Analyses and Preliminary Interpretation of Big Islands Albert's and Albert's Lake Blocks *for* Copper Reef

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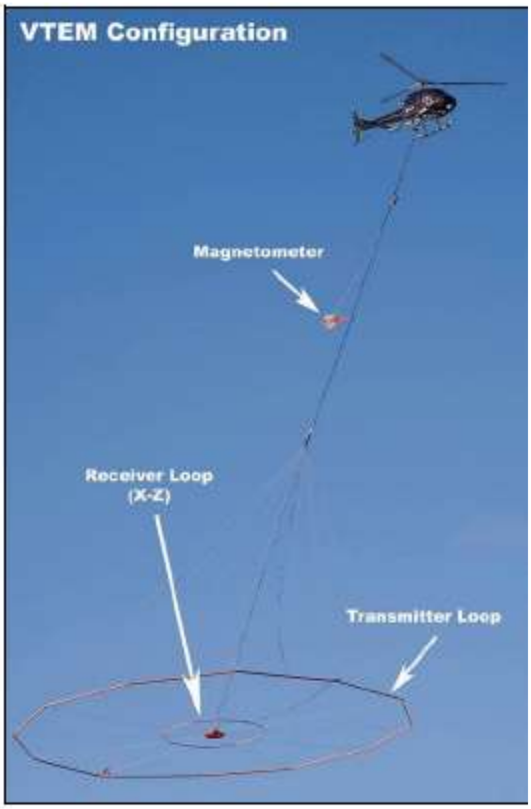
January 2015

VTEM Airborne Time Domain System



The VTEM airborne system is in some sense like a MaxMin system. The system has a transmitter which radiates a magnetic field and receives a reflection signal in a receiver coil. The transmitter and receiver move together along a flight line similar to a MaxMin system with some differences. First, the transmitter is much larger than in a MaxMin system as indicated in the figure and the receiver is located inside the transmitter unlike a MaxMin system where the receiver is separated by some distance along the survey line from the transmitter. The second and most profound difference from a MaxMin system is that the current which is driven into the transmitter to generate the radiating source field is a signal which is not a single frequency but consists of many frequencies which create a virtual continuous signal in time but which repeats continuously during the survey at a specific time length called the base period. In this case, the source signal repeats at a rate of 30Hz or 30 time per second. In the case of the nature of the source signal this is very much like a Crone pulse system used widely in northern Manitoba in either surface or borehole surveys. The main difference between the Crone system and the VTEM system is that the transmitter is in a fixed location for a Crone survey with only the receiver moving whereas it the transmitter moves along the survey line for the VTEM survey carrying the receiver with it as in a MaxMin survey.

VTEM Geological Responses

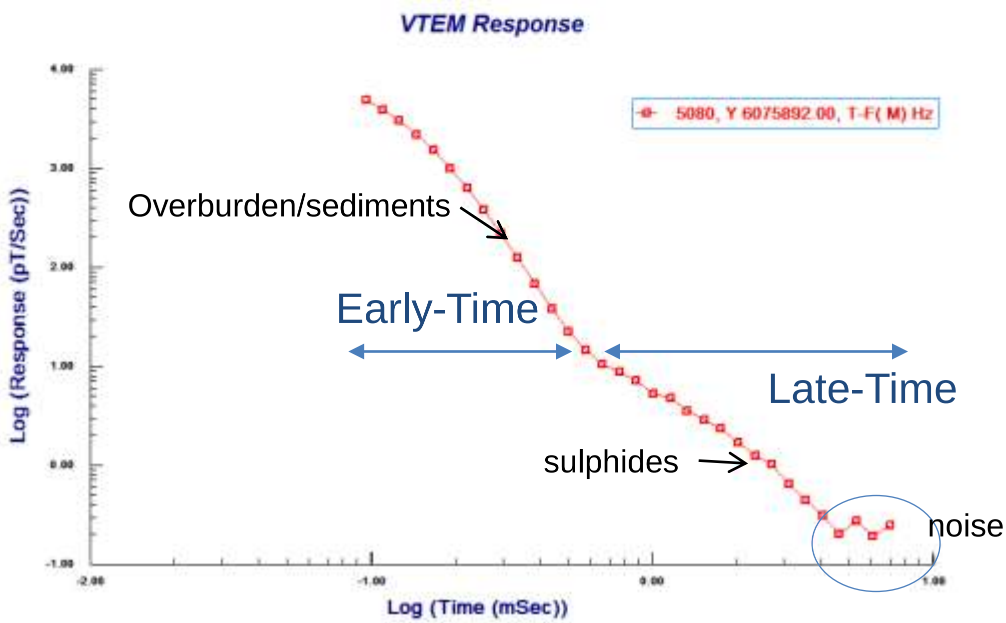
In a MaxMin system, one can select the frequency of the transmitting signal and thus the frequency of the response to the geology. Low vs. high frequency responses are due to two primary issues. The lower the frequency generally the deeper the geology that affects the data but also the low frequencies are used to differentiate high conductivities (sulfide targets) from lower conductivities (overburden).

During the repetitive signal of a VTEM or Crone system, data is measured at different times during this repetitive period. Measurements made at the beginning of the cycle are termed "early time" measurements whereas measurements made late in the cycle are term "late time" measurements. Generally, early time measurements are dominated by high frequency responses whereas late time measurements are dominated by low frequency responses. Thus, in general terms, early time measurements are shallow geology whereas late time are deep geological responses. However, this must be understood also in the sense that strong conductors, even if shallow, may have late time responses to the source signal.

In a MaxMin system, one examines the difference between the Inphase and the Quadrature (Out-of-Phase) response to determine if the conductor is strong or not. In a time domain system, the analogy to this comparison is to examine the rate that the amplitude of the response decreases with time. This is called the "decay" in geophysical jargon. Fast decreases (decays) indicate weak conductors whereas slow decays indicate strong conductors.

The figure below indicates these concepts. This response is from a location over the Z1 (Albert's Lake) anomaly but is extremely similar to the responses over the Discovery deposit at Reed Lake. The early time decay is fast and is due most likely to sediments on the bottom of the lake whereas the late time indicates a conducting target consisting of semi-conducting minerals.

Note: Due to the range of data values and time values, the most useful means to display the decay responses is with the logarithm of time vs. the logarithm of amplitude. For those long past their high school days, the log of a number is, $A = 10^x$, x is the log of A.

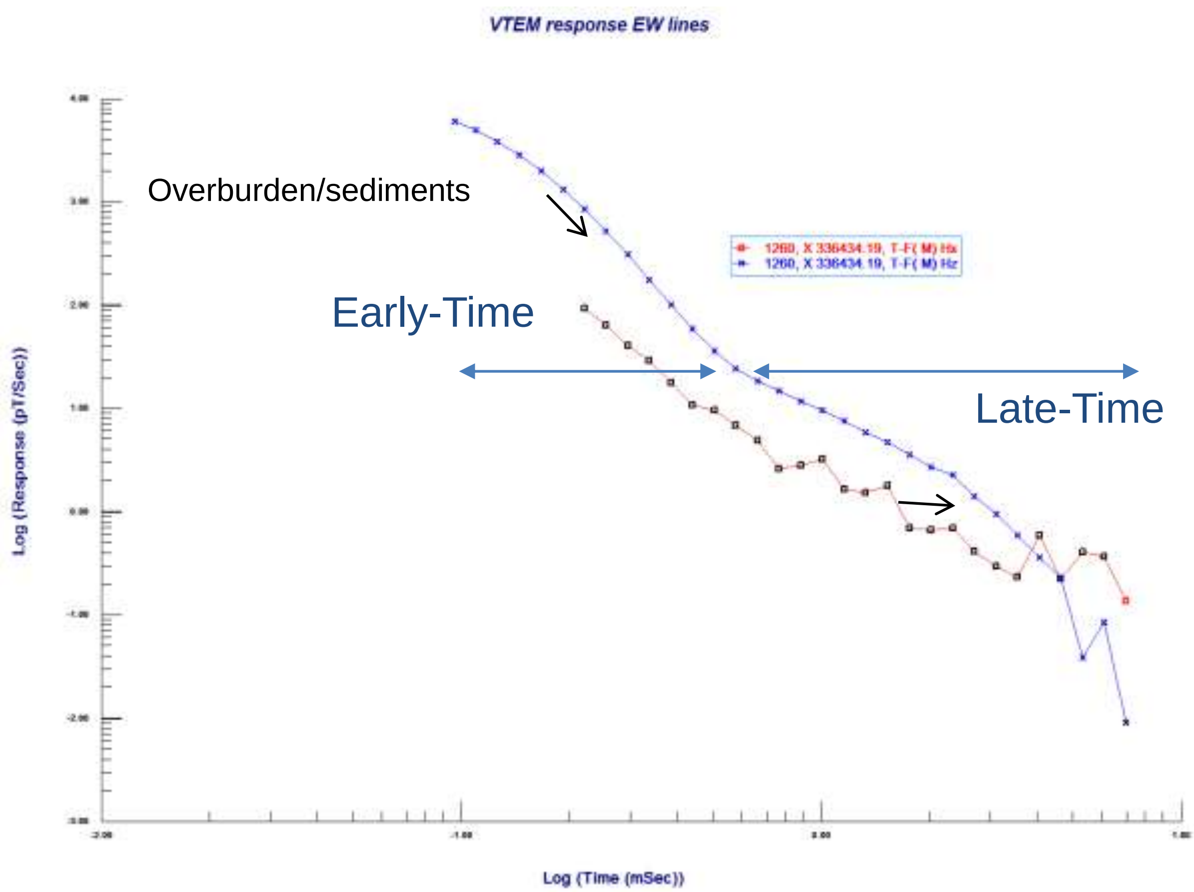


VTEM Geological Responses

No matter what the shape or type of EM transmitter, the response to the geology is 3-D and thus there are 3 directions to the magnetic field from arising from the ground due to excitation by the source transmitter. For example, a major limitation to the MaxMin system was that the receiver only measured the magnetic field whose direction is vertical to the ground surface. In most ground time-domain EM surveys (TDEM), at least 2 components of the magnetic field are measured. The vertical component (Hz) and a horizontal component (Hx) directed to the local azimuth of the profile. Often, the third component (Hy) is also measured. This component is perpendicular to both Hz and Hx.

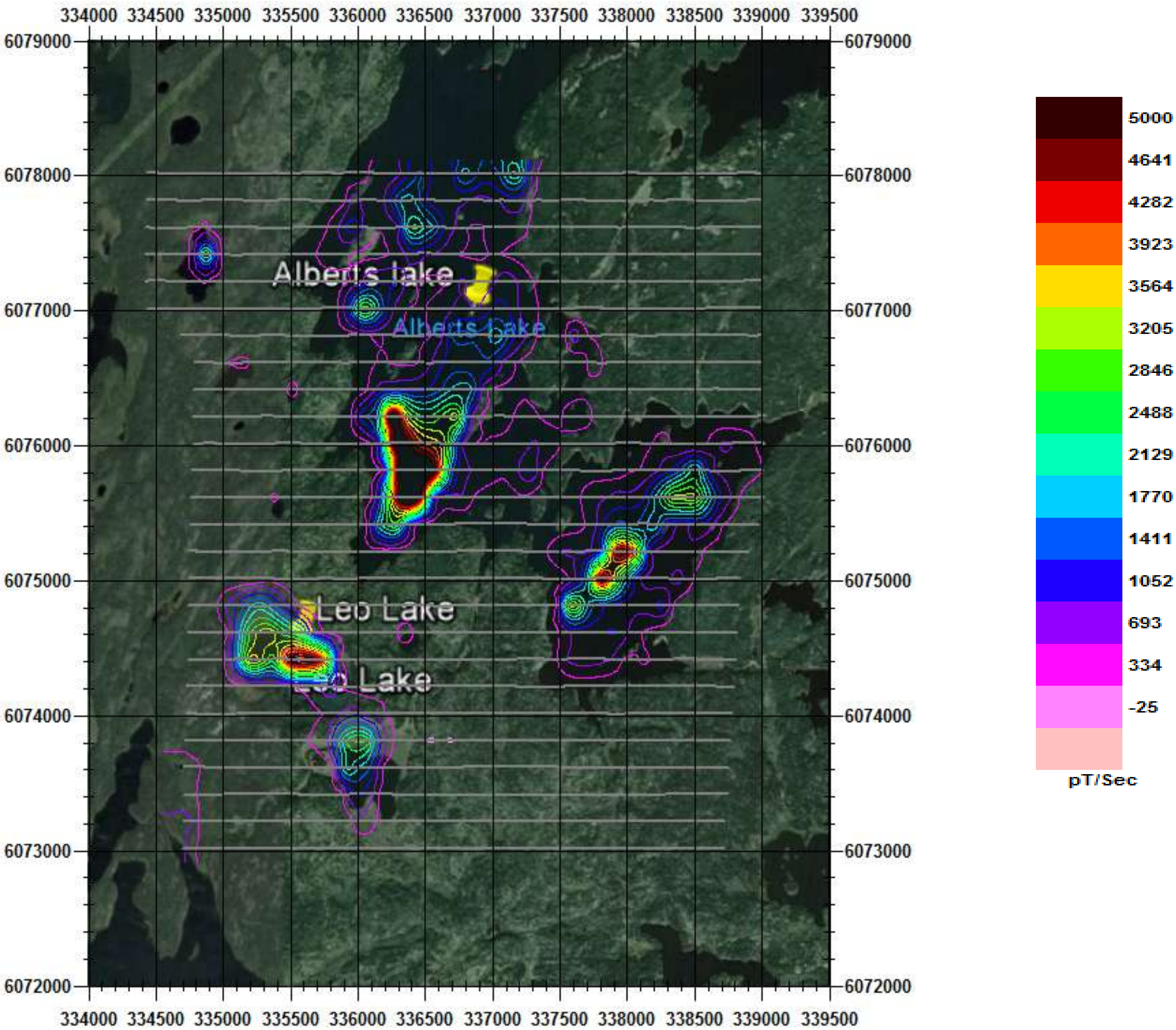
In an attempt to remove this restriction, Geotech attempts to measure the Hx component during the VTEM survey. In the figure below, we show the Hz (vertical) and Hx (horizontal) response over a very proximate location due to the EW survey lines. The vertical response (Hz) is shown in blue indicating the weak surficial conductor (sediments) versus the later slower response of the deeper sulphides. The horizontal (Hx) response is shown in red. Early times are not provided by Geotech for some particular weakness of the system. However, by late time, the Hx response is noisy and of no particular use in the interpretation of the deeper sulphides.

Thus, we will focus on only the vertical magnetic data from the VTEM system.



Albert's Lake region VTEM responses

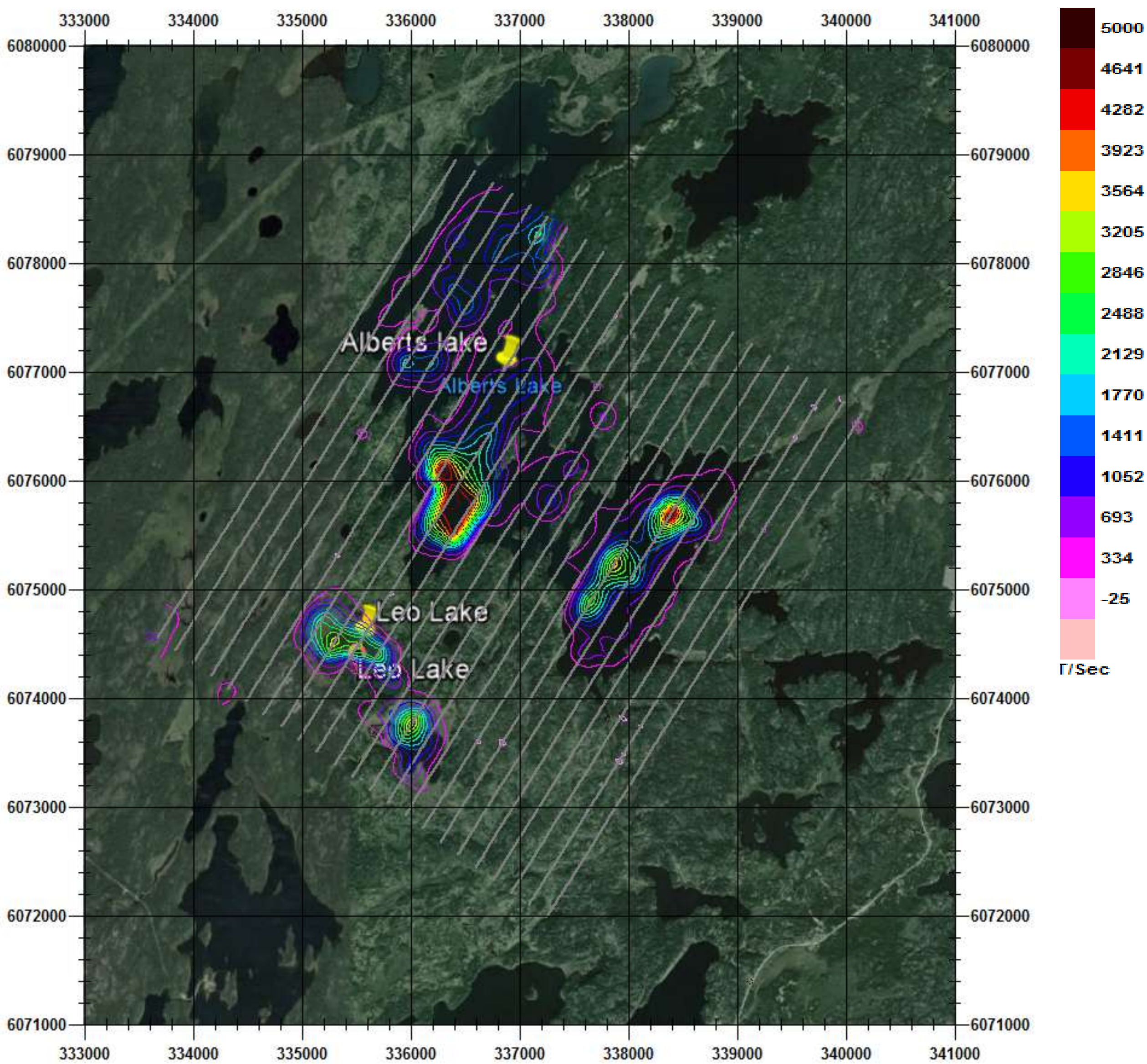
There is a strong correlation in the early time VTEM responses with the outlines of lakes. Below, is shown a maps contouring Channel 1 (earliest time) responses with an underlay map made from a Google Earth map. In this first case, the EW data (Big Island-Arthurs survey) is shown. One can see a strong correlation between the VTEM response and the lake outlines. Stronger responses might indicate s deeper sediments layer.



Note: The Google Earth satellite image is taken as a raster image and thus is a 3D image. Positioning of the map is thus not exactly accurate as a planer (flat) image and thus positions are not exactly accurate. Positioning, in this case, is most accurate around the NW portion of Albert's Lake.

Albert's Lake region VTEM responses

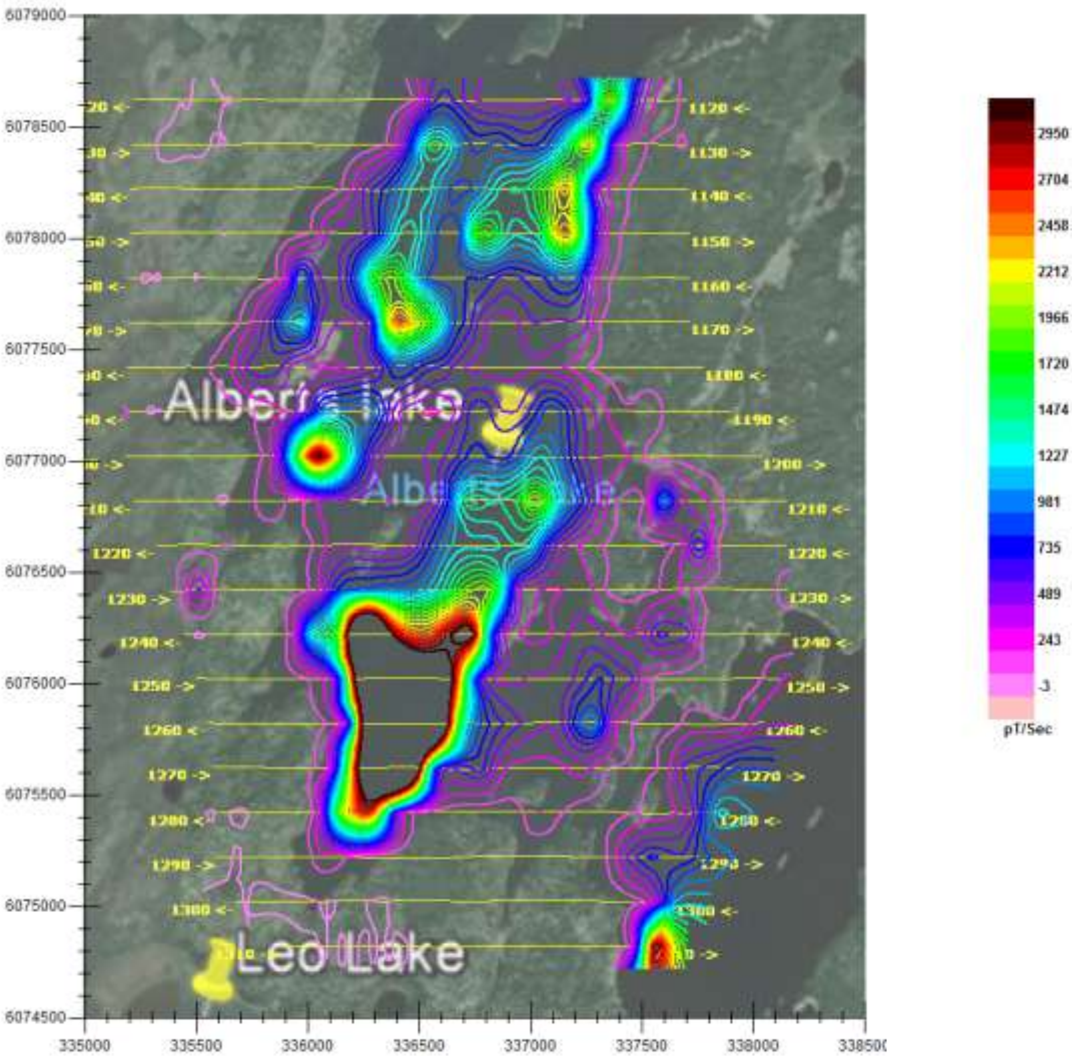
There is a strong correlation in the early time VTEM responses with the outlines of lakes. Below, is a map showing contouring Channel 1 (earliest time) responses with an underlay map made from a Google Earth map. In this first case, the NE-SW data (Arthur Lake block) is shown. One can see a strong correlation between the VTEM response and the lake outlines. Stronger responses might indicate s deeper sediments layer. The 2 sections of Arthur's Lake appear well outlined as well as Leo Lake and a smaller lake to the SE.



Albert's VTEM responses

Here, to understand better the lake bottom responses as well as to be able to clarify that indeed there are deeper more interesting targets, we will focus on the NW portion of the lake.

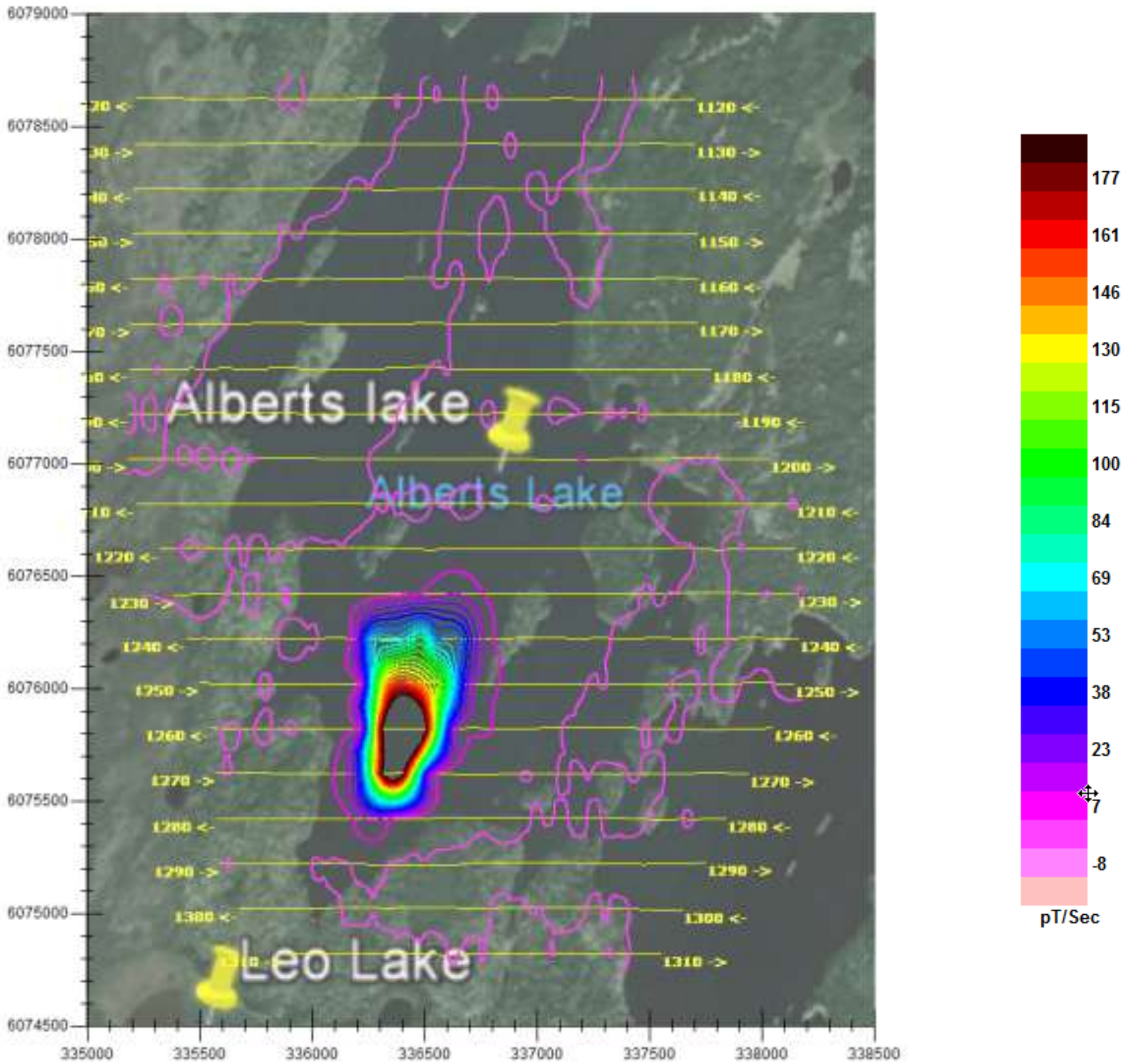
Below, we see a map of the Ch1 VTEM response underlain by a satellite image of the lakes. The correlation between the lakes and the early times can be clearly seen. But, we also, see that the response varies considerably over the surface of the lake likely indicating a varied thickness of sediments. WE can also see a spatial inconsistency between the satellite image and the data. This could either be due to the registration of the satellite map or error in data positioning (which is not unusual).



Albert's VTEM responses

Here, to understand better the lake bottom responses as well as to be able to clarify that indeed there are deeper more interesting targets, we will focus on the NW portion of the lake.

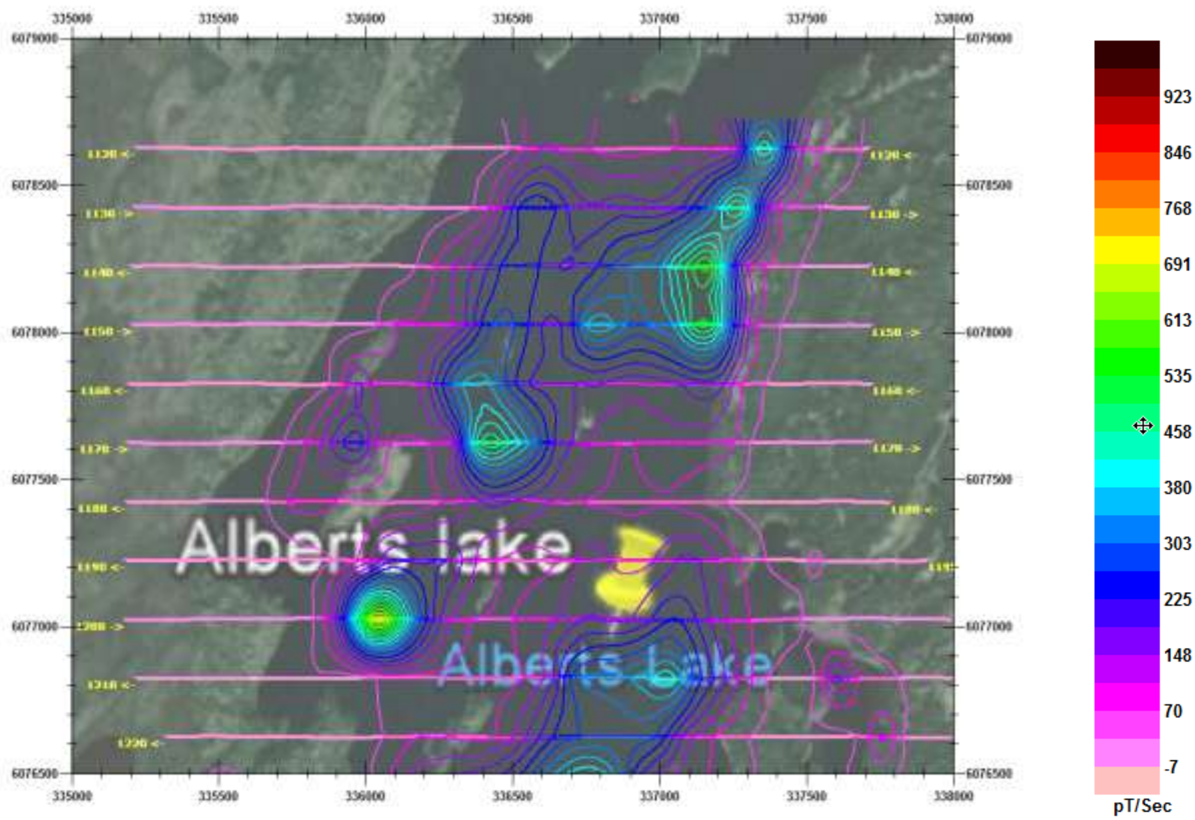
Below, we see a map of the Ch9 VTEM response underlain by a satellite image of the lakes. While there still remains a small correlation with the lake at very low response amplitudes, the area of the 2 deeper, more conducting anomalies are not clearly distinct. There is a correlation between the late time anomaly and the early time anomaly as seen by comparison of this figure and the previous. With the VTEM data, alone, one cannot determine if this is due to thicker sediments in this area, more conducting sediments or effects from the deeper anomaly.



To understand more clearly the difference between responses outside the lake, inside the lake and over interesting conductors, we will take a closer look at line 1150 outside and over the lake.

Albert's VTEM responses

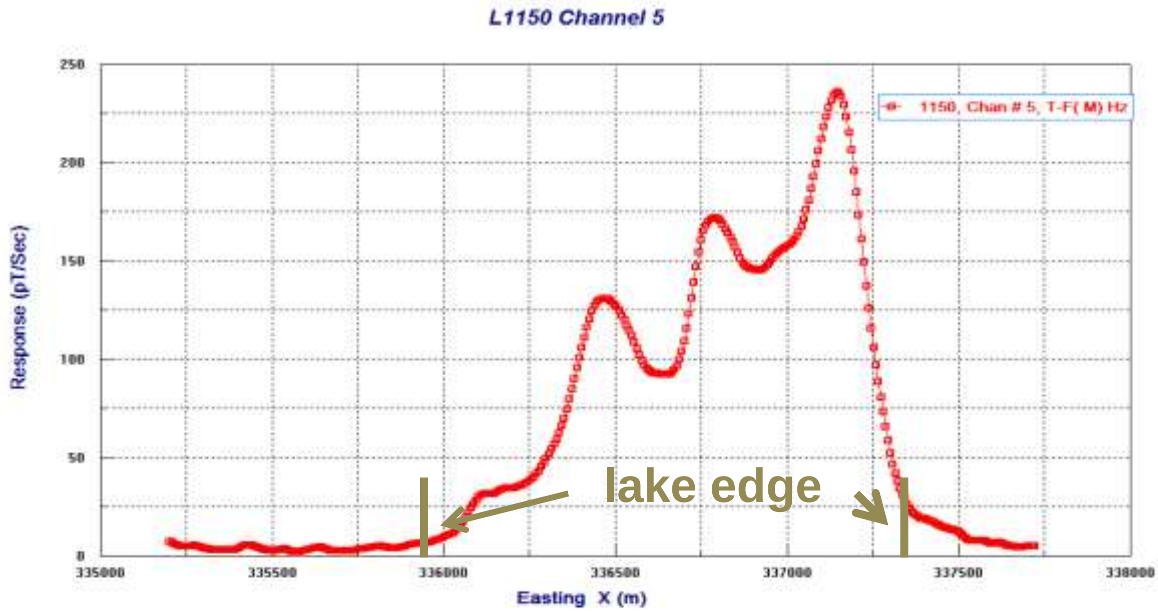
To understand more clearly the difference between responses outside the lake, inside the lake and over interesting conductors, we will take a closer look at line 1150 outside and over the lake. In the Figure below we show the most northern part of the NE of the lake but here we use Ch4. Sometimes the earliest of channels can be a little suspect so we chose a slightly later channel. Data values are also shown by their color outside the lake showing that there is nothing but system response and no ground response outside the edges of the lake.



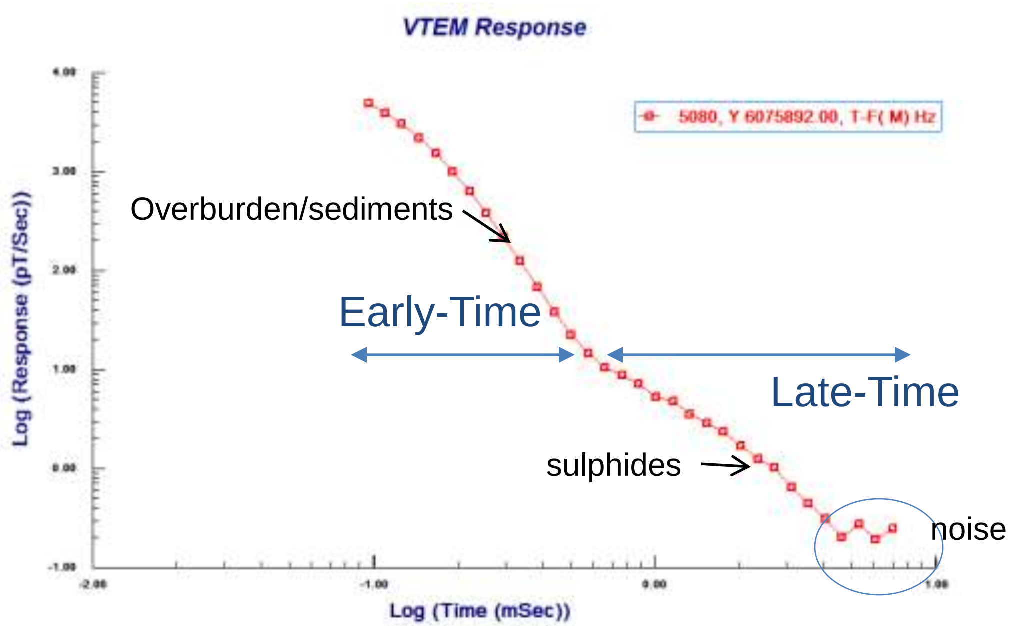
While any of the flight lines could be chosen for our illustration, we chose L1150, across the central portion of the figure.

Albert's VTEM responses (Line 1150)

A plot of the data for Ch5 is shown below along L1150 as a function of easting. The lake edges are indicated by green markers. Clearly, we can observe the increased amplitude over the entire lake. The response dies off near the edge of the lake becoming very small off the lake.

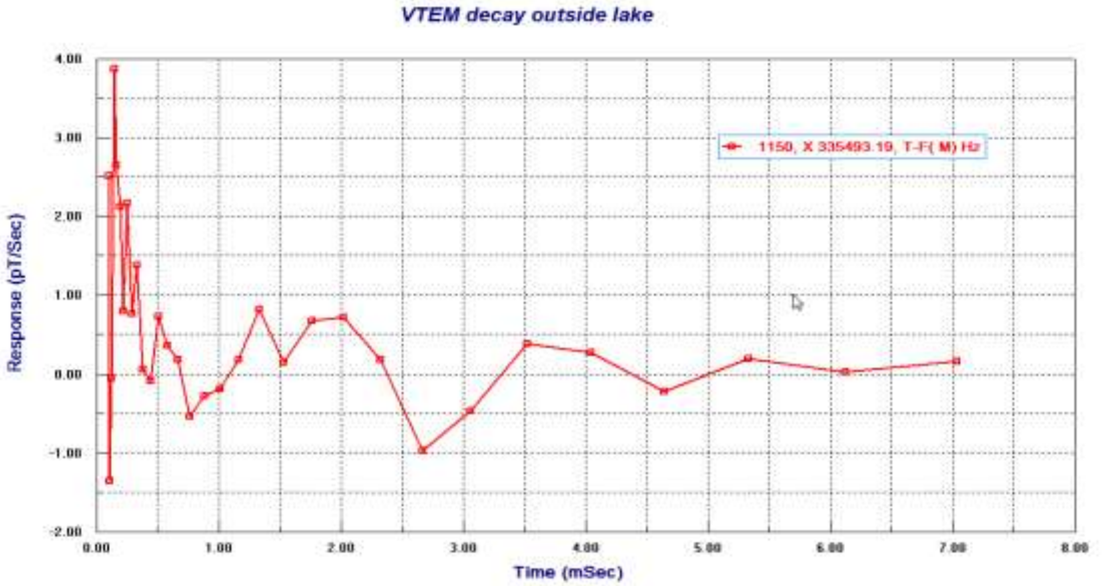


Previously, we showed the response of the Z1 targets. Below, we repeat this figure. We will now compare this response to that on L1150, first off the lake and then over the lake.

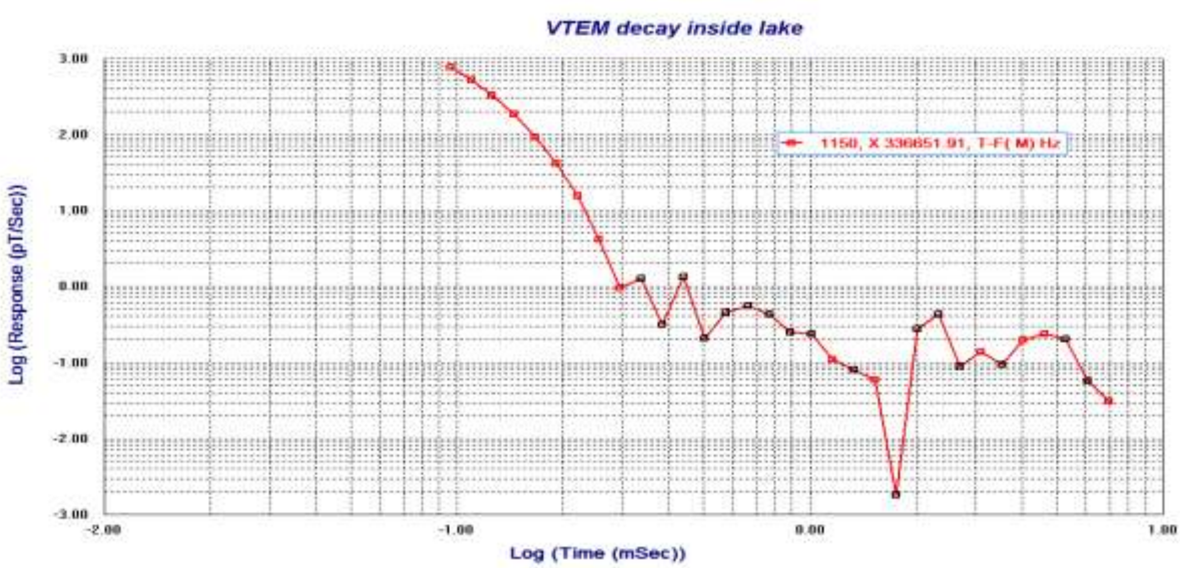


Albert's VTEM responses (Line 1150)

We will compare the response over the Z1 anomalies to that over the land and then over the lake and then analyze and interpret the response over the lake. The first figure below shows the response at a location about 500m to the east of the lake. For those unfamiliar with TEM response this is entirely noise partially instrumental and partially environmental-



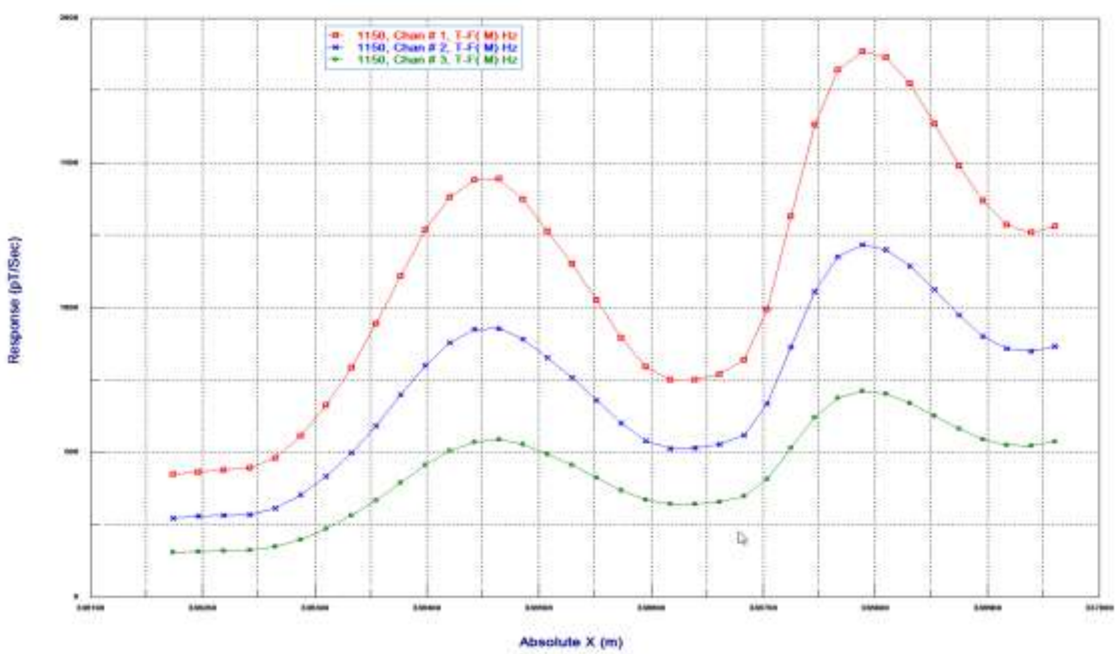
Below is shown the response at a typical location over the lake. The early channel data (first 9 channels) show a response very close to that of the early time response over the Z1 anomalies. As this type of decay is present all over the lake, we determine this to be to lake bottom sediments. Regions of slightly higher response as seen in the previous page could be due to thicker sediments or the presence of deeper mineralization but less strong than over the Z1 anomalies.



Albert's VTEM responses (Line 1150)

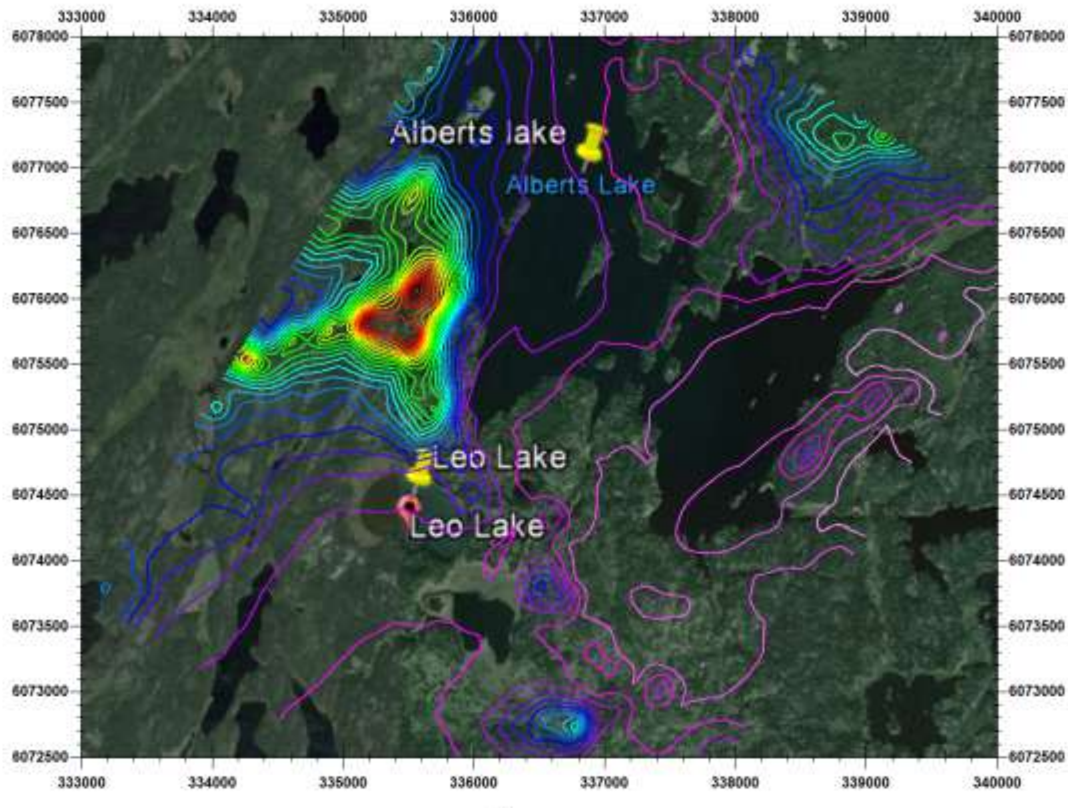
We show the response for the 3 earliest channels below entirely over the lake. The western part of the data approaches a small island whereas the eastern part of this short line is about 450m from the shore. Generally, the response can be modeled as a conductor slightly dipping to the west. The model is all resistive except for a conducting zone with its top at 16m below the surface. From this type of data, we are limited to using a thin-sheet model and the model produced is 0.5S. If the sediments were 25 ohm-m in resistivity then this would infer sediments with a thickness of about 12m.

This model does not account for local variations as seen at 336500 and 336800 below. However, the airborne data is not the most suitable for inferring depth of the lake and sediments.



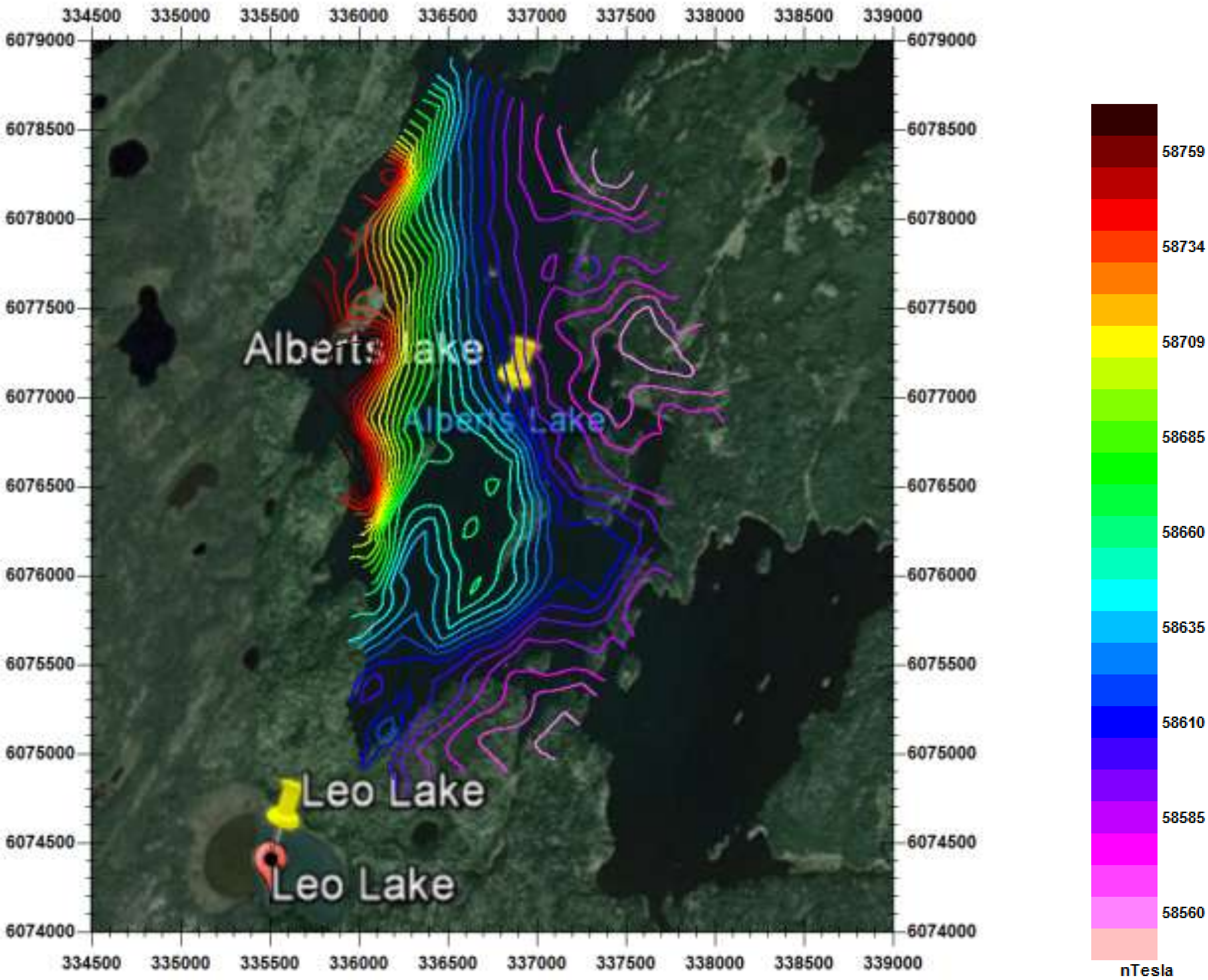
Albert’s Magnetic responses

The figure below is a magnetic (TMI) map of the area around the NE portion of Albert’s Lake. The map is made by combining the EW lines from the Big Island and NE-SW lines from the Albert's block of data. We can see that it is difficult to observe if there are any local, small scale magnetic anomalies over the Z1 targets as the data is dominated by a large magnetic anomaly just to the east of the lake. The entire region contains such magnetic anomalies. Thus, we need to par down the data to focus more explicitly on the Z1 anomalies.



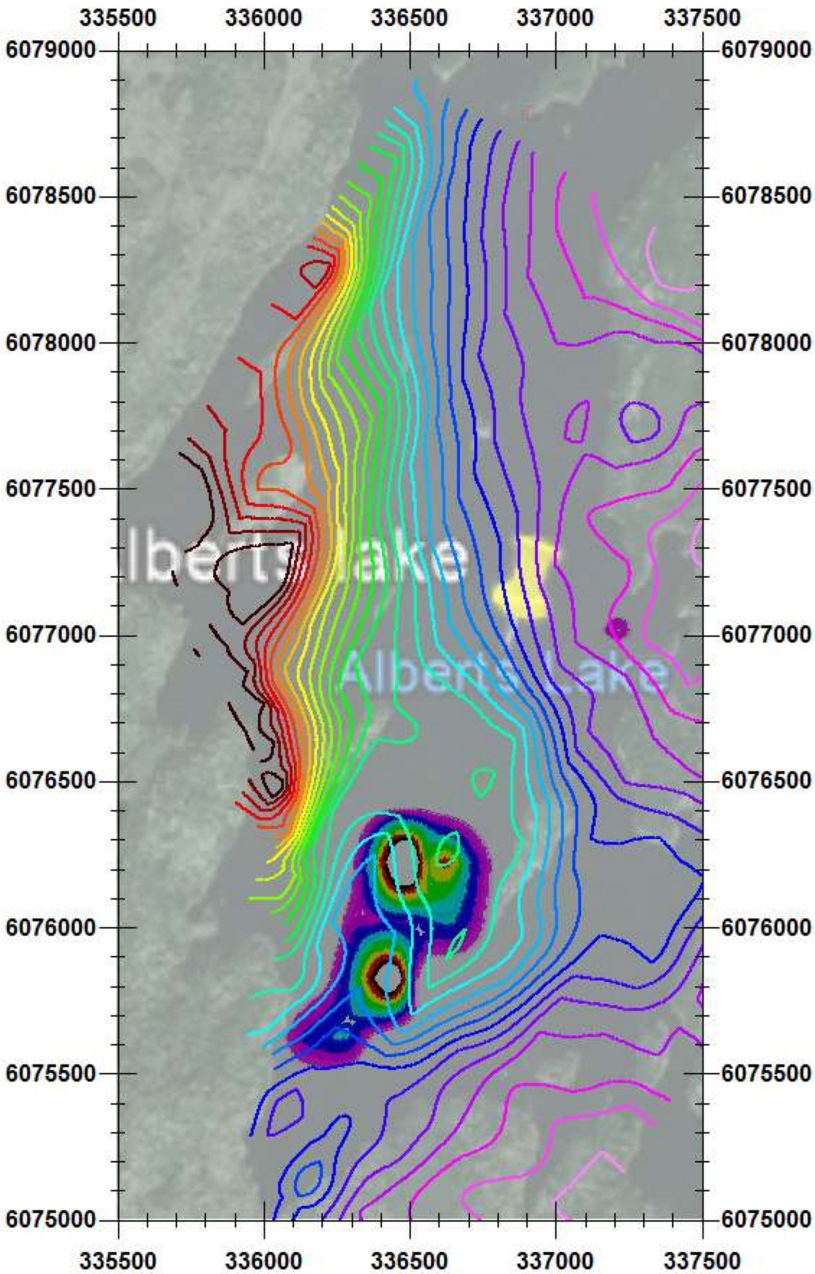
Albert’s Magnetic responses

In the figure below, the data immediately east of the lake is removed. There is still a strong gradient from the large magnetic anomaly to the east of the lake. However, we can now observed a local magnetic high over the Z1 anomalies.



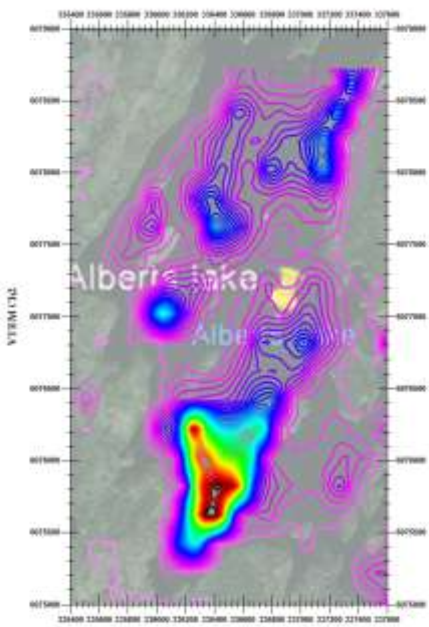
Albert's Magnetic responses

Below, we see the contoured the magnetic response from the previous figure with CH15 VTEM EM underlain. While the magnetic response from the magnetic anomaly east of lake still significantly affects the data, we do see a high associated with the region of the Z1 anomalies. This local distortion around the Z1 anomalies appears to be more with the stronger northern EM anomaly.

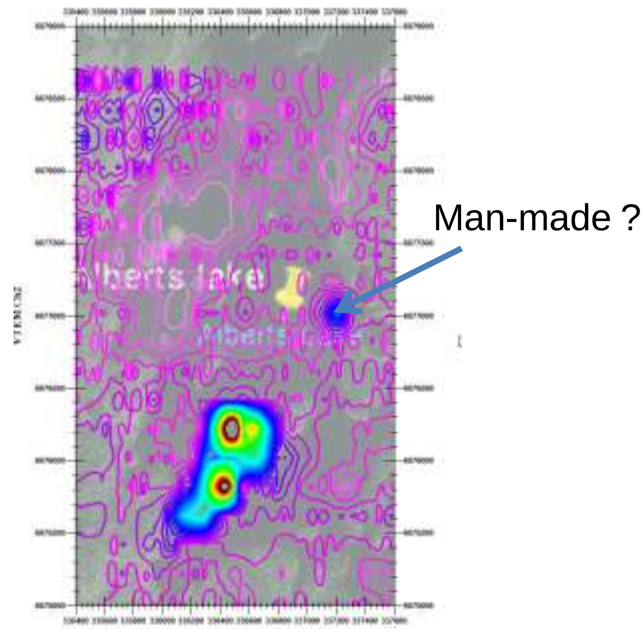


Albert's Airborne EM anomalies (from EW lines).

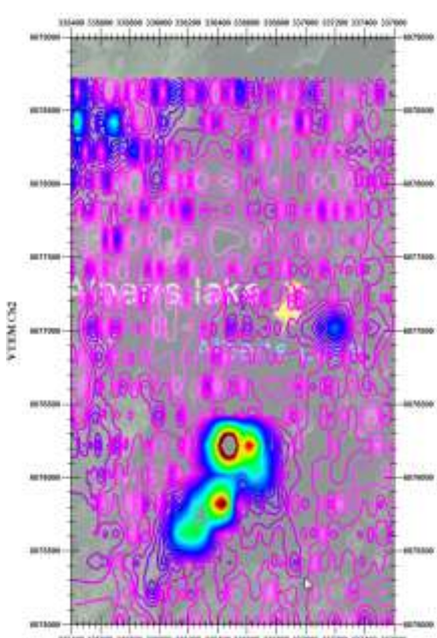
It is useful to examine more closely the Z1 EM anomalies. In this first examination, we create maps of the VTEM data at various times during the decay of the responses. The first map is Ch2, in the upper left corner. From this map, alone, one cannot distinguish the effect of the sediments nor that the structure may consist of 2 distinct structures. However, from the later channel displays, it would appear the early time response is a combination of the response of the sediments and the deeper structures. Previously presented, line plots make this combination evident. By Ch15, it is evident that there is a much more conducting structure(s) and possibly 2 different structures. The later time displays (Ch21 and Ch26) indicating that the strikes of the structures are different and that the northern structure is more conducting.



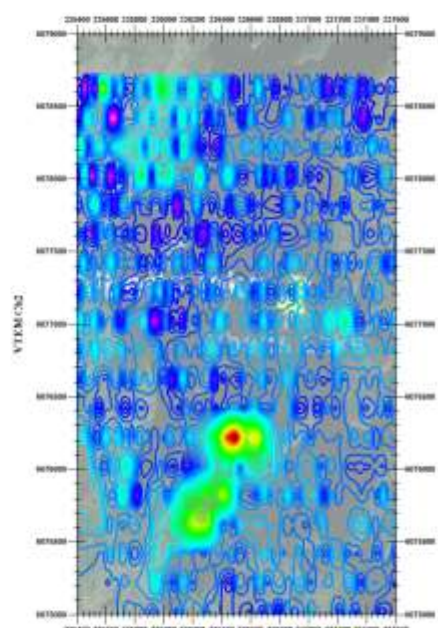
VTEM Ch2



VTEM Ch15



VTEM Ch21



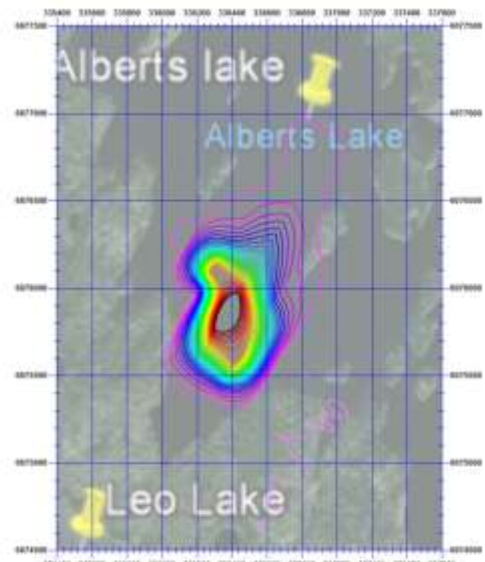
VTEM Ch26

Albert’s Airborne EM anomalies (from NE-SW lines).

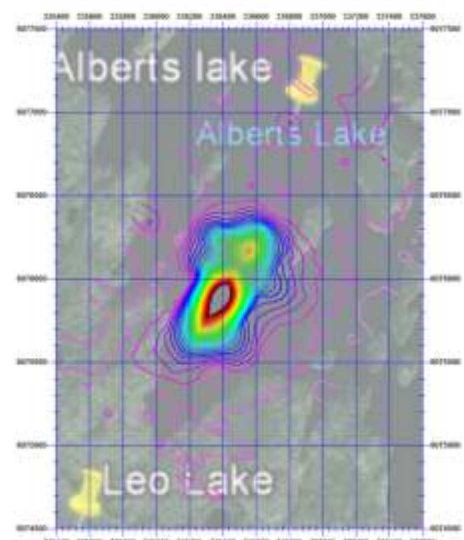
The NE-SW flight lines of the Albert's Lake Block give us a slightly different view of the data.

In early time, the response is strongly bound by the shorelines and islands.

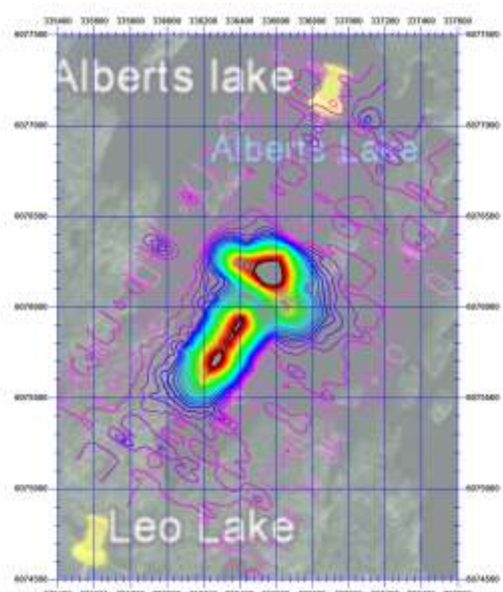
As the time channels progress to later time, the southern target becomes prominent earliest possibly indicating that the top of the conducting material is shallower than the northern target. However, early in the late time (Ch18), the north and south portions of the target separate and show the northern target striking more east-west and t he southernn target more north-south As we proceed to the latest reliable channel (Ch23), the 2 targets appear to separate with now both having approximately equal strength.



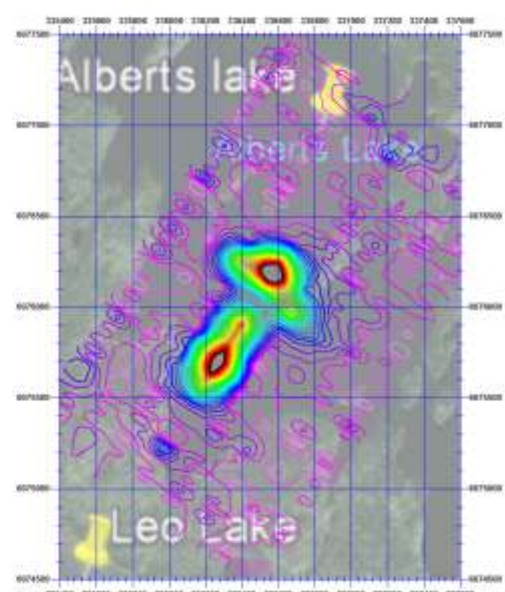
Hz Ch7 (late early-time)
Response partially controlled by shoreline and islands



Hz Ch12 (early mid-time)
Targets begin to separate. South target shallower



Hz Ch18
Targets separate with apparent different strikes

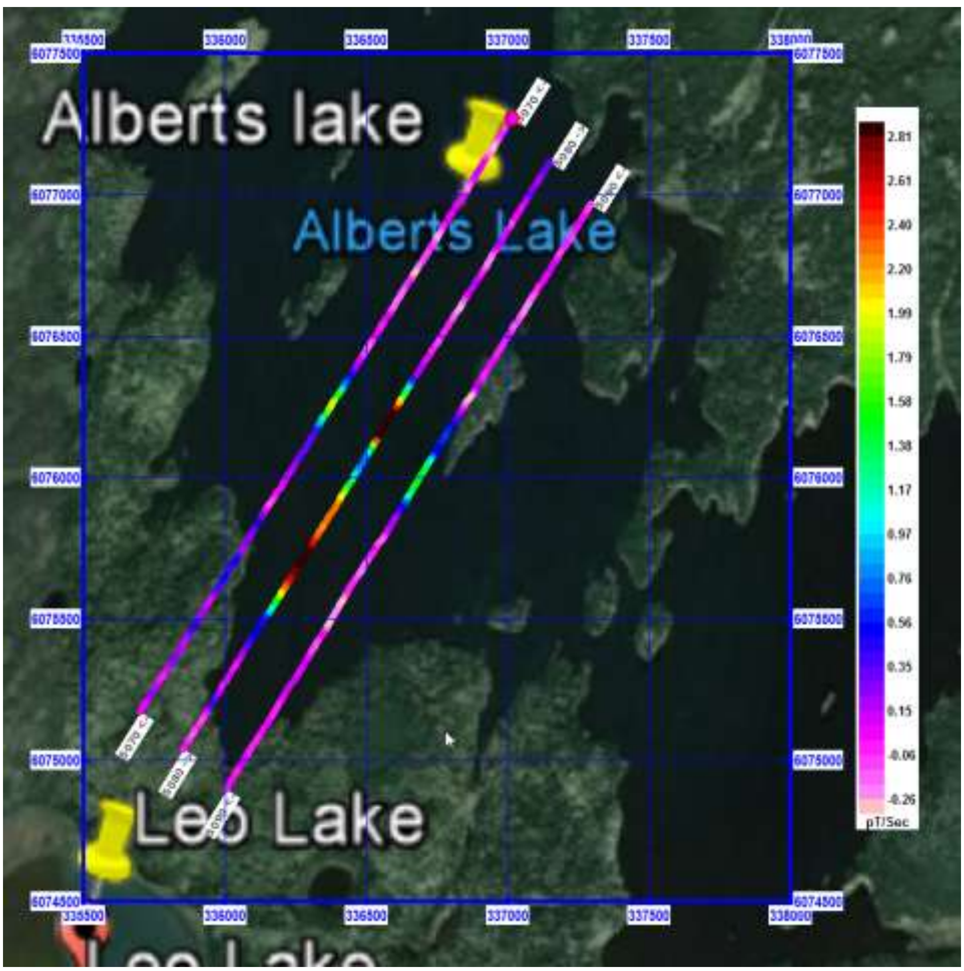


Hz Ch23 (latest reliable)
Targets are now separate
South target apparently stronger

Albert's Airborne EM anomalies (from NE-SW lines).

We will now examine the anomalies in a another manner . For the Albert's block data, the three main flight lines over the structures are 5070, 5080 and 5090. Here we show portions of these 3 flight lines over the Z1 structures. Chn 22 is shown with colors indicating amplitude. We can see the narrow aspect the response as both structures appear predominantly on 1 line (5080) with EW strike extent of the northern structure somewhat evident.

These can be see more clearly in the next set of plots.

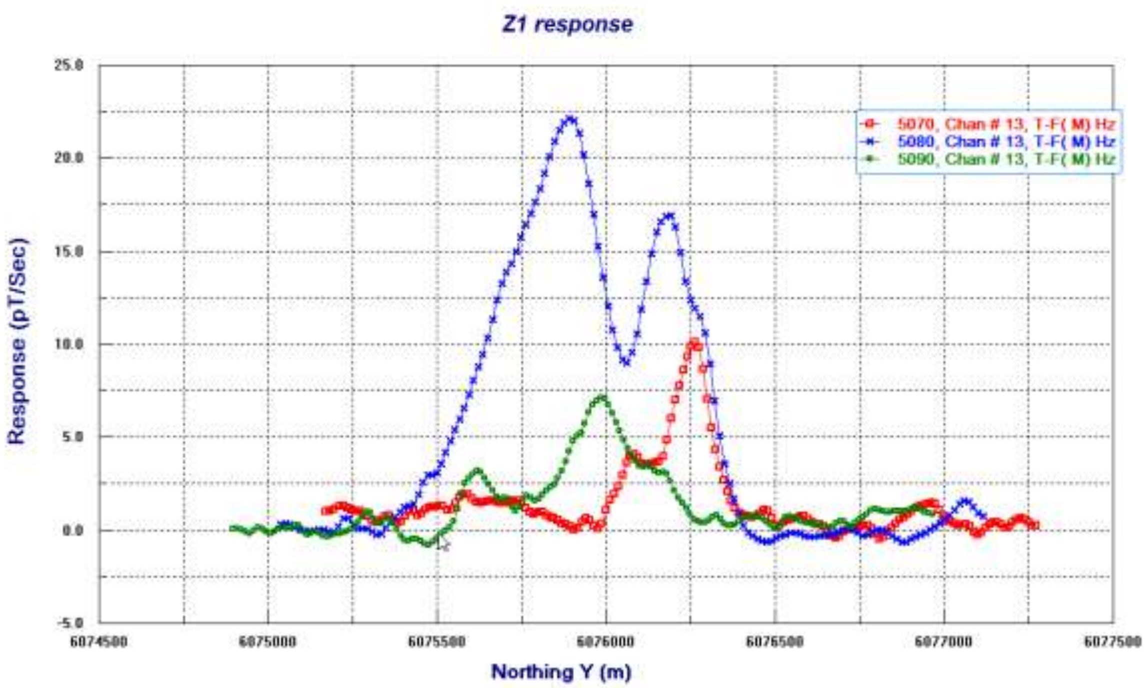


Hz Ch22 - Lines 5070-5090

Albert’s Airborne EM anomalies (from NE-SW lines).

Below are plots of the data along the 3 flight lines. We observe, first, how narrow is the response across the flight lines of the southern target. The southern target is apparently striking more along the flight directions while the northern target is striking more NW-SE or perpendicular to the flight lines.

There is some evidence that the southern target is dipping or plunging to the SW. But, the mixing of the north and southern targets leave any attempt to distinguish dip and/or plunge very questionable.



Hz Ch13 – late mid-time

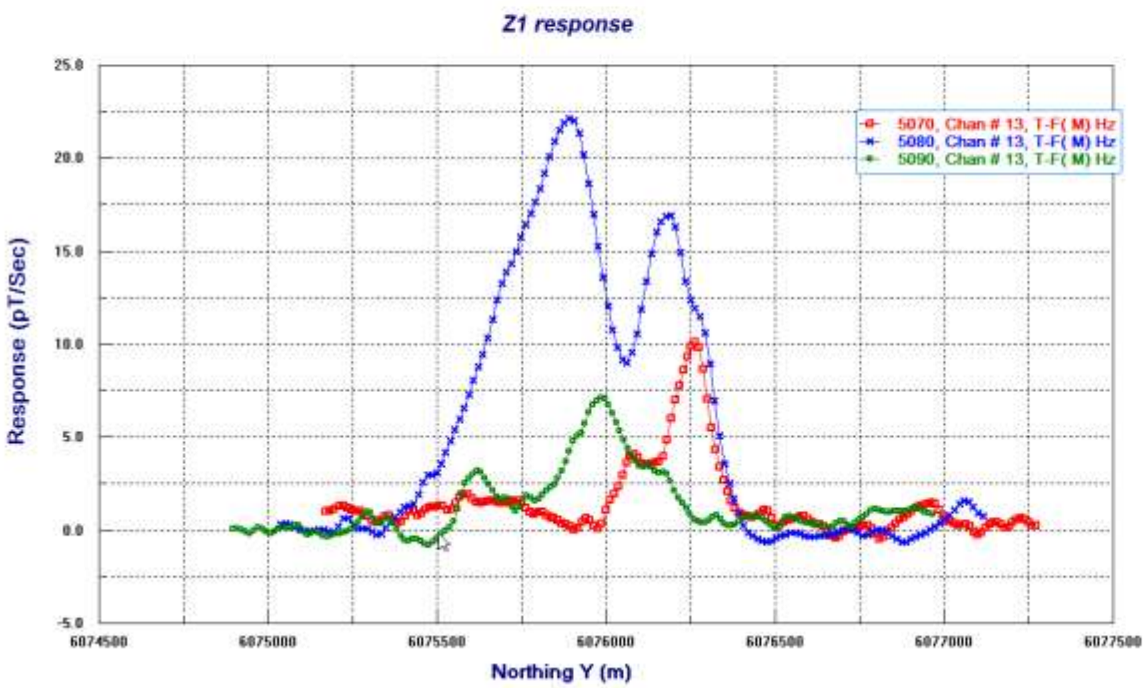
Beginning of domination by deeper more conducting zones

- **Red – L5070**
- **Blue – L5080**
- **Green – L5090**

Albert's Airborne EM anomalies (from NE-SW lines).

Below are plots of the data along the 3 flight lines. We observe, first, how narrow is the response across the flight lines of the southern target. The southern target is apparently striking more along the flight directions while the northern target is striking more NW-SE or perpendicular to the flight lines.

There is some evidence that the southern target is dipping or plunging to the SW. But, the mixing of the north and southern targets leave any attempt to distinguish dip and/or plunge very questionable.



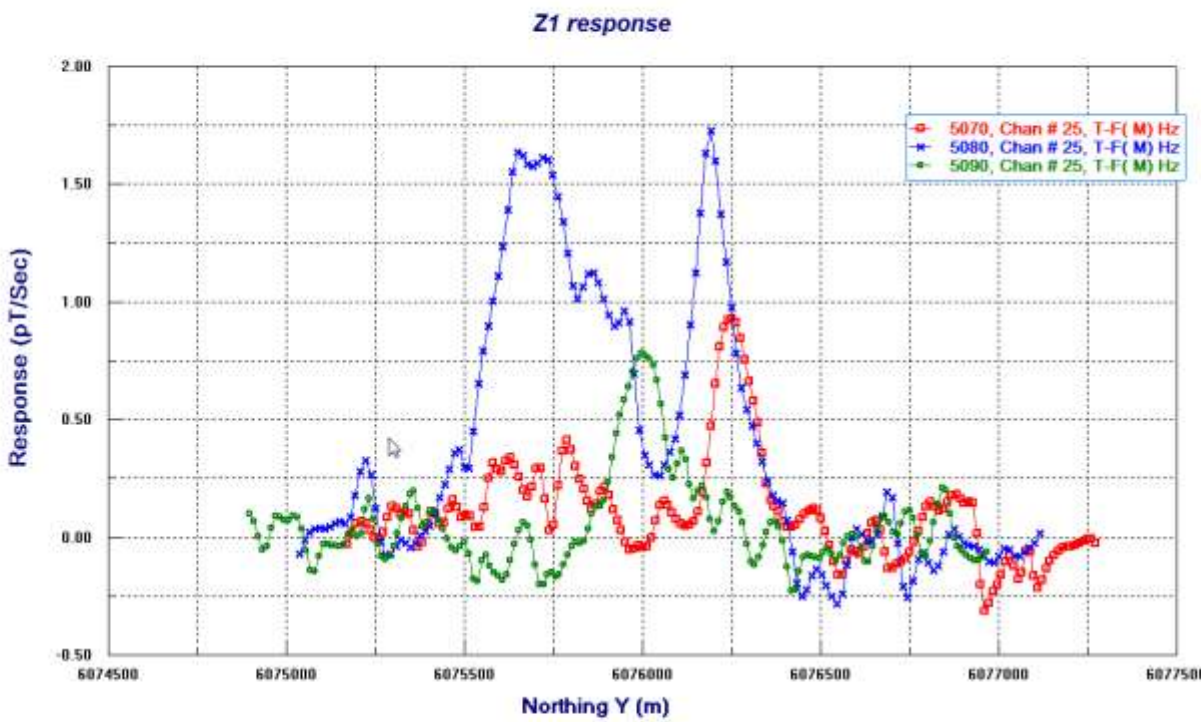
Hz Ch13 – late mid-time
Beginning of domination by deeper more conducting zones

- **Red – L5070**
- **Blue – L5080**
- **Green – L5090**

Albert’s Airborne EM anomalies (from NE-SW lines).

Finally, as we look at the one of the latest of reliable channels, we observe

-The strength of both the south and north zones are concentrated along L5080
- the southern target has a more conducting southern portion
- the northern target appears flat in its dip with little evidence of plunge

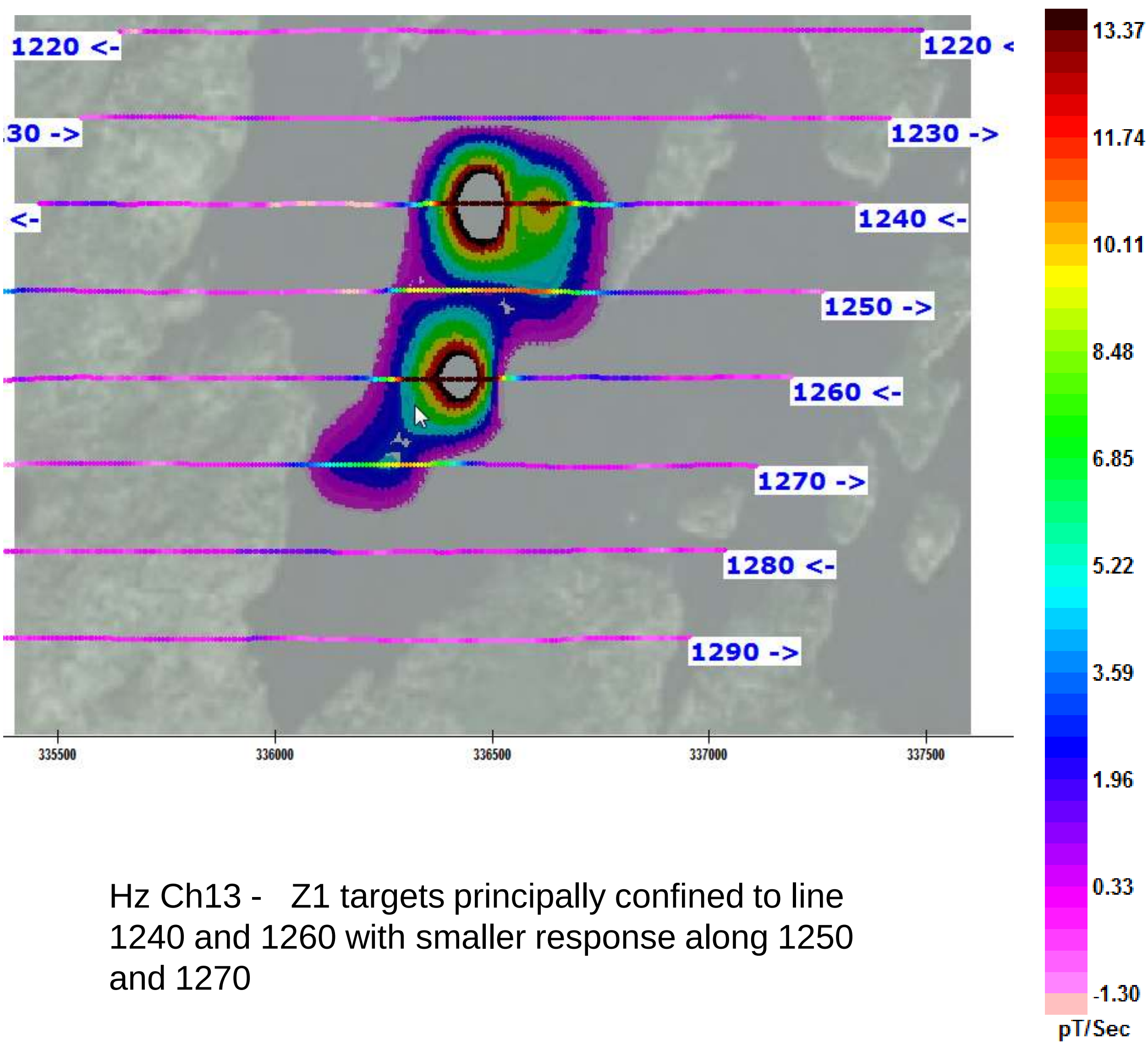


Hz Ch25 –late time
The 2 zones now appear to separate and the southern zone appears to be stronger in the southern portion of the south target.

- **Red – L5070**
- **Blue – L5080**
- **Green – L5090**

Albert's Airborne EM anomalies (EW lines).

The EW flight lines of the Big Island – Albert's survey sample the Z1 anomalies in a somewhat different manner. Below, we see Ch13 plotted along the flight lines (in color). The Ch15 anomaly is contoured below over the satellite image of the lake area. The strongest responses are along Line 1240 and Line 1260 with somewhat smaller responses along L1250 and 1270.

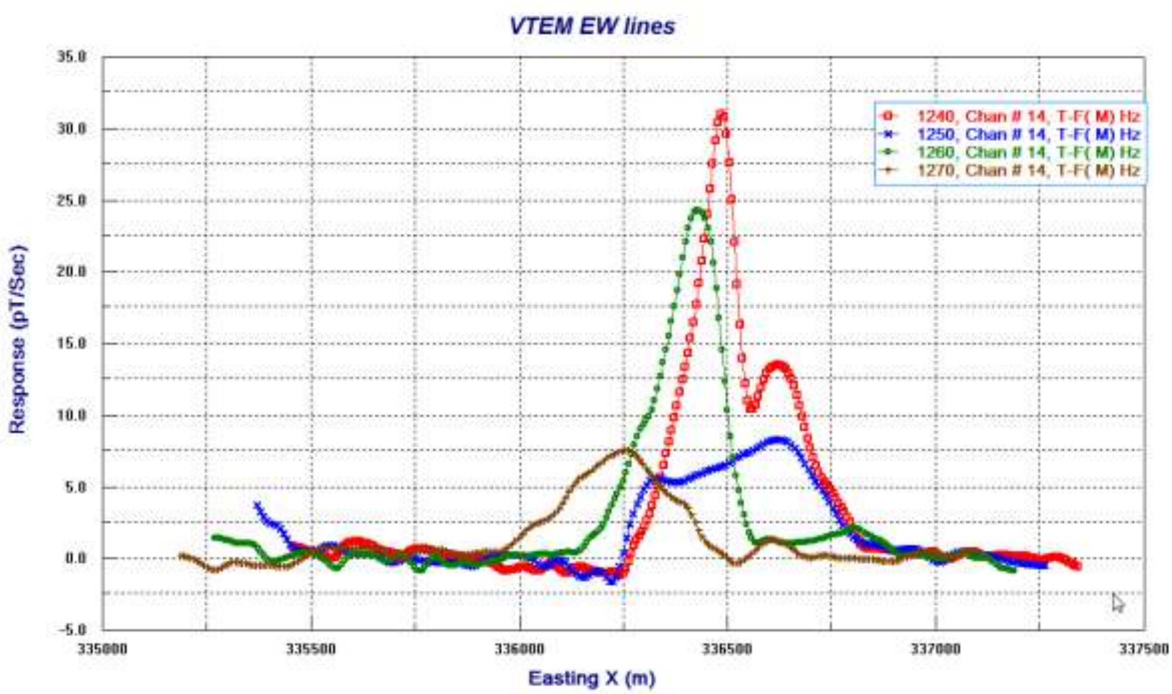


Hz Ch13 - Z1 targets principally confined to line 1240 and 1260 with smaller response along 1250 and 1270

Albert’s Airborne EM anomalies (EW lines).

Here, we present the Hz response at Ch14 where the decays have significantly slowed down indicating detection of more conductive structures.

L1240 (red) crosses the northern structure and shows 2 peaks and thus possibly 2 zones. The next line south, L1250 (blue) shows a continuation of the eastern portion of the north anomaly. The next line south, L1260 (green), indicates the heart of the southern structure which continues into L1270 (brown) indicating the south structure strike south and to the west but is weaker to the south.



Hz Ch14 early mi-time

Separation of the conductors and some indication that the northern target consists of 2 zones.

- **Red – L1240**
- **Blue – L1250**
- **Green – L1260**
- **Brown – L1270**

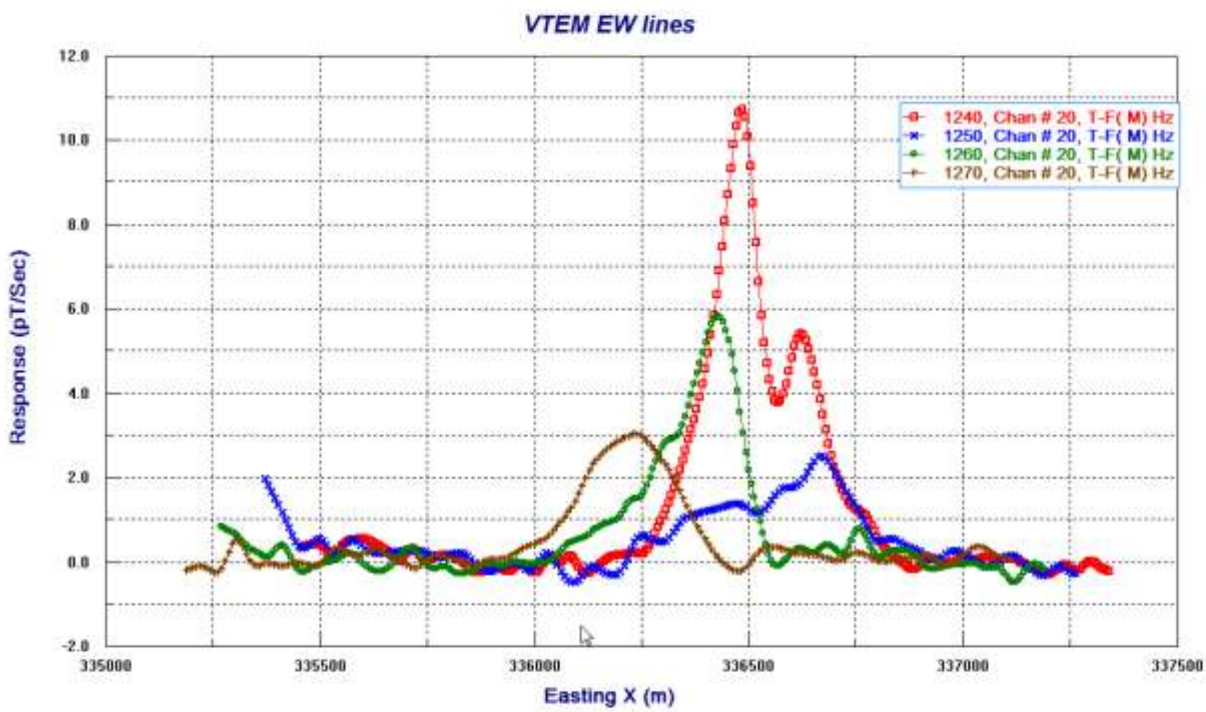
Albert's Airborne EM anomalies (EW lines).

Here, we present the Hz response at Ch20 where we are now well into the slow decays of the conductive targets.

L1240 (red) crosses the northern structure and shows 2 peaks and thus most likely 2 zones. The next line south, L1250 (blue) shows a continuation of the eastern portion of the north anomaly. The next line south, L1260 (green), indicates the heart of the southern structure which appears to be of weaker conductivity from the western northern anomaly.

The southern portion of the south anomaly shows on L1270 (brown) which is now more comparable in strength to response on L1260. This indicates likely that the southern structure is plunging to the south.

L1240-L1260 indicate that the western structure in the northern anomaly the main part of the southern structure are dipping to the west. However, L1270 indicates that the southern portion of the southern anomaly is more flat.



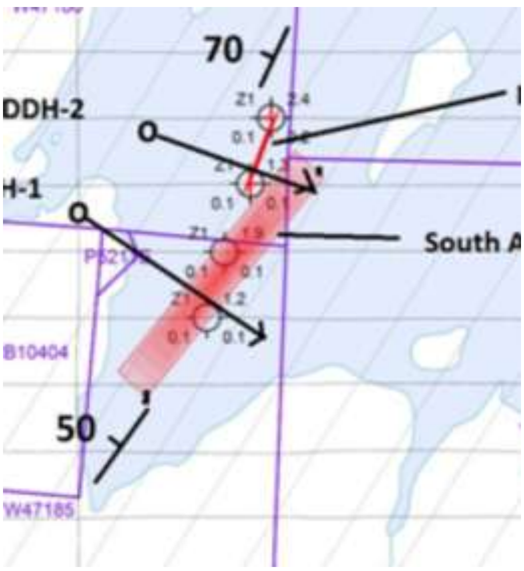
Hz Ch20 mid-late time

Separation of the conductors and some indication that the northern target consists of 2 zones.

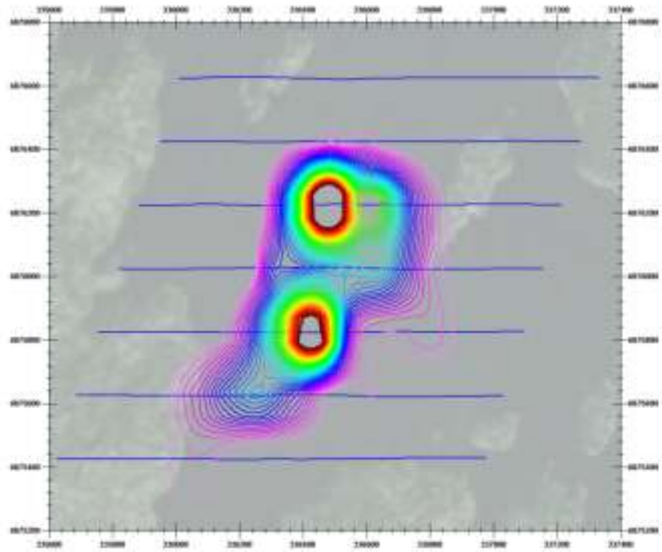
- **Red – L1240**
- **Blue – L1250**
- **Green – L1260**
- **Brown – L1270**

Albert’s Airborne EM anomalies – Structural Models 1

Before, presenting our models, we would review some aspects of the data with some comparisons to models presented in the REPORT (Base Metal Report Albert's Lake, V4). We do not have exact positioning of the two models from this report but will try to make comparison via these comparison images.



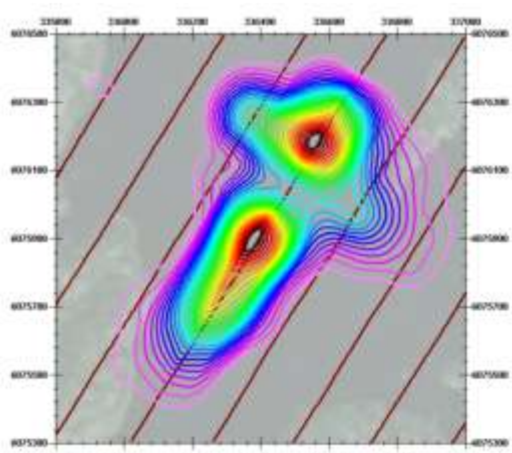
from pg15 REPORT



Ch14 EW Lines

Channel 14 is shown on the upper right for the EW lines. This channel is well into the response of the deeper conductors and later than the last of sediment response. While the general strike of the overall structures would be agreed to be generally SW to NE, there is very little in the details of the provided model to which we would agree.

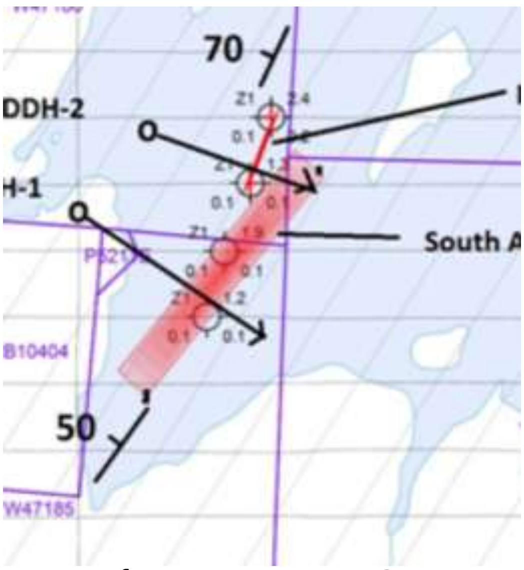
Channel 14 is shown on the right for the diagonal flight lines. Quite evidently, the structure is more complicated than presented in the 2 plate model. Also, it would appear that the South structure had a much shorter strike and that the north structure actually was much longer and had a strike some 50 degrees west of north. Also, apparently the structures have central areas of stronger conductance.



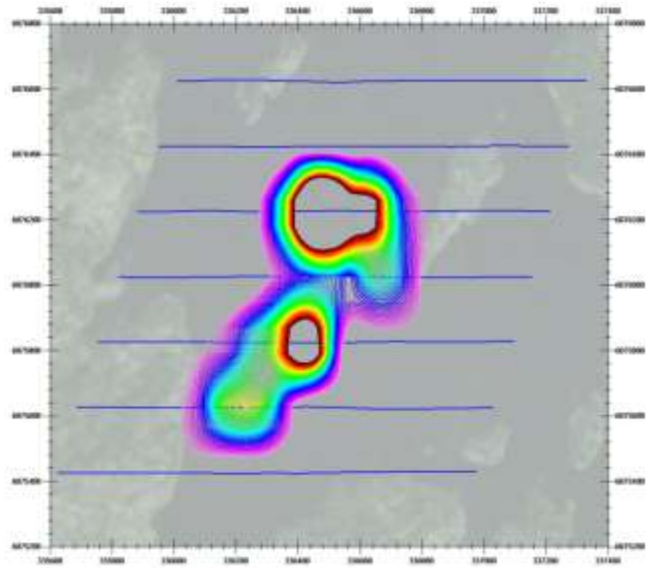
Ch14 SW-NE Lines

Albert's Airborne EM anomalies – Structural Models - 2

Before, presenting our models, we would review some aspects of the data with some comparisons to models presented in the REPORT (Base Metal Report Albert's Lake, V4). We do not have exact positioning of the two models from this report but will try to make comparison via these comparison images.



from pg15 REPORT

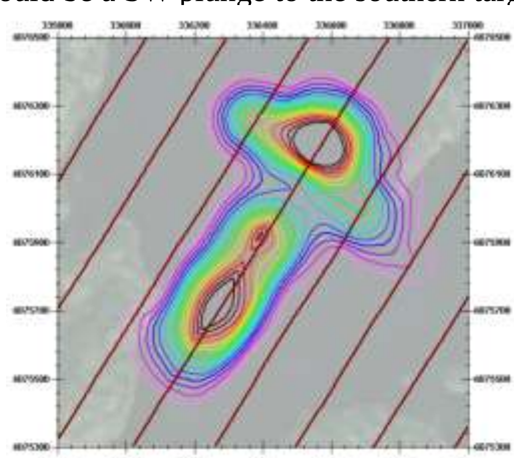


Ch20 EW Lines

Channel 20 is shown on the upper right for the EW lines. This channel is now into the middle of the response of the deeper. The strike angle of the southern target appears to correlate with the REPORT but is shorter in length. However, the northern structure is evidently of an entirely different strike length and angle from the report. There could be a SW plunge to the southern target.

Channel 20 is shown on the right for the diagonal flight lines. The northern structure again appears to be of a SE strike contrary to the report. The southern structure appears to be of a rather steep dip.

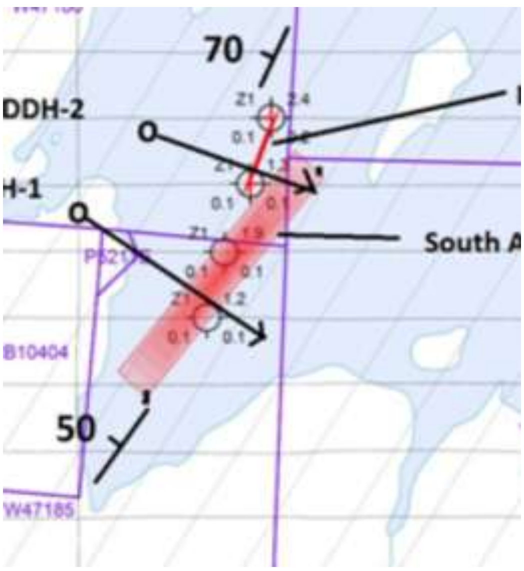
On page 16 of the REPORT, the northern structure appears to be dipping to the SE. However, the nature of the response would imply a rather flat structure.



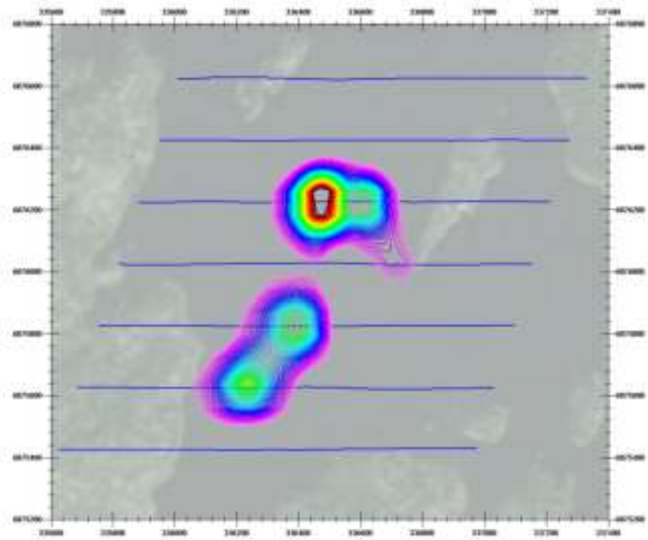
Ch20 SW-NE Lines

Albert’s Airborne EM anomalies – Structural Models - 3

Before, presenting our models, we would review some aspects of the data with some comparisons to models presented in the REPORT (Base Metal Report Albert's Lake, V4). We do not have exact positioning of the two models from this report but will try to make comparison via these comparison images.

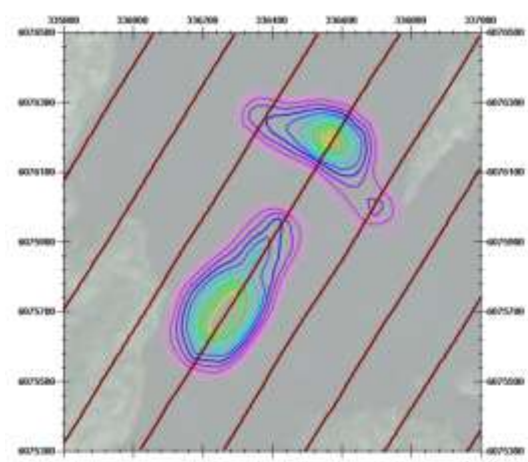


from pg15 REPORT



Ch24 EW Lines

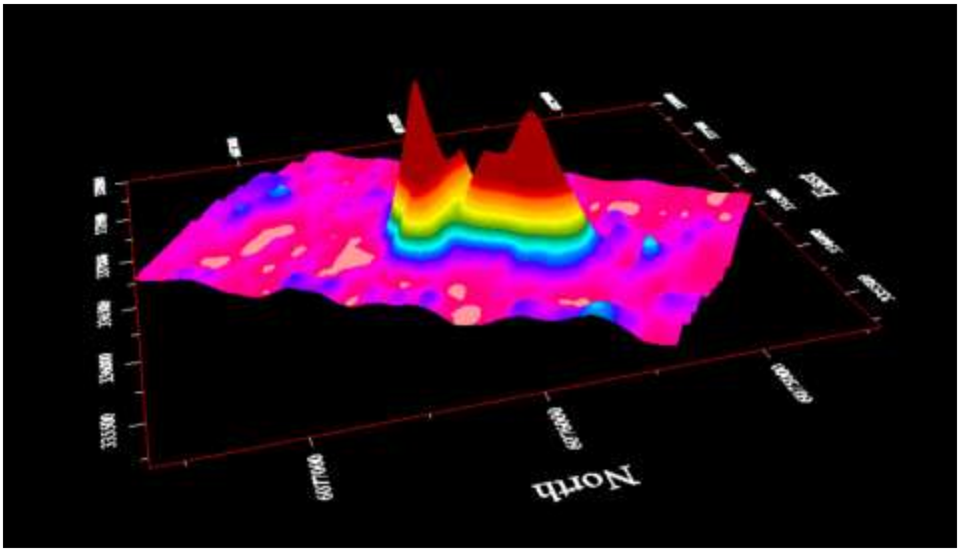
Channel 24 is shown on the upper right for the EW lines. Ch24 on the diagonal lines is shown below. The concentration of the conductive material appears more confined and of shorten strike both for the north and south structures. The northern structure is either striking or dipping just south of east. The response of the northern structure appears contrary to page 17 (TOP) of the REPORT.



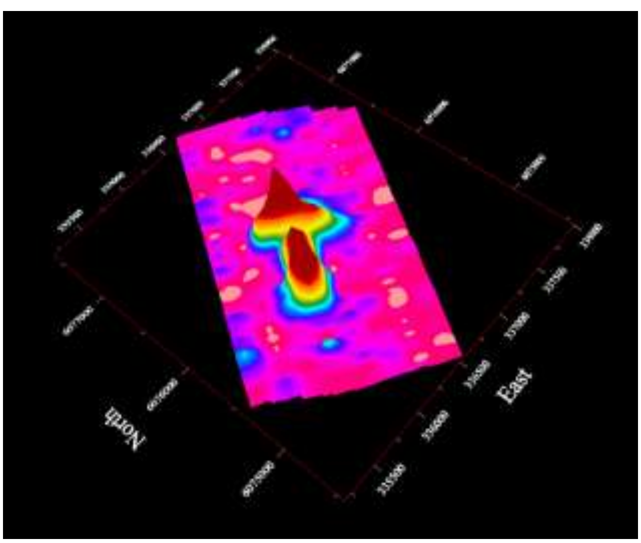
Ch24SW-NE Lines

Albert's Airborne EM anomalies – Structural Models - 4

Another way to view the responses is a 3D surfaces where the response is represented by a surface in 3D.



Ch23 NE-SW Lines viewed from west

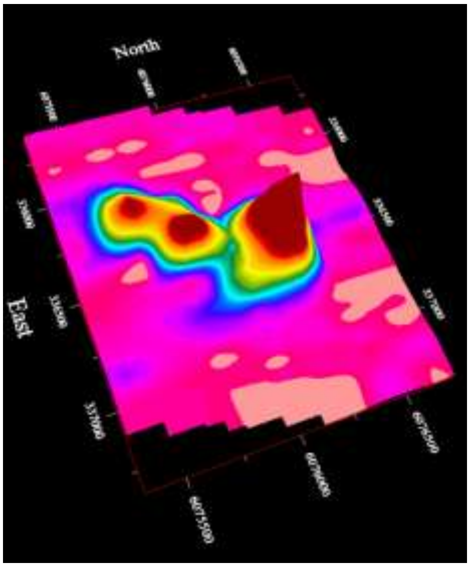


Ch23 NE-SW Lines
viewed from SW

These responses are late time for the structures. Apparently the north and south structures are distinct with the southern structure striking SW with virtually no dip but a strong anomaly to the south along an apparent plunge. The northern structure is striking approximately perpendicular to the flight lines with a slight SW dip. Both structures appear roughly conical which would agree with the Reed Lake Discovery target.

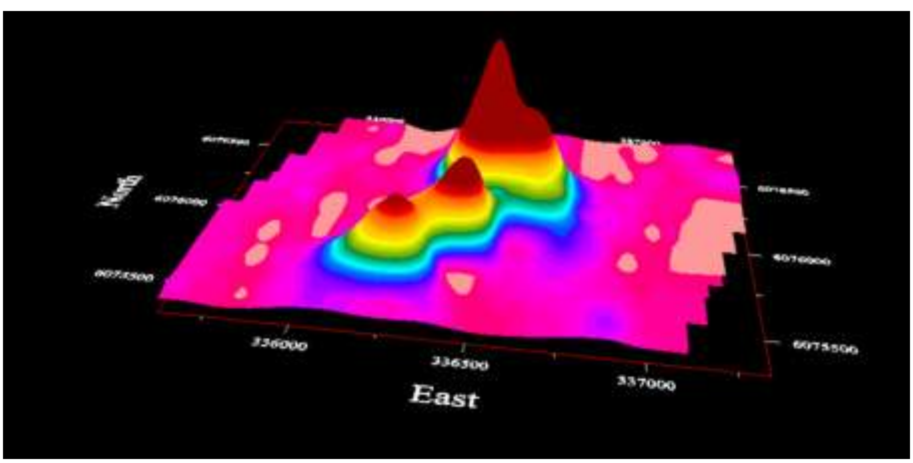
Albert's Airborne EM anomalies – Structural Models - 5

Another way to view the responses is a 3D surfaces where the response is represented by a surface in 3D. Here we show the surface from the EW lines.



Ch22 EW Lines viewed from South East

Ch22 EW Lines viewed from South



The northern structure again appears conical with a NW-SE strike as before.

The southern structure is striking SW but appears to consist of 2 distinct zones.

The northern structure appears stronger or possibly shallower. This distinction must be determined via modeling.

Albert's Airborne EM anomalies – Structural Models - 6

Geophysical Models: We have performed quite an extensive simulation study in an attempt to determine good geophysical models to explain the VTEM data.

1. Shallow (early time) Model: Over large portions of the lake as in many other lakes in this region, there is a significant early time response which decays quite rapidly. The response can be represented by a weak conductor some 10-20m in depth to its top. It is not possible to determine this depth accurately from this type of data but we would interpret this model as the electrical effects of sediments on the lake bottom. The response is not uniform over the lake but it does appear to correlate with "expected water" and sediment depths.
2. Deeper and More Conducting (later time) Models: In our opinion, the data represents structure somewhat more complex than 2 linear anomalies but there are 2 regions which could be expressed as 2 structures (South and North).

2A: South Target: There is an approximate linear target. We model this as

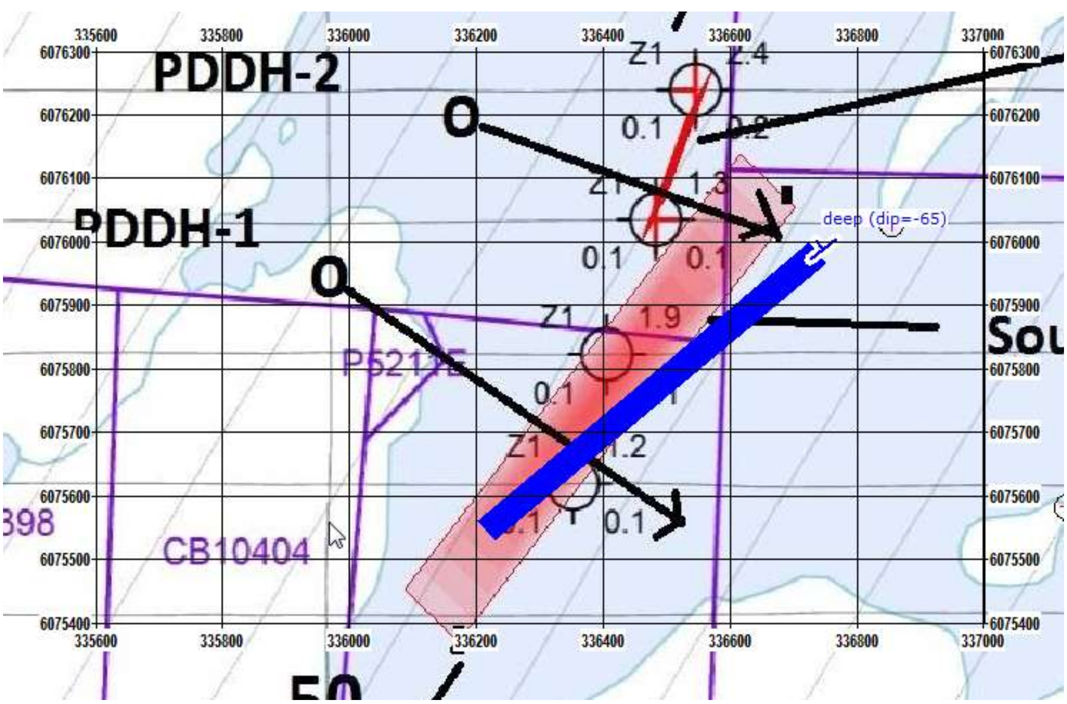
Strike Extent: 680m, Strike angle: 50 degrees east of North.

Depth to Top: 150m

Dip Extent: 100m, Dip angle : 65 degrees , Note **

Conductance: 50 Siemens

** ***With this type of instrument it is almost impossible to determine if the dip extent is greater than 100m.***



South Target (blue) – Pg15 Report below

Albert's Airborne EM anomalies – Structural Models – 6cont

<u>Geophysical Models: (comments)</u>

_ Our model differs somewhat from that of your consultant although we do not have all the details of that model. Our strike angle is slightly more to the east, our dip angle slightly steeper and our strike length somewhat shorter.

In reference to these differences:

- strike angle – we cannot understand why the previous consultant has chosen the strike that was reported

- dip angle – this angle is very difficult to interpret with a system such as the VTEM and thus on could understand these differences in dip angle.

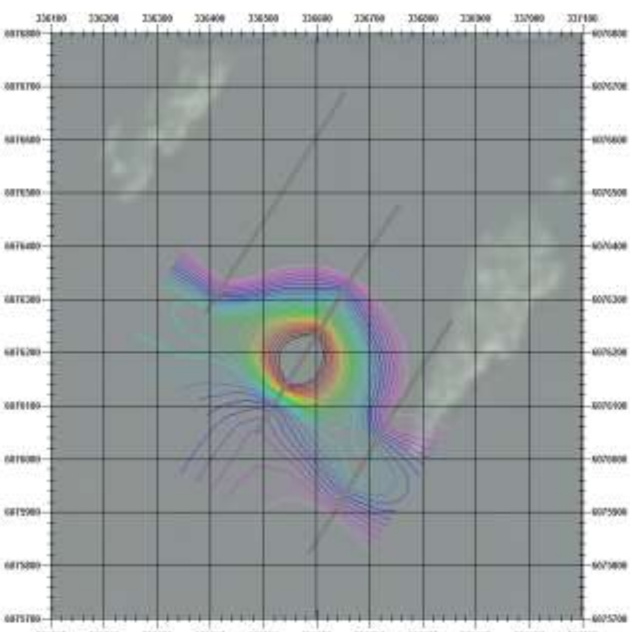
- strike length: the structure is not a continuous conductance along its length. There is some evidence of a deeper structure at the south end of the structure arguing for a plunge in this direction. However, we would still question the extent of the strike length.

Albert’s Airborne EM anomalies – Structural Models - 7

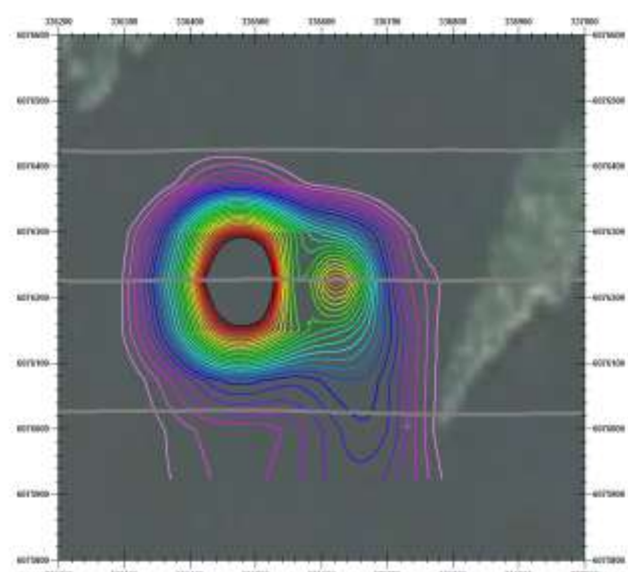
<u>Geophysical Models:</u>

3A: North Target: Below on left is a contoured map of Ch20 of the VTEM data along the diagonal lines. The target is see almost solely on the central line (L5080). The enhanced response to the SE of the main response is almost certainly due to the northern portion of the southern target. There is an apparent dip to the NE.

In the figure at the bottom left, we show the response for Ch20 for the EW lines. The target is restricted almost entirely to the middle flight line (L1240). The target appears to consist of 2 parts.



North Target – diagonal lines Ch20

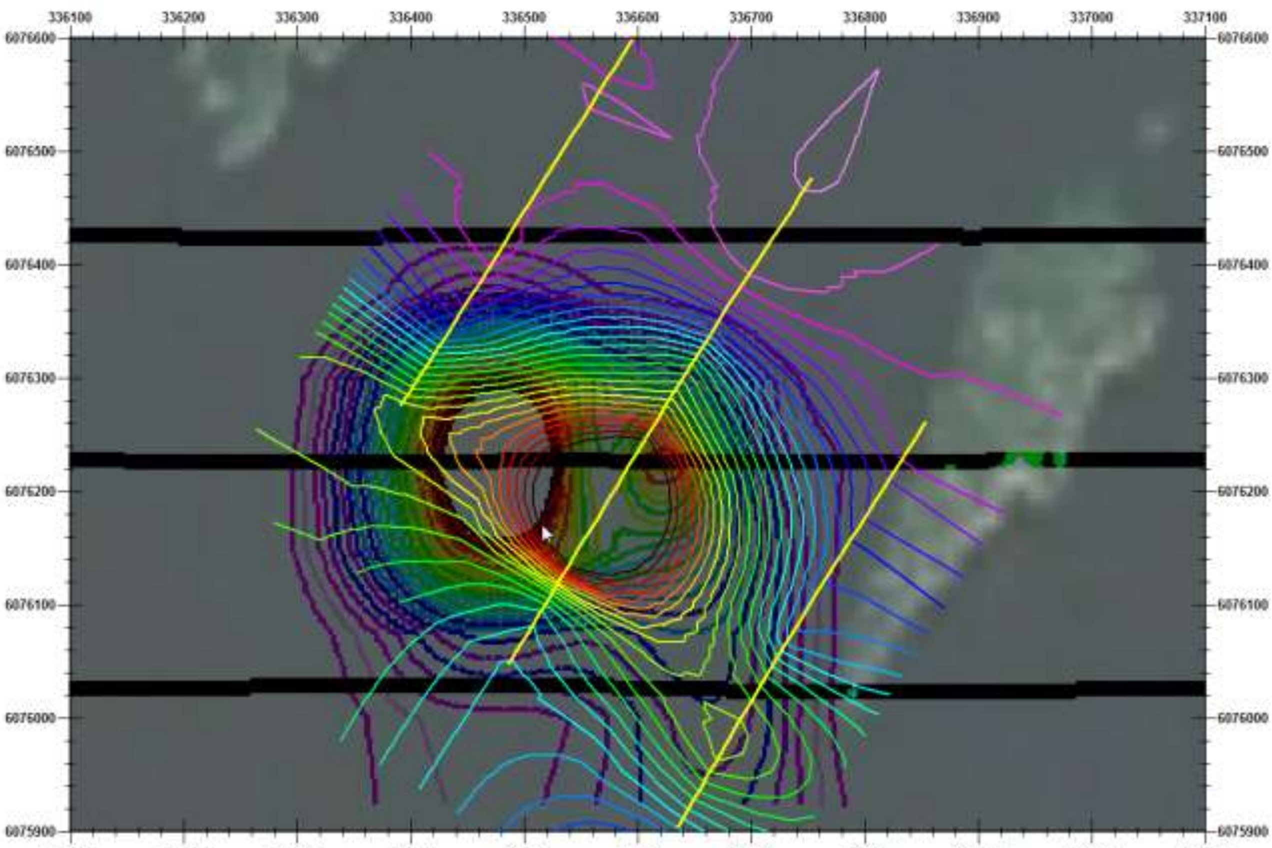


North Target – EW lines Ch20

Albert’s Airborne EM anomalies – Structural Models - 8

Geophysical Models:

3A: North Target: Below we show a contour of the Ch20 data for the diagonal lines with the same channel underlain. It is evident that the 2 survey directions do no delineate the exact position and geometry of the target.



North Target – diagonal lines Ch20
with Ch20 EW lines underlain

Albert's Airborne EM anomalies – Structural Models - 9

Geophysical Models:

3A: North Target: For the NE-SW flight lines, the North target is relatively straightforward.

The enhanced response to the south of the east island is caused by the northern extent of the southern target. We were required to change our previous model by adjusting the strike 2 degrees less east ward and extending the target a further 20m along strike to the NE. These changes are not in any way inconsistent with the EW lines.

The main response of the northern target as seen by the bulls eye is a sloping anomaly to the NE as seen in the figure to the bottom right. This model easily explains the diagonal flight lines.

3A: North Target: There is an approximate linear target. We model this as

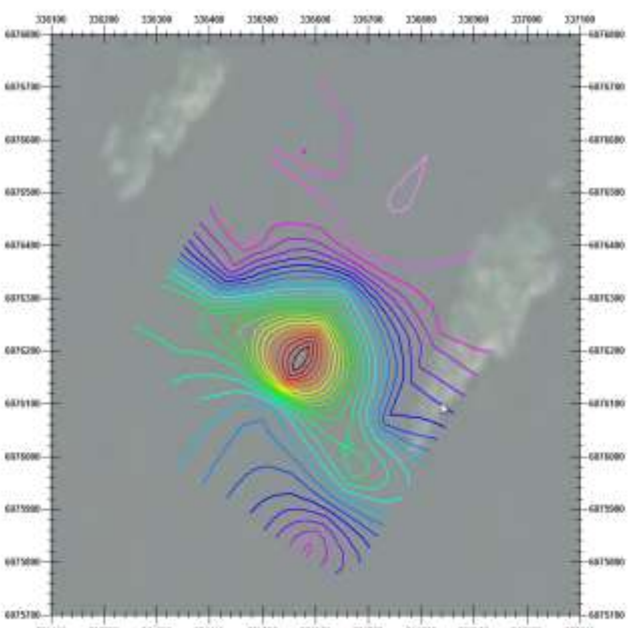
Strike Extent: 260m, Strike angle: 65 degrees west of North.

Depth to Top: 180m

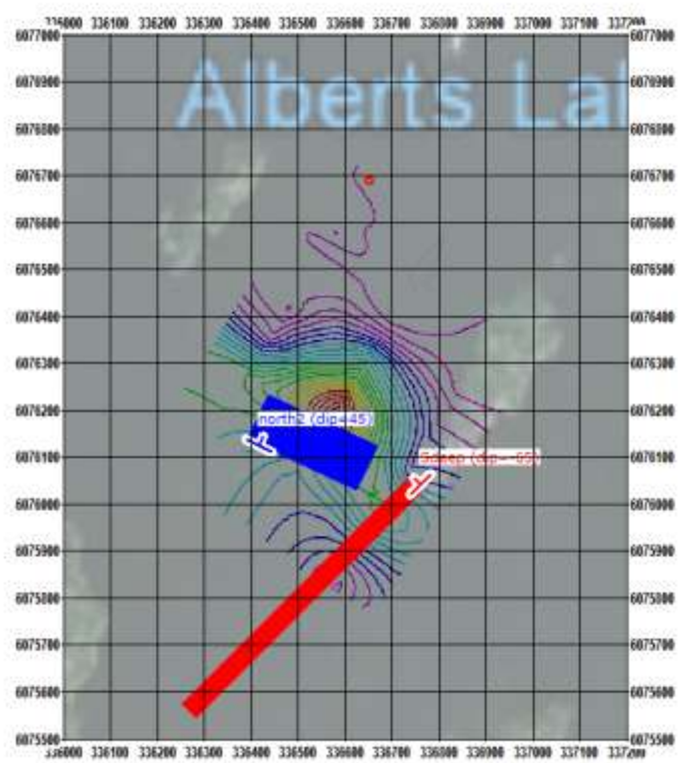
Dip Extent: 150m, Dip angle : 45 degrees ,

Conductance: 45 Siemens

Note: At depth, it appears that the structure becomes slightly more conductive and with a shorter dip extent.



North Target – diagonal lines Ch20



North and South Targets

Albert's Airborne EM anomalies – Structural Models - 10

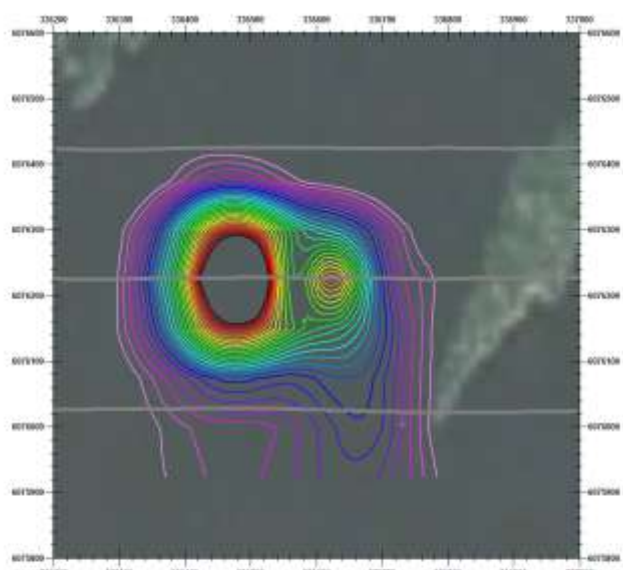
<u>Geophysical Models:</u>

3A: North Target: For the EW flight lines, the North target is slightly more complicated.

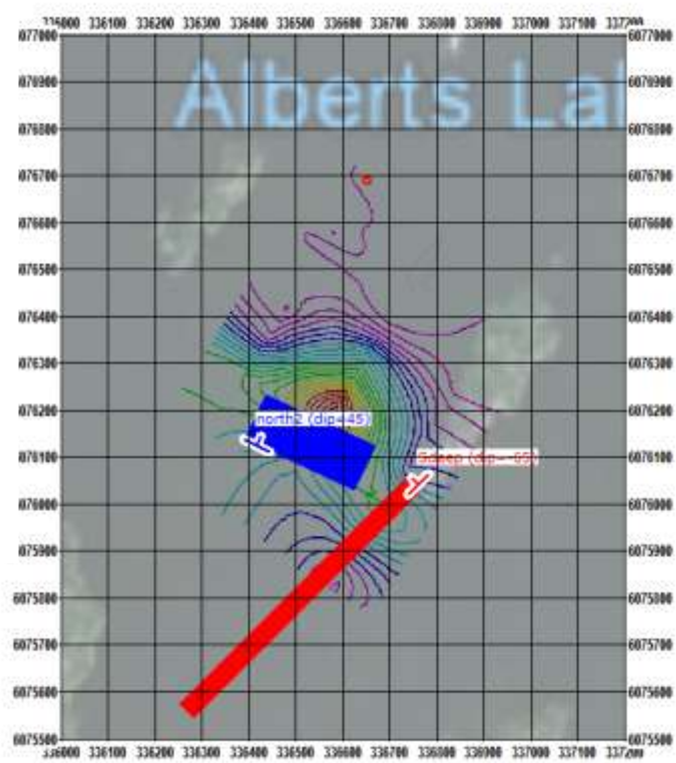
To a great extent our previous North model from the diagonal flight lines explains the data as shown below. However, the response of our North target has one lobe covering the entire anomaly as opposed to two lobes.

The conclusion a mentioned before is that the northern anomaly while of the geometry previously given, consists of a western portion slightly more conducting than the eastern portion. Also, the eastern portion is slightly deeper to its top.

This is a reasonable model for the data. It could be improved possibly but again suggests the need for a follow-up ground survey(s).



North Target – EW lines Ch20

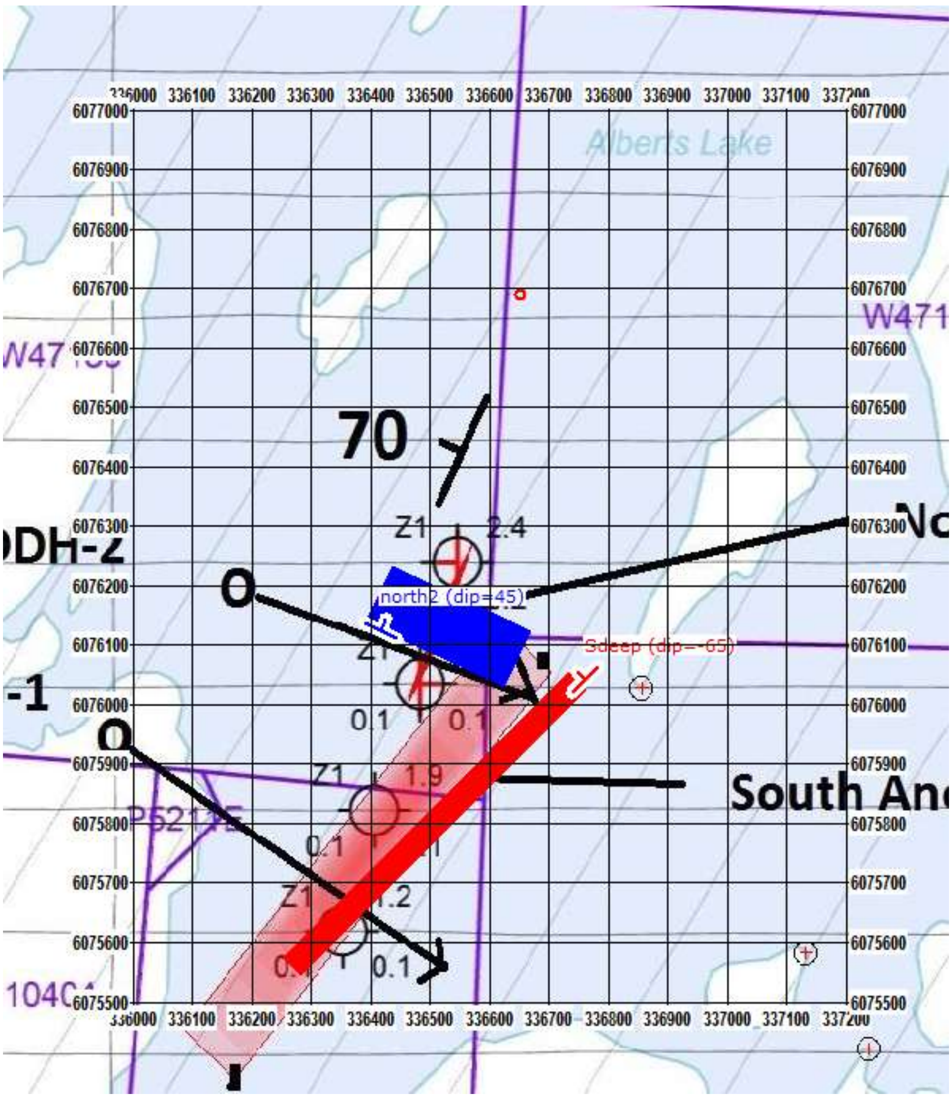


North and South Targets

Albert's Airborne EM anomalies – Structural Models - 12

<u>Geophysical Models Comparisons.</u>

The figure below provides a comparison of the surface expression of our models vs. your consultant.



Model Comparison

Comments

1. We have studied a number of assessment reports from this region where drilling has been done based on VTEM data. A common thread in these reports is that the EM anomaly should be accompanied by a magnetic anomaly if the anomaly is a VMS target. We believe that the magnetic response is most likely from pyrrhotite in the roots of the VMS target.

2. In this region, there are found a number of semi-conducting minerals – galena, sphalerite, chalcopyrite, pyrrhotite and pyrite among them which could form a deposit producing a VTEM response of the amplitudes observed over the Z1 (Albert's Lake anomaly) zone.

3. The conductivity of these semi-conducting minerals can vary over a very wide range. However, in all 5 cases that we have studied all produce a conductance similar to that we have modeled over Z1. In particular, the Discovery deposit at Reed Lake is similar in size, shape, depth and conductance to the northern zone of Z1. This deposit has a magnetic response associated with it.

4. Our models agree to a reasonable extent to your consultant's models but there are significant differences.

Recommendations

1. We would not agree that the VTEM data provides sufficient resolution on the targets to enable drilling. This is not only based upon the modeling discrepancies but also upon studying other VTEM data which has been drilled both with success and without success.

2. We would recommend 2 ground surveys both with a coverage of 800 x 800m.

a) ground magnetic – use of a walking overhauser magnetic meter at 50m line spacings.

with the walking magnetometer, data is collected roughly 4 times per second continuously as the operator walks. GPS positioning is recorded automatically during the survey.

b) 3-component ground TEM with one (1) fixed transmitter loop. As the stations are mostly located on the lake, a permanent grid would not be required. The loop does not require a grid to be positioned correctly. We would recommend a 3-component receiver with a fixed rigid construction to ensure accuracy of the 3 components of the data. Only Geonics Ltd has such a receiver and this receiver has a more accurate late time response than the Crone Pulse receiver coil. Further recommendations and details can be provided.