11966 – 95A Avenue,
Delta, BC V4C 3W2 Canada
Tel +1 (604) 582-1100
www.sjgeophysics.com

MEMORANDUM

Date: September 13, 2017

From: E. Trent Pezzot

To: Bonanza Mining Corporation

SUBJECT: Interpretation of Magnetic and Volterra-3DIP survey – MC Claims

This memorandum documents the interpretation of ground magnetic and IP surveying completed on a portion of the MC property, located approximately 12 km north of Stewart, B.C.

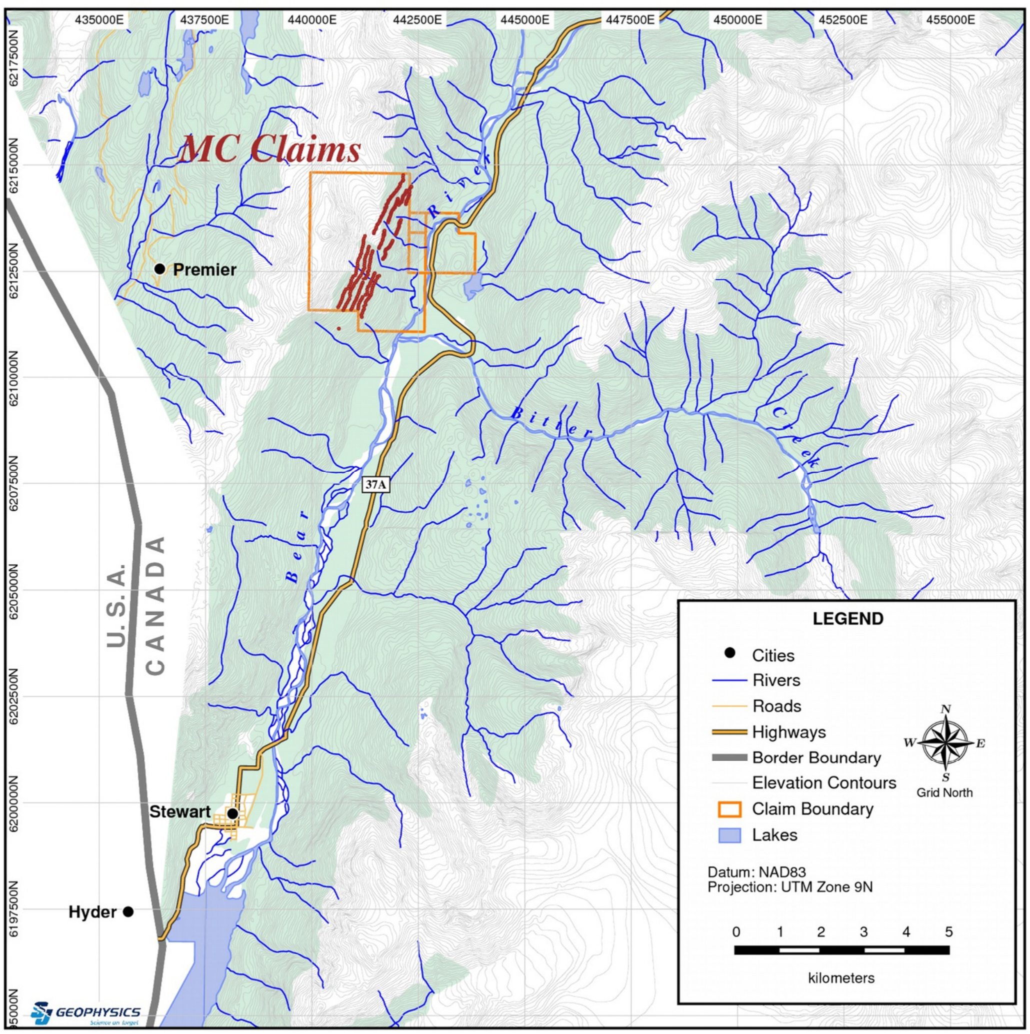


Figure 1: Location map for the MC Claims project

Sixteen (16) minfile occurrences are identified in the immediate area of the survey. Fourteen (14) are associated with metallic or polymetallic veins (quartz-sulphide veins containing gold-silver-zinc which are hosted within volcanic-sedimentary rocks) and two are recorded as occurrences of Kuroku style massive sulphides. The mineralization is associated with increased quantities of sulphides.

The objective of these surveys was to map the electrical and magnetic properties of the area and investigate whether the near surface mineralized showing are related to each other by a deeper mineralized system.

Details concerning the survey grid, procedures and equipment used are documented in a separate logistics report authored by the chief field geophysicist Ross Polutnik. Three appendices, containing magnetic, chargeability and resistivity maps are attached to this memo. A fourth appendix showing cross-sections through the chargeability and resistivity models is also included.

All map and location coordinates are provided in the NAD83, zone 9N UTM coordinate system.

The survey grid consisted of 5 NE trending survey lines, nominally spaced at 150 metre intervals.

The extreme topography forced the survey crew to generally follow topographic contours along the easterly facing slope. Numerous cliffs, gullies and other access problems resulted in the survey lines wandering from the proposed grid and being broken into multiple segments, often offset, gapped or overlapping each other. Many of these line segments are associated with shifts in elevation, as the crew was forced to find new accessible routes.

Two prominent gaps are present in the data, both associated with creek drainages. One is associated with a northerly trending section of the drainage, following UTM coordinate 445,500E and divides the grid into northern and southern sections. The second gap follows a NW trending segment of a creek and breaks the northern section into two smaller parts. The IP survey was set up with transmitters and receivers on different survey lines, allowing data to be gathered across these gaps at depth. The magnetic data does not extend across the gaps.

The orientation of the survey grid is conducive for mapping northwesterly trending structures. Unfortunately, with the narrow (450m wide) grid, we are only able to map short segments of what are likely much longer trends. A further complication for the interpretation is that the extreme topographic relief can result in significant changes in the depth along strike to any northwesterly trending feature.

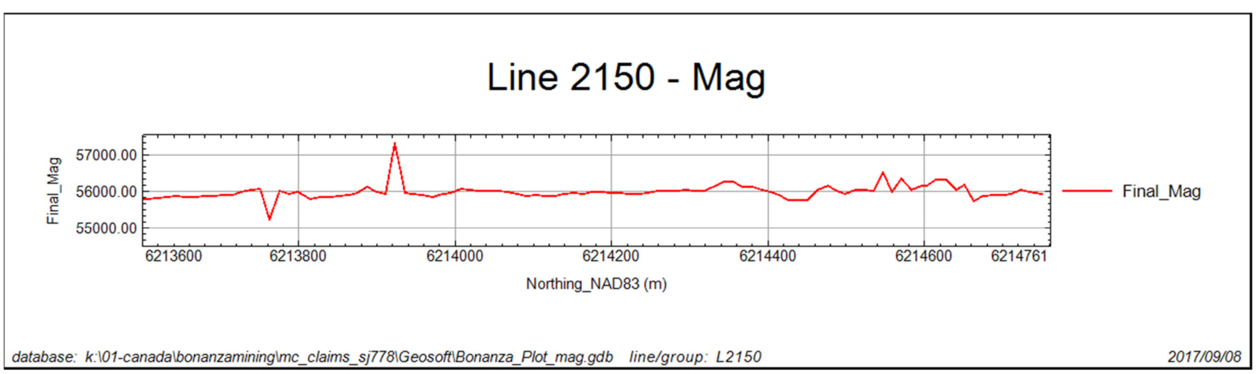
Discussion of Results

Magnetic Data

Total field magnetic field Intensity data (TFM) was gathered at 10 metre and 12.5 metre station intervals along the IP survey lines. The limited size of the survey and gaps due to inaccessible terrain did not provide a large or consistent enough set of magnetic data to analyze with the 3D inversion technique.

Maps showing the magnetic data are provided in Appendix 1. Data is plotted in both stacked profile format along the survey lines and has been gridded with a minimum curvature algorithm to produce false colour contour maps. The magnetic data appears to be relatively noisy, with high frequency variations mapped along the lines. This response is typical of the volcaniclastic rocks underlying the property. This volatility is more pronounced across the northern half of the grid. Although there are numerous high and low amplitude, single station spikes noted, the data appears to be reliable and of high quality. Unfortunately, the survey lines are too far apart to confidently correlate these high amplitude spikes across lines. However, the general appearance of the responses suggests that in the southern half of the grid, narrow magnetic trends primarily delineate NW striking structures and a couple of east-west trends. In the northern half of the grid, small magnetic lows appear to delineate isolated pods.

As a check of the instrumentation, two survey lines were surveyed in a walking-mag mode, where the magnetometer automatically records the TFM value at designated time intervals. For the most part, magnetic data gathered in this manner was spaced at 1 to 2 metre intervals along the survey lines. Several instances are noted where high amplitude, spike like responses, noted in the normal survey method are much better defined in the walking mode data. This supports the conclusions cited in previous work that high magnetic susceptibility rocks are exposed or lie directly below the ground surface. Previous work discovered that the extreme magnetic highs may be related to cross-cutting dykes. More detailed magnetic surveying will be required to properly map these anomalies in order to determine whether they occur as isolated pods or comprise larger structures.



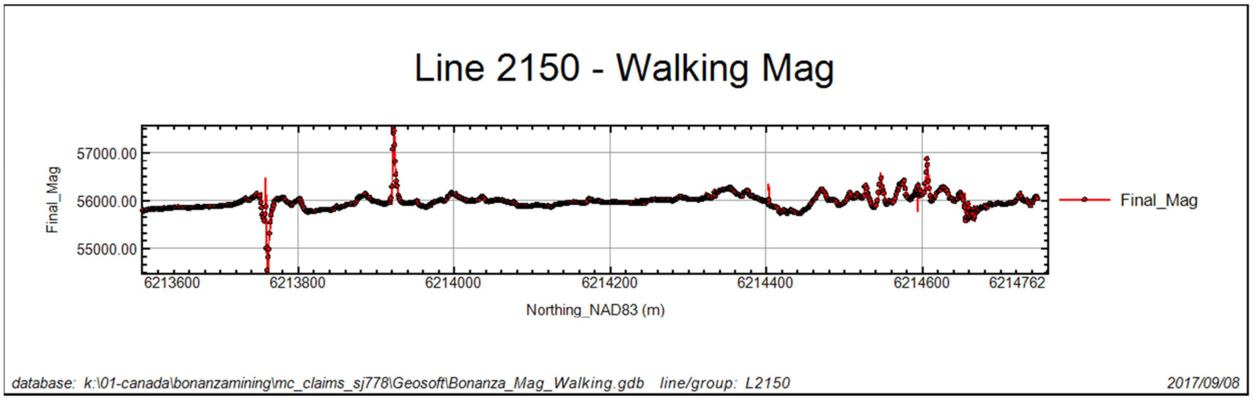


Figure 2: Comparison of Normal and Walking Magnetic profiles along a section of line 2150E.

There is a distinct shift the apparent background magnetic intensity from lows (<55750 nT) in the south half of the grid to highs (> 55850 nT) to the north. Due to the narrow width of the survey block, the precise location of this contact is not clearly delineated, but it appears to run roughly east-west in the vicinity of station 3600N (UTM northing 6,213,000N). This implies there may be a lithological contact in this area.

It is noted that the southern ends of IP survey lines 2600E and 2450E skirt the edge of a mapped occurrence of the Texas Creek intrusion that straddles the southern edge of the MC1 (567077) claim. While there are a couple of small magnetic highs that appear to correlate with this feature (one at south end of line 2600E and another that crosses three lines (2600E, 2450E and 2300E near station 3200N), insufficient data was acquired in this area to confidently associate these responses with the known intrusion.

The survey grid is too small to determine whether there are any large magnetic anomalies, either relatively high or low amplitude, which might suggest the presence of a buried intrusive below the survey area. From a regional perspective, the survey grid is positioned within a NE elongated magnetic high, approximately 15 km long and 5 km wide.

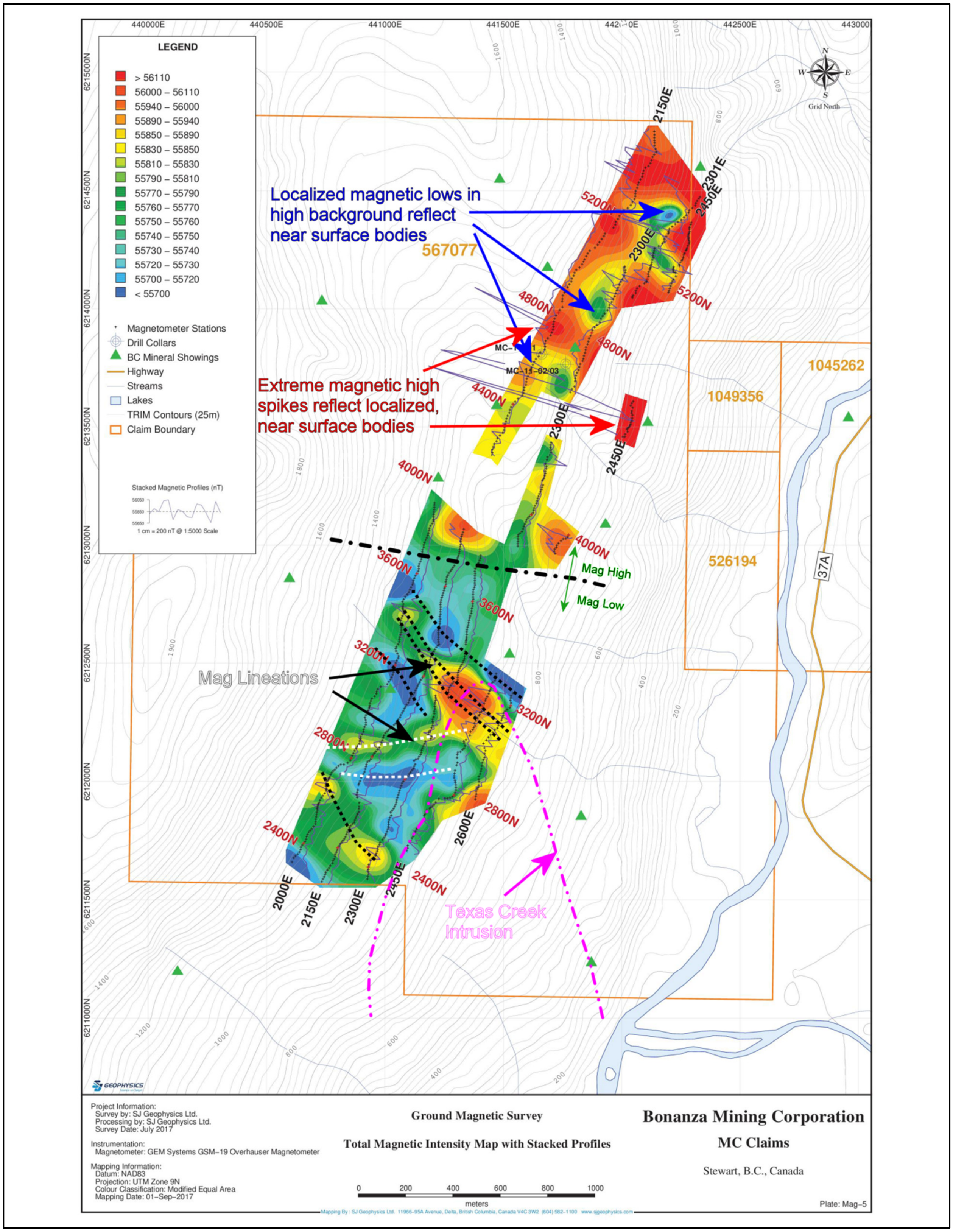


Figure 3: Total Field Magnetic Colour Contour and Stacked Profile Map. Interpretation comments.

IP Survey

IP surveys provide measurements for two parameters: resistivity and chargeability. Resistivity data can delineate both resistive and conductive trends and is often helpful in mapping general geology, lithology and structures. Chargeability data maps polarizable rocks, hopefully disseminated sulphides. The technique is primarily used to map large, low grade deposits.

A 3D IP survey was designed that was comprised of alternating receiver and transmitter lines spaced at 150 metre intervals. This data is analyzed using 3D inversion programs that build a 3 dimensional block model showing the subsurface distribution of the physical parameter being studied. This block model is then manipulated in a 3D visualization program that allows the user to correlate surface and downhole information and generate isosurface and cross-section plots that can be used to interpret geology.

The electrode array was designed to investigate whether the known near surface, mineralized veins are related to each other by a deeper mineralized system. A consequence of the wide line and electrode spacings is that near surface features are only resolved along the survey lines and not mapped between them. Consequently the shallow depths within the 3D models appear to delineate narrow lineations that closely correlate with the survey lines. An examination of the shallow (25m - 75m) depth slices through both the resistivity and chargeability models clearly reveal this character. At depths of 100m or more, the inversion models are considered more reliable in that discrete bodies can be positioned between and across survey lines in order to explain responses observed on different lines.

IP Chargeability

The chargeability data is presented in Appendix 2 as a series of plan maps showing slices through the inversion model at different depths below the ground surface. Several snapshots from the 3D viewing program are provided as figures in this report to illustrate features discussed. The 3D inversion models are provided as digital files to allow viewing in several different 3D viewing programs.

Like the magnetic data, the chargeability models reflect a shift in the background amplitudes between the northern and southern parts of the grid. The contact is not precisely defined but generally follows main drainage in the vicinity of station 3600N. There are two small, near surface and low amplitude chargeability pods immediately southwest of this contact. Both are mapped at the ends of the survey line segments therefore poorly constrained. One, located at 2000E/4000N coincides with the Aztec (79918) minfile occurrence. The other, located near 2600E/3300N coincides with the Ben Lamond (79912) minfile occurrence. There do not appear to be any other significant chargeability anomalies mapped to the southwest. Subtle trends generally mirror the northwesterly orientation seen in both the magnetic and resistivity data.

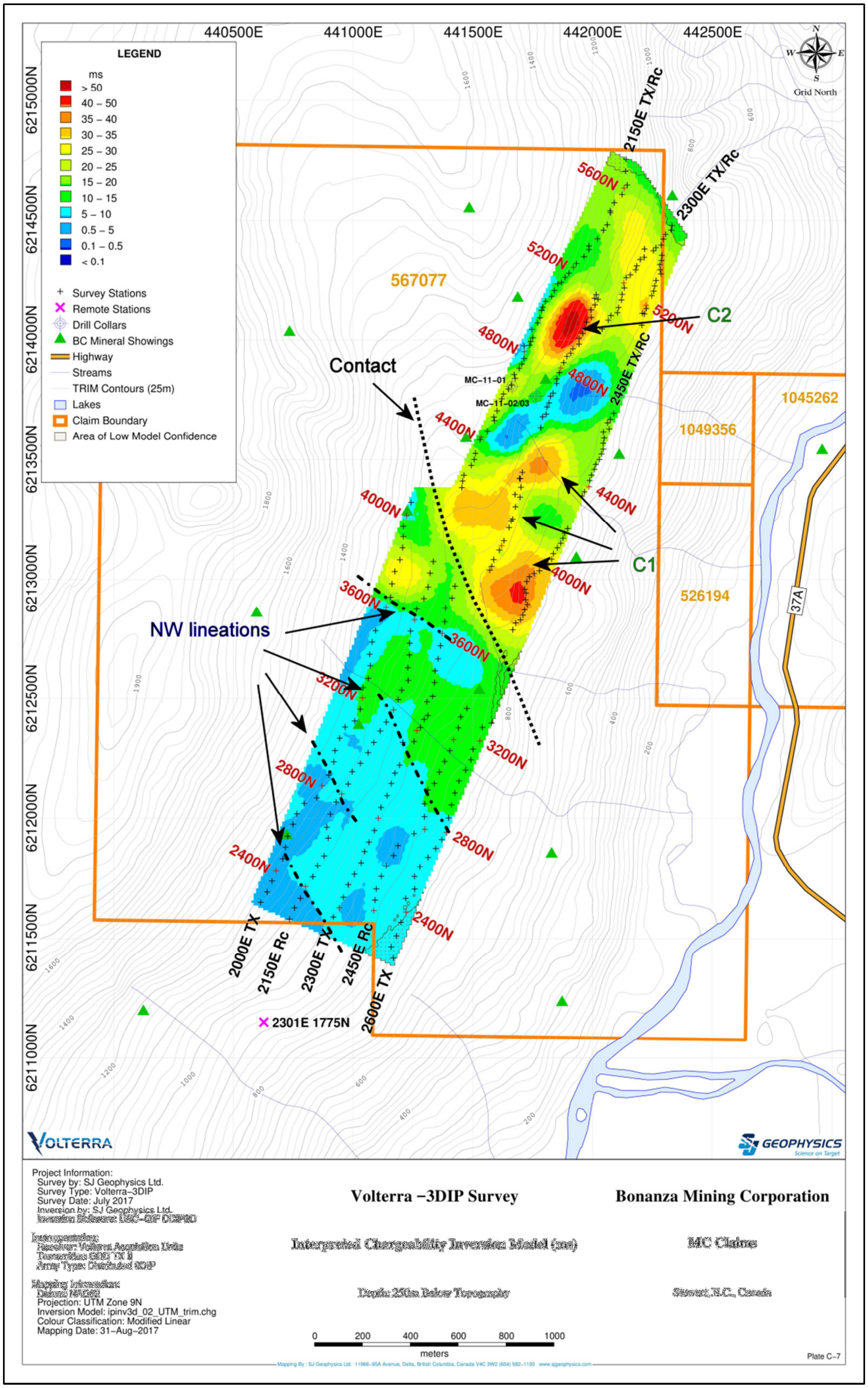


Figure 4: Chargeability Inversion model – Colour Contour map at 250 metres below ground surface.

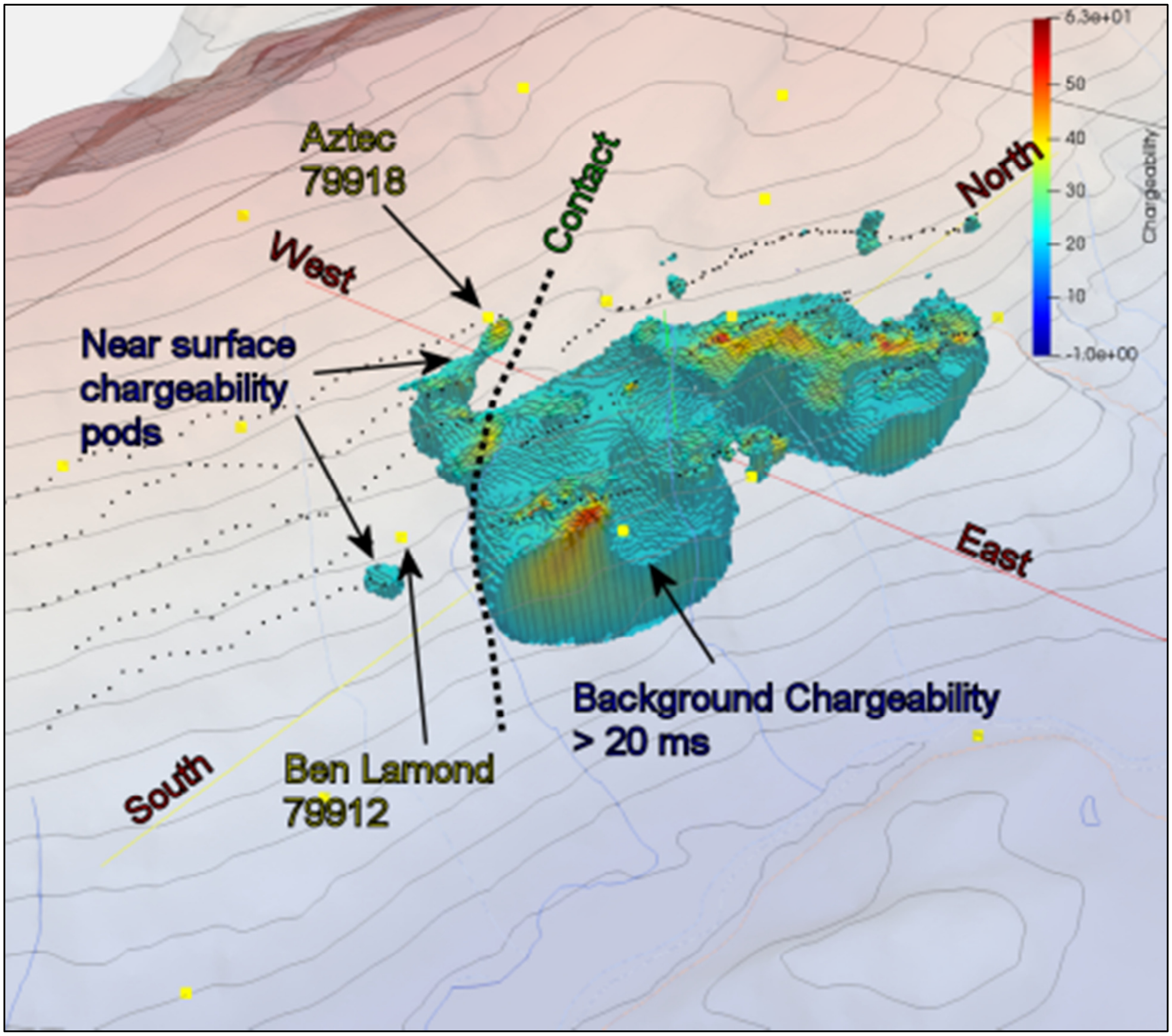


Figure 5: Chargeability Inversion model – Threshold > 20 ms. Elevated view looking from southeast.

The 3D inversion model maps two main high chargeability anomalies (C1 and C2) below the northern portion of the survey grid which could represent disseminated sulphide bodies. Two of the nearby minfile showings (Rock of Ages Fr N (80789) and Dalhousie (80734)) are flagged as Kuroko style massive sulphides and a third (Rock of Ages Fr S (80287)) as a mineralized vein system. All three of these minfile occurrences appear to correlate with narrow, pipe-like apophyses that extend up from the large, buried chargeability masses.

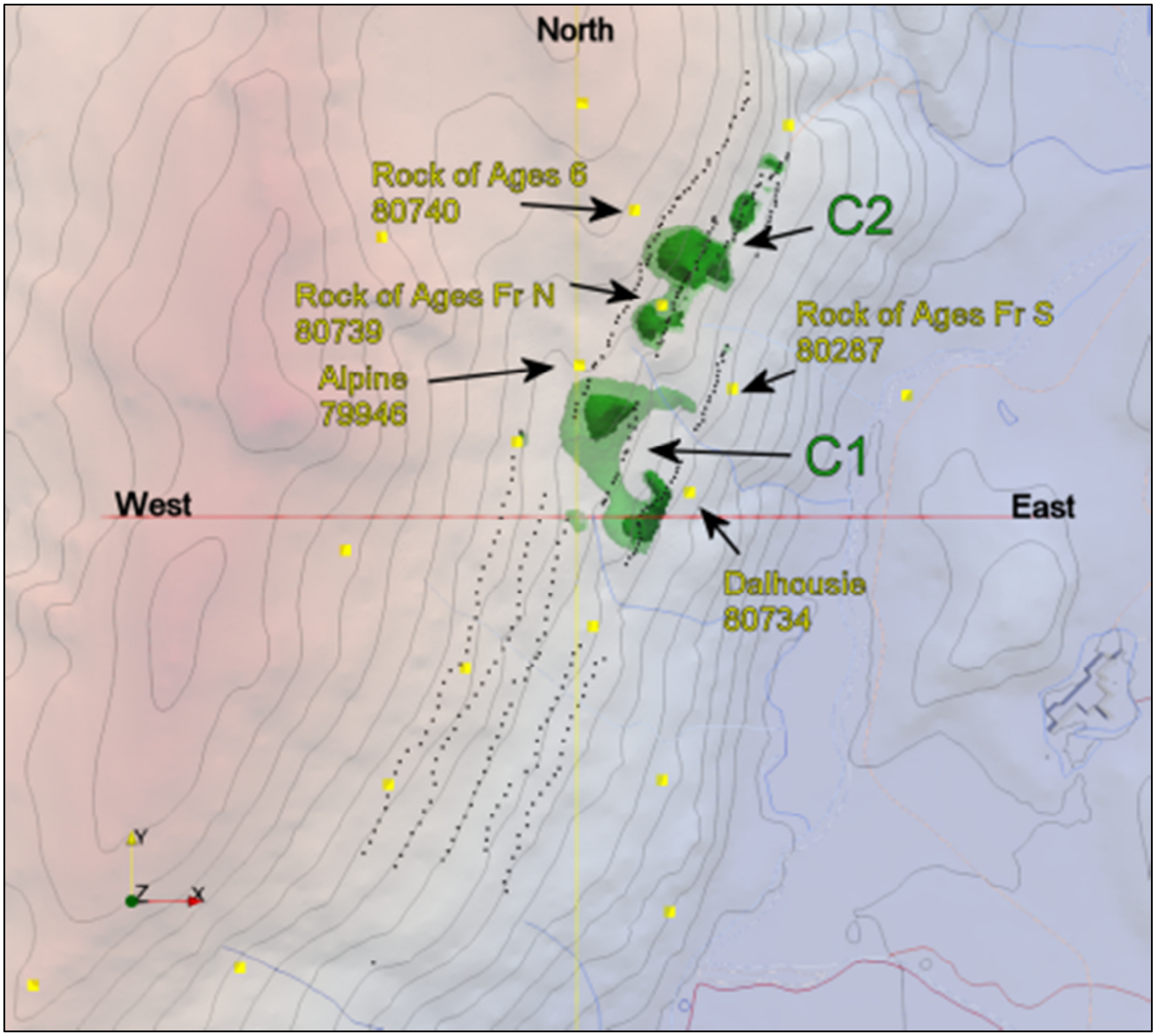


Figure 6: Chargeability Inversion Isosurfaces –Top View, looking down. Dark Green = 40ms, Translucent light Green = 35 ms.

C1 lies at the southern end of the north section of the grid and coincides with very high amplitude magnetic spikes. It appears to be comprised of two buried, possibly connected, lobes. The southern lobe is smaller and closer to the surface. It is located near the Dalhousie mineral showing and immediately south of the Rock of Ages #2 vein copper-gold bearing quartz sulphide vein system. The northern lobe is larger and could be a north-northwesterly down dip extension of the southern lobe. It appears to be centered some 500 metres below ground surface.

C2 is located to the north of C1 and appears to be closer to ground surface. This anomaly appears to be spread out for about 900 metres along line 2300E and includes 4 near surface pods. The southernmost pod lies directly below the Rock of Ages Fr N minfile showing. The next pod to the north is notably larger and deeper than the others. This anomaly lies some 300m southeast and downslope from minfile Rock of Ages 6 (80740) and appears to be centred approximately 300 meters below surface.

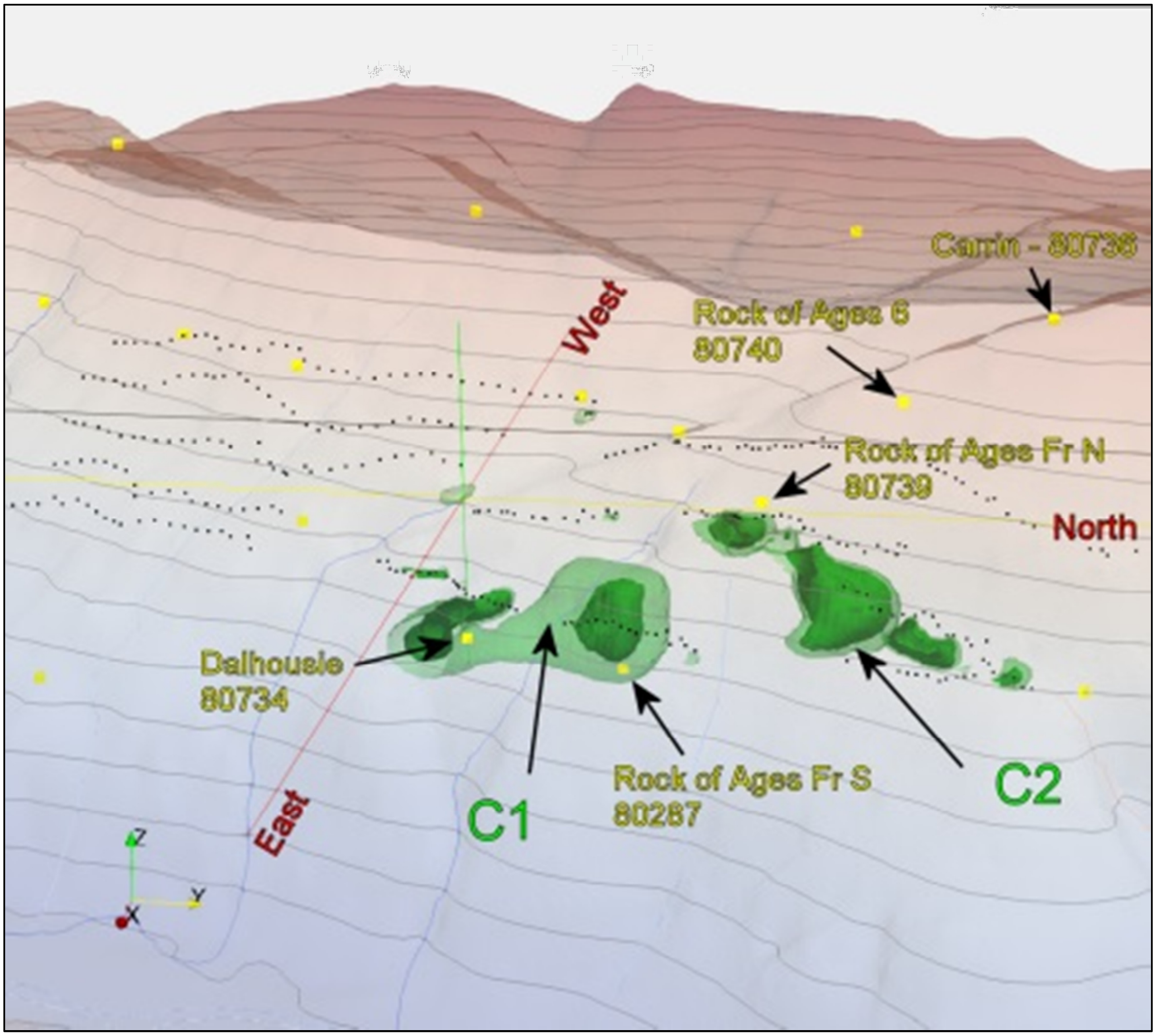


Figure 7: Chargeability Inversion Isosurfaces – Side View from East. Dark Green = 40ms, Translucent light Green = 35 ms.

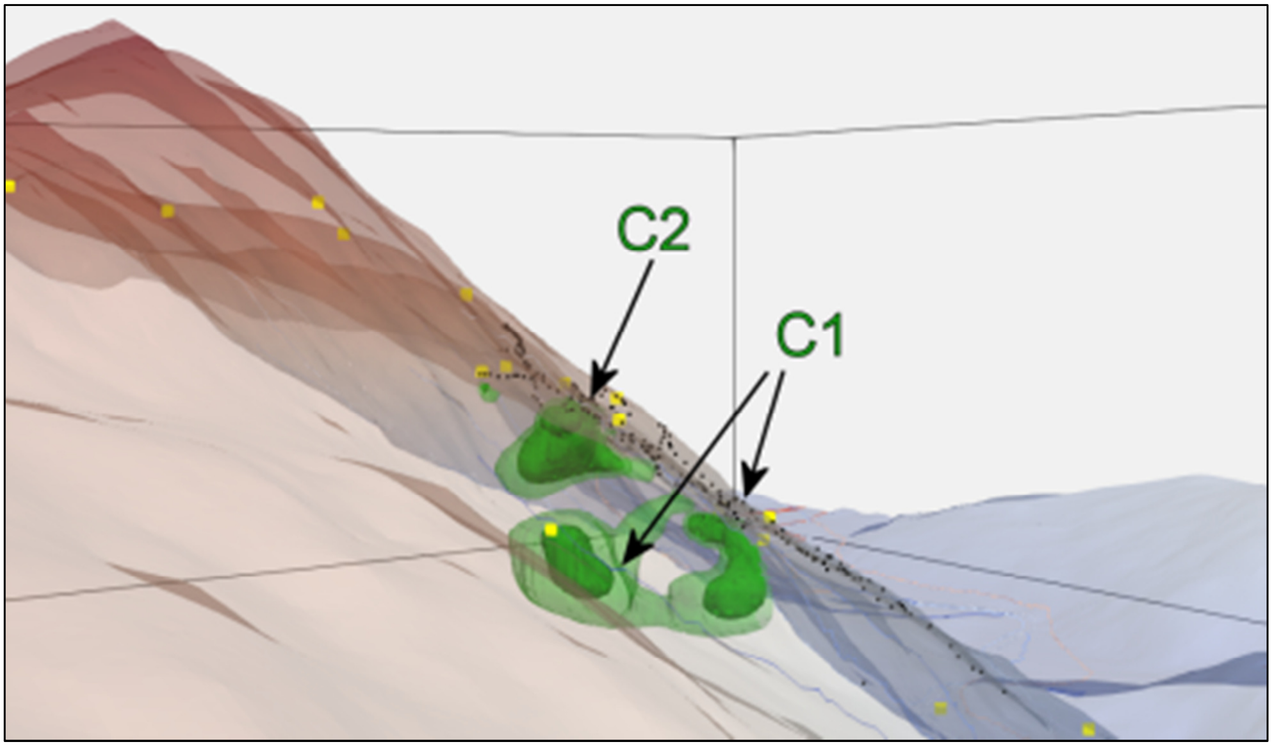


Figure 8: Chargeability Inversion Isosurfaces – Side View Looking Northeast. Dark Green = 40ms, Translucent light Green = 35 ms.

IP Resistivity

The resistivity data is presented in Appendix 3 as a series of plan maps showing slices through the inversion model at different depths below surface. Several snapshots from the 3D viewing program are provided as figures in this report to illustrate features discussed.

The resistivity data shows a similar pattern to the chargeability data in that the near surface models show narrow linear features that generally follow survey lines. As discussed above, this response is at least partially attributed to the lack of resolution of near surface features due to the wide survey line spacing. Another similarity is that the survey grid can be divided into zones based on differing background resistivity. The depth slice through the inversion model at 200m depth outlines these zones and suggests the contacts between them strike around N45°W.

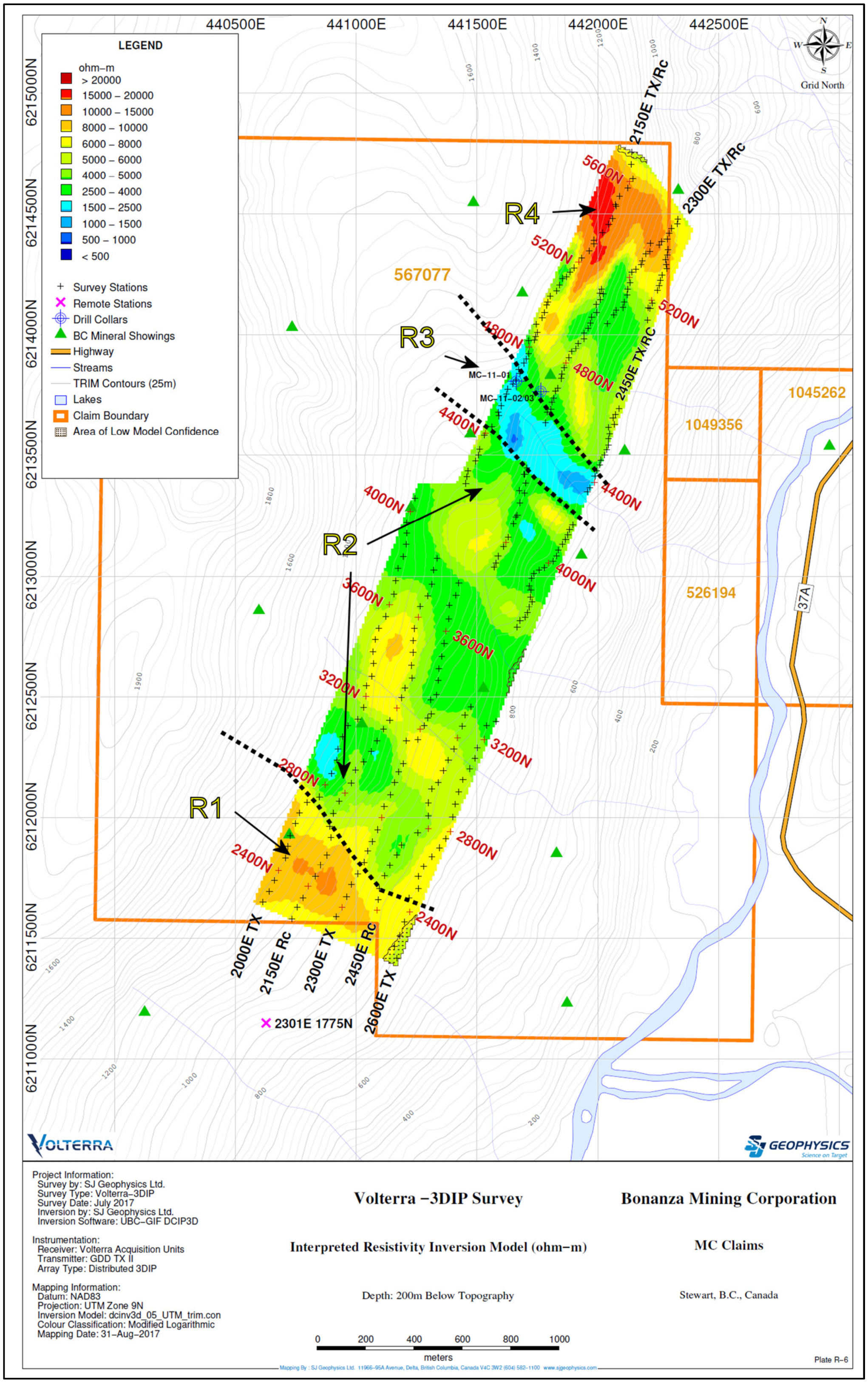


Figure 9: Resistivity Inversion, Depth Slice at 200 metres below topography.

- R1 – This high resistivity zone is located at the southern end of the grid. It is different from other features in the area in that it appears to be dipping at a shallow angle to the northeast.

- R2 – This is a broad zone of moderate resistivity immediately north of R1. It is approximately 1.6 km wide and internally appears to be comprised of northwesterly striking bands.

- R3 – This narrow (200m wide) zone of low resistivity strikes approximately N35°W and follows a steep sided drainage (Rock of Ages Creek). It is associated with a gap in the IP survey due to inaccessible terrain so it is possible this response is somewhat questionable. However, several of the minfile showings and localized magnetic spikes are located near the edges of this zone. This response could represent a fault zone.

- R4 – This very high resistivity zone covers the northern ends of the survey lines.

The R4 zone can be further divided and the inversion model suggests it is comprised of three, relatively horizontal (or shallow westerly dipping) high resistivity (> 12000 ohm-m) layers that outcrop at three distinct elevations:

- R4a is located along line 2300E, north of station 5400N, at elevation 850m. This layer appears to lie directly above the northern lobe of the C2 chargeability anomaly. Note there are two more localized resistive zones mapped along this same elevation to the south near grid coordinates on 2450E/4500N and 2600E/2400N.

- R4b is mapped along line 2150E, from station 5200N to the north, at elevation 1150m. This section appears to be the largest and deepest of the three zones. It likely outcrops at surface and extends into the hillside. This zone appears to lie above and to the north of the C2 chargeability anomaly.

- R4c is mapped from 2300E/4500N to 2150E/5200N at elevation 1250m. Note this trend appears to plunge shallowly down to the south and may be comprised of two zones. From 2300E/4500N to 2150E/4900N it appears as a 200m wide zone striking close to north where it abruptly changes strike to N20°E. It appears to lie directly above the large C1 chargeability pod.

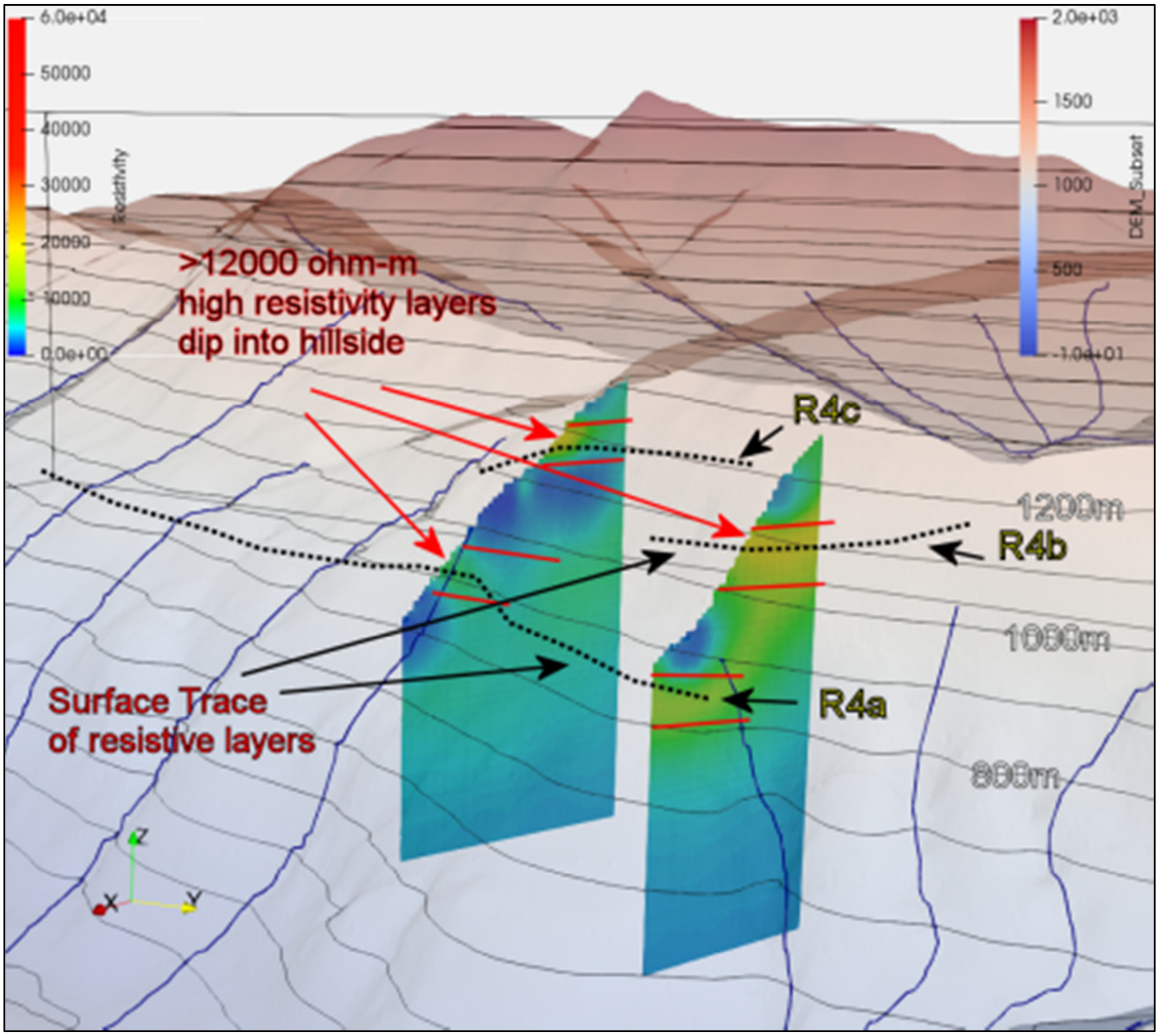


Figure 10: Cross-sections through resistivity model showing evidence of three shallow, westerly dipping high resistivity layers at 850m, 1100m and 1200m elevation

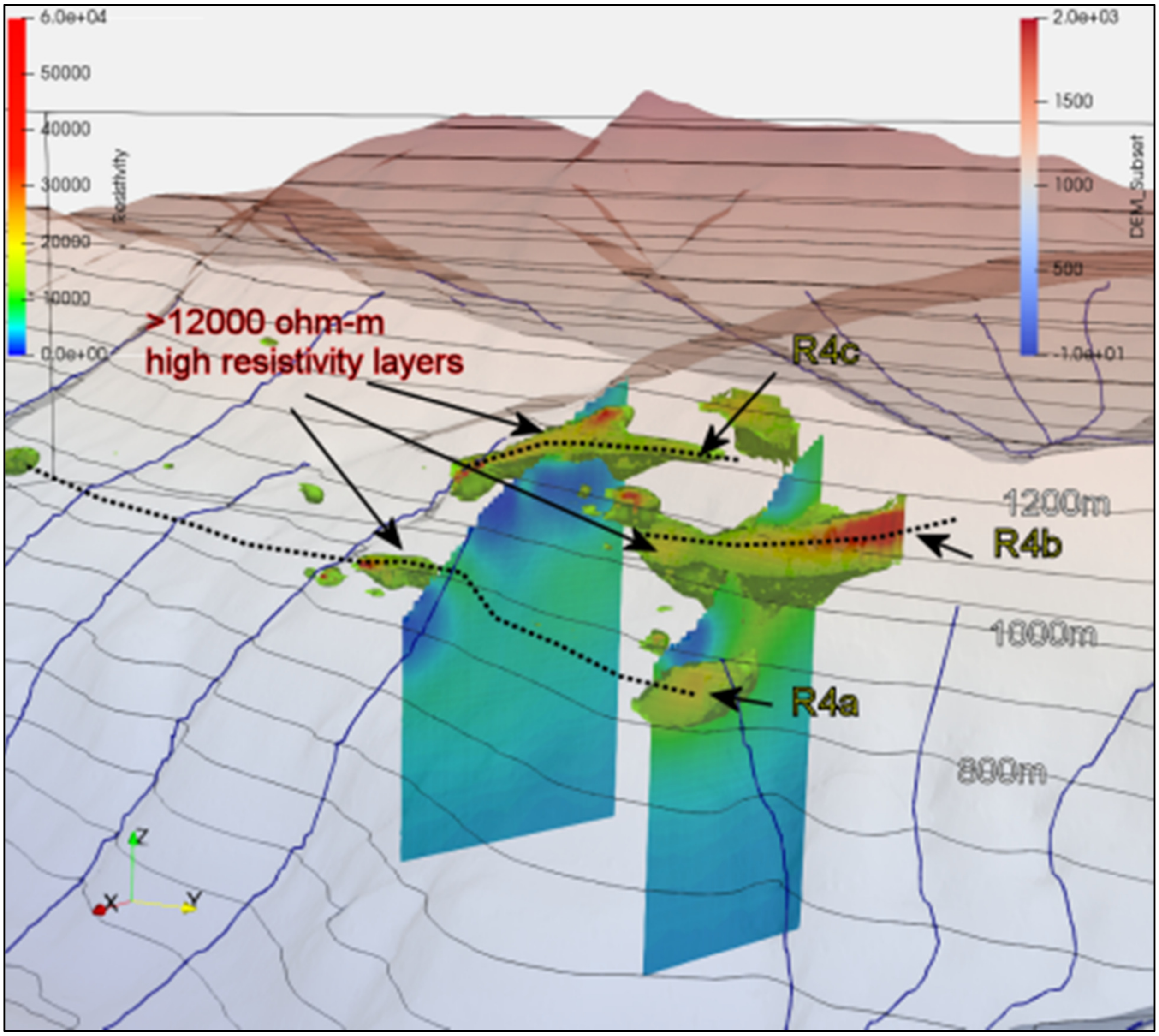


Figure 11: Cross-sections and 12000 ohm-m isosurfaces through resistivity model showing evidence of three shallow, westerly dipping high resistivity layers at 850m, 1100m and 1200m elevation

Examination of the conductivity isosurfaces suggests one significant conductive lineation that roughly parallels a 600 metre section of line 2300E, from 2500N to 3100N. There are no similar responses observed on the adjacent lines and it is unclear whether this feature is real or an inversion artefact.

Summary

All three parameters, magnetics, chargeability and resistivity suggest a lithological change between the southern and northern halves of the survey grid. The southern half is characterized by lower resistivity, lower chargeability and lower magnetic intensity than the northern half.

Several high amplitude magnetic spikes are mapped across the grid. Several of these coincide with known polymetallic veins and shear zones that host hematite and magnetite. These responses are attributed to small, near surface pods of iron rich rocks and should be considered priority areas for geological mapping and prospecting. In spite of the narrow width of the survey grid (450m) and the wide line spacing (150m) several magnetic trends are apparent that support the interpretation of northwesterly striking geology. Additional surveying, both up and down slope will be required to confirm these trends.

Two large high chargeability zones are mapped in the northern part of the survey grid near 300 metres depth. These may be reflecting disseminated or semi-massive sulphide bodies and could be related to the vein systems mapped at the surface. Inversion modelling suggests narrow apophyses may extend up from these bodies and approach the ground surface.

The resistivity inversion suggests the presence of several flat lying or shallow westerly dipping high resistivity layers in the area that likely outcrop at specific topographic elevations. These layers appear to lie stratigraphically above the high chargeability anomalies. A 200m – 300m wide zone of anomalously low resistivity crosses the grid in the vicinity of station 4400N. This anomaly may be reflecting a fault zone that is associated with several of the known mineralized vein systems. If this relationship can be confirmed, it may provide a tool for directing further exploration along strike to both the northwest and southeast.

Recommendations

If not already available, geological mapping is recommended to identify the source of the high resistivity layers R4a, R4b and R4c. This information will help determine whether these features are in some manner related to the target mineralization.

Chargeability anomalies C1 and C2 are both comprised of a large and deep body with small, apophyses extending to the surface. One possible interpretation is that the deep anomalies represent large, buried masses of disseminated to semi-massive sulphides and the surface features are representing small, localized mineralized zones that originated from them. No evidence has been found that suggests these deep bodies have already been tested. It is likely that drilling will be required.

Considering the terrain, I suspect finding a suitable site to access and construct a drilling platform will play a major role in determining the most efficient way to drill. A preferred scenario to help minimize the length of the holes would be to collar them downslope to the southeast of the targets and angling the drilling to the northwest to intersect the interpreted targets. Initial holes should target the centre of the high chargeability body but multiple holes will likely be required in order to identify and delineate them. If these targets reflect sulphide mineralization, it is possible that the highest chargeability zones may be associated with high pyrite concentrations and economic mineralization may be found around the periphery of chargeability anomalies.

Two targets have been selected that represent the interpreted centres of the large, buried chargeability anomalies.

C1 centre is located at UTM grid coordinates 441590E / 6213390N / 710 masl. This point is approximately 410 metres below the ground surface at 1120 masl.

C2 centre is located at UTM grid coordinates 441895E / 6214027N / 900 masl. This point is approximately 265 metres below the ground surface at 1165 masl.

The drill hole azimuth, dips and lengths will need to be calculated to intersect these targets once suitable drill collars locations have been established.