.0 and 781.3 to 788.5 (E)
		COLOR: Mainly Green, speckled, white gabbro, Gen. green streaked dark green Phyllite
		PRIMARY ~~STRUCTURE~~: The Gabbro fabric is formed by fine foliation plans with Sand Sized grains of Feldspar + quartz aligned along planes of foliation
		TECTONIC STRUCTURE: Foliation to C/A Taken at Gabbro Contacts 740.5 = 24°, @ 760.5 = 23°, @ 768.1 = 31°, @ 775.10 = 29° @ 787.5 = 28°
		GENERAL ALTERATION: Phyllite as previously discribed, with foliated Bands of Albite, Chorite and Some diss. Pyrite ie: 781.3 to 781.9 & from 782.38 to 783.10, 787.2 to 787.8 Marapositie deposited along foliation plans, with some late Bands of Albite

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Widely Scattered Pyrite & rare pyrrhotite disseminations				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA15-14-1 EXT

From	To	
788.5	792.4	LITHOLOGY: Phyllonite after Sediments. Consists of sand sized grains of Quartz in lite grey Sericite matrix
		COLOR: Lite grey, speckled by even lighter grey.
		PRIMARY STRUCTURE: - Distorted by tectonics — Fabric finely foliated with quartz green oriented parallel to foliation.
		TECTONIC STRUCTURE: Fault Zone 788.5 to 789.3 cuts c/nat 37°, cuts foliation at 16°, Consists of mainly soft fault gauge with phyllite clasts.
		GENERAL ALTERATION: Matrix of the phyllonite is totally altered to lite grey sericite

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
rare diss. Pyrite				

ADDITIONAL OBSERVATIONS:

Drill Hole Record: Various 884-3 Page # 14 of

HOLE #: VA-14-1 EXT.

From	To	LITHOLOGY: Silicified CRACKLE Breccia, after Alberta Siltstone
792.4	927.0	

COLOR: Very lite grey to white, with grey mottling cut by abundant hair line white fracture's

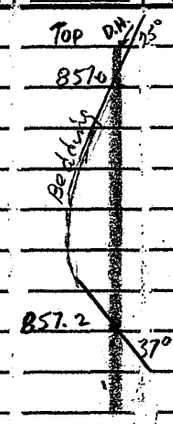
PRIMARY STRUCTURE: Destroyed by alteration & Tectonics, Disrupted bedding from 842.0 to 847.0, Bedding to C/A @ 842 = 15° @ 845.0 = 2°, @ 846.5 = 23° Note Bedding from 839 to 843 Plus is highly distorted, But locally distinct, Bedding to C/A @ 810.5 = 50°, @ 830.0 = 56° @ 843.0 = 23°, @ 845.3 = 30°, @ 857.0 to 857.2 Nose of fold see sketch Below. @ 883.0 = 30°, @ 888.7 = 14°, @ 909.0 = 5°, @ 911.0 = 16°

TECTONIC STRUCTURE: This interval is intensely Crackle Brecciated, hair line fractures are abundant and at various angles to C/A, these early fractures are cut by late well developed Quartz-White Sericite Veins Less than 1 cm thick these veins cut C/A @ 77°, @ 834.1 thin gouge filled shear cuts C/A @ 28°, @ 843.2 thin 1 cm thick Gauge filled Shear cuts Core @ 20°, @ 867; thin sheet @ 12° to C/A, @ 872. shearing @ 5° to C/A, 881.7 to 882.0 Fault gouge cuts C/A @ 47°, @ 912. Gouge filled shear cuts C/A @ 44°

GENERAL ALTERATION: Crackle Brecciated Sediments are intensely Silicified, cut by numerous hair line fractures hosting Sericite mainly with Some Quartz & calcite.

→ 923.6 to 924.3 Fault Zone cuts C/A @ 18°

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Pyrite is Locally very weak diss. in this Brecciated interval @ 834.0, one Blob 2mm in size of Sphalerite, at 839.0, 865.3 to 865.6 Rare Specks of Galena @ 871.8 Rare Specks of Pb.				



ADDITIONAL OBSERVATIONS:

Drill Hole Record: 792.4 to 944.0 = 152 Meters Page #15 of

HOLE #: VA15-14-1 EXT

From	To	LITHOLOGY:
927.0	944.0	Intense 3 phase Breccia

COLOR: Mottled & Streaked Lite grey, Lite yellowish grey, grey, Dk grey and White.

PRIMARY STRUCTURE: – Distroyed by tectonics. Breccia Structure, phase I crackle Breccia, cut by white Quartz veins that cut C/A gen. between 30° & 38°, White Quartz veins are cut by late very irregular veins & veinlets of Gray Quartz, chloritic abundant diss. Calcite – Dolomite Rombs. with. Some Silvery grey Sericite

TECTONIC STRUCTURE: 933.5 to 936.0 Fault Zone consisting Rubbly Broken Rock & Soft Fault Gouge cut C/A @ 19° @ 941.0 Then Gouge filled Shear cuts C/A 45°

GENERAL ALTERATION: Breccia Structure hosts 3 phase of alteration, Crackle Breccia phase, intense Sericitization and yellow Sericite alteration, phase (2) White Quartz Veins cut Crackle Breccia, phase (3), White Quartz Veins are cut by late Veins of grey Quartz - hosting Carbonate Rombs!

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

VA15-14 Ext Page # 16 of

HOLE #: VA77-32

From	To	
944.0	974.4	LITHOLOGY: MOHE FAULT Zone Consists of Soft fault gauge and broken Silicified Breccia and Devonian Dolomite Rocks.
		COLOR: lite grey, dark grey & Black.
		PRIMARY STRUCTURE: —
		TECTONIC STRUCTURE: Shearing in fault zone to C/A < 38° Dominant, 10°, last shear with slicken-sides @ 75° to C/A
		GENERAL ALTERATION: —

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

VA15 14 Ext

HOLE #: VA17-32

From	To	
974.0	982.0	**LITHOLOGY:** Silty Argillite weakly Calcareous, DEVONIAN SEDS. Start here.
		COLOR: Black.
		PRIMARY STRUCTURE: massive, no Bedding. Worm Boring Structures from 977.5 to 979.6 No, Bedding or laminations etc.
		TECTONIC STRUCTURE: — fractures @ 30° to C/A (abund.), commonly lined by Sele Calcite
		GENERAL ALTERATION: —
		MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE: rare very fine x'line diss. Pyrite

SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

VA15-14 Ext Page #18 of

HOLE #: VA 17-32

From	To	
982.0	985.3	LITHOLOGY: Arenaceous Argillite.
		COLOR: Lite grey with a Brownish Tinge.
		PRIMARY STRUCTURE: Massive. no bedding etc. very fine grained mature to Sub-mature Sand scattered through out the Argillite
		TECTONIC STRUCTURE: as above
		GENERAL ALTERATION: mud - Stone facies

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Some very finely dis. Pyrite				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

VA15-14 Ext

Page # 19 of

HOLE #: VA17-32

From	To	
1385.3	1387.6	LITHOLOGY: Sericitic Arenite, composed mainly of Quartz, and Lesser Lithic Sand.
		COLOR: Grey to Black.
		PRIMARY STRUCTURE: massive, no Rabbuquebe. Quartz and Lithic Sand, as med. grained, Mature to immature., rounded to angular, unsorted & ungraded.
		TECTONIC STRUCTURE: See above
		GENERAL ALTERATION: Matrix is Sericitic.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
widely scattered Pyrite xtls.				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

~~VA15-14 Ext~~

HOLE #: VA17-32

From	To	LITHOLOGY: Arenaceous dolomitic Argillite
987.6	1000+	
		COLOR: Lite Brownish—Tannish grey
		PRIMARY STRUCTURE: Massive, Contacts are indistinct, gradational and distorted by Soft Sed. deformation fine Quartz Sand is disseminated through this unit, Sand grains are mature to immature dolomitic Argillite is micritic
		TECTONIC STRUCTURE: See above.
		GENERAL ALTERATION:

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Very rare Pyrite				

ADDITIONAL OBSERVATIONS:

Drill Hole Record: VA15-14 Ext Page #21 of

HOLE #: VA17-32

From	To	
1000.4	1018.6	LITHOLOGY: Calcareous Quartz arenite
		COLOR: Grey
		PRIMARY STRUCTURE: massive, Contacts are distinct and gradational, The rock is composed of 90 % med. to fine grained Quartz sand in a calcareous argillite matrix; Tabular Silty argillite clasts are widely scattered Through this unit, The Quartz Sand is Mature to immature, is not Sorted or graded, Dark grey Argillaceous Structure are common throughout this unit.
END	OF	TECTONIC STRUCTURE: Calcite healed fracture set C/A @ 53°, open fractures @ 73°
	HOLE	
		GENERAL ALTERATION:

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

1028

DRILL HOLE RECORD

PAGE #: 1 of

PROPERTY: VINE PROPERTY
LOCATION: HOGG CREEK
COMMENCED: Dec. 7, 2016 COMPLETED:
COORDS: Long. Lat.
COORDS: UTM (E) 586,490 (N) 5472890 (EL)
COORDS: Grid (E) (N) (EL)
ELEVATION: 980.0 M COLLAR: Dip: -90 Azi: —
OBJECTIVE:

HORI. COMP:
VERT. COMP:
CORR. DIP:
TRUE BEARING:
% RECOVERY:
LOGGED DATE: Dec. 2016
LOGGED BY: D.L. Pighin

HOLE#: VA16-24
LENGTH: 313.4 m

DRILL CONTRACTOR: F&B
CORE SIZE: NQ
CASING: 9.14m Left in hole
CORE STORAGE: Vine

SURVEYS: Depth: Dip: Azi: Type:

Additional SURVEYS:	Depth:	Dip:	Azi:
	24.0m	-89.2	022.7°
	99.0m	-89.1	029.5°
	204.0m	-87.4	061.9°
	313.3	-86.7	52.6°

Imperial ☐ Metric ☐

From To

LITHOLOGY: Strongly Foliated Gabbro
9.14-110.3 53.7 to 54.4 Phyllitic Seds.
103.3 to 107.7 Foliated Lamprophyre dyke.

COLOR: Green, streaked lite green, and speckled white.

PRIMARY STRUCTURE: Texture: foliated phyllitic gabbro, often with a mylonitic texture.

TECTONIC STRUCTURE: Foliation to Core Axis @ 14.6 = 20°, @ 34.3 = 25°, @ 43.4 = 15°, @ 67.3 = 20°, @ 92.7 = 25° @ 110.0 = 43°, @ 121.5 = 20°, @ 80.0 Meters Fault zone gouge and Brecciated phyllite, cuts C/A parallel to foliation 108.0 to 110.0 Phyllitic mylonite zone.

GENERAL ALTERATION: mainly Dynamic, mainly mylonization, phyllitization and Lite chloritization of 49.4, Small ragged Blebs of aphanitic tourmaline; 77.5 to 78.4 massive Black Chlorite Schist.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:
Qtz. — Albite Vein 64.0 - 65.0 cut C/A @ 40°
host rare pyrite

SAMPLE#	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA16-24

From	To
110.3	158.0

LITHOLOGY: Sericite - Biotite phyllite.
124.8 to 161.5 Core Loss = 66%.

COLOR: Lite greenish grey, Streaked Black, and reddish lite grey. (wet)

PRIMARY STRUCTURE:

TECTONIC STRUCTURE: @ 114.0 10 Cm of Soft fault gouge, cuts C.A. parallel to foliation @ 20° to C/A.
124.0 to 161.5 Sheared phyllite, shearing parallel to foliation, 124.8 to 144.5 Broken Rubbly Core with scattered Bands of fault gouge, with foliation to core @ 90° & 65°, 148.8 to 150.5 abund. Small scale Drag folds, fold Axis to C/A = 20°, qtz parallel to foliation, Foliation to C/A @ 158.0 = 34°

GENERAL ALTERATION: Seds. are totally altered mainly to Sericite, with lesser biotite
131.0 - 132.6 Massive white albitized Seds, with diss. Pyrite (very Badly Broken core) 139.0 - 142.1, Massive white albitization of Seds, Badly Broken Core, 149.0 to 150.2, Spotted by small patches of Black aphanitic Tourmaline to

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Pyrite occurs through-out phyllite zones, it occurs mainly as paper thin linings on foliation plans.

ADDITIONAL OBSERVATIONS:

178.5 last BGX.

Drill Hole Record:

Page # 3 of

HOLE #: VA16-24

From	To	
159.0	185.0	

LITHOLOGY: Foliated Gabbro (Phyllitic Gabbro)

COLOR: Green Speckled white.

~~PRIMARY STRUCTURE~~: TEXTURE; Phyllitic mylonite

TECTONIC STRUCTURE: Upper Contact From 159.0 to 162.0 is marked by fault gouge & highly Sheared gabbro @ 45° to C/A
Foliation to C/A @ 173.8 = 35°; 182.8 to 183.2 fault gouge (2 contacts)

GENERAL ALTERATION: 168.3 to 168.7 Massive Hbn. Epidot, cut by some late calcite veinlets & scattered blebs of Qtz.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

159.0 to 162.0 abund. diss. Pyrite associated with fault gouge & foliated gabbro -

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA16-24.

From	To
185.0	218.2

LITHOLOGY: Sericitic - Chloritic Phyllite.

COLOR: Grey, Streaked, Black, lito grey, and Locally White, Some reddish Brown streaks.

PRIMARY STRUCTURE: Distroyed.

TECTONIC STRUCTURE: 191.8 to 194.0 fault gouge, 203.9 to 204.0 fault gouge, 205 to 205.3 fault gouge No Contacts
Foliation to C/A @ 186. = 52°, @ 212.0 = 48°

GENERAL ALTERATION: Rock totally Altered to Sericite mainly with thin layers of Black chlorite, and lesser Albite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

Pyrite is rare but gen. occurs along the plans of foliation

SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record: Log Box 178.5. Page # 5 of

HOLE #: VA 16-24

From	To
218.2	262.0

LITHOLOGY: Phyllitic Gabbro

COLOR: Green Speckled & Streaked White.

PRIMARY ~~STRUCTURE~~: TEXTURE

TECTONIC STRUCTURE: Strongly Foliated at 225.0 foliation to C/A = 41°, @ 237.0 = 38°, @ 250.5 = 55°
241.5 to 245.7 Fault Zone, Consists of Brecciated gabbro and Soft Fault Gouge, Contacts destroyed by Drill
252.7 to 255.4 Fault Zone cuts C/A @ 55° parallel to foliation. Foliation to C/A @ 256.0 = 70° and @ 260.0 = 30°

GENERAL ALTERATION: 235.0 to + 255.4 Calcite-Sericite-Quartz alteration of phyllitic gabbro is Strong and as controlled by foliation, Some fine Black Biotite

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Pyrite is relatively abundant in the alteration zone from 235.0 to + 255.4
Ranging from 1% to 5% Diss. Euhedral pyrite.
@ 237.2 massive Band of Pyrite Parallel to foliation 1.5 cm thick.
@ 237.7 massive Band of Pyrite Parallel to foliation 3cm thick
@ 239.2 Massive Band of Pyrite Parallel to foliation 4cm thick.

ADDITIONAL OBSERVATIONS:

Drill Hole Record: 279.8 Page # 6 of

HOLE #: VA16--24

From	To	
262.0	285.5	LITHOLOGY: Moyie Fault Zone Consists of a Soft fault gouge matrix surrounding some angular Phyllite and Limestone clasts.
		COLOR: Grey + Green fault gouge with white and grey clasts
		~~PRIMARY STRUCTURE:~~ Distroyed.
		TECTONIC STRUCTURE: H.W. Contact distoryed by Drilling. F.W. Contact with Slickensides cuts C/A at 50°
		GENERAL ALTERATION: Tectonic

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Mylonite F

Drill Hole Record:

HOLE #: VA 16-24

From	To	
285.5	313.4	LITHOLOGY: DEVONIAN Carbonates
		285.5 to 288.5 Calcareous Quartz & Lithic grets
		288.5 to 303.9 Crackle Breccia Grey dolomite - healed By white Dol.
		COLOR: 303 to 310. Lite grey to punkish Calcareous Siltstone
END		PRIMARY STRUCTURE: 310.0 to 343.8 Crackle Brecciated. Gary dolomite
OF		
HOLE 1		TECTONIC STRUCTURE:
		GENERAL ALTERATION:

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

ef

DRILL HOLE RECORD

PAGE #: 1 of

PROPERTY: VINE

LOCATION: EAST OF PEAVINE CRK.

COMMENCED: Jan. 7, 2017 COMPLETED: Jan. 20, 2017

COORDS: Long. Lat.

COORDS: UTM (E) 586572 (N) 5473372 (EL)

COORDS: Grid (E) (N) (EL)

ELEVATION: 1010.0 COLLAR: Dip: -90° Azi:

OBJECTIVE: Test GRAVITY ANOMALY

HORI. COMP:

VERT. COMP:

CORR. DIP:

TRUE BEARING:

% RECOVERY:

LOGGED DATE: Jan. 2017

LOGGED BY: D.L. Pighin

HOLE#: VA17-25

LENGTH: 821.64 Meters.

DRILL CONTRACTOR: F+B Drilling

CORE SIZE: NQ

CASING: 6.7 ? left in hole.

CORE STORAGE: Vine Facilities

SURVEYS: Depth: Dip: Azi: Type:

Additional SURVEYS:

Depth:	Dip:	Azi:
17.0	-89.4°	301.6°
101.0	-89.8°	302.6°
200.0	-89.6	306.2°
300.0	-89.4	327.9°
400.79	-89.5	313.6°
501.0	-89.2	025.4
601.9	-88.7	32.2°
700.0	-88.0	33.6°
801.0	-87.7	39.9°

Imperial ☐ Metric ☐

From To	LITHOLOGY:
6.7-30.9	6.7 to 9.3 finely xtln. gabbro Sill? 9.3 to 30.9 Typical Lower Aldridge silty Argillite.

COLOR: Shades of grey & lite grey

PRIMARY STRUCTURE: Gen thin to Very thin bedded, Bedding is tabular and Steep

Bedding to C/A @ 11.4 = 76°, @ 28.0 = 84°

TECTONIC STRUCTURE: Scattered thin Very irregular Qtz. filled Fractures

GENERAL ALTERATION: 29.0 to 30.9 intensely Silicified & Sericitized

rare late 0.5cm to 1cm thick Albite Veins Cut Axis @ 42°

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

3.8 to 24.0 Quartz Breccia Structure cuts C/A @ 60° (Barren)

Widely scattered Pyrite min. in thin Qtz. filled Fracture.

SAMPLE#	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-25

From	To	
30.9	55.1	LITHOLOGY: 30.9 to 33.4 Finely +Hbn Gabbro Sill cuts C/A @ 70° 33.4 to 53.2 Siltstone 53.2 to 55.1 Granophyric Fragmental
		COLOR: lite grey, Speckled Black
		PRIMARY STRUCTURE: Siltstone, is massive, no Bedding Plans noted, no grading, Granophyric fragmental, consists of wide scattered highly altered clasts, most have gostly outlines Due to intense alteration, clasts range in size from 1 cm sq. to 5 cm tabular shaped clasts
		TECTONIC STRUCTURE: —
		GENERAL ALTERATION: Massive Siltstone unit is Strongly Biotitic, with Lesser Muscovite in Main Sericite matrix, from 33.4 to 38.0 Intensely Silicified with abundant Biotite, Sericite & Some muscovite, Granophyric fragmental is altered to mainly Biotite & Sericite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Sm siltstone unit, rare thin 05cm thick Black Chlorite & Pyrite veins' cal C/A @ 5° Granophyric unit, hosts small patchs of Disseminated Pyrite, Pyrrhotite & Chalcopyrite.				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-25

From	To	
55.1	119.6	LITHOLOGY: Gabbro Sill ? Top Contact cuts C/A @ 70° Basal Contact very distorted.
		COLOR: Green Speckled white
		~~PRIMARY STRUCTURE~~: TEXTURE Med. to Coarsely xtln. 98.0 – 103.2 Gabbro has a sheeted fabric formed by rhythmically alternating hard and soft 5cm thick bands of sericitic and unaltered gabbro
		TECTONIC STRUCTURE:
		GENERAL ALTERATION:

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-25

From	To	
119.6	159.2	LITHOLOGY: Mainly Silty Argillite, approx. 30% of the of the Beds in this interval are weakly Calcareous. Good Lower Aldridge Sediments.
		COLOR: "Wet" Grey, Banded and mottled Maroonish grey
		PRIMARY STRUCTURE: Thin to Very thin Bedded, fine grained Sediments, Bedding as tabular and distorted Soft Sedimentary Slumps Zone 156.5 to ____ with Some widely Scattered Large clasts Bedding to C/A @ 123.2 = 80°, @ 135.0 = 80°, @ 156 = 77°
		TECTONIC STRUCTURE: NIL.
		GENERAL ALTERATION: Regional Biotitization and Sericitization.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Rare irregular hair line fractures host Pyrite and or pyrrhotite.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-25

From	To	
159.2	409.4	LITHOLOGY: Gabbro Sill, H.W. Contact cuts C/A @ 60° 357.1 to 358.24 Calcite - Sediment complex cuts C/A @ 47° Calcite Vein Contact is Parallel to Bedding in Sedimentary Beds.
		COLOR: Green Speckled White.
		~~PRIMARY STRUCTURE~~: TEXTURE 159.2 to 190.0 Coarse grained gabbro, @ 190, 10cm zone of Fragmental rock consisting of Sed. clasts in gabbro matrix, Fine grain gabbro to 191.0, then gabbro is coarse grained again to 318.5
		TECTONIC STRUCTURE: 314.0 to 333.0 Weakly cracktic brecciated by wide scattered 1mm to 3mm thick fractures that cut C/A mainly at angles of 62° & 15°, fractures healed by Qtz, and Calcite
		GENERAL ALTERATION: @ 220.5 Zone 10cm thick with absent. Coarsely altered Tourmaline needles follows FW of Quartz Vein. 227.5 to 228.6 Kalonized zone associated with minor Thin Quartz Veins cut C/A @ 46° (Feldspar totally altered to white Sericite

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
193.0 to 194.4 Quartz Vein cuts C/A @ 20°, host rare Pebbles of Pyrrhotite + minor Chalcopyrite				
212.0 - 5 cm Thick Barren calcite Vein cut C/A @ 15°				
218.5 to 220.5, Quartz Vein with Chlorite + minor Calcite Hosts rare Sphalerite @ 219.3				
270.3 to 273.0 Quartz - Calcite Vein cuts C/A of 31°				
@ 375.0, massive Pyrite - Pyrrhotite 3mm thick cuts C/A @ 5°, @ 380.0 3mm thick Pyrite, Pyrrhotite vein cuts C/A @ 5°.				
@ 395.0 Quartz Vein 5cm thick cut C/A @ 20° Hosts abundant Pyrite + Pyrrhotite				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-25

From	To	
409.4	458.7	LITHOLOGY: Mainly Phyllitic Gabbro, with Phyllitic Seds from 418.0 - 419

COLOR: Green finely Speckled white, with fine Black & Dark green lineation

~~PRIMARY STRUCTURE~~: Texture, is mylonitic, milled grains of feldspar occur in a matrix of chlorite and Sericite.

TECTONIC STRUCTURE: foliation @ 414 = 32° to C/A, @ 419 = 30° to C/A

GENERAL ALTERATION: Matrix of Gabbro is gen. altered Sericitte and Chlorite, locally Talc chlorite, Some host Lenses of Quartz & Epidot. Phyllite after Sediments consists mainly of Sericite and chlorite, rarely Quartz.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

Pyrite and rare Chalcopyrite are locally very weakly disseminated with the foliated gabbro.

SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-25

From	To
458.7	476.2

LITHOLOGY: Phyllite after Sediments

COLOR: Lite greenish grey, finely Streaked by dark grey & Black distorted lineation

PRIMARY STRUCTURE: distroyed by Alteration

TECTONIC STRUCTURE: @ 460 foliation to C/A = 18°, foliation plans are Strongly distorted by small scale drag folds, that are Very irregular

GENERAL ALTERATION: totally recrystallized to Sericite & chlorite, from 468 - 470.00, abund. coarsely altr. Muscovite with Black chlorite lineation

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Phyllite gen. hosts weakly diss. Pyrite, rare chalcopyrite and rare pyrrhotite through-out this interval. From 460.5 to 464.10 Pyrite & pyrrhotite, with rare Sphalerite & chalcopyrite form small wispy-distorted layers & lenses parallel to foliation

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-25

From To: 476.2 to 496.9

LITHOLOGY: Phyllitic Gabbro

COLOR: Speckled white on a green back ground

PRIMARY STRUCTURE: Fine grained with with phyllitic Banding; Phyllite has a mylonite texture; mainly formed by tiny milled Quartz grains, 486.1 to 492.3 gabbro is weakly foliated

TECTONIC STRUCTURE: foliation to C/A @ 482.2 = 37°, @ 496.0 = 45°

GENERAL ALTERATION: 476.2 to 486.13 Strongly mylonitized Gabbro with amphiboles & feldspar altered to Chlorite & Calcite, with Jade and scattered irregular patches of Calcite throughout interval. 487.0 to 488.0 Feldspar matrix altered to Epidot.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

476.2 to 486.13 Euhedral Pyrite is abundantly scattered throughout this Section est. 2% pyrite in gen. but up to 5% locally. Fine gen. pyrite & rare chalcopyrite is weakly diss. throughout the phyllitic gabbro in as interval.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-25

From	To
496.9	505.2

LITHOLOGY: Phyllite after Sediments 496.0 to 499.4
499.4 to 502.0 Phyllitic gabbro

COLOR: Wispy Banded Dark green and green.

PRIMARY STRUCTURE: destroyed by Tectonic =

TECTONIC STRUCTURE: foliation @ 499.0 = 45° to C/A intensely foliated, boudinaged, and deformed by small scale drag folds, foliation to C/A @ 502 = 32°

GENERAL ALTERATION: totally altered to Sericite, and chlorite, with some small Black chlorite Veinos

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

502.0 to 505.2 Phyllite unit host abund. Euhedral and Anhedral pyrite.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-25

From	To
505.2	517.4

LITHOLOGY: Strongly phyllitic Gabbro.

COLOR: Green with abund. Black Banding

PRIMARY STRUCTURE: distroyed by Tectonics

TECTONIC STRUCTURE: foliation 40° to C/A

GENERAL ALTERATION: Totally altered to chlorite mostly Black and to Sericite, small Quartz bands are scattered through-out interval, abund. developed of late irregular patches of Calcite through-out

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

Pyrite is weakly diss. through-out this interval.

SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-25

From	To	LITHOLOGY:
517.4	522.1	Phyllitic Sediments 517.4 to 520.4
		520.4 to

COLOR: Lite grey Streaked lite green

~~PRIMARY STRUCTURE~~: Totally distroyed

TECTONIC STRUCTURE: foliation @ 520.0 = 25°, Boudinage and Small scale drag folds deform plans of foliation

GENERAL ALTERATION: Sediments are totally altered to Sericite & Chlorite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Pyrite is weakly diss. Through out this interval

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-25

From	To
522.4	531.0

LITHOLOGY: Mylonized Quartzite

COLOR: Lite maroonish grey

PRIMARY STRUCTURE: Massive, formed by milled clasts of Quartzite in a fine Sericite matrix

TECTONIC STRUCTURE: 522.4 to 225.6, Mylonite Fault Zone, consists of 1.5 Meters of fine foliated Talcose green fault gouge, cuts C/A @ 30°

GENERAL ALTERATION: Intensely Silicified Quartzite, micro-clasts in a Sericite matrix

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Mylonized Quartzite host relatively abundant finely x'line Pyrite, as fine wispy lenses and scattered blebs. Est. 0.5 to 1.5 % Pyrite by Vol.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-25

From	To
531.0	569.0

LITHOLOGY: Crackle Brecciated Quartzite
543.13 to 543.9 unaltered Silty Argillite

COLOR: Grey mottled Buff by late Sericitization.

PRIMARY STRUCTURE: destroyed by alteration, unaltered Silty Argillite is thin Bedded, with Sharp — Tabular Bedding Planes. Cut C/A @ 45°.

TECTONIC STRUCTURE: Brecciation fractures cut C/A mainly at Angles of 65°, 30° & rare @ 10°

GENERAL ALTERATION: Intensely Quartzite after Siltstone? crackle Breccia and mottled by very fine grained yellowish-Tan Sericite, which is cut by irregular "very" thin Veinlets of white Dolomite and Quartz.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Finely Disc. Pyrite occurs Throughout this interval in the Sericitic altered Quartzite and never in the late fractures.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-25

From	To	
569.0	717.8	LITHOLOGY: Siltstone intermixed with Silty Argillite + Argillite Highly distorted Middle ALDRIDGE Marker Bed Segments 569.0 to 570.0, 586 to 588.5, 604.0 to 610.0, @ 616.7, 633.5 to 636.0, 639.7 to 641.0, 644.8 to CA 646.7, Segments of Distorted marker beds to 690.00
		COLOR: Grey, mottled lite grey and lite yellowish grey
		PRIMARY STRUCTURE: distorted in part by tectonics, with local Segments of distinct and tabular bedding. Sed's- which are not hydrothermally altered, are Siltstone, Silty argillite & Argillite. Bedding to CA @ 604.3 = 26°, @ 610.0 = 21°, @ 616.7 = 40°, @ 619.5 = 10°, @ 622.5 = 26°, @ 633.0 = 47°, @ 636.0 = 14°, @ 640.8 = 18° @ 645.7 = 10°, @ 664.0 = 24°, @ 672.0 = 6°, @ 684.5 = 5°, @ 688.0 = 5°, @ 695 = 25°, @ 710 = 9°
		TECTONIC STRUCTURE: Weak Crackle Brecciation as previously described Continues from 569 to 646.5 Fault Zone consisting of gauge + shear sed's cut C/A @ 11°, 638.7 to 639.5 Fault zone consisting of gauge & sheared Sed's cut C/A @ 11° 649.5 to 650. Fault zone as above cuts C/A @ 10°, 645.5 to Crackle brecciation becomes stronger again from 646.4 to ——— Shear zone 667.0 cuts C/A @ 20°, @ 701.2 - 702.0 Fault zone cuts C/A @ 16, 703.0 to 704.7 thin Shear zone cuts C/A @ 7
		GENERAL ALTERATION: Intense Silicification & Yellowish Sericitization Continues to 622., from 622.0 to 646.4 Sericitization and Silicification as patchy, 646.4 to +713.0 Sericitization and Silicification becomes intense again.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Pyrite is weakly diss. Through-out This interval, rarely more than 0.5% by Vol.				

NOTE:

Marker Segment @ 588.2 matched to FALLS Std., this marker bed is overturned.

Marker Segment @ 616.7 matched to MONROE Std. this bed is right is right side up

ADDITIONAL OBSERVATIONS:

Drill Hole Record: Perfect 146.5 Page # 15 of

From	To	LITHOLOGY: Strongly Altered mixed Siltstone & Argillite	HOLE #: VA17-25
717.8	736.18		

COLOR: Mottled grey, dark grey & lite tan.

PRIMARY STRUCTURE: distroyed by hydrothermal alteration & Tectonics, rare remnant Bedding plans @ @ 722.4, cut C/A @ 38°

TECTONIC STRUCTURE: Fault Zone 717.8 to 721.8 cut C/A @ 5°, Consists of abundant Soft fault Gouge and crushed Seds. 721.8 to 736.18 is relatively Strongly Crackle Brecciated and healed by Quartz and Quartz - Dolomite, fractures Show no prefered orientation.

GENERAL ALTERATION: Seds. are intensely Silicified and Sericitized, alteration appears to pre-date the Brecciation.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Weak Pyrite mineralization is widely Scattered through out this interval, it occurs in the Crackle Veinlets and in the altered Seds.
Very Rare galena & Sphalerite noted in Breccia Veinlets (with Qtz)

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-25

From	To	
736.18	749.8	LITHOLOGY: Tectonic Conglomerate? or Tectonically Altered Aldridge fragmental dacite, consists of Albite, Sericitic Silicified Quartz, and Silty argillite clasts in a Black argillite matrix.
		COLOR: White & Tan & Grey clasts in a Black matrix.
		PRIMARY STRUCTURE: Distroyed by tectonics, clasts are ragged in outline and elongated parallel to a crude foliation @ 30° to C/A. Clasts range in size from 1cm to plus 5cm. Some clasts show clearly that they were Brecciated Twice Before the current breccia was produced.
		TECTONIC STRUCTURE: See above
		GENERAL ALTERATION: Alteration appears to be pre current Breccia, clasts are albitize, & strongly Silicified, & Sericitized, much like the Rock unit that Forms the H.W. to the current Breccia Zone.
		MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE: Very weakly disseminated fine Pyrite mineralization in matrix and clasts.

SAMPLE #	From	To	Length

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-25

From	To	
749.8	756.4	LITHOLOGY: MOYIE FAULT, Consists of Soft lite grey gouge surrounding small dark grey rounded clasts, Soft gouge is common in Zone. Large & Small irregular patches of late white Pegmatite are developed with in the soft gouge
		COLOR: lite gray with Patchs of white & Dark grey.
		PRIMARY STRUCTURE: distroyed.
		TECTONIC STRUCTURE: Fault cuts C/A @ 49°, and or 65° or 55° foliation plans developed in the fault gouge
		GENERAL ALTERATION:
		MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE: rare fine diss. Pyrite

SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-25

From	To	LITHOLOGY:
756.4	792.3	Argillaceous - Silty Dolomite DEVONIAN

COLOR: 'wet' Black, with White fractures

PRIMARY STRUCTURE: Massive, No Bedding, very finely x'tln.

TECTONIC STRUCTURE: 756.4 - 792.3 Crackle Breccia, Very Strongly to 768.0, The dominate fractures cut C/A @ 66° & 25°, with abund hair line irregular fractures., Most of the fractures are Healed By White Calcite

GENERAL ALTERATION:

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

784.1 to 786.6 Large & irregular Patches of finely x'tln Pyrite, Massive finely x'tln Pyrite form Bodies up to 5cm x 3cm. & over 10cm Pyrite Con form up to 30% of Core by Vol.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-25

From	To	LITHOLOGY:
192.3	809.	Weakly calcareous Silty Argillite (Devonian sedS.)

COLOR: Black to Jet Black

PRIMARY STRUCTURE: Massive very fine grain, no evidence of Bedding, abundant worm hole Borings, unit Becomes weakly arenaceous to-wards its Base.

TECTONIC STRUCTURE: —

GENERAL ALTERATION: Some weak Silicification locally.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Interval Becomes weakly Pyritic to-wards its Base

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-25

From	To	
809.0	821.64	LITHOLOGY: Quartz - Lithic Grit Grading into a Conglomerate with Quartz grit matrix
		COLOR: Grey Speckled White + Black
		PRIMARY STRUCTURE: Massive, formed of Grit sized grains of Quartz & + Black Argillite, The Grit grains are sharply angular to Rounded, They are not Sorted or graded.
END		The matrix is mainly Sericite
OF		
HOLE		TECTONIC STRUCTURE: N/A.
		GENERAL ALTERATION: Silicified & Sericitic

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

rare diss. Pyrite.

SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

DRILL HOLE RECORD

PAGE #: 1 of

PROPERTY: VINE

LOCATION: EAST of Peavine Crk

COMMENCED: Jan 21, 2017 COMPLETED: Jan. 23, 2017

COORDS: Long. Lat.

COORDS: UTM (E) 586 830 (N) 5473560 (EL)

COORDS: Grid (E) (N) (EL)

ELEVATION: 1050.0m. COLLAR: Dip: −80 Azi: 222°

HORI. COMP:

VERT. COMP:

CORR. DIP:

TRUE BEARING:

% RECOVERY:

LOGGED DATE: Jan. 2017

LOGGED BY: D.L. Pighin

HOLE#: VA-17-26°

LENGTH: 200.0

DRILL CONTRACTOR: F+B Drilling

CORE SIZE: NQ

CASING: 13.0 Left in hole

CORE STORAGE: Vine Property

OBJECTIVE:

SURVEYS: Depth: Dip: Azi: Type:

Additional SURVEYS:	Depth:	Dip:	Azi:
	86.0	80.1	228.5°
	200.0	−80.6	237.6°

Imperial ☐ Metric ☐

From To **LITHOLOGY:** Meta-Sedstone

130-833 "Middle or Lower? Aldridge FM. Sediments are to highly altered to Tell.

COLOR: Dark grey Banded by Lite Tannish grey & Locally Lite Greenish Grey.

PRIMARY STRUCTURE: Mainly Med. to thick Bedded, Bedding is generally indistinct, But can be distinct and Tabular.

Bedding to C/A @ 9.0 = 38°, @ 34.0 = 50°, @ 41.0 = 47° to C/A, @ 53.0 = 55° to C/A, @ 64.0 = 58° to C/A

TECTONIC STRUCTURE: in This interval foliation occurs in narrow & widely Scattered Bands that Cut C/A @ 20° and @ 13°

GENERAL ALTERATION: 13.0 − 52.5 Regional Biotitization, Banded by Late Sericitization and Silicification

13.8 to 15.1 albite zone cuts C/A @ 11°, 15.1 to 23.7 Silicification, Sericitization, becomes intense, Some weakly Chloritized beds also occur, in association with Sericite + Silicification. Chloritization starts to get Stronger to-wards the Base of this interval

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

15.1 to 15.3, Barren Qtz. Vein cuts C/A 54°

SAMPLE#	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-26

From	To
83.7	117.2

LITHOLOGY: Mera-Selkstone

COLOR: Green and Greenish grey, some white Blebs

PRIMARY STRUCTURE: Destroyed by alteration and tectonics, some rare Bedding Planes @ 94.0 bedding to C/A = 45°, @ 97.9 = 60°

TECTONIC STRUCTURE: 83.7-117.2, foliated zone, with associated narrow Bands of fine Breccia. The foliation and fine breccia is healed by alteration, The foliation cuts C/A mainly @ 5° to Core Axis.

GENERAL ALTERATION: This interval is Strongly Chloritic & Sericitic with some zones of intense Silicification. Small & late Calcite Belbs & wisps are associated with foliation Breccias

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Through out this Chloritic interval pyrrhotite & pyrite is abundant in the narrow 2cm to 5cm Breccia zones, Weak Sphalerite mineralization occurs locally with in Breccias, and in adjacent Seds. The Sulphides are commonly Rimed by Black Chlorite
The Sphalerite occurs mainly from 97.0 to 102.6.

@ 99.9 a irregular Quartz Vein 6mm thick cuts C/A 30°, hosts Pyrrhotite, galena & Sphalerite

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-26

From	To
117.2	151.1

LITHOLOGY: Silty Argillite
Lower ACD. Type Sed's.

COLOR: Grey to Brownish grey

PRIMARY STRUCTURE: Med. to thin & very thin Bedded, Bedding is distinct, gen tabular; Some Beds are finely parallel laminated.
Bedding to C/A @ 119.8 = 33°, @ 128.7 = 30°, @ 132.0 = 20°, @ 144.5 = 12°, @ 148.0 = 6°

TECTONIC STRUCTURE: NIL.

GENERAL ALTERATION: Mainly Regional Biotitization & Sericitization, 145.0 to 145.8. Albitization, Associated with Subhedral pink garnets

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

@ 137, 20cm thick Zone of Heavy diss. Pyrrhotite, assoc. with albitization
@ 137.5 " " "

ADDITIONAL OBSERVATIONS:

Drill Hole Record: Iles

HOLE #: VA17-26

From	To	LITHOLOGY: Gabbro Sill? Dyke? Contacts are gradational and indistinct
151.1	to 200.0	
END		

COLOR:

PRIMARY STRUCTURE: Texture: upper Contact Gabbro is fine grained, And then Becomes Very Coarsely xtln. to 199.0, Feldspar is gen anhedral to Subhedral, Some feldspar xtls. show a fine graphic texture.

TECTONIC STRUCTURE: None, gabbro appears to be very Competent.

GENERAL ALTERATION: Weakly calcareous, Locally weaky Magnetic

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

ilmenite and associated leucoxene widely diss. through out the gabbro matrix, from 0.5% to locally 5%
Pyrrhotite & rare Chalcopyrite weakly diss. through out gabbro.

@ 190.0, 1cm. thick Epidote-minor Calcite Vein cuts C/A @ 10° host rare pyrrhotite & chalcopyrite
@ 190.7 to 191.2 1 to 2cm thick irregular Epidote Calcite Vein cut C/A @ 12°, hosts massive Pyrrhotite minor chalcopyrite as wispy irregular Shaped Zones
@ 192.0 2cm thick Epidote-calcite vein cuts C/A at 10° (BARREN
Note gabbro is gen weakly Magnetic, Probably due to diss. Pyrrhotite

ADDITIONAL OBSERVATIONS:

DRILL HOLE RECORD

PAGE #: 1 of

PROPERTY: VINE

LOCATION: East of Peavine Creek.

COMMENCED: Feb. 17, 2017 COMPLETED:

COORDS: Long. Lat.

COORDS: UTM (E) 586530 E (N) 5473320 N (EL)

COORDS: Grid (E) (N) (EL)

ELEVATION: 1010 M. COLLAR: Dip: -90° Azi: ——

HORI. COMP:

VERT. COMP:

CORR. DIP:

TRUE BEARING:

% RECOVERY:

LOGGED DATE: Feb. 2017

LOGGED BY: D.L. Pighin

HOLE#: YA17-27

LENGTH: 81.0 Meters

DRILL CONTRACTOR: F+B Drilling

CORE SIZE: NQ

CASING: Left in hole 1.5 Meters

CORE STORAGE: Vine Property

OBJECTIVE:

SURVEYS: Depth: Dip: Azi: Type:

Additional SURVEYS:	Depth:	Dip:	Azi:
	30.0	-89.5	108.3

Imperial ☐ Metric ☐

From To	**LITHOLOGY:**
1.5 to 7.3	Fine to aphanitic Gabbro Sill.

COLOR: Green

PRIMARY STRUCTURE:

TECTONIC STRUCTURE:

GENERAL ALTERATION:

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE#	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-27

From	To	
7.3	26.6	**LITHOLOGY:** Silty Argillite Good Lower Aldridge Sed's.
		COLOR: Shades of grey
		PRIMARY STRUCTURE: Thin to Very Thin Bedded, Bedding indistinct due to strong scouring By The Drill Bit, and abundant grease. Bedding to C/A @ 9.0 = 83°, @ 23.0 = 77°
		TECTONIC STRUCTURE: NIL.
		GENERAL ALTERATION: Mainly Regional biotitization & Seriatization, overprinted by late Silicification Blonde seriatization and green chloritization.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

@ 26.6. 1 cm thick Calcite Vein host diss. Sphalerite, cut C/A @ 32°

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-27

From	To	
26.6	81.0	**LITHOLOGY:** Gabbro Contact evidistinct due to fine Crackle Brecciation; DYKE or Sill?, Consists of approx. 60 – 65% Amphibole – 35% Plagioclase
END		**COLOR:** Green Speckled White
OF		**~~PRIMARY STRUCTURE~~:** Texture: Fine xtln. From 26.6 to 29.0; Coarsely xtln from 29.0 to 71.0, 71.0 to 81.0 Med. xtln. Feldspar xtls are Gen. Subhedral, Some have a graphic texture, produced
HOLE		by Quartz, Amphiboles mainly Hornblende are mostly Euhedral.
		TECTONIC STRUCTURE: MIL
		GENERAL ALTERATION: 74.1 to 77.0 - Quartz-Calcite Vein. cuts C/A @ 5° has a 4cm thick light Salvage Band of late Argillitization, graphic texture produce by late Quartz alteration of Feldspar. Gabbro is weakly Calcareous.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Weakly disseminated Ilmenite and associated Leucoxene Through-out

ADDITIONAL OBSERVATIONS:

DRILL HOLE RECORD 21-

PAGE #: 1 of

PROPERTY: VINE		HORI. COMP:	**HOLE#:** VA17-28
LOCATION: NORTH EAST OF Hiawatha Lake		VERT. COMP:	**LENGTH:** 1316.7 Meters
COMMENCED: March 13, 2017	COMPLETED: April, 2017	CORR. DIP:	
COORDS: Long.	Lat.	TRUE BEARING:	DRILL CONTRACTOR: FYB Drilling
COORDS: UTM (E) 584840	(N) 5471810 (EL)	% RECOVERY:	CORE SIZE: NQ
COORDS: Grid (E)	(N) (EL)	LOGGED DATE: March 2017	CASING: 124.7 Meters
ELEVATION: 970 Meters.	COLLAR: Dip: -90° Azi: —	LOGGED BY: D.L. Pighin	CORE STORAGE: VINE

OBJECTIVE:

SURVEYS: Depth: Dip: Azi: Type:

Additional SURVEYS:

Depth:	Dip:	Azi:
136.0	-89.2	281.3
236.0	-89.5	241.4
337.1	-89.6	269.6
436.0	-89.9	322.0
535.0	-89.7	287.2°
635.8	-89.8	057.7°
736.0	-90°	—
882.7	-88.7	072.6°
983.3	-87.4	071.6
1184.45	-86.5	071.4

Imperial ☐ Metric ☐

From To 124.7 to 141

LITHOLOGY: Siltstone, interbedded Silty Argillite & Argillite
70% (est) of interval as Siltstone

COLOR: Grey Banded locally by Lite grey

PRIMARY STRUCTURE: Med. to Thin Bedded, Bedding plans are gen distinct wavy to tabular
Siltstone gen very fine grained, Some flame structures, Some beds are fairly parallel
Laminated Bedding to C/A @ 135.0 = 82°, @ 163.7 = 75°

TECTONIC STRUCTURE: N.L.

GENERAL ALTERATION: Mainly Regional Brittization, Siltstone Beds are gen Silicified, with rare sub Meter Pink Garnets and Widely scattered tiny flakes of Muscovite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:
Pyrrhotite very weakly diss. Through-out this interval, Widely Scattered 1cm to 4cm thick Barren Quartz-Biotite Veins

SAMPLE#	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-28

From	To	LITHOLOGY:
164.1	184.0	Siltstone interbedded Silty Argillite, & rare Argillite. interval is (est.) 70% Siltstone

COLOR: Banded Grey, Tete grey & Dark reddish Brown Grey.

PRIMARY STRUCTURE: Mainly Med. to thin Bedded, Some Thin very thinly bedded Segments Bedding is distinct, flat to wavy, fine grained beds, Some planar structure, and rare Rip-up clasts, Some Siltstone Beds are distinctly graded fining upwards.

TECTONIC STRUCTURE: 167

GENERAL ALTERATION: Siltstone Beds are Strongly Silicified, with weakly diss. fine xtln muscovite and rare Subhedral Pink garnets, Silty Argillite & Argillite Beds are Sericitic & Biotitic with scattered calcite &/or Selenite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Some scattered/patches of weakly diss. Pyrrhotite.				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-28

From	To	
184.0	291.5	**LITHOLOGY:** Siltstone, interbedded Silty Argillite & Lesser Argillite. This interval is 75% Siltstone. BASE OF FRINGE MARKER BED at 233.8
		COLOR: Lt. grey, Grey and Brownish Lt. grey
		PRIMARY STRUCTURE: Med. to Thick Bedded Siltstones, with thin to very thin Argillite - silty Argillite Sequences. Bedding is wavy, wavey & distinct. Some Rip-up Clasts calcite filled Selenite x-tls. Zone very finely Parallel laminated Silty Argillite beds @ 203.2 bedding to C/A = 77°, @ 282.5 = 76° to C/A, @ 248.5 = 80°, @ 282.0 = 75°
		TECTONIC STRUCTURE: 181.0 to 187.4 Fault, cuts C/A @ 25°, Consists of Breccia Sed. in a Lithified gauge matrix., at 211.0 to 212.6 thin Breccia Zone cuts C/A @ 5°, 256.7 to 257.0 Fault zone cuts C/A @ 67° Consists of Soft fault gouge and Brecciated Sed., 266.0 to 266.5 Fault Zone cuts C/A parallel to Bedding @ 70° 272.7 to 273.4) Fault zone cuts C/A @ 14°, mostly Soft gouge) 279.0 to 280.3 Fault zone cuts C/A @ 15° Consisted of Soft gouge & B. Sed
		GENERAL ALTERATION: Siltstone. Beds are gen. Strongly Silicified with weakly diss. fine x-tls of Muscovite, and Spotted by widely Scattered Subhedral garnets, widely Scattered

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Rare Quartz veins with coarse Black Biotite rare weakly diss Pyrrhotite.		Salvages	cut C/A @ 8°,	rare 4cm thick
284.0 - 284.6 Quartz vein Mod abund. Black coarsely x-tln Biotite			cut C/A @ 10°	

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-28

From	To	
291.5	315.0	**LITHOLOGY:** Silty Argillite, Argillite, interbedded Siltstone. This interval is approx. 30% Siltstone
		COLOR: Lite grey, interlayed grey and reddish grey
		PRIMARY STRUCTURE: Med. to thin & very thin Bedded, Beddding as shap and Tabular. Silty Argillite are gen. finely Parallel laminated
		Bedding to C/A @ 315.0 = 75°.
		TECTONIC STRUCTURE: NIL
		GENERAL ALTERATION: Mainly Regional Silicitization & Serecitization, Speckled by 1 to 2% muscovite & and rare subhedral pink garnets. Siltstone beds are gen. Silicified with rare garnets

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: YA17-28

From	To	LITHOLOGY:
315.0	398.9	Siltstone, interbedded Silty Argillite This interval is 75% Siltstone

COLOR: Gen. lite grey.

PRIMARY STRUCTURE: Med. to thick and locally Very thick Bed ie. 342.4 to 345.4 is one Bed of Siltstone
Bedding is gen. indistinct, Convolly wavy with some good Ball & Pillow development.
Some flame structures, Siltstone Beds gen fine grained,
Bedding to C/A @ 316.0 = 77°, @ 377.5 = 70°, @ 398.9 = 75°

TECTONIC STRUCTURE: 10 cm thick Soft gouge filled shear cut C/A @ 50°

GENERAL ALTERATION: Siltstone Beds are Intensely Silicified, Sericitic + Locally Biotitic, weakly Speckled by late tiny xtls of muscovite, and locally widely scattered Sub Medual Pink grains.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
rare weak diss. Pyrrhotite									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-28

From	To	
398.9	419.4	**LITHOLOGY:** Silty Argillite - 100% of interval 403.0 - 403.9 Gabbro Dyke cuts C/A at 30° (SULLIVAN MUDS) FROM 404.0 to 419.0 (15.0 m)
		COLOR: Grey (Dry) Dark grey (wet)
		PRIMARY STRUCTURE: Med. to Thin Bedded, Bedding Distinct and Tabular, Beds in gen. are very finely parallel Laminated, in general these Beds are a very fine grain Silty Argillite.
		TECTONIC STRUCTURE: NIL.
		GENERAL ALTERATION: Finely Biotitic and Lesser Sericitic, with some beds hosting Mod. diss. fine muscovite Wks, approx ½ of the Beds in this interval are Silicified, some beds are weakly calcareous.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Pyrrhotite is weakly diss. throughout this interval. Pyrrhotite also occur in rare Thin Bedding Parallel Lamina.				
@ 412.2, 6 cm thick Near Massive Pyrrhotite Band, parallel to bedding hosts rare Sphalerite. This Band is Conductive and Magnetic.				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA11-28

From 419.4 To 458.4

LITHOLOGY: Dominantly Silty Argillite, minor Argillite.

LOWER ALDRIDGE SEDS

COLOR: Banded Lite greenish grey, and Rosey dark grey.

PRIMARY STRUCTURE: Med. to Thin Bedded

Bedding to C/A @ 433.5 = 76°, @ 455.5 = 80°

TECTONIC STRUCTURE: 446.2 to 446.53 Fault Zone all SSH gouge, underlain by 1.0 meters of crackle Breccia
Fault Cuts C/A @ 68°, Core is Broken 443.0 to 446.0

GENERAL ALTERATION: Regional Silicification, Silicification & Sericitization, Minor patchy Late Sericitization related to hairline fractures Produces lite pink patches in Silicification adjacent to the fracture. 435.0 to 443.0. Some calcareous Beds from 443.0, Locally Black Chlorite occur as small blebs associated and in tiny Vugs.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
432.7 to 433.5 Very weakly diss. Sphalerite, associated with hair line Chloritic fractures									
446.53 to 448.0 crackle Breccia host absent. Pyrite & pyrrhotite, associated with Chlorite.									
In Gen Pyrite & Pyrrhotite occur weakly throughout this interval.									
Assoc. with Chloritic fractures									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-28

From	To	LITHOLOGY:
458.4	471.0	Fault Zone mainly soft fault gouge and Brecciated Seds 469 to 471.0 mainly crackle Breccia
		COLOR:
		PRIMARY STRUCTURE: —
		TECTONIC STRUCTURE: Fault Zone cuts CA @ 14°
		GENERAL ALTERATION: Fracture & crackle Breccia assoc. with fault are healed by Blue Chlorite, Pyrite and pyrrhotite & Sphalerite. Host Seds commonly altered to White Sericite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
469.4 to 471.0 Sphalerite, Pyrite & pyrrhotite, occur in fracture fillings with chlorite in the crackle Breccia Zone Below the fault. Host Seds are Commonly Note: Sphalerite is relatively abundant.				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-28

From	To	
471.0	660.7	**LITHOLOGY:** Silty Argillite minor Siltstone and Argillite interval is est. 80% Silty argillite L.A. Seds, Good Lower ALDRIDGE SEDS (typical)
		COLOR: Lite greenish grey, widely Banded by Rosey dark grey
		PRIMARY STRUCTURE: Mod. to very Thin Bedded, Bedding distinct — flat, Very fine grained Silty Argillite These Sediments are Rhythmically Bedded from Silty Argillite to Argillite
		Bedding to C/A @ 486.0 = 68°, @ 565.7 = 75°, @ 595.6 = 78°
		TECTONIC STRUCTURE: N.L
		GENERAL ALTERATION: Regional, Biotitization, Sericitization and Silicification, cut by Late Hair line Chlorite Filled fractures, with associated lite green intense Silicification, Silty Argillite Beds are Locally all altered to fine rosey Black Biotite, with Late small muscovite XNLS diss Through-out. and Late Sericite, Sub Hedral Pink garnets, are widely scattered Throughout altered Silty Argillite Beds.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
472.54 to 472.9, Sphalerite weakly diss. and chlorite occur in Silicified Silty Argillite.				
474.3 to 475.0, Sphalerite occurs with chlorite & calcite in a thin Vein sub parallel to C/A.				
492.5 to 499, Sphalerite & pyrite & Pyrrhotite occur mainly in Silicified Zones in Chloritic Hairline fractures, that are sub parallel to Core "AXIS" Sphalerite is always weak diss. in the adjacent lite green intensely Silicified Seds.				
@ 518.5 Sphalerite as above, @ 526 Sphalerite as above				
@ 504.6 5mm thick Bed of MASSive Pyrrhotite is Conductive & magnetic				
@ 505.7 3mm " " " " " "				
Pyrrhotite in General is weakly diss. Through-out all The Altered Silty Argillite beds in This interval.				
561.5 to 564.0 Thin irregular 5mm to 20mm Tension crack Veins cut C/A Subparallel to Core Axis and @ 10° to 15° to C/A These Vein host massive Pyrrhotite, lesser Chalcopyrite in a Black to dark green chlorite gangue				
@ 589.7 Tension crack Vein cuts C/A @ 10°, 4mm wide Beds Pyrrhotite, galena & Sphalerite in a quartz-Sericite gangue				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-28

From	To	LITHOLOGY:
600.7	681.0	Siltstone minor Silty argillite interbeds This interval is 80% Siltstone / 681.0 to Gabbro Dyke? THIS interval is the FOOTWALL QUARTZITE UNIT

COLOR: Mainly Lite grey and Lite greenish gray, with Some Rosey Dark grey Bands

PRIMARY STRUCTURE: Mainly med. to thick Bedded, with rare, Very Thin Bedded, finely parallel Segments, rarely more Then 20 cm. Thick, Bedding Plans are rarely distinct, and generally Bdg planes are Wavey and indistinct, Those Beds. Look a lot like Middle Aldridge Turbidites Bedding to C/A @ 607.0 = 76°, @ 641.5 = 72° @ 664.5 = 50°, @ 675.0 = 70°

TECTONIC STRUCTURE: 679.5 to 681.0 Fault Zone cuts C/A @ 30°, Consists of Brecciated Loose Beds and Soft Fault gauge

GENERAL ALTERATION: Most of the Siltstone Beds are intensely Silicified & weakly Sericitized with widely Scattered Subhedral Pink garnets. Some beds have remnant Patches of Biotite Refional alteration, Locally the Silicified Siltstone beds are Strongly Chloritic.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
@ 605.8, Pyrrhotite filled Tension crack cuts	C/A 16°	as Magnetic & Conductive		
608.8 – 610.4 Breccia Zone cuts C/A @ 5 to	10°. Consists	of Siltstone Clasts in a massive		
Pyrrhotite & minor Chalcopyrite and Chlorite	matrix	Magnetic & Conductive		
@ 623.0, Massive Pyrrhotite + Qtz Vein Cut	C/A @	5° as magnetic & Conductive		
663.0 to 664.5, 6 x 1 cm thick Beds of Black Chlorite-Massive Pyrrhotite and Pyrite, rare chalcopyrite				
These Band or beds are to Pyritic to be Mag. or	Conductive			
©				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-28

From	To	LITHOLOGY:
681.0	694.0	Gabbro Dyke

COLOR: Green

PRIMARY STRUCTURE: TEXTURE: Finely xtln.

TECTONIC STRUCTURE: Fault Zone 687.6 to 690.0 cut C/A @ 37°, Consist of crushed gabbro and Sft fault gouge.

GENERAL ALTERATION:

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
@ 692.0 Quartz - Pyrrhotite Rubble.									

ADDITIONAL OBSERVATIONS:

Drill Hole Record: 694 to 761.3 Page # 12 of

HOLE #: VA 17-28

From	To	LITHOLOGY:
694.0	761.3	Siltstone Footwall Quartzite unit as previously discribed from 600.7 to 681.0

COLOR: Lite greenish Grey to 743.0, Then darker green with greenish Black fracture scattered through to 761.3

PRIMARY STRUCTURE: See from 600.7 to 681.0

Bedding to C/A @ 697.3 = 73°; @ 734.0 = 65°; @ 749.1 = 60°, 758.5 = 60°

TECTONIC STRUCTURE: 695.0 to 696.0 Fault Zone cuts Core Axis @ 25° Consists of Soft Fault Gouge matrix with milled clasts of Siltstone, Massive Pyrrhotite, Pyrite and Quartz. @ 699.8 thin 8cm Chlorite Shear cuts C/A @ 39°. 745.5 to 759.0 weakly crackle Brecciated, fractures to Core are mainly at 36° + 55° to C/A.

GENERAL ALTERATION: From 694.0 to 761.3 Siltstone Beds are Strongly Silicified, and Chloritic, Chlorite alteration increasingly Stronger towards the Base of the F.W.Q unit; 694.0 to 761.3 Weakly crackle Brecciated fractures are healed by late Black chlorite + Pyrrhotite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
@ 694.0, 16 cm thick Massive Pyrrhotite - Quartz Vein Cut C/A @ 66° Conductive & Magnetic									
714.5 to 715.1 Strongly Chloritic Seds with rare Massive Pyrrhotite Lines wispy Zones.	"	"	"	"	"	"	"	"	
720.8 + 721.5 " " " " " " " " " and Qtz. Veinlets									
@ 735.6, 1.5 cm Thick massive Pyrrhotite Band cuts C/A @ 90° - Conductive + Magnetic.									
Crackle Breccia from 745.5 to 759.0 is mineralized By Pyrrhotite and Black chlorite, Black Chlorite									
always forms a Selvage around Pyrrhotite, 754.9 to 755.3, is approx 50% Pyrrhotite forming with chlorite									
the matrix of a well developed Breccia, that cuts C/A @ 80°?									
from 755.3 to 761.3 Pyrrhotite + rare Chalcopyrite & Black Chlorite occur in tight fractures Through-out									
the Crackle Breccia.									

ADDITIONAL OBSERVATIONS:

Drill Hole Record: Soak

HOLE #: VA 17-28

From	To
761.3	818.0

LITHOLOGY: Meta-Silty Mudstone interbedded, Argillite good Calcareous Sediments

COLOR: (wet) Banded & Mottled Lite grey, Lite greenish grey, & Dark Rosey Grey

PRIMARY STRUCTURE: Gen. Thin to very Thin bedded Bedding is Steep and Tabular from 761.3 to 775.6, From 775.6 to 818.0 Bedding plans are relatively indistinct due to Alteration

Bedding to C/A @ 764.4 = 50°, @ 775.0 = 55°, @ 782.1 = 50°, @ 800.0 = 52°, @ 817.7 = 60°

TECTONIC STRUCTURE: NIL

GENERAL ALTERATION: Seds in this interval are generally intensely Silicified, with Some softer Sericitic Interbeds, locally, But scattered Throughout the interval are small 3mm to 4mm elyptical late Silica concretions, usually rimed by white Sericite, The Silicified Seds. a speckled by Late Sericitization, Some thin Argillite interbeds are Totally altered to Sericite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Weakly diss Pyrrhotite occurs locally Throughout	secet this interval			
815.0 - 815.3 Crackle Breccia Zone 30 cm thick,	healed by chlorite & Pyrrhotite			
783.4 to 783.5 Breccia Zone cuts C/A @ 50°, Rock	Bands & Lenses of Massive Pyrite & Pyrrhotite (Conductive)			

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-28

From	To	LITHOLOGY:
818.0	898.0	Gabbro Sill " Gabbro Arch?

COLOR: Green Speckled White

PRIMARY STRUCTURE: Med. to Very Coarse grained, 852.0 to 869.8 Gabbro differentiates to a very Coarse xtln Hornblendite.

TECTONIC STRUCTURE: NIL

GENERAL ALTERATION: Gen fresh except for ilmenite being altered in part to Leucoxene

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
@ 826.2, 1 cm thick Pyrrhotite Vein cuts C/A @	48°	Conductive & Magnetic							
@ 826.3 5 mm thick Pyrrhotite Vein cuts C/A @	45°	"	&	"					
@ 835.8 @ 12 cm thick Massive Pyrrhotite, minor Chalcopyrite Vein cuts C/A @ 67° Some associated Quartz + rare Calcite Strongly Conductive and magnetic									
@ 836.9 3cm thick Quartz - Calcite vein cuts C/A 45° with a massive Pyrrhotite Salvage is Conductive									
837.0 to 837.2 Diss. Pyrrhotite Zone Not Conductive									
@ 839.7 5 cm thick Strongly diss. Pyrrhotite Zone Conductive & Magnetic									
@ 869.8 4 cm thick Massive Pyrrhotite + Calcite Vein cuts C/A @ 45° is Conductive & Magnetic.									
@ 884.4 3 cm. thick Calcite - Quartz / massive Sulphide Vein cuts C/A @ 16° is Conductive & Magnetic.									
@ 889.4 3 mm Thick Massive Pyrrhotite Vein cuts C/A @ 38° is Conductive & Magnetic.									
Note The Gabbro is Gen. Fresh very weakly diss. Pyrrhote & rare Chalcopyrite throughout this unit. Ilmenite & associated Leucoxene ranging from 3 to 4% by Volume (est.)									

ADDITIONAL OBSERVATIONS: Note: This hole was stoped Here do to Muddy Road Conditions well Continue later.

Drill Hole Record: 980.2 ft Page # 15 of

From	To	LITHOLOGY: Gabbro Sill Continues (GABBRO ARCH Sill ?)	HOLE #: VA17-28
898.0	1086.3		

COLOR:

PRIMARY STRUCTURE:

TECTONIC STRUCTURE: 3mm to 10mm Calcite + Quartz Veins that cut Core AXIS @ 90° ± 5° these Vein are are scattered Through-out the Core but become stronger and more abundant from 968.0 to ..... 978.0 to ___ Shear Zone cuts C/A @ 5°, Consists of green lithified fault gauge, Brecciated Quartz + Pyrite

GENERAL ALTERATION:

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE: Quartz-calcite Veins that cut C/A @ 5° are generally sluggy Lined by tiny Quartz xtls. Shear zone @ 978 hosts only minor Pyrite. Ilmenite content in this Sill drops off @ about 937.0

SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

1115.0

Drill Hole Record:

HOLE #: VA 17-28

From 1086.3 To 1163.4

LITHOLOGY: Highly Altered Lower Aldridge Sediments mainly Silty Argillite.

COLOR: (Wet:) Lt. Greenish grey, mottled by dark reddish grey, Bands of white

PRIMARY STRUCTURE: Mainly thin to very thin Bedded, Bedding is indistinct, due to Alteration.

Bedding to C/A @ 1093.3 = 75°; @ 1102.0 = 68°; @ 1140.4 = 52°; @ 1160.6 = 61°

TECTONIC STRUCTURE: Weakly crackle Brecciated from 1086.3 to 1154.0, hairline fractures com. healed by Barren white Calcite. 1154.0 to 1163.4 Sediments are weakly foliated @ 61° Parallel to Bedding, at 1132.3 to 1136.0 Fault Zone cuts C/A 61°, Consists of Brecciated Sediments mixed with Soft fault gauge

GENERAL ALTERATION: Regional dirty reddish dark grey biotitization + Silicification is largely overprinted by late green intense Silicification + fine Sericitization, which is overprinted by scattered Bands of Albitization, garnetization + Chloritization. Strongest garnetization @ 1097.3.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
Widely scattered Throughout this interval a Scattered thin irregular Quartz, Chlorite, Pyrrhotite veinlets									
@ 1103.5, Tiny patch of very weakly diss. Sphalerite.									
@ 1154.6, irregular 2 cm to 4 cm thick Pyrrhotite - Pyrite + Chlorite Vein.									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: YA 17-28

From	To	LITHOLOGY: Gabbro Sill, Lower Contact parallel to foliation
1163.9	1192.8	

COLOR: Green.

PRIMARY ~~STRUCTURE~~: fine grained, due to strong foliation.

TECTONIC STRUCTURE: Tectonic foliation is @ 46°, foliation is weakly developed throughout this sill.

GENERAL ALTERATION: foliated.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
Pyrite is relatively abundant this sill, it occurs as weak dis, and locally as Black Chlorite and Pyrite layers up to 2 cm thick, Pyrite Content 5% to locally 10% by Vol.									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-28

From	To	LITHOLOGY: Phyllite after Sed.
1192.8	1197.0	
		COLOR: Mottled Brownish grey and Lite Yellowish Brown
		PRIMARY STRUCTURE: destroyed by alteration + foliation.
		TECTONIC STRUCTURE: Strongly foliated @ 46° to C/A.
		GENERAL ALTERATION: Brown Silicified-Biotitic Regional alteration, mottled by lite yellow intense Sericitization

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length	_____	_____	_____	_____	_____
Sulphides very rare, occ. Pyrite									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-28

From	To	
1197.0	1211.0	**LITHOLOGY:** Meta Sediments, altered silty Argillite?
		1209.9 to 1211.0 Soft finely foliated & crenulated phyllite
		Consisting mainly of fine layers of Sericite and clear aphanitic Quartz, with patches of Late Calcite
		COLOR: Late Bluish Gokey
		PRIMARY STRUCTURE: Distorted
		TECTONIC STRUCTURE: finely Crackle Brecciated throughout this interval, foliation in this unit is rare @ 38° to C/A (@ 1205)
		GENERAL ALTERATION: Intense Silicification of a very fine grained Sediment, hairline fractures that form the crackle Breccia are lined by Calcite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Sulphides are rare in this unit But From 1209.14 to 1209.4 Pyrrhotite occurs in thin Lamina & dissemination 15% by Vol.				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

From	To	LITHOLOGY: Mylonitic Quartzite	HOLE #: VA17-28
1211.0	1215.3		

COLOR: lite grey Speckled grey, with Some lite Blue grains

PRIMARY STRUCTURE: Distorted by Foliation, TEXTURE: Mylonite consists of grit and rare pebble-sized rounded Quartz grains in an Aphanitic Quartz matrix, Quartz grains show no grading or sorting

TECTONIC STRUCTURE: weakly foliated at 37° to core axis, Quartz grains are gen. aligned with the plans of foliation

GENERAL ALTERATION: Intensely Silicified, with weak Sericite, Some larger Quartz grains apear to be altered to lite Blue amethyst, Some late calcite Veinlets.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
Pyrite is finely diss. Throughout the Mylonite, range between 2% to Totally 5% by Vol.									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-28

From	To	LITHOLOGY:
1215.3	1220.3	Silicified Phyllite 1216.6 to 1217.5 Micaceous phyllite, with abundant talc Blebs of calcite
		COLOR: Variegated - Mottled lite grey and grey
		PRIMARY STRUCTURE: Distorted by alteration etc.
		TECTONIC STRUCTURE: foliation @ 1220.3 = 42° to CA.
		GENERAL ALTERATION: Intensely silicified with weak Sericitization.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
Abundant fine pyrite stks diss. Throughout this unit 3% to 5% locally. by Vol.									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-28

From	To
1220.3	1279.6

LITHOLOGY: Sericitic, Chloritic phyllite

COLOR: Green, streaked by dark green, with some white Bands & Patches

PRIMARY STRUCTURE: TEXTURE; very finely foliated. Foliation plans are commonly crenulated, and distored by micro-folds. Albite & Quartz layers are common & Boudinaged. Late Calcite forms irregular Veinlets and patches through this interval.

TECTONIC STRUCTURE: Foliation is intense, @ 1231.4 cuts C/A @ 40°, @ 1252. cuts C/A @ 40°

GENERAL ALTERATION: Sedis, are totally altered to Sericite & Chlorite, with scattered layers of albite & Silicification.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
at 1230.5 a 3cm thick calcite Vein host bedds of massive Pyrrhotite cut C/A @ 5°				
1241.7 to 1242.1 Limestone unit host 60% + pyrrhotite, with rare chalcopyrite and with scattered Clasts of albite. H.W. & F.W. marked by Strong Chloritization				
@ 1251.0 10cm Band of White host foliation parallel Band of Pyrite 5mm thick				
Pyrite and lesser pyrrhotite weakly disseminated in the phyllite through-out this interval.				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-28

From	To	
1279.0	1292.3	LITHOLOGY: MOYIE FAULT, Consists Lithified & Soft Fault gouge; Consisting of Dolomite clasts, Dolspar clasts, in a dolomitic gauge matrix. Note most of the clasts in this fault zone are Devonian Dolomite that Form F.W. of Fault.
		COLOR: Mottled lite grey, white and grey.
		PRIMARY STRUCTURE:
		TECTONIC STRUCTURE: Lithofied and Soft Gouge is strongly foliated @ 52° to C/A
		GENERAL ALTERATION:

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-28

From	To	LITHOLOGY:
1292.3	1296.0	Devonian Dolomitic Argillite

COLOR: Black

PRIMARY STRUCTURE: Massive, no Bedding, very fine grain etc.

TECTONIC STRUCTURE: all cracks Brecciated. Healed by white dolomite

GENERAL ALTERATION: None.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Some rare tiny wisps of very fine Pyrite.				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-28

From	To
1301.0	1312.7

LITHOLOGY: Dolomite

COLOR: Dark grey (wet)

PRIMARY STRUCTURE: Massive, and Med. thin., locally with casts of worm hole Borings

TECTONIC STRUCTURE: 1301.0 to 1302.7 Strongly Brecciated at 51° to C/A.

GENERAL ALTERATION: Widely Scattered Veinlets and irregular patches of late white dolomite

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
Wk									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-28

From	To	
1312.7	1316.7	LITHOLOGY: Weakly Calcareous Argillite
		COLOR: Black. (wet)
		PRIMARY STRUCTURE: Massive gen. Rare bedding plans near top of unit, cuts C/A @ 57°
END		
OF		
		TECTONIC STRUCTURE: Brecciated & Sheared @ 60° to C/A.
HOLE		
		GENERAL ALTERATION: nil.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
Nil.									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17 - 28

From	To	
1316.7	1317.9	LITHOLOGY: Dacite
END		COLOR: Grey
		PRIMARY STRUCTURE: Foliated & thin.
OF		
HOLE		
		TECTONIC STRUCTURE: Brecciated & Sheared @ 60° to C/A
		GENERAL ALTERATION: N.L

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length	_____	_____	_____	_____	_____
N.L.									

ADDITIONAL OBSERVATIONS:

164
169
35.0

DRILL HOLE RECORD

PAGE #: 1 of

PROPERTY: Vine		HORI. COMP:	**HOLE#:** VA 17-29
LOCATION: Peavine Mtn		VERT. COMP:	**LENGTH:** 1400.8
COMMENCED: May 10, 2017	COMPLETED: June 14	CORR. DIP:	
COORDS: Long.	Lat.	TRUE BEARING:	DRILL CONTRACTOR: F&B Drilling
COORDS: UTM (E) 584850.	(N) 5472610 (EL)	% RECOVERY:	CORE SIZE: NQ
COORDS: Grid (E)	(N) (EL)	LOGGED DATE: May 2017	CASING: 1.5, Left in Hole -
ELEVATION: 1165.0	COLLAR: Dip: −90° Azi: −0	LOGGED BY: D.J. Pighin	CORE STORAGE: Vine Property

OBJECTIVE:

SURVEYS: Depth: Dip: Azi: Type:

Imperial ☐ Metric ☐

From To	
1.5 - 1258	**LITHOLOGY:** Mainly Siltstone with minor interbeds of Argillite & Silty Argillite with Segments of the Aldridge marker beds @ 13.8 unmatched, @ 40.5 "Mark?" and from 108.9 to 109.2 LAMB Marker Bed "Good Match" This interval is 75% Siltstone.
	COLOR: Grey with Lite grey Bandings
and some what	**PRIMARY STRUCTURE:** Mainly med. to thick and very thick Bedded, Bedding is wavey, indistinct, Bedding is sharp - flat in the Silty Argillite interbeds.
	Bedding to C/A @ 13.5 = 75°, @ 41.5 = 70°, @ 108.8 = 74°
	TECTONIC STRUCTURE: NIL
	GENERAL ALTERATION: Regional.
	MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:
	rare diss. Pyrrhotite.

SAMPLE#	From	To	Length

Additional SURVEYS:	Depth:	Dip:	Azi:
	123.0	−89.7	125°
	223.0	−88.8	106.7°
	323.0	−88.6	104.6°
	423.0	−87.6	112.4°
	523.6	−87.6	124.1°
	623.0	−87.4	145.3°
	723.0	−86.3	140.5°
	821.0	−86.1°	142.9°
	923.0	−84.4	350.0
	1023.0	−85.2	150.5
	1123.0	−84.8	147.7
	1223.87	−84.8	145.7
	1322.83	−84.4	146.6

ADDITIONAL OBSERVATIONS:

65

Drill Hole Record:

HOLE #: VA17-29

From	To	
125.8	162.2	**LITHOLOGY:** Siltstone minor Argillite interbeds Interval is 75% Siltstone
		COLOR: Wet. Dark grey with lite grey Argillite Bed tops
		PRIMARY STRUCTURE: med to thin Bedded, rare thick Beds, Bedding is distinct, gen. wavy to flame structured, Beds are med. to fine grained, beds are graded fining upwards to a silt to argillite Bed top; These are classic Turbidite Beds. Bedding to C/A @ 129.8 = 70° & 71° @ 150.
		TECTONIC STRUCTURE: NIL.
		GENERAL ALTERATION: Regional Silicification, Biotitization and sericitization, Some Siltstone Beds are strongly Calcareous, late lite green Sericitization follows late hairline fractures. Calcite after Selinite vtls are widely scattered throughout this interval.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Widely scattered Quartz-Biotite veins cut C/A 12°, rarely more than 5cm thick				

ADDITIONAL OBSERVATIONS:

Drill Hole Record: 218.03

HOLE #: IIA17-29

From	To	
162.2	to 266.5	**LITHOLOGY:** Siltstone minor interbedded Silty Argillite & argillite HIAWATHIA MARKER ZONE 162.2 to 266.5 Hawarthia marker Beds are scattered Through out this interval, Marked @ 164.6, @ 191.0 & @ 208.0 and @ 243.5, and @ 266.5. This interval is 60% Siltstone.
		COLOR: (wet) Dark grey with Ide grey Argillite Red tops.
		PRIMARY STRUCTURE: Bedding in Siltstone Beds is indistinct, Bed flat sharp in Marker Beds, Silt Stone Beds are gen. graded fining upwards, gen. fine to med. grained, 175.3 to 181.2 Coarse grained, graded Siltstone Beds, this beds are 50 cm thick, They are Strongly Calcareous and grade rapidly upwards to Argillite Bed tops. Bedding to C/A @ 163.3 = 67°, @ 191.0 = 70°, @ 208.0 = 76°, 170.7 to 171.0, Fragmental bed. probably Rip-up clasts.
		TECTONIC STRUCTURE: NIL Bedding to C/A @ 243.5 = 70°, @ 266.0 = 75°
		GENERAL ALTERATION: Regional; Biotitization - Silicification and Sericitization, late calcite after Selicite Veins are still widely scattered through-out this interval. Silicification is very intense from 258.0 to 263.9

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
178.0 to 180.0: Quartz - Biotite Veins 4 cm to 6 cm thick cut C/A @ 10° Host pyrrhotite Pyrrhotite is weakly diss. in the Lenicy Siltstone Beds, But is diss. Very weakly Through-out this interval. @ 258.7, Barren Qtz. Vein, 30 cm thick cut C/A @ 16°.				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-29

From	To	LITHOLOGY:
266.5	286.5	Mainly Siltstone, minor thin interbeds of Argillite - Silty Arg. Interval is 85% Siltstone.

COLOR: (Wet.) Dark Grey, Banded Lite grey, and Locally Tannish Brown.

PRIMARY STRUCTURE: Med. to thick to Very Thick Bedded, with minor thin to Very Thin Beds, Bedding is Sharp Locally, Bilt Generally indistinct.

Bedding to C/A @ 279.6 = 68°

TECTONIC STRUCTURE:

GENERAL ALTERATION: Regional, intense Silicification + fine Biotitization and Sericitization, Locally Banded. By Tannish brown late Late Silicification and Sericitization. 276.0 to 276.2 late calcium rich Concretions.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
minor weakly diss. Pyrrhotite Through-out the Section.									
@ 269.2, 20 cm thick Qtz. Vein cuts C/A 25° hosts abundant Pyrrhotite, rare Chalcopyrite, Black Chlorite, and Small Blebs of Calcite									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-29

From	To	
2860	2990	LITHOLOGY: Siltstone interbedded Argillite + Silty Argillite interval is 50% Siltstone
		COLOR: Dark grey & grey mottled and Banded green by late alteration
		PRIMARY STRUCTURE: Med to thin & Very Thin Bedded, Bedding is commonly sharp & flat. Bedding to C/A @ 298.3 = 58°
		TECTONIC STRUCTURE: 294.0 to 294.5 Breccia Zone cuts C/A @ 50°, healed By Black Chlorite and calcite
		GENERAL ALTERATION: 288.4 to 291.0 Chloritization of thin argillite beds is intense, Siltstone Beds still have some Remaining, Regional Silicification & Biotitization, That is overprinted by late stage Silicification & Sericitization?

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
Very weakly diss pyrrhotite throughout this interval mainly in Siltstone Beds									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-29

From	To	
299.0	364.9	LITHOLOGY: Main Altered Siltstone minor interbedded Silty Argillite & Argillite. This interval is approx. 85% Siltstone.
		COLOR: (wet) Dark grey, with reddish brown Tint, Banded & mottled by Lite grey.
		PRIMARY STRUCTURE: Mainly med., thick & very thick Bedded, with minor thin to very thin bedded Argillaceous Sequences from 312.0 to 314.0, & 337.0 to 339.2 & 327.1 to 328.8 bedding planes are gen. undistinct, Commonly wavy, But one Sharp & flat in thin Bedded sequences, Siltstone Beds are med. to fine grained, and rarely Coarse Grained, The Siltstone beds are gen. grated fining upwards to Argillite Bed top (Turbidite Beds.) Some Soft Sed. deformation & Rip-up clasts
		TECTONIC STRUCTURE: Bedding to C/A @ 313.5 = 70°, @ 323.6 = 64°, @ 345.0 = 70°, @ 361.0 = 62°
		GENERAL ALTERATION: Siltstone beds are intensely Silicified, finely Biotitic, and Speckled by small Lobe xtls of Muscovite, Silty Argillite - Argillite Beds are altered mainly to Sfl Sericite, and Some fine Black Biotite. xtls of Calcite & Quartz after Selenite are abundant throughout this interval, most abundant from 328.2 to 337.2 Note. Quartz replaces the calcite xtls after Selenite: 356.2 to 361.0 Silicified Siltstone Bed are strongly Calcareous.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
Subhedral orange garnets, & Muscovite are abundant from 364.0 to 364.9.									
Rare weak pyrrhotite diss, locally throughout Interval.									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-29

From	To	LITHOLOGY:
364.9	368.0	Fault Zone, Consists of a melee of Soft grey gouge and Soft But Competent Brecciated Lamprophyre Dyke. Fault Contact cuts C/A @: 38° (good contact)
		COLOR: Lite grey and dark green.
		PRIMARY ~~STRUCTURE~~:
		TECTONIC STRUCTURE:
		GENERAL ALTERATION:

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length	_____	_____	_____	_____	_____

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-29

From	To	LITHOLOGY: Meta Sediments
368.0	371.7	
		COLOR: lite grey, locally mottled Brown, Orange and Black, overprinted by silvery Speckles (Muscovite)
		PRIMARY STRUCTURE: Remnant Bedding? @ 68° to C/A.
		TECTONIC STRUCTURE:
		GENERAL ALTERATION: Sediments totally altered to Sericite, Biotite and locally subhedral orange Garnets all overprinted by muscovite speckles.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-29

From	To	
371.7	384.0	**LITHOLOGY:** Gabbro – Lamprophyre Dyke Complex Lower Contact cuts C/A @ 37°
		COLOR: Dark Green & Brown
		~~**PRIMARY STRUCTURE:**~~ TEXTURE: Fine grained & Locally Brecciated.
		TECTONIC STRUCTURE: Lamprophyre Totally Brecciated from 371.7 to 374.4 cuts C/A 5°
		GENERAL ALTERATION: 383.0 to 384.0 Dyke altered to fine Sericite + Biotite, with abundant relatively large anhedral lite–pink to lite orange garnets.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
@ 383.6 4cm thick Band of 60° + Sphalerite rare galena cuts C/A @ 37°									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA-17-29

From	To	
384.0	397.0	**LITHOLOGY:** Meta-Siltstone, minor meta-Argillite . this interval is 80 % altered Siltstone
		COLOR: Mainly Lite grey and Lesser Grey.
		PRIMARY STRUCTURE: Med. to thick and Some Very thick Beds, Bedding planes are indistinct in altered Siltstone Beds, Bedding is distinct & flat in altered Argillite Beds. @ 396.0 bedding to C/A = 70°
		TECTONIC STRUCTURE: rare fractures @ 15°/45°
		GENERAL ALTERATION: Siltstone & Argillite Beds are weakly to Strongly Calcareous, Matrix of Siltstone beds is totally altered to Sericite and lesser fine biotite, with some muscovite, (Silty Argillite & Argillite beds are totally altered to fine Sericite, anhedral Pink garnets occurs in Siltstone and argillite beds through-out this interval. Calcite & Quartz after Selenite vns are abundant all through this interval.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
rare specks of pyrrhotite									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA-17-29

From	To	
397.0	401.2	LITHOLOGY: Meta-Argillite & Metasiltstone
		Interval is 50% altered Siltstone
		LOIS CRK MARKER BED @ 398.3. Match to std.
		COLOR: Parallel Banded, Brownish grey, lite grey and light greenish grey. (wet)
		PRIMARY STRUCTURE: Thin to Very thin Bedded, Bedding plans are Sharp and Tabular
		Bedding to c/A @ 398.0 = 70°
		TECTONIC STRUCTURE: NIL.
		GENERAL ALTERATION: See interval 384.0 to 397.0

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
NIL.									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

Page #12 of

HOLE #: VA17-29

From	To	LITHOLOGY:
406.2	421.1	Siltstone interbedded argillite & Sooty Argillite (Graphitic) interval is 75% Siltstone

COLOR: wet; Shades of Lite grey, dark grey, and grey.

PRIMARY STRUCTURE: Mainly med. to thick & rarely Very thick beds of Siltstone, med. to fine grained Sedst. Bedding plans are wavy and Commonly indistinct

Bedding to C/A @ 419.0 = 65°

TECTONIC STRUCTURE: 411.0 to 414.6. Fault Zone cuts C/A 52°. Fault Zone Consists of Soft Clay gouge And healed Breccia, clasts are Strongly Biotitized & Sericitized, clasts are clast Supported with a calcite matrix.

GENERAL ALTERATION: Alteration, Continues as described previously, Beds are not as intense, Sericitization and garnets are not as Strongly developed as above, Calcite and Quartz replacement of Selenite Atls. are Still abundant, Silicification of Siltstone Beds is intense locally, Beds locally are Still weakly Calcareous.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

From	To	LITHOLOGY: Siltstone interbedded with argillite & Silty Argillite interval is 55% Siltstone.	HOLE #: VA 17-29°
421.1	432.0		
		COLOR: (wet) Dark grey with Reddish Tinges interlayered with lite grey	
		PRIMARY STRUCTURE: Med, to thin and very Thin bedded, Bedding plans are distinct and Tabular.	
		TECTONIC STRUCTURE: NIL	
		GENERAL ALTERATION: Siltstone beds are still regional Silicification & Sericitization with Some Small Anhedral garnets, Calcite & quartz pseudomorps after Selenite Still abund, Some Beds are weakly Calcareous.	

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
NIL									

ADDITIONAL OBSERVATIONS:

Drill Hole Record: Fringe 520? Dave Page # 14 of

HOLE #: VA 17-29

From	To	
432.0	442.0	LITHOLOGY: Siltstone, minor Silty Argillite
		Interval is 75% Siltstone
		COLOR: wet dark grey, Band grey
		PRIMARY STRUCTURE: Med. to thick and Very thick Bedded, very thin bedded argillite 437.8 to 438.4
		Bedding to C/A @ 438.4 = 77°
		TECTONIC STRUCTURE: 433.5 – 433.8, Fault zone consists of crushed Sibs in fault zone.
		GENERAL ALTERATION: Regional Silicification, Biotitization & Sericitization

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
Nil.									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-29

From	To	LITHOLOGY:
442.0	472.7	Siltstone, interbedded Silty Argillite & Argillite interval as 65% Siltstone

COLOR: Reddish, Brownish grey, mottled by lite greenish grey, and lite grey

PRIMARY STRUCTURE: Med. to thin Bedded, rare thick beds, 463.0 to 464.4, very thin Bedded Limey Argillite. Bedding Plans are gen. Wavy and undistinct, and locally flat & Sharp. Some thin Zones of Soft Sediment deformation, Scattered Rip-up clasts, Siltstones are fine to med. grained, Some bed show grading fining upwards. Bedding to C/A @ 453.0 = 64°, @ 464.4 = 70°

TECTONIC STRUCTURE: @ 451.8 thin gouge filled Shear cuts C/A @ 22°, widely Scattered fractures @ 20° & 40° to C/A

GENERAL ALTERATION: Regional Biotitization, and Sericitization, overprinted by Lite Chlorite developed along fracture described above and along Some Bedding Plans, Some Beds are weakly limey and Very Strongly limey from 463.0 to 464.4.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
rare diss. Pyrrhotite, or pyrite Locally.									
rare 1 cm thick Quartz-Calcite vein hosts Pyrrhotite & Trace chalcopyrite					cut C/A @	17°			

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-29

From	To	LITHOLOGY:
472.1	477.6	Siltstone, minor Argillite interval 80% Siltstone

COLOR: Dark grey Tinged Red, Banded lite grey.

PRIMARY STRUCTURE: Thick to Very Thick Bedded, Bedding is indistinct, Some graded Beds fining upwards.

TECTONIC STRUCTURE: —

GENERAL ALTERATION: Regional Silicification, Biotitization and Sericitization, with Some scattered Concretions consisting of calcite & biotite & Diss. pyrrhotite, Beds are gen. weakly Limy.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
rare diss. pyrrhotite.									

ADDITIONAL OBSERVATIONS:

Drill Hole Record: Parallel.

HOLE #: VA 17-29

From	To
477.6	529.2

LITHOLOGY: Siltstone interbedded Silty Argillite & Argillite
Interval 60% Siltstone
FRINGE MARKER BED @ 515.5M.

COLOR: Dark Reddish grey, Banded By Lite grey.

PRIMARY STRUCTURE: Mainly med. to thin and Very thin Bedded, rare thick Bed. 477.6 to 478.3 Very thin Bedded finely laminated altered Argillite, rare thick Beds of Siltstone, Bedding is distinct, gen wavy, But locally Tabular. Bedding plans are commonly Marked by Fossil structures, and Ball & Pillow development.
Bedding to C/A @ 483.0 = 67°, @ 500.5 = 66°, @ 515.0 = 70°

TECTONIC STRUCTURE:

GENERAL ALTERATION: Regional - Silicification, Sericitization and Biotitization; 477.6 to 478.3 & from 517.6 to 526.5' finely parallel laminated Argillite beds are strongly Biotitized, dotted by Coarse Sericite, and are gen. calcareous.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

Pyrite & Pyrrhotite are weakly deposited in widely scattered Hairline fractures Throughout this interval

SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 97-29

From	To	
529.2	590.3	LITHOLOGY: Siltstone interbedded Silty Argillite & Argillite Interval is 75% Siltstone VAL marker BED @ 544.6
		COLOR: (wet) Gen. Grey, with lite grey and dark grey Banding, some lite green & Brown mottling
		PRIMARY STRUCTURE: Med. to thick bedded, with scattered narrow (50cm or less) very thin Bedded argillite sequences. 539.2 to 540.2 very thin bedded, Bedding as distinct Both wavy and tabular. Some narrow zones of Soft Sediment deformation, rare Rip-up clasts. Bedding @ 556.6 = 66°, @ 581.4 = 70°
		TECTONIC STRUCTURE: @ 571.8 2cm thick Heal Breccia zone cuts C/A @ 21°, @ 576.0 2cm thick Breccia zone cuts C/A 6°, @ 576.3 4cm thick Gauge filled shear cut C/A @ 70°
		GENERAL ALTERATION: Regional as previously described, with rare but widely scattered Sub-hedral lite pink garnets, rare Small Biotite rich Concretions

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
@ 530.0 6cm thick Quartz-chlorite Vein hosts abundant massive Pyrrhotite Cuts C/A @ 20°									
Pyrite + Pyrrhotite occur through this unit as previously discribed.									
@ 561.8, 5cm thick Qtz. Vein host Pyrrhotite and Coarsely +1m. Black Biotite Salvages along Vein Contacts Cuts C/A @ 10°									
@ 564.0 10cm thick Barren Qtz. Vein with Coarse Black Biotite cuts C/A @ 10°									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

From	To	LITHOLOGY: Siltstone interbedded Silty Argillite, Lesser Argillite. Interval is 50.7% Siltstone.	HOLE #: VA 17-29
590.3	628.7		

COLOR: Dark Grey and grey Siltstone 603.0 to 611.5 Brownish grey, with fine whitish grey speckling

PRIMARY STRUCTURE: med to thin Bedded, rare very thin Beds, most of the bedding plans are flat and distinct, 603.0 to 611.5 mainly finely parallel laminated Silty Argillite

Bedding to C/A @ 624.7 = 70°

TECTONIC STRUCTURE: NIL.

GENERAL ALTERATION: Regional in general, But from 603m to 611.5, generally Carbonatized, altering Black Biotite to Brown Biotite. Subhedral to anhedral pink garnets occur locally through out this interval.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

603.0 – 611.5 Pyrrhotite is weakly diss. through-out the Calcareous Silty Argillite Unit, rarely more then 1% by Vol

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-29

From	To	
625.7	631.0	LITHOLOGY: Siltstone: rare thin interbeds of Silty Argillite Interval is 85% Siltstone
		COLOR: Grey
		PRIMARY STRUCTURE: Thick to Very Thick Bedded, Bedding is indistinct, to Locally Distinct, Bedding wavy, Siltstones are med. grained, Commonly graded fining up-words
		TECTONIC STRUCTURE: Nil.
		GENERAL ALTERATION: Regional, Sericitization

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Nil.				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA-17-29

From	To	
631.0	646.6	LITHOLOGY: Siltstone interbedded Silty Argillite and argillite Interval is 60% Siltstone
		COLOR: Dark grey, Banded, Lite Greenish grey, & mottled by light green.
		PRIMARY STRUCTURE: Med. to thin Bedded; Bedding plans are indistinct, to locally distinct Bedding plans are marked by flame structures. These are all graded beds Bedding to C/A @ 643.0 = 68°
		TECTONIC STRUCTURE: N.C.
		GENERAL ALTERATION: Regional to: 632.5. 632.5 to ____ ; Siltstone beds are intensely Silicified, and Sericitized. with widely Scattered anhedral lite pink garnets, argillite Bed tops are chloritic and Sericitic.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
@ 633.1, 5 cm thick Quartz – chlorite, minor pyrrhotite Vein cuts C.A @ 16°				

ADDITIONAL OBSERVATIONS:

Drill Hole Record: associated Page # 22 of

HOLE #: VA-17-29

From	To	
646.6	663.6	LITHOLOGY: Siltstone, interbedded Silty Argillite interval is 80% Siltstone
		COLOR: Dark grey, Banded & Mottled by Lite grey, lite greenish grey and Dark Brownish grey
		PRIMARY STRUCTURE: Med. to thick bedded, rarely thin bedded, Bedding plans are distinct, gen. wavy rare flame structures, and rare Ball and Pillow structures.
		Bedding 650. = 69° to C/A
		TECTONIC STRUCTURE: 650.2 to 651.2 Fault Zone parallel to Bedding consists Lithified Breccia
		GENERAL ALTERATION: Generally intensely Silicified, speckled by late Sericite – Muscovite, Some beds are finely Biotitic which is probably regional Region alteration, Subhedral-euhedral like pink garnets, occur Locally but always in association with intense Silicification

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Some scattered 2cm + 5cm Quartz - Biotite - calcite Veins cut C/A at 15°				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA-17-29

From	To	LITHOLOGY:
663.6	666.9	Silty Argillite interval 25% Siltstone

COLOR: Dark grey, laminated lite green, speckled by fine Muscovite.

PRIMARY STRUCTURE: Thin to Very thin bedded, Bedding is distinct & Tabular, Beds are finely parallel laminated

Bedding to C/A @ 666.9 = 72°

TECTONIC STRUCTURE: NIL

GENERAL ALTERATION: Fine regional Biotitization; over printed by intense Silicification, and carbonatization speckled by late muscovite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

rare Specks of pyrrhotite.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA-17-29

From	To
669.-	697.8

LITHOLOGY: Siltstone, interbedded Silty Argillite
Interval is 75% Siltstone

COLOR: Dark grey, Banded Lite grey

PRIMARY STRUCTURE: Mainly med. to thick Bedded, are distinct to indistinct in part, Bedding plans are wavy to locally flat.

TECTONIC STRUCTURE:

GENERAL ALTERATION: Regional · Silicification and biotitization, with relatively abundant Subhedral Lata Porph Crarnets scattered through-out this interval, Gornets are associated with the intense Silicification

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
rare, diss pyrrhotite				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: 11A-17-29

From	To	LITHOLOGY:
697.8	712.0	Silty Argillite. This Interval is 100% Silty Argillite This is the (SULLIVAN MUDS)

COLOR: Grey & Dark grey, finely parallel laminated by Black Seriecitous.

PRIMARY STRUCTURE: Med., thin, and Very thin Bedded, Bedding is distinct and tabular, these are very fine grain Silty Argellite beds, that are all very finely parallel laminated.

@ 706.6 beddens to C/A = 72°

TECTONIC STRUCTURE: VrL

GENERAL ALTERATION: Regional; Very fine Biotitization & Sericitization, with late local Silicification, Late Speckling by Sericite

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
697.8 to 706.5 Weakly disseminated Pyrrhotite, 0.5% to 1% By Vol				
706.5 to 708.7, Strongly diss. Pyrrhotite, and very rare diss. Sphalerite, gen. 5 to 15% Pyrrhotite: Pyrrhotite occurs as Strong diss. and as paper thin Lamina Best Pyrrhotite 706.5 to 706.6, 40% Pyrrhotite as paper thin Laminations & dissemenation - (Magnetic Conductive) and @ 708.4 to 708.7, Heavy diss. Pyrrhotite with paper thin Lamination, Some weak diss. Sphalerite 10% to 35% Pyrrhotite				
Sampled. See Sample Book				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA-17-29

From	To	LITHOLOGY:
712.0	721.7	Siltstone 95% Siltstone

COLOR: Gen. Grey with some Lite green mottling

PRIMARY STRUCTURE: Massive, no bedding; From 718.0 to 721.7 Mixed Lithology; due to Strongly developed Soft Sediment deformation

TECTONIC STRUCTURE: N/L -

GENERAL ALTERATION: Some pockets of lite lite green - chloritic alteration

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA-17-29

From	To
721.7	796.8

LITHOLOGY: Mainly Silty Argillite with Siltstone from 740.7 to 745.6
This interval is 90% Silty Argillite
This is TYPICAL LOWER ALDRIDGE F.M.

COLOR: Rhythmically Banded lite grey, white and, maroon dark grey.

PRIMARY STRUCTURE: Mainly med to thin and Very thin beds, Bedding is Sharp and Tabular approx. 50% of the Beds are finely parallel Laminated, the rest are without structure, These beds are Rhythmically bedded. except 740.7 to 745.6 these are thick to very thick Siltstone Beds @ 723.8 bedding to C/A = 72°, @ 757 ± 72° to C/A, @ 776.0 = 72° to C/A (med to thick Beds 785.6 - 796.8

TECTONIC STRUCTURE: @ 745.5, 10cm thick gauge + Breccia zone cuts C/A 26°.

GENERAL ALTERATION: Regional Biotitization and Sericitization, with Patchy Silicification
721.7 — 772.16 all The Beds are weakly to strongly Calcareous, 772.16 - approx 1/3 of Beds are weakly to Strongly calcareous, From 736 to 785. Silty argillite Beds are Strongly Silicified and Speckled by Late Sericite, Rhythmically interbedded with Silicified beds are Soft Lite grey silty Argillite beds altered to fine Sericite

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Pyrrhotite is weakly diss. in most of the Silicified beds and Thereites associated with late coarse Sericite specks, The diss. Pyrrhotite in these bed is about 1.0% to rarely 5% by Vol.

Pyrrhotite rarely occurs as Small massive belts in hairline fractures probably Tension cracks.
785.0 to 792.6, Scattered weak diss. of Pyrolusite.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VM-17-29

From	To	
1962	855.9	**LITHOLOGY:** Silty Argillite, with minor thin interbeds of arenaceous (Quartz sand) Argillite. This Sediments are Classic Lower Aldridge F.M.
		COLOR: Rhythmically Banded dark grey and Lite grey, rarely white.
		PRIMARY STRUCTURE: Thin to Very thin Bedded, Beddings sharp and Flat, fine grained Sediments. Silty Argillite Beds are gen. Very finely Parallel Laminated, Arenaceous, Argillite interbeds are then 1 cm thick, and tabular, The Sand grains gen. rounded and ungraded & unsorted, and are MAx. 0.25% of millimeter in Size. Bedding to C/A @ 807.5 = 72°, Beddings to C/A @ 897.15 = 74°
		TECTONIC STRUCTURE: NIL, Very nice and competent Core.
		GENERAL ALTERATION: Silty Argillite Beds are Silicified in part from Bed Base upwards, Silicification as speckled by Fine Sericite flecks. Bed tops are Soft and altered to fine Sericite Some scattered calcareous Beds,

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Pyrrhotite, is very weakly diss. in most of the Beds within this interval				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-29

From	To	
883.9	884.2	LITHOLOGY: Altered Silty Argillite..
		Interval is 95% Silty Argillite.
		COLOR: Mainly terra cotta Brown, Speckled white & Silvery white (wet)
		PRIMARY STRUCTURE: Mainly Thick to very Thick bedded, with Some thin to very thin beds.
		Thes Sebs are gen. very finely parallel laminated, with distinct and flat Bedding plans
		Bedding to C/A @ 883.0 = 72°
		TECTONIC STRUCTURE: NIL.
		GENERAL ALTERATION: Late Calcareous Alteration of Regional Biotitic Silty Argillite, has altered the Biotite
		To terra Cotta brown Phlogopite, with late speckling by Sericite & Calcite

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
rare weak disseminations of Pyrrhotite Scattered Through-out the Section				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-29

From	To	
884.2	961.0	**LITHOLOGY:** Siltstone interbedded Silty argillite TOP OF FOOTWALL QUARTZITE 70% Siltstone NOTE: 913.6 to 922.5 Lower Aldridge type Sebs SEE LOG from 855.9 to 884.2
		COLOR: Lite grey Some dark grey Bandeing (cont)
		PRIMARY STRUCTURE: med to thick Bedded, Bedding plans are distinct and gen. wavey to distorted by Soft Seb. deformation (ie Slumping) rip-up clast are rare
		Bedding to C/A @ 914.0 = 73°
		TECTONIC STRUCTURE: @ 940.0, thin 1cm thick Shear zone cuts C/A @ 15° 957.5 to 958.0 Fault Zone Consists of Brecciated Sebs. with Some Silt Fault Gouge, fault cut C/A @ 56°, or 58° Angle between Fault Plan & Bedding = 56°
		GENERAL ALTERATION: Regional Biotitization & Silicification, with scattered small to med Sieve Anhedral garnets dwelped in the Seticified Sebs. Late Chlontization occurs in hairline fractures and in Sebs as Bands and Patches.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
890.7 to 890.9, Tension crack Vein 5cm wide cut C/A @ 5°, Vein Consists of Quartz & Biotite with a large patch of Massive Pyrrhotite				
Pyrrhotite occurs in Rare tension crack Veinlets with Quartz - Chlorite & Biotite				

ADDITIONAL OBSERVATIONS:

Drill Hole Record: 1079.0 Page #32 of

HOLE #: VA 17-29

From	To	
967.0	1075.4	LITHOLOGY: Siltstone interbedded Silty Argillite Interval is 65% Siltstone STILL IN FOOTWALL QUARTZITE Base of F.W.Q @ 1044.0
		COLOR: Lete grey Siltstone, with Banded Dark grey & Lite Greyish Brown Silty Argillite
		PRIMARY STRUCTURE: Med to thick Bedded, with interlayed Sequences of Thin to Very Thin Silty Argillite ie: 966.3 to 969.6, & 993.3 to 995.3, Bedding in thin to very thin Sequences is flat & Short, (Silty argillite beds at the top of Siltstone Beds are commonly distorted by Soft Sed. Deformation, ie: Soft Sed. folds, Boudinaged beds, Ball & Pillow etc., Bedding to C/A @ 968.0 = 77°, @ 994.0 = 73°, @ 1053.0 = 75°
		TECTONIC STRUCTURE:
		GENERAL ALTERATION: See alteration Described between 984.2 & 967.0 - Spotted Hornfelesa alteration Starts at 1030.3 Consists of Consists of OVoid spots of Sericite in siltstone beds and ovoid spots of Biotite, these spots are richer in Biotite and/or Sericite than the surrounding matrix, These spotted Hornfelesa Beds all so Silicified weakly.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
987.0 to 989.3 2 Thin-1cm Thick Quartz-Calcite Veins cut C/A @ 10° host minor Sphalerite & Galena.				
972.8 to 975.5 2 Quartz, minor Calcite & Biotite Veins host Pyrite and rare specks of Sphalerite, cut C/A @ 10°				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-29

From	To	
1075.4	1092.8	LITHOLOGY: Metasiltstone Altered Lower Aldridge F.M?
		1075.0 to 1079.0 Lamprophyre dyke cuts core at 45° and Reddens at 60°.
		COLOR: Mainly Lite tans, mottled by grey, white and Pinkish white, with Tale Speckling by small grey & white ovoid
		PRIMARY STRUCTURE: Distroyed by Hydrothermal Alteration; Some remnant Bedding Plans present. "Structures.
		Bedding to C/A @ 1117.3 = 75°
		TECTONIC STRUCTURE: 5 cm thick gauge zone, Tallaws Bore contact of Lamprophyre Dyke @ 60° to C/A.
		1119.0 to 1119.5 Breccia Zone parallel to underlaying gabbro Contact.
		GENERAL ALTERATION: Intensely Silicified en Part, and en Part intensely Sericitized, cut by Tale hairline Veinlets, Veins which interface Albite into the adjacent Sedi, there is a lot of Albitization in this interval, Some subhedral pink garnets occur with Albitization, late ovoid Structures are abundant Speckled Throughout this interval, they Consist of Biotite and Sericite, and Some Consist of Quartz.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
Rare Disc Pyrrhotite + pyrite.									

ADDITIONAL OBSERVATIONS:

1152 to 1162.5 1162 1151 1196

Drill Hole Record: Page #34 of

HOLE #: VA17-29

From	To	
1092.8	1377.2	**LITHOLOGY:** Gabbro Sill. (Gabbro Arch Sill) H.W. Contact cuts C/A at 73°, F.W. cuts C/A @ 50°
		COLOR: Dark green, Speckled white
		PRIMARY ~~STRUCTURE~~: TEXTURE Finely xtln. from 1092.8 to 1121.87, Coarsely xtln. from 1121.87 to 1142.0, 1142.0 to 1152.0 Very Coarsely xtln. 1152.0 to 1162.5 Xenolithic ZONE Cut C/A at 75°, Contacts are Sharp + flat. The Zone Consists of Siltstone xenoliths in a med. to Coarsely xtln gabbro matrix, Siltstone xnoliths Still retain only Regional Biotite alteration
		TECTONIC STRUCTURE: 1370.0 to 1377.2 Crackle Brecciated, healed by Calcite, Some thin Shear zones within Crackle breccia Zone Cut C/A @ 30°
		GENERAL ALTERATION:

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-29

From	To	
1377.2	1400.8	**LITHOLOGY:** Silty Argillite Lower Aldridge Formation.
		COLOR: Shades of Grey.
END		**PRIMARY STRUCTURE:** Breccia to 1392.0 Thin to Very Thin Bedded 1392.0 to 1400.8, Bedcontacts distinct and gen. flat.
OF		Bedding to C/A @ 1400.0 = 72°
HOLE		**TECTONIC STRUCTURE:** 1377.2 to 1392.0 Breccia Zone, Consists of Crackle Breccia with zones of intensely Developed Clast Supported Breccia, that cut C/A @ 13° and at 25° with Slicken sided contacts. Matrix gen is Calcite & Sericite.
		GENERAL ALTERATION: 1392.0 to 1400.8 Regional Biotitization, with rare Bands of late Chloritization Breccia Zone, Regional Biotite in clasts altered in part to terra Cotta Colored Sericite and Chlorite, rare narrow bands of heavy diss. Sub Rebed garnets occur in Breccia Zone. Some of the these garnet appear to Altered to Sericite

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Pyrite is weakly diss through-out the above Breccia Structure.				

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-29

From	To	LITHOLOGY:
		COLOR:
		PRIMARY STRUCTURE:
		TECTONIC STRUCTURE:
		GENERAL ALTERATION:
		MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length
2108966	698.0	699.0	1.0
" 967	699.0	700.0	"
" 968	700.0	701.0	"
" 969	701.0	702.0	"
" 970	702.0	703.0	"
" 971	703.0	704.0	
" 972	704.0	705.0	
" 973	705.0	706.0	
" 974	706.0	707.0	
" 975	707.0	708.0	
" 976	708.0	209.0	
" 977	209.0	210.0	
" 978	210.0	211.0	
" 979	211.0	212.0	

ADDITIONAL OBSERVATIONS:

DRILL HOLE RECORD

PAGE #: 1 of

PROPERTY: Vine		HORI. COMP: 0	HOLE#: VA 17-30
LOCATION: East of Vine Vein		VERT. COMP: 538.58	LENGTH: 538.58
COMMENCED: June 19, 2017	COMPLETED: June 30 2017	CORR. DIP:	
COORDS: Long. 990	Lat.	TRUE BEARING:	DRILL CONTRACTOR: F4B
COORDS: UTM (E) 585990	(N) 5473025 (EL)	% RECOVERY:	CORE SIZE: NQ
COORDS: Grid (E)	(N) (EL)	LOGGED DATE: June, 2017	CASING: 2.4 meters Left in hole
ELEVATION: 970 Meters	COLLAR: Dip: −90° Azi: —	LOGGED BY: D.L. Pigken	CORE STORAGE: Vine Property.

OBJECTIVE:

SURVEYS: Depth: Dip: Azi: Type:

Additional SURVEYS:	Depth:	Dip:	Azi:
	23.47	-89.5	299.7
	67.9	-89.8	192.6
	224.6	-89.4	249.2
	302.7	-89.2	201.9
	432.0	-88.5	196.5
	523.3	-88.6	206.3

Imperial ☐ Metric ☐

From-To 2.4–1360

LITHOLOGY: Argillaceous Siltstone, interbedded Silty Argillite Good Lower Aldridge Fm. Seds.

COLOR: Wet, Rhythmically Banded Rose/dark grey, and Tete to whitish grey.

PRIMARY STRUCTURE: Thin to very thin Bedded, Bedding Planes are tabular and Sharp, gen. all very fine grained Sediments

Bedding to C/A @ 11.0 = 70°, @ 38.0 = 70°, @ 73.0 = 65°, @ 96.0 = 66°, @ 130.15 = 70°

TECTONIC STRUCTURE: Fault Zone 34.7 to 35.0 mainly gouge + finely brecciated Seds.

Cuts C/A @ 16°, 129.3 to 129.5 Healed Breccia Zone cut C/A @ 70° parallel to Bedding, Sericitic Argillite matrix.

GENERAL ALTERATION: Regional, fine, rosy black biotite, speckled by white Sericite, and rare fine muscovite, Overprinted locally by Late lite green chloritization argillaceous Siltstone Beds are gen. Silicified, and approx ½ of them are weakly to Strongly Calcareous

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

Patchos of weakly diss. pyrrhotite occur through out this interval. these patches are gen. Very weakly magnetic. @ 30.50 rare diss. Spherulite parallel to bedding. @ 99.6, 2 cm thick, Bedding parallel Albite Band hosts diss Sphalerite @ 130.15 Pyrrhotite, calcite, chlorite vein 5mm to 10mm thick is parallel to C/A

SAMPLE#	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record: 136 + 150 = 286

HOLE #: VA-17-30

From	To	
136.0	166.5	LITHOLOGY: Mainly Siltstone with minor Silty Argillite intervals. Top of F.W.Q. unit
		COLOR: Gen. Lite grey to grey, Band grey & Dark grey, with Some Lite green Segregations + Patches
		PRIMARY STRUCTURE: Med to thin + thick Bedded, Bedding as distinct but highly distorted by Soft Sediment deformation, ie, flame structures and Soft Sediments Slumping
		Bedding to CA @ 160.6 = 68
		TECTONIC STRUCTURE:
		GENERAL ALTERATION: Regional, fine biotitization & Silicification, rare Subhedral pink garnets

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

rare Small Patches of diss. pyrrhotite rarely more than 5cm thick, these are weakly Magnetic.
at 166.3 Meters 2 to 3mm thick calcite + chlorite Vein cuts C.A. @ 5° Most Rare Sphalerite

ADDITIONAL OBSERVATIONS:

Drill Hole Record: Page # 3 of

HOLE #: VA-17-30

From	To	LITHOLOGY: Calcareous, Muscovitic, Silicified Siltstone F.W.Q. Fm.
166.5	172.5	
		COLOR: Like Terra Cotta Brown Speckled Silici.
		PRIMARY STRUCTURE: Very thick to thick Beds, primary structures Distroyed by Alteration.
		@ 166.8 Bedding to C/A = 70°
		TECTONIC STRUCTURE: NIL.
		GENERAL ALTERATION: Silicified with fine Brown Biotite or phlogopite? over printed by calcite and fine muscovite, Bands & Streaks of late lite green chlorite after biotite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

@ 165.8, 2mm to 4mm thick, calcite-chlorite vein cut C/B @ 5° host rare Galena + Sphalerite

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA-17-30

From	To	
172.5	237.0	LITHOLOGY: Siltstone, with scattered interbedded sequences of Silty Argillite, This interval is 70% Siltstone. F.W.G - Fm.
		COLOR: Grey to Lite grey Siltstone, Argillite - Silty Arg. thinly Banded Lt. grey, Dk grey, Brownish Grey
		PRIMARY STRUCTURE: Mainly med to thick Bedded Siltstone with very thin bedded Sequences of Argillite & Silty Argillite, from 185.1 to 187.4, From 196.5 to 198.5, From 195.5 to 197.3, From 199.4 to 200.5 Bedding in these Beds is sharp & Commonly flat. Some beds are distorted by Soft-Sediment deformation - Bedding @ 203.3 = 65°, Bedding to C/A @ 218.5 = 60°
		TECTONIC STRUCTURE:
		GENERAL ALTERATION: Regional Silicification, Biotitization and Sericitization, with widely scattered Subhedral Pink garnets, Some Calcite after Selenite widely scattered through-out this interval.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Very rare diss. Pyrrhotite.				

ADDITIONAL OBSERVATIONS:

Drill Hole Record: Page # 5 of

HOLE #: VA-17-30

From	To	
237.0	259.8	**LITHOLOGY:** Argillite interbedded Silty Argillite, rare Siltstone, This interval has a Softer Aldridge look to it. This interval is 80% Argillite-Silty Argillite
		COLOR: Banded. Lite greenish grey, Lite grey, Terra-cotta brown, rare white, all speckled lite Silvery grey.
		PRIMARY STRUCTURE: Mainly Very Thin Bedded, with Lesser thin Beds, Bedding Planes are Sharp & flat, most of the Beds are finely Parallel Laminated. 259.3 to 259.8, Strongly deformed by Soft Sediment Slumping. @ 258.0 Bedding to C/A = 60°
		TECTONIC STRUCTURE:
		GENERAL ALTERATION: Regional: Fine reddish brown Biotitization, Sericitization, Speckled by-Fine Sericite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Very rare 2mm to 4mm Thick irregular Veinlets host Pyrrhotite, they are magnetic these Vein Qtz, cut the Core @ 25° to Axis, Gangue is mainly Qtz. with Lesser Chlorite

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VM-17-30

From	To	
259.8	340.2	**LITHOLOGY:** Mainly Siltstone minor interbedded Silty Argillite & Argillite. Good F.W.Q Sed's. Interval is 80% Siltstone from 305.0 to 340.0 Interval is 90% Siltstone.
		COLOR: Mainly Banded Grey & Dark grey, with Some Brownish grey with Some Lite green mottling.
		PRIMARY STRUCTURE: Med. to thick Bedded, Bedding is distinct and Wavy to Distorted by Soft Sed. Slumping all of the Soft Sed. deformation is confined to Argillite interbeds, 305.0 to 340.0 Bedding plans are very rare
		Bedding to C/A @ 293.0 = 64°, @ 310.0 = 55°, @ 317.7 = 53°, @ 336.2 = 47°
		TECTONIC STRUCTURE: 293.7 to 294.0 fault cuts C/A @ 62° Consists of loose brecciated Sed & gouge
		at 304.2 thin Shear zone, @ 307.0 thin shear zone
		338.3 to 340.2 Strongly developed fault zone cuts C/A @ 38°, Consists of Semi-Lithified fault gouge and abundant Small milled clasts.
		GENERAL ALTERATION: Regional Biotization, Sericitization and Silicification, with rare Subhedral Pink garnets in Some the Siltstone Beds, Some late lite green Chloritization covers along hairline fractures & in irregular patches.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
Rare Pyrrhotite mostly in thin irregular Veinlets, that are very rare in this interval. to 320.0 From 320.0 to 340. Veins & Veinlets of calcite, Quartz, Chlorite, pyrite + pyrrhotite are relatively more abundant, these veins are rarely more than 3 to 4 mm thick and gen. cut C/A @ 15° to 20° 328.5 to 328.8, Qtz-calcite Breccia Zone cuts C/A 21°; hosts minor Pyrite & Arsenopyrite @ 340.2 10cm thick Mylonized calcite vein Hosts paper thin layers of Pyrite				

ADDITIONAL OBSERVATIONS:

Drill Hole Record: Page # 7 of

HOLE #: VA17-30

From	To	LITHOLOGY:
340.2	376.7	Siltstone. Interval is 90% Siltstone F.W.C. FM. 367.8 to 369.8 Gabbro Dyke cuts C/A at 31°

COLOR: Grey with Bands of whitish grey Spotted by small elliptical spheres of dark grey

PRIMARY STRUCTURE: Mainly Thick to very thick Bedded, Bedding is highly deformed and very rare. Siltstone Beds are med. to fine grained.

Bedding at 351.0 = 58° to C/A, @ 373.5 = 70°

TECTONIC STRUCTURE: @ 357.0, 5cm. thick Shear zone with gouge cuts C/A 52°, @ 358.4 Shear - Breccia Zone 20cm thick cuts C/A @ 15°, 370.6 to 371.4 fault cuts C/A @ 15°, Consists of milled clasts in semi-lithified gouge

GENERAL ALTERATION: Regional, Biotitization and Silicification, overprinted by late Silicification + Sericitization, producing Bands of Spotted Hornfels, rare subhedral Pink garnets. Albitization is strongly developed for approx metre below F.W of Gabbro Dyke, @ 374.0, 5 to 7cm thick irregular layer of Carbonate & biotite host Diss. Pyrrhotite.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

Very rare diss. Pyrrhotite

SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA-17-30

From	To
376.7	408.5

LITHOLOGY: Meta siltstone Interval is 90% altered Selkirk

COLOR: Mainly lite yellowish grey & Lite greenish grey, with scattered Patches white and dark green.

PRIMARY STRUCTURE: Mainly distroyed by Alteration, Bedding planes are very rare

Bedding @ 403.0 = 70°

TECTONIC STRUCTURE: 389.4 to 389.9 Breccia Zone cut C/A @ 55°

GENERAL ALTERATION: Strongly sericitic and weakly chloritic with scattered patches & Veinlets of albite and dark green chlorite 389.4-389.9 Strongly chloritic abundant dark green chlorite associated with albitization & Pyrrhotite, 405.0 to 406.5 2 only calcite-Biotite Cavernations

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

389.4 to 389.9 as described above Quartz massive pyrrhotite with lesser Chalcopyrite - Magnetic

380.0 to 389.4 irregular calcite, Quartz and biotite Veins Most minor Pyrrhotite and Pyrite, these Veins are 3mm to 5mm rarely 10mm thick

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA-17-30

From	To	
408.5	439.0	LITHOLOGY: Meta-Sediments and Dyke Complex. Fw9. ?
		408.5 to 409.9 Finely xtln. gabbro dyke cuts c/A @ 80° 418.0-419.0 Finly xtln. gabbro Dyke
		Cuts c/A @ 60°, 421.0-439.0 Coarsely xtln. Gabbro Dyke cut c/A H.W. @ 60° and F.W. @ 20°. Both Contact are sharp.
		COLOR: Gabbro Dyke are green to mottled green and lite gray, Seds, Mottled lite green, wimish gray, grey and locally White
		PRIMARY STRUCTURE: Destroyed by Alteration
		TECTONIC STRUCTURE: NIL
		GENERAL ALTERATION: Seds from 409.0 to 418.0, Strongly altered by Albite, chlorite, and fine-sericite forming a lite green, white and wimish grey texture, Seds from 419.0 to 421.0 are totally silicified, & albitized in part, with abundant diss. Chlorite through-out.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
Weak Pyrrhotite & Pyrite occur in widely scattered, hair-line fractures through-out this interval.									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

Page #10 of

HOLE #: VA-17-30

From	To
439.0	460.9

LITHOLOGY: Massive Meta Siltstone fragmental unit

COLOR: Wine grey mottled lite green, dark green & white.

PRIMARY STRUCTURE: Massive no Bedding, with widely scattered relatively large angular clasts matrix appears to be all a fine grained Siltstone.

TECTONIC STRUCTURE: 447.1 to 447.3 Breccia zone with Semi Litified gauge cuts C/A @ 75°

GENERAL ALTERATION: Regional Biotitization, mottled by Late chloritization, and locally by Albitization. Some of the clasts are totally altered to Sericite

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Pyrite & Pyrrhotite are gen. very weakly diss. Throughout this unit, Widely Scattered 2mm to 3mm Veinlets composed of Quartz-calcite & pyrite, these veins cut C/A Between 20° & 22°, rarely @ 26°

ADDITIONAL OBSERVATIONS:

Equigranular

Drill Hole Record:

Page # 11 of

HOLE #: VA-17-30

From	To	
460.9	538.58	LITHOLOGY: Gabbro Sill (The Arch) Contact Tis distinct cut C/A @ 65°
END		COLOR: Green, Speckled White
		~~PRIMARY STRUCTURE~~: TEXTURE; gabbro in this interval is gen. all Equigranular, med. +tlm.
OF		
HOLE		TECTONIC STRUCTURE: 479.0 to 481.4 Breccia zone Sub parallel to C/A Healed by Calcite widely scattered thin shear plans 5mm to 10mm thick cut C/A @ 12° to 15°, gen healed by Semi-Tethyshed chlorite + Sericite, rare diss. Pyrite, widely scattered, very thin calcite filled fractures cut C/A gen @ 45° 516.7 to 517.7 Breccia cuts C/A @ 70°, heal by Soft gouge, 526.4 to 528.5 Loose Rubby Core Breccia Zone cuts C/A @ 20°
		GENERAL ALTERATION: 487.4 to 488.4 Massive albite + chlorite zone cuts C/A @ 22°,

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

DRILL HOLE RECORD 13.7 to 14.1 PAGE #: 1 of

PROPERTY: VINE | HORI. COMP:

HOLE#: VA-17-31

LOCATION: East of Vine Vein | VERT. COMP:

LENGTH: 163.7 Meters

COMMENCED: July 3, 2017 | COMPLETED: July 5, 2017 | CORR. DIP:

COORDS: Long. | Lat. | TRUE BEARING: | DRILL CONTRACTOR: F&B Drilling

COORDS: UTM (E) 585905 | (N) 5473124 | (EL) | % RECOVERY: | CORE SIZE: NQ

COORDS: Grid (E) | (N) | (EL) | LOGGED DATE: July 2017 | CASING: 1.52" Left in hole

ELEVATION: 980 Meters | COLLAR: Dip: -90 | Azi: — | LOGGED BY: D. G. Pitkin | CORE STORAGE: Vine Property.

OBJECTIVE:

SURVEYS: Depth: | Dip: | Azi: | Type:

Additional SURVEYS:

Depth:	Dip:	Azi:
21.52	-89.4	144.1°
127.1	-89.4	144.1°

Imperial ☐ Metric ☐

From To 1.52 to 23.4

LITHOLOGY: Siltstone, rare Silty Argillite

This interval is 80% Siltstone.

COLOR: Mainly Dark grey, with Some greenish dark grey layers.

PRIMARY STRUCTURE: Mainly thick to very thick bedded, Bedding Plans Lightly distorted by Soft. Sed. deformation) 13.7 to 14.1 Thin bedded to Very thin bedded sequences with Sharp flat bedding plans. @ 100 Bdding to C/A = 68°

TECTONIC STRUCTURE: Nil.

GENERAL ALTERATION: Regional Silicification, Biotitization and Sericitization

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

rare diss. Pyrrhotite and Pyrite.

SAMPLE#	From	To	Length

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VH-17-31

From	To	
23.4	46.5	**LITHOLOGY:** Argillite interbedded Silty Argillite & Calcareous Silty Argillite 29.0 to 33.3 Mainly Calcareous Silty Argillite "SULLIVAN MUDS" 42.0 to 43.1 gabbro Sill
		COLOR: (Wet) Dark grey Banded grey with Local white to Silvery white Speckling
		PRIMARY STRUCTURE: Med. to thin bedded with Some thick finely parallel Laminated Silty Argillite beds Bedding is distinct and flat
		Bedding to C/A @ 29.0 = 68°
		TECTONIC STRUCTURE: N.I.L.
		GENERAL ALTERATION: Regional Silicification, Sericitization and Biotitization Speckled by Fine Calcite and Sericite, Some scattered Patchs of small anhedral Pink garnets. From 29.8 to 25.7

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
@ 39.0, 12 cm. thick Bed hosts 45% Pyrrhotite as thin Pyrrhotite layer parallel to Bedding. This mineralization is Strongly Conductive and Strongly Magnetic.				
From 36.0 to 38.7, rare & widely scattered, hair line thick Chlorite and Calcite filled fractures host rare specks of Sphalerite				

ADDITIONAL OBSERVATIONS:

Drill Hole Record: + 150 46 196 mauve

Page #3 of

HOLE #: YA-17-31

From	To	
46.5	163.7	LITHOLOGY: Rhythmically interbedded Silty Argillite, Argillite and Arenaceous Argillite. These are Lower Aldrich Sediments.
END		COLOR: Interlayered Dark yellowish dark grey, lite grey, white and lite greenish grey.
		PRIMARY STRUCTURE: Mainly thin to very thin bedded, rarid Some med Beds, Bedding planes are sharp
OF		and tabular, Silty Argillite bed are gen. very finely parallel laminated, Quartz arenite beds are gen
		lite grey unsorted and ungraded Qtz Sand, in an Argillite matrix, most of the quartz grains show quartz overgrowths
HOLE		Bedding to C/A @ 57.0 m = 66° 73.3 to 163.7 Some Med. to thick Silty Argillite Beds
		TECTONIC STRUCTURE: NIL. Bedding to C/A at. 78.0 = 66°, @ 117.76 = 66°, @ 145 = 67°, @ 157.7 = 65°

GENERAL ALTERATION: Regional Biotitization & Silicification of Silty Argillite beds, that are spotted by late calcite and Sericite, Argillite, & Arenaceous Argillite Beds altered to fine Sericite, except for the Qtz. Sand. Note at least 75% of the Silty Argillite Beds in this interval are weakly to very strongly calcareous.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

rare Tension (Chevron) Veinlets cut C/A @ 18°, from 2mm to 10mm thick Host Calcite, Qtz and Pyrrhotite Diss. Pyrrhotite occurs mainly in Silty Argillite beds, rare more than 1% by Vol.

ADDITIONAL OBSERVATIONS:

DRILL HOLE RECORD

PAGE #: 1 of

PROPERTY: VINE

LOCATION: VINE VEIN

COMMENCED: July 12, 2017 COMPLETED:

COORDS: Long. Lat.

COORDS: UTM (E) 585788E (N) 5472561 (EL)

COORDS: Grid (E) (N) (EL)

ELEVATION: 955.0 Meters COLLAR: Dip: -75 Azi: 032

HORI. COMP:

VERT. COMP:

CORR. DIP:

TRUE BEARING:

% RECOVERY:

LOGGED DATE: July 2017

LOGGED BY: D.L. Hyden

HOLE#: VA17-32

LENGTH: 462.36

DRILL CONTRACTOR: F+B Drilling

CORE SIZE: NO

CASING: 30.79

CORE STORAGE: VINE

OBJECTIVE:

SURVEYS: Depth: Dip: Azi: Type:

Additional SURVEYS:

Depth:	Dip:	Azi:
127.0M	-74.1	- 32.1
187.0M	-73.7	- 33.3
227.0M	-74.0	- 35.0
328.21M	-73.0	- 39.9
449.4	-71.6	- 41.6

Imperial ☐ Metric ☐

From To 30.79-39.0

LITHOLOGY: Siltstone M.M. Siltstone Base of Middle Member Fm.

COLOR: Lite grey

PRIMARY STRUCTURE: Thick Bedded, Bedding is indistinct.

TECTONIC STRUCTURE: 33.0 to 39.0, Core is broken & Rubbly due to Shearing Subparallel to Core Axis.

GENERAL ALTERATION: Regional Silicification + Sericitization, and Biotitization.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

NVK.

SAMPLE#	From	To	Length

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-32

From	To	LITHOLOGY:
39.0	to 54.8	Argillite silty Argillite "SULLIVAN MUDS"

COLOR: Dark grey

PRIMARY STRUCTURE: Med. to thin Bedded, Some very thin Beds; Bedding is distinct and gen sharp, these Seds. are gen. very finely parallel laminated.

@ 54.6 Bedding to C/A = 65°

TECTONIC STRUCTURE: Widely scattered thin crackle breccia zones, and Veinlets cut C/A at 15° to 21° and rare calcite Vein cut C/A at 45°

GENERAL ALTERATION: Regional.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Very rare specks of Diss. Sphalerite in Sullivan muds., with relatively abund. Diss. Pyrrhotite & Pyrite

55.5 to 55.8 Calcite Vein hosts minor Pyrrhotite & Pyrite, and Coarsely xtln. Biotite

This Vein cut C/A at 45°

ADDITIONAL OBSERVATIONS:

41° 12

Drill Hole Record: P #3 of

HOLE #: VA17-32

From	To
54.8	208.5

LITHOLOGY: Altered Silty Argillite
These are Lower Aldridge Seds.
76.9 to 83.5 Gabbro Dyke Base Contact cuts C/A @ 12°, Lamprophyre Sill from 121.2 to 124.0 Cuts C/A

COLOR: Grey, mottled terra-cotta and green.

PRIMARY STRUCTURE: Med. to Thin bedded, Bedding plans are Sharp and tabular; Seds for the most part are finely parallel laminated, and fine grained.

Bedding to C/A @ 92.0 = 74°, @ 114.9 = 72°, @ 124.0 = 60°, @ 150.5 = 60°, @ 164.0 = 63°, @ 202.0 = 62°

TECTONIC STRUCTURE: Relatively abundantly scattered throughout this interval are late Thin irregular calcite veinlets that cut C/A @ angles discribed precisely
@ 75.0, a fault Zone Cuts C/A 25°, Consists of semi Lithified fault gouge & Brecciated Seds. 30cm Thick.
129.0 to 137.2 Fault Zone cut C/A @ 12° Consists of loose Brecciated Seds. + Soft Gouge

GENERAL ALTERATION: Regional Fine Bleat Biotitization as altered in part to a Terra-cotta colored Mica, Poss. phlogopite, overprinted late Chloritization and muscovitization.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length					

TECTONIC Structure

Fault Zone	157.4	157.7		Consists of Soft fault gouge & finely Brecciated Sediments, cuts C/A @ 47°
Fault Zone	171.6	182.0		" " " " " & " " " " , cuts C/A @ 15° or Less.
Fault Zone	186.0	187.8		" " " " " & " " " " , cuts C/A @ 34°

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-32

From	To	
208.5	270.0	LITHOLOGY: VINE VEIN STRUCTURE, Composed mainly of gabbro and Massive Sulphide Veins and Breccia Structures
		COLOR: Mainly Green, with Bands and Streaks of Melidic grey, Brown and reddish Brown
		PRIMARY STRUCTURE: Destroyed by Hydro Thermal alteration, and tectonics
		TECTONIC STRUCTURE: 213.0 to 214.0 Fault Brecciated Zone cuts C/A 37°, Consists of crushed gabbro around gabbro clasts
		217.0 to 218.6 " " " " C/A 32°, " " " " " " "
		226.13 to 228.3 Fault Breccia, healed by Sericite, Chlorite and Pyrite Cut C/A @ 30°
		F.W of the Vein Vein Structure cuts C/A @ 25°, and is marked by .5 cm of Soft Fault Gouge
		GENERAL ALTERATION: Hydro-Thermal; Intense Chloritization, and Sericitization

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length
209.6 to 210.3, Sulphide Rich Breccia structure 40% Sulphide by Vol.; Sulphide & minor Calcite and Black waxy Chlorite from the matrix around Quartz clasts, Sulphides Consists mainly of Sphalerite, & Pyrrhotite, lessor Pyrite, Arsenopyrite, chalcopyrite and galena.				
@ 211.7 10cm thick Qtz. Vein cuts C/A @ 36° Hosts minor Sphalerite				
215.9 to 217.1 Sulphide Breccia as discribed above, But with galena and Pyrrhotite the dominant Sulphides.				
226.13 to 228.3 Fault breccia Zone, hosts abundant small vlts. of pyrite, clasts Consist mainly of Quartz and gabbro.				
230.7 to 232.0 Quartz - Calcite - Black chloride - Sulphide Vein, the Vein is approx. 25% Sulphide, mainly Galena, pyrrhotite, lessor Pyrite, Some chalcopyrite and rare Sphalerite, Vein cuts C/A @ 25°				
263.0 to 265.0 Quartz - Calcite, with Some Black Chlorite, and Sulphides, the Vein is approx. 40% Sulphide, mainly pyrrhotite, Sphalerite, and Arsenopyrite, with minor galena and chalcopyrite				

ADDITIONAL OBSERVATIONS:

Drill Hole Record: P# 5 of

HOLE #: VA17-32

From	To
270.0	355.3

LITHOLOGY: Siltstone

F.W.G.

COLOR: Grey mottled, lite grey & lite greenish grey.

PRIMARY STRUCTURE: Distroyed by tectonic's & Hydrothermal alteration

Bedding to C/A @ 353.4 = 20°

TECTONIC STRUCTURE: 271.25 to 274.0 Rubbly Broken Core, fault Zone? Angle to Core Axis?
Weakly crackle brecciated from 274.0 to 289.5, dominant fractures cut Core Axis @ 20°+ 50°, 293.5-304.2, Baddly Broken Core due to shearing at 20° to C/A, 304.2 to 305.0. Strong shear zone cut C/A @ 60°, 305.0 to 331.0 Competent Core, 331.0 to 334.1 Baddly Broken Core @ 45° to C/A, 338.0 to 345.0 Baddly Broken Core @ 30° C/A

GENERAL ALTERATION: Siltstone is intensely Silicified, and Sericitic, with Patchy Chloritization at 276.6 10 cm thick Band of albite, @ 286.5 10cm thick Band of albite is associated with Some Pyrrhotite and pyrite Mineralization. From 285.8 to 355.3, Silicification & Sericitization & chloritization as intense, all becoming Stronger towards Base of this interval

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

@ 279.3 2mm to 4mm thick fracture host abund Sphalerite, cuts C/A @ 50°
@ 282.8, hair line fracture cuts C/A @ 20° host trace of Sphalerite
@ 286.5 15 cm thick Zone of heavy diss. pyrrhotite & Pyrite is associated with albitization
irregular hair line fractures hosts Block Chlorite, Pyrrhotite, pyrite, Chalcopyrite, rare galena & Sphalerite
@ 296.6, @ 300.9, @ 314.5, @ 302.3, @ 308.8, @ 319.4, @ 325.7

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA 17-32

From	To	
355.0	365.0	LITHOLOGY: Phyllite Phyllitic Lamprophyre 355.0 to 358.0 Cats c/a Parallel to foliation @ 20°
		COLOR: Striped lite green, dark green, lite yellow, Brown and Black-
		PRIMARY STRUCTURE: Destroyed By Tectonics.
		TECTONIC STRUCTURE: Strongly foliated @ 20° to c/a.
		GENERAL ALTERATION: Sets totaly altered to Chlorite, Sericite, Biotite and Quartz.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:	SAMPLE #	From	To	Length					
N.V.									

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: MA 17-32

From	To
365.0	382.0

LITHOLOGY: Quartzite

COLOR: Mainly green to Blackish green.

PRIMARY STRUCTURE: distroyed by Alteration and Tectonics

TECTONIC STRUCTURE: Weakly to Strongly foliated. at 32° to C/A.

GENERAL ALTERATION: Intensely Silicified, Strongly chloritized and weakly Sericitized.

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Pyrite is diss. Through-out this interval, ranging from 1% to 3% by Volume.

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-32

From	To	
382.0	389.5	**LITHOLOGY:** Gabbro Contacts are parallel to foliation @ 28° to C/A.
		COLOR: Dark green stearked lite green, with some yellowish green patches
		PRIMARY STRUCTURE: ~~Texture~~ fine grained.
		TECTONIC STRUCTURE: Gen. weakly foliated @ 26° to C/A.
		GENERAL ALTERATION: Altered in part to Chlorite and Epidote, with remnant amphiboles & Quartz grains Through-out, H.W. Contact mark by a 5cm Band of Epidote, FW Contact marked by 10cm Band of Albite

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

The gabbro host from 5% to 10% pyrite and lesser chalcopyrite

SAMPLE #	From	To	Length					

ADDITIONAL OBSERVATIONS:

Drill Hole Record:

HOLE #: VA17-32

From To	
399.5 to 462.36	LITHOLOGY: Chloritic, Sericitic Phyllite, after Seds. ?
END	
	COLOR: Gen. Lite grey and lite greenish grey
OF	PRIMARY STRUCTURE: distroyed.
HOLE	
	TECTONIC STRUCTURE: Foliation to C/A @ 412.0 = 23°, @ 455 = 20°
	Fault Zone 420.0 to 420.6 cuts C/A @ 21° parallel to foliation, Consists mainly of Soft gauge
	Fault Zone 443.0 to 443.3 cut C/A @ 45° and is oblique to foliation
	GENERAL ALTERATION: The rock is totally Altered to Sericite, & chlorite, with Some thin layers of Silicification

MINERALIZATION & ASSOCIATED ALTERATIONS, HOST STRUCTURE:

SAMPLE #	From	To	Length

Pyrrhotite + Pyrite is weakly diss, mainly along the plans of foliation, in the Phyllite throughout this interval.
Thin late Veinlets consisting Black chlorite, white sericite, Quartz, Pyrite + Pyrrhotite cut the Phyllitic foliation, at Various angles, Some of this Veinlets host Trace amounts of Sphalerite, Galena, & Chalcopyrite.

ADDITIONAL OBSERVATIONS:

ont 3200' to 3235'

HOLE NO. VA-17-32

From	To	COMMENTS		SAMPLE #	Width	C/L
		VINE VEIN STRUCTURE				
207	208	Silicified Sed. rare diss. Pyrrhotite.	210	8981		
208.0	209.0	Silicified, Strongly Sericitic + Biotitic	"	8982		
209.0	210.3	Quartz - Sulphide Vein, with minor calcite, and Black Chlorite filled fractures, Sulphide content of vein approx 40% mostly pyrrhotite & Pyrite, with minor Sphalerite, Galena, arsenopyrite.	"			
			210	8983	1.30	
210.3	211.3	Altered gabbro, mainly Sericite-Muscovite-Biotite, with rare Late Veinlets of calcite, gen. with very rare Sphalerite	"	8984		
211.3	to 212.3	Altered gabbro with 20 cm thick Quartz-minor calcite, Black Chlorite vein hosting minor Sphalerite, Galena & Pyrite min.	210	8985		
212.3	213.8	Brecciated Gabbro minor diss. Pyrite	"	8986		
213.3	214.3	Brecciated Gabbro with gouge matrix, minor Pyrite.	210	8987		
214.3	215.3	Gabbro, rare diss Pyrite	210	8988		
215.3	to 216.3	Gabbro, rare diss Pyrite	210	8989		
216.3	217.3	Quartz-chlorite-massive Sulphide Vein, 50% Sulphide, mainly Pyrrhotite, Pyrite and abundent arsenopyrite, with one 10cm Band of massive Galena and Pyrrhotite.	210	8990	1.0	
217.3	218.3	Brecciated Gabbro with gouge matrix, Some Local Patchs of massive Pyrite, with Some Arsenopyrite	210	8991	1.0	
218.3	219.3	Gabbro gen. Competent Some very fine diss. Pyrite	210	8992		
219.3	220.3	Gabbro " " " "	210	8993		
220.3	221.3	Gabbro " " " "	210	8994		
221.3	222.3	Gabbro " " " "	210	8995		
222.3	223.3	Gabbro " " " "	210	8996		
223.3	224.3	Gabbro " " " "	210	8997		(17)

HOLE NO. VA-17-32

From	To	COMMENTS		SAMPLE #	Width	C/L
224.3	225.3	Gabbro, Competent, weak diss. Pyrite	210	8998		
228.3	226.3	Gabbro, Competent, host one 20cm thick Quartz-Calcite-Chlorite Vein, with minor Pyrite + Arsenopyrite, and very rare Sphalerite	210	8999	1.0	
226.3	227.3	Brecciated Gabbro, clasts altered to Biotite, Muscovite, Quartz and Calcite, matrix consists of abundant Pyrite, Muscovite, Biotite and Calcite.	210	9000		
		New SAMPLE Book STARTS HERE.				
227.3	228.3	Brecciated, clasts are mainly Quartz, matrix is plus 40% Pyrite, and 60% Sericite-muscovite, some Black chlorite, some Arsenopyrite	210	7151		
228.3	229.3	Gabbro	210	7152		
229.3	230.3	Gabbro	210	7153		
230.7	231.7	Quartz-calcite-chlorite-Sulphide Vein, 10% Sulphide consisting main of Pyrrhotite, rare galena + sphalerite and very rare arsenopyrite.	210	7154	1.0	
231.7	232.7	Quartz-Sulphide-Chlorite-Calcite Vein, 20% Sulphides mainly Pyrite + Pyrrhotite, and locally abundant galena, and rare patches of diss. Arsenopyrite.	210	7155	1.0	
232.7	233.7	Gabbro - Competent rare diss. Pyrite.	210	7156	1	
233.7	234.7	" " " " "	210	7157		
234.7	235.7	" " " " "	210	7158		
235.7	236.7	" " " " "	210	7159		
236.7	237.7	" " " " "	210	7160		
237.7	238.7	" " " " "	210	7161		
238.7	239.7	" " " " "	210	7162		
238.7	240.7	Gabbro with 5cm thick Qtz. V. host pyrite + Trace Sphalerite	210	7163		
240.7	241.7	Gabbro Competent rare diss. Pyrite.	210	7164		
241.7	242.7	" " " " "	210	7165		
242.7	243.7	" " " " "	210	7166	1.9	

HOLE NO. VA 17-32

From	To	COMMENTS		SAMPLE #	Width	C/L
243.7	244.7	Gabbro Competent weak diss. Pyrite.	210	7167		
244.7	245.7	" " " " "	210	7168		
245.7	246.7	" " " " "	210	7169		
246.7	247.7	" " " " "	210	7170		
247.7	248.7	" " " " "	210	7171		
248.7	249.7	" " " " "	210	7172		
249.7	250.7	" " " " "	210	7173		
250.7	251.7	" " " " "	210	7174		
251.7	252.7	" " " " "	210	7175		
252.7	253.7	" " " " "	210	7176		
253.7	254.7	" " " " "	210	7177		
254.7	255.7	" " " " "	210	7178		
255.7	256.7	" " " " "	210	7179		
256.7	257.7	" " " " "	210	7180		
257.7	258.7	" " " " "	210	7181		
258.7	259.7	" " " " "	210	7182		
259.7	260.7	" " " " "	210	7183		
260.7	261.7	" " " " "	210	7184		
261.7	263.0	Sericite - Biotite, Calcareous meta-Sediments, rare diss. Pyrrhotite	210	7185		
263.0	264.0	Quartz, chlorite, calcite, Sulphide Vein approx 50 Sulphide mainly Pyrrhotite, pyrite, galena, & Sphalerite and arsenopyrite.	210	7186	1.0	
264.0	265.0	Quartz - chlorite, calcite Sulphide Vein as above.	210	7187	1.0	
265.0	266.2	Meta-Sebs, Biotite & Sericite - muscovitic, weakly Calcareous rare diss. Pyrrhotite & Sphalerite. END OF Sampling	210	7188		72

Total Sample 58

Appendix 6: Drill sections with lithology and sampling

PJX Resources Inc.

VINE PROPERTY

Fort Steele Mining Division
Kootenay District

0 250 500 750 1000
METERS

DIAMOND DRILLING

Collar Location

Section Line

N

582500 583000 583500 584000 584500 585000 585500 586000 586500 587000 587500 588000

5475500 5475000 5474500 5474000 5473500 5473000 5472500 5472000 5471500 5471000 5470500

P
VA15-09ext
H
VA14-01ext
VA15-14ext
VA17-26
O
G
I
VA17-25
VA17-27
M
VA17-31
L
VA17-30
F
VA16-24
N
VA17-32
K
VA17-29
J
VA17-28

F

F’

VA16-24

casing

gabbro

phyllite

phyllitic gabbro

phyllite

phyllite gabbro

fault

dolomite

313.4m

1000

900

800

700

600

Elevation

0

200

400

Distance

PJX Resources Inc.

Drill Section F - F`

VINE PROPERTY

Fort Steele Mining Division

Kootenay District

0 50 100

metres

Scale: 1:1000

G

G’

VA17-25

casing

silty argillite

gabbro

siltstone

granophyric fragmental

gabbro

silty argillite

gabbro

calcite sediment complex

gabbro

phyllitic gabbro

phyllite

phyllitic gabbro

phyllite

pyllitic gabbro

phyllite

phyllite

breccia

mylonite fault

silty argillite

breccia

siltstone

conglomerate

fault

dolomite

silty argillite

conglomerate

821.64m

1000

900

800

700

600

500

400

300

200

100

Elevation

0

200

400

Distance

PJX Resources Inc.

Drill Section G - G`

VINE PROPERTY

Fort Steele Mining Division

Kootenay District

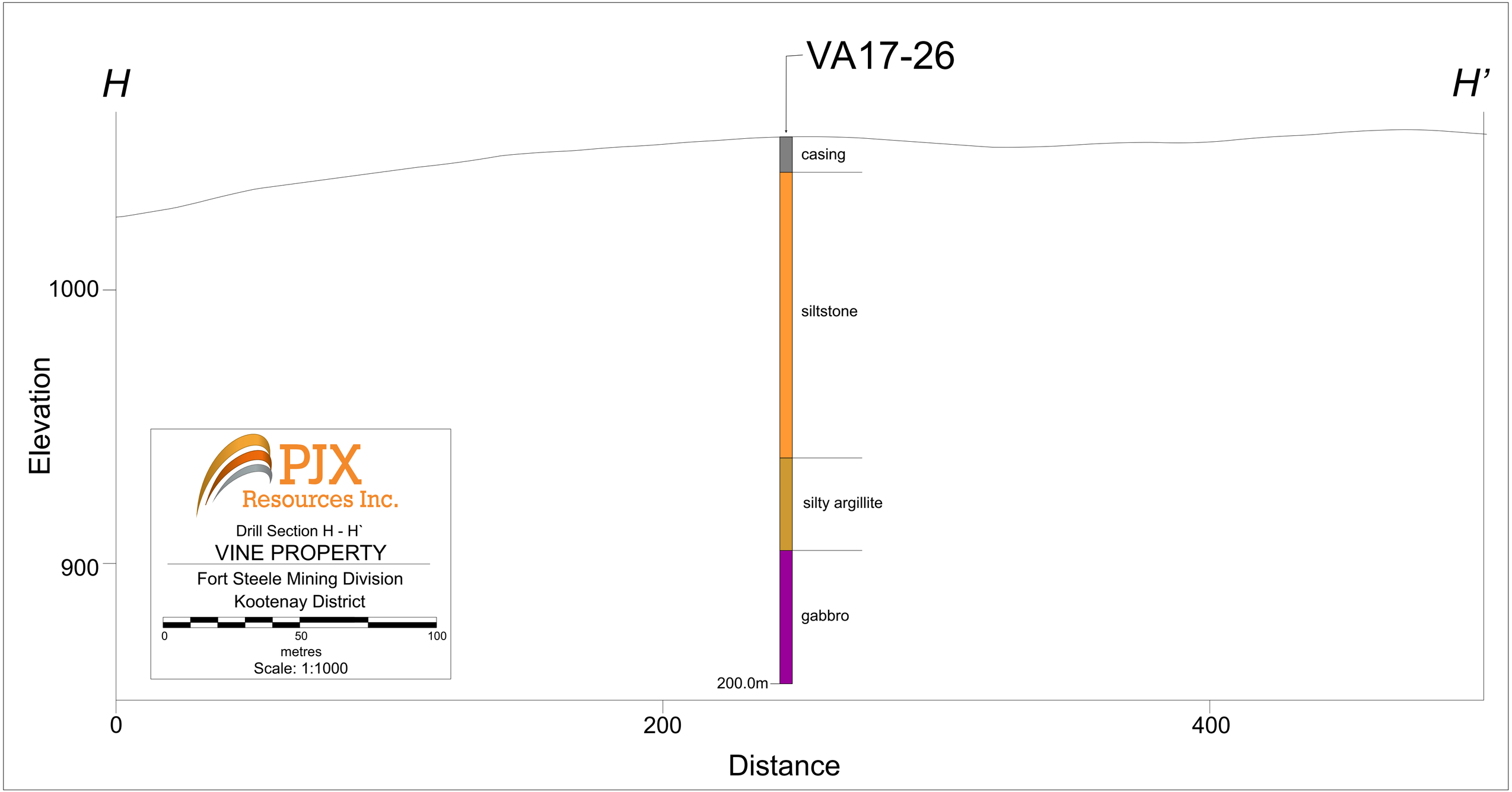
0 50 100

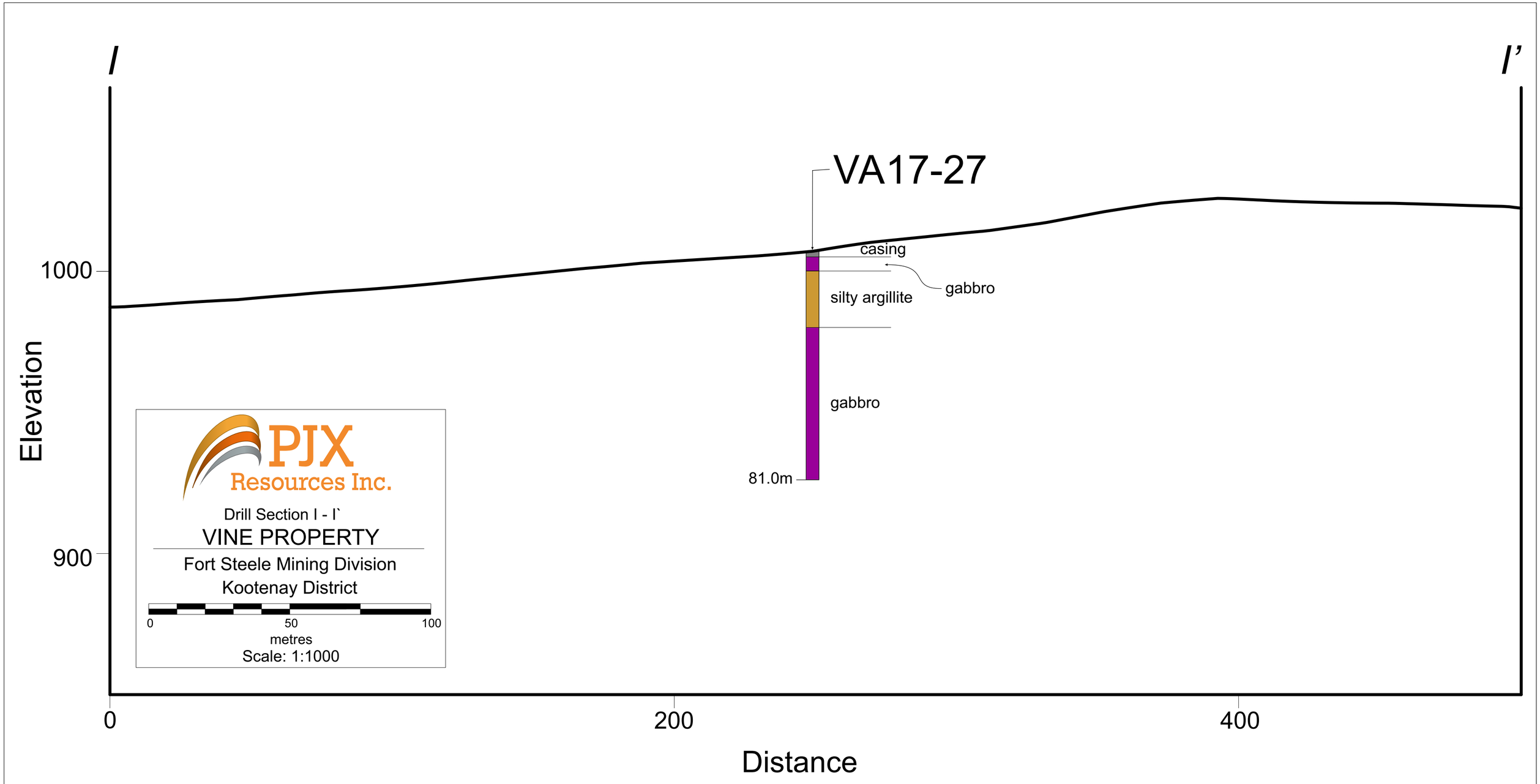
metres

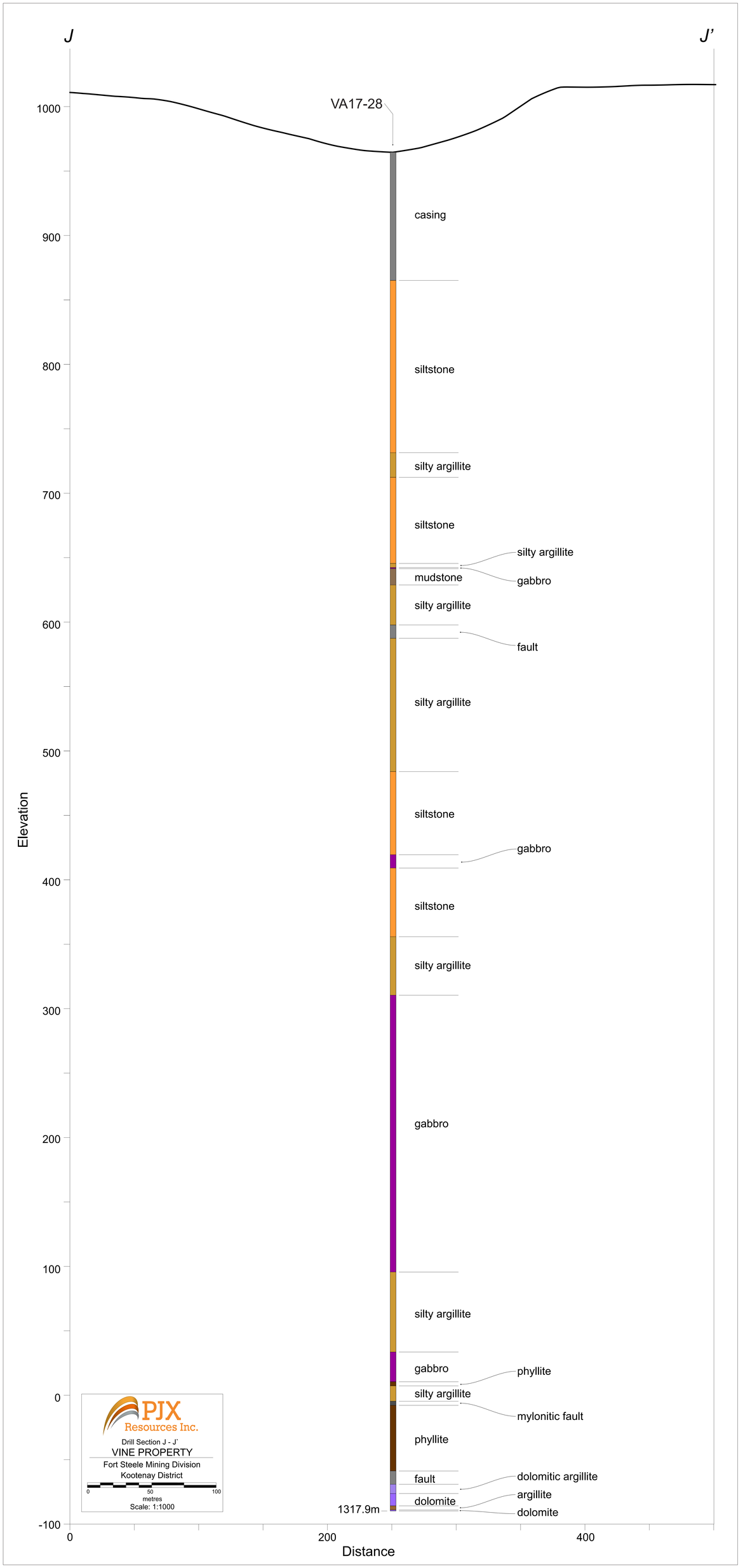
Scale: 1:1000

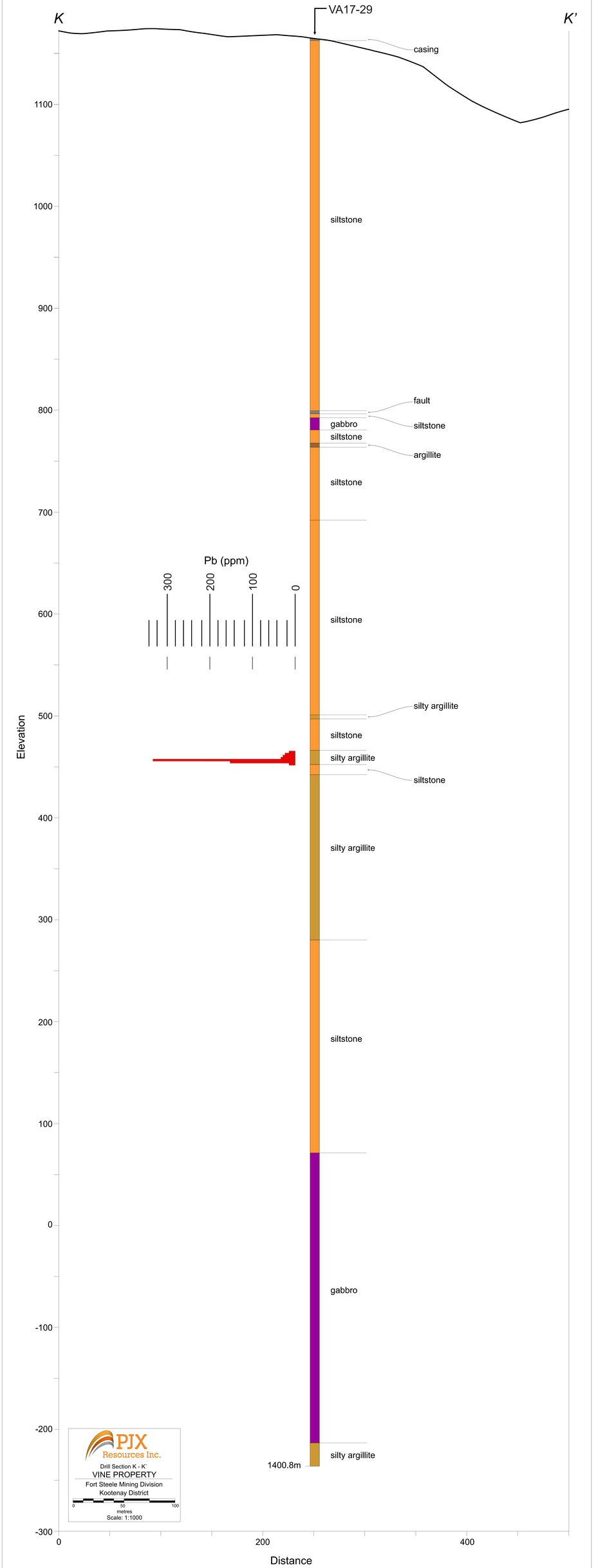
Lithology Legend

- porphyry
- fragmental
- karst
- conglomerate
- argillaceous limestone
- brecciated quartzite
- brecciated siltstone
- mylonite fault
- phyllite
- phyllitic gabbro
- phyllitic sediments
- granite
- gabbro
- granophyre
- granophyric fragmental
- lamprophyre
- shale
- limestone
- dolomite
- dolomitic argillite
- arenaceous dolomite
- felsite
- scree
- arenite
- casing
- wacke
- sub wacke
- quartz wacke
- fault
- meta seds
- altered sediments
- siltstone
- silty argillite
- silty argillite and siltstone
- arenaceous argillite
- quartzite
- silty quartzite
- breccia
- vein
- argillite
- mudstone


H
VA17-26
H’
casing
siltstone
silty argillite
gabbro
200.0m
1000
900
Elevation
0
200
400
Distance
PJX
Resources Inc.
Drill Section H - H`
VINE PROPERTY
Fort Steele Mining Division
Kootenay District
0
50
100
metres
Scale: 1:1000


I
I'
VA17-27
casing
gabbro
silty argillite
gabbro
81.0m
1000
900
Elevation
0
200
400
Distance
PJX
Resources Inc.
Drill Section I - I`
VINE PROPERTY
Fort Steele Mining Division
Kootenay District
0
50
100
metres
Scale: 1:1000


J
J'
VA17-28
casing
siltstone
silty argillite
siltstone
silty argillite
gabbro
mudstone
silty argillite
fault
silty argillite
siltstone
gabbro
siltstone
silty argillite
gabbro
silty argillite
gabbro
phyllite
silty argillite
mylonitic fault
phyllite
fault
dolomitic argillite
dolomite
argillite
dolomite
1317.9m
Elevation
Distance
1000
900
800
700
600
500
400
300
200
100
0
-100
0
200
400
PJX Resources Inc.
Drill Section J - J`
VINE PROPERTY
Fort Steele Mining Division
Kootenay District
0
50
100
metres
Scale: 1:1000


K
VA17-29
K'
casing
siltstone
fault
gabbro
siltstone
siltstone
argillite
siltstone
Pb (ppm)
300
200
100
0
siltstone
silty argillite
siltstone
silty argillite
siltstone
silty argillite
siltstone
gabbro
silty argillite
1400.8m
Elevation
1100
1000
900
800
700
600
500
400
300
200
100
0
-100
-200
-300
0
200
400
Distance
PJX Resources Inc.
Drill Section K - K'
VINE PROPERTY
Fort Steele Mining Division
Kootenay District
0
50
100
metres
Scale: 1:1000

L

L`

VA17-30

casing

siltstone

argillite

siltstone

quartzite

fragmental

gabbro

538.6m

1000

900

800

700

600

500

400

Elevation

0

200

400

Distance

PJX Resources Inc.

Drill Section L - L`

VINE PROPERTY

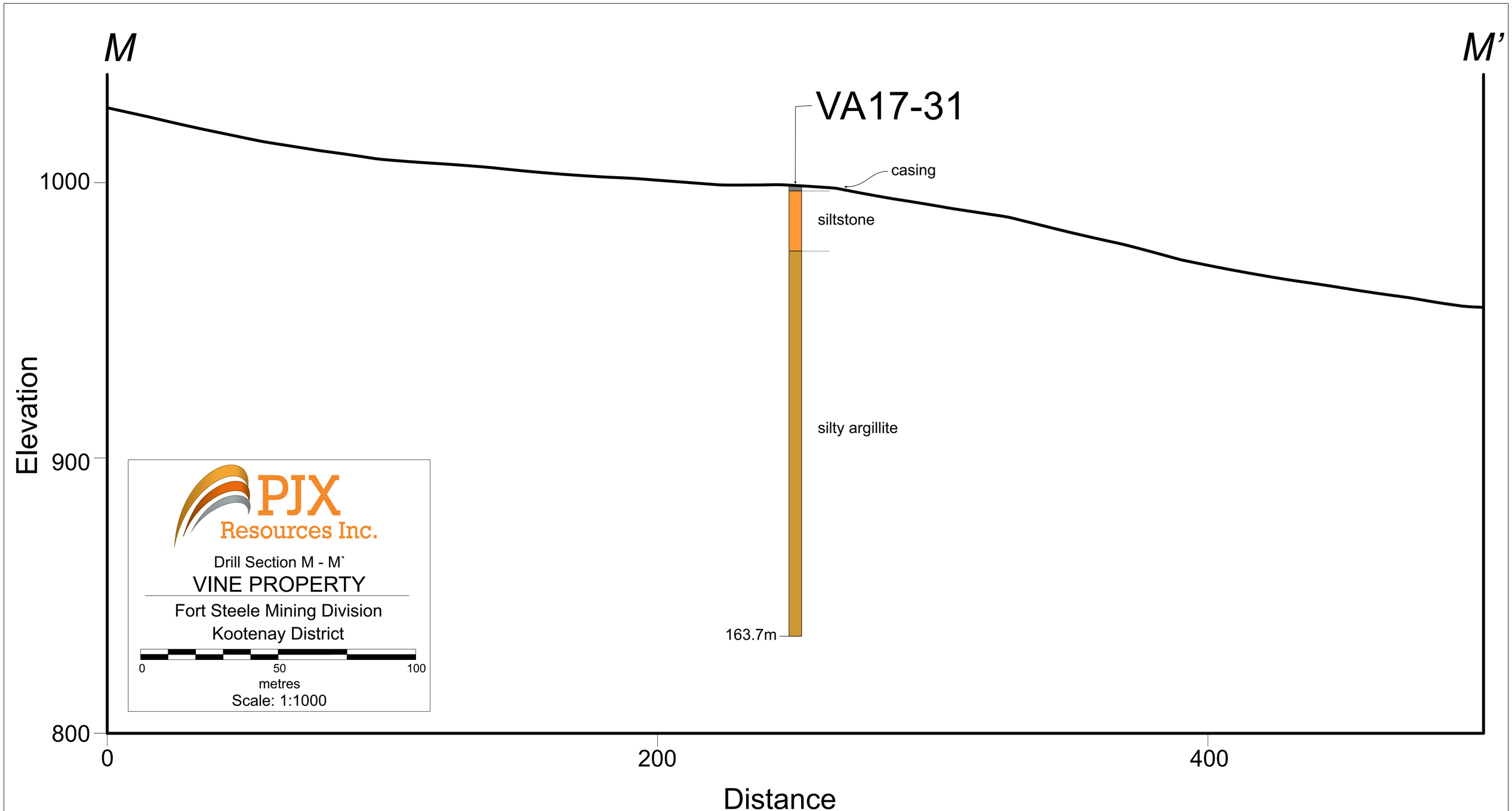
Fort Steele Mining Division

Kootenay District

0 50 100

metres

Scale: 1:1000


M
M'
VA17-31
casing
siltstone
silty argillite
163.7m
1000
900
800
Elevation
0
200
400
Distance
PJX
Resources Inc.
Drill Section M - M`
VINE PROPERTY
Fort Steele Mining Division
Kootenay District
0
50
100
metres
Scale: 1:1000

N

N’

1000

900

800

700

600

500

400

Elevation

0

200

400

Distance

VA17-32

casing

siltstone

argillite

Pb (ppm)

6000

4000

2000

0

silty argillite

vein

>40,000ppm

siltstone

phyllite

quartzite

gabbro

phyllite

538.6m

PJX Resources Inc.

Drill Section N - N`

VINE PROPERTY

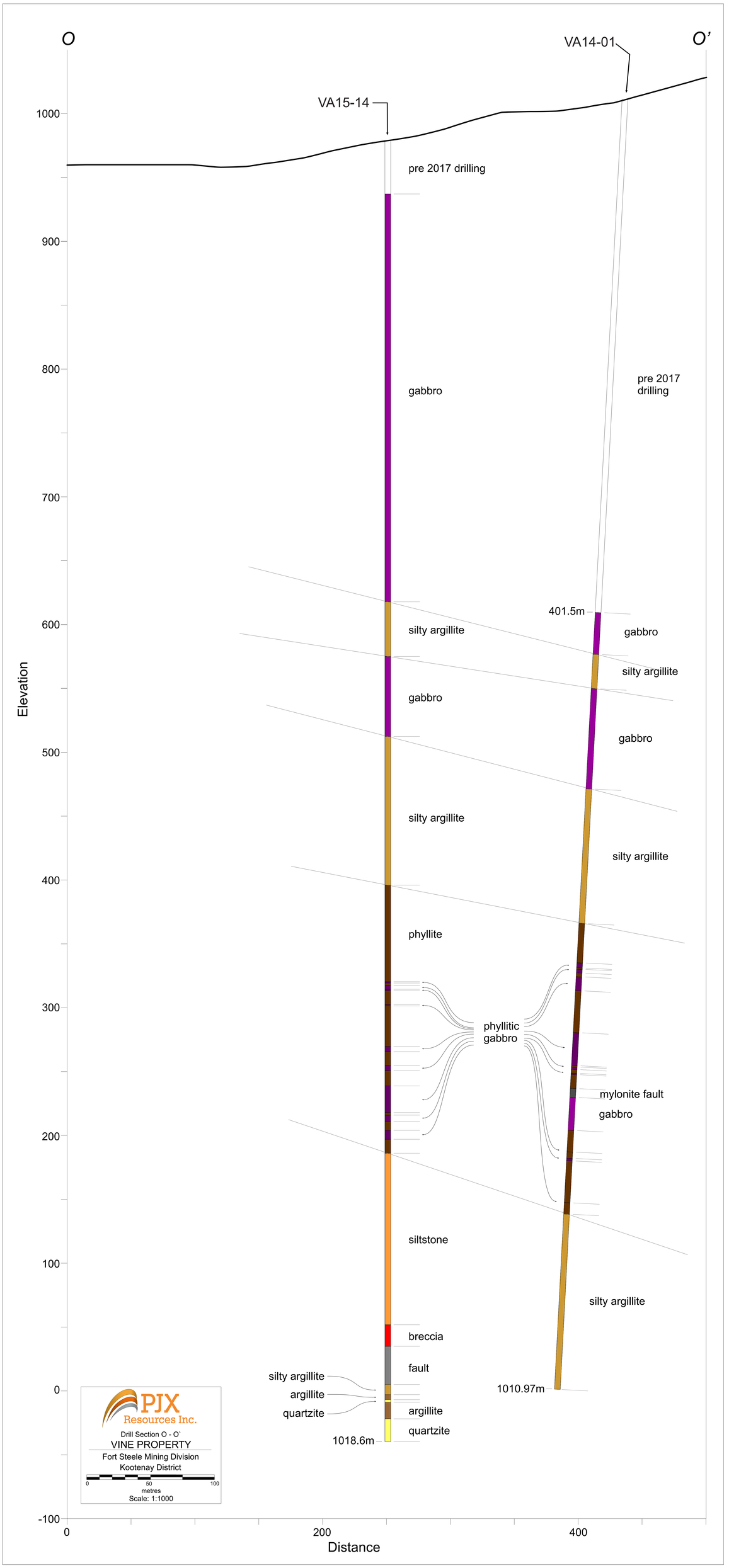
Fort Steele Mining Division

Kootenay District

0 50 100

metres

Scale: 1:1000


O
O'
VA14-01
VA15-14
1000
900
800
700
600
500
400
300
200
100
0
-100
Elevation
pre 2017 drilling
gabbro
pre 2017
drilling
401.5m
gabbro
silty argillite
silty argillite
gabbro
gabbro
silty argillite
silty argillite
phyllite
phyllitic
gabbro
mylonite fault
gabbro
siltstone
silty argillite
breccia
fault
silty argillite
argillite
quartzite
1010.97m
argillite
quartzite
1018.6m
0
200
400
Distance
PJX
Resources Inc.
Drill Section O - O`
VINE PROPERTY
Fort Steele Mining Division
Kootenay District
0
50
100
metres
Scale: 1:1000

P

P’

VA15-09

pre 2017 drilling

333.53m

gabbro

footwall quartzite

gabbro

silty argillite

886.9m

Elevation

1000

900

800

700

600

500

400

300

200

100

0

0

200

400

Distance

PJX Resources Inc.

Drill Section P - P`

VINE PROPERTY

Fort Steele Mining Division

Kootenay District

0 50 100

metres

Scale: 1:1000

Appendix 7: Sample assay certificates for diamond drilling

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

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

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Submitted By: Confirmation & Data Distribution List
Receiving Lab: Canada-Vancouver
Received: October 06, 2017
Report Date: December 08, 2017
Page: 1 of 3

CERTIFICATE OF ANALYSIS VAN17002294.3

CLIENT JOB INFORMATION

Project: VINE
Shipment ID:
P.O. Number
Number of Samples: 58

SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days
DISP-RJT Dispose of Reject After 60 days

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

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	58	Crush, split and pulverize 250 g rock to 200 mesh			VAN
AQ201	58	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN
Ship	1	Shipping charges for collect packages			VAN
AQ370-X	3	1:1:1 Aqua Regia digestion ICP-ES analysis	1	Completed	VAN
FA430	2	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	VAN
EN002	2	Environmental disposal charge-Fire assay lead waste			VAN

ADDITIONAL COMMENTS

Version 3: AQ370-As, Pb, Zn & FA430 included.

Invoice To: PJX Resources Inc.
5600 - 100 King Street West
Toronto Ontario M5X 1C9
Canada

CC: Dave L.Pighin
Michael Seabrook

BRITISH COLUMBIA CERTIFIED ASSAYER
MARCUS LAU
Production Manager

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

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE
Report Date: December 08, 2017

CERTIFICATE OF ANALYSIS VAN17002294.3

	Method	WGHT	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
	MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001
2108981	Drill Core	2.59	0.3	25.7	104.3	133	0.2	10.4	4.1	448	1.89	1.4	1.6	10.3	12	0.5	0.6	0.4	9	1.04	0.023
2108982	Drill Core	2.93	0.2	102.9	96.4	408	0.1	42.1	8.0	1356	5.84	8.9	3.8	2.0	18	3.4	1.7	0.3	95	0.80	0.036
2108983	Drill Core	3.49	0.3	702.3	5626.8	2815	7.0	75.5	176.4	601	14.16	>10000	1364.5	1.0	39	31.7	113.2	16.8	46	3.04	0.012
2108984	Drill Core	2.93	0.2	111.8	321.9	516	0.5	47.6	17.9	976	5.33	165.3	14.9	1.1	26	4.4	2.1	1.2	118	1.77	0.033
2108985	Drill Core	3.72	0.3	13.9	187.9	633	0.2	49.4	25.1	1117	4.93	82.5	2.8	1.1	29	3.7	1.1	0.3	98	2.34	0.027
2108986	Drill Core	2.90	0.3	52.2	95.3	195	0.1	54.6	31.8	761	3.95	76.5	4.5	0.8	43	0.9	1.5	0.1	99	1.92	0.033
2108987	Drill Core	2.90	0.3	22.7	27.7	159	<0.1	50.3	25.8	922	4.50	45.6	2.6	0.9	39	0.5	1.4	<0.1	109	1.91	0.035
2108988	Drill Core	2.73	0.4	33.4	24.9	202	<0.1	56.9	32.1	908	4.40	105.7	1.7	0.9	28	0.7	2.2	<0.1	103	1.46	0.035
2108989	Drill Core	1.70	0.3	65.8	1339.8	270	0.9	40.2	27.5	873	5.05	439.8	14.5	0.8	31	1.7	4.0	1.0	113	1.34	0.032
2108990	Drill Core	3.33	0.3	795.7	>10000	1585	36.9	60.9	132.2	233	15.94	>10000	1324.8	0.1	38	30.6	75.0	33.8	14	1.40	0.002
2108991	Drill Core	4.15	0.3	179.9	92.3	171	0.2	48.3	37.3	1164	7.12	828.1	59.7	0.7	61	0.8	6.2	0.2	94	5.61	0.026
2108992	Drill Core	2.85	0.3	37.8	119.4	224	0.1	44.4	19.9	747	3.97	53.7	4.2	0.9	41	0.8	1.9	0.1	93	2.59	0.031
2108993	Drill Core	2.86	0.3	126.2	45.0	209	<0.1	61.9	34.0	559	3.92	28.9	2.7	0.8	30	0.5	1.3	<0.1	80	1.49	0.033
2108994	Drill Core	3.77	0.4	94.5	57.6	114	<0.1	56.3	27.4	567	3.45	19.3	3.7	0.9	45	0.2	1.8	<0.1	89	2.78	0.034
2108995	Drill Core	2.83	0.3	63.1	55.2	123	<0.1	55.7	24.9	547	3.49	20.2	14.0	0.9	48	0.3	1.9	<0.1	92	1.66	0.031
2108996	Drill Core	2.27	0.3	53.0	35.4	112	<0.1	46.5	23.4	455	2.63	30.4	2.2	0.9	23	0.2	1.0	<0.1	59	1.29	0.035
2108997	Drill Core	3.63	0.3	64.3	48.5	110	<0.1	48.9	28.2	539	3.10	24.9	1.4	1.0	27	0.3	1.3	<0.1	83	1.45	0.034
2108998	Drill Core	3.02	0.3	65.4	44.6	119	<0.1	44.5	24.5	547	3.47	24.0	4.1	0.9	29	0.2	0.9	<0.1	82	1.39	0.034
2108999	Drill Core	2.99	0.2	207.3	1022.3	149	1.3	26.2	52.1	988	4.85	5160.4	434.6	0.6	46	1.0	29.8	2.8	95	5.29	0.021
2109000	Drill Core	2.48	0.3	242.1	94.4	223	0.2	52.3	49.9	915	8.74	1411.6	72.3	0.9	40	0.9	8.9	0.2	105	3.18	0.034
2107151	Drill Core	2.40	0.2	234.7	164.0	160	0.2	39.3	72.5	812	7.36	4474.7	369.9	0.3	45	0.8	30.1	0.5	44	4.84	0.012
2107152	Drill Core	2.66	0.3	49.0	45.0	125	<0.1	51.4	31.5	663	3.80	483.2	47.1	0.7	24	0.2	4.0	0.1	73	1.28	0.033
2107153	Drill Core	5.42	0.3	18.1	29.9	173	<0.1	27.9	11.0	968	4.75	16.7	5.3	0.9	24	0.6	0.6	<0.1	99	1.81	0.035
2107154	Drill Core	2.32	0.2	1067.4	1185.3	112	1.9	26.0	14.2	381	4.59	20.3	13.7	1.2	45	0.9	3.0	5.1	3	5.39	0.003
2107155	Drill Core	3.07	0.2	593.7	2899.1	281	6.3	60.3	56.0	855	7.60	1915.3	242.0	0.3	130	2.5	45.9	15.6	10	8.10	0.007
2107156	Drill Core	2.80	0.3	125.6	261.9	429	0.4	57.0	27.4	1233	6.68	502.6	34.1	1.1	102	2.3	31.6	0.8	67	5.45	0.035
2107157	Drill Core	2.33	0.3	16.7	73.4	167	<0.1	60.5	35.7	1313	5.26	53.3	4.5	1.0	52	0.5	1.7	0.1	153	4.67	0.031
2107158	Drill Core	3.28	0.3	12.7	60.9	134	<0.1	48.0	38.7	740	3.50	67.0	8.3	0.8	30	0.4	0.9	<0.1	91	1.77	0.033
2107159	Drill Core	3.50	0.3	27.5	51.1	149	<0.1	61.0	37.0	934	4.49	53.3	2.7	0.9	41	0.3	1.2	0.1	120	2.53	0.034
2107160	Drill Core	3.30	0.3	50.4	48.4	91	<0.1	50.6	29.7	445	2.54	43.3	3.3	0.6	29	0.2	0.9	0.2	71	1.15	0.031

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE
Report Date: December 08, 2017

CERTIFICATE OF ANALYSIS VAN17002294.3

	Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ370	AQ370	AQ370
	Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	Pb	Zn	As
	Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	%	%
	MDL	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2	0.01	0.01	0.01
2108981	Drill Core	17	9	0.43	45	0.070	<1	0.95	0.013	0.36	0.2	0.02	1.4	0.1	0.43	3	<0.5	<0.2			
2108982	Drill Core	5	100	2.02	53	0.152	1	2.84	0.014	0.52	0.3	0.02	4.3	0.3	0.83	5	<0.5	<0.2			
2108983	Drill Core	2	32	0.81	10	0.024	1	1.24	0.019	0.09	0.2	0.05	4.4	0.3	7.31	6	2.2	0.7	0.58	0.30	1.75
2108984	Drill Core	3	140	1.70	26	0.133	<1	2.29	0.047	0.14	0.3	0.01	9.0	<0.1	1.21	7	<0.5	<0.2			
2108985	Drill Core	3	120	2.17	25	0.170	1	2.89	0.050	0.27	0.2	0.01	8.3	<0.1	0.17	6	<0.5	<0.2			
2108986	Drill Core	3	87	1.78	21	0.149	1	2.04	0.084	0.17	0.2	0.01	10.4	<0.1	0.51	5	<0.5	<0.2			
2108987	Drill Core	2	92	2.00	20	0.144	1	2.36	0.076	0.18	0.2	<0.01	9.9	<0.1	0.22	6	<0.5	<0.2			
2108988	Drill Core	3	97	1.93	20	0.159	1	2.39	0.063	0.15	0.2	<0.01	8.9	<0.1	0.26	5	<0.5	<0.2			
2108989	Drill Core	2	106	2.01	22	0.121	2	2.42	0.056	0.18	0.2	<0.01	10.8	<0.1	0.80	5	<0.5	<0.2			
2108990	Drill Core	<1	14	0.40	6	0.007	<1	0.51	0.029	0.04	0.3	0.05	2.2	0.2	>10	10	4.3	1.4	>4	0.17	1.17
2108991	Drill Core	2	76	2.08	23	0.130	<1	2.12	0.072	0.14	0.2	0.03	8.7	<0.1	3.57	5	0.8	<0.2			
2108992	Drill Core	3	92	1.84	25	0.152	2	2.05	0.097	0.19	0.1	0.05	9.3	<0.1	0.57	5	<0.5	<0.2			
2108993	Drill Core	3	71	1.50	21	0.125	2	1.80	0.094	0.20	0.1	0.05	9.0	<0.1	1.14	4	<0.5	<0.2			
2108994	Drill Core	3	76	1.61	17	0.146	2	1.91	0.113	0.18	0.1	0.05	10.7	<0.1	0.59	4	<0.5	<0.2			
2108995	Drill Core	3	79	1.77	14	0.114	1	1.93	0.120	0.18	0.1	0.05	10.8	<0.1	0.45	5	<0.5	<0.2			
2108996	Drill Core	3	54	1.05	12	0.095	<1	1.43	0.093	0.13	<0.1	<0.01	7.4	<0.1	0.22	4	<0.5	<0.2			
2108997	Drill Core	3	63	1.22	16	0.113	2	1.67	0.114	0.17	0.1	0.01	9.3	<0.1	0.32	4	<0.5	<0.2			
2108998	Drill Core	3	68	1.32	17	0.117	1	1.84	0.125	0.17	0.1	<0.01	9.3	<0.1	0.47	5	<0.5	<0.2			
2108999	Drill Core	1	97	0.89	35	0.070	1	1.36	0.069	0.12	0.4	<0.01	7.3	<0.1	1.85	5	0.5	<0.2			
2109000	Drill Core	3	135	1.99	35	0.172	2	2.72	0.097	0.20	1.0	<0.01	8.7	<0.1	3.74	6	1.0	<0.2			
2107151	Drill Core	1	56	1.27	14	0.058	2	1.57	0.039	0.07	0.4	<0.01	4.0	<0.1	3.93	5	0.6	<0.2			
2107152	Drill Core	2	75	1.54	19	0.109	1	1.96	0.071	0.13	0.3	<0.01	7.5	<0.1	0.54	4	<0.5	<0.2			
2107153	Drill Core	3	84	2.01	19	0.129	<1	2.60	0.067	0.14	1.5	<0.01	7.6	<0.1	0.17	6	<0.5	<0.2			
2107154	Drill Core	<1	4	0.45	2	0.001	<1	0.40	0.031	0.01	0.3	<0.01	1.1	<0.1	2.57	<1	0.7	0.3			
2107155	Drill Core	1	11	0.42	11	<0.001	2	0.32	0.009	0.11	0.1	0.03	5.1	0.1	3.78	<1	1.1	1.0			
2107156	Drill Core	3	79	1.81	30	0.002	3	1.41	0.036	0.32	0.1	0.02	20.0	0.1	0.82	4	<0.5	<0.2			
2107157	Drill Core	3	138	2.50	18	0.126	2	3.03	0.057	0.20	0.2	<0.01	16.1	<0.1	0.13	8	<0.5	<0.2			
2107158	Drill Core	3	89	1.67	18	0.122	2	2.06	0.082	0.14	0.2	<0.01	9.1	<0.1	0.05	5	<0.5	<0.2			
2107159	Drill Core	3	116	2.23	24	0.139	1	2.51	0.089	0.12	0.2	0.01	11.7	<0.1	0.13	6	<0.5	<0.2			
2107160	Drill Core	2	68	1.12	16	0.113	2	1.48	0.090	0.13	0.2	<0.01	7.5	<0.1	0.17	4	<0.5	<0.2			

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE
Report Date: December 08, 2017

CERTIFICATE OF ANALYSIS VAN17002294.3

		Method	FA430
		Analyte	Au
		Unit	ppm
		MDL	0.005
2108981	Drill Core		
2108982	Drill Core		
2108983	Drill Core		1.423
2108984	Drill Core		
2108985	Drill Core		
2108986	Drill Core		
2108987	Drill Core		
2108988	Drill Core		
2108989	Drill Core		
2108990	Drill Core		1.547
2108991	Drill Core		
2108992	Drill Core		
2108993	Drill Core		
2108994	Drill Core		
2108995	Drill Core		
2108996	Drill Core		
2108997	Drill Core		
2108998	Drill Core		
2108999	Drill Core		
2109000	Drill Core		
2107151	Drill Core		
2107152	Drill Core		
2107153	Drill Core		
2107154	Drill Core		
2107155	Drill Core		
2107156	Drill Core		
2107157	Drill Core		
2107158	Drill Core		
2107159	Drill Core		
2107160	Drill Core		

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE
Report Date: December 08, 2017

CERTIFICATE OF ANALYSIS VAN17002294.3

	Method	WGHT	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
	MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001
2107161	Drill Core	3.49	0.5	52.2	27.5	164	<0.1	50.9	26.7	621	3.40	30.4	2.2	0.8	24	0.3	1.3	0.1	70	1.31	0.036
2107162	Drill Core	3.10	0.3	57.0	24.3	150	<0.1	51.1	34.7	575	3.20	46.8	2.5	0.7	22	0.3	0.7	<0.1	66	1.15	0.034
2107163	Drill Core	3.36	0.4	44.8	36.7	253	<0.1	53.0	29.2	748	3.94	35.5	1.9	0.8	22	0.6	0.9	0.1	81	1.22	0.033
2107164	Drill Core	3.70	0.3	44.1	71.3	117	<0.1	48.6	33.1	668	3.17	50.0	2.7	0.8	24	0.3	0.9	0.2	76	1.53	0.033
2107165	Drill Core	2.93	0.4	45.1	48.3	212	<0.1	66.1	32.9	1023	5.46	57.9	4.4	0.8	27	0.5	1.0	0.1	123	1.66	0.034
2107166	Drill Core	2.81	0.3	38.1	88.4	153	0.1	48.6	23.1	746	3.68	28.1	1.4	0.7	16	0.4	0.8	0.2	88	1.40	0.036
2107167	Drill Core	2.89	0.3	19.1	29.9	129	<0.1	50.2	41.3	714	3.71	67.3	1.1	0.7	31	0.2	0.8	<0.1	91	1.79	0.033
2107168	Drill Core	2.42	0.3	74.6	34.1	96	<0.1	50.9	22.1	533	2.99	23.8	1.2	0.5	44	0.2	0.6	<0.1	76	1.34	0.035
2107169	Drill Core	3.24	0.3	174.7	64.4	92	0.1	62.8	30.0	459	3.26	23.7	1.5	0.5	28	0.2	0.9	0.2	76	1.20	0.034
2107170	Drill Core	3.32	0.2	133.7	46.4	148	<0.1	61.1	30.7	587	3.97	25.1	<0.5	0.7	17	0.4	0.5	0.1	78	0.93	0.036
2107171	Drill Core	2.93	0.3	102.3	37.2	96	<0.1	57.5	26.8	469	3.04	24.0	<0.5	0.7	19	0.2	0.6	<0.1	70	1.23	0.035
2107172	Drill Core	4.15	0.3	71.9	30.0	111	<0.1	55.7	31.8	439	2.81	51.3	0.6	0.7	18	0.2	0.6	<0.1	60	1.15	0.034
2107173	Drill Core	3.05	0.3	37.3	22.2	100	<0.1	54.2	34.4	634	3.45	45.2	2.0	0.7	24	<0.1	0.9	<0.1	84	1.48	0.032
2107174	Drill Core	2.41	0.2	42.5	42.7	102	<0.1	52.0	32.3	542	3.02	44.8	0.7	0.7	17	0.2	0.6	<0.1	67	1.22	0.032
2107175	Drill Core	3.17	0.3	30.8	41.0	85	<0.1	50.1	34.9	503	2.73	57.8	1.2	0.7	20	0.1	1.3	<0.1	64	1.19	0.029
2107176	Drill Core	2.93	0.3	26.1	40.0	88	<0.1	44.2	35.7	486	2.60	51.7	0.7	0.7	33	0.2	0.9	<0.1	64	1.25	0.030
2107177	Drill Core	2.99	0.3	30.9	53.1	137	<0.1	42.0	28.2	600	3.15	38.7	<0.5	0.6	23	0.3	0.8	<0.1	77	1.57	0.030
2107178	Drill Core	2.14	0.3	70.0	38.7	105	<0.1	55.5	30.5	724	3.94	30.5	<0.5	0.7	25	0.2	1.5	<0.1	103	1.81	0.033
2107179	Drill Core	3.08	0.4	64.1	21.9	93	<0.1	58.5	30.7	697	3.66	41.5	1.0	0.8	20	0.1	0.6	<0.1	76	1.58	0.031
2107180	Drill Core	2.70	0.3	95.6	157.3	108	0.3	57.0	26.1	616	3.65	96.3	1.5	1.2	26	0.2	0.9	0.7	84	1.94	0.035
2107181	Drill Core	3.48	0.3	34.1	35.5	175	<0.1	43.5	31.5	875	4.07	73.0	0.8	1.1	24	0.4	0.6	<0.1	84	1.82	0.034
2107182	Drill Core	2.75	0.3	35.8	118.0	319	0.2	49.6	29.6	784	3.67	40.8	0.7	0.8	18	1.3	0.9	0.2	79	1.78	0.036
2107183	Drill Core	1.03	0.9	25.0	35.4	89	0.4	21.9	16.5	445	2.63	20.6	0.8	7.5	10	0.2	0.8	0.2	35	0.60	0.034
2107184	Drill Core	5.09	0.3	34.8	38.5	163	<0.1	45.9	28.0	806	3.81	48.5	13.4	0.7	22	0.3	0.7	<0.1	95	1.65	0.036
2107185	Drill Core	3.52	0.3	62.1	44.4	227	<0.1	27.0	8.6	1545	7.53	5.2	1.4	1.5	19	0.4	1.4	<0.1	227	2.22	0.041
2107186	Drill Core	3.11	0.3	1559.9	5117.5	>10000	4.2	61.2	87.6	648	10.10	7174.1	587.8	0.5	54	134.5	92.6	5.7	18	5.70	0.002
2107187	Drill Core	3.27	0.2	582.6	755.8	138	0.9	39.4	44.7	548	7.39	1928.9	332.8	0.2	33	1.2	43.4	1.3	5	3.79	0.001
2107188	Drill Core	2.65	0.4	27.0	73.6	445	0.2	51.3	26.8	1596	5.82	64.4	4.9	0.8	29	0.9	2.5	0.6	154	2.54	0.038

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE
Report Date: December 08, 2017

CERTIFICATE OF ANALYSIS VAN17002294.3

	Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ370	AQ370	AQ370
	Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	Pb	Zn	As
	Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	%	%
	MDL	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2	0.01	0.01	0.01
2107161	Drill Core	2	75	1.44	19	0.137	<1	1.91	0.081	0.15	0.2	<0.01	6.5	<0.1	0.20	4	<0.5	<0.2			
2107162	Drill Core	2	64	1.33	31	0.132	1	1.88	0.078	0.20	0.2	<0.01	5.5	<0.1	0.10	4	<0.5	<0.2			
2107163	Drill Core	3	85	1.58	57	0.143	<1	2.09	0.079	0.41	0.1	<0.01	6.3	0.1	0.25	5	<0.5	<0.2			
2107164	Drill Core	2	81	1.29	26	0.128	<1	1.69	0.087	0.14	0.2	<0.01	6.2	<0.1	0.14	4	<0.5	<0.2			
2107165	Drill Core	2	128	2.24	17	0.143	<1	2.84	0.069	0.12	0.3	<0.01	8.6	<0.1	0.39	6	<0.5	<0.2			
2107166	Drill Core	2	92	1.51	19	0.127	<1	1.98	0.076	0.16	0.1	<0.01	6.2	<0.1	0.17	5	<0.5	<0.2			
2107167	Drill Core	2	86	1.60	27	0.170	<1	2.27	0.111	0.22	0.1	<0.01	8.3	<0.1	0.06	5	<0.5	<0.2			
2107168	Drill Core	2	66	1.14	23	0.161	<1	1.71	0.100	0.18	0.1	<0.01	7.0	<0.1	0.14	4	<0.5	<0.2			
2107169	Drill Core	2	62	1.04	14	0.137	<1	1.59	0.086	0.14	0.1	<0.01	7.2	<0.1	0.66	4	<0.5	<0.2			
2107170	Drill Core	2	77	1.45	16	0.137	<1	1.95	0.070	0.16	0.2	<0.01	6.5	<0.1	0.57	4	<0.5	<0.2			
2107171	Drill Core	2	59	1.13	15	0.136	<1	1.61	0.086	0.17	0.2	<0.01	7.3	<0.1	0.32	4	<0.5	<0.2			
2107172	Drill Core	2	59	1.13	16	0.125	1	1.56	0.078	0.16	0.1	<0.01	6.2	<0.1	0.21	3	<0.5	<0.2			
2107173	Drill Core	2	83	1.56	13	0.137	<1	2.02	0.069	0.12	0.1	<0.01	6.5	<0.1	0.17	4	<0.5	<0.2			
2107174	Drill Core	2	72	1.33	17	0.112	2	1.76	0.076	0.16	0.1	<0.01	6.0	<0.1	0.11	4	<0.5	<0.2			
2107175	Drill Core	2	64	1.22	15	0.100	<1	1.65	0.079	0.12	0.1	<0.01	6.2	<0.1	0.09	3	<0.5	<0.2			
2107176	Drill Core	2	59	1.14	16	0.105	<1	1.59	0.084	0.13	<0.1	<0.01	6.9	<0.1	0.06	4	<0.5	<0.2			
2107177	Drill Core	2	66	1.34	20	0.120	<1	1.78	0.077	0.16	0.1	<0.01	7.4	<0.1	0.18	4	<0.5	<0.2			
2107178	Drill Core	2	86	1.71	18	0.125	1	2.17	0.074	0.16	0.2	<0.01	9.5	<0.1	0.19	6	<0.5	<0.2			
2107179	Drill Core	2	66	1.42	17	0.124	<1	1.96	0.070	0.12	0.1	<0.01	5.4	<0.1	0.34	4	<0.5	<0.2			
2107180	Drill Core	2	72	1.16	27	0.152	1	1.79	0.062	0.17	15.6	<0.01	5.7	<0.1	0.63	4	<0.5	<0.2			
2107181	Drill Core	3	78	1.69	25	0.154	<1	2.35	0.078	0.14	0.3	<0.01	6.5	<0.1	0.22	4	<0.5	<0.2			
2107182	Drill Core	3	75	1.47	31	0.143	1	2.02	0.078	0.16	0.3	<0.01	6.9	<0.1	0.23	4	<0.5	<0.2			
2107183	Drill Core	16	31	0.79	138	0.135	<1	1.29	0.054	0.57	1.0	0.07	3.7	0.3	0.52	3	<0.5	<0.2			
2107184	Drill Core	2	82	1.57	37	0.158	<1	2.11	0.072	0.13	0.2	<0.01	7.0	<0.1	0.16	5	<0.5	<0.2			
2107185	Drill Core	5	163	3.48	29	0.219	<1	4.21	0.063	0.14	0.4	<0.01	11.1	<0.1	0.44	14	<0.5	<0.2			
2107186	Drill Core	1	7	0.10	5	0.002	<1	0.26	0.009	0.02	<0.1	0.62	1.8	<0.1	6.60	1	1.4	0.3	0.48	1.39	0.72
2107187	Drill Core	<1	4	0.06	21	0.001	1	0.16	0.007	0.01	0.1	<0.01	0.6	<0.1	4.50	<1	0.9	<0.2			
2107188	Drill Core	3	123	2.42	107	0.217	1	3.43	0.035	0.72	0.3	<0.01	11.8	0.4	0.12	7	<0.5	<0.2			

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE
Report Date: December 08, 2017

CERTIFICATE OF ANALYSIS VAN17002294.3

		Method	FA430
		Analyte	Au
		Unit	ppm
		MDL	0.005
2107161	Drill Core		
2107162	Drill Core		
2107163	Drill Core		
2107164	Drill Core		
2107165	Drill Core		
2107166	Drill Core		
2107167	Drill Core		
2107168	Drill Core		
2107169	Drill Core		
2107170	Drill Core		
2107171	Drill Core		
2107172	Drill Core		
2107173	Drill Core		
2107174	Drill Core		
2107175	Drill Core		
2107176	Drill Core		
2107177	Drill Core		
2107178	Drill Core		
2107179	Drill Core		
2107180	Drill Core		
2107181	Drill Core		
2107182	Drill Core		
2107183	Drill Core		
2107184	Drill Core		
2107185	Drill Core		
2107186	Drill Core		
2107187	Drill Core		
2107188	Drill Core		

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE

Report Date: December 08, 2017

QUALITY CONTROL REPORT VAN17002294.3

	Method	WGHT	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
	MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001
Pulp Duplicates																					
2108982	Drill Core	2.93	0.2	102.9	96.4	408	0.1	42.1	8.0	1356	5.84	8.9	3.8	2.0	18	3.4	1.7	0.3	95	0.80	0.036
REP 2108982	QC		0.3	106.4	96.1	408	0.1	44.7	8.5	1378	5.90	9.8	4.5	2.1	19	3.4	1.8	0.3	98	0.84	0.037
2107164	Drill Core	3.70	0.3	44.1	71.3	117	<0.1	48.6	33.1	668	3.17	50.0	2.7	0.8	24	0.3	0.9	0.2	76	1.53	0.033
REP 2107164	QC		0.3	43.2	71.8	120	<0.1	49.7	31.9	656	3.21	49.3	2.5	0.9	25	0.3	0.8	0.2	77	1.55	0.032
2107186	Drill Core	3.11	0.3	1559.9	5117.5	>10000	4.2	61.2	87.6	648	10.10	7174.1	587.8	0.5	54	134.5	92.6	5.7	18	5.70	0.002
REP 2107186	QC																				
Core Reject Duplicates																					
2108983	Drill Core	3.49	0.3	702.3	5626.8	2815	7.0	75.5	176.4	601	14.16	>10000	1364.5	1.0	39	31.7	113.2	16.8	46	3.04	0.012
DUP 2108983	QC		0.3	684.4	5122.0	2614	6.5	72.0	171.4	621	13.78	>10000	1448.3	0.9	38	30.1	109.9	15.4	47	3.02	0.013
2107167	Drill Core	2.89	0.3	19.1	29.9	129	<0.1	50.2	41.3	714	3.71	67.3	1.1	0.7	31	0.2	0.8	<0.1	91	1.79	0.033
DUP 2107167	QC		0.3	18.2	28.9	123	<0.1	47.9	39.7	713	3.70	61.6	0.6	0.7	30	0.2	0.6	<0.1	89	1.64	0.034
Reference Materials																					
STD CDN-ME-9A	Standard																				
STD CDN-ME-14A	Standard																				
STD CDN-ME-9A	Standard																				
STD CDN-ME-14A	Standard																				
STD DS11	Standard		13.4	147.5	132.4	331	1.7	76.2	13.2	991	3.05	42.5	70.1	7.3	65	2.5	8.6	11.9	47	1.04	0.074
STD DS11	Standard		14.4	152.7	140.0	348	1.8	81.2	14.4	1056	3.24	45.0	70.3	7.5	71	2.5	8.4	12.5	52	1.13	0.071
STD OXC129	Standard		1.2	26.0	5.9	39	<0.1	76.6	19.6	407	2.95	0.6	197.2	1.7	181	<0.1	<0.1	<0.1	50	0.68	0.100
STD OXC129	Standard		1.3	28.7	6.1	42	<0.1	83.2	21.0	431	3.10	0.6	198.6	1.6	198	<0.1	<0.1	<0.1	53	0.70	0.099
STD OXC145	Standard																				
STD OXH139	Standard																				
STD OXN134	Standard																				
STD OXC129 Expected			1.3	28	6.2	42.9		79.5	20.3	421	3.065	0.6	195	1.9					51	0.684	0.102
STD DS11 Expected			14.6	149	138	345	1.71	77.7	14.2	1055	3.1	42.8	79	7.65	67.3	2.37	8.74	12.2	50	1.063	0.0701
STD OXN134 Expected																					
STD OXC145 Expected																					
STD OXH139 Expected																					

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

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

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE
Report Date: December 08, 2017

QUALITY CONTROL REPORT VAN17002294.3

		Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ370	AQ370	AQ370
		Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	Pb	Zn	As
		Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	%	%
		MDL	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2	0.01	0.01	0.01
Pulp Duplicates																						
2108982	Drill Core		5	100	2.02	53	0.152	1	2.84	0.014	0.52	0.3	0.02	4.3	0.3	0.83	5	<0.5	<0.2			
REP 2108982	QC		5	107	2.11	55	0.166	<1	2.91	0.015	0.54	0.3	0.02	4.6	0.3	0.84	5	<0.5	<0.2			
2107164	Drill Core		2	81	1.29	26	0.128	<1	1.69	0.087	0.14	0.2	<0.01	6.2	<0.1	0.14	4	<0.5	<0.2			
REP 2107164	QC		2	81	1.31	26	0.125	<1	1.73	0.085	0.14	0.2	<0.01	6.8	<0.1	0.14	4	<0.5	<0.2			
2107186	Drill Core		1	7	0.10	5	0.002	<1	0.26	0.009	0.02	<0.1	0.62	1.8	<0.1	6.60	1	1.4	0.3	0.48	1.39	0.72
REP 2107186	QC																			0.48	1.35	0.71
Core Reject Duplicates																						
2108983	Drill Core		2	32	0.81	10	0.024	1	1.24	0.019	0.09	0.2	0.05	4.4	0.3	7.31	6	2.2	0.7	0.58	0.30	1.75
DUP 2108983	QC		2	32	0.84	10	0.023	1	1.24	0.018	0.09	0.2	0.05	4.3	0.2	7.24	6	2.4	0.6			
2107167	Drill Core		2	86	1.60	27	0.170	<1	2.27	0.111	0.22	0.1	<0.01	8.3	<0.1	0.06	5	<0.5	<0.2			
DUP 2107167	QC		2	86	1.59	26	0.167	1	2.24	0.102	0.22	0.1	<0.01	8.3	<0.1	0.05	5	<0.5	<0.2			
Reference Materials																						
STD CDN-ME-9A	Standard																			<0.01	0.01	<0.01
STD CDN-ME-14A	Standard																			0.48	3.08	<0.01
STD CDN-ME-9A	Standard																			<0.01	0.01	<0.01
STD CDN-ME-14A	Standard																			0.49	2.94	0.01
STD DS11	Standard		18	57	0.82	362	0.089	7	1.11	0.071	0.39	2.9	0.27	3.2	5.0	0.27	5	1.9	4.4			
STD DS11	Standard		18	59	0.87	401	0.098	6	1.20	0.076	0.42	3.1	0.27	3.5	5.2	0.29	5	2.6	4.9			
STD OXC129	Standard		12	50	1.51	48	0.382	<1	1.51	0.572	0.36	<0.1	<0.01	0.6	<0.1	<0.05	5	<0.5	<0.2			
STD OXC129	Standard		13	53	1.59	54	0.408	1	1.61	0.598	0.37	<0.1	<0.01	0.7	<0.1	<0.05	6	<0.5	<0.2			
STD OXC145	Standard																					
STD OXH139	Standard																					
STD OXN134	Standard																					
STD OXC129 Expected			12.5	52	1.545	50	0.4	1	1.58	0.59	0.3655			1.1			5.5					
STD DS11 Expected			18.6	61.5	0.85	385	0.0976		1.1795	0.0762	0.4	2.9	0.26	3.4	4.9	0.2835	5.1	2.2	4.56			
STD OXN134 Expected																						
STD OXC145 Expected																						
STD OXH139 Expected																						

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

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

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE
Report Date: December 08, 2017

QUALITY CONTROL REPORT VAN17002294.3

		Method	FA430
		Analyte	Au
		Unit	ppm
		MDL	0.005
Pulp Duplicates			
2108982	Drill Core		
REP 2108982	QC		
2107164	Drill Core		
REP 2107164	QC		
2107186	Drill Core		
REP 2107186	QC		
Core Reject Duplicates			
2108983	Drill Core		1.423
DUP 2108983	QC		
2107167	Drill Core		
DUP 2107167	QC		
Reference Materials			
STD CDN-ME-9A	Standard		
STD CDN-ME-14A	Standard		
STD CDN-ME-9A	Standard		
STD CDN-ME-14A	Standard		
STD DS11	Standard		
STD DS11	Standard		
STD OXC129	Standard		
STD OXC129	Standard		
STD OXC145	Standard		0.208
STD OXH139	Standard		1.299
STD OXN134	Standard		7.515
STD OXC129 Expected			
STD DS11 Expected			
STD OXN134 Expected			7.667
STD OXC145 Expected			0.212
STD OXH139 Expected			1.312

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE

Report Date: December 08, 2017

QUALITY CONTROL REPORT VAN17002294.3

		WGHT	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001
STD CDN-ME-9A Expected																					
STD CDN-ME-14A Expected																					
BLK	Blank		<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001
BLK	Blank		<0.1	0.4	0.2	<1	<0.1	0.3	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
ROCK-VAN	Prep Blank		0.8	4.0	7.5	44	<0.1	1.1	3.7	607	1.68	2.4	<0.5	1.7	28	<0.1	<0.1	<0.1	18	0.73	0.041
ROCK-VAN	Prep Blank		0.8	5.9	8.8	47	<0.1	1.0	3.8	623	1.66	1.7	<0.5	1.7	28	<0.1	0.1	<0.1	18	0.75	0.040

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

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

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE
Report Date: December 08, 2017

QUALITY CONTROL REPORT VAN17002294.3

		AQ201 La ppm 1	AQ201 Cr ppm 1	AQ201 Mg % 0.01	AQ201 Ba ppm 1	AQ201 Ti % 0.001	AQ201 B ppm 1	AQ201 Al % 0.01	AQ201 Na % 0.001	AQ201 K % 0.01	AQ201 W ppm 0.1	AQ201 Hg ppm 0.01	AQ201 Sc ppm 0.1	AQ201 Tl ppm 0.1	AQ201 S % 0.05	AQ201 Ga ppm 1	AQ201 Se ppm 0.5	AQ201 Te ppm 0.2	AQ370 Pb % 0.01	AQ370 Zn % 0.01	AQ370 As % 0.01
STD CDN-ME-9A Expected																			0.003	0.0096	0.00125
STD CDN-ME-14A Expected																			0.488	2.97	0.0105
BLK	Blank	<1	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2			
BLK	Blank	<1	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2			
BLK	Blank																				
BLK	Blank																				
BLK	Blank																		<0.01	<0.01	<0.01
BLK	Blank																		<0.01	<0.01	<0.01
Prep Wash																					
ROCK-VAN	Prep Blank	5	3	0.52	40	0.068	2	1.04	0.069	0.08	0.1	<0.01	2.8	<0.1	0.10	4	<0.5	<0.2			
ROCK-VAN	Prep Blank	6	3	0.52	37	0.069	2	1.04	0.063	0.08	<0.1	<0.01	2.5	<0.1	0.10	4	<0.5	<0.2			

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE

Report Date: December 08, 2017

QUALITY CONTROL REPORT VAN17002294.3

		FA430 Au ppm 0.005
STD CDN-ME-9A Expected		
STD CDN-ME-14A Expected		
BLK	Blank	
BLK	Blank	
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	
BLK	Blank	
Prep Wash		
ROCK-VAN	Prep Blank	
ROCK-VAN	Prep Blank	

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

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

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Submitted By: Confirmation & Data Distribution List
Receiving Lab: Canada-Vancouver
Received: October 30, 2017
Report Date: December 13, 2017
Page: 1 of 3

CERTIFICATE OF ANALYSIS VAN17002568.1

CLIENT JOB INFORMATION

Project: VINE
Shipment ID:
P.O. Number
Number of Samples: 49

SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days
DISP-RJT Dispose of Reject After 60 days

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

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	49	Crush, split and pulverize 250 g rock to 200 mesh			VAN
AQ201	49	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN
Ship	1	Shipping charges for collect packages			VAN

ADDITIONAL COMMENTS

Invoice To: PJX Resources Inc.
5600 - 100 King Street West
Toronto Ontario M5X 1C9
Canada

CC: Dave L.Pighin
Michael Seabrook

BRITISH COLUMBIA CERTIFIED ASSAYER
MARCUS LAU
Production Manager

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

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE
Report Date: December 13, 2017

CERTIFICATE OF ANALYSIS VAN17002568.1

	Method	WGHT	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
	MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001
2107201	Drill Core	0.75	0.9	39.5	11.2	97	<0.1	18.3	13.7	485	3.68	<0.5	<0.5	11.4	10	<0.1	<0.1	0.8	25	0.27	0.052
2107202	Drill Core	0.53	0.9	24.2	12.0	323	<0.1	13.9	9.2	619	3.81	1.7	2.1	10.8	15	1.6	<0.1	0.9	24	0.29	0.055
2107203	Drill Core	2.82	0.9	30.6	15.1	74	<0.1	18.5	9.7	394	2.94	<0.5	<0.5	12.1	16	<0.1	<0.1	0.6	18	0.28	0.050
2107204	Drill Core	1.53	0.7	28.3	18.8	105	<0.1	17.7	9.7	513	3.26	1.5	1.2	12.2	18	<0.1	<0.1	0.6	23	0.30	0.052
2107205	Drill Core	1.94	0.5	28.0	24.0	96	<0.1	19.0	9.8	441	3.01	<0.5	1.5	12.7	21	0.1	<0.1	0.6	20	0.30	0.043
2107206	Drill Core	0.51	0.6	23.0	16.2	443	<0.1	15.8	8.3	589	3.30	<0.5	0.5	11.8	32	2.5	<0.1	0.5	24	0.61	0.048
2107207	Drill Core	2.80	1.9	26.7	20.3	79	<0.1	17.5	9.7	456	3.13	5.5	0.6	12.8	29	<0.1	0.1	0.7	20	0.61	0.046
2107208	Drill Core	2.27	1.3	27.1	6.9	66	<0.1	18.7	10.7	374	2.85	14.4	0.6	12.3	13	<0.1	0.1	0.5	16	0.27	0.038
2107209	Drill Core	2.35	1.6	34.7	22.6	72	<0.1	23.6	12.6	409	3.33	6.4	0.8	12.1	15	<0.1	0.2	0.7	22	0.36	0.051
2107210	Drill Core	2.26	1.2	20.8	8.2	33	<0.1	17.6	9.9	326	2.39	8.4	<0.5	10.4	15	<0.1	0.4	0.4	21	0.51	0.036
2107211	Drill Core	2.19	0.7	26.5	15.3	55	<0.1	20.6	11.4	365	2.77	4.5	<0.5	11.5	12	<0.1	0.1	0.5	17	0.28	0.041
2107212	Drill Core	2.10	1.9	29.4	21.0	109	<0.1	22.4	13.1	392	3.06	6.8	<0.5	14.4	10	0.3	0.4	0.6	18	0.26	0.045
2107213	Drill Core	2.64	3.4	31.6	25.7	68	0.1	22.6	12.3	329	2.98	6.9	<0.5	12.7	9	<0.1	0.5	0.7	18	0.23	0.045
2107214	Drill Core	2.37	1.8	30.3	18.4	100	<0.1	23.9	12.3	324	2.86	2.6	<0.5	11.8	11	0.2	0.1	0.5	14	0.27	0.042
2107215	Drill Core	1.72	3.9	27.2	25.5	180	<0.1	21.0	11.1	352	2.95	9.8	<0.5	11.4	13	0.6	0.1	0.7	15	0.28	0.043
2107216	Drill Core	0.46	0.6	21.3	13.8	469	<0.1	16.0	8.9	288	2.29	2.5	<0.5	9.6	13	2.2	<0.1	0.3	16	0.27	0.043
2107217	Drill Core	2.08	0.9	24.5	7.8	76	<0.1	21.5	11.5	385	2.84	5.9	<0.5	11.1	13	<0.1	0.1	0.5	16	0.27	0.038
2107218	Drill Core	0.64	0.6	32.7	7.0	344	<0.1	25.0	13.0	378	3.00	2.5	<0.5	11.5	19	1.4	0.1	0.7	17	0.32	0.056
2107219	Drill Core	2.14	0.8	21.6	6.1	110	<0.1	20.1	9.0	406	2.51	3.1	<0.5	10.8	19	0.2	<0.1	0.3	16	0.33	0.042
2107220	Drill Core	2.21	5.8	28.3	32.6	95	<0.1	21.5	10.3	239	2.54	12.9	<0.5	12.0	21	0.2	0.1	0.7	18	0.57	0.053
2107221	Drill Core	0.48	5.9	47.8	423.9	437	1.3	20.2	13.0	197	2.55	10.4	42.6	9.8	33	2.0	0.1	7.9	10	1.28	0.050
2107222	Drill Core	2.00	1.8	34.2	15.1	69	<0.1	23.1	11.5	233	2.71	9.6	<0.5	13.0	20	<0.1	0.2	0.5	18	0.53	0.050
2107223	Drill Core	0.58	0.9	33.7	51.1	835	0.1	21.0	11.3	249	2.53	5.8	1.0	11.9	30	4.4	0.1	1.0	17	1.23	0.047
2107224	Drill Core	2.08	6.5	32.1	19.5	80	<0.1	23.5	11.6	282	2.87	12.6	<0.5	12.3	18	<0.1	0.1	0.5	19	0.39	0.051
2107225	Drill Core	2.85	5.7	29.9	40.0	129	<0.1	18.8	10.6	226	2.27	11.9	<0.5	11.1	20	0.3	0.1	0.6	18	0.62	0.043
2107226	Drill Core	2.10	1.5	33.7	18.6	75	<0.1	24.0	11.8	347	3.01	4.8	<0.5	11.2	33	<0.1	0.1	0.5	24	0.68	0.048
2107227	Drill Core	2.58	3.9	34.5	48.9	90	<0.1	22.4	12.1	279	2.77	19.6	<0.5	11.5	21	0.2	0.2	0.7	18	0.68	0.049
2107228	Drill Core	1.63	2.6	23.2	42.1	71	<0.1	15.5	7.2	301	2.15	4.1	<0.5	11.6	19	<0.1	0.1	0.3	18	0.45	0.046
2107230	Drill Core	2.19	0.8	29.4	23.4	78	<0.1	17.5	9.1	332	2.49	9.6	<0.5	9.3	16	<0.1	0.1	0.3	20	0.36	0.042
2107231	Drill Core	2.53	1.0	39.5	25.0	105	<0.1	20.7	11.1	377	3.06	4.4	<0.5	11.3	17	0.2	<0.1	0.5	21	0.31	0.050

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE
Report Date: December 13, 2017

CERTIFICATE OF ANALYSIS VAN17002568.1

Method		AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
Analyte		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
MDL		1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
2107201	Drill Core	34	24	0.81	113	0.134	<1	1.53	0.049	1.16	0.1	<0.01	3.0	0.3	1.04	5	0.5	<0.2
2107202	Drill Core	29	27	1.13	180	0.144	<1	1.89	0.038	1.52	0.1	<0.01	2.4	0.5	0.62	5	<0.5	<0.2
2107203	Drill Core	33	18	0.79	114	0.123	1	1.49	0.041	1.00	0.2	<0.01	2.1	0.4	0.83	4	<0.5	<0.2
2107204	Drill Core	35	22	0.98	152	0.150	<1	1.70	0.041	1.32	0.1	<0.01	2.1	0.5	0.76	5	<0.5	<0.2
2107205	Drill Core	34	20	0.88	122	0.133	<1	1.61	0.032	1.14	0.2	<0.01	2.3	0.5	0.80	5	<0.5	<0.2
2107206	Drill Core	33	25	1.08	97	0.145	<1	1.66	0.047	0.86	0.2	<0.01	2.8	0.4	0.65	5	0.6	<0.2
2107207	Drill Core	37	19	0.89	94	0.141	1	1.58	0.042	0.76	0.2	<0.01	3.0	0.4	0.83	5	<0.5	<0.2
2107208	Drill Core	32	16	0.67	78	0.128	1	1.42	0.040	0.51	0.2	<0.01	2.4	0.2	0.79	4	0.6	<0.2
2107209	Drill Core	35	20	0.79	93	0.153	1	1.55	0.046	0.63	0.3	<0.01	4.0	0.2	1.02	5	0.5	<0.2
2107210	Drill Core	25	19	0.60	91	0.111	2	1.27	0.063	0.59	0.1	<0.01	4.6	0.4	0.61	5	<0.5	<0.2
2107211	Drill Core	27	17	0.63	86	0.134	<1	1.33	0.048	0.50	0.2	<0.01	2.6	0.2	0.75	4	<0.5	<0.2
2107212	Drill Core	34	16	0.83	80	0.100	<1	1.48	0.043	0.43	0.2	<0.01	2.7	0.2	0.83	5	<0.5	<0.2
2107213	Drill Core	35	16	0.71	71	0.091	<1	1.34	0.052	0.39	0.2	<0.01	2.7	0.1	0.99	5	0.6	<0.2
2107214	Drill Core	29	17	0.62	95	0.126	<1	1.33	0.044	0.51	0.2	<0.01	2.3	0.2	1.01	4	<0.5	<0.2
2107215	Drill Core	29	16	0.71	89	0.120	<1	1.42	0.041	0.50	0.2	<0.01	2.1	0.2	0.92	4	<0.5	<0.2
2107216	Drill Core	26	20	0.56	69	0.115	<1	1.12	0.056	0.34	0.2	<0.01	2.5	0.1	0.68	4	0.5	<0.2
2107217	Drill Core	27	20	0.72	78	0.125	2	1.36	0.046	0.37	0.2	<0.01	2.5	0.1	0.80	5	0.5	<0.2
2107218	Drill Core	35	22	0.73	93	0.132	<1	1.46	0.045	0.63	0.3	<0.01	2.6	0.2	1.00	5	0.5	<0.2
2107219	Drill Core	31	21	0.77	111	0.138	<1	1.39	0.047	0.67	0.2	<0.01	2.8	0.2	0.53	5	<0.5	<0.2
2107220	Drill Core	23	19	0.61	103	0.136	2	1.17	0.046	0.79	0.2	<0.01	3.0	0.3	0.92	4	0.6	<0.2
2107221	Drill Core	16	12	0.21	75	0.070	1	0.62	0.034	0.37	0.2	<0.01	3.0	0.1	1.52	2	0.8	0.7
2107222	Drill Core	25	19	0.58	99	0.132	1	1.13	0.040	0.75	0.2	<0.01	3.1	0.3	1.07	5	0.7	<0.2
2107223	Drill Core	18	18	0.43	87	0.123	<1	0.86	0.046	0.55	0.2	<0.01	3.2	0.2	1.14	3	0.7	<0.2
2107224	Drill Core	27	20	0.72	102	0.136	<1	1.27	0.037	0.86	0.2	<0.01	3.2	0.3	1.04	5	<0.5	<0.2
2107225	Drill Core	23	19	0.51	93	0.127	<1	0.95	0.046	0.57	0.2	<0.01	3.0	0.2	0.89	4	0.5	<0.2
2107226	Drill Core	27	21	0.83	84	0.139	1	1.40	0.037	0.83	0.2	<0.01	3.7	0.3	1.10	6	0.7	<0.2
2107227	Drill Core	24	18	0.61	91	0.124	1	1.13	0.039	0.77	0.2	<0.01	3.0	0.2	1.06	4	<0.5	<0.2
2107228	Drill Core	20	20	0.69	95	0.117	1	1.13	0.041	0.64	0.2	<0.01	3.0	0.2	0.47	5	0.6	<0.2
2107230	Drill Core	20	21	0.78	96	0.115	<1	1.22	0.046	0.79	0.1	<0.01	2.9	0.2	0.63	5	<0.5	<0.2
2107231	Drill Core	24	22	0.86	106	0.134	1	1.43	0.051	1.00	0.2	<0.01	3.1	0.3	0.89	5	0.6	<0.2

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE
Report Date: December 13, 2017

CERTIFICATE OF ANALYSIS VAN17002568.1

Method		WGHT	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
Analyte		Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001
2107232	Drill Core	2.19	1.4	40.4	24.8	77	<0.1	24.7	11.9	406	2.89	7.4	<0.5	11.6	21	<0.1	0.2	0.5	20	0.39	0.053
2107233	Drill Core	2.40	1.7	59.1	36.9	96	<0.1	78.6	16.9	471	3.47	3.7	<0.5	11.9	21	0.1	0.1	0.9	36	0.64	0.146
2107234	Drill Core	2.24	1.1	45.3	17.8	94	<0.1	57.4	13.9	499	2.88	1.5	<0.5	10.8	26	<0.1	0.1	0.5	25	0.83	0.131
2107235	Drill Core	2.43	1.2	36.1	14.8	152	<0.1	32.6	9.5	551	2.77	4.8	1.4	8.8	22	0.3	0.1	0.3	24	0.61	0.083
2107236	Drill Core	2.02	2.8	32.0	23.4	175	<0.1	28.3	12.0	453	3.09	11.3	1.1	10.5	13	0.6	0.1	0.5	16	0.30	0.052
2107237	Drill Core	2.69	1.3	28.2	8.6	78	<0.1	22.2	11.7	428	2.87	13.8	1.5	10.2	12	<0.1	0.1	0.5	14	0.27	0.044
2107238	Drill Core	2.65	1.4	34.6	21.1	77	<0.1	26.0	13.7	393	3.14	15.6	<0.5	10.9	10	0.1	0.6	0.9	14	0.29	0.044
2107239	Drill Core	3.04	1.6	30.9	15.8	218	<0.1	22.7	12.1	408	2.85	7.2	<0.5	10.0	14	1.3	0.2	0.8	13	0.46	0.044
2107240	Drill Core	3.01	1.2	30.0	29.5	114	<0.1	20.0	11.1	446	2.63	10.8	1.1	9.9	15	0.2	0.4	0.6	17	0.58	0.038
2107241	Drill Core	3.74	1.5	28.1	75.8	410	0.1	19.9	13.0	466	2.63	21.9	2.4	10.6	16	1.1	0.4	0.6	15	0.59	0.041
2107242	Drill Core	2.44	1.6	35.7	38.4	124	<0.1	22.9	11.4	450	2.92	16.5	1.4	11.8	12	0.4	0.6	0.6	17	0.42	0.046
2107243	Drill Core	2.51	1.0	26.7	8.7	41	<0.1	16.0	8.6	526	2.61	7.4	<0.5	9.3	12	<0.1	0.5	0.4	17	0.75	0.039
2107244	Drill Core	3.49	1.7	18.8	2.0	60	<0.1	8.7	19.8	1158	5.66	19.0	29.9	7.0	9	<0.1	0.2	0.1	87	0.51	0.137
2107245	Drill Core	2.41	1.8	39.7	32.2	66	<0.1	23.0	13.9	407	3.54	0.8	0.8	9.4	7	<0.1	0.3	0.4	31	0.22	0.051
2107246	Drill Core	2.36	2.4	50.2	40.7	69	<0.1	19.5	10.7	337	3.08	2.2	<0.5	9.1	8	<0.1	0.3	0.3	30	0.28	0.042
2107247	Drill Core	2.38	1.7	73.9	158.9	82	0.4	21.6	12.0	331	2.67	5.3	1.8	10.3	6	<0.1	0.3	1.6	23	0.26	0.044
2107248	Drill Core	1.85	1.8	61.0	6.9	44	<0.1	19.8	12.7	311	2.57	6.9	1.2	10.2	5	<0.1	0.5	0.1	27	0.25	0.050
2107249	Drill Core	2.82	1.4	182.6	1248.0	1594	2.2	24.2	15.6	341	2.80	22.7	5.1	10.4	4	9.7	0.9	7.9	21	0.25	0.041
2107251	Drill Core	3.24	1.3	56.6	15.2	59	<0.1	20.5	11.3	314	2.60	30.4	0.7	10.1	7	0.1	1.5	0.2	23	0.28	0.042

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE
Report Date: December 13, 2017

CERTIFICATE OF ANALYSIS VAN17002568.1

Method		AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
Analyte		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
MDL		1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
2107232	Drill Core	25	22	0.90	116	0.140	1	1.48	0.044	1.03	0.2	<0.01	3.2	0.4	0.84	6	0.6	<0.2
2107233	Drill Core	21	92	0.98	97	0.131	1	1.50	0.060	1.01	0.2	<0.01	4.7	0.3	1.12	6	0.8	<0.2
2107234	Drill Core	22	70	0.90	134	0.121	<1	1.43	0.044	1.07	0.2	<0.01	3.3	0.4	0.77	5	0.5	<0.2
2107235	Drill Core	21	48	1.00	107	0.127	1	1.51	0.050	0.85	0.2	<0.01	3.6	0.3	0.54	5	<0.5	<0.2
2107236	Drill Core	28	21	0.81	85	0.102	1	1.42	0.039	0.34	0.2	<0.01	2.8	<0.1	0.87	5	<0.5	<0.2
2107237	Drill Core	26	18	0.72	79	0.100	2	1.34	0.035	0.33	0.2	<0.01	2.9	<0.1	0.74	5	<0.5	<0.2
2107238	Drill Core	25	16	0.70	78	0.102	1	1.32	0.033	0.33	0.2	<0.01	3.2	<0.1	0.95	5	<0.5	<0.2
2107239	Drill Core	27	16	0.64	78	0.106	<1	1.25	0.035	0.32	0.2	<0.01	3.3	0.1	0.95	5	<0.5	<0.2
2107240	Drill Core	21	19	0.77	70	0.045	<1	1.37	0.039	0.28	<0.1	<0.01	3.2	<0.1	0.48	5	<0.5	<0.2
2107241	Drill Core	26	16	0.74	79	0.078	1	1.32	0.034	0.29	0.1	<0.01	3.5	<0.1	0.62	5	<0.5	<0.2
2107242	Drill Core	29	17	0.86	89	0.102	<1	1.57	0.034	0.35	0.2	<0.01	4.8	<0.1	0.61	6	<0.5	<0.2
2107243	Drill Core	22	17	0.79	67	0.091	<1	1.45	0.036	0.32	0.2	<0.01	3.7	<0.1	0.22	6	<0.5	<0.2
2107244	Drill Core	18	15	1.24	67	0.243	<1	2.18	0.062	0.89	0.2	<0.01	12.0	0.3	0.79	12	0.7	<0.2
2107245	Drill Core	21	23	0.85	84	0.156	<1	1.30	0.060	0.95	0.2	<0.01	5.4	0.3	1.05	6	<0.5	<0.2
2107246	Drill Core	22	22	0.88	71	0.137	<1	1.31	0.067	0.80	0.2	<0.01	5.6	0.2	0.87	6	<0.5	<0.2
2107247	Drill Core	20	19	0.83	99	0.140	<1	1.32	0.048	0.87	0.2	<0.01	4.7	0.3	0.68	6	<0.5	<0.2
2107248	Drill Core	18	24	0.83	71	0.110	<1	1.22	0.053	0.53	0.2	<0.01	4.9	0.1	0.57	6	<0.5	<0.2
2107249	Drill Core	18	19	0.92	90	0.092	2	1.43	0.035	0.57	0.2	0.02	3.9	0.2	0.61	6	1.0	0.2
2107251	Drill Core	17	18	1.05	91	0.054	<1	1.48	0.049	0.47	<0.1	<0.01	4.3	<0.1	0.41	6	<0.5	<0.2

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE

Report Date: December 13, 2017

QUALITY CONTROL REPORT VAN17002568.1

	Method	WGHT	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
	MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001
Pulp Duplicates																					
2107206	Drill Core	0.51	0.6	23.0	16.2	443	<0.1	15.8	8.3	589	3.30	<0.5	0.5	11.8	32	2.5	<0.1	0.5	24	0.61	0.048
REP 2107206	QC		0.6	22.6	16.3	434	<0.1	15.9	8.4	594	3.29	<0.5	<0.5	11.8	32	2.5	<0.1	0.5	23	0.60	0.049
2107237	Drill Core	2.69	1.3	28.2	8.6	78	<0.1	22.2	11.7	428	2.87	13.8	1.5	10.2	12	<0.1	0.1	0.5	14	0.27	0.044
REP 2107237	QC		1.4	27.7	8.7	88	<0.1	23.7	11.6	426	2.88	14.4	<0.5	10.4	13	<0.1	0.2	0.5	14	0.27	0.043
Core Reject Duplicates																					
2107212	Drill Core	2.10	1.9	29.4	21.0	109	<0.1	22.4	13.1	392	3.06	6.8	<0.5	14.4	10	0.3	0.4	0.6	18	0.26	0.045
DUP 2107212	QC		1.8	27.5	20.8	113	<0.1	22.0	13.3	382	3.07	6.7	<0.5	14.5	11	0.3	0.4	0.6	18	0.27	0.043
2107247	Drill Core	2.38	1.7	73.9	158.9	82	0.4	21.6	12.0	331	2.67	5.3	1.8	10.3	6	<0.1	0.3	1.6	23	0.26	0.044
DUP 2107247	QC		1.7	81.2	149.3	74	0.4	22.3	12.1	313	2.66	6.5	<0.5	9.1	6	<0.1	0.3	1.5	23	0.26	0.046
Reference Materials																					
STD DS11	Standard		13.1	151.4	128.6	345	1.6	80.0	14.3	950	3.08	41.4	73.1	7.1	68	2.3	6.9	11.3	49	1.05	0.063
STD DS11	Standard		14.2	151.8	133.3	332	1.6	76.7	14.0	1037	3.07	43.5	69.4	7.8	67	2.4	7.6	11.8	50	1.04	0.072
STD OXC129	Standard		1.3	24.9	5.8	41	<0.1	75.8	20.9	418	3.02	0.6	176.8	1.5	175	<0.1	<0.1	<0.1	50	0.67	0.100
STD OXC129	Standard		1.3	27.4	5.9	42	<0.1	76.2	20.9	416	3.03	<0.5	186.5	1.8	191	<0.1	<0.1	<0.1	53	0.70	0.109
STD OXC129 Expected			1.3	28	6.2	42.9		79.5	20.3	421	3.065	0.6	195	1.9					51	0.684	0.102
STD DS11 Expected			14.6	149	138	345	1.71	77.7	14.2	1055	3.1	42.8	79	7.65	67.3	2.37	8.74	12.2	50	1.063	0.0701
BLK	Blank		<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001
BLK	Blank		<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001
Prep Wash																					
ROCK-VAN	Prep Blank		0.9	5.2	1.3	38	<0.1	1.0	3.7	557	1.73	1.6	<0.5	1.9	25	<0.1	<0.1	<0.1	22	0.66	0.041
ROCK-VAN	Prep Blank		0.6	1.6	1.3	35	<0.1	0.7	3.5	553	1.81	0.9	0.6	2.2	25	<0.1	<0.1	<0.1	21	0.60	0.042

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **PJX Resources Inc.**
5600 - 100 King Street West
Toronto Ontario M5X 1C9 Canada

Project: VINE

Report Date: December 13, 2017

QUALITY CONTROL REPORT VAN17002568.1

	Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Pulp Duplicates																		
2107206	Drill Core	33	25	1.08	97	0.145	<1	1.66	0.047	0.86	0.2	<0.01	2.8	0.4	0.65	5	0.6	<0.2
REP 2107206	QC	33	24	1.07	95	0.139	<1	1.63	0.048	0.86	0.1	<0.01	2.7	0.4	0.64	5	0.6	<0.2
2107237	Drill Core	26	18	0.72	79	0.100	2	1.34	0.035	0.33	0.2	<0.01	2.9	<0.1	0.74	5	<0.5	<0.2
REP 2107237	QC	25	17	0.72	83	0.106	<1	1.37	0.036	0.33	0.2	<0.01	3.1	<0.1	0.74	5	<0.5	<0.2
Core Reject Duplicates																		
2107212	Drill Core	34	16	0.83	80	0.100	<1	1.48	0.043	0.43	0.2	<0.01	2.7	0.2	0.83	5	<0.5	<0.2
DUP 2107212	QC	34	16	0.81	88	0.109	1	1.55	0.044	0.45	0.2	<0.01	2.9	0.2	0.84	5	0.7	<0.2
2107247	Drill Core	20	19	0.83	99	0.140	<1	1.32	0.048	0.87	0.2	<0.01	4.7	0.3	0.68	6	<0.5	<0.2
DUP 2107247	QC	18	18	0.81	96	0.121	1	1.30	0.050	0.86	0.2	<0.01	4.3	0.2	0.70	5	<0.5	<0.2
Reference Materials																		
STD DS11	Standard	18	56	0.84	349	0.092	7	1.15	0.072	0.40	2.9	0.24	2.9	4.9	0.27	5	1.9	4.5
STD DS11	Standard	19	58	0.83	371	0.094	6	1.17	0.071	0.40	2.8	0.26	3.3	4.8	0.28	5	2.3	4.8
STD OXC129	Standard	12	48	1.53	47	0.397	1	1.56	0.585	0.35	<0.1	<0.01	1.2	<0.1	<0.05	5	<0.5	<0.2
STD OXC129	Standard	12	52	1.54	51	0.397	<1	1.57	0.572	0.35	<0.1	<0.01	0.9	<0.1	<0.05	6	<0.5	<0.2
STD OXC129 Expected		12.5	52	1.545	50	0.4	1	1.58	0.59	0.3655			1.1			5.5		
STD DS11 Expected		18.6	61.5	0.85	385	0.0976		1.1795	0.0762	0.4	2.9	0.26	3.4	4.9	0.2835	5.1	2.2	4.56
BLK	Blank	<1	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
Prep Wash																		
ROCK-VAN	Prep Blank	6	2	0.51	106	0.075	2	1.00	0.094	0.11	<0.1	<0.01	2.9	<0.1	<0.05	4	<0.5	<0.2
ROCK-VAN	Prep Blank	7	3	0.50	58	0.074	2	0.97	0.090	0.08	0.1	<0.01	2.8	<0.1	<0.05	4	<0.5	<0.2

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

Appendix 8: Report on analysis of magnetic and VTEM data by Salt Spring Imaging Ltd.

Report on: Analyses and Preliminary Interpretation of Airborne Magnetics and VTEM data on the Vine Property, Southeast BC, Part I: Southeast Anomaly

Frederick A. Cook, PhD. P. Geo.

Salt Spring Imaging, Ltd.
128 Trincomali Heights
Slat Spring Island, BC V8K1M8

Executive Summary

Airborne magnetic and EM (VTEM) data were recorded by Geotech on part of the Vine property in the Purcell anticlinorium on southeastern British Columbia. Enhanced analyses of the magnetic data allow improved locality, depth and geometric information on the magnetic source(s) and comparison with the EM anomalies to test the idea that the EM and magnetic anomalies are, in some places, spatially coincident. In this first report, an anomaly in the southeast portion of the data (called anomaly 1 here) is analysed.

Introduction

The purpose of this report is to describe the reprocessing and initial interpretation of high resolution airborne magnetic data across part of the Vine property and to compare the results with airborne EM data that were recorded at the same time. The data sets were acquired in October, 2011 by Geotech (Klewchuk, 2012) and were provided to the author as Geosoft grid files and associated images. In this report, an analysis of the first (Anomaly 1; Figures 1, 2 and 3) of three anomalous areas is addressed. Anomalies 2 and 3 will be addressed in a subsequent report.

The objectives of the analysis are to determine the nature of potential sources for the magnetic anomalies and to compare the results with the EM data in an effort to test the potential of the anomalous signals. The EM data were analysed and inverted by Geotech so that there was little additional processing that could be applied that would enhance the results. Accordingly, most of this report focuses on analyses of the magnetic data.

Data

Data were provided as Geosoft grid (grd) files and were converted to xyz (ASCII) files for plotting and processing. The magnetic data had been corrected for diurnal variations, but no allowance had been made for the regional Earth field (International Geomagnetic Reference Field, or IGRF). In this area, the IGRF is relatively planar and dips southwest with a declination of about 15.4 degrees and an inclination of about 15.4 degrees. To approximate the IGRF, the regional values were calculated for the area and for a time near the center of the survey and were then subtracted from the measured Total Magnetic Intensity (TMI). The result is shown in Figure 1.

Once the IGRF has been removed the data could be reduced to the North Pole (RTP) to approximate the anomaly shape if the sources were in a vertically oriented field (i.e., near the pole). The reduce-to-pole data are shown in Figure 2. Note that there has been some shift in the contour patterns with anomaly 1 appearing somewhat more symmetric.

The reduced-to-pole results were then subsequently used in the later processing.

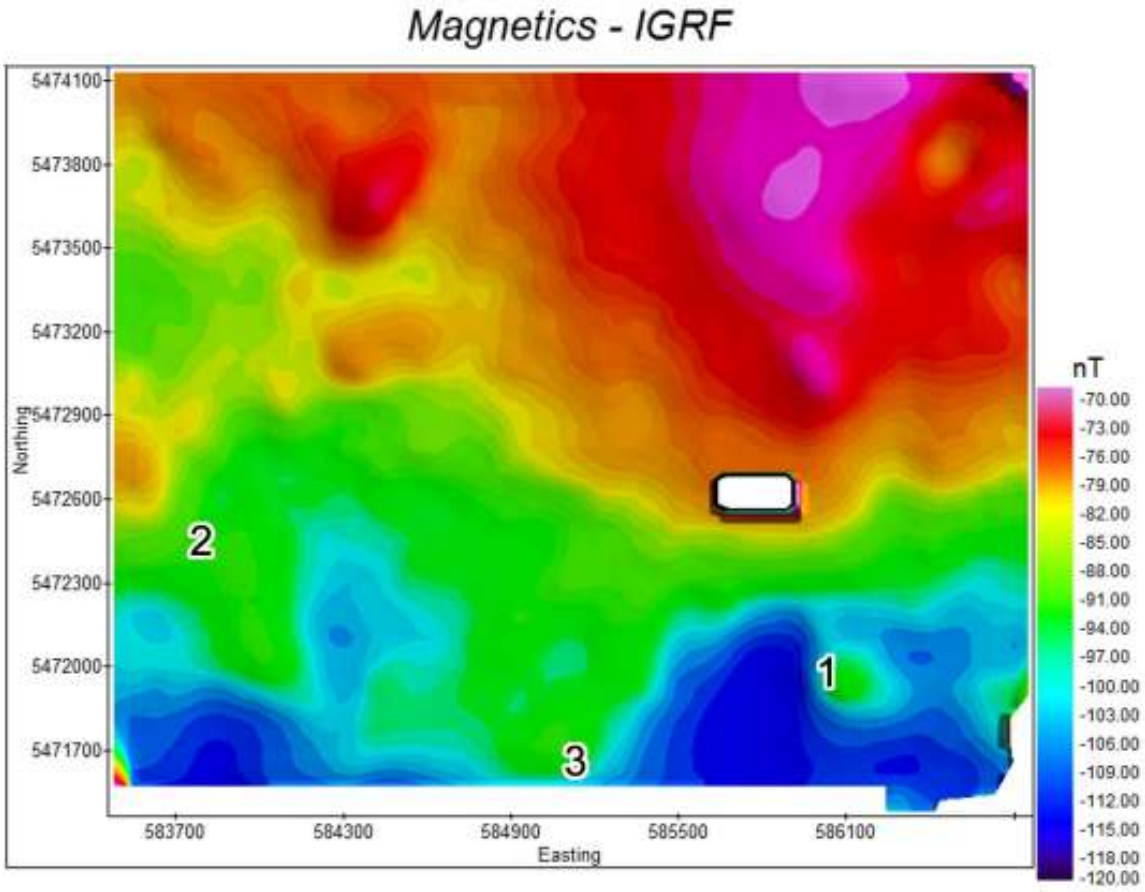


Figure 1. Magnetic anomaly data for the area near the Vine showing (rectangle near utms 585800, 5472600). Effects of the International Geomagnetic Reference Field have been removed as described in the text. The IGRF in the title indicates the processing step to remove the Earth's regional field. The numerals on the map refer to anomaly locations; this report addresses anomaly 1 in the southeast.

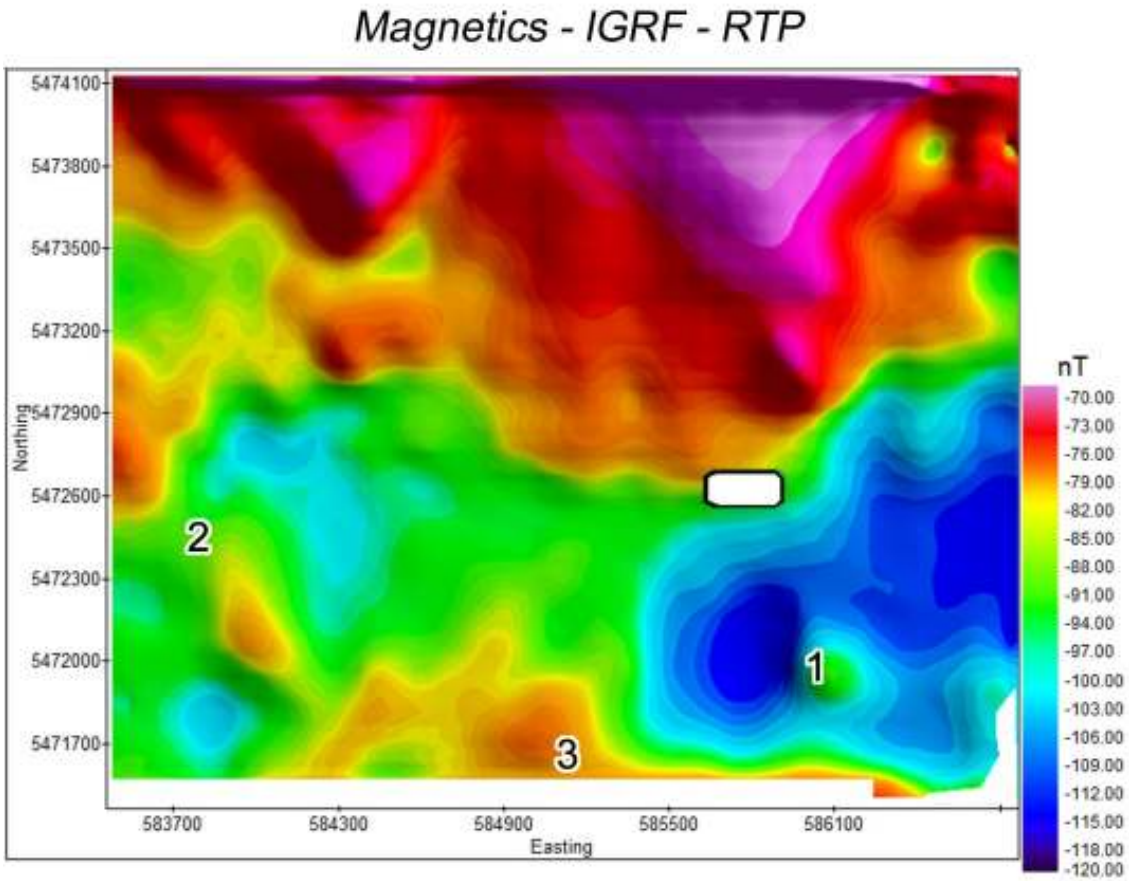


Figure 2. Same map area as in Figure 1 showing the magnetic data after reduction to the North Pole.

The electromagnetic (EM) data were provided as B-field vertical component maps and dB/dt maps. For the purpose of spatial correlation with the magnetic data, the B-field Z-component map is shown in Figure 3. The map indicates a large region of elevated conductivity in the south and southwest portions of the map area with a prominent local anomaly near locations 1.

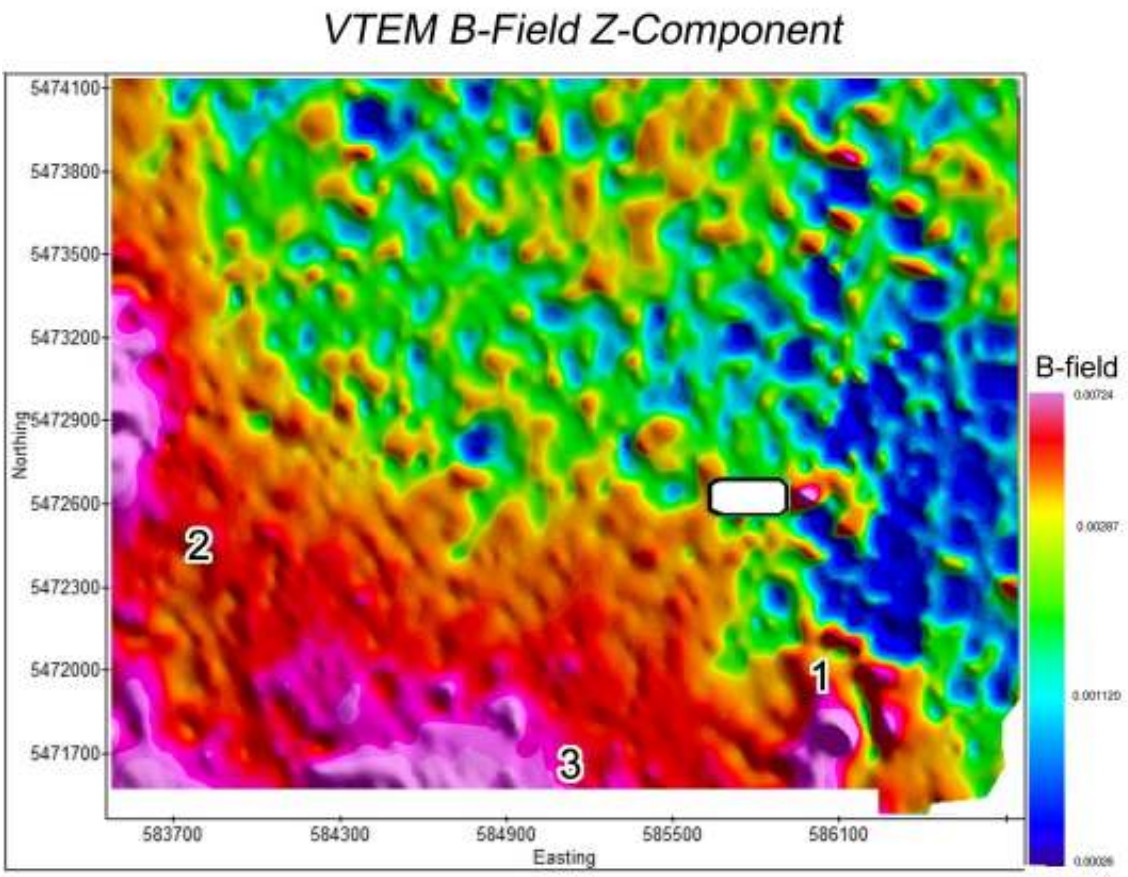


Figure 3. VTEM data (B-field, Z-component) for the same area as in Figure 1.

Methods

Regional Map

As the objectives of the project are to delineate the locations, depth and geometry of magnetic source(s) and then to compare the results with the results from the EM analyses, it is necessary to apply a variety of methods. There have been a number of approaches to determining geometry of magnetic sources, but without detailed knowledge of the magnetic characteristics of the sources (e.g., susceptibility, remanence, etc.), the approach taken here is relatively simple and is based on analyses of the tilt angle. Although the tilt angle can be effective in the delineating the source locations, an important property of the tilt angle is that it tends to equalize the amplitudes of anomalies such that anomalies with small; amplitudes appear to be similar in magnitude to larger anomalies. This, in turn, means that noise can also be amplified such that the data often need to have a smoothing filter applied before application of the tilt angle. For these data, a smoothing filter based on upward continuation is applied before calculating the tilt angle (Figure 4).

.

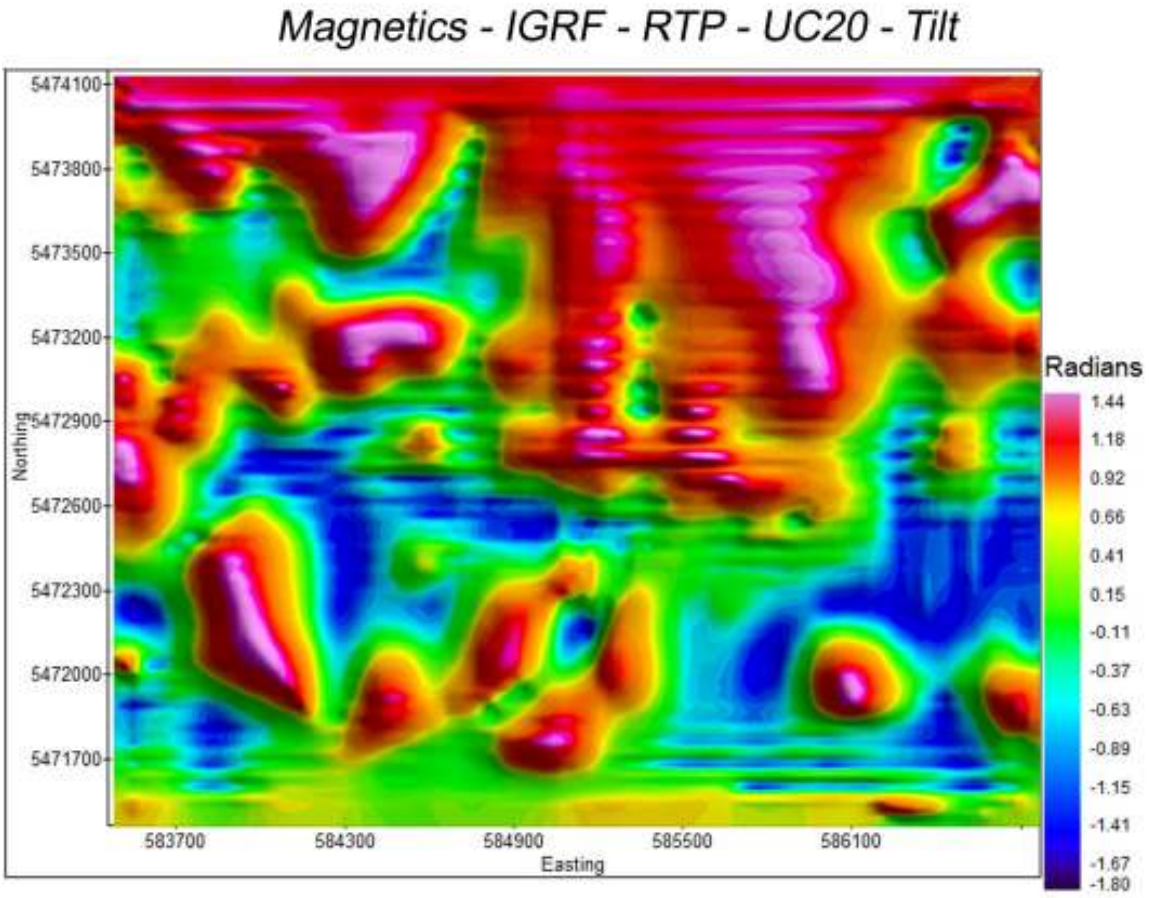


Figure 4. Magnetic data after application of an upward continuation of 20m (labelled as UC20 at the top) and then the tilt angle (Tilt). Note that the various amplitudes have been more or less equalized and that anomaly 1 is nearly circular. Note also that some linear noise is present due to the amplification of low amplitude noise.

The tilt angle map indicates a number of important features. First, the anomalies are much narrower than they are on the reduced to pole map (Figure 2). Second, as expected, the anomalies are more prominent due to the equalization of amplitudes (i.e., amplification of low amplitude signals and suppression of high amplitude signals). The objective here is to find the source locations. Anomaly 1, in particular, now stands out as a nearly circular anomaly. Remember, of course, that anomaly 1 is not a strong anomaly (approximately 5-10 nT above the local background). However, the analysis here indicates that it is relatively symmetric and may not have significant dip. These can be addressed by examining Anomaly 1 in greater detail.

Detailed Analysis of Anomaly 1

Figure 5 shows the reduced-to-pole magnetic data around anomaly 1 enlarged. The visible bumps in the image are the grid points illustrating again why it is necessary to smooth the data before applying the tilt angle. At this scale, however, additional processes can be applied to estimate depth, geometry and location.

Application of the tilt angle after the upward continuation of 20m shows that the bumpiness of the grid points is amplified and more obvious than it is on the large scale map (Figure 4). Hence to smooth the data further, a larger upward continuation of 60m has been applied and is shown in Figure 7.

There are a number of methods that have been used to estimate depth to magnetic sources. A relatively simple approach was recently described by Salem et al (2010) using the tilt angle. Assuming near-vertical contacts, the depth to a source can be estimated by measuring the distance between the +45 degree and -45 degree contours. To illustrate this for the 20 and 60m upward continuations, Figures 8 and 9 show the region between +45 and -45 degrees as red. If we measure the distance from the yellow contour on one side of the red to the yellow contour on the opposite side, the values is an estimate of twice the depth. If the data have been upward continued (as in our case here), this value must then be subtracted.

Hence, for the UC20 result (Figure 8), the width is shown by the scale to be about 200m, half of which is 100m. Subtracting the 20m upward continuation provides an estimate of 80 for the depth. For the UC60 result (Figure 9), the scaled width is about 250m, half of which is 125m. Subtracting the 60m upward continuation provides an estimate of about 65m to the top of the source. In either case, the source appears to be quite shallow.

The geometry of the source can be generally determined by the shape of the contours on the tilt angle map; widening of contours on one side of an anomaly indicates that the source dips in that direction. For Anomaly 1, the contours are relatively symmetric (almost circular), such that there is little evidence of significant dip. The widening of the contours on the tilt angle maps to the southeast and south may be more of an edge effect than widening due to dip.

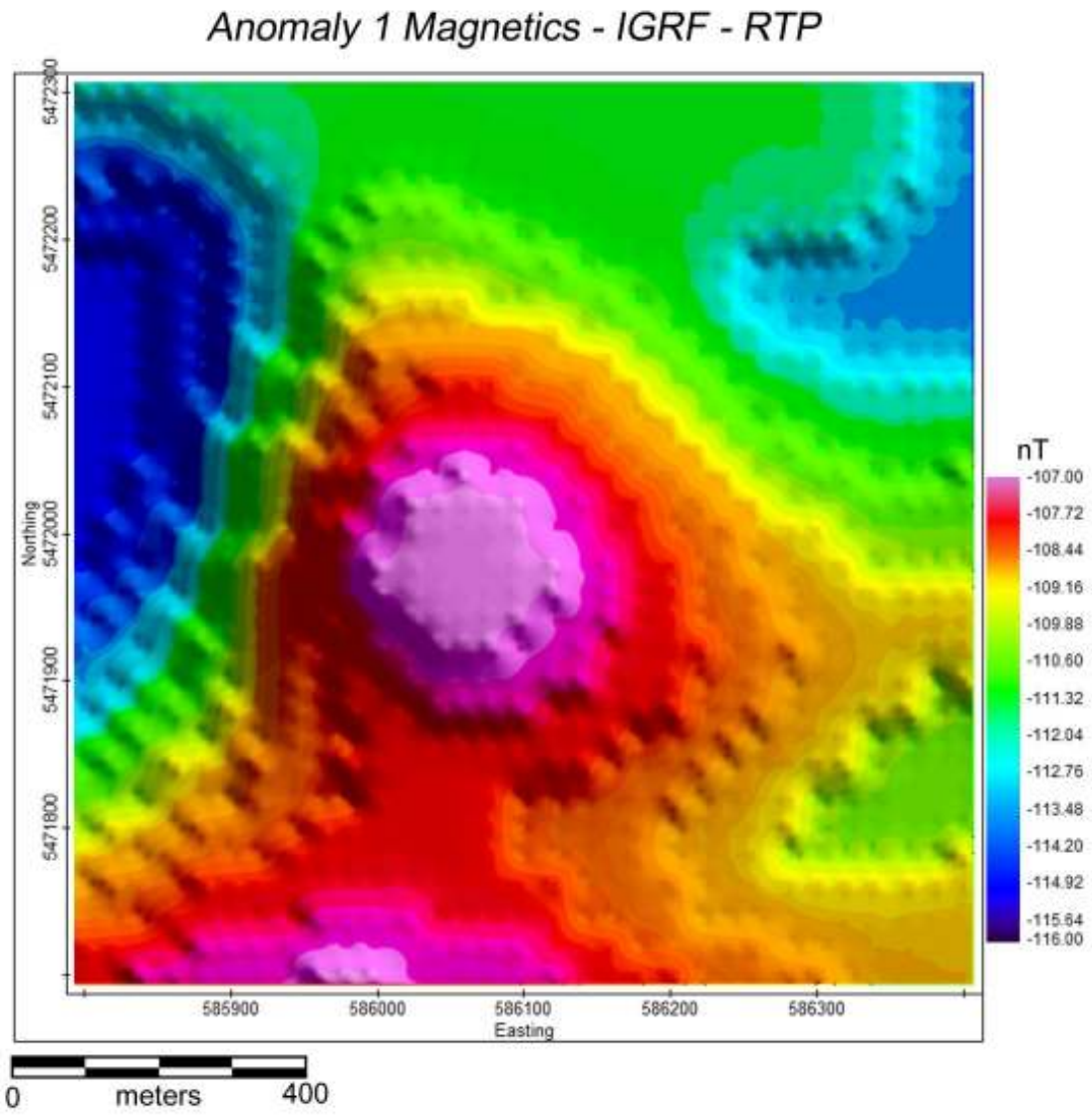


Figure 5. Detailed map of the magnetic data near Anomaly 1. The bumpiness of the coloured contours is caused by the grid points.

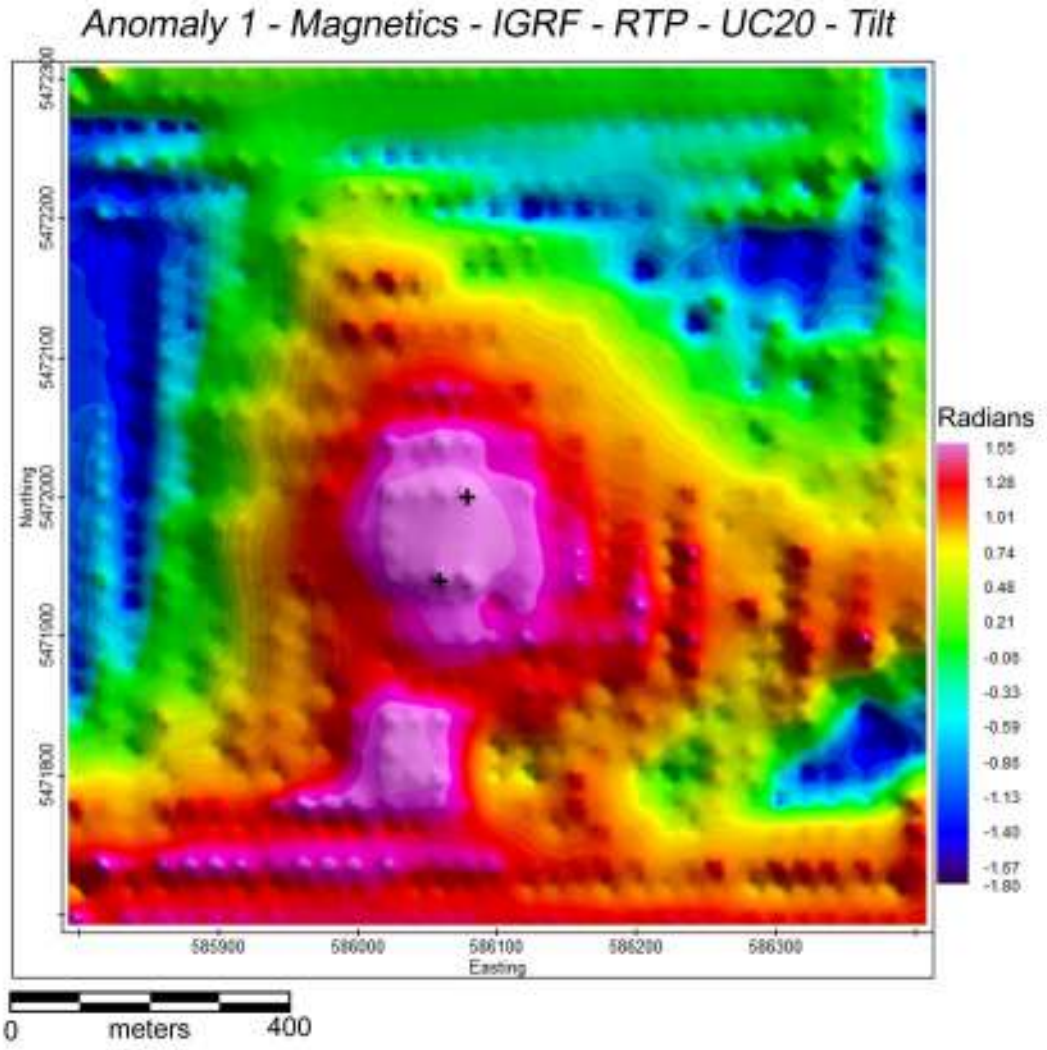


Figure 6. Detailed map of the magnetic data near Anomaly 1 after application of an upward continuation smoothing of 20 and then the tilt angle. Note that the bumpiness is amplified. The black crosses are the two highest valued points. Note that the widening of the contours near the bottom f the map may be an edge effect.

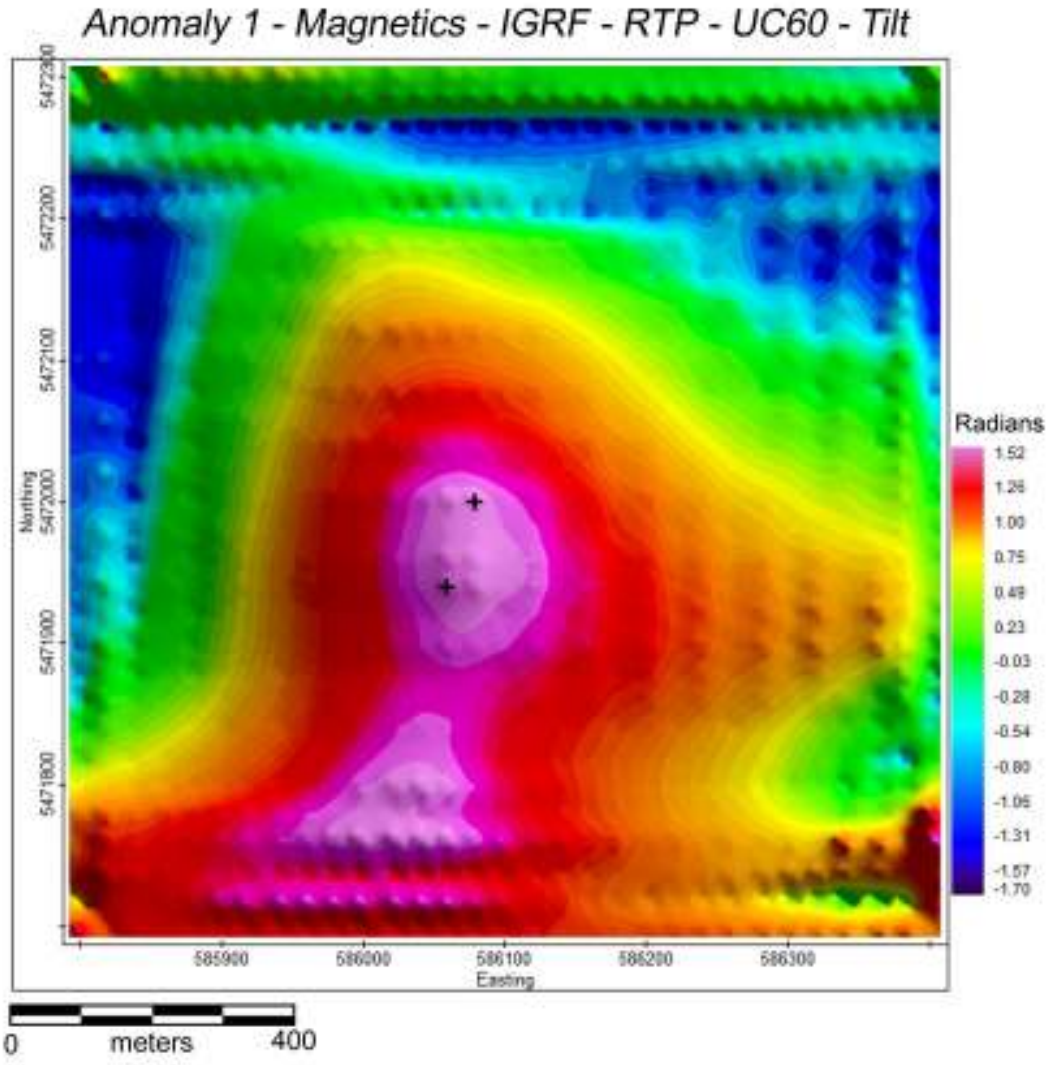


Figure 7. Application of the tilt angle after upward continuation of 60m to smooth the data even more than the 20m upward continuation. Note the smoother contours than in Figure 6.

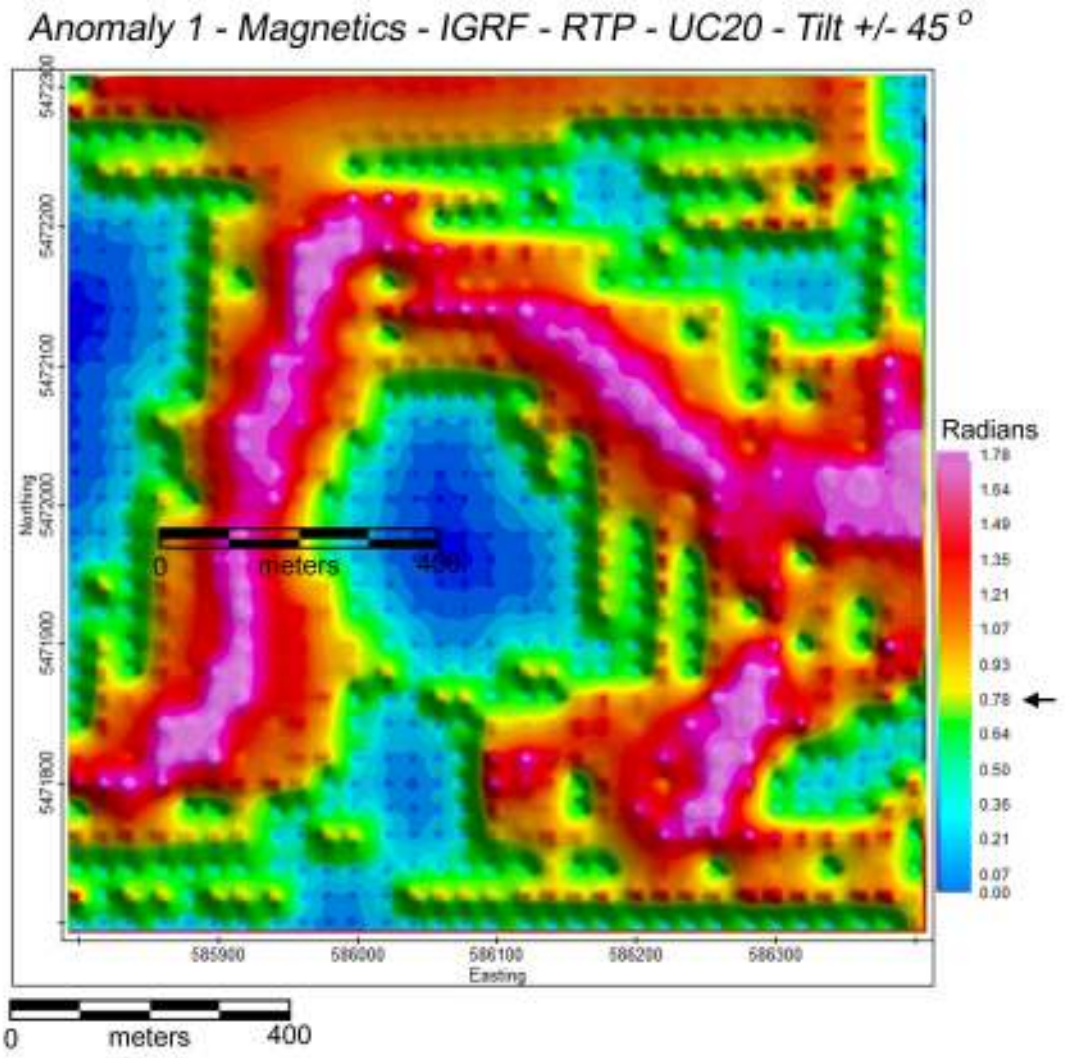


Figure 8. Contours of the tilt angle between +/- 45 degrees. The purpose of this is to estimate depth to the source; the depth is approximately ½ the width of the contours from +45 degrees to – 45 degrees. Here the scale shows that that width (between the yellow-green contact on one side of the red band and the yellow green on the other) is about 200m. So, ½ of this measurement (100m) minus the upward continuation smoothing (20m) provides an estimate of about 80m to the top of the source. The arrow indicates 0.785 radians, or 45 degrees.

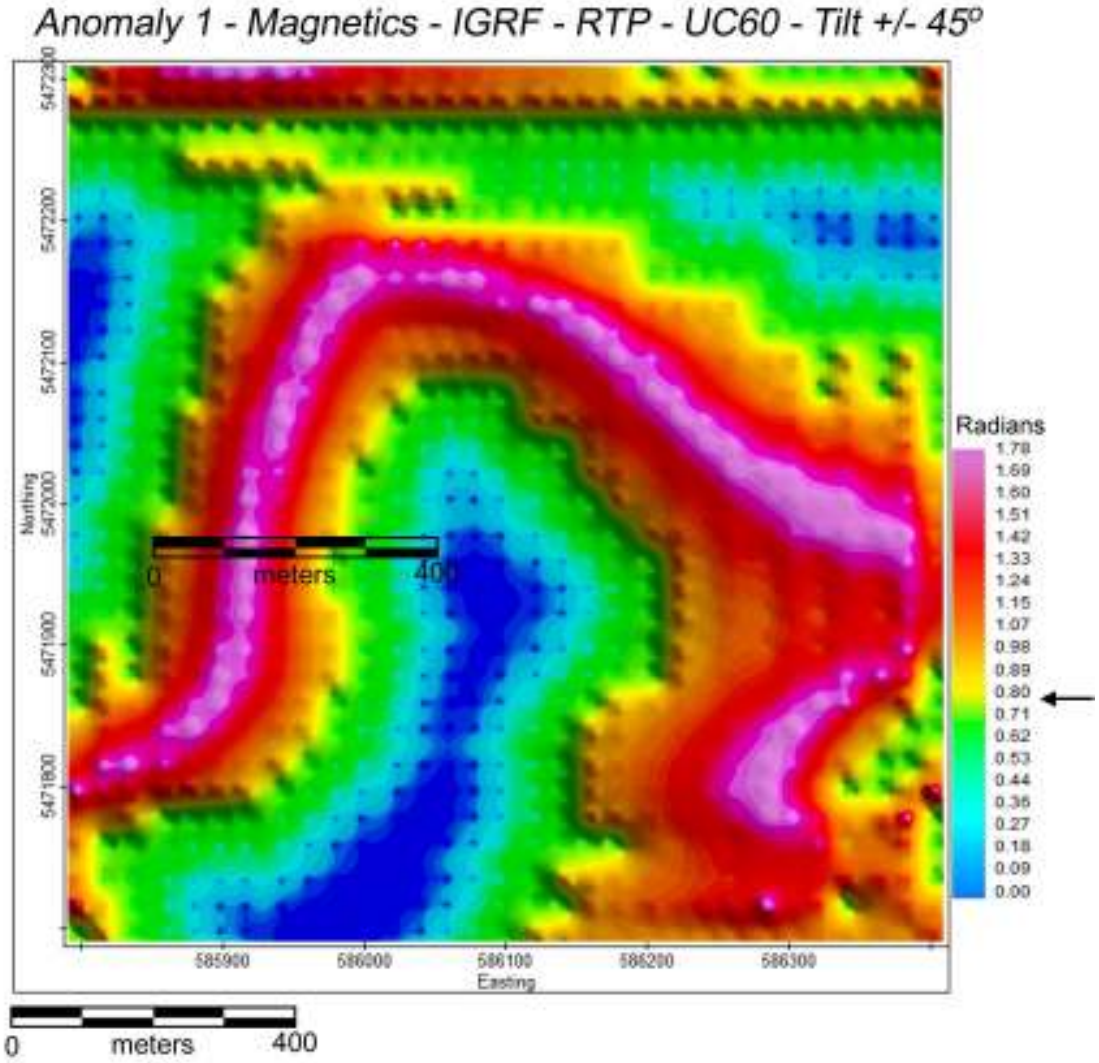


Figure 9. Contours of the tilt angle between +/- 45 degrees. The purpose of this is to estimate depth to the source; the depth is approximately ½ the width of the contours from +45 degrees to – 45 degrees. Here the scale shows that that width (between the yellow-green contact on one side of the red band to the yellow green on the other) is about 250m. So, ½ of this measurement (125m) minus the upward continuation smoothing (60m) provides an estimate of about 65m to the top of the source. The arrow indicates 0.785 radians, or 45 degrees.

Anomaly 1 and Source location

The location of the source is determined by two factors: 1) the location of the highest values, and 2) the locations of the edges of the source. The locations of the highest values of the tilt angle for the magnetic data are shown in Figures 6 and 7. The locations of the edges are a bit more complex.

There have been a number of methods devised to map the edges of magnetic sources. Recently Cooper and Cowen (2006, 2013) proposed a method called the hyperbolic tilt angle that appears to work well on model data, and is shown here in Figure 10. Here the high values are shown as magenta on red outline the interpreted edge of the source. However, the southern part of the anomaly is smeared out due to edge effects and should be ignored.

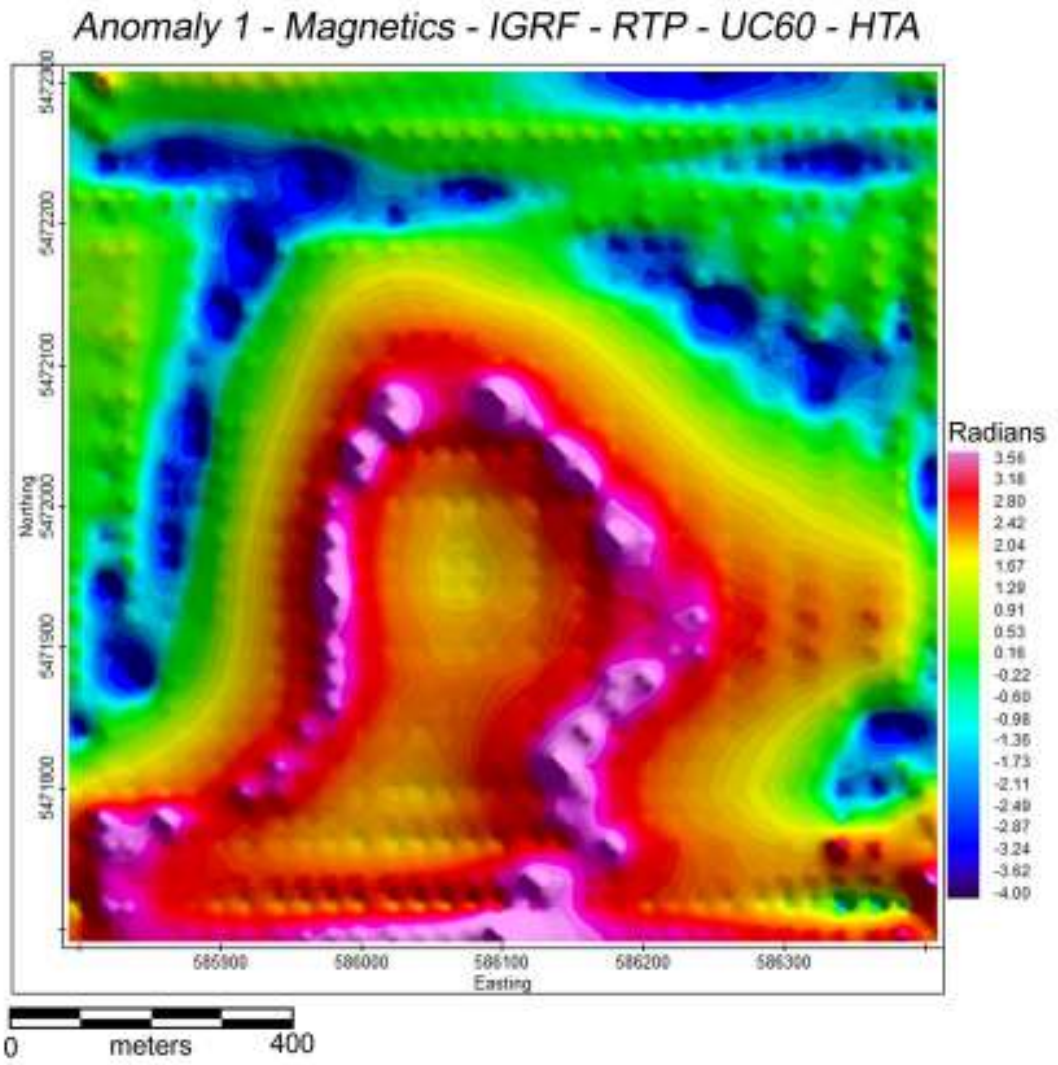


Figure 10. Hyperbolic tilt angle calculated for anomaly 1 area after upward continuation of 60m. The high values (magenta-red) are interpreted to be at or close to the edges of the source, except in the south where there are edge effects.

Figure 11 shows the same result superimposed with transparency on the tilt angle (for the 60m upward continuation smoothing). In this image, the location and shape of the source appears to be reasonably well delineates, with the exception of the edge effects in the south.

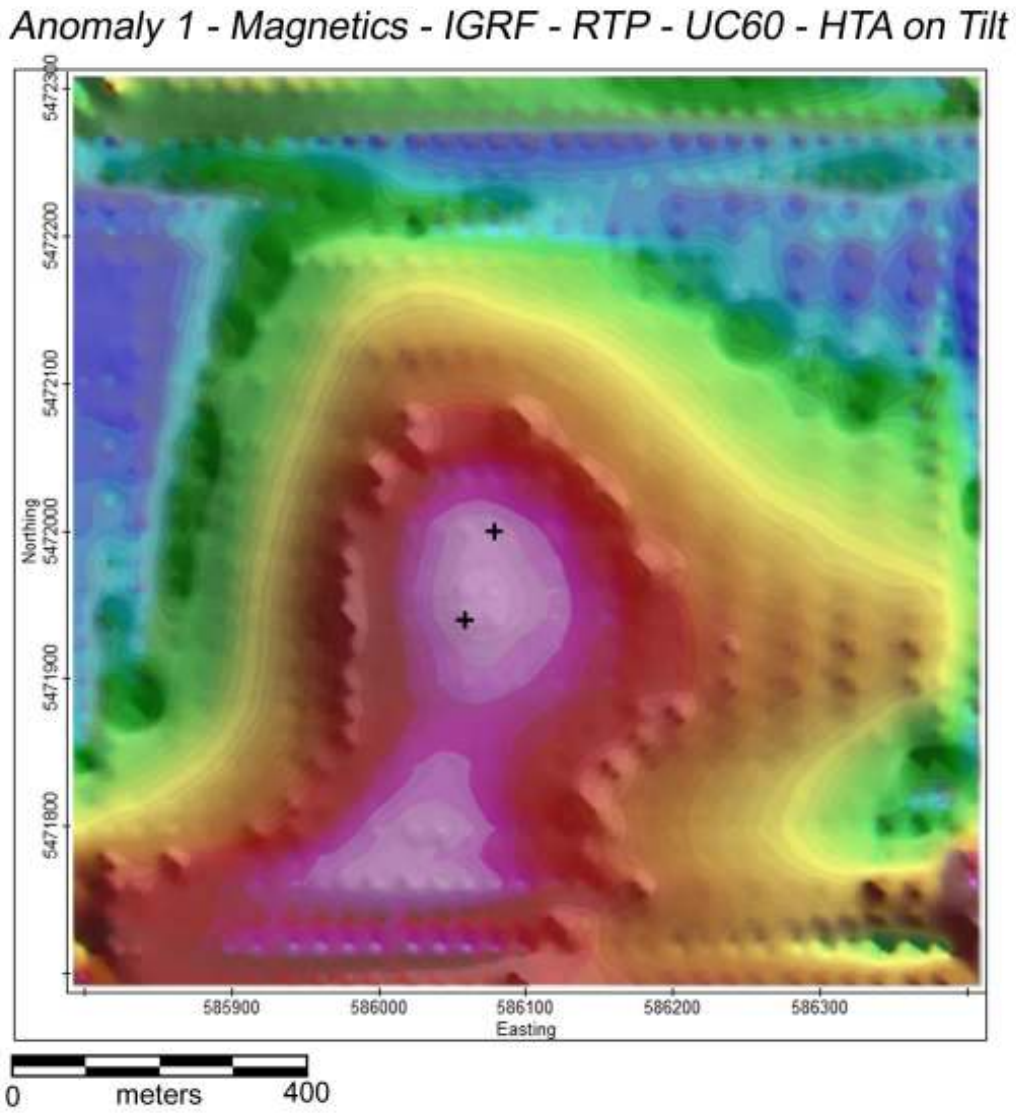


Figure 11. Hyperbolic tilt angle of anomaly 1 superimposed on the tilt angle map. Again, the black crosses represent the locations of the highest values of the tilt angle.

Comparison with the EM anomaly

In addition to the magnetic anomaly, there appears to be an EM anomaly in the vicinity of anomaly 1 (Figure 3). However, if the location of the magnetic anomaly is determined by the tilt angle and associated processes (Figures 6, 7 and 11) is correct, the location of the EM anomaly high and the magnetic high are offset (Figure 12); the EM peak is about 120-200m south of the peaks on the magnetic high.

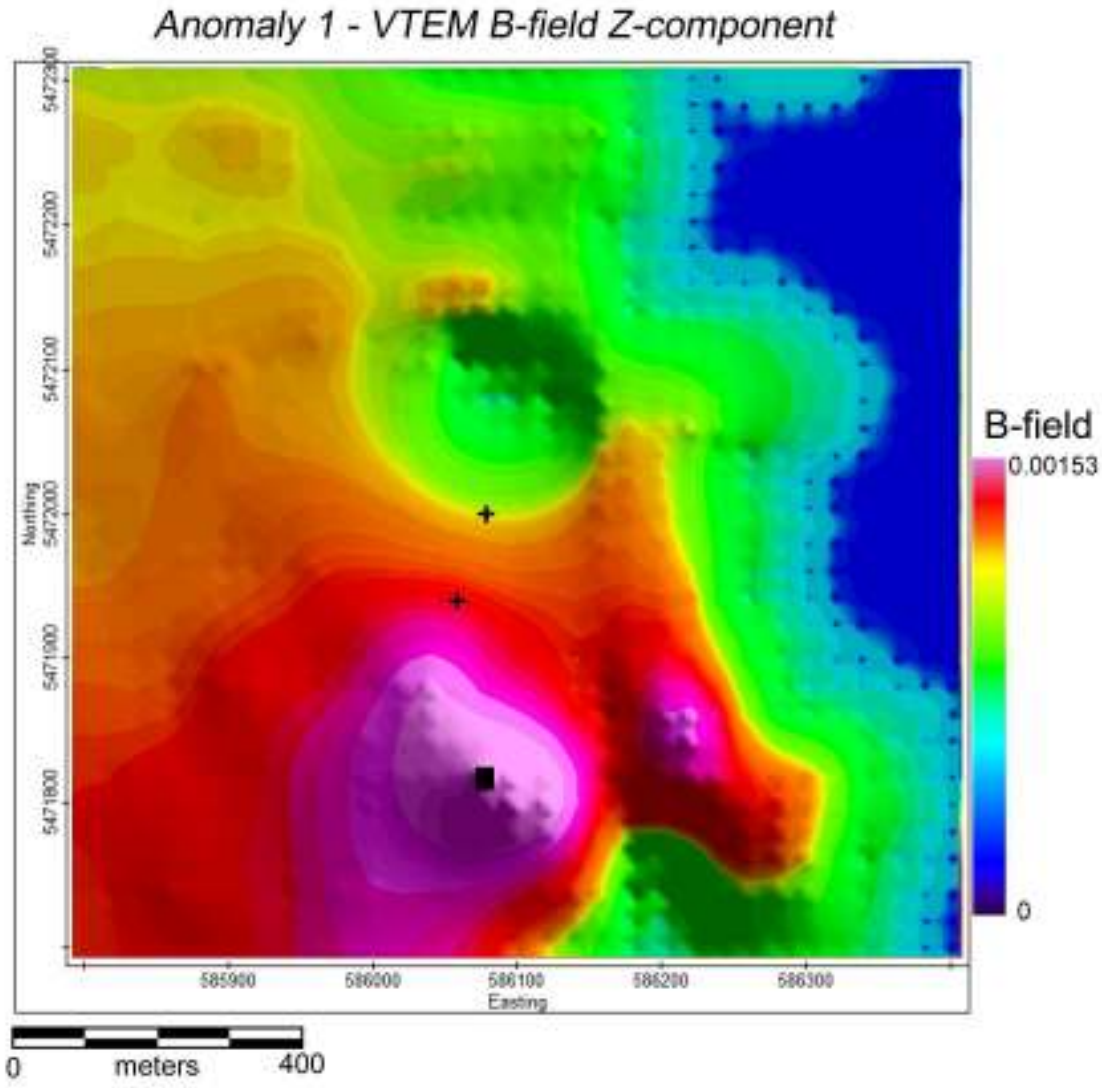


Figure 12. EM anomalies in the vicinity of anomaly 1. This is an enlargement of the B-field Z-component from Figure 3. The black square is the highest EM value and is offset from the high magnetic values by about 120-200m to the south.

Conclusions

The results of the advanced analysis of the magnetic and EM data in the vicinity of anomaly 1 have delineated the following characteristics:

1. Magnetic anomaly 1 is nearly circular and probably has little dip. It may dip slightly to the south-southeast, but the interference of edge effects makes this determination difficult;
2. The depth to the magnetic source as determined by the tilt-depth method of Salem et al (2007) indicates the top of the source is shallow (less than 100m);
3. Application of the hyperbolic tilt angle appears to have delineated the edges of the source and thus defined the area that may be of interest for exploration activities.
4. The EM and magnetic highs are spatially close, but not collocated. The peak values are separated by 120-200m.

References

Cooper, G.R.J., Cowan, D.R., 2006. Enhancing potential field data using filters based on the local phase. Computers & Geosciences 32, 1585–1591.

Cooper, G. J. 2013. Reply to a discussion about the ‘‘Hyperbolic tilt angle method’’ by Zhou et al, Computers & Geosciences, 52, 496-497

Klewchuk, P., 2012. Assessment Report on Airborne Geophysics, Vine claims, British Columbia Geological Survey Assessment Report 32855, 74pp.

Salem, A., Williams, S., Fairhead, J. D., Ravat, D., and Smith, R., 2007. Tilt-depth method: A simple depth estimation method using first-order magnetic derivatives, The Leading Edge, 26, 1502-1505.

Report on:
Analyses and Preliminary Interpretation of Airborne Magnetics and VTEM data on the Vine Property, Southeast BC, Part 2: Anomalies 2 and 3

Frederick A. Cook, PhD. P. Geo.

Salt Spring Imaging, Ltd.
128 Trincomali Heights
Slat Spring Island, BC V8K1M8
December 9, 2016

Executive Summary

Airborne magnetic and EM (VTEM) data were recorded by Geotech on part of the Vine property in the Purcell anticlinorium on southeastern British Columbia. Enhanced analyses of the magnetic data allow improved locality, depth and geometric information on the magnetic source(s) and comparison with the EM anomalies to test the idea that the EM and magnetic anomalies are, in some places, spatially coincident. In this second report, the characteristics of anomalies 2 and 3 are addressed..

Introduction

The purpose of this report is to describe the reprocessing and initial interpretation of high resolution airborne magnetic data across part of the Vine property and to compare the results with airborne EM data that were recorded at the same time. The data sets were acquired in October, 2011 by Geotech (Klewchuk, 2012) and were provided to the author as Geosoft grid files and associated images. In this report, an analysis of the second and third anomalies (anomalies 2 and 3; Figures 1 and 2) of three anomalous areas is addressed. Anomaly 1 was addressed in Part I.

The objectives of analyzing anomalies 2 and 3 are somewhat different than those for anomaly1. Specifically, the following questions were asked in the initial email:

For anomaly 2:

"There is a northwest trending fault on the west side of the VTEM survey area. The 5th, 6th,and 7th flight lines from the south side of the survey show what may be a coincident mag and EM anomaly just east of the NW trending fault. Is this a real EM and mag anomaly? If it is, can you tell its orientation and depth, or anything else about it that would be useful?"

and for anomaly 3:

"When you turn on the VTEM dB/dt Tau map you will see a broad EM anomaly covering the south side of the survey. It appears to dip north parallel to bedding. As you go

further north the anomaly disappears because it dips below the depth of survey penetration. We plan to drill this target. Does this target correlate with the 2 target areas above?

Data

As in Part I, the data were provided as Geosoft grid (grd) files and were converted to xyz (ASCII) files for plotting and processing. As described in Part 1, the magnetic data had been corrected for diurnal variations, but no allowance had been made for the regional Earth field (International Geomagnetic Reference Field, or IGRF). In this area, the IGRF is relatively planar and dips southwest with a declination of about 15.4 degrees and an inclination of about 72 degrees. To approximate the IGRF, the regional values were calculated for the map area and for a time near the center of the survey and were then subtracted from the measured Total Magnetic Intensity (TMI). The result is shown in Figure 1 of Part 1. The data were then reduced to pole (Figure 1 here).

The electromagnetic (EM) data were provided as B-field vertical component maps and dB/dt maps. For the purpose of spatial correlation with the magnetic data, the B-field Z-component map is shown in Figure 2. The map indicates a large region of elevated conductivity in the south (area 3) and southwest (area 2) portions of the map`.

Anomaly 2 -Methods

The objectives of the project are to delineate the locations, depth and geometry of magnetic source(s) and then to compare the results with the results from the EM analyses. There have been a number of approaches to determining geometry of magnetic sources, but without detailed knowledge of the magnetic characteristics of the sources (e.g., susceptibility, remanence, etc.), the approach taken here is relatively simple and is based on analyses of the tilt angle. Although the tilt angle can be effective in the delineating the source locations, an important property of the tilt angle is that it tends to equalize the amplitudes of anomalies such that anomalies with small; amplitudes appear to be similar in magnitude to larger anomalies. This, in turn, means that noise can also be amplified such that the data often need to have a smoothing filter applied to minimize the noise amplification of the tilt angle. For these data, a smoothing filter based on upward continuation is applied.

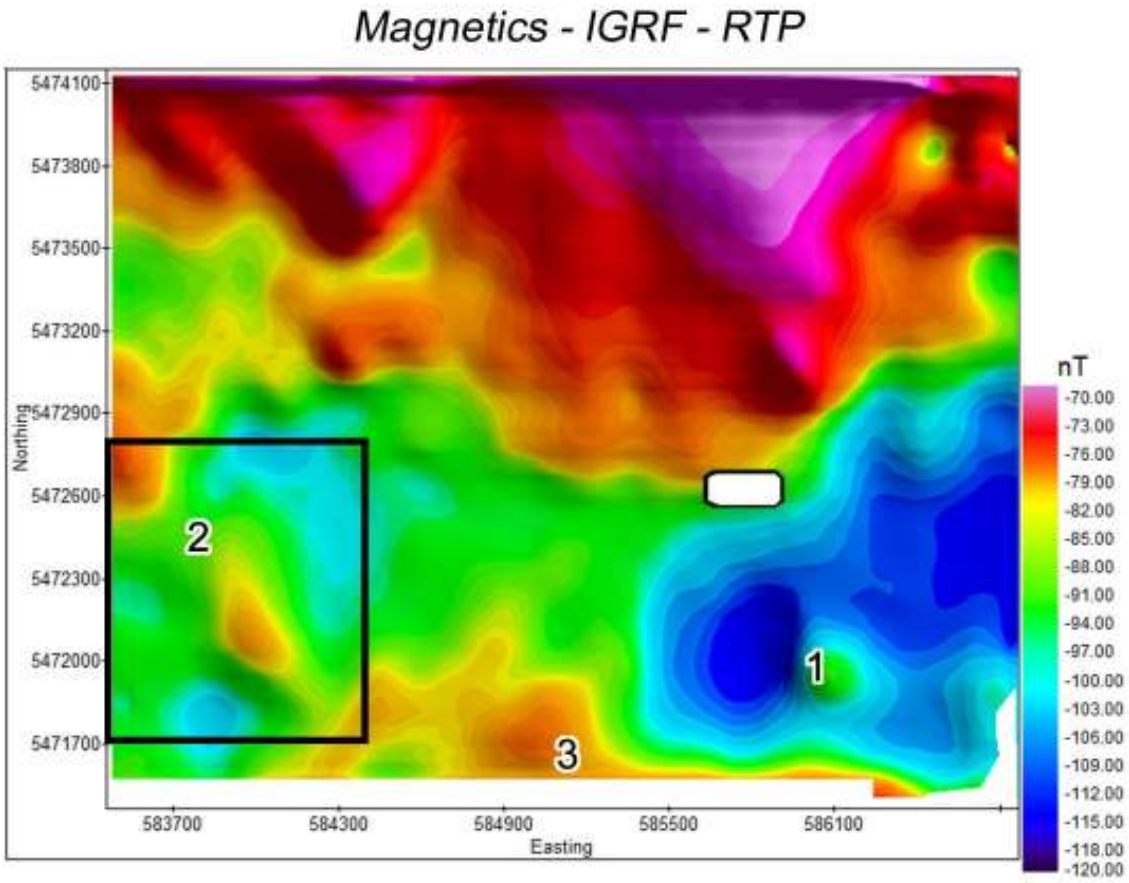


Figure 1. Same map area as in Part 1 showing the magnetic data after reduction to the North Pole. Outlined area is enlarged in Figure 3.

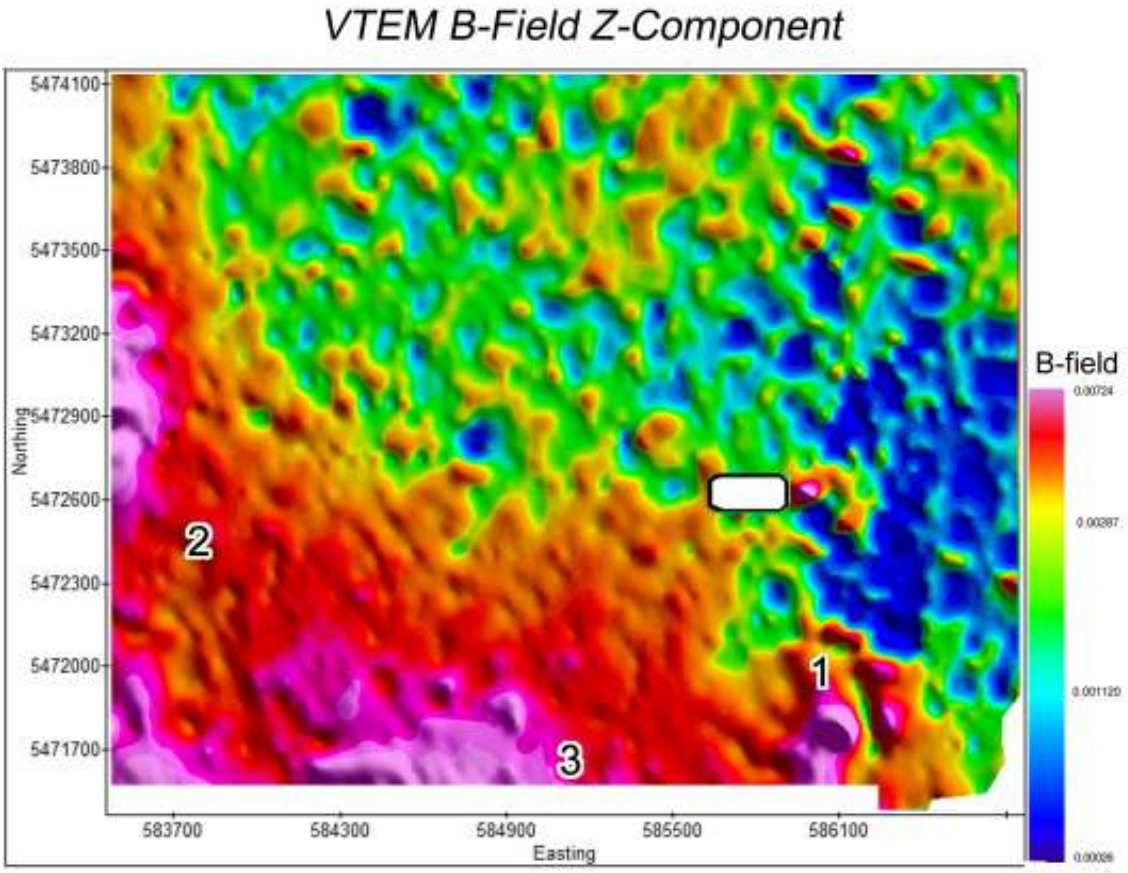


Figure 2. VTEM data (B-field, Z-component) for the same area as in Figure 1.

Anomaly 2 - Results

Magnetic Data

Figure 3 shows an enlargement of the data in the vicinity of anomaly 2. Note that the magnitude of the anomaly is not large, perhaps 5-7 nT above background. Nevertheless, it does not appear to be an artefact, so that unless there is a large magnetic feature (e.g., iron pipe) at the surface, the anomaly is likely due to magnetic variations in the rocks.

Figure 4 shows the same map area after application of the tilt angle. The resulting anomaly is narrower and linear and is probably closer to the source shape than indicated by the results in Figure 1. As was done for anomaly 1, an estimate of depth can be made from the width of the tilt angle between +45 degrees and -45 degrees (+0,785 radians and -0.785 radians). Figure 5 shows the results of plotting the tilt angle values between +/- 45 degrees (red band). For anomaly 2, the width of the red band varies a little, but is narrow everywhere (except where there is interference from adjacent anomalies). Two examples of depth estimate are shown in Figure 5; one gives and estimate of about 55m to the top of the source, an the other gives an estimate of about 35m. Both depth estimates are shallow, and are approaching the limits of resolution for 20m grid spacing.

An estimate of the subsurface geometry can be obtained by calculating contours for several successive upward continuations of the tilt angle. Then by comparing the zero contours for each, the dip direction of a source may be determined. Figure 6 shows the procedure. Here, the data were upward continued to 20, 50, 100, 150 and 200m after applying the tilt angle. The zero contours for each upward continuation were plotted and color-coded so that the contour for a continuation of 20m is shown by the black line, for 200m by the red line, and so on. As shown by Lahti and Karinen (2012), if the contours are wider on one side of an anomaly, the source likely dips in that direction. Here there may be a slight widening to the southwest, although the apparent widening of the contours in the southwest may also be due to interference with adjacent anomalies.

Finally, the geometry of the magnetic source can be estimated by analysing the contours of the tilt angle for different values of upward continuation. The principle here is that as the upward continuation increases (thus as the observe gets farther from the source), the contours of the tilt angle will widen. By examining the symmetry (or not) of the contours around an anomaly, some the dip direction may be determined. As pointed out by Lahti and Karinen (2010), the anomalies will widen in the downdip direction.

For this case, the contours are narrow and show little separation on the east side of anomaly 2, but may widen slightly on the southwest. This could indicate a slight southwest dip, although there may be interference from some adjacent anomalies.
The edges of the source for the anomaly can be approximated with the hyperbolic tilt angle as shown by Cooper and Cowan (2006) and Cooper (2013). Figure 7 shows the calculate hyperbolic tilt angle (HTA) for anomaly 3; the source should lie within the peaks of the HTA.

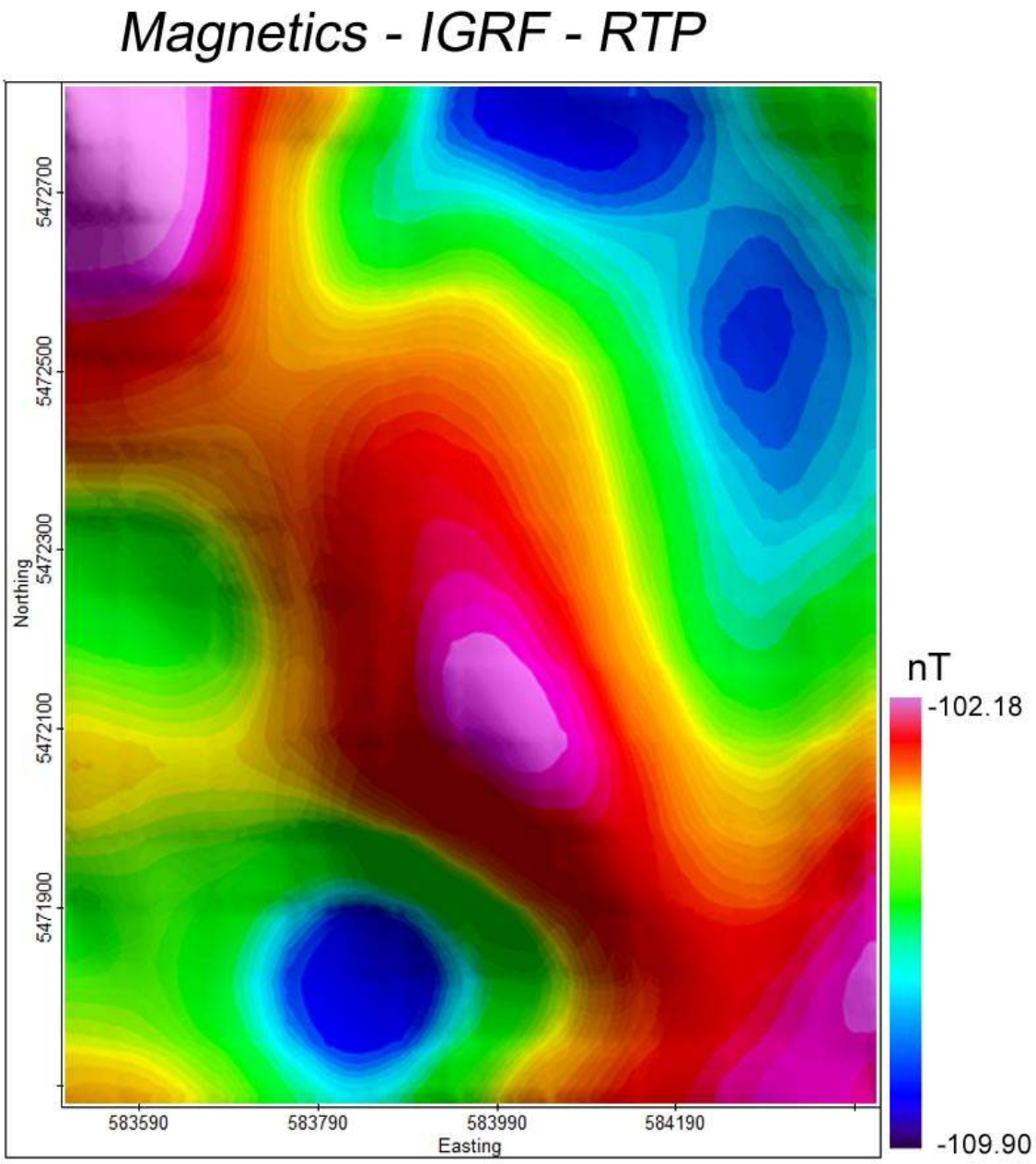


Figure 3. Anomaly 2 magnetic data after estimation of the IGRF and reduction to the pole.

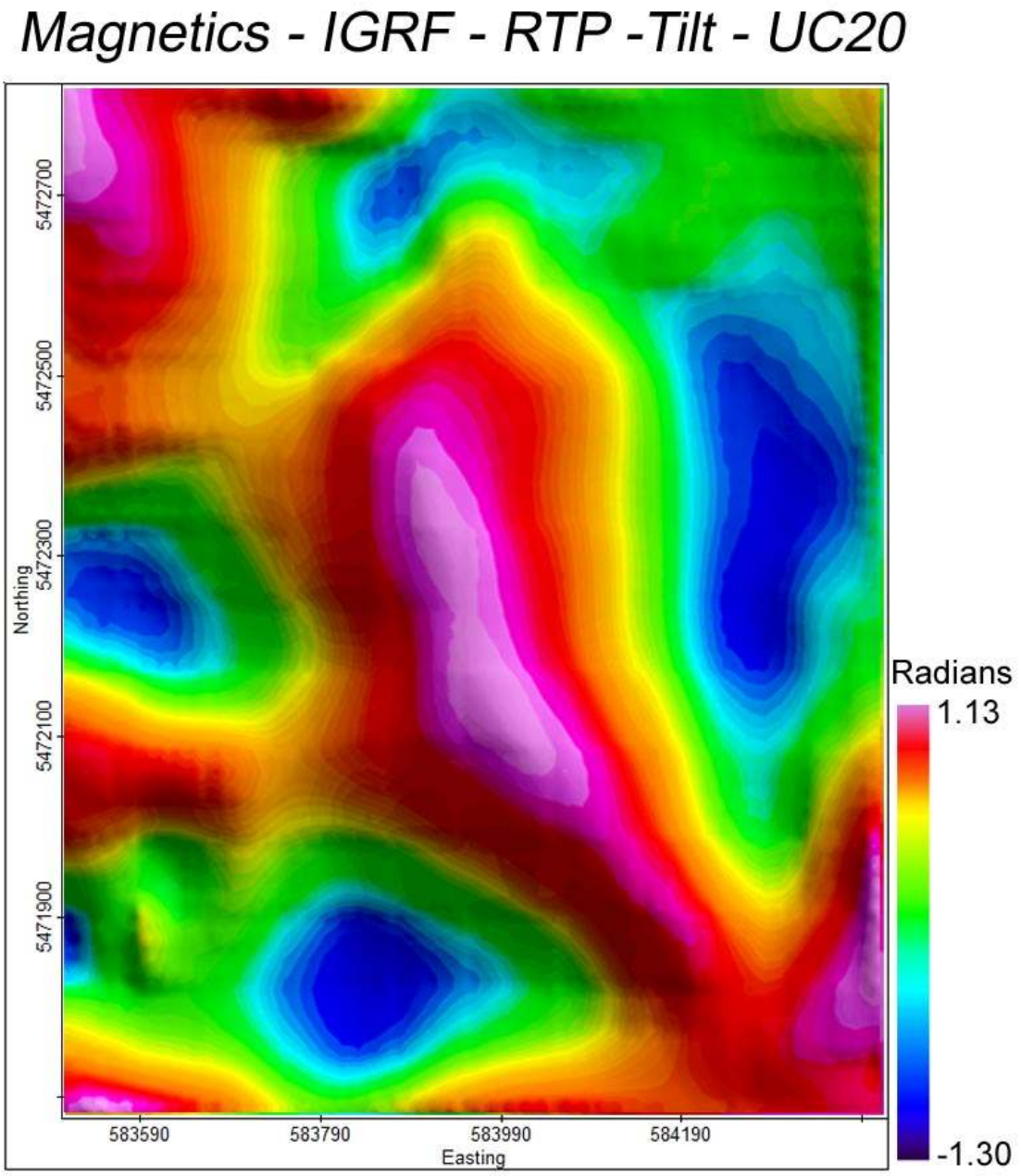


Figure 4. Anomaly 2 magnetic data after estimation of the IGRF, reduction to the pole and application of the tilt angle. Note that the anomaly is narrower than in Figure 3, indicating a narrow source.

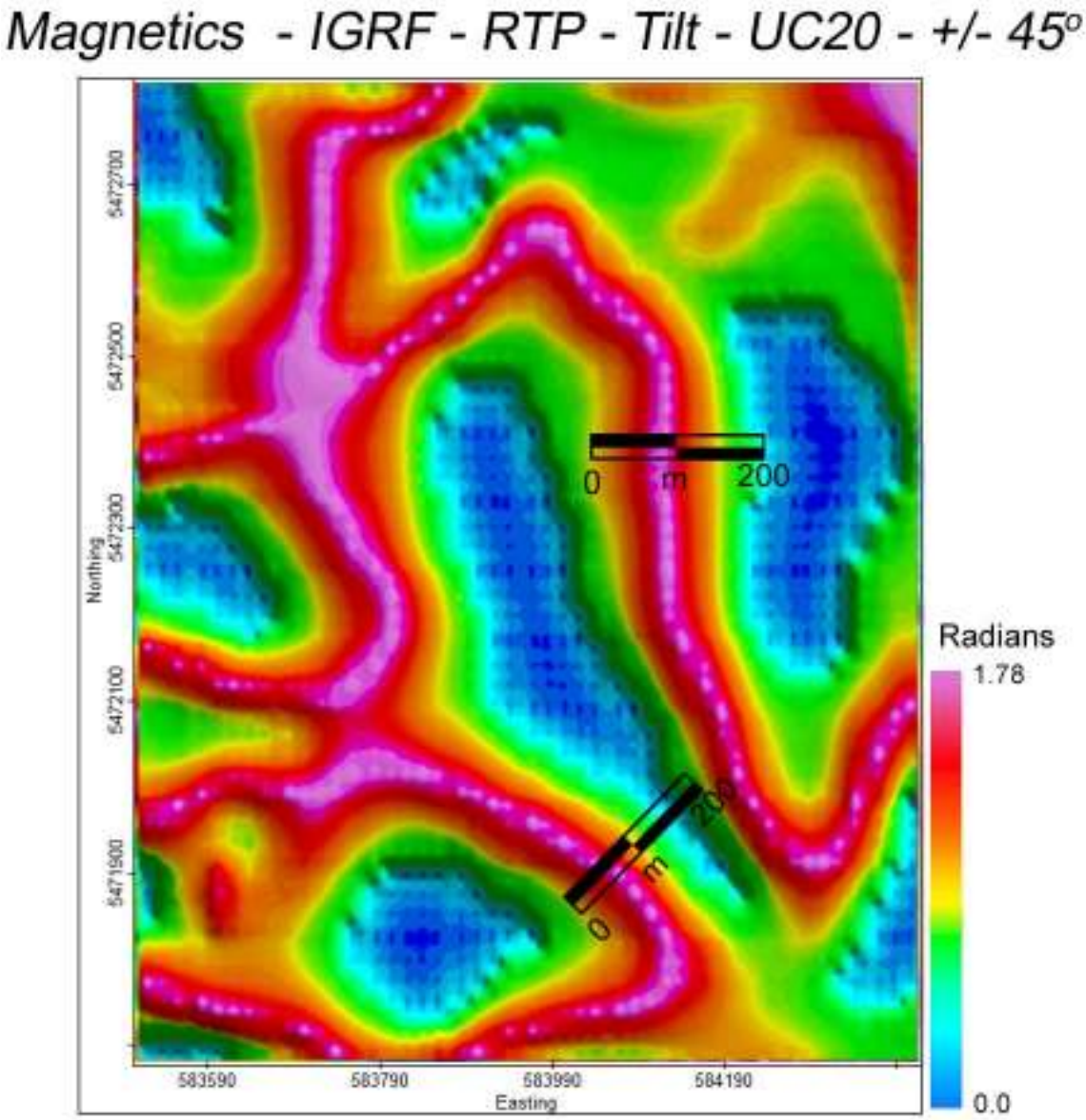


Figure 5. Anomaly 2 magnetic data after estimation of the IGRF, reduction to the pole, calculation of the tilt angle and plotting of the tilt angle between +45 degrees and – 45 degrees (red bands). The width of the red bands provides an estimate of twice the depth to the source. Estimates at two locations are shown. Near 584190e, 5472400n, the width appears to be about 150m. So, the depth estimate is (150/2) – upward continuation = 75-20, or 55m below the magnetometer. For the estimate near 584000e, 5471900n, the width of the red band is about 110m, so the depth estimate is (110/2) – upward continuation = 55-20, or 35m below the magnetometer. Note that with a grid spacing of 20m, these estimates are approaching the resolution of the data.

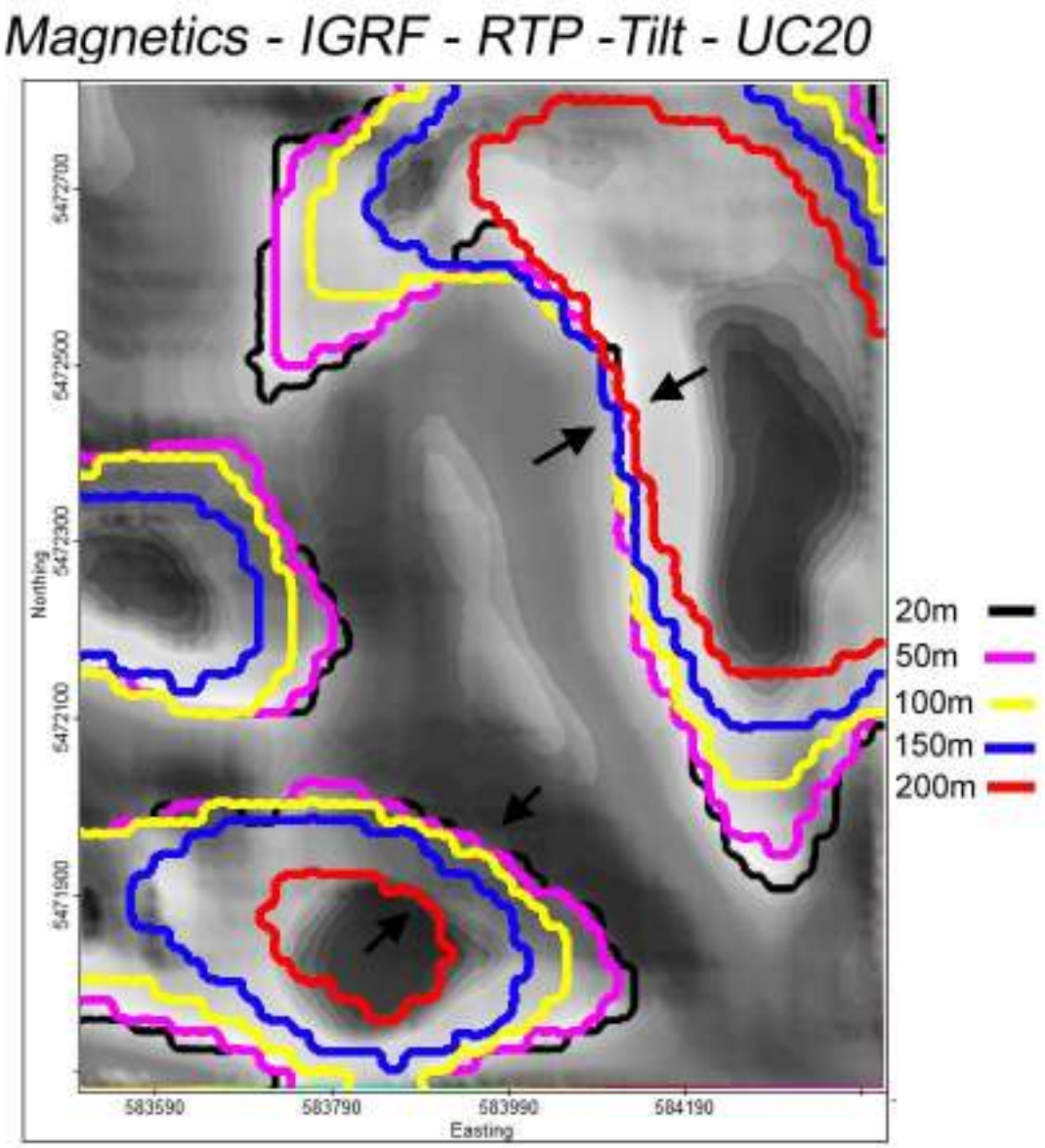


Figure 6. Estimation of dip is made by superimposing the 0-radian contours from each of several successive upward continuations of the tilt angle. Upward continuation values are shown with the colored lines. Thus, the blue line is the 0-contour for an upward continuation of the tilt angle by 150m, red is for an upward continuation of 200m, and so on.

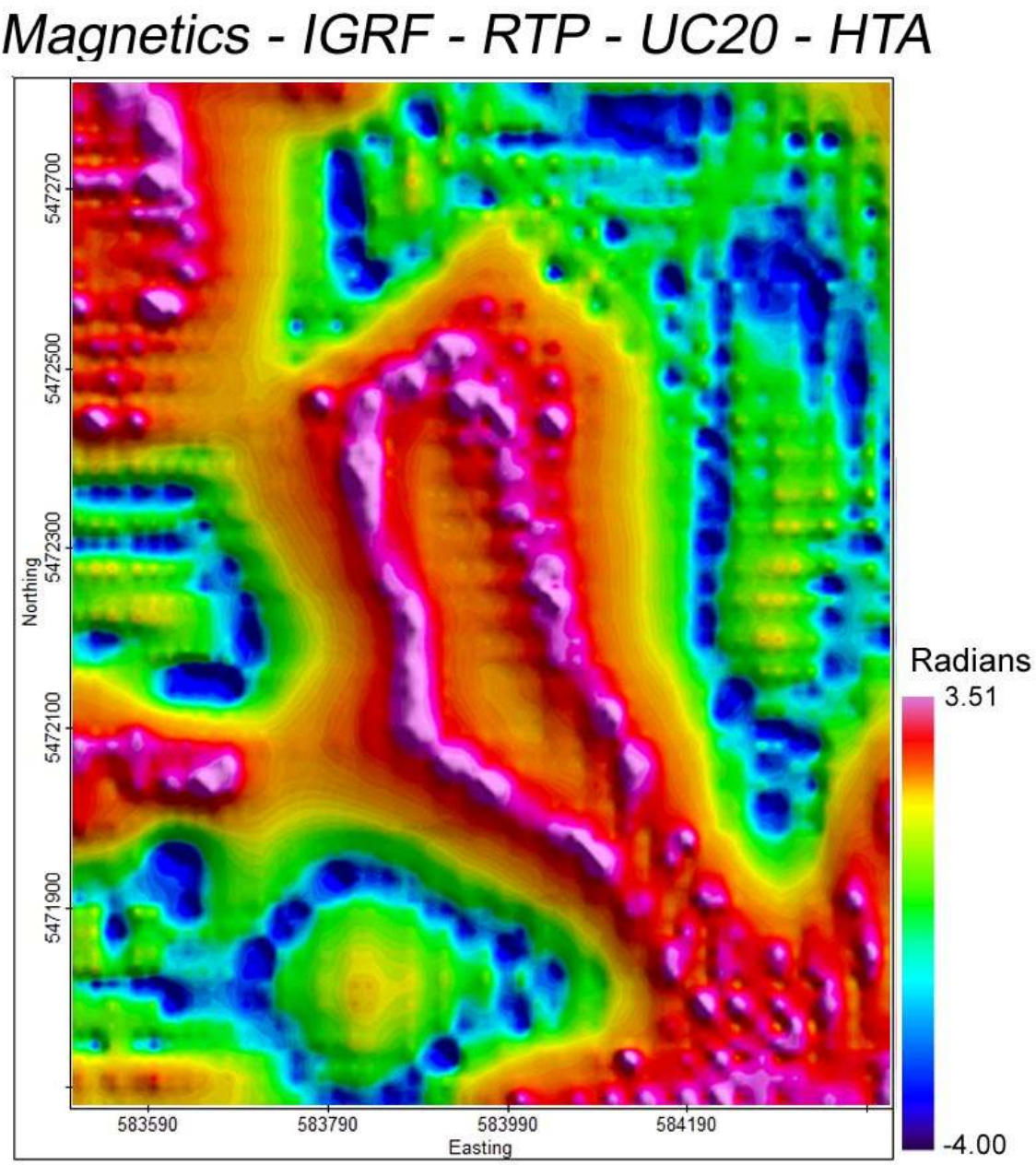


Figure 7. Calculated hyperbolic tilt angle (HTA) of anomaly 2 following procedure outlined in Cooper and Cowan (2006) and Cooper (2013).

Correlation to the EM Inversions

Figures 8 and 9 are the magnetic anomaly (IGRF – RTP) and VTEM (B-field) maps with locations of profiles shown. Profiles 4301 and 4220 are the locations of EM inversion cross sections (Figures 10 and 11), and profiles 1 and 2 are profiles that cross the peaks of associated magnetic anomalies 1 and 2.

The inversion for line 4301 projects through the approximate position of anomaly 1 (Figures 8 and 9) and is interpreted with a prominent conductor near 50m depth in the vicinity of anomaly 1 (Figure 10). Similarly, the inversion for line 4220 projects through the position of anomaly 2 and is interpreted to indicate a substantial conductor at the west edge of the line near 50m depth (Figures 9 and 11).

Along profile 1, magnetic anomaly 1 and the conductor at ~50m depth appear to coincide. However, as pointed out in part 1 of the report, the magnetic high is offset about 150-200m to the north of the conductor.

When the magnetic anomaly profile along profile 2 is correlated with the EM inversion along line 4220, the peak of anomaly 2 is located approximately 150-200m east of the conductor (Figure 8). The apparent depth of the conductor (about 50m) is similar to the depth estimated for the source of the magnetic anomaly (see above). Thus, although the EM and magnetic anomaly are not strictly collocated, they are close in areal position and depth and may be related to the same geological feature.

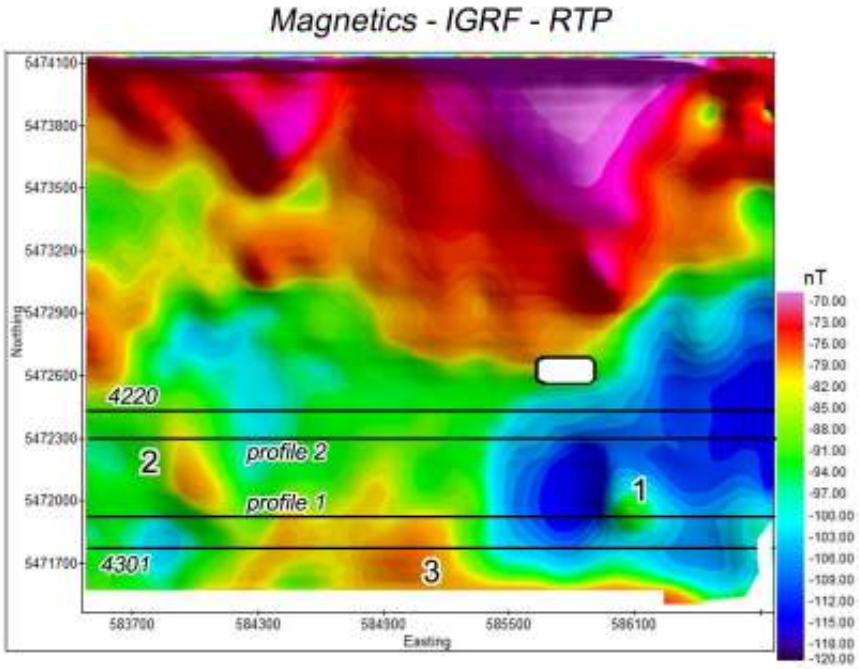


Figure 8. Map of the magnetic anomalies after corrections for the IGRF and reduction to the pole have been applied (Figure 1). EM inversion profiles 4220 and 4301 are shown as are two profiles through magnetic highs at anomaly 1 (profile 1, along 5472050) and anomaly 2 (profile 2 along 5472300) that are shown in Figures 10 and 11.

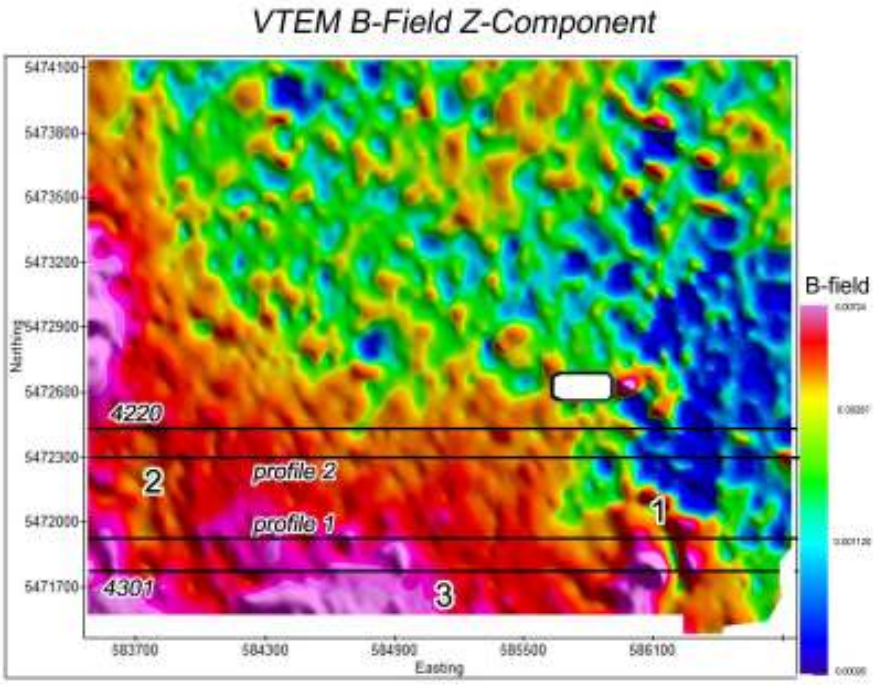


Figure 9. Map of the VTEM data (B-field, Z-component; Figure 2). EM inversion profiles 4220 and 4301 are shown as are two profiles through magnetic highs at anomaly 1 (profile 1, along 5472050) and anomaly 2 (profile 2 along 5472300) that are shown in Figures 10 and 11.

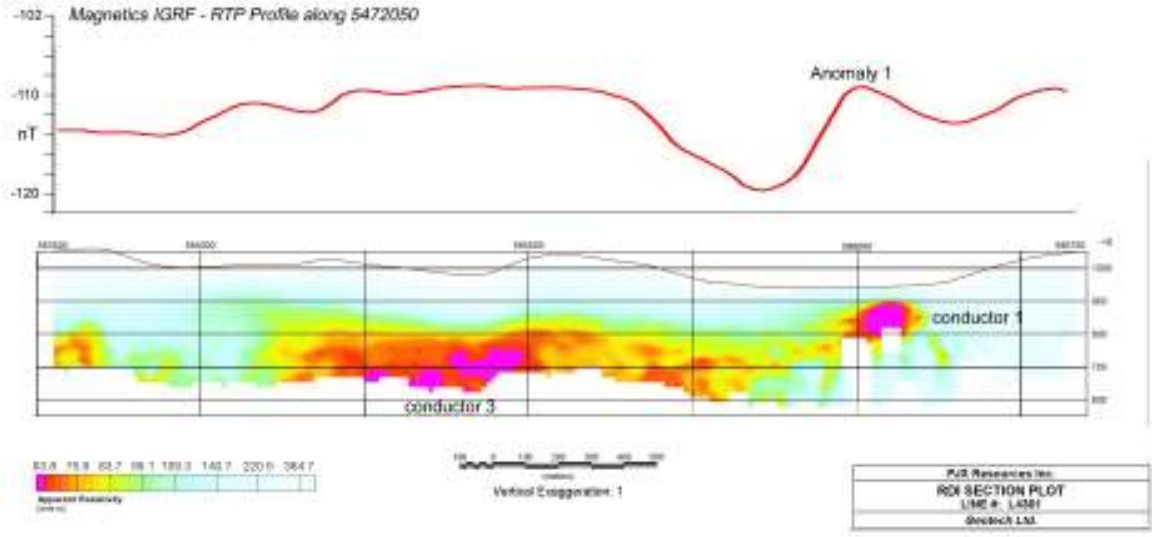


Figure 10. (lower) Inversion of the VTEM data along profile 4301 showing a conductor on the east at approximately 50m depth near anomaly 1. (upper) magnetic anomaly from the IGRF-RTP map (Figure 8). Note that the magnetic anomaly appears to coincide with the east conductor; however, it is offset to the north. The conductor labelled as 'conductor 3' is interpreted in the vicinity of anomaly 3.

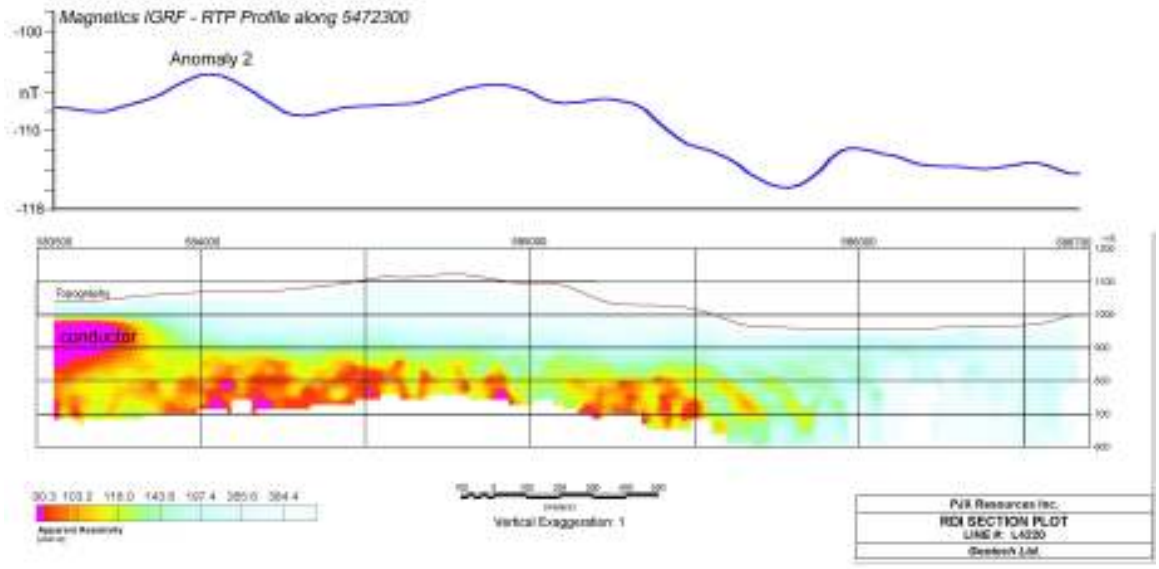


Figure 11. (lower) Inversion of the VTEM data along profile 4301 showing a conductor on the west side of the section at approximately 50m depth near anomaly 2. (upper) magnetic anomaly from the IGRF-RTP map (Figure 8).

Correlation to Geology

Figure 12 is the map of the geology near the Vine vein with the map of the tilt angle superimposed and traces of the faults indicated. There is a sill in the northwest corner of the map that shows a strong magnetic anomaly; most of the sills have little or no magnetic signature. Note that the sill anomaly appears to be offset along the Vine fault structure.

In contrast, a sill in the southwest has almost no associated magnetic anomaly. A northwest-southeast fault that was pointed out in the initial comments on these anomalies is parallel to anomaly 2 suggesting they may be related. However, anomaly 2 is about 100m east of the interpreted fault. Thus, depending on how well the fault is located, the relationship between anomaly 2 and the fault is unclear.

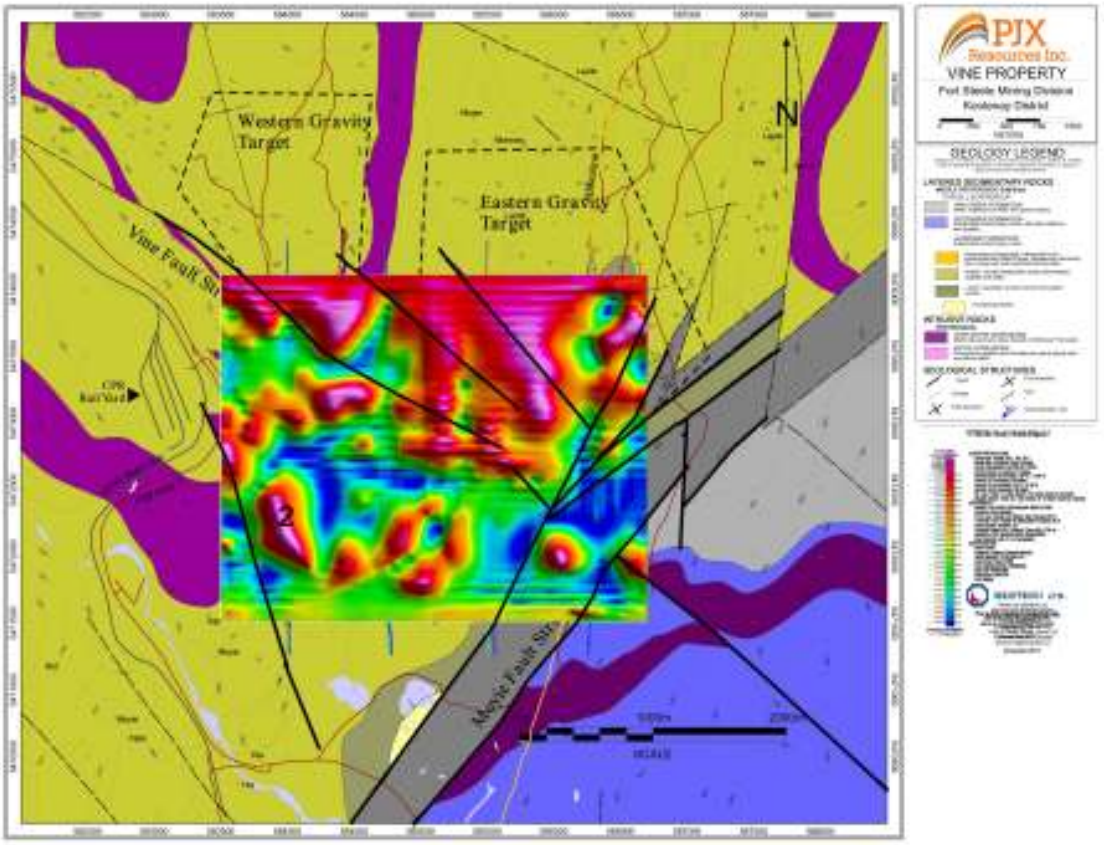


Figure 12. Superposition of the tilt angle map from Figure 4 of Part 1 onto the geological map near the Vine vein with approximate positions of faults shown (black lines). Note that anomaly 2 (indicated by the '2') is parallel to a NW-SE fault.

Anomaly 3

The question was asked as to whether the large EM anomaly 3 (Figure 1) correlates with targets 1 and 2. The simple answer is no, anomaly 3 is significantly deeper than either anomaly 1 or anomaly 2 at the locations of 1 and 2. In other words, examination of Figure 10 shows that anomaly 2 is at about 50-100m depth on the left edge of the section, whereas the remnants (in an inversion sense) of the large, north-dipping conductive zone 3 are near 200-300m at this location.

However, it is possible that the conductors at anomalies 1 and 2 are related to a larger conductor at anomaly 3. In Figure 10, it appears that there is a weak zone of elevated conductivity that connects conductor 1 with conductor 3. Whether this apparent connection is real, or whether it is an effect of the contouring used to display these inversions is not known, and may require subsurface geological information (e.g., drilling) to test.

Summary

As in the case of anomaly 1, the source for anomaly 2 also appears to be shallow (less than 100m to the top). It is located parallel to, but about 100m east of, a fault and it appears to be a real anomaly (i.e., not some noise feature), but whether it is due to magnetic variations in the rocks, or to some cultural feature would need to be addressed. The source for the magnetic anomaly may have a slight west dip, but is likely near vertical. The top of the source of the magnetic anomaly appears to be at approximately the same depth as a conductor interpreted in the EM inversions, although the magnetic source may be located about 150-200m to the east of the conductor.

The conductor interpreted for anomaly 3 appears to be deeper than either the conductors or the magnetic sources for anomalies 1 and 2. It may be possible that the conductors are related, for example by connecting veins, but it is difficult to determine that from the existing data.

References

Cooper, G.R.J., Cowan, D.R., 2006. Enhancing potential field data using filters based on the local phase. Computers & Geosciences 32, 1585–1591.

Cooper, G. J. 2013. Reply to a discussion about the ‘‘Hyperbolic tilt angle method’’ by Zhou et al, Computers & Geosciences, 52, 496-497.

Klewchuk, P., 2012. Assessment Report on Airborne Geophysics, Vine claims, British Columbia Geological Survey Assessment Report 32855, 74pp.

Lahti, I, and T. Karinen. 2010. The derivative multiscale edges of magnetic data, The Leading Edge, 29, 24-29.

Appendix 9: Map and sections of processed VTEM data by GeoSource Earthscience Consulting

583500 584000 584500 585000 585500 586000 586500

5474000 5473500 5473000 5472500 5472000 5471500

Scale 1:10466.67

250 0 250

(meters)

WGS 84 / UTM zone 11N

Conductivity

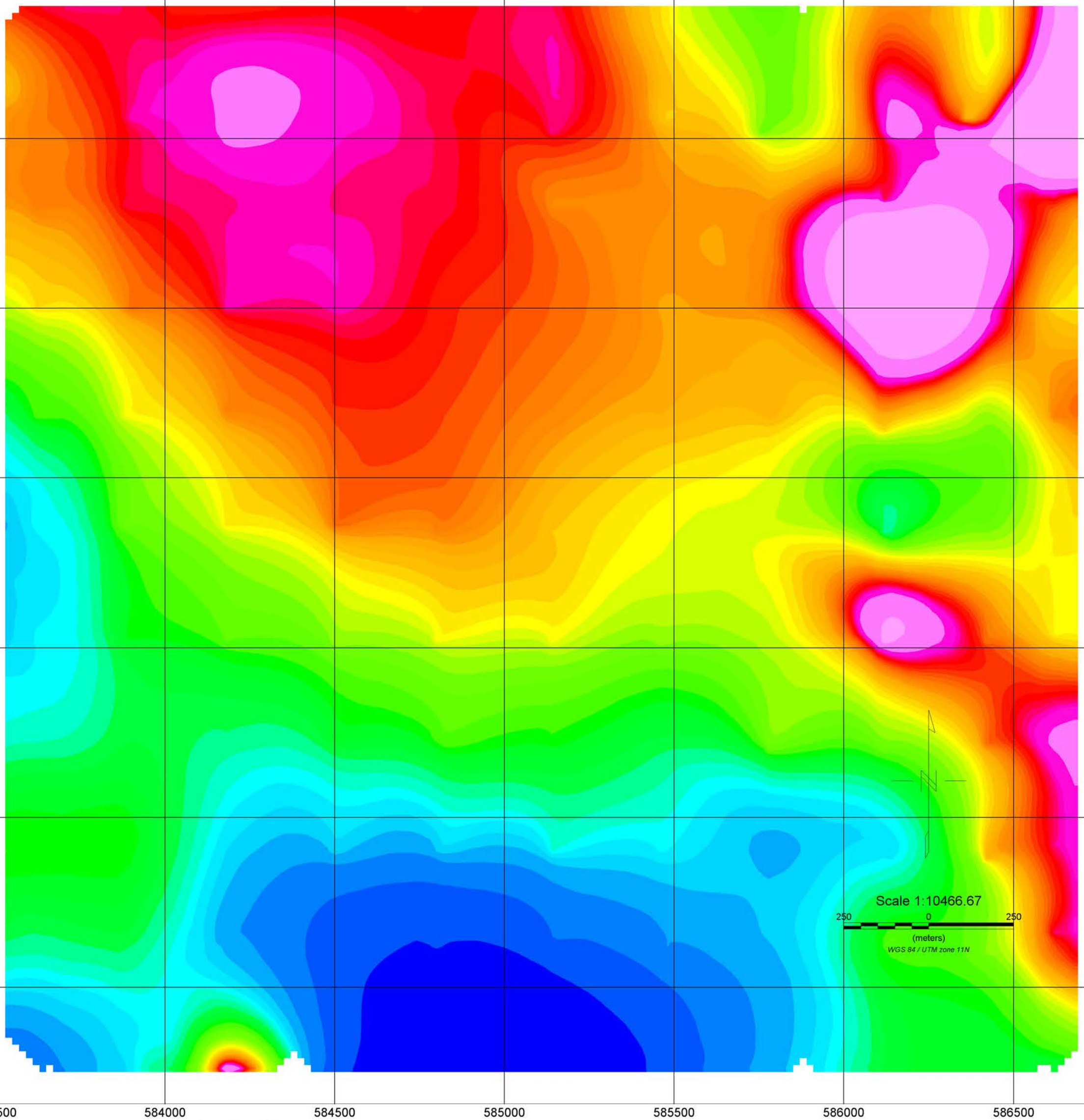
milliSiemens/m

0.83858 0.90873 0.92810 0.94340 0.95743 0.96835 0.97503 0.98005 0.98478 0.98779

PJX RESOURCES INC
VineAC880
RBB August

583500 584000 584500 585000 585500 586000 586500

5474000 5473500 5473000 5472500 5472000 5471500



Scale 1:10466.67

250 0 250

(meters)

WGS 84 / UTM zone 11N

Conductivity

milliSiemens/m

0.91346 0.95383 0.96193 0.96818 0.97686 0.98242 0.98649 0.98934 0.99206 0.99478

PJX RESOURCES INC
VineAC1161
RBB August

GeoSource
Earthscience Consulting

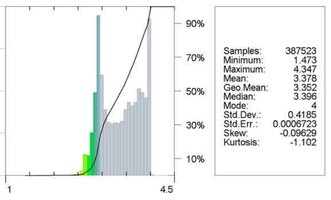
Survey Specifications:

Aircraft: Astar B2 helicopter, Registration PR-HTA
Flight Line Spacing: 100 metres
Nominal terrain clearance 30 metres
EM sensor is 15 metres under helicopter

Instruments:

Geotech Time Domain Electromagnetic System
with concentric Rx/Tx geometry
Geometrics G823A Optically-pumped,
High Sensitivity Cesium Magnetometer
Mag Resolution 0.02 nT at 10 samples/sec
Navigation: Ashtech GG24 Board & Sensor,
Update Rate 1 Hz

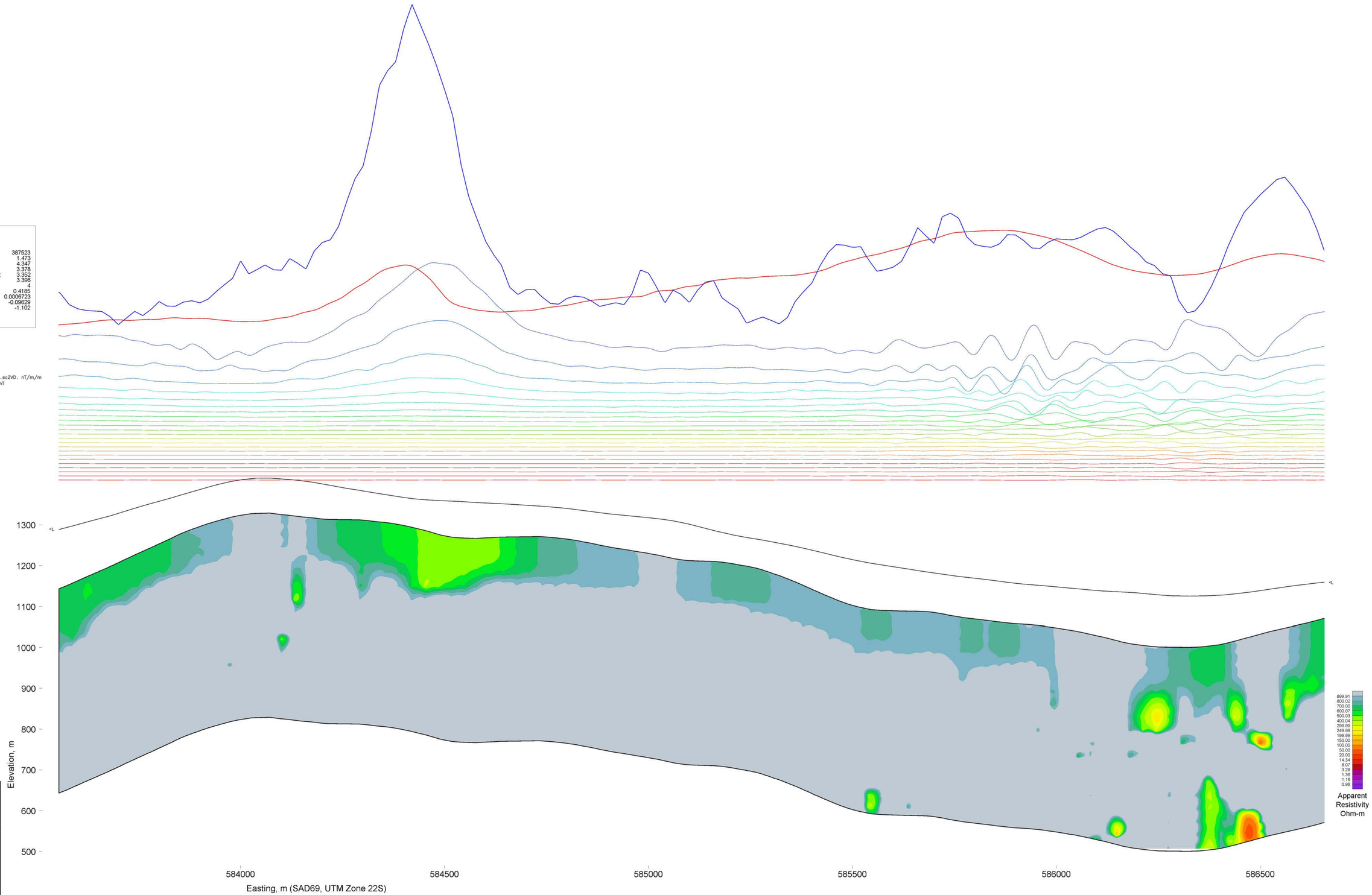
Grid Value Histogram



Samples:	387523
Minimum:	1.473
Maximum:	4.347
Mean:	3.378
Geo.Mean:	3.352
Median:	3.396
Mode:	4
Std.Dev.:	0.4185
Std.Err.:	0.0006723
Skew:	-0.09629
Kurtosis:	-1.102

Second Vertical Derivative, 1mm = .sc2VD. nT/m/m
Total Magnetic Field, 1 mm = 0.1 nT
EM Profiles scale 1 mm = 0.05 pT/(A•m^4)

0.13 ms
0.15 ms
0.17 ms
0.19 ms
0.22 ms
0.26 ms
0.30 ms
0.35 ms
0.41 ms
0.48 ms
0.57 ms
0.68 ms
0.81 ms
0.96 ms
1.13 ms
1.34 ms
1.60 ms
1.90 ms
2.24 ms
2.66 ms
3.18 ms
3.78 ms
4.46 ms
5.30 ms
6.34 ms
EM Bird Height, metres



PJX RESOURCES INC
Vine Project
South East British Columbia
Canada, North America

Geotech TDEM System

App.Resistivity-Depth Section
Line L4060
Flight .flt,,Date.

Processed by Geosource
155 Antibes Drive, Suite 116
North York, Ontario, Canada

August 2017

Project 543

GeoSource
Earthscience Consulting

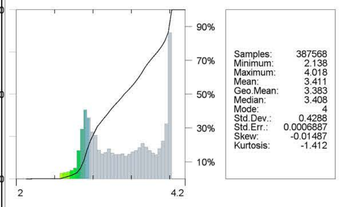
Survey Specifications:

Aircraft: Astar B2 helicopter, Registration PR-HTA
Flight Line Spacing: 100 metres
Nominal terrain clearance 30 metres
EM sensor is 15 metres under helicopter

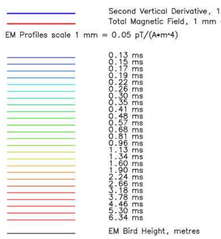
Instruments:

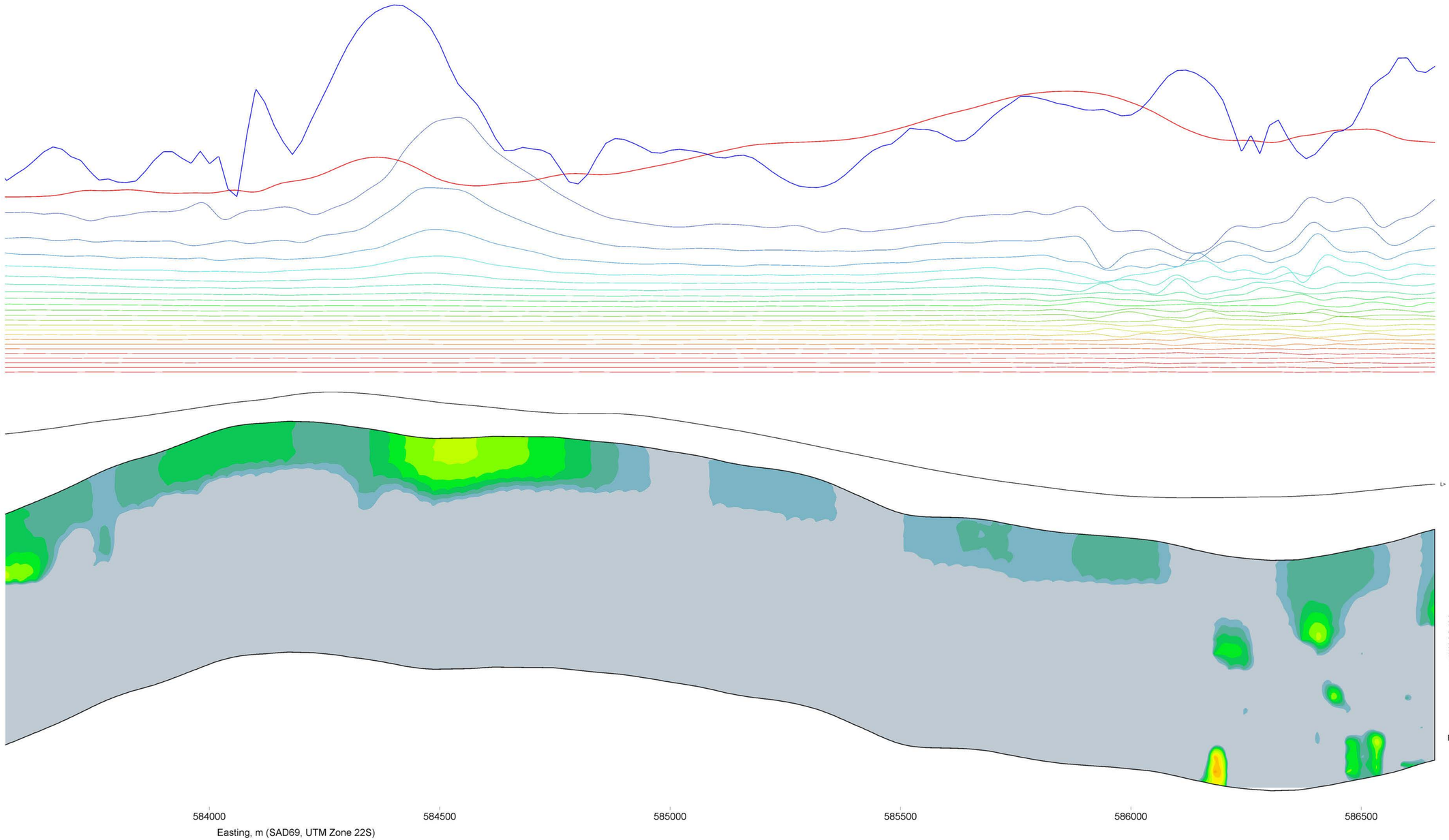
Geotech Time Domain Electromagnetic System
with concentric Rx/Tx geometry
Geometrics G823A Optically-pumped,
High Sensitivity Cesium Magnetometer
Mag Resolution 0.02 nT at 10 samples/sec
Navigation: Ashtech GG24 Board & Sensor,
Update Rate 1 Hz

Grid Value Histogram



Samples:	387568
Minimum:	2.138
Maximum:	4.018
Mean:	3.411
Geo.Mean:	3.383
Median:	3.408
Mode:	4
Std.Dev.:	0.4288
Std.Err.:	0.0006887
Skew:	-0.01487
Kurtosis:	-1.412





PJX RESOURCES INC
Vine Project
South East British Columbia
Canada, North America

Geotech TDEM System

App.Resistivity-Depth Section
Line L4070
Flight .flt,,Date.

Processed by Geosource
155 Antibes Drive, Suite 116
North York, Ontario, Canada

August 2017

GeoSource
Earthscience Consulting

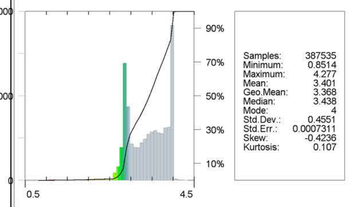
Survey Specifications:

Aircraft: Astar B2 helicopter, Registration PR-HTA
Flight Line Spacing: 100 metres
Nominal terrain clearance 30 metres
EM sensor is 15 metres under helicopter

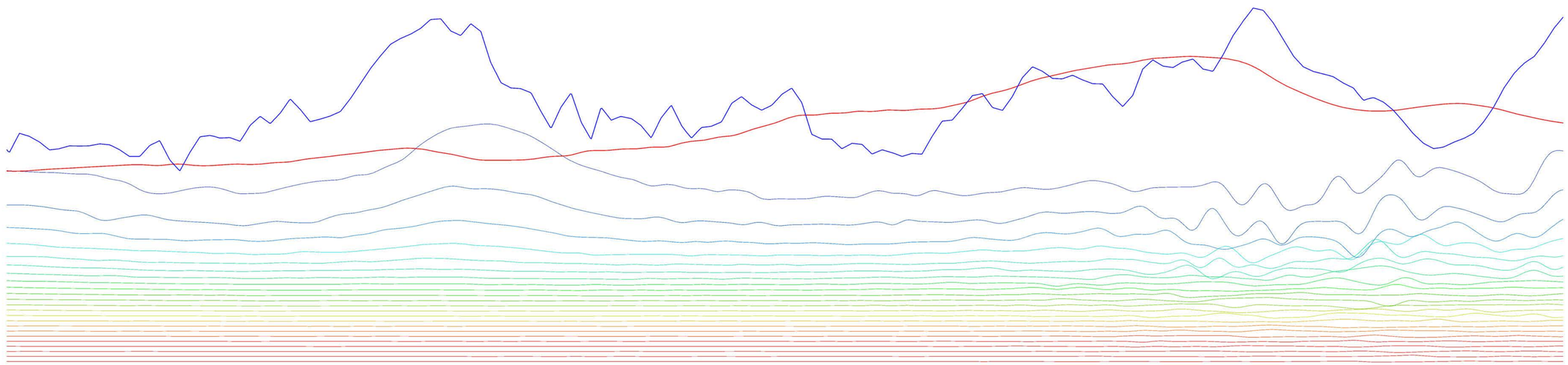
Instruments:

Geotech Time Domain Electromagnetic System
with concentric Rx/Tx geometry
Geometrics G823A Optically-pumped,
High Sensitivity Cesium Magnetometer
Mag Resolution 0.02 nT at 10 samples/sec
Navigation: Ashtech GG24 Board & Sensor,
Update Rate 1 Hz

Grid Value Histogram

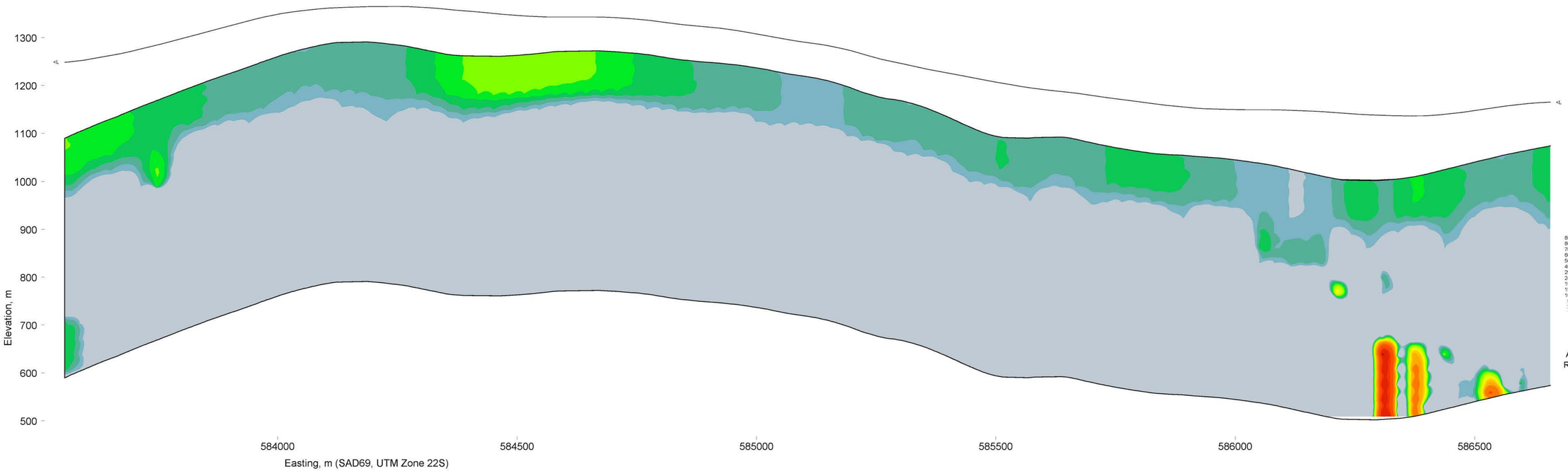


Samples:	387535
Minimum:	0.8514
Maximum:	4.277
Mean:	3.401
Geo.Mean:	3.368
Median:	3.438
Mode:	4
Std.Dev.:	0.4551
Std.Err.:	0.0007311
Skew:	-0.4238
Kurtosis:	0.107



Second Vertical Derivative, 1mm = .sc2VD. nT/m/m
Total Magnetic Field, 1 mm = 0.1 nT
EM Profiles scale 1 mm = 0.05 pT/(Am^4)

0.13 ms
0.15 ms
0.17 ms
0.19 ms
0.22 ms
0.26 ms
0.30 ms
0.35 ms
0.41 ms
0.48 ms
0.57 ms
0.68 ms
0.81 ms
0.95 ms
1.14 ms
1.60 ms
1.90 ms
2.24 ms
2.66 ms
3.18 ms
3.78 ms
4.46 ms
5.30 ms
6.34 ms
EM Bird Height, metres



PJX RESOURCES INC
Vine Project
South East British Columbia
Canada, North America

Geotech TDEM System

App.Resistivity-Depth Section
Line L4080
Flight .flt.,.Date.

Processed by Geosource
155 Antibes Drive, Suite 116
North York, Ontario, Canada

August 2017

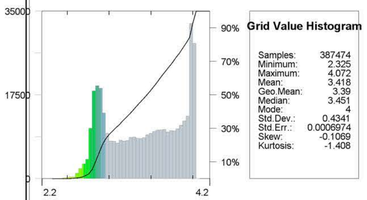
GeoSource
Earthscience Consulting

Survey Specifications:

Aircraft: Astar B2 helicopter, Registration PR-HTA
Flight Line Spacing: 100 metres
Nominal terrain clearance 30 metres
EM sensor is 15 metres under helicopter

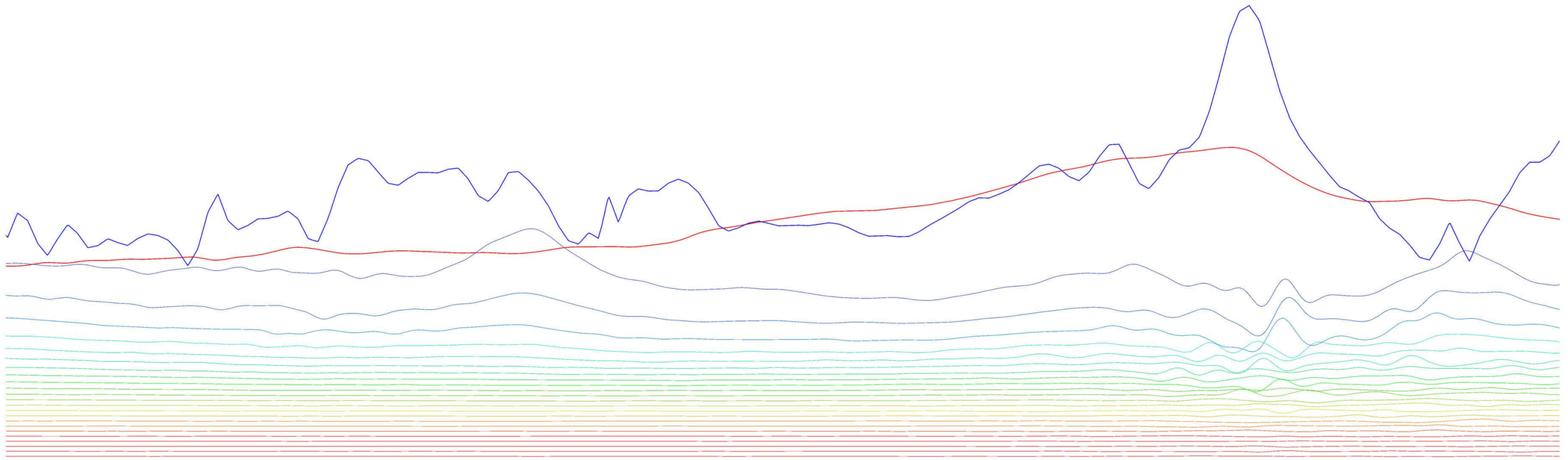
Instruments:

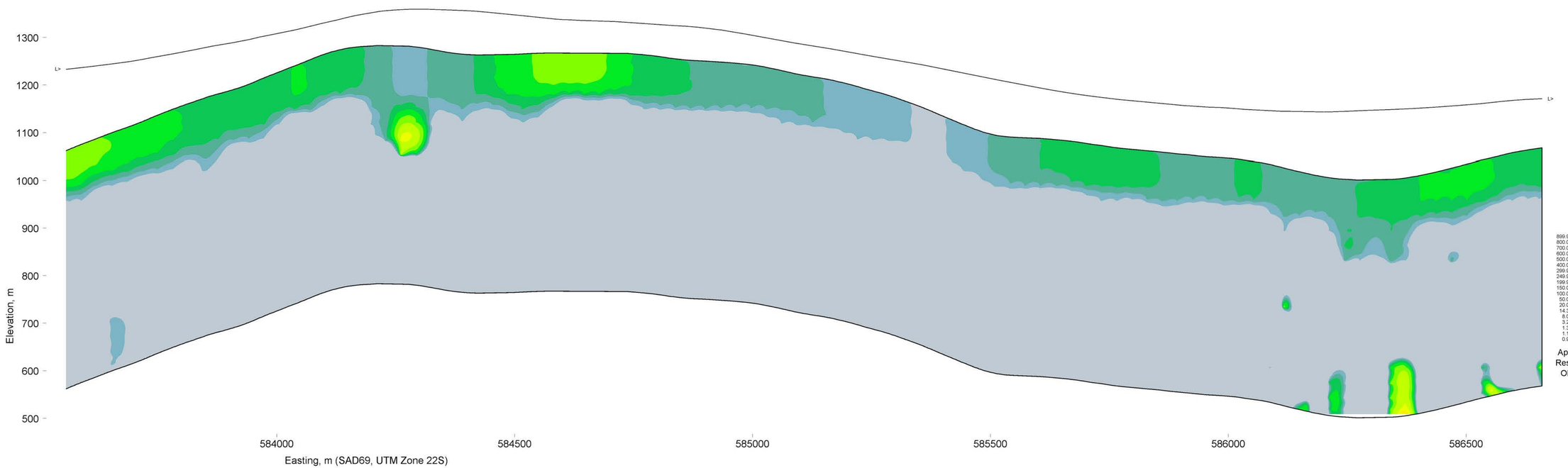
Geotech Time Domain Electromagnetic System
with concentric Rx/Tx geometry
Geometrics G823A Optically-pumped,
High Sensitivity Cesium Magnetometer
Mag Resolution 0.02 nT at 10 samples/sec
Navigation: Ashtech GG24 Board & Sensor,
Update Rate 1 Hz



Grid Value Histogram

Samples:	387474
Minimum:	2.325
Maximum:	4.072
Mean:	3.418
Geo.Mean:	3.39
Median:	3.451
Mode:	4
Std.Dev.:	0.4341
Std.Err.:	0.0006974
Skew:	-0.1069
Kurtosis:	-1.408





PJX RESOURCES INC
Vine Project
South East British Columbia
Canada, North America

Geotech TDEM System

App.Resistivity-Depth Section
Line L4090
Flight .flt.,.Date.

Processed by Geosource
155 Antibes Drive, Suite 116
North York, Ontario, Canada

August 2017

Project 543

Appendix 10: Report on borehole and surface TDEM by SJ Geophysics Ltd.

Geophysical Report Prepared

for

PJX Resources Inc.

Volterra

Borehole & Surface

TDEM

at the

Vine Property

Cranbrook, B.C., Canada
Latitude: 49° 24′ 8.2″ N, Longitude: 115° 49′ 29.9″ W
NTS SHEET: 082G05

Survey conducted by SJ Geophysics Ltd.
February 2017

Report prepared by
Syd Visser
Darren Pinkerton
February 2017

Table of Contents

1 Survey Summary....1
2 Location and Access....3
3 Grid and Loop Information....5
4 Field Work and Instrumentation....8
4.1 Field Logistics....8
4.2 Survey Parameters and Instrumentation....10
4.2.1 Volterra Borehole Electromagnetic & Magnetic System....10
4.2.2 Volterra-TDEM Surface Survey....13
4.2.3 GPS....15
5 Quality Assurance and Data Deliverables....15
5.1 Locations....15
5.2 EM Data....15
5.3 Data Deliverables....16
6 Geophysical Techniques....18
6.1 Time Domain EM method....18
7 Discussion of borehole results....20
7.1 Magnetics....20
7.1.1 VA14-01....20
7.1.2 VA15-02....21
7.1.3 VA17-25....22
7.2 Time Domain EM....23
7.2.1 VA14-01....23
7.2.2 VA15-02....26
7.2.3 VA17-25....28
7.2.4 Line 1, Loop 1....30
8 Conclusion....32
Appendix A : Statement of Qualifications....33
Appendix B : Instrument Specifications....35

Dabtube 24-bit four-channel acquisition unit....35
SJ Geophysics EM Transmitter (EMTX)....35
Borehole 3-Component Fluxgate Sensor....36
Borehole Axial B-Field Coil (Ant-23)....36
Surface B-Field Coil (Ant-23)....36

Index of Figures

Figure 1: Overview map of the Vine Property located in southeast BC, Canada....3
Figure 2: Location map for the Vine Property showing road access....5
Figure 3: Grid map....7
Figure 4: General Principles of TDEM (Grant & West, 1965)....19
Figure 5: VA14-01 Total Field Magnetics....21
Figure 6: VA15-02 Total Field Magnetics....22
Figure 7: VA17-25 Total Field Magnetics....23
Figure 8: VA14-01 B-Field Coil A component....24
Figure 9: Fluxgate magnetometer U (East) component....25
Figure 10: Fluxgate magnetometer V (North) component....25
Figure 11: VA15-02 B-Field coil A component....27
Figure 12: VA15-02 Fluxgate magnetometer U component....27
Figure 13: VA15-02 Fluxgate magnetometer V component....28
Figure 14: VA17-25 B-Field coil A component loop1....29
Figure 15: VA17-25 B-Field coil A component loop2....29
Figure 16: Line 1, Loop 1 pT/amp (point normalized)....30
Figure 17: Line 1, Loop 1 % primary field (continuously normalized)....31

Index of Tables

Table 1: Survey Summary....2

Table 2: Borehole location parameters (UTM, NAD83 Zone 11)....6

Table 3: TDEM Survey Parameters (UTM, NAD83 Zone11)....6

Table 4: Details of the crew on site....8

Table 5: List of holes Dummy probed....9

Table 6: Receiver and transmitter parameters....13

Table 7: Volterra-BHEM sensor offsets....13

Table 8: TDEM recording and transmitting parameters....14

1 SURVEY SUMMARY

SJ Geophysics Ltd. was contracted by PJX Resources Inc. to acquire Volterra Borehole Electromagnetic and Magnetic data as well as a single surface Volterra TDEM line on their Vine Property. Table 1 provides a brief summary of the project.

Client	PJX Resources Inc.
Project Name	Vine Property
Mobilization	February 12 and 19, 2017
Down-Hole	
Survey Type	Volterra Borehole Electromagnetic & Magnetic Volterra 3-Component BHEM and BHMAG
Hole Name(s)	VA14-01, VA17-25, VA15-02, VA17-08
Location (Drill collar)	586600 E 5473630 N 1020 m elevation 586572 E 5473372 N 1010 m elevation 586385 E 5473504 N 960 m elevation ??? (NAD83 UTM Zone 11N)
Active Loop(s) (Approx. centre of loop)	Loop 1: 586285 E 5474261 N Loop 2: 586166 E 5473238 N (UTM NAD83 Zone 11N)
Total Length (m)	937, 655, 720, 89 m
Production Dates	February 13-16, 2017
Surface	
Survey Type	Volterra Time-Domain EM
Location (Approx. centre of line)	586399E 5474008 N (UTM NAD83 Zone 11N)
Total Line Kilometers	2.3 km
Active Loop(s) (Approx. centre of loop)	Loop 1: 586285 E 5474261 N
Production Dates	February 17-18, 2017

Objective	SJ Geophysics' objective was to carry out a Volterra Borehole EM and Mag survey in four drill holes on the Vine Property to search for conductors located in the vicinity of the boreholes. Only three boreholes were surveyed as one was blocked near the surface. One surface Voltera-EM line was surveyed to follow-up on an airborne magnetic anomaly. The conductors are expected to have a similar response to the nearby Sullivan deposit.

Table 1: Survey Summary

This report summarizes the operational aspects and methodologies of the geophysical surveys and gives a brief interpretation of the survey results. This report is meant to be an addendum to a more extensive geological drill report and thus will not discuss any historic data or geological information.

2 LOCATION AND ACCESS

The Vine Property is located 11 kilometers south of Cranbrook, British Columbia. The property is crossed by 2 power lines, a CPR rail line, and Highway 3.

(http://pjxresources.com/projects/vine-property)

Figure 1: Overview map of the Vine Property located in southeast BC, Canada

The Vine Property was accessed through an alternative access road due to an unusually large snowpack during the time of the survey. The alternative route can be accessed from Cranbrook

by the following directions.

- Drive south on Victoria Ave, which turns into 22nd Ave
- From 22nd Ave turn east onto 13th St, followed by south onto 24th Ave
- Turn east onto 21st St
- Turn south onto Hidden Valley RD
- Follow Hidden Valley RD to its end which will take you to the property access

The climate of the project area is dry and moderate. The temperature ranges from lows of -20 ºC in the winter to highs of 35 ºC in the summer. Most of the precipitation in the area falls as snow in the winter.

The topography of the immediate area is characterized by rolling hills covered with fairly open pine forests. The topography steepens significantly a few kilometers to the west as you get further into the Purcell mountains.

Both small and large mammals are common in the forest on the project. Common larger mammals include Mule deer, black bears, and elk.

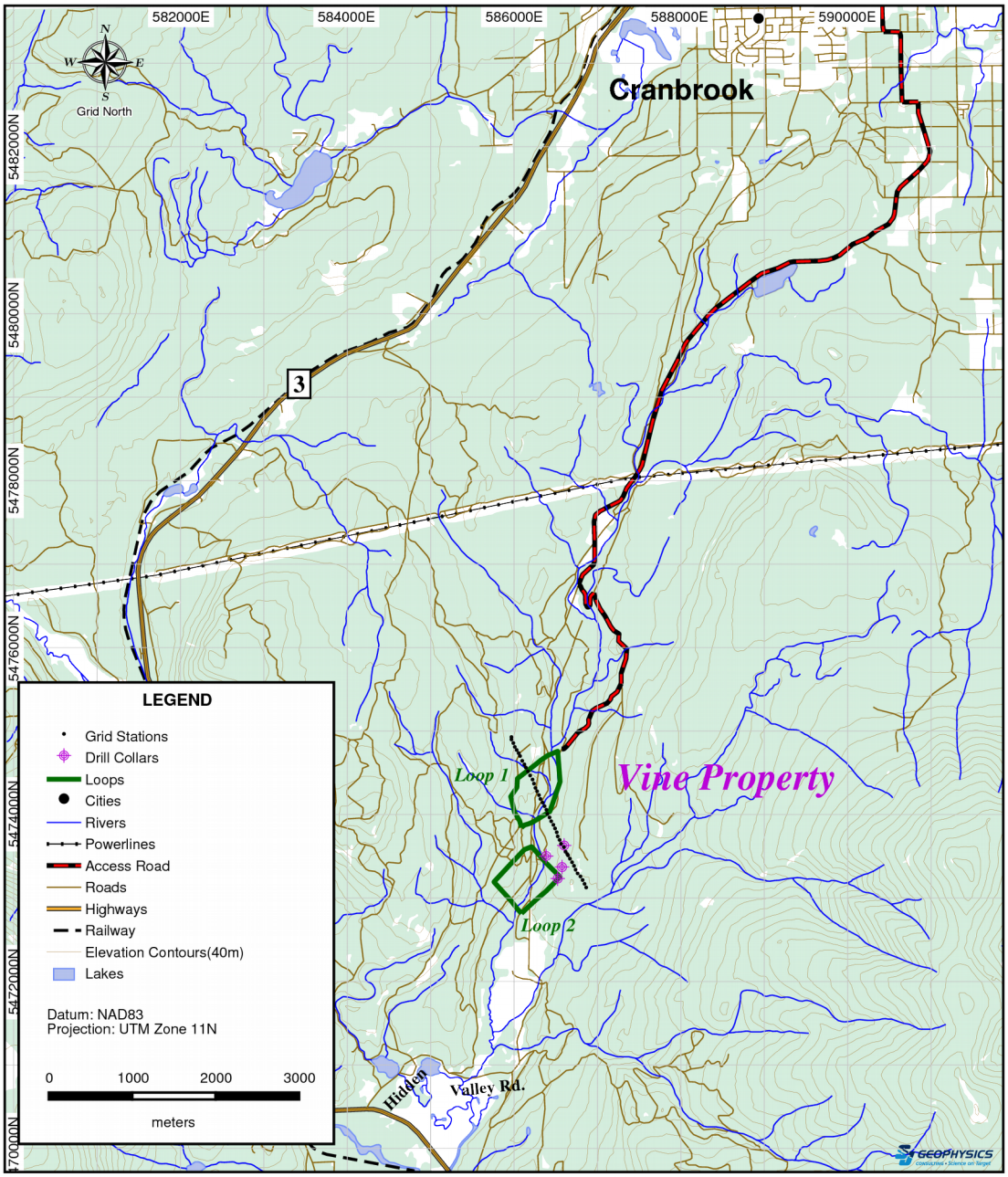


Figure 2: Location map for the Vine Property showing road access

3 GRID AND LOOP INFORMATION

The Vine property Borehole EM survey consisted of four boreholes. The surveyed boreholes were located in the eastern portion of the Vine property. Two surface loops with dimensions approximately 500 m × 500 m were located to the west of the boreholes. One of the loops was

situated more to the north, and the other loop to the south of the surveyed holes. Borehole locations and drill trace lengths are listed in Table 2 and the loop locations are presented in Figure 3.

Borehole ID	Drill Collar Easting	Drill Collar Northing	Drill Collar Elevation (m)	Total Drill Trace Length (m)
VA14-01	586600 E	5473630 N	1020	1010.97
VA17-25	586572 E	5473372 N	1010	821.17
VA15-02	586385 E	5473504 N	960	955.2
VA15-08	586521 E	5473234 N	1010	532

Table 2: Borehole location parameters (UTM, NAD83 Zone 11)

The Surface TDEM survey consisted of a single line extending from the southeast for 1 km intersecting hole VA14-01. The survey line continued through Loop 1 extending 400 m northwest past the loop. Loop 1 was reused for the surface line but not Loop 2 due to the amount of activity in the area. Surveying began in the southeast section of the line with stations spaced every 50 m continuing until terrain became too difficult to traverse. The survey parameters are listed in Table 3 and the survey stations are presented in Figure 3.

Survey Lines	1 N
Loop	Loop 1
Survey Line Azimuth	335°
Station Spacing	50 m
Elevation Range	971-1060 m

Table 3: TDEM Survey Parameters (UTM, NAD83 Zone11)

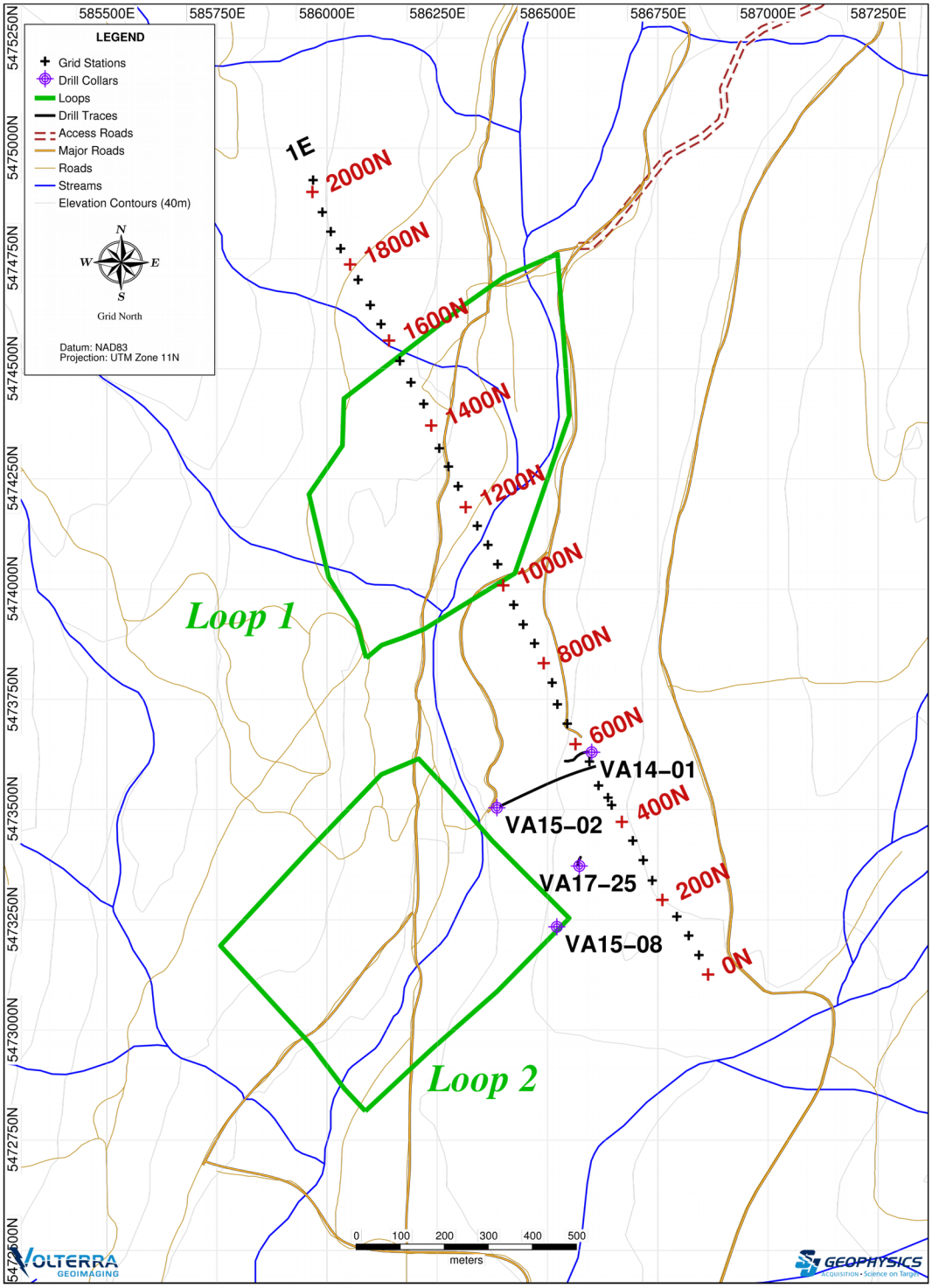


Figure 3: Grid map

4 FIELD WORK AND INSTRUMENTATION

4.1 Field Logistics

An SJ Geophysics Borehole EM field crew typically consists of one field geophysicist and one geophysical operator. The field geophysicist and operator carry out all operational aspects including field logistics, data acquisition and initial field data quality control. For this survey, one senior geophysicist and one geophysical operator were present for the duration of the survey. Two additional helpers were supplied by the client through Tanglefoot Forestry Consultants Ltd to assist in laying out of the loops and help conduct the surface EM survey. Table 4 lists the crew members on this project.

Crew Member	*Role*	*Company*	*Dates on Site*
Syd Visser	Senior Geophysicist	SJ Geophysics	February 13-18, 2017
Darren Pinkerton	Geophysical Operator	SJ Geophysics	February 13-18, 2017
Jeff Davies	Helper	Tanglefoot	Feb 13, 14, 17, 19, 2017
Jordan Pelten	Helper	Tanglefoot	Feb 13,14, 17, 19, 2017

Table 4: Details of the crew on site

The SJ Geophysics crew's first day on site was February 13th and the crew remained on site through February 18th. Mobilization to Cranbrook occurred on February 12th and demobilization occurred on February 19th. Both crew members mobilized to and from Cranbrook by airplane. Transportation in town occurred using a rented Ford F-150 pickup truck. The SJ Geophysics crew was accommodated in a single suite at the Nomad Motel located in Cranbrook. Meals for the crew members consisted of a basic breakfast, packed lunch, and dinner at a local restaurant.

During the Volterra Borehole Electromagnetic & Magnetic survey all designated survey holes were dummy probed to determine if any obstructions were present in the hole. A total of three holes were probed (excluding VA14-01), resulting in two of the holes being clear to an acceptable survey depth. The probing was completed on February 13th while the two supplied helpers laid out the loops. Table 5 below lists the holes probed and the corresponding depth to obstruction.

Borehole ID	***Depth to Obstruction (m)***
VA14-01	937 (Rod Depth)
VA17-25	755
VA15-02	730
VA15-08	89

Table 5: List of holes Dummy probed

Borehole data acquisition was acquired from three of the open holes during the period of February 14th - 16th. Two holes, VA17-25 and VA15-02, were surveyed using the SJ Geophysics supplied winch. Borehole VA14-01 was surveyed by lowering the probe through the rods and allowing it to protrude approximately 8 m below the drillbit.

Hole VA17-25 was surveyed on February 14th to a depth of 655 m, which was 100 m short of the dummied depth. This change in achievable depth was likely caused by the dummy probe dislodging some grease when the hole was dummy probed and blocking the hole. Transmitter issues resulted in no data being collected above a depth of 300 m from Loop 1. Hole VA15-02 was surveyed on February 15th to the depth of 720 m achieved by the dummy probe. Hole VA14-01 was surveyed last on February 16th. This hole was surveyed last due to the rods being stuck in the hole. During the survey of this hole a small leak in the drill caused the rods to slowly turn while the drillers pulled rods. The slow turning caused minor issues with the orientation of the probe causing the cross components to not be calibrated properly. This issue was caught at 500 m and it was determined that the data could be fixed in house at a later date using the magnetic and electromagnetic data.

Two loops were utilized for all three survey holes with the only instance of issue noted for hole VA17-25. Overall, the Borehole EM survey went smoothly with limited equipment issues. Good quality data was collected from all three boreholes.

Data collection on the Volterra-TDEM surface survey began on February 17th and was completed February 18th. Surveying was initially conducted by the two client supplied helpers with stations collected at 50 m intervals. Data collection began 50 m southeast of hole VA14-01 then continued southeast until station 0. The helpers then began working in the opposite direction from hole VA14-01 towards and through Loop 1 for a total of 1300 m. Data collection on the line took a second day due to the difficulty of traversing through the snow. The remaining 250 m inside Loop 1 along with an additional 480 m to the west of Loop 1, was collected the second

day by the SJ Geophysics crew. Data collection was halted in the northwest due to the terrain becoming difficult to traverse.

Only Loop 1 was used during the Surface Volterra-TDEM survey due to the drill move activity around the second transmitter site.

4.2 Survey Parameters and Instrumentation

4.2.1 Volterra Borehole Electromagnetic & Magnetic System

SJ Geophysics Ltd.'s Volterra Borehole System was utilized for the Borehole electromagnetic (EM) survey. The Volterra Borehole EM system is based upon the Volterra Acquisition system, first developed for surface surveys, and then adapted to the Borehole environment. The internally designed 24-bit Analog-to-Digital (ADC) electronics record the full-waveform signal from various sensors. The recorded signal is downloaded to a personal computer and then passed through proprietary signal-processing software to calculate the geophysical parameters.

On the surface, a transmitter system was connected to a loop to generate the primary field. The rectangular loop was set up using 14 gauge EM wire (solid copper magnetic wire with insulating varnish). The transmitter system consisted of an SJ Geophysics proprietary transmitter unit (EMTX), its power supply unit, current waveform recording and monitoring unit, and connecting accessories. The transmitter units (EMTX) were set to 7.5 Hz and 15 Hz square waveform (100% duty cycle) through the loop. Each EMTX unit was powered by an individual gas generator with a minimum wattage of 5500 watts. The real-time current was recorded using a data acquisition unit connected to a current monitoring toroid.

A Volterra-BH Acquisition Probe containing 2, 4-channel full-waveform, data acquisition units was used to measure the EM and magnetic field responses. The acquisition probe used in the survey is a modular design comprised of up to 5 sections: two sensor tubes (magnetics and coil), two battery tubes, and a Borehole Dabtube (data-acquisition unit). For the collection of 3-component Borehole-EM data, two different sensors are connected simultaneously to the Borehole Dabtube. The first sensor, which measures the axial-component of the EM field, is a high sensitivity B-field coil with a frequency range of 1 Hz to 40 kHz. The second sensor, measuring the X-Y-Z components, is a three-component fluxgate magnetometer with a frequency range up to 3 kHz. The fluxgate magnetometer is both AC and DC coupled with amplification on the AC coupled sensor to increase the sensitivity for EM measurements. The DC coupled sensor

measures both the EM and DC Magnetics. It should be noted that the B-field coil and fluxgate sensor are separated by approximately 3 m.

An inertial measurement unit (IMU) located within the Dabtube provides orientation data and the temperature of the electronics board. The acquisition probe was synchronized with GPS before it went down the hole, and after it came out of the hole, to ensure correct timing and location. Once the unit acquired a GPS lock, data recording was started with an Android tablet connected to the Dabtube via a Bluetooth connection.

The specifications of the instruments used in the project are listed in Appendix B and the recording parameters are summarized in Table 6.

Survey Technique	Volterra Borehole TDEM
EM Receiver	Volterra Borehole System
Measured Component	B-Field Coil: Z Component Fluxgate Mag: X, Y, Z Components DC coupled X, Y, Z Components AC coupled IMU: Temp and 3 component mag, acc, gyro
Sample Rate	32000 samples/second
Reading Length	120 seconds
Borehole ID	VA14-01
Reading intervals	Drill trace length 937 to 500 m: about 9 m Drill trace length 505 to 310 m: about 15 m Drill trace length 310 to 46 m: about 24 m
Borehole ID	VA17-25
Reading intervals	Drill trace length 650 to 500 m: about 10 m Drill trace length 655 to 500 m: about 20 m Drill trace length 500 to 300 m: about 10 m Drill trace length 300 to 20 m: about 20 m
Borehole ID	VA15-02

Survey Technique	Volterra Borehole TDEM
Reading intervals	Drill trace length 720 to 300 m: about 10 m Drill trace length 300 to 20 m: about 20 m
EM Loop	Loop 1
Transmitter	EMTX (SN#3002)
Waveform	Square
Frequency	15 Hz (Feb 14-16)
Duty	100%
Loop Size	Rectangular, about 500 m × 500 m
Current	Approximately 5.8 A peak-to-peak
EM Loop	Loop 2
Transmitter	EMTX (SN#3003)
Waveform	Square
Frequency	7.5 Hz (Feb 14-16)
Duty	100%
Loop Size	Rectangular, about 500 m × 500 m
Current	Approximately 5.8 A peak-to-peak

Table 6: Receiver and transmitter parameters

When surveying through the rods, all depths are referenced relative to the drill-bit depth. During processing, corrections were applied to account for the offset from the eight extension rods, battery tubes and data acquisition unit that were used in the survey. The offset from the drill-bit for each sensor is listed in Table 7.

Sensor Configuration	**Offset (cm) below Drill Bit** (8 ext. rods)
B-Field Coil (Z component)	998
Fluxgate Mag (X, Y, Z component)	698

Table 7: Volterra-BHEM sensor offsets

4.2.2 Volterra-TDEM Surface Survey

A single Volterra acquisition set consisting of one B-field sensor coil oriented in the vertical (Hz) direction was connected to a data acquisition unit to collect the surface TDEM data. The four-channel Volterra acquisition unit contains 24-bit analog-to-digital electronics that record the full waveform signal from various sensor configurations and is known internally as a Dabtube. Android tablets utilizing in-house software were used to view decimated data in real time via a Bluetooth connection. The signal visible through the software enables the operators to verify that the loop was transmitting a strong signal and that the coils are operating as expected.

The TDEM survey consisted of laying out a large 500 x 500 m loop and taking a series of in-loop and outside-loop measurements. A B-field sensor coil and Dabtube were set up at each survey station to measure the z-component of the magnetic field. Data was acquired at each individual station with a reading length of 60 seconds.

An SJ Geophysics' proprietary transmitter, EMTX, was utilized to transmit a square (100% duty cycle) waveform through the loop. A base frequency of 7.5 Hz was utilized for the duration of the survey. The real-time current was monitored using a data acquisition unit to record the voltage drop across a current monitoring toroid.

The recording and transmitting parameters used for the survey are described in Table 8. The full instrument specifications are listed in Appendix B.

Survey Technique	Surface TDEM
EM Signal Recording	Volterra Data Acquisition Unit (8000 series)
Sensor	ANT-23, B-Field Coil (SN# 3623)
Measured Component	Z component
Sample Rate	32,000 samples/second
Reading Length	60 seconds (1 minute)
EM Signal Processing	CSProc
EM Loop	Loop 1
EM Transmitter	EMTX (SN# 3002)
Waveform / Duty Cycle	Square / 100 %
Base Frequency	7.5 Hz
Loop Size	500 m x 500 m
Loop Resistance	19 ohm
Current	5.8 A peak-to-peak

Table 8: TDEM recording and transmitting parameters

4.2.3 GPS

Location data was collected using handheld GPS units, consisting of Garmin GPSMap 60cx and GPSMap 64s models. Compasses were utilized to assist with navigation between stations. All location data was collected in the field with the WGS84 datum.

5 Quality Assurance and Data Deliverables

5.1 Locations

Good quality location data is the first step to the successful analysis and interpretation of geophysical survey data. Garmin GPSMap 60cx/64s handheld GPS units were utilized to collect location information and survey stations. The quality of the location data and labeling were checked using GPS management software such as Garmin BaseCamp or GIS packages like

QGIS and GRASS. Any inconsistent measurements were discarded. All GPS data points were collected correctly during the survey so no recollection was required.

The collar location azimuth and dip is very important for location information and is required along with the IMU data. The IMU data is collected internally by the probe and used to calculate the rotation of the 3-component EM probe. The Borehole survey data was provided by the client.

5.2 EM Data

During surveying, the transmitter current is monitored with a dedicated Volterra Dabtube unit which measures the current from a toroid current monitor. A measure of "squareness" is applied to the stacked current waveforms to confirm the stack-frequency is precise to a user-defined number of significant figures, typically four decimal places. Each reading is visualized in a variety of formats (i.e. raw, raw-zoom, spectral, stacked) which allows the data processor to quickly identify readings compromised by power outage, motion, noise or other issues. Compromised data are flagged for removal and, if required, re-acquisition is completed the following day.

Two methods are used for normalization. The first method uses the current calculated from the transmitter signal. The second method uses a deconvolution of the data to account for the transmitter waveform. Although deconvolution is a better method, it does tend to generate some noise in the very early time data.

Within the processing work-flow, the data collected from the 3-component Fluxgate mag: X, Y, and Z data components are rotated to A, U, V components using orientation data from the IMU accelerometer and the survey data provided by the client. Drill holes with a dip greater than 75° make it difficult to collect good IMU orientation data, which frequently leads to errors during the rotation calculations. The uncertainty in the Borehole survey parameters provided by the client are unknown.

The raw data collected in the Vine Borehole and surface EM Project contain noise from nearby high voltage power lines. After the filtering and stacking processes by the processing software, most of the noise was satisfactorily suppressed. The decay curves, and resultant profiles were generally smooth, at least for the mid to late-time gates.

5.3 Data Deliverables

All final data were processed at the SJ Geophysics office in Delta, BC. The loop locations were collected by handheld GPS in WGS 84 and converted into NAD 83 Zone 11N. The location information has been provided in CSV formated text files as easting , northing and elevation. The location data is also included in the TEM files.

The 3-component and total field magnetic data, IMU data and temperature collected from both loops are located in CSV text files.

The EM data were provided in TEM file format (column separated data with survey and instrument parameters in header) as a standard fixed loop survey.

Timing schemes refer to how the width of the time channels decrease with each subsequent channel, starting from the late time. For example, the "TWO" scheme calculates the width of each channel as 1/2 of the previous channel's width until a minimum gate width of 1 sample is reached. The "SQRT2" scheme divides the previous channel's width by a factor of $2^{1/2}$. The data for this survey was processed internally using two different timing schemes: SQRT2 and Maxwell (described below). The number of gates were chosen based on the minimum gate width (early time) and the sampling rate of the Dabtube. Although the sampling rate for this survey was 32 ksps, the gate selection did not take into account that the frequency response of the coil is between 1 and 10 kHz (the 3 dB down point being at 10 kHz). Therefore the very early time gates may be beyond the resolution of the system.

The SQRT2 scheme for the 7.5 Hz and 15 Hz base frequencies provided a default 16 to 17 gates. For the Volterra-EM data, Channel 1 refers to the latest time gate, following the convention of the UTEM and UREM systems[1].

Data was collected using a 100% duty cycle waveform. The results are a measurement of the total field. The total field is very important for borehole work since it shows the direction of the primary field, which is required to determine whether we have an in-hole or off-hole anomaly. All data is presented as a secondary field. This is because the modeling program used by most people does not handle total field and does not allow re-normalization in real time.

To obtain a secondary field we have to subtract the primary field, in the direction of the sensor field, from the total field. Handheld GPS units were used to collect the loop location data and is not of sufficient quality to accurately calculate the primary field for this standard

1 *UTEM: Lamontagne Geophysics Ltd.*
UREM: Vale Canada Ltd.

processing. To correct for this error in calculation we simply assume that the latest time gate (referred to as the reference time gate) is the primary field and subtract it from the total field to obtain the secondary field. Even using this method our time gates still reach out significantly later in time for 15 Hz 100% duty cycle system than for a 15 Hz 50% cycle system. The reference time gate itself is always reduced to the calculated field and is very useful to look at for any large, very late time responses.

Along with the time gates and the reduction by the primary field to obtain the secondary field, the data is normalized using a number of different schemes. The most fundamental one is to normalize to the transmitter current which is recorded at the transmitter using a toroid attached to a Volterra Dabtube. The second method is to deconvolve the data with the full waveform data collected at the transmitter. Both of these methods are commonly referred to as constant gain or point normalized measurements and the results are presented in picoTesla per amp. A third method is commonly referred to as a variable gain or continuously normalized survey. In this case we normalize to the reference time gate or the calculated total field and multiply by 100. These results are presented as a percentage of the primary field.

The data will be presented as digital data in a directory named as the borehole name which contains 6 files ending with .tem and .png files and one .csv file with magnetic and IMU data as listed below.

- VA14-01 = main directory with Borehole name
  - LoopNumber
    - TotalField-pT-Amp = total field in pT per amp
      - .tem = Volterra time gate data deconvolved to the current monitor
      - .png = corresponding images for the above in directories starting with 'IMG' the plot files will be reduced to late time channel
    - Mag-imu = contains a .csv file with magnetic and IMU data

6 GEOPHYSICAL TECHNIQUES

6.1 Time Domain EM method

The time domain EM technique energizes the ground with a variable magnetic field known as the primary field. A transmitter sends an alternating electric current through a loop of wire laid on the surface to create the primary field (Figure 4). Each time a variation occurs in the current (e.g. succession of on-time/off-time), and therefore in the primary field, the induced voltage causes eddy currents to flow within underground conductors near the loop. Circulating about these currents is another magnetic field termed the "secondary" field. The magnitude and rate of decay of the eddy currents depend on the electrical conductivity and on the geometry of the medium. As the secondary field is directly proportional to the eddy currents, recordings of the secondary field can be exploited to infer information about the conductivity structure of the subsurface.

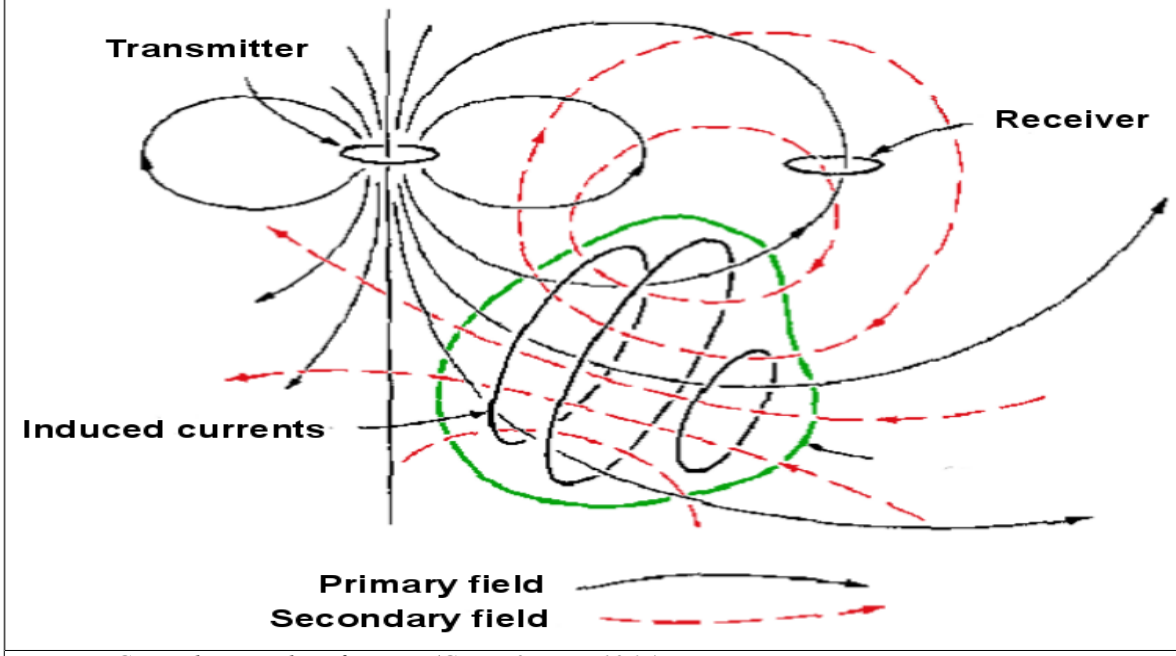


Figure 4: General Principles of TDEM (Grant & West, 1965)

In resistive media eddy currents decay rapidly, whereas in conductive media the currents will decay more slowly. A sensitive B-Field sensor is connected to a receiver (Dabtube) to measure the total magnetic field, the vector sum of both primary and secondary magnetic fields, on the surface. The information carried by the secondary magnetic field will be extracted during a processing stage using filtering, modeling and normalization.

Measurements are taken along survey lines which can be outside, inside or crossing the loop. Moreover, two different loops using two different frequencies can stimulate the ground at the same time and the secondary field related to each of them will be isolated at the processing stage.

TDEM measurements are generally considered repeatable; however, changing field conditions such as variable water content can reduce the overall repeatability. Incorporating other data sets to assist in geological interpretation is prudent.

7 DISCUSSION OF BOREHOLE RESULTS

7.1 Magnetics

The borehole probe contains a 3 component fluxgate magnetometer sensor along with a 3 component magnetic mems (IMU) sensor. The fluxgate sensor is more sensitive then the mems, therefore the fluxgate sensor data is used for interpretation. Although 3 components of the magnetic field is measured, only the total field is shown and used for interpretation.

7.1.1 VA14-01

The total magnetic field background of borehole VA14-01 is around 55800 nT which is a little higher than expected and possibly due to the proximity of the drill rods. There is a small, short wavelength, weak anomaly located at a depth of about 490 m which correlates with the central part of a gabbro sill. A wider more erratic magnetic anomaly, starting at a depth of about 550 m and ending at a depth of about 650 m, correlates very well with a layer of lower Aldridge rocks. This layer of sediments must contain layers of magnetite and or pyrrhotite, especially at the top of the layer and near the bottom although there is no indication of it in the drill logs. The EM response suggests if it is pyrrhotite it is not very extensive. The small anomalies further down the hole at a depth of about 700 m seems to correlate with a thin gabbro.

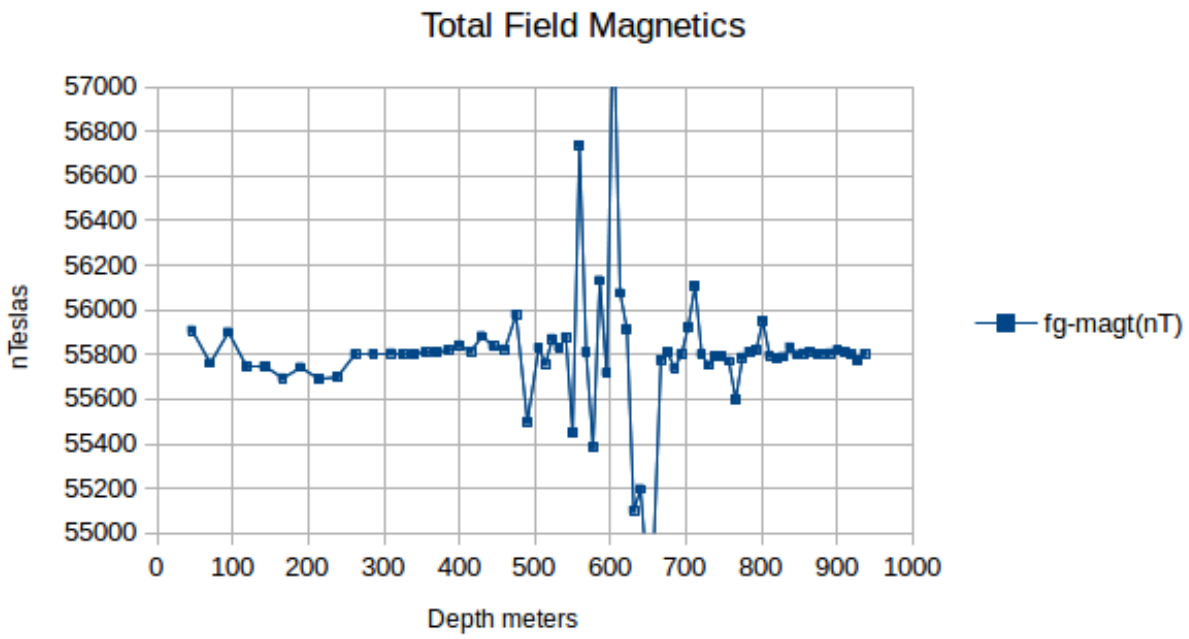


Figure 5: VA14-01 Total Field Magnetics

7.1.2 VA15-02

The total magnetic field background of borehole VA15-02 is around 55400 nT. The sharp negative anomaly located at a depth of 200 m is in the central part of a gabbro sill. The logs do not indicate anything abnormal in this region. The anomaly located at a depth of 400 m correlates very well with a layer of lower Aldridge formation which contains disseminated pyrrhotite. There is no apparent EM anomaly associated with this horizon.

There is a very distinct but relatively weak anomalous region located at a depth of 500 m to 650 m. This zone correlates well with a second lower Aldridge horizon that also contains disseminated pyrrhotite. This zone is also associated with a very weak EM anomaly. A very weak small anomaly at a depth of about 700 m seems to be associated with a gabbro sill.

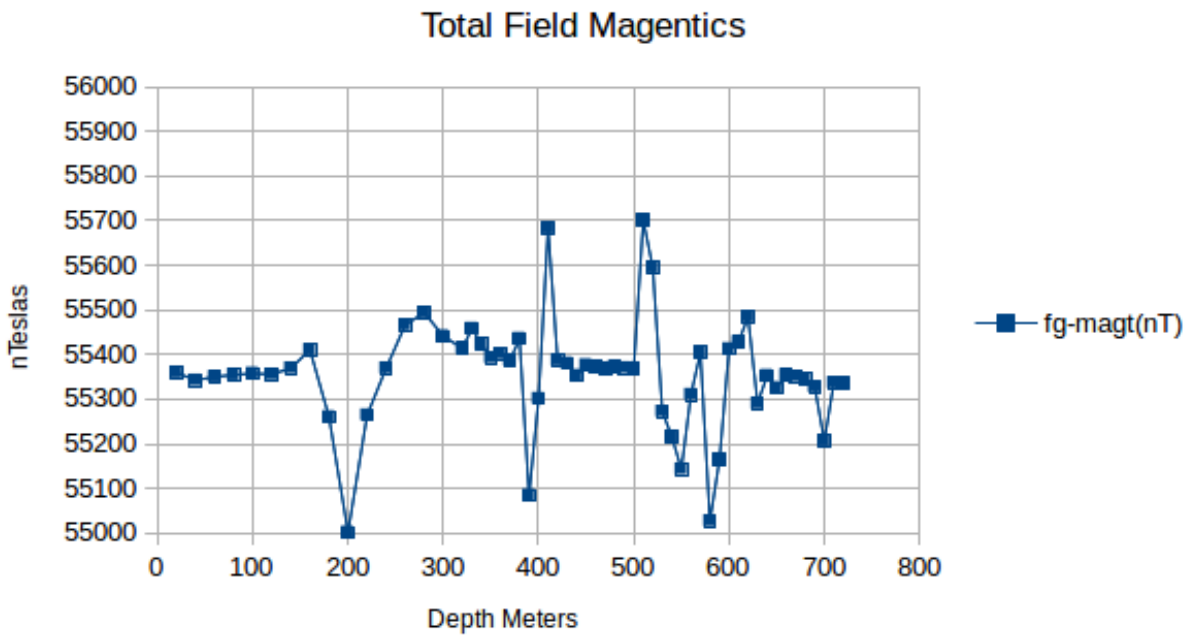


Figure 6: VA15-02 Total Field Magnetics

7.1.3 VA17-25

The total magnetic field background of borehole VA17-25 is around 55350 nT. There are no significant anomalies in this borehole. The only very short wavelength anomaly in this borehole is located at a depth of about 470 m and is likely associated with a gabbro.

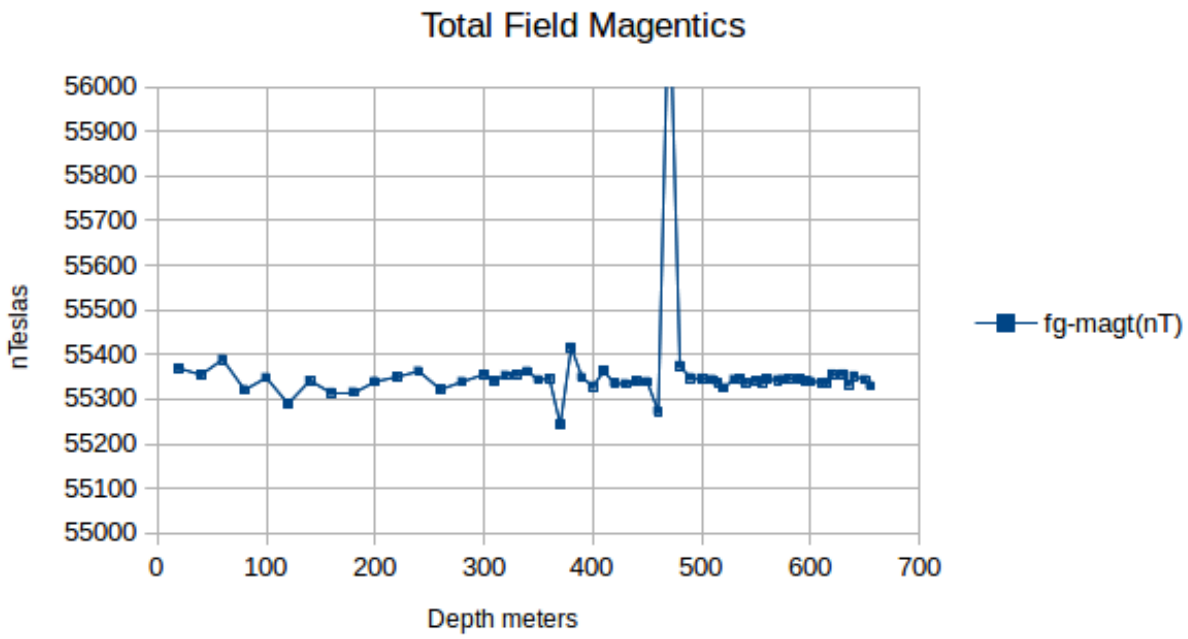


Figure 7: VA17-25 Total Field Magnetics

7.2 Time Domain EM

The EM data was collected using a very sensitive axial component B-field coil and a 3 component fluxgate magnetometer used in AC coupled mode. The axial B-Field coil data "A" and the cross components "U" and "V" from the much less sensitive fluxgate magnetometer will be used in the discussion of the results. For the near vertical hole VA14-01 an azimuth of 90 degrees with be assumed thus U will be in the East direction and V in the North. All plots are the secondary field in pT/amp and reduced to a late time channel. The latest time channel is the total field and is compared to the calculated primary field to check for any late time anomalies and sign correctness.

7.2.1 VA14-01

The EM data from Loop 1 in all components indicates there is a weak anomalous zone from a depth of about 550 m to 650 m. This correlates very well with the magnetically active zone discussed earlier that correlated with the lower Aldridge formation. The lower Aldridge formation at this location contains some sphalerite and likely pyrrhotite as indicated by the magnetics. There is likely enough pyrrhotite to make this zone weakly conductive.

There is no indication of a strong late time anomaly; therefore, it is considered very safe to reduce the remaining early time data to a late time channel, removing any noise due to location errors. Since the hole is near vertical, it is almost impossible to use the accelerometers to correct the rotations. The rotation of the cross components to UV coordinate system could have significant error, therefore the calculated primary field was used to calculate the rotation assuming that the azimuth was east. A second advantage of doing a survey through the rods with a modern drill is that there is very little rotation of the rods during a pull so the orientation tends to be very consistent.

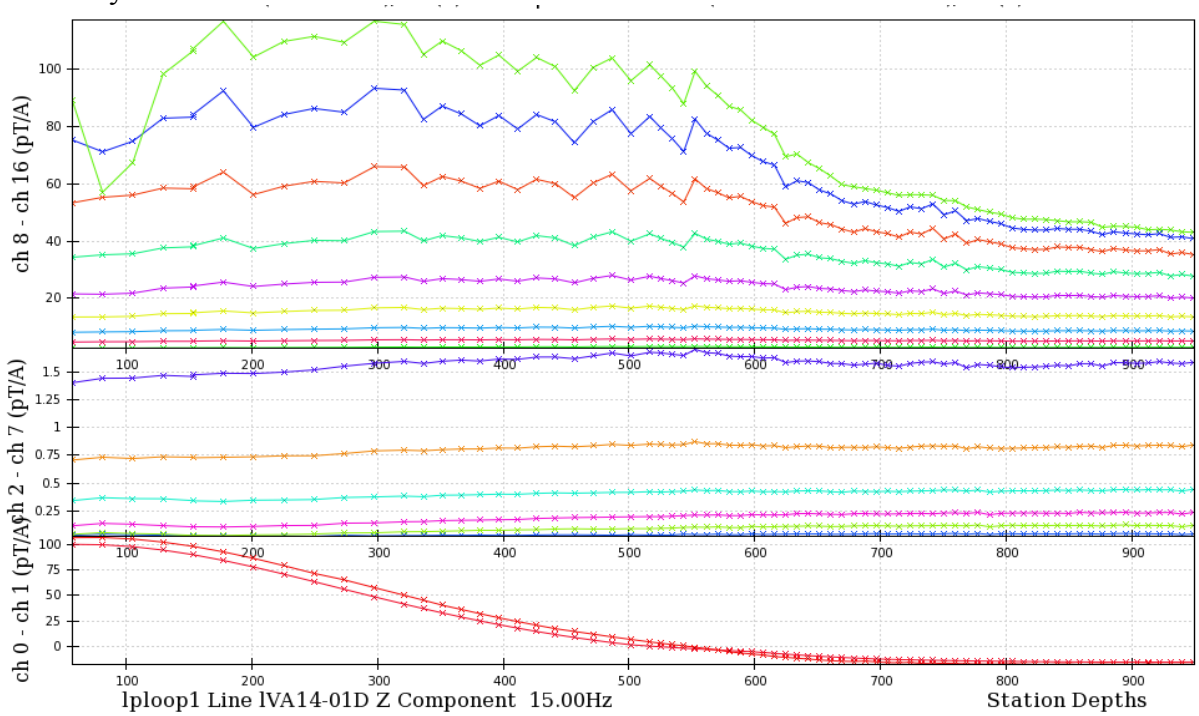


Figure 8: VA14-01 B-Field Coil A component

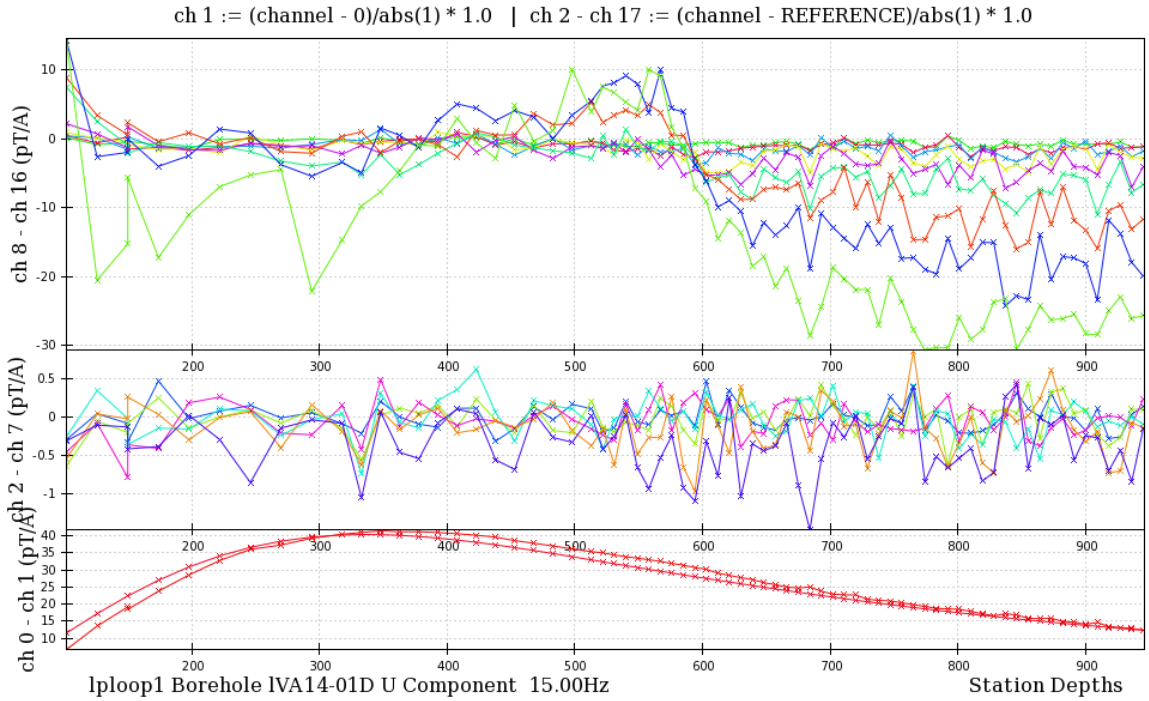


Figure 9: Fluxgate magnetometer U (East) component

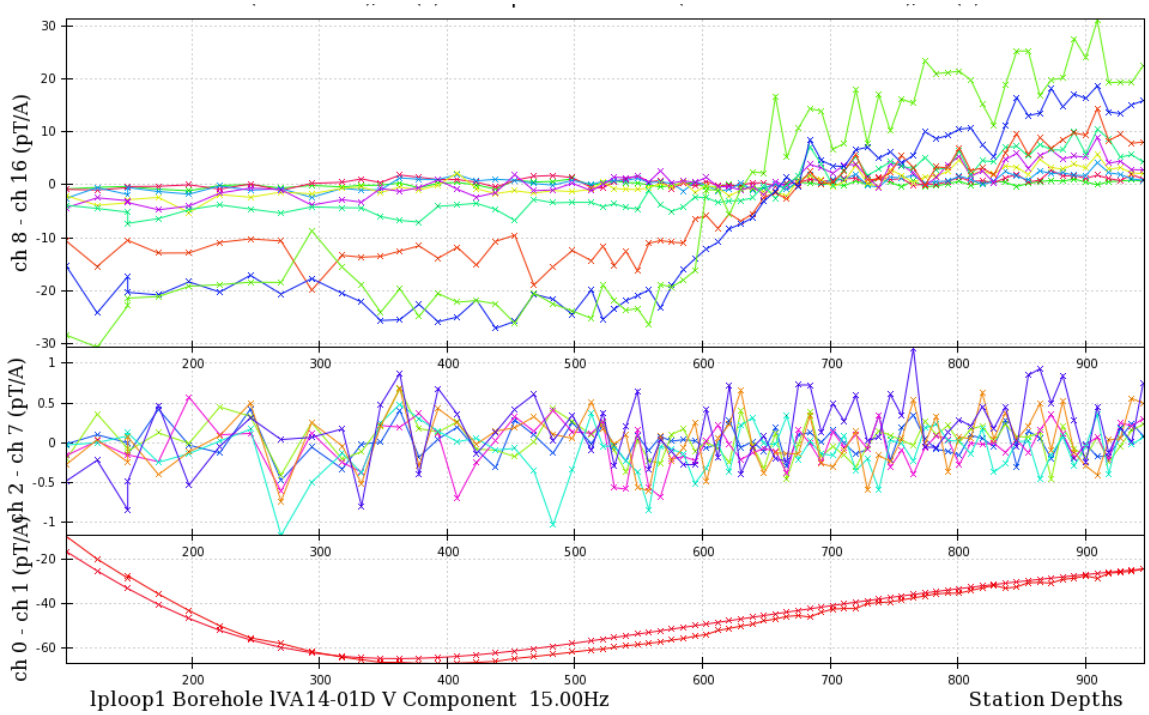


Figure 10: Fluxgate magnetometer V (North) component

7.2.2 VA15-02

The EM data from Loop 1 in the very sensitive axial component shows a very short wavelength and weak anomaly associated with the magnetic anomaly seen at a depth of about 400 m. This anomaly indicates a very weak conductor with no significant extent.

There is a weak anomalous zone from a depth of about 500 m to 650 m that is clear on the early time channels of all 3 components. This correlates very well with the magnetically active zone discussed earlier that correlated with the lower Aldridge formation. The lower Aldridge formation at this location contains some sphalerite and likely pyrrhotite as indicated by the magnetics. There is likely enough pyrrhotite to make this zone weakly conductive. This is likely the same formation as in Borehole VA14-01 since the response is very similar and the holes, as shown on the borehole traces in Figure 3, are not far apart in this area.

While rotating the U and V components of the fluxgate magnetometer it was noticed that the calculated primary field and ch1 did not match near the bottom of the hole. After looking at the survey results calculated from the borehole IMU and comparing it to the last survey point form the drill logs it was determined that the drill log survey point is likely not reliable. Inserting a survey point at a depth of 750 m (dip of 70.5 degrees and azimuth of 74.6) between points 356.7 m (dip of 70.1 and azimuth of 65.5) and 933 m (dip of 66.1 and azimuth of 118.8) gave much better results. The dip and azimuth calculated from the IMU and fluxgate mags can be seen in the accompanying magnetic results file from hole VA15-02.

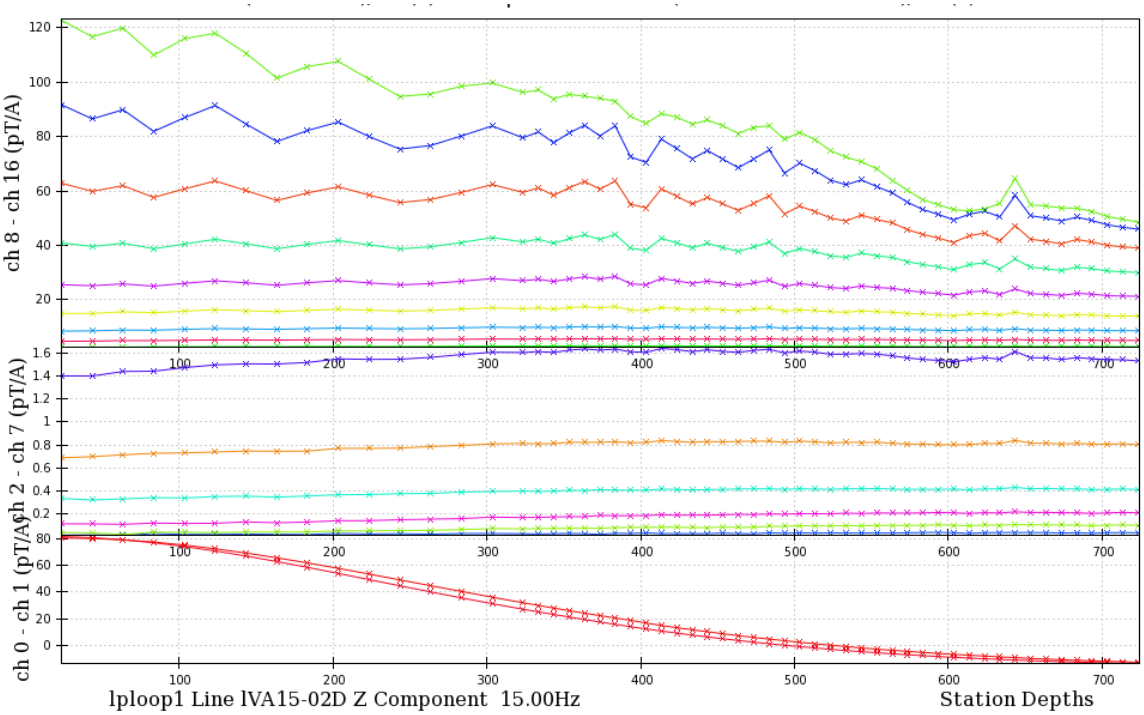


Figure 11: VA15-02 B-Field coil A component

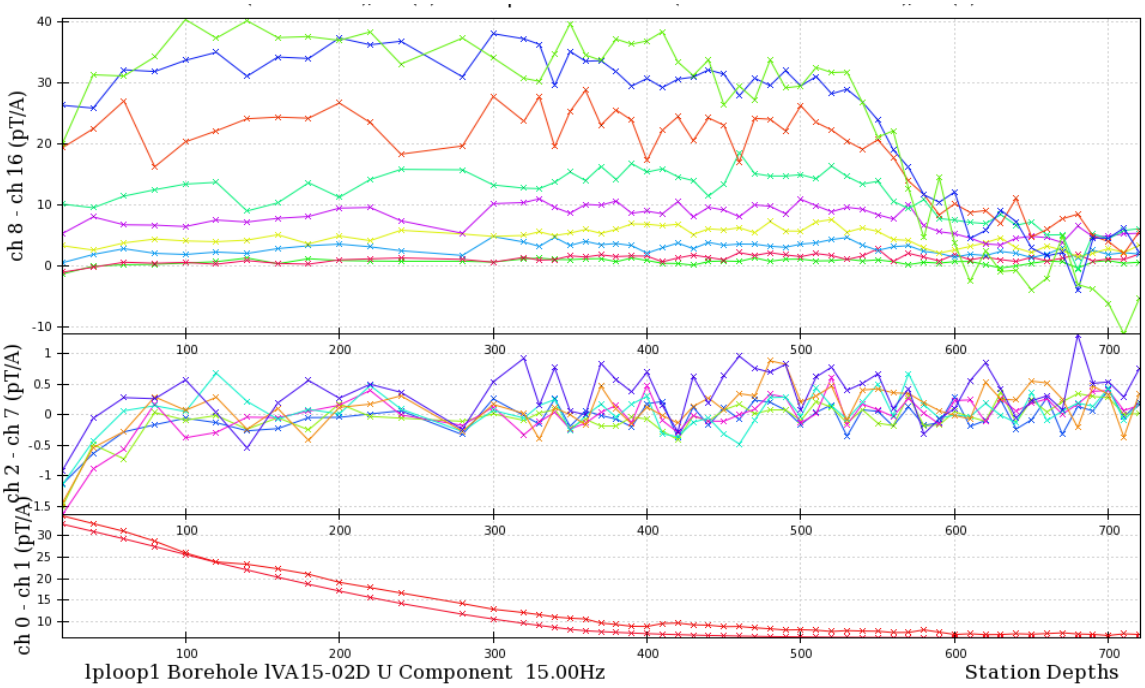


Figure 12: VA15-02 Fluxgate magnetometer U component

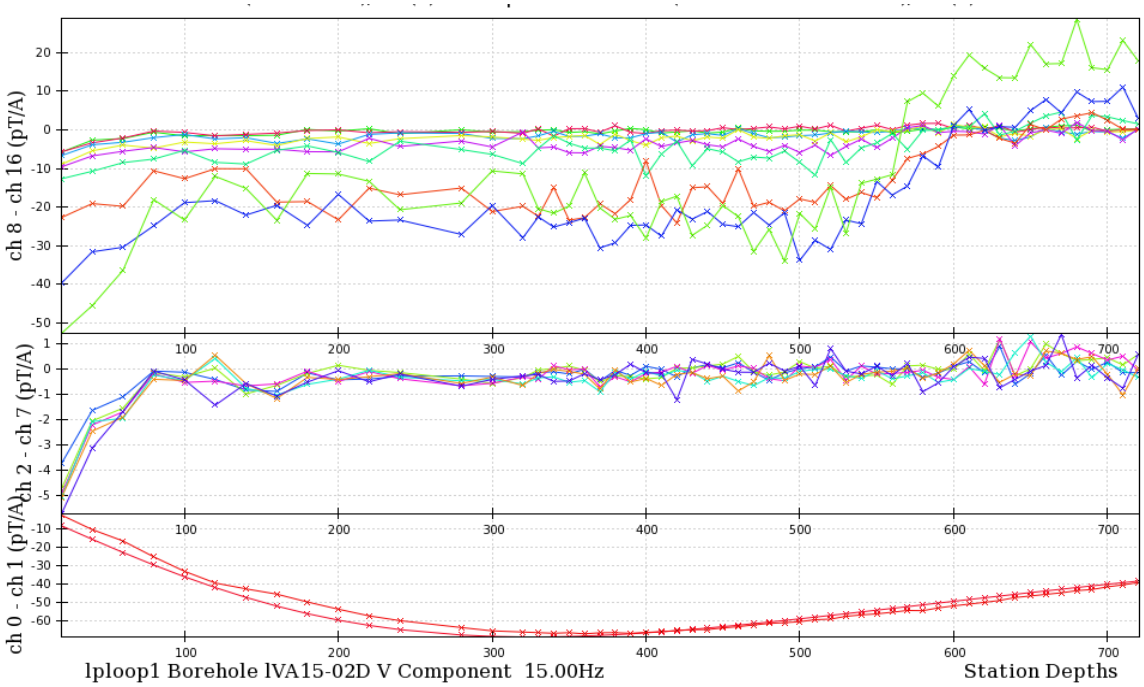


Figure 13: VA15-02 Fluxgate magnetometer V component

7.2.3 VA17-25

The EM data from Loop 1 or Loop 2 as shown in Figures 14 and 15, for the very sensitive axial component shows no response except for normal background response in the survey area. The axial components also show no response except for background. Unfortunately we could only survey to a depth of 720 m due to a blocked hole, therefore may not have surveyed to the area of interest.

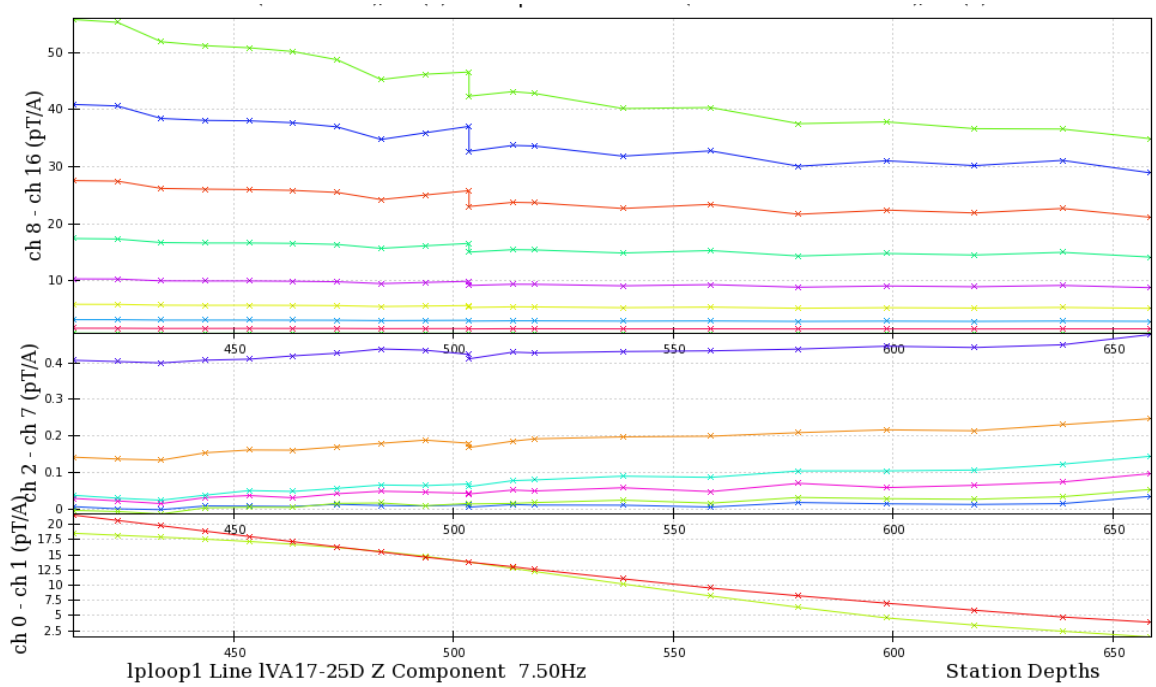


Figure 14: VA17-25 B-Field coil A component loop1

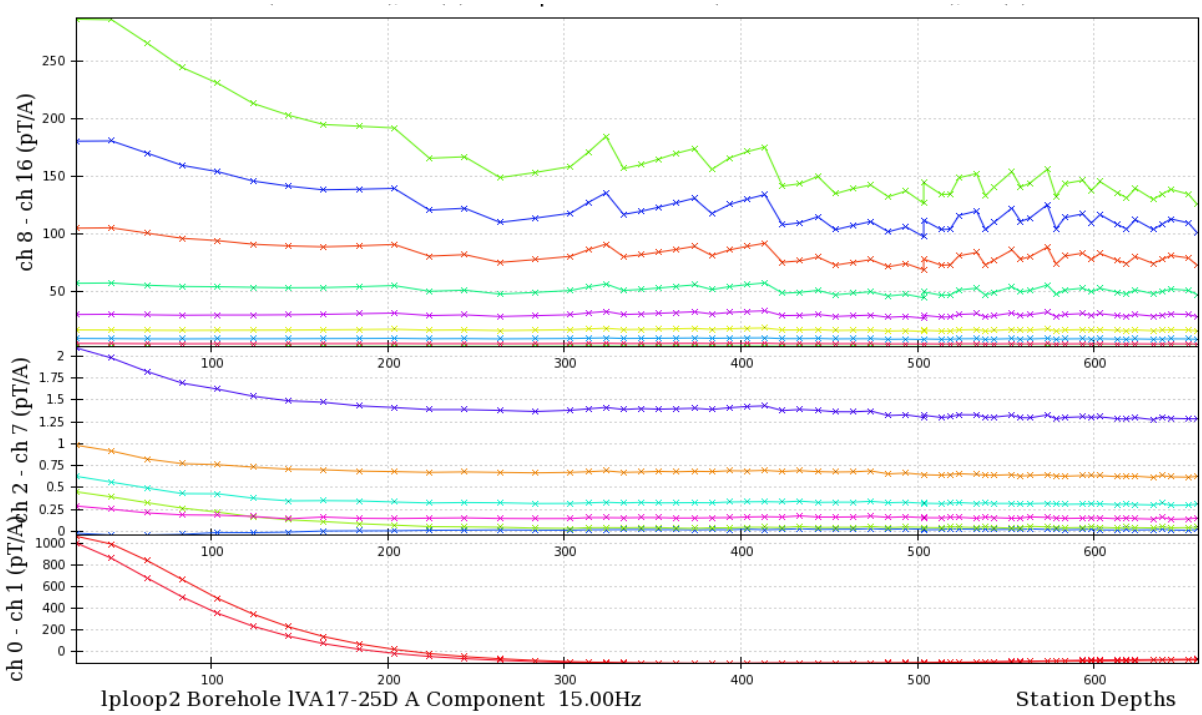


Figure 15: VA17-25 B-Field coil A component loop2

7.2.4 Line 1, Loop 1

The surface line was surveyed through Loop 1 which was located at stations 1025 and 1525 on the survey line. The only response seen on the line is a weak response at station 225 indicating a lower resistivity rock unit at the beginning of the line. The second late time response seen between stations 1000 and 1250 is likely due to the power line in this area. In general, the data indicates that the transmitter loop is underlain by fairly resistive rock and that there is likely a lower resistivity unit located at the southern end of the line.

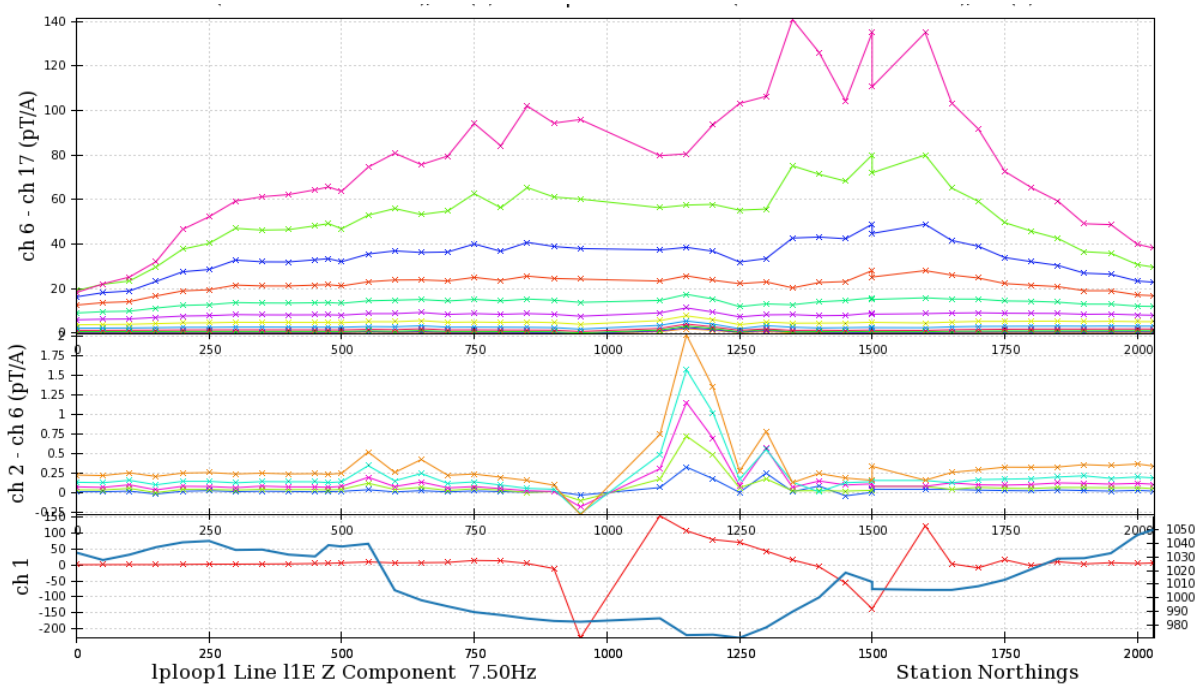


Figure 16: Line 1, Loop 1 pT/amp (point normalized)

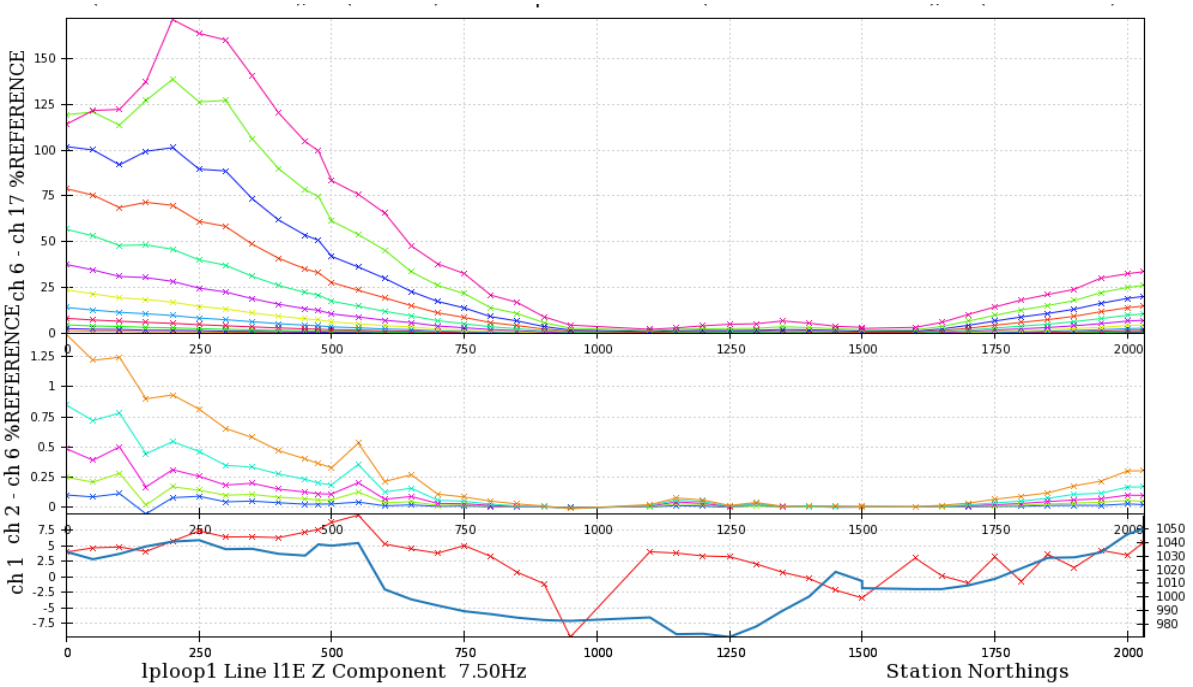


Figure 17: Line 1, Loop 1 % primary field (continuously normalized)

8 CONCLUSION

The Borehole survey indicates the lower Aldridge formation, intersected at depths from 550 m to 600 m in holes VA14-01 and VA16-02, has a magnetic and very weak EM response. The magnetic and very weak EM response is likely the result of minor pyrrhotite or conductive clays present in the formation. There does not appear to be enough mineralization present to call it a conductor. No EM or magnetic responses were observed in hole VA17-25 down to the depth surveyed.

The surface EM line was surveyed through Loop 1 to follow up on an airborne magnetic anomaly. No indication of a flat lying conductive body under the loop was observed. It appears that the rock units located at the south end of the line have lower resistivities.

Respectfully submitted,

Syd Visser, B.Sc, P.Geo

Darren Pinkerton, B.Sc
per SJ Geophysics Ltd.

APPENDIX A : STATEMENT OF QUALIFICATIONS

Syd Visser

I, Syd J. Visser, of 5159 125A St, Surrey, British Columbia, hereby certify that,

1) I am a graduate from the University of British Columbia, 1981, where I obtained a B.Sc. (Hon.) Degree in Geology and Geophysics.
2) I am a graduate from Haileybury School of Mines, 1971.
3) I have been engaged in mining exploration since 1968.
4) I am a professional Geoscientist registered in British Columbia.

Signed by: _____

Syd Visser, B.Sc., P.Geo.
Geophysicist/Geologist

Date: _____

Darren Pinkerton

I, Darren Pinkerton, of 115 Thames Close NW, Calgary, Alberta, hereby certify that,

1) I am a graduate from the University of British Columbia, 2013, where I obtained a B.Sc. Degree in Geophysics.
2) I have been engaged in mining exploration since 2014.

Signed by: _____

Darren Pinkerton, B.Sc.,

Date: _____

APPENDIX B : INSTRUMENT SPECIFICATIONS

Dabtube 24-bit four-channel acquisition unit

Technical:

Input impedance:	10 MΩ
Input overvoltage protection:	5.6 V
Internal memory:	Storage Capacity 16 GB
Number of inputs:	4
Synchronization:	GPS
Selectable Sampling Rates (samples/second):	128000, 64000, 32000, 16000, 8000, 4000,2000,1000
Common mode rejection:	More than 80 dB (for Rs=0)
Voltage sensitivity:	Range:-5.0 to +5.0 V (24 bit) Resolution: 0.24 μV

General (4 channel unit):

Dimensions:	Diameter: 5.5 cm, Length: 60 cm
Weight:	0.85 kg
Battery:	3.6 V internal
Operating temperature range:	-40 ºC to 40 ºC

SJ Geophysics EM Transmitter (EMTX)

Input

Power Supply Voltage:	110V AC with power supply or Constant DC power
AC/DC Wall Adapter:	7.0 V DC for controller

Output

Voltage:	5 to 500 V, peak to peak
Current:	0 to 16 A, peak to peak
Loop Resistance:	1 to 50000 Ω
Waveform:	100% or 50 % duty cycle
Base Frequency	DC to 100 Hz, adjustable in 0.01 Hz

BOREHOLE 3-COMPONENT FLUXGATE SENSOR

Frequency range:	AC coupled: 1 Hz to 3,000 Hz
	DC coupled: DC to 3000 Hz
Sensitivity in pass band:	AC coupled: 50 mV/nT
	DC coupled: 0.1 mV/nT
Noise level:	6 pT per √Hz at 1 Hz

BOREHOLE AXIAL B-FIELD COIL (ANT-23)

Frequency range:	1 Hz to 40,000 Hz
	Response same as a magnetometer over this frequency range
Sensitivity in pass band:	100 mV/nT
Noise level:	12 fT per √Hz at 1 Hz

SURFACE B-FIELD COIL (ANT-23)

Frequency range:	0.1 Hz to 40,000 Hz
	Response same as a magnetometer over this frequency range
Sensitivity in pass band:	100 mV/nT
Noise level:	12 fT per √Hz at 1 Hz

Appendix 11: Foldout Maps

PJX Resources Inc.

VINE PROPERTY

Fort Steele Mining Division
Kootenay District

0 250 500 750 1000
METERS

GEOLOGY LEGEND

Geology by: D.L. Pighin and A.S. Hagen

LAYERED SEDIMENTARY ROCKS

MIDDLE PROTEROZOIC (Helikian)

PURCELL SUPERGROUP

VAN CREEK FORMATION
Siltite, argillaceous siltite and quartz wacke.

KITCHENER FORMATION
Subdivided sedimentary rocks. dolomitic siltstone and argillite.

ALDRIDGE FORMATION
Subdivided sedimentary rocks.

- Sedimentary fragmental: Interpreted to be synsedimentary debris flows, dewatering structures, mud volcanoes and hydrothermal breccias.
- Middle: Quartzofeldspathic wacke,intercalated argillite and siltite.
- Lower: Quartzite, quartz arenite and quartz wacke.
- Footwall quartzite

INTRUSIVE ROCKS

PROTEROZOIC

POST-MOYIE INTRUSIONS
Mafic sills and rare dikes hosted in Kitchener Formation.

MOYIE INTRUSIONS
Fine-grained gabbro and hornblende quartz diorite sills and minor dikes

GEOLOGICAL STRUCTURES

- Fault
- Contact
- Fold Syncline
- Fold Anticline
- Vien
- Cross Section Line

Vine

582500 583000 583500 584000 584500 585000 585500 586000 586500 587000 587500 588000

5475500 5475000 5474500 5474000 5473500 5473000 5472500 5472000 5471500 5471000 5470500

PJX Resources Inc.

VINE PROPERTY

Fort Steele Mining Division
Kootenay District

0 250 500 750 1000
METERS

GRAVITY SURVEY

1.2km Residual Gravity (~100m ASL)

mGal

1.4
1.2
1.0
0.8
0.6
0.4
0.2
-0.0
-0.2
-0.4
-0.6
-0.8
-1.0
-1.2
-1.4
-1.6
-1.8

Processing Flow

Bouguer			
RES	REG		6th Order Polynomial Filter
RES	EQ. MASS	REG	5.1 km Model
RES	EQ. MASS	REG	2.2 km Model
RES	EQ. MASS	REG	1.2 km Model
RES	MOD	REG	650 m Model

Survey and Interpretation by:
EXCEL GEOPHYSICS INC.
High River, Alberta (403) 652-1068
www.excelgeophysics.com

N

582500 583000 583500 584000 584500 585000 585500 586000 586500 587000 587500 588000

5475500 5475000 5474500 5474000 5473500 5473000 5472500 5472000 5471500 5471000 5470500