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# Geophysical Report

## Yukon Mineral Exploration Program (YMEP)

### Carlisle Creek Exploration Program

#### Carlisle Creek

Lease No. IW00436-owner Mr. Chad Cote

NTS: 115-J/13

Latitude: 62° 59<sup>5</sup>' N Longitude: -139 ° 32.5' W

**Whitehorse Mining District**

Work Performed March 1<sup>st</sup> to March 27<sup>th</sup>, 2015

By Richard Daigle

GroundTruth Exploration Inc.

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Sections of all resistivity and IP are attached to the report

## 1.0.Introduction

GroundTruth Exploration Inc. (**GTx**), of Dawson, YT was commissioned in 2015 by Mr. Shawn Ryan to do exploration work on the Carlisle Creek **Claim 38, Lease 510256**, Whitehorse Mining District. Carlisle Creek flows into the Yukon River and is situated 120 air kilometers south of Dawson City, Geologically situated in the YTNA Terrain, DMN geological unit, the property has very limited past work.

End of February early March 2015 three man crews snowmobiled to the property and was later joined by two more GTx workers who were mobilized from Dawson by helicopter. The Coffee Creek Airstrip operated by Kaminak was also used for support.

Objective of the 2015 work is to find potential placer auriferous targets using geophysical methods that will be followed-up in the future by drill testing. Line Cutting, DGPS, DCRes/IP<sup>1</sup>, Magnetics, GPR<sup>2</sup> surveys were all completed during March 9<sup>th</sup> to March 27<sup>th</sup>, 2015.

A local gridding method was used for localizing purposed and collaborations with the client. A fictional base line 1000N bisects the entire claims. Four Lines were then cut perpendicular measuring westerly from the east boundary, with west headings, line 2200W was located where past resistivity surveys were completed by GTx in 2013.

Crews then proceeded to do line brushing and chaining pre-geophysical surveys. The work site was between 2.5km to 5km of travel by snow machine. Little snow cover and an extreme cold snap hampered the surveys.

Data is presented here-in and forms the main basis of this report. Four lines were read using all three geophysical methods. Several arrays were applied reading the resistivity surveys along the traverses. The Magnetic was also read with an additional detail grid near L1600W using spot reading method versus walk-mag method. The GPR read all traverses, some bush-crash surveys, along with reading along the main access trail.

Results are discussed here-in keeping in consideration it is an ongoing project.

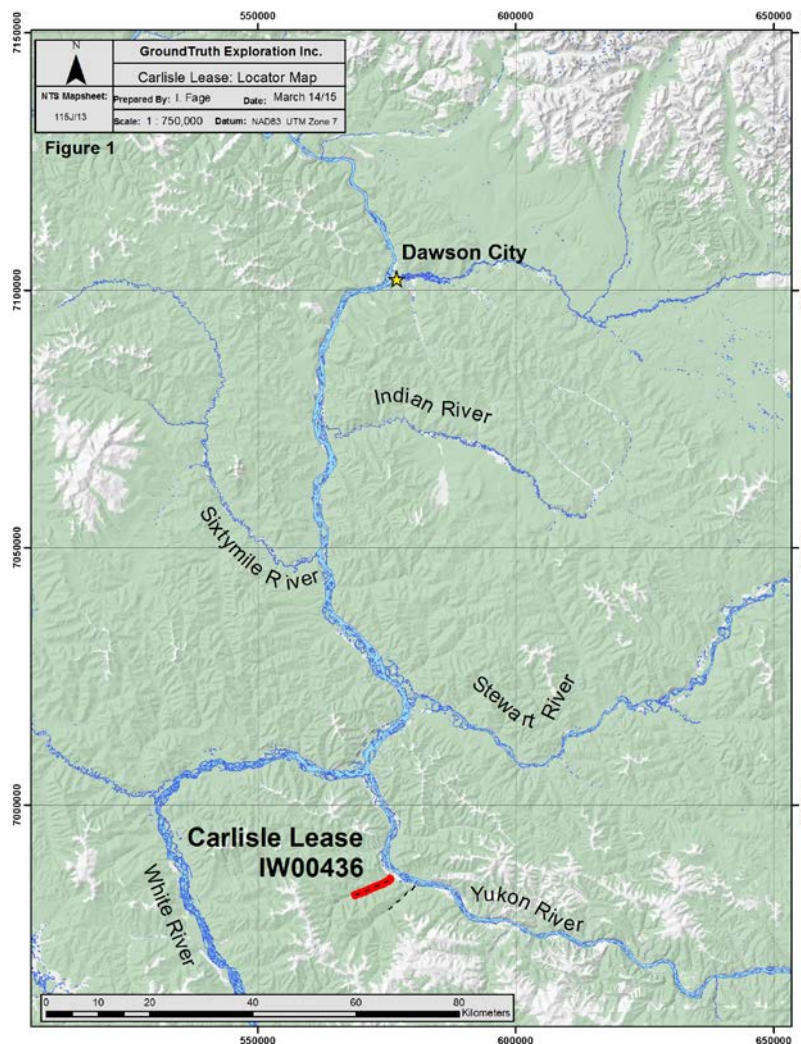
DCRes/IP<sup>1</sup>  
GPR<sup>2</sup>

Direct Current Resistivity and Induced Polarization Surveys  
Ground Penetrating Radar

## 2.0 Property

### 2.1 Description Tenure

The prospecting lease is located 120km South of Dawson City within the Yukon river drainage system in west-central Yukon Territory. It is centered at 62° 59 N, 139° 32.5 W, on NTS map sheet 115J/13 (Figure 1). It is accessible in winter on the Yukon river via snowmobile, and accessible by helicopter year round. Neighbouring Thistle Creek (~10km to the north) has placer mines which are currently accessed from Dawson City by barge on the Yukon River to the mouth of Thistle creek.



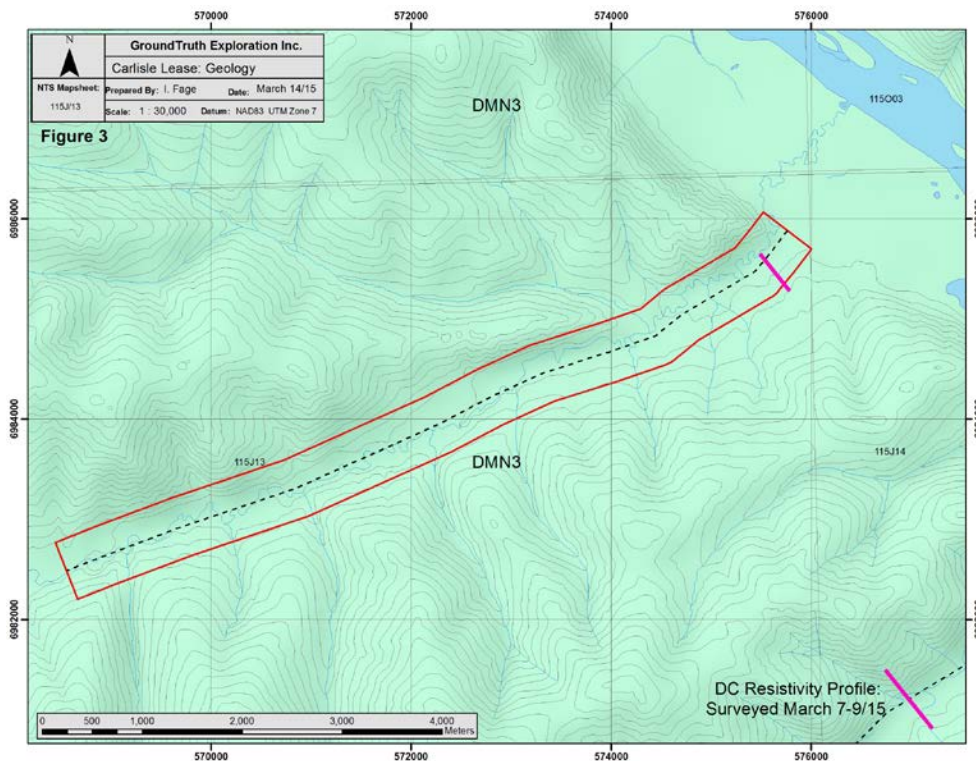
**FIGURE A** The Carlisle Creek Placer Prospecting lease Tenure: Carlisle Creek, IW00436 Length: 5 miles Expiry: October 10, 2015

## 2.1 Physiology and Geology

The Carlisle Creek placer prospecting lease is located within the Yukon-Tanana Terrane. The landscape is composed broad valleys bordered by moderately sloped, tree covered hills ranging in elevations from 1200 to 5000 feet. The area experiences typical climatic conditions for central Yukon Territory with short, warm and dry summers and cold winters. Temperatures range from -20°C to -60°C in the winter and +10°C to +30°C in the summer.

The Carlisle Creek placer lease is completely underlain by a Devonian-Mississippian metamorphic unit. The southern headwaters of Carlisle creek are underlain by an early Jurassic plutonic unit but this is outside of the placer lease (approx. 10km away). See

**Figure B General geology underlying the claims**



**Legend for Figure B: Regional Geology:**

**Devonian-Mississippian**

<b>DMN3</b>	<b>DMN3:</b> NASINA: quartzite, micaceous quartzite, quartz muscovite (chlorite; feldspar augen) schist, and minor metaconglomerate and metagrit as in (1), but may locally include significant Nisling Assemblage
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**Early Jurassic**

<b>EJgA</b>	<b>EJgA:</b> AISHIHIK SUITE: medium- to coarse- grained, foliated biotite-hornblende granodiorite; biotite-rich screens and gneissic schlieren; foliated hornblende diorite to monzodiorite with local K-feldspar megacrysts; may include unfoliated monzonite of the Long Lake Suite (Aishihik Suite)
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<b>EJqL</b>	<b>EJqL:</b> LONG LAKE SUITE: massive to weakly foliated, fine to coarse grained biotite, biotite-muscovite and biotite-hornblende quartz monzonite to granite, including abundant pegmatite and aplite phases; commonly K-feldspar megacrystic (Long Lake Suite)
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**Upper Cretaceous**

<b>uKC1</b>	<b>uKC1:</b> CARMACKS: augite olivine basalt and breccia; hornblende feldspar porphyry andesite and dacite flows; vesicular, augite phyric andesite and trachyte; minor sandy tuff, granite boulder conglomerate, agglomerate and associated epiclastic rocks (Carmacks Gp., Little Ridge Volcanics, Casino Volcanics)
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### 3.0 Resistivity/ IP Surveys

#### 3.1 Resistivity/ IP Survey Procedure

Line brushing and HRDC<sup>1</sup> Resistivity surveys on the Sunshine Creek, Placer Lease **IW00413** was completed on **March 26<sup>th</sup>, 2015.**

Crews used AGI's<sup>2</sup> supersting instrument reading the Schlumberger Inverse **Si3** Array, with the eighty four (84) electrode cable system. A dipole spacing "**A**" = **3M** was used to gather high density data (ideally 1390 points) over a **249M Traverse(s)** which becomes a 1.5M special sample interval, with a D.O.I.<sup>3</sup>, nearing **80M** down.

The Si3 Array is the advantageous of all for speed, good signal to noise, and delineating horizontal impacts. See appendix for additional theory and procedures.

#### 3.2 Field Operation

- Five Man Crews for the **CRL15-RESIP** surveys, out of Dawson, YT
- Mid-point of survey anchored using the Ashtech DGPS
- Minimal brush cutting while establishing pickets at a given intervals (11 electrodes)
- Electrodes chained-in at dipole spacing's, further read with DPGS for elevation control
- Six cables laid out with fourteen electrode take-outs each
- Contact Resistances (CRS) most often supplemented with saline solution
- Survey started once CRS satisfies qualitative data collection

#### 3.3 Data Processing

The data integrity is verified as the survey(s) progress, by the operator. If results are not satisfying the survey can be repeated. AGI's Earth Imager software is used on site. The results, first removed of misfits (usually 2% noise threshold) before generating a resulting inversion. If/ when the elevation survey is available the inversion is adjusted accordingly. The resistivity and DGPS data is made available to the client both hard copy images and digitally.

**HRDC<sup>1</sup>** High Resolution Direct Current

**AGI<sup>2</sup>** Advanced Geophysics Instruments

**D.O.I.<sup>3</sup>** Depth of Investigation

### 3.4 Survey Results

Grand Totals of 32 Arrays gathering 39841 samples with the supersting using following arrays;

- Si3 Schlumberger Inverted large expa
- Si4 Schlumberger Inverted limited expansions
- xDD Extended Dipole-dipole
- Sc Schlumberger Convetional
- Sc3 Schlumberger expanding

Figure C Survey Line Location



LINE	ARRAY	A spacing	date DATA FILE	Misfits	Samples	Lost Rdgs.	local grid coordinates	
							from	to
L 400W	<b>A Survey</b>							
	xDD	5M	150312xD	25.00%	3403	60	500	915
	Si3	5M	150312Si	9.00%	1391	1	500	910
	SC	5M	150312SC	9.00%	1364	92	500	850
	<b>B Survey</b>							
	xDD	5M	150313xD	57.00%	2771	692	640	1000
Si3	5M	150313Si	41.00%	1294	98	640	1050	
sC	5M	150313SC	33.00%	1035	421	640	1035	



**C Survey**

xDD	5M	150314xD	36.00%	3116	347	780	1195
Si3	5M	150314Si	16.00%	1240	152	780	1195
sC	5M	150314SC	19.00%	1328	128	780	1195

**South Survey**

xDD	2.5M	150316xD	10	3338	125	535	745
SC	2.5M	150316SC	0.2	1229	227	535	740
Si3	2.5M	150316Si	2.80%	1347	45	535	730
Si4	2.5M	150316S4	3.80%	1662	66	535	735

**North Survey**

xDD	2.5M	150315xD	51.40%	1255	508	850	1055
SC	2.5M	150315SC	37.90%	1100	356	850	1050
Si3	2.5M	150315Si	22.80%	1240	152	850	1040
Si4	2.5M	150315S4	24.30%	1513	177	850	1025

L1600W

**A Survey**

SC	3M	0322SC-2	16.60%	1449	7	510	756
Si3	3M	031522S3	25.90%	1309	2	510	756

**B Survey**

SC	3M	150324SC	53.40%	1204	252	671	887
Si3	3M	150324S3	45.00%	1167	223	671	867
	3M	24BSuppl.	70.00%	785	22	785	867

**C Survey**

SC	3M	150325SC	71.60%	1097	359	836	1081
Si3	3M	150325S3	57.00%	1352	43	846	1092

**D Survey**

SC	3M	150326SC	59.60%	1044	412	1004	1250
Si3	3M	150322S3	100.00%	1362	28	1004	1250

**South Survey**

SC	1.5M	150323S3	31.20%	1392	9	630	753
Si3	1.5M	150323SC	44.00%	1423	33	630	753

**North Survey**

Si3	1.5M	150324S3	25.00%	1392	0	699	822
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L 2200W

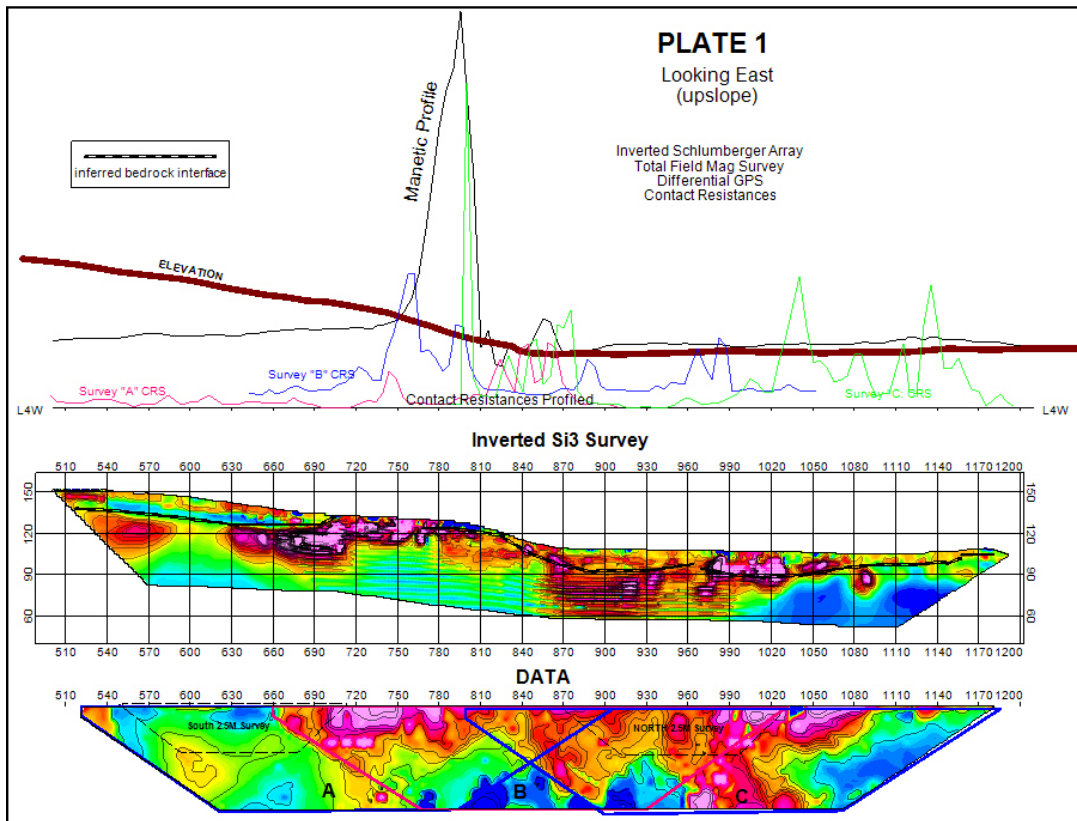
Si3	3M	150320S3	56.00%	320	1070	825	1035
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L 2700W

xDD	5M	150320xD	61.00%	3137	326	750	1165
Si3	5M	150320S3	65.70%	1143	247	750	1165
SC3	5M	150320SC	66.20%	1182	274	750	1165

## L 400W

This line was read using 5M and 2.5 M dipole spacings attempting to delineate bedrock interface through frozen cover and permafrost. Figures 1 through 14 (inclusive ) are here-in for references. The 700M long traverse was read using three surveys **A, B, and C** spreading 415M each at 5M dipoles (the system comprises 84 electrodes which spreads 415M using A=5M). IP effects/chargeability were also read on the first day reading block "A" taking advantage of lower contact resistances (CRS). The resistivities surveys proved a south dipping influence, the chargeability read substantiates underlying geology (bedrock) may be so. Another difficult aspect governing the apparent resistivity readings is seeing the contrast between permafrost and bedrock (at times frozen). An area of concern was near 700N on the traverse. A detailed 2.5M survey was emplaced here and northerly where bedrock plunges again (see plate 1).



**Figure D**      **Compilation of Surveys along Traverse L 400W**

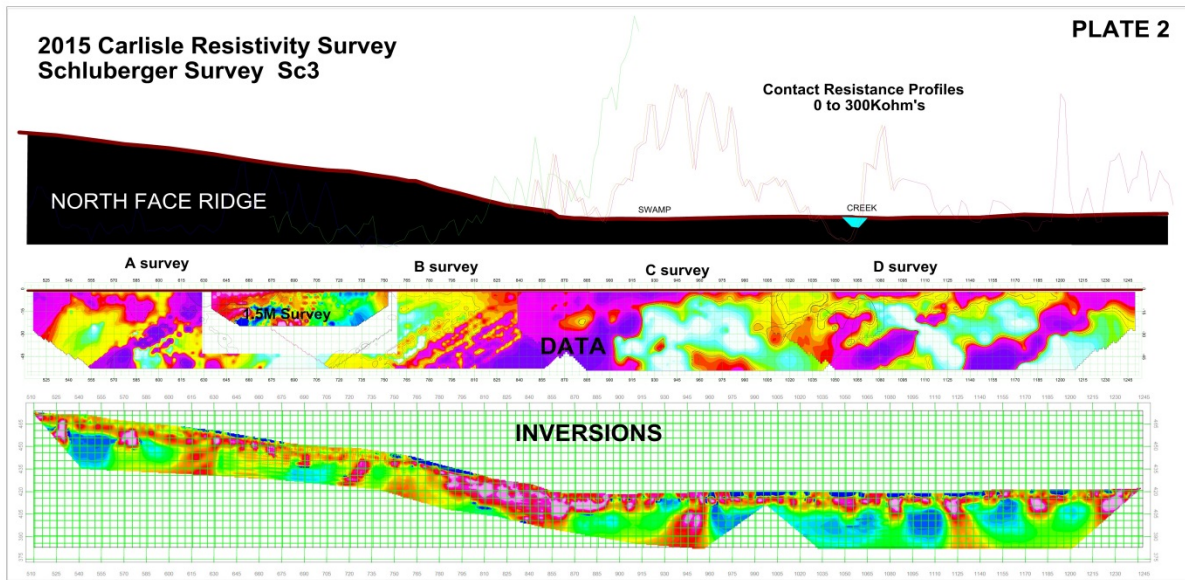
**Line 2700W**

Proved very difficult to read with the surface solidified (frozen) mainly around the paralleling creek at 1000N, proving to be overflowed during freeze-up. The creek also had little or no water flowing after protruding the ice. Once the line was cut, crews and gear mobilized it was decided to continue reading on this line.

**Line 1600W**

Surveyed in Four separate spreads A,B,C and D using a dipole spacing of 3M from local grid coordinate 500N to 1240N. Two arrays were performed on all four. This line was

also difficult achieving reasonable good contact resistances.



**Figure E Four Surveyed areas along Line 1600W with A=3M**

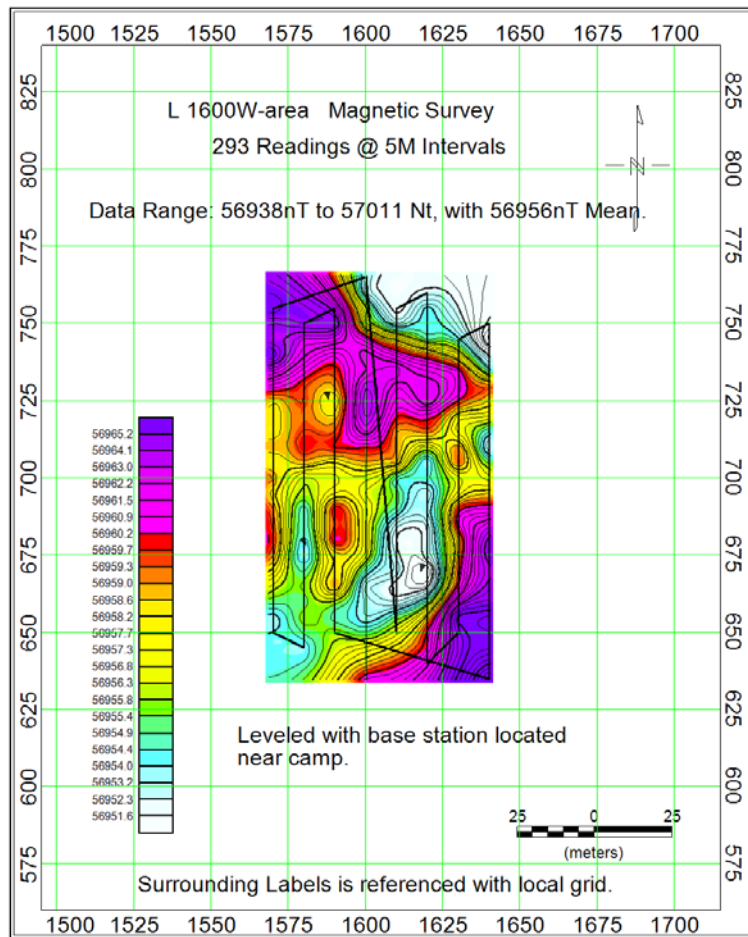
**Line 2200W**

Unable to lower the contact resistances, this line had to be abandoned.

## 4.0 Magnetic Survey

### 4.1 Survey Procedure

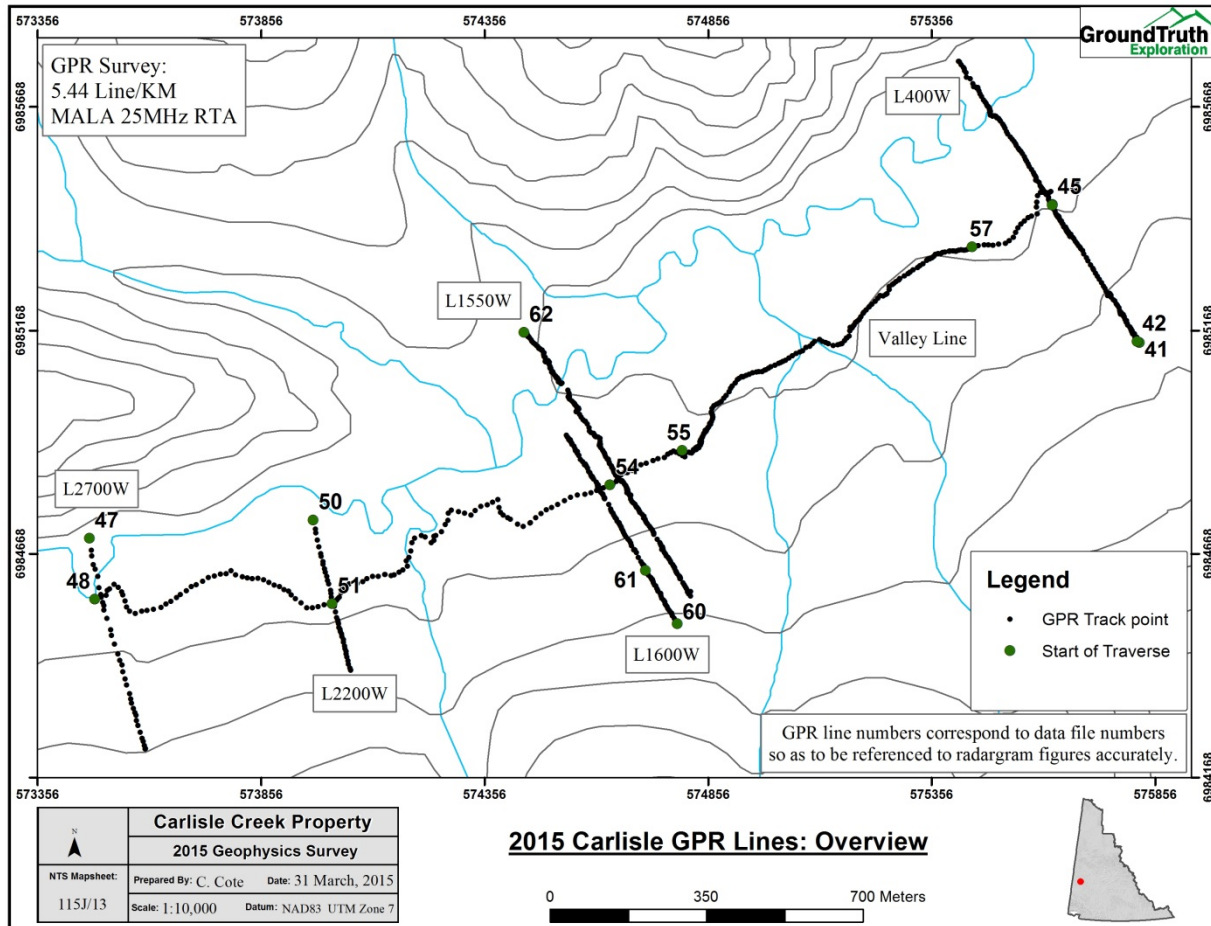
Crews used two GSM-19 proton precession magnetometers to do the ground magnetic survey. A base station located near camp was used to perform diurnal corrections. Rather than use the walk-mag mode, spot readings were done using a staff along the traverses reading at 5M intervals. Surveys were conducted mainly along the two resistivity valley study lines 400W and 1600W. A detailed grid was completed over an area along line 1600W to evaluate its response.



**Figure F Detail Mag survey on Line 1600W**

## 5.0 GPR Survey

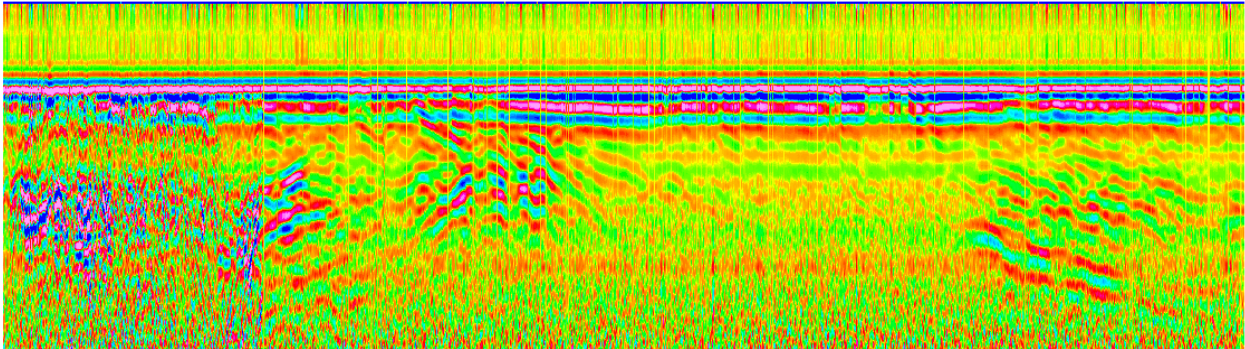
### 5.1 Procedure



**Figure G GPR Traverses**

Crews used the Mala 25Mhz GPR unit of International ground radar consulting to perform three days of survey. The data was processed in-house using GPR SLICE software package.

## 5.2 Results

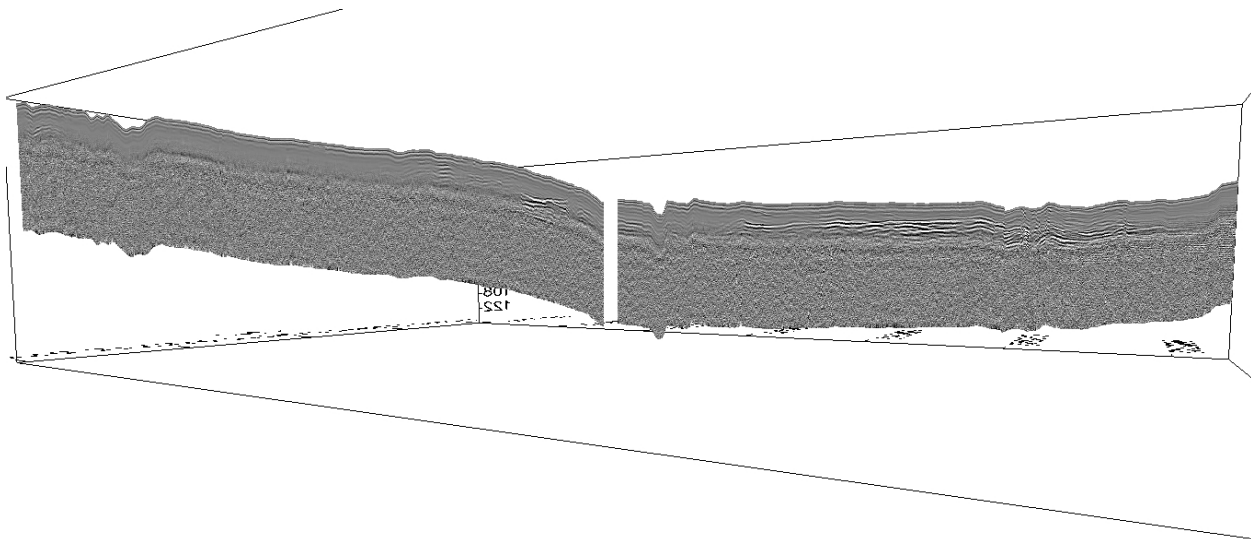


**Figure G Line 1600W Survey**

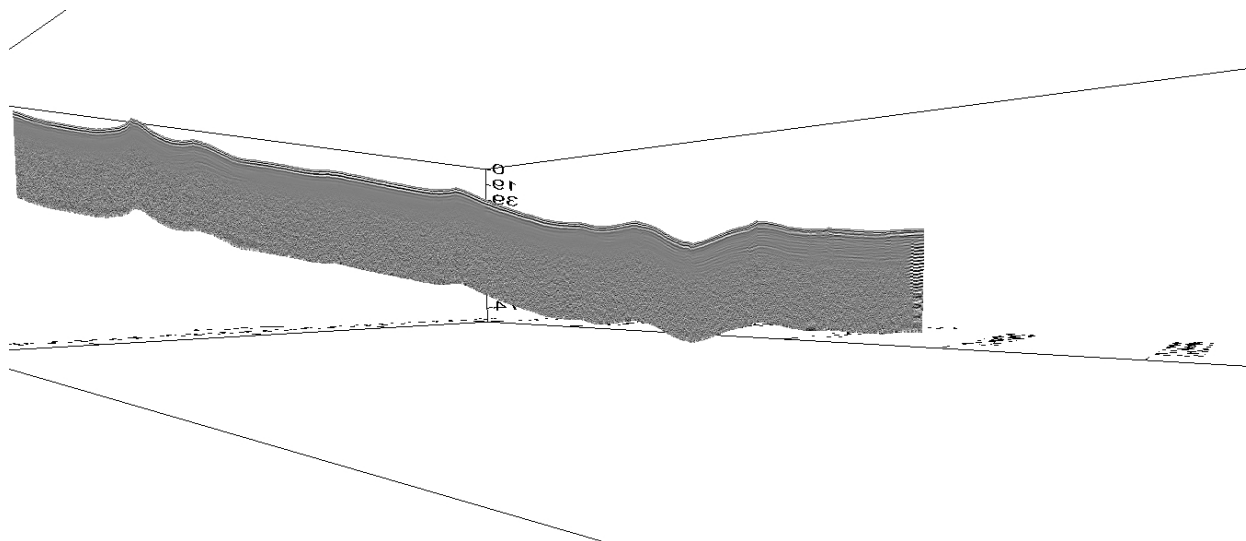
The data collected is still being processed. Additional support from International Ground Radar is still needed along with familiarizing with the data on hand.

Additional

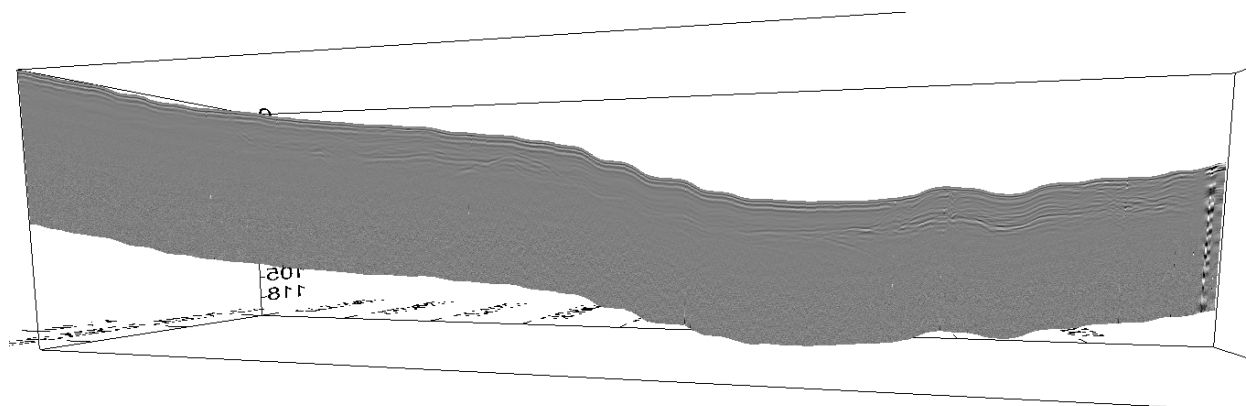
Results



**Line 400W GPR Survey**



**Line 1600W GPR Survey**



**Line 2700W GPR Survey**



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## 6.0 Conclusion

Additional work is left to the clients discretion.

Cold weather is not favored doing resistivity surveys. Low contact resistances is chiefly responsible gathering qualitative data. When doing inversions it is paramount to have the best data quality possible. The Schlumberger conventional array did prove better signal to noise but did not outperform the inverted schlumberger array results substantially to justify its use especially considering its much longer read time. The extended dipole-dipole proved the noisiest of arrays. The survey using a 3M dipole spacing was most successful. Using 1.5M is warranted only in areas where additional information is required.

The ground mag does insinuate trends which could be followed-up.

The GPR survey warrants additional study by further processing the results.

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## 7.0 Certification

I Richard Daigle of Ontario certify that I am a graduate Electronic Technologist and have been practicing my profession since 1980.

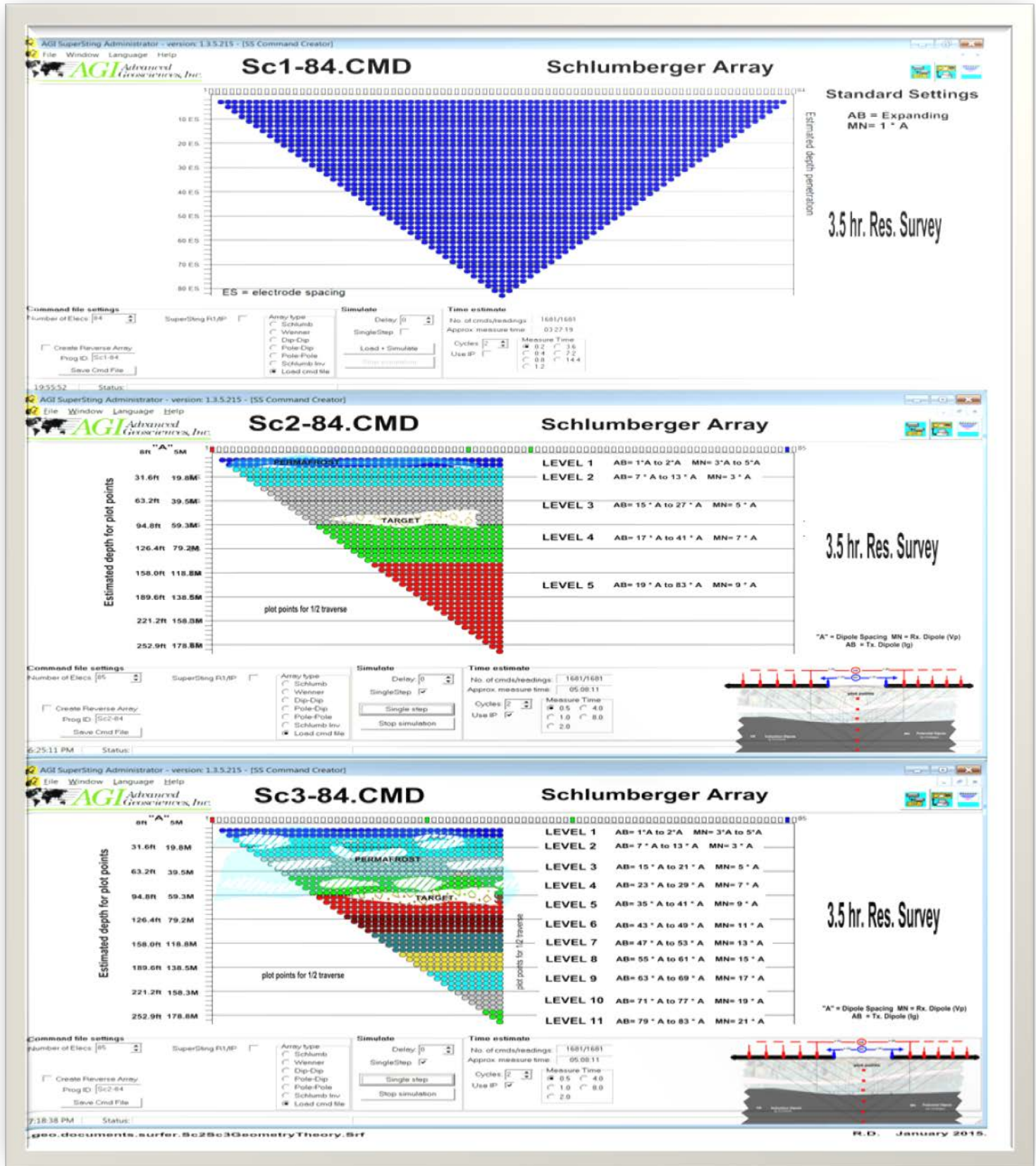
I have submitted numerous assessment and other reports in several provinces in Canada.

Respectfully submitted for your approval

Richard Daigle

Date:

# Conventional Schlumberger

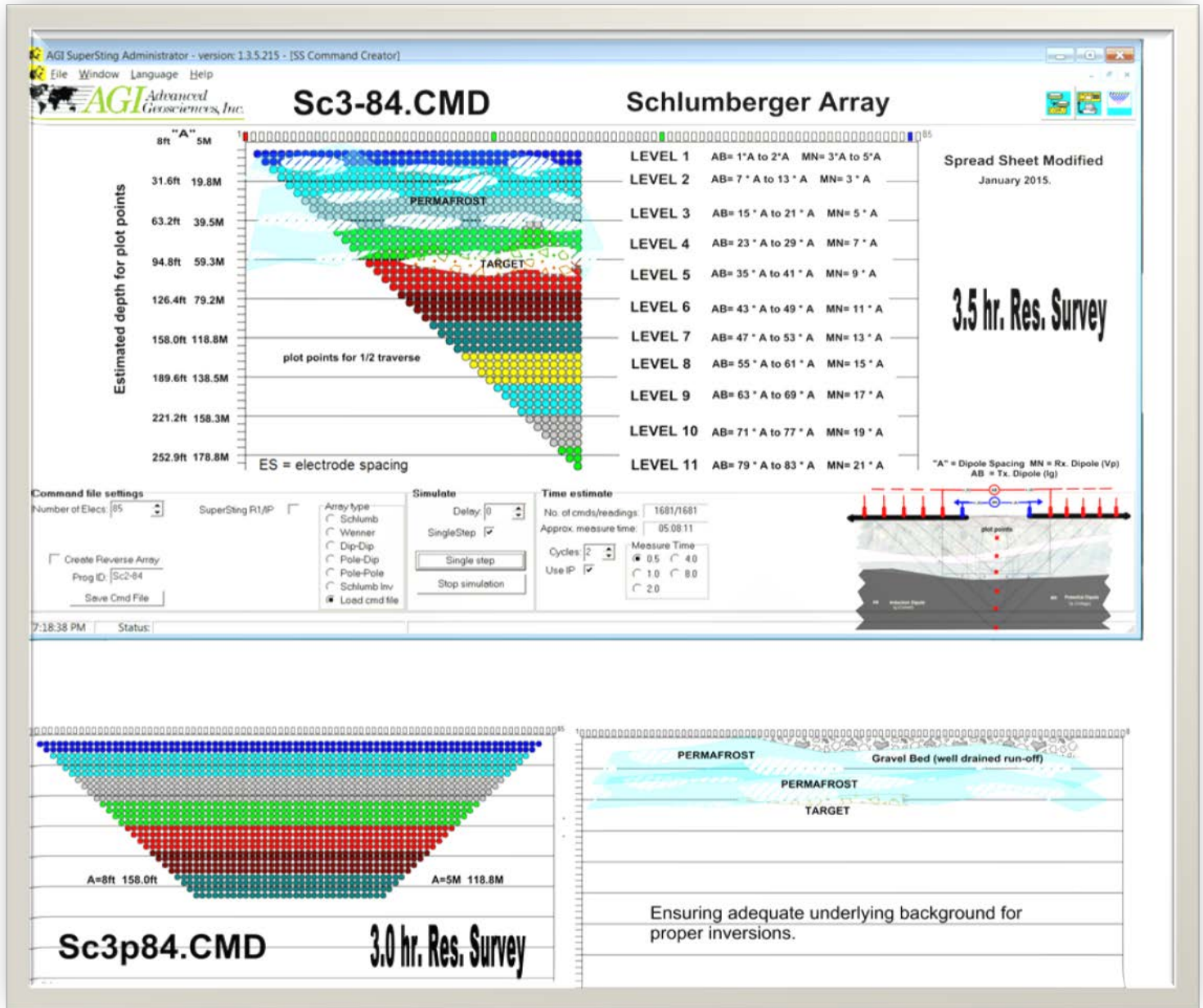


Compiling three arrays for rapid comparison, Sc2 and Sc3 further described following pages.

Read time will increase during repeats in poor contact resistances (electrodes) environment.

## Sc3-84 Geometry & Theory

Created for a six cable survey (84 electrodes), the **Sc3-84** command file is modified by spreadsheet, based on successful



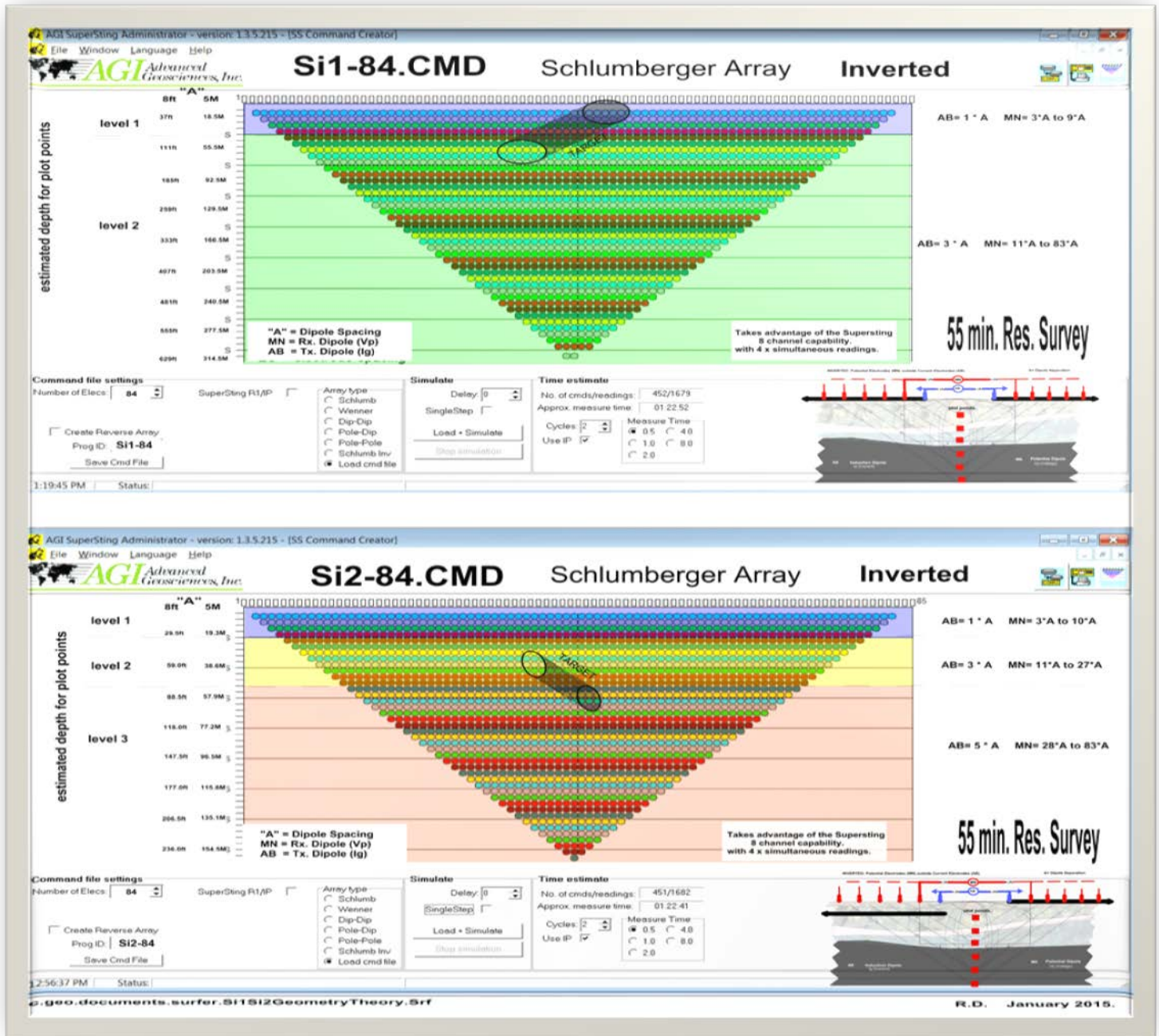
results of Si3. Compared to a single A\*1 spread created by factory settings (AGI's supersting command administrator).

Vertical sounding improved by increasing the inner electrodes (MN), compared to the factory settings of  $A * 1$ . Additional expansions smooth's surficial effects and enhances responses at depth. The **Sc3** is designed for large thickness of a surficial resistive cover (i.e. permafrost).

Compared to the inverted methods signal/ noise will greatly be improved. While the inverted method increases resistance by expanding inner current electrodes, and requiring additional primary voltage, this attenuates **Ig.3's** primary weakness is additional time in data acquisition, therefore **Sc3p84** was created for targets known to be at limited depths.

## Si1 & Si2 --84 Geometry & Theory

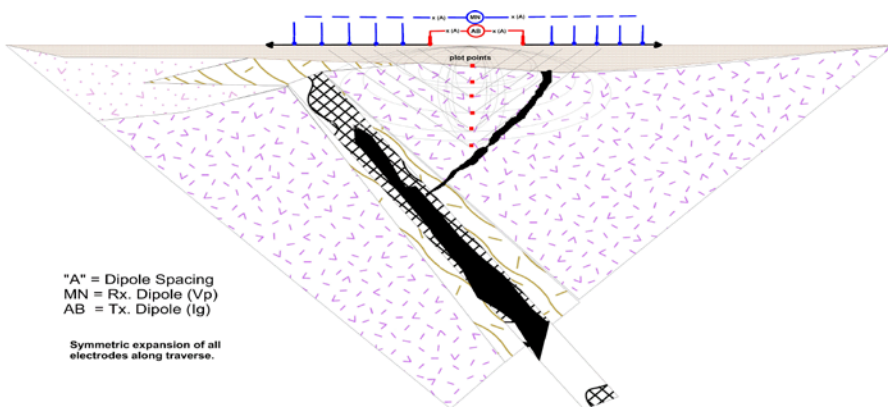
Created for a six cable survey (84 electrodes), the Si1-84 & Si2-84 command files are modified by spreadsheet, based on successful results of 2013 case-study 5. Compared to a single A\*1 spread (AGI's supersting command administrator).



Vertical sounding improved by increasing the inner electrodes (AB), compared to the factory settings of  $A * 1$ . The  $A * 1$  is ideal for a surficial target with limited depth extent. Additional expansions smooth's surficial effects and enhances responses at depth. These limited expansions were most successful when encountering a narrow zone with limited conductance. Additional information under the targeted zones is obtainable with this geometry.

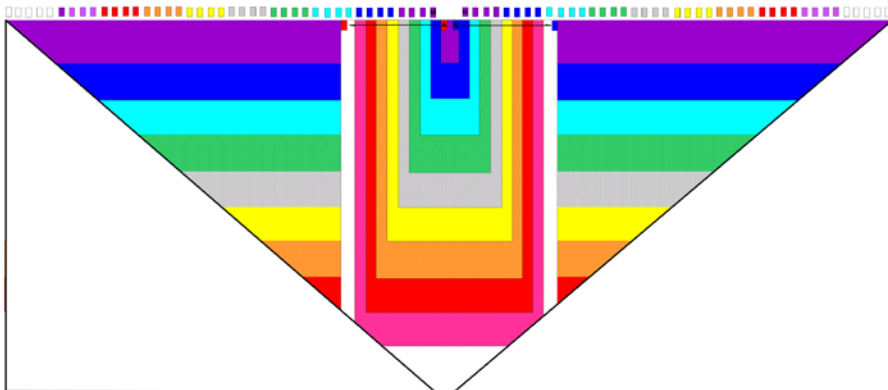
# Si3-84 Geometry & Theory

Created for a six cable survey (84 electrodes), the **Si3-84** command file is modified by spreadsheet, based on successful results of the 2013 case-studies, and more. Compared to a single A\*1 spread created by factory settings (AGI's supersting command administrator) results have been smoothed by eliminating surficial effects.



## Si3 Array

Designed for maximum depth sounding. Anticipating moderate to low apparent resistive cover.  
 Most rapid, using 8 channels on each level, n=1 to n = 4 with good S/N.  
 NOTE: Symmetric expansion of all electrodes along traverse.



LEVEL 1	AB= A * 1	MN= 3*A to 9*A
LEVEL 2	AB= A * 3	MN=11*A to 17*A
LEVEL 3	AB= A * 5	MN=19*A to 25*A
LEVEL 4	AB= A * 7	MN=27*A to 35*A
LEVEL 5	AB= A * 9	MN=37*A to 43*A
LEVEL 6	AB= A * 11	MN=45*A to 51*A
LEVEL 7	AB= A * 13	MN=63*A to 59*A
LEVEL 8	AB= A * 15	MN=61*A to 67*A
LEVEL 9	AB= A * 17	MN=69*A to 75*A
LEVEL 10	AB= A * 19	MN=77*A to 83*A

**AGI SuperSting Administrator - version: 1.3.5.215 - [SS Command Creator]**

**Si3-84.CMD Schlumberger Array Inverted**

Estimated depth for plot points:

- 8ft 5M
- 31.6ft 19.8M
- 63.2ft 39.5M
- 94.8ft 59.3M
- 126.4ft 79.2M
- 158.0ft 118.8M
- 189.6ft 138.5M
- 221.2ft 138.3M
- 252.9ft 158.0M

Command file settings: Number of Elec: 84, SuperSting R1/IP, Array type: Schlumb, Wenner, Dip-Dip, Pole-Dip, Pole-Pole, Schlumb Inv, Load cmd file.

Time estimate: No. of cmds/readings: 452/1679, Approx. measure time: 01:22:52, Cycles: 2, Measure Time: 0.5, 4.0, 1.0, 8.0, 2.0.

55 min. Res. Survey

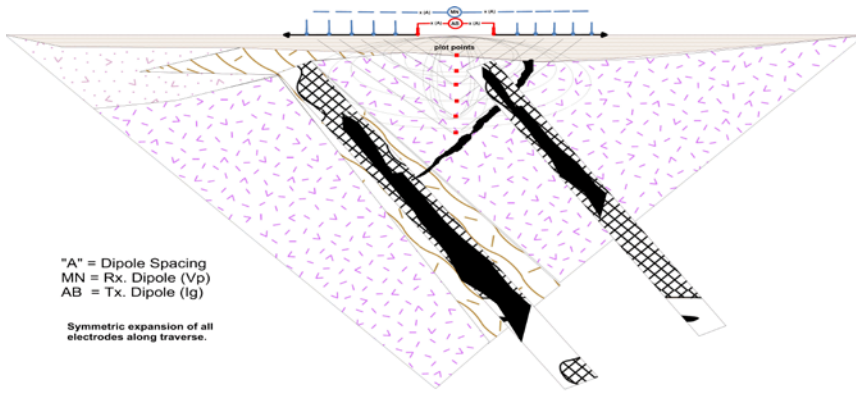
Si3p84.CMD 45 min. Res. Survey

LEVEL 6 158.0ft A=8ft 118.8M A=5M

Vertical sounding improved by increasing the inner electrodes (MN), compared to the factory settings of  $A * 1$ . Additional expansions smooth's surficial effects and enhances responses at depth. The receivers 8 channel capability is maximized reading up to n=4 on all levels with maximum distribution to bottom of survey. **Si3p84** may be of choice for placer exploration targeting a limited depth with maximum levels created using Si3p84 vs. Si484.

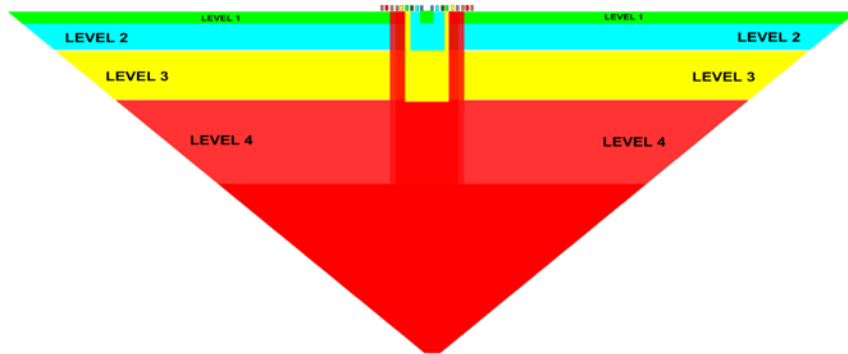
# Si4-84 Geometry & Theory

Created for a six cable survey (84 electrodes), the **Si4-84** command file is modified by spreadsheet, based on successful results of the 2013 case-studies, and more. Compared to a single A\*1 spread created by factory settings (AGI's supersting command administrator) results have been smoothed by eliminating surficial effects.



## Si4 Survey

- Ideal delineating multiple zones.
- Superior to Si3 over resistive cover (permafrost).
- A Six Cable Set-up with 84 electrodes
- Expanding both AB current (Ig) and MN potential (Vp) dipoles.
- Five Levels only.
- Plot points in the middle of spread



- Level 1 AB= 1\*A MN= 3\*A to 5\*A
- Level 2 AB= 3\*A MN= 5\*A to 17\*A
- Level 3 AB= 5\*A MN= 7\*A to 33\*A
- Level 4 AB= 7\*A MN= 9\*A to 57\*A

AGI SuperSting Administrator - version: 1.3.5.215 - [SS Command Creator]

File Window Language Help

AGI Advanced Geosciences, Inc. **Si4-84.CMD** Schlumberger Array **Inverted**

Estimated depth for plot points

8ft 5M  
 31.6ft 19.8M  
 63.2ft 39.5M  
 94.8ft 59.3M  
 126.4ft 79.2M  
 158.0ft 118.8M  
 189.6ft 138.5M  
 221.2ft 138.3M  
 252.9ft 158.0M

Spreadsheet Created  
 January, 2013.

**1.0 hr. Res. Survey**

Command file settings: Number of Elecs: 85, SuperSting R1/IP, Array type: Schlumb, Delay: 0, SingleStep, Load + Simulate, Stop simulation, Time estimate: No. of cmds/readings: 527/1682, Approx. measure time: 01:36:37, Cycles: 2, Measure Time: 0.5, 1.0, 2.0, Use IP: [checked]

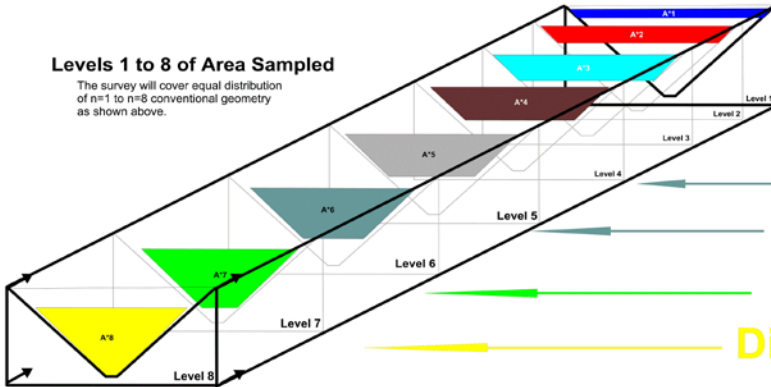
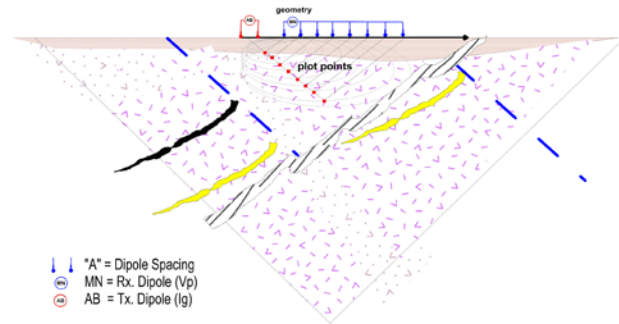
**Si4p84.CMD** 0.8 hr. Res. Survey

5:12:02 PM Status:

Vertical sounding improved by increasing the inner electrodes (MN), compared to the factory settings of A \* 1. Additional expansions smooth's surficial effects and enhances responses at depth. The receivers 8 channel capability is maximized reading up to n=4 on all levels. May be of choice for delineating multiple zones, or a narrow zone in a complex setting **Si4p84** may be of choice for placer exploration targeting a limited depth..

# xDD Geometry & Theory

Created for a six cable survey (84 electrodes), the **DD-8-8 command** file is program generated. Although additional readings can be achieved by increasing **max n & Max dpl** settings below, both are limited to eight expansions ensuring good signal/ noise (qualitative response).



## xDD-8-8 Array

Ideal mapping complex geology

### extended Dipole Dipole Array

An abundance of overlapping readings between levels. Compared to conventional method the extended reads from n=1 after expanding A (dipole spacings). The conventional created by AGI's supersting administrator will only read beyond the former dipole setting.

**extended:** expanding AB current electrodes eight times opposed to traverse (direction of MN and the equal A station increment). Reading n=1 nearest to surface after each AB expansion.

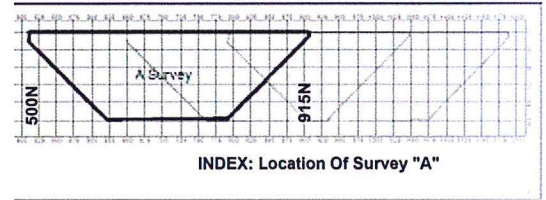
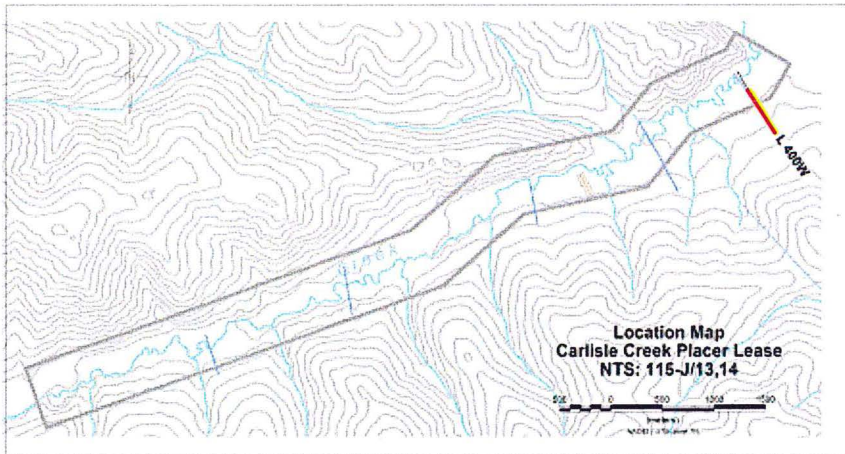
Settings maximized to **n=8** ensuring good S/N.  
(8 X as per Max n and Max Dpl settings below)

The Dipole Dipole Array is historically the most common used. Compared to other arrays it's geometry allowed augmented production physically, carrying wires in the field. Today's instrumentation has changed this approach. It is a superior array when underlying targets have shallow dips. The narrow concentration of induced currents allow better coupling. Very beneficial to supplement other arrays when time permits

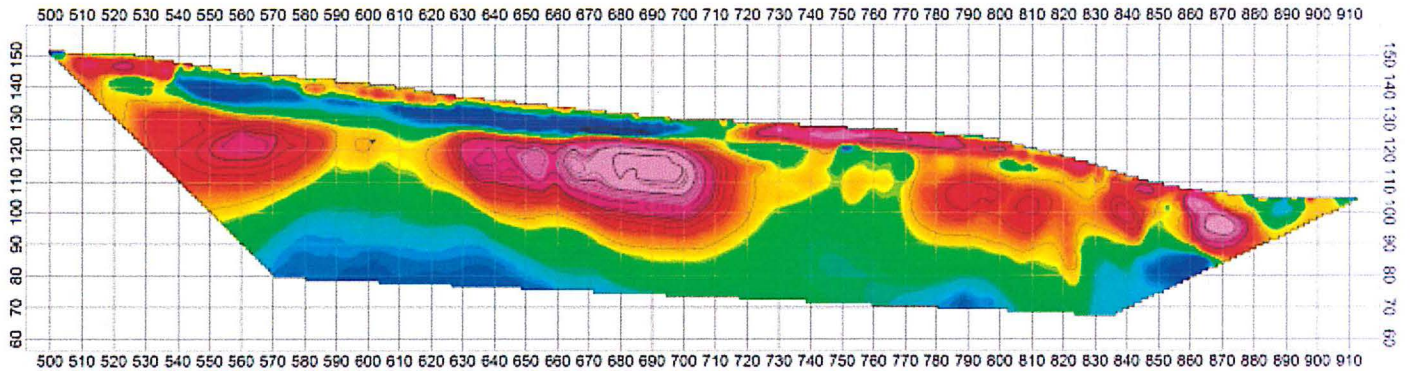


Figure 1

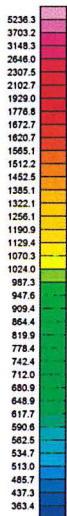
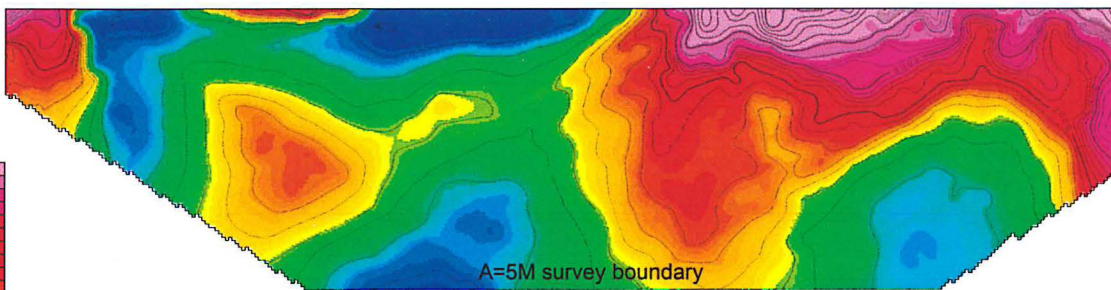
L 400W  
Schlumberger Array  
A= 5M



## Apparent Resistivity Inversion MODEL by Earth Imager



## DATA



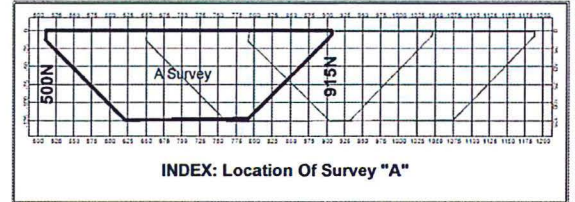
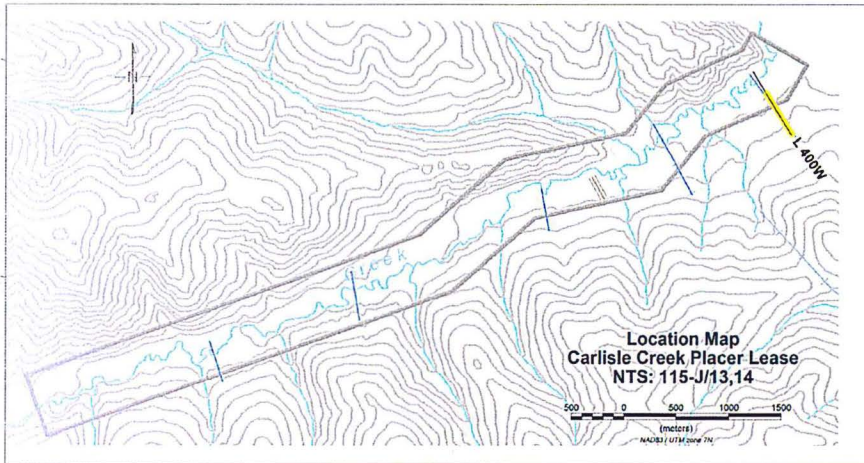
1359 plot points  
Range: 166 to 11.2 Kohms/ 5M  
Mean: 1456 ohms/ 5M

Ig= 1.0 to 92 mA induced  
Vp= 14.6 to 4131 Mv primary voltages read  
contact resistances from 5Kohm to 115Kohm

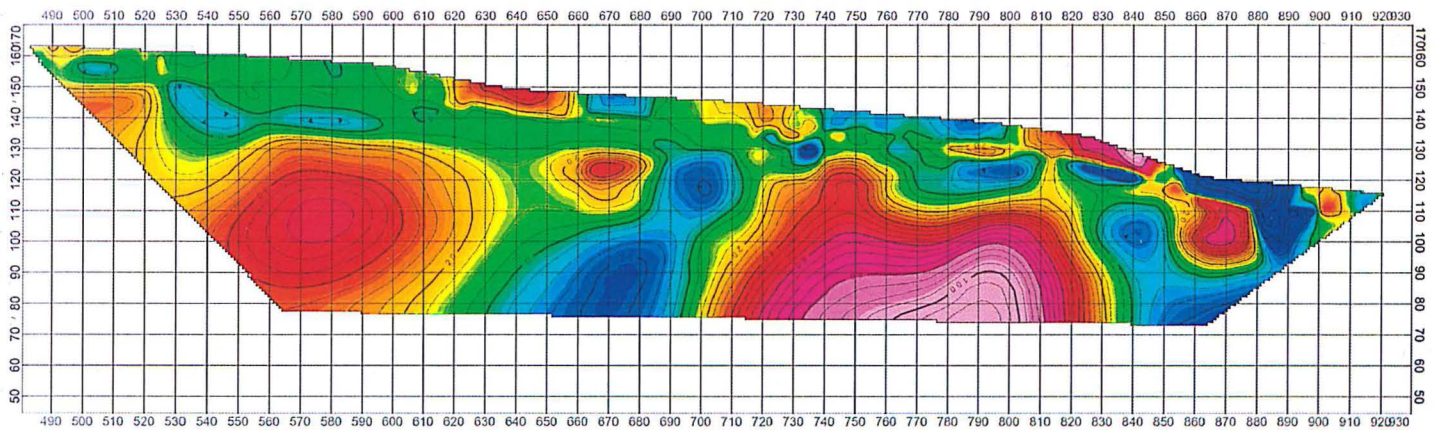
LINE	ARRAY	A spacing	DATA FILE	Misfits	Samples Read	Lost Rds.	from	to
L 400W	A Survey							
	iDD	5M	150312xD	25.00%	3403	60	500	915
	iS3	5M	150312SI	9.00%	1391	1	500	910
survey	B Survey							
	iC	5M	150312SC	9.00%	1364	92	500	850
	iDD	5M	150313xD	57.1%	2771	692	640	1000
C Survey	C Survey							
	iS3	5M	150313SI	41.1%	1294	98	640	1050
	iC	5M	150313SC	33.00%	1035	421	640	1035
North Survey	North Survey							
	iDD	5M	150314xD	36.00%	3116	347	780	1195
	iS3	5M	150314SI	16.00%	1240	152	780	1195
South Survey	South Survey							
	iC	5M	150314SC	19.00%	1328	128	780	1195
	iDD	2.5M	150316xD	10	3338	125	535	745
North Survey	North Survey							
	iC	2.5M	150316SC	0.2	1229	227	535	740
	iS3	2.5M	150316SI	2.80%	1347	45	535	730
	iH	2.5M	150316SH	3.80%	1862	66	535	735
North Survey	North Survey							
	iDD	2.5M	150315xD	51.40%	1255	508	850	1055
	iC	2.5M	150315SC	37.90%	1100	356	850	1050
	iS3	2.5M	150315SI	22.80%	1240	152	850	1040
North Survey	North Survey							
iH	2.5M	150315SH	24.30%	1513	177	850	1025	

**Figure 1a**

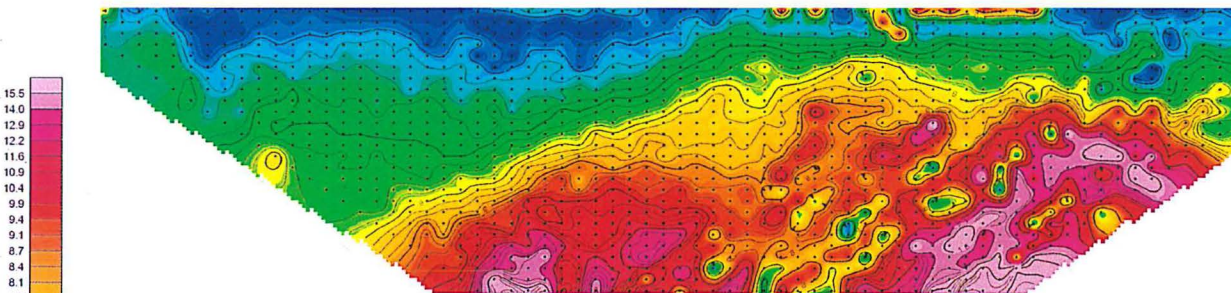
**L 400W  
Schlumberger Array  
A=5M**



**Apparent Chargeability  
Inversion MODEL by Earth Imager**



**DATA**



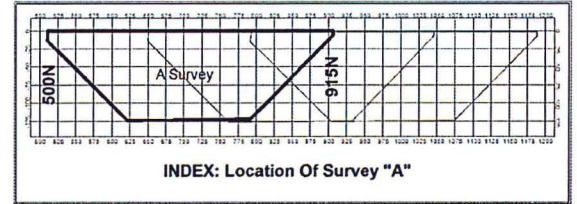
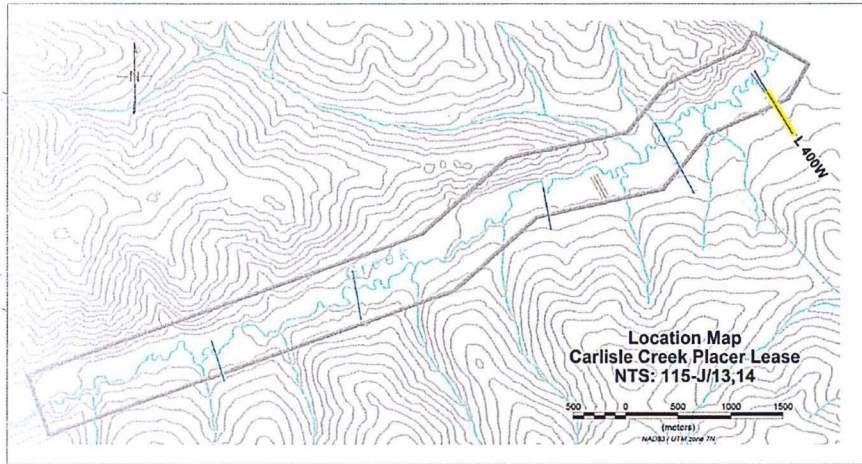
1359 plot points  
Range: -35 to 39.1 mV/V  
Mean: 6.4 mV/V

Ig= 1 to 92 mA induced  
Vp= 4.6 to 4131 Mv primary voltages read  
contact resistances from 5Kohm to 115Kohm

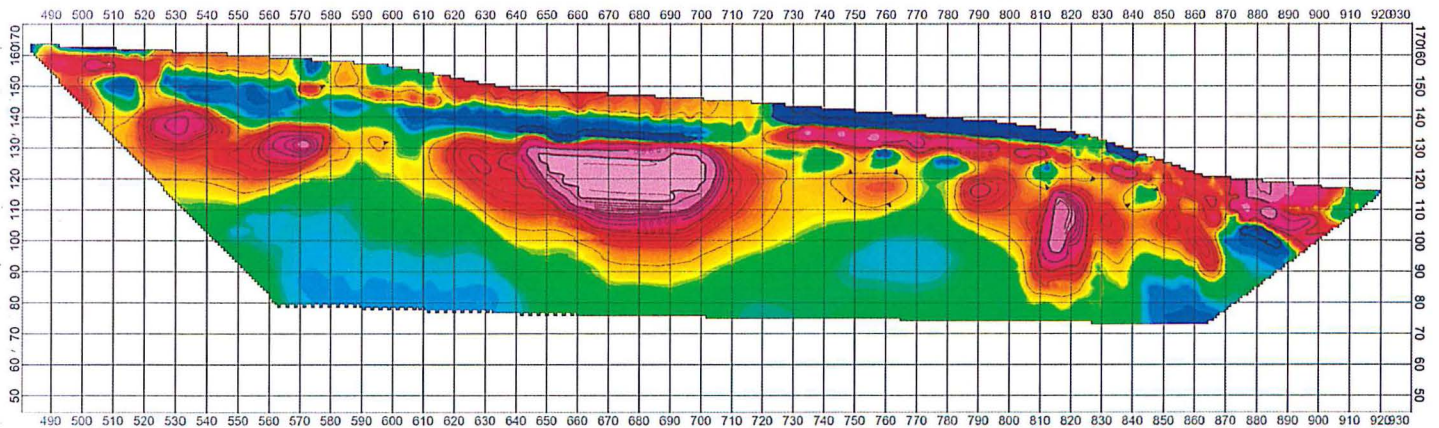
LINE	ARRAY	A spacing	DATA FILE	Misfits	Samples Read	Lost Rdgs.	from	to
<b>survey</b>								
<b>A Survey</b>								
xDD	5M	150312xD	25.00%	3403	60	500	915	
Si3	5M	150312Si	9.00%	1391	1	500	910	
sC	5M	150312sC	9.00%	1364	92	500	850	
<b>B Survey</b>								
xDD	5M	150313xD	57%	2771	692	640	1000	
Si3	5M	150313Si	41%	1294	98	640	1050	
sC	5M	150313sC	33.00%	1035	421	640	1035	
<b>C Survey</b>								
xDD	5M	150314xD	36.00%	3116	347	780	1195	
Si3	5M	150314Si	16.00%	1240	152	780	1195	
sC	5M	150314sC	19.00%	1328	128	780	1195	
<b>South Survey</b>								
xDD	2.5M	150316xD	10	3338	125	535	745	
sC	2.5M	150316sC	0.2	1229	227	535	740	
Si3	2.5M	150316Si	2.80%	1347	45	535	730	
Si4	2.5M	150316S4	3.80%	1662	66	535	735	
<b>North Survey</b>								
xDD	2.5M	150315xD	51.40%	1255	508	850	1055	
sC	2.5M	150315sC	37.90%	1100	356	850	1050	
Si3	2.5M	150315Si	22.80%	1240	152	850	1040	
Si4	2.5M	150315S4	24.30%	1513	177	850	1025	

**Figure 2**

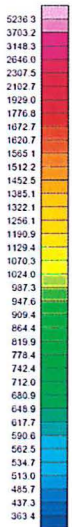
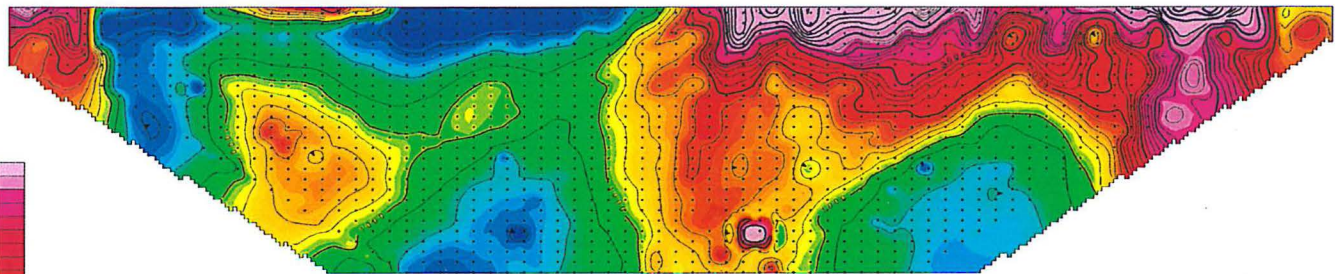
**L 400W**  
**Inverted Schlumberger Array**  
**A=5M**



**Apparent Resistivity  
 Inversion MODEL by Earth Imager**



**DATA**



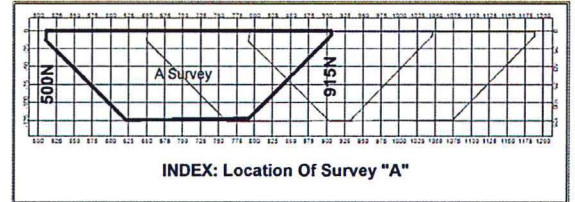
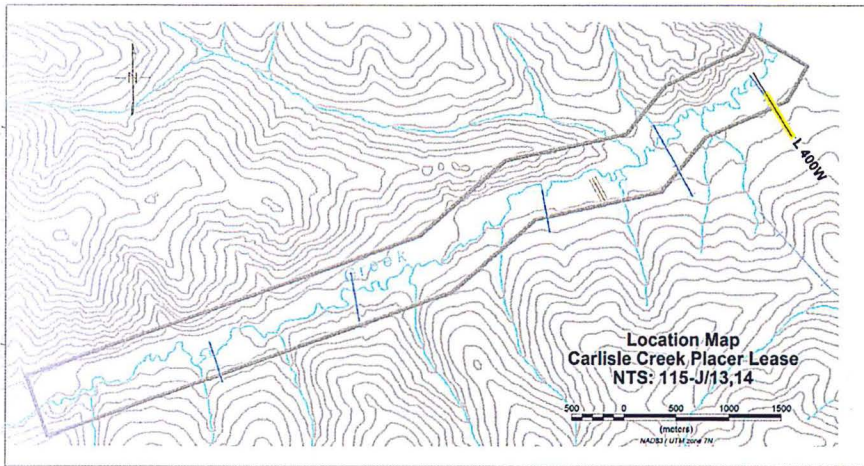
1359 plot points  
 Range: 166 to 11206 ohms/ 5M  
 Mean: 1456 ohms/ 5M

Ig= 1 to 92 mA induced  
 Vp= 4.6 to 4131 Mv primary voltages read  
 contact resistances from 5Kohm to 115Kohm

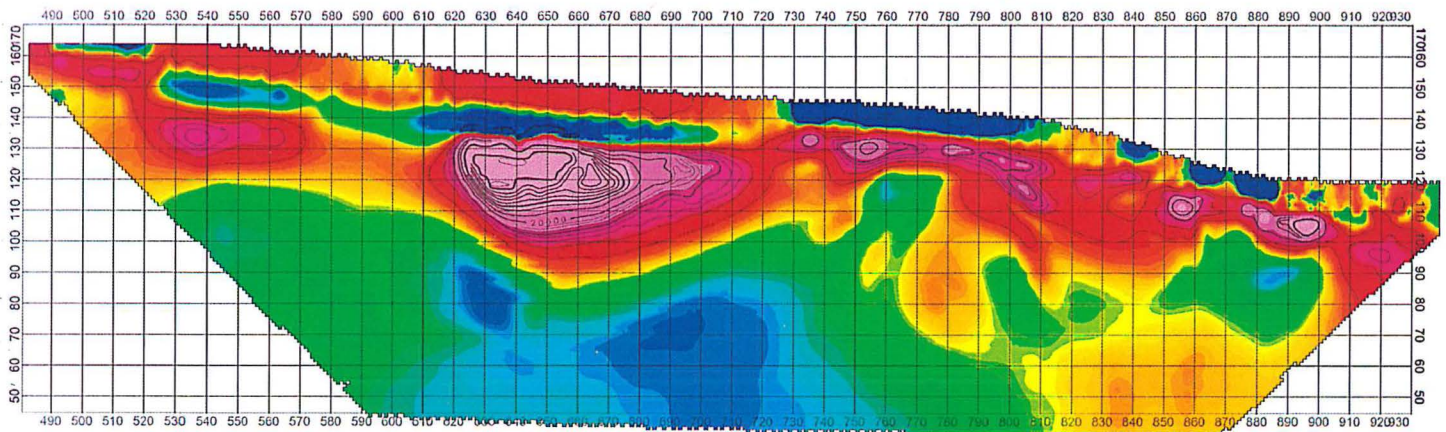
LINE	ARRAY	A spacing	DATA FILE	Misfits	Samples Read	Lost Rdgs.	from	to
<b>survey</b>								
A Survey	xDD	5M	150312xD	25.00%	3403	60	500	915
	SI3	5M	150312SI	9.00%	1391	1	500	910
	sC	5M	150312sC	9.00%	1364	92	500	850
B Survey	xDD	5M	150313xD	57%	2771	682	640	1000
	SI3	5M	150313SI	41%	1294	98	640	1050
	sC	5M	150313sC	33.00%	1035	421	640	1035
C Survey	xDD	5M	150314xD	36.00%	3116	347	780	1195
	SI3	5M	150314SI	16.00%	1240	152	780	1195
	sC	5M	150314sC	19.00%	1328	128	780	1195
South Survey	xDD	2.5M	150316xD	10	3338	125	535	745
	sC	2.5M	150316sC	0.2	1229	227	535	740
	SI3	2.5M	150316SI	2.80%	1347	45	535	730
	SI4	2.5M	150316S4	3.80%	1662	66	535	735
North Survey	xDD	2.5M	150315xD	51.40%	1255	508	850	1055
	sC	2.5M	150315sC	37.90%	1100	356	850	1050
	SI3	2.5M	150315SI	22.80%	1240	152	850	1040
	SI4	2.5M	150315S4	24.30%	1513	177	850	1025

**Figure 3**

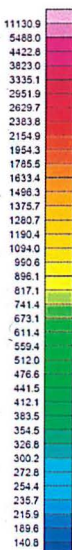
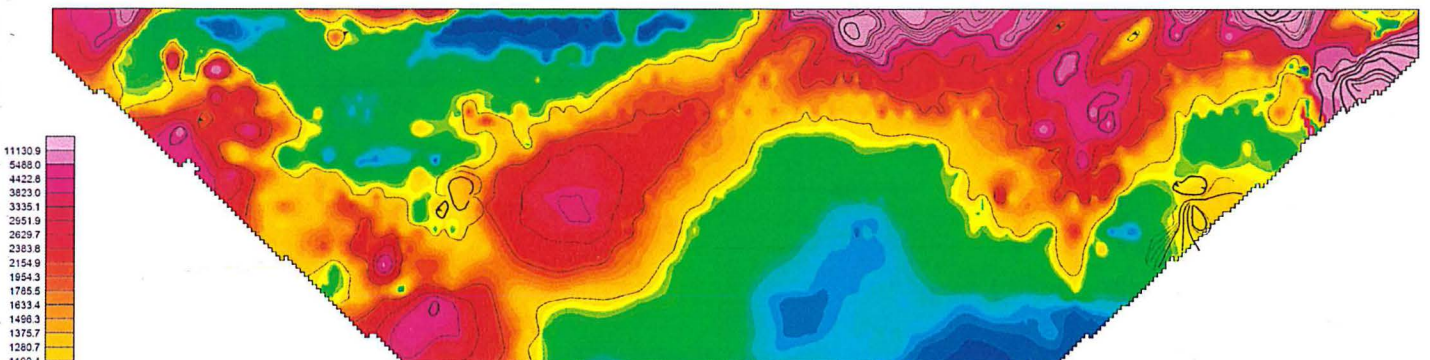
**L 400W**  
**extended Dipole Dipole Array**  
**A=5M**



**Apparent Resistivity  
 Inversion MODEL by Earth Imager**



**DATA**



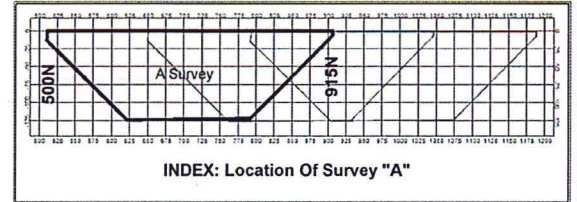
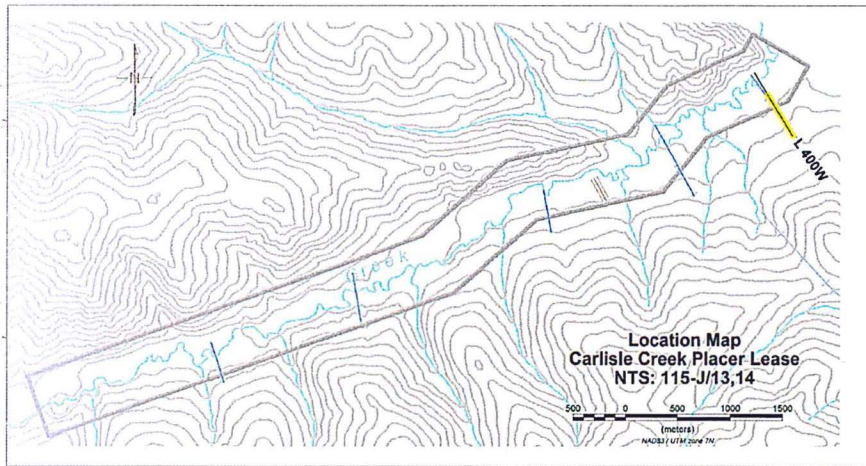
1359 plot points  
 Range: 0 to 68Kohms/ 5M  
 Mean: 1801 ohms/ 5M

Ig= 1 to 92 mA induced  
 Vp= 4.6 to 4131 Mv primary voltages read  
 contact resistances from 5Kohm to 115Kohm

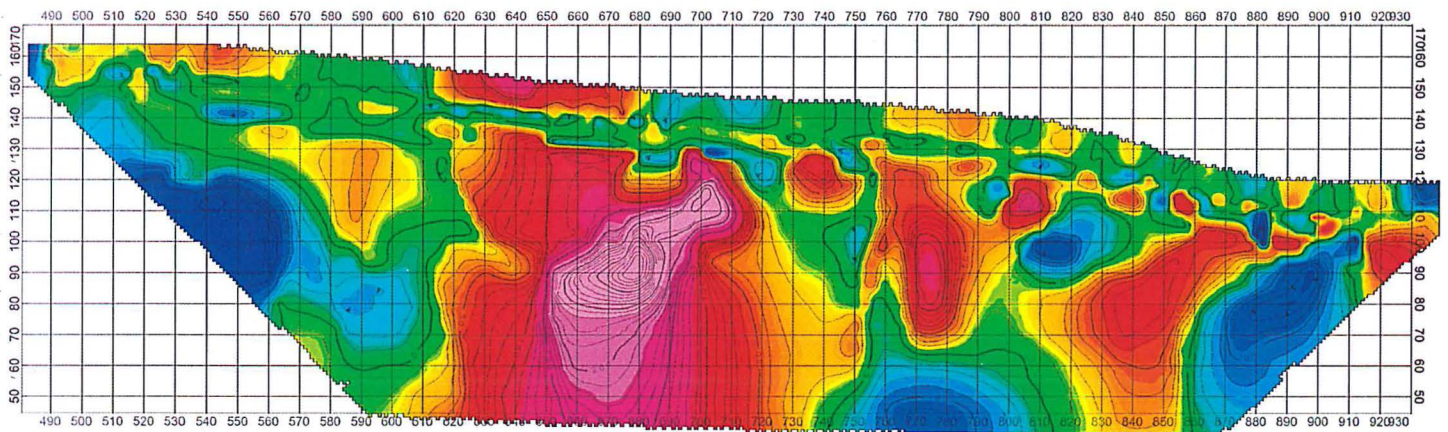
LINE	ARRAY	A spacing	DATA FILE	Msfts	Samples Read	Lost Rigs.	from	to
L 400W survey	A Survey							
	xDD	5M	150312xD	25.00%	3403	60	500	915
	S3	5M	150312S	9.00%	1301	1	500	910
	SC	5M	150312SC	9.00%	1364	92	500	850
B Survey	xDD	5M	150313xD	57%	2771	692	640	1000
	S3	5M	150313S	41%	1294	98	640	1050
	sC	5M	150313SC	33.00%	1035	421	640	1035
C Survey	xDD	5M	150314xD	36.00%	3116	347	780	1195
	S3	5M	150314S	16.00%	1240	152	780	1195
	sC	5M	150314SC	19.00%	1328	128	780	1195
South Survey	xDD	2.5M	150316xD	10	3338	125	535	745
	SC	2.5M	150316SC	0.2	1229	227	535	740
	S3	2.5M	150316S	2.80%	1347	45	535	730
	S4	2.5M	150316S4	3.80%	1962	66	535	735
North Survey	xDD	2.5M	150315xD	51.40%	1255	508	850	1055
	SC	2.5M	150315SC	37.90%	1100	356	850	1050
	S3	2.5M	150315S	22.80%	1240	152	850	1040
	S4	2.5M	150315S4	24.30%	1513	177	850	1025

**Figure 3a**

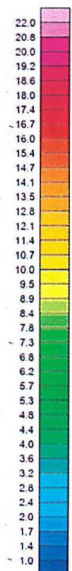
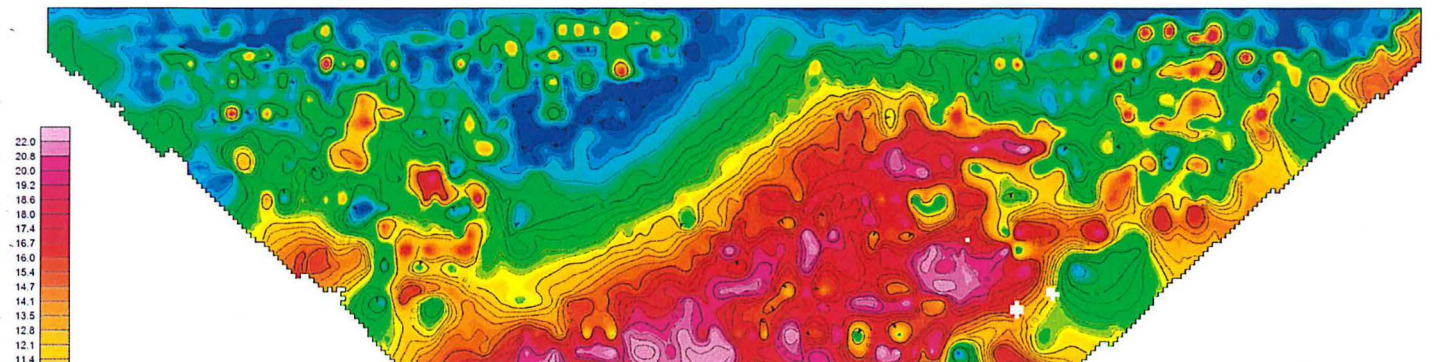
**L 400W**  
**extended Dipole Dipole Array**  
**A=5M**



**Apparent Chargeability**  
**Inversion MODEL by Earth Imager**



**DATA**



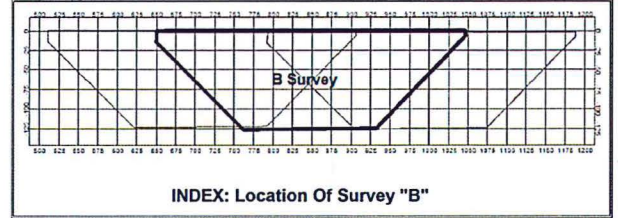
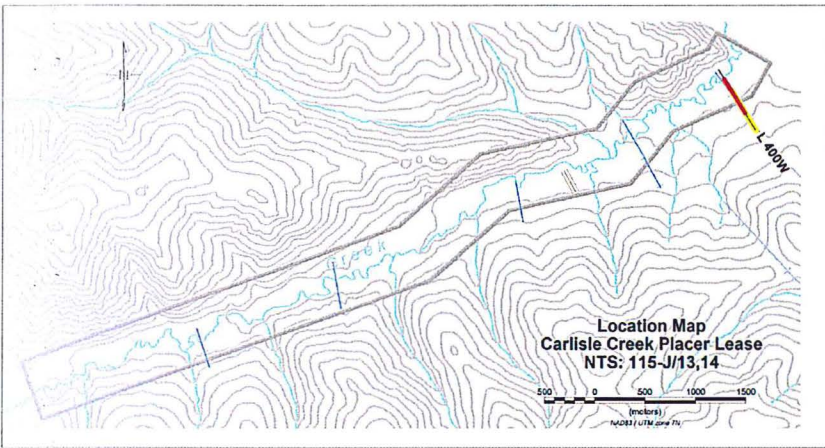
1359 plot points  
 Range: -37 to 97 mV/V  
 Mean: 7.9mV/V

Ig= 1 to 92 mA induced  
 Vp= 4.6 to 4131 Mv primary voltages read  
 contact resistances from 5Kohm to 115Kohm

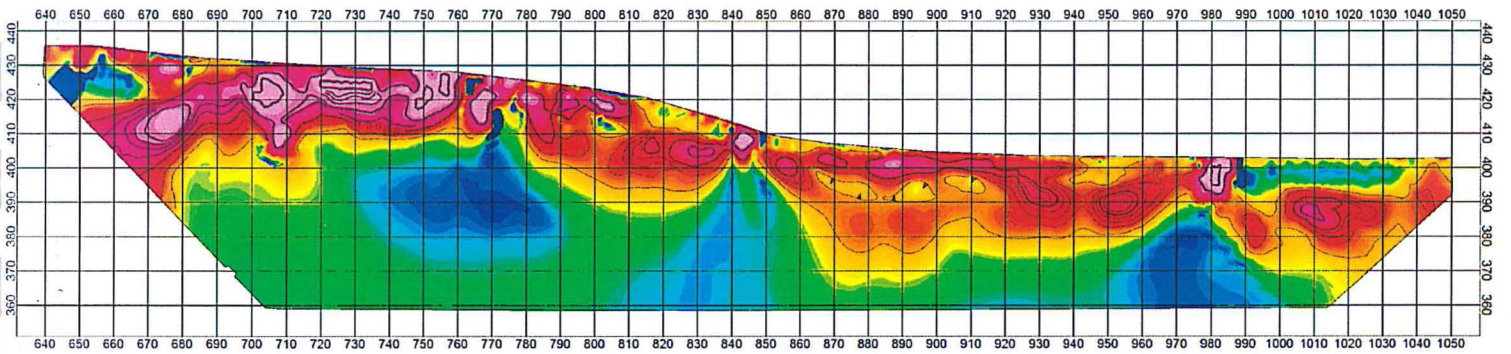
LINE	ARRAY	A spacing	DATA FILE	MsfTs	Samples Read	Lost Rfdgs.	from	to
L 400W survey	A Survey							
	xDD	5M	150312xD	25.00%	3403	60	500	915
	S13	5M	150312SI	9.00%	1391	1	500	910
	SC	5M	150312SC	9.00%	1364	92	500	850
B Survey	xDD	5M	150313xD	57%	2771	692	640	1000
	S13	5M	150313SI	41%	1294	98	640	1050
	sC	5M	150313SC	33.00%	1935	421	640	1035
C Survey	xDD	5M	150314xD	36.00%	3116	347	780	1195
	S13	5M	150314SI	16.00%	1240	152	780	1195
	sC	5M	150314SC	19.00%	1328	128	780	1195
South Survey	xDD	2.5M	150316xD	10	3338	125	535	745
	SC	2.5M	150316SC	0.2	1229	227	535	740
	S13	2.5M	150316SI	2.80%	1347	45	535	730
	SH	2.5M	150316S4	3.80%	1962	66	535	735
North Survey	xDD	2.5M	150315xD	51.40%	1255	508	850	1055
	SC	2.5M	150315SC	37.90%	1100	356	850	1050
	S13	2.5M	150315SI	22.80%	1240	152	850	1040
	S14	2.5M	150315S4	24.30%	1513	177	850	1025

**Figure 4**

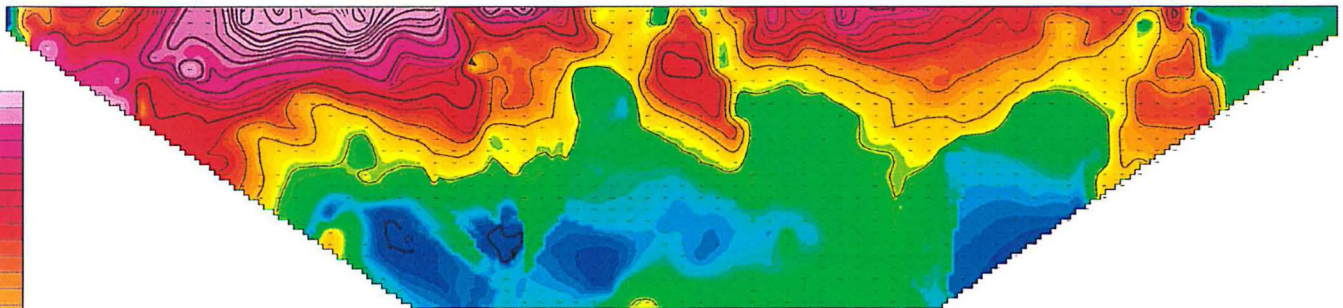
**L 400W  
Sclumberger Array  
A=5M**



**Apparent Resistivity  
Inversion Model by Earth Imager**



**DATA**



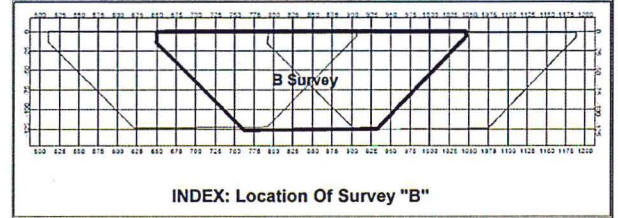
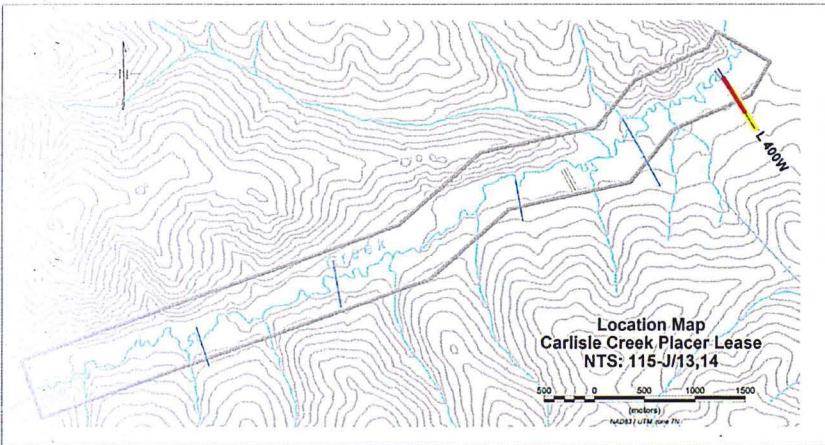
**1319 data points**  
Range: 0 to 57Kohms  
Mean: 3.7Kohms

**Ig= 1 to 99 mAmps Induced**  
**Vp= .4 to 4329 mV read**  
**Contact Resistances 5Kohms to 115Kohms**

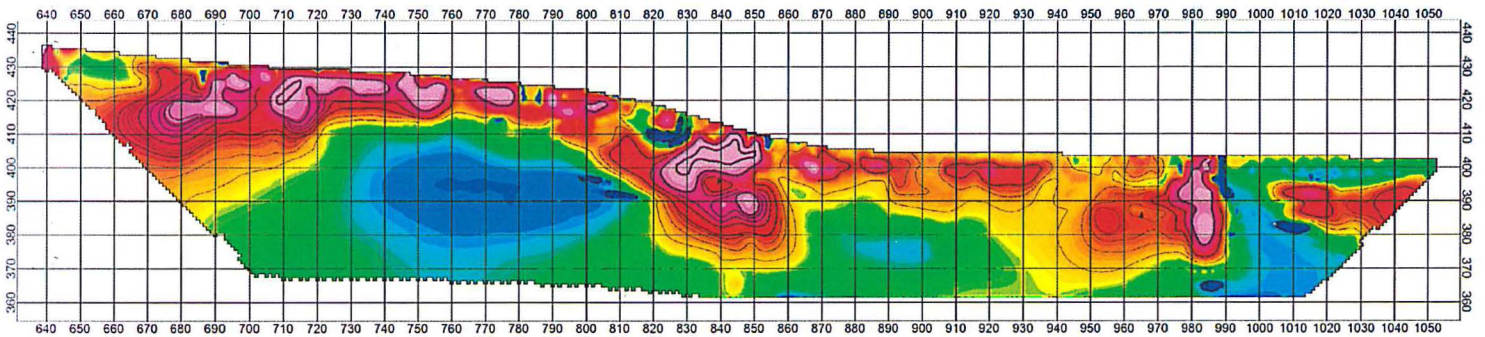
LINE	ARRAY	A spacing	DATA FILE	Misfits	Samples Read	Lost Rdgs.	from	to
L 400W	<b>A Survey</b>							
	xDD	5M	150312xD	25.00%	3403	60	500	915
	Si3	5M	150312Si	9.00%	1391	1	500	910
	SC	5M	150312SC	9.00%	1364	92	500	850
	<b>B Survey</b>							
	xDD	5M	150313xD	57% <sup>1</sup>	2771	692	640	1000
	Si3	5M	150313Si	41% <sup>1</sup>	1294	98	640	1050
	sC	5M	150313SC	33.00%	1035	421	640	1035
	<b>C Survey</b>							
	xDD	5M	150314xD	36.00%	3116	347	780	1195
	Si3	5M	150314Si	16.00%	1240	152	780	1195
	sC	5M	150314SC	19.00%	1328	128	780	1195
	<b>South Survey</b>							
	xDD	2.5M	150316xD	10	3338	125	535	745
	SC	2.5M	150316SC	0.2	1229	227	535	740
	Si3	2.5M	150316Si	2.80%	1347	45	535	730
	Si4	2.5M	150316S4	3.80%	1662	66	535	735
	<b>North Survey</b>							
	xDD	2.5M	150315xD	51.40%	1255	508	850	1055
	SC	2.5M	150315SC	37.90%	1100	356	850	1050
	Si3	2.5M	150315Si	22.80%	1240	152	850	1040
	Si4	2.5M	150315S4	24.30%	1513	177	850	1025

**Figure 5**

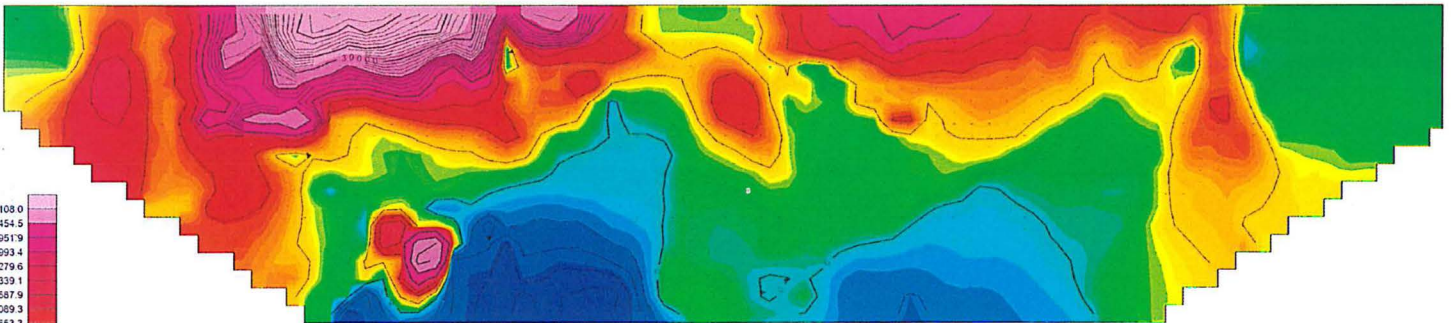
**L 400W  
Inverted Schlumberger Array  
A=5M**



**Apparent Resistivity  
Inversion Model by Earth Imager**



**DATA**



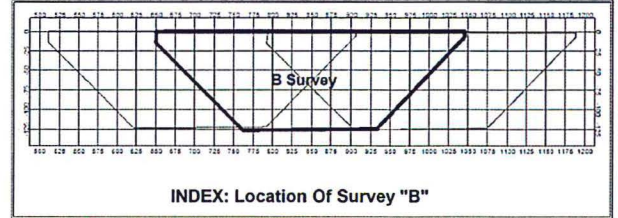
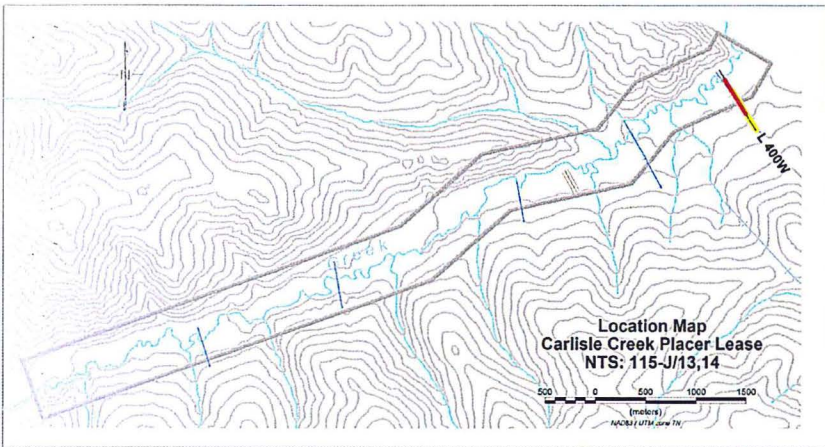
**1788 data points  
Range: 0 to 81Kohms  
Mean: 4.5Kohms**

**Ig= 1 to 80 mAmps Induced  
Vp= .82 to 9481 mV read  
Contact Resistances 5Kohms to 115Kohms**

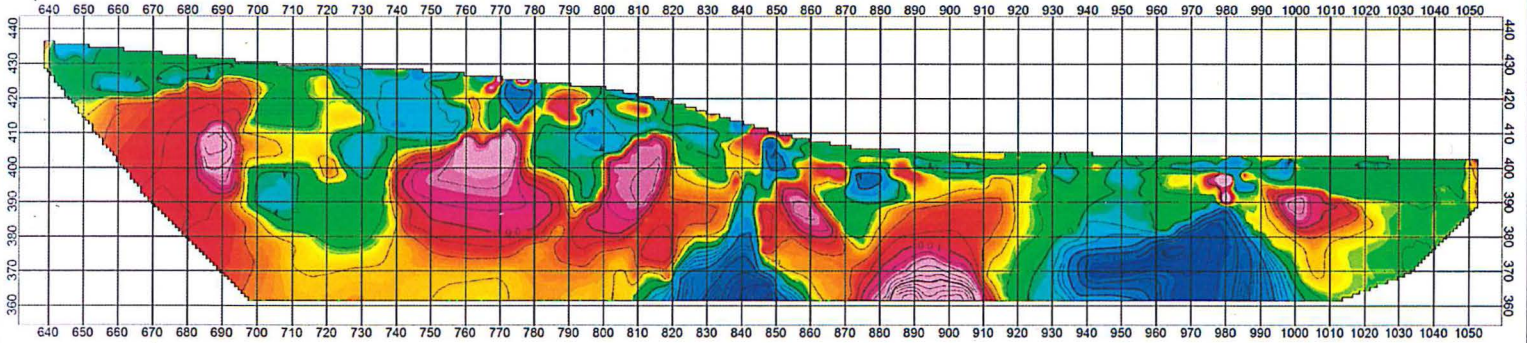
LINE	ARRAY	A spacing	DATA FILE	Misfits	Samples Read	Lost Rdgs.	from	to
L 400W	<b>A Survey</b>							
	xDD	5M	150312xD	25.00%	3403	60	500	915
	Si3	5M	150312Si	9.00%	1391	1	500	910
	SC	5M	150312SC	9.00%	1364	92	500	850
survey	<b>B Survey</b>							
	xDD	5M	150313xD	57%	2771	692	640	1000
	Si3	5M	150313Si	41%	1294	98	640	1050
	sC	5M	150313SC	33.00%	1035	421	640	1035
	<b>C Survey</b>							
	xDD	5M	150314xD	36.00%	3116	347	780	1195
	Si3	5M	150314Si	16.00%	1240	152	780	1195
	sC	5M	150314SC	19.00%	1328	128	780	1195
	<b>South Survey</b>							
	xDD	2.5M	150316xD	10	3338	125	535	745
	SC	2.5M	150316SC	0.2	1229	227	535	740
	Si3	2.5M	150316Si	2.80%	1347	45	535	730
	Si4	2.5M	150316S4	3.80%	1662	66	535	735
	<b>North Survey</b>							
	xDD	2.5M	150315xD	51.40%	1255	508	850	1055
	SC	2.5M	150315SC	37.90%	1100	356	850	1050
	Si3	2.5M	150315Si	22.80%	1240	152	850	1040
	Si4	2.5M	150315S4	24.30%	1513	177	850	1025

Figure 5a

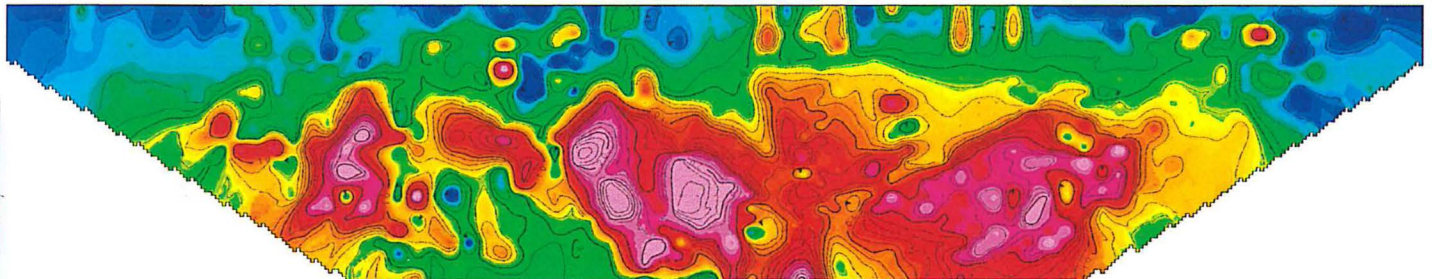
**L 400W  
Inverted Schlumberger Array  
A=5M**



**Apparent Chargeability  
Inversion Model by Earth Imager**



**DATA**



1788 data points  
Range: 1 to 99 mV/V  
Mean: 8.0 mV/V

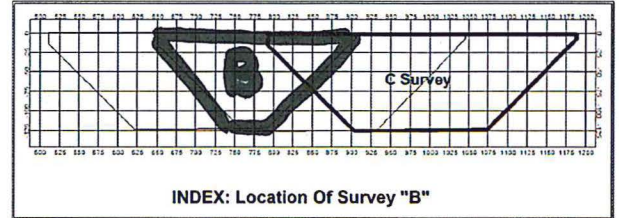
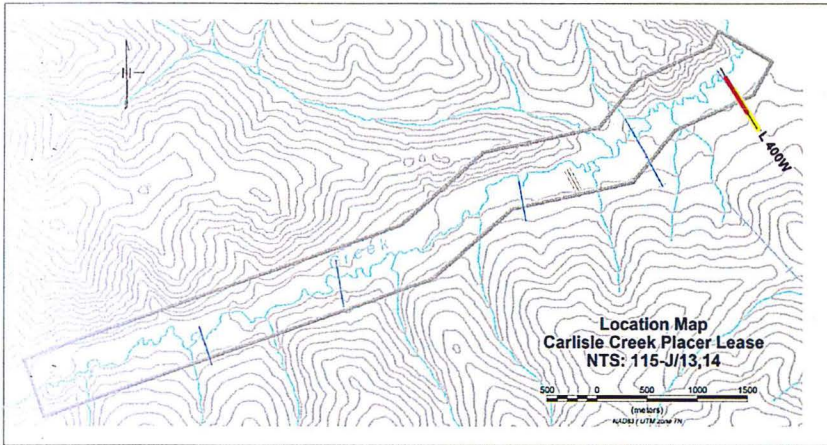
Ig= 1 to 80 mAmps Induced  
Vp= .82 to 9481 mV read  
Contact Resistances 5Kohms to 115Kohms

LINE	ARRAY	A spacing	DATA FILE	Misfits	Samples Read	Lost Rdgs.	from	to
L 400W	<b>A Survey</b>							
	xDD	5M	150312xD	25.00%	3403	60	500	915
	Si3	5M	150312Si	9.00%	1391	1	500	910
	SC	5M	150312SC	9.00%	1364	92	500	850
	<b>B Survey</b>							
	xDD	5M	150313xD	57.00%	2771	692	640	1000
	Si3	5M	150313Si	4.10%	1294	98	640	1050
	sC	5M	150313SC	33.00%	1035	421	640	1035
	<b>C Survey</b>							
	xDD	5M	150314xD	36.00%	3116	347	780	1195
	Si3	5M	150314Si	16.00%	1240	152	780	1195
	sC	5M	150314SC	19.00%	1328	128	780	1195
<b>South Survey</b>								
xDD	2.5M	150316xD	10	3338	125	535	745	
SC	2.5M	150316SC	0.2	1229	227	535	740	
Si3	2.5M	150316Si	2.80%	1347	45	535	730	
Si4	2.5M	150316S4	3.80%	1662	66	535	735	
<b>North Survey</b>								
xDD	2.5M	150315xD	51.40%	1255	508	850	1055	
SC	2.5M	150315SC	37.90%	1100	356	850	1050	
Si3	2.5M	150315Si	22.80%	1240	152	850	1040	
Si4	2.5M	150315S4	24.30%	1513	177	850	1025	

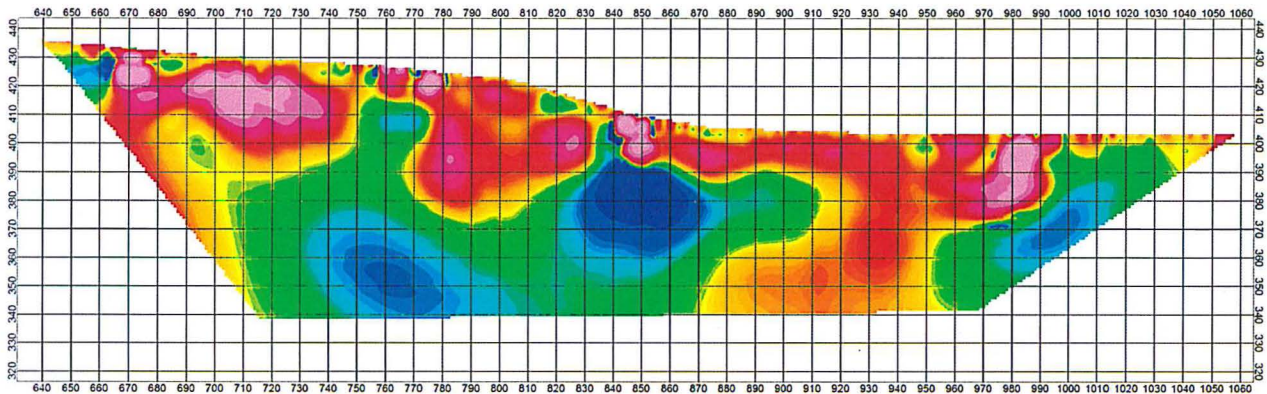


**Figure 6**

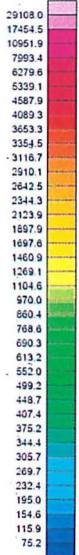
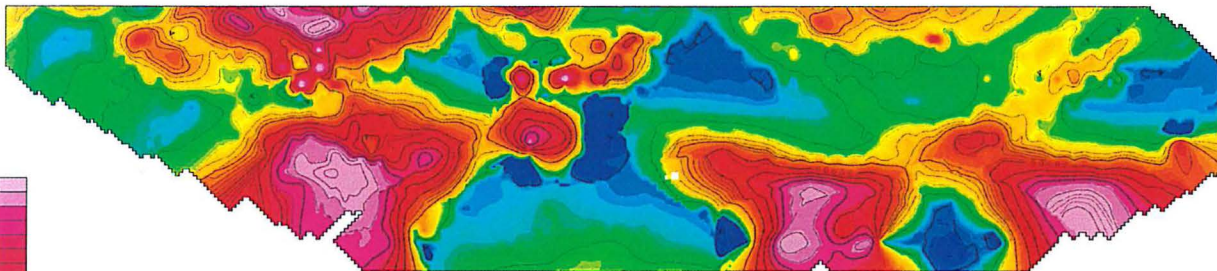
**L 400W**  
**extended Dipole Dipole Array**  
**A= 5M**



**Apparent Resistivity  
 Inversion Model by Earth Imager**



**DATA**

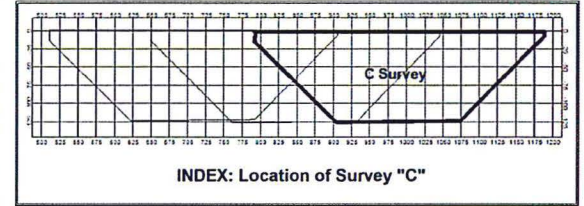
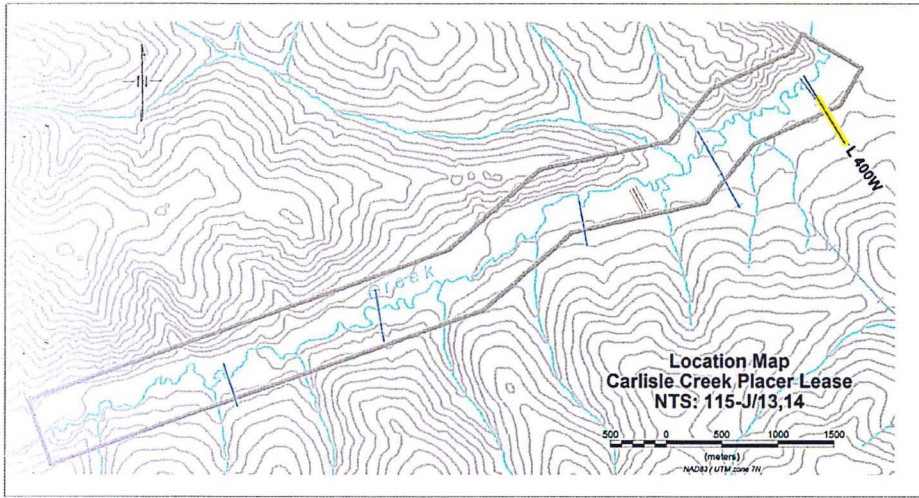


**3958 data points**  
**Range: 0 to 800Kohms/ 5M**  
**Mean: 4000Kohms/ 5M**

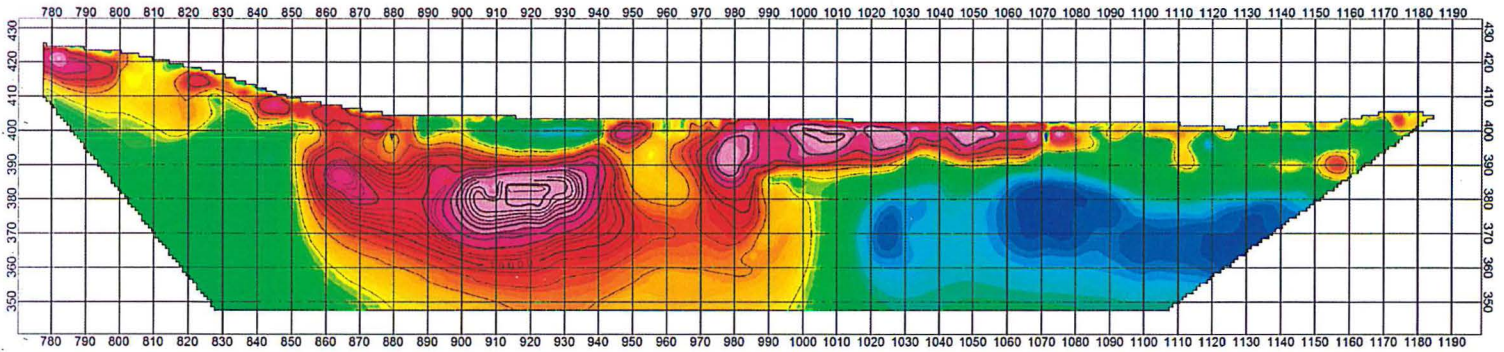
**Ig= 1 to 86 mAmps Induced**  
**Vp= .82 to 4000 mV read**  
**Contact Resistances 5Kohms to 300Kohms**

LINE	ARRAY	A spacing	DATA FILE	Misfits	Samples Read	Lost Rdgs.	from	to
L 400W	<b>A Survey</b>							
	xDD	5M	150312xD	25.00%	3403	60	500	915
	SI3	5M	150312SI	9.00%	1391	1	500	910
	SC	5M	150312SC	9.00%	1364	92	500	850
	<b>B Survey</b>							
	xDD	5M	150313xD	57%	2771	692	640	1000
	SI3	5M	150313SI	41%	1294	98	640	1050
	sC	5M	150313SC	33.00%	1035	421	640	1035
	<b>C Survey</b>							
	xDD	5M	150314xD	36.00%	3116	347	780	1195
	SI3	5M	150314SI	16.00%	1240	152	780	1195
	sC	5M	150314SC	19.00%	1328	128	780	1195
<b>South Survey</b>								
xDD	2.5M	150316xD	10	3338	125	535	745	
SC	2.5M	150316SC	0.2	1229	227	535	740	
SI3	2.5M	150316SI	2.80%	1347	45	535	730	
SI4	2.5M	150316S4	3.80%	1662	60	535	735	
<b>North Survey</b>								
xDD	2.5M	150315xD	51.40%	1255	508	850	1055	
SC	2.5M	150315SC	37.90%	1100	356	850	1050	
SI3	2.5M	150315SI	22.80%	1240	152	850	1040	
SI4	2.5M	150315S4	24.30%	1513	177	850	1025	

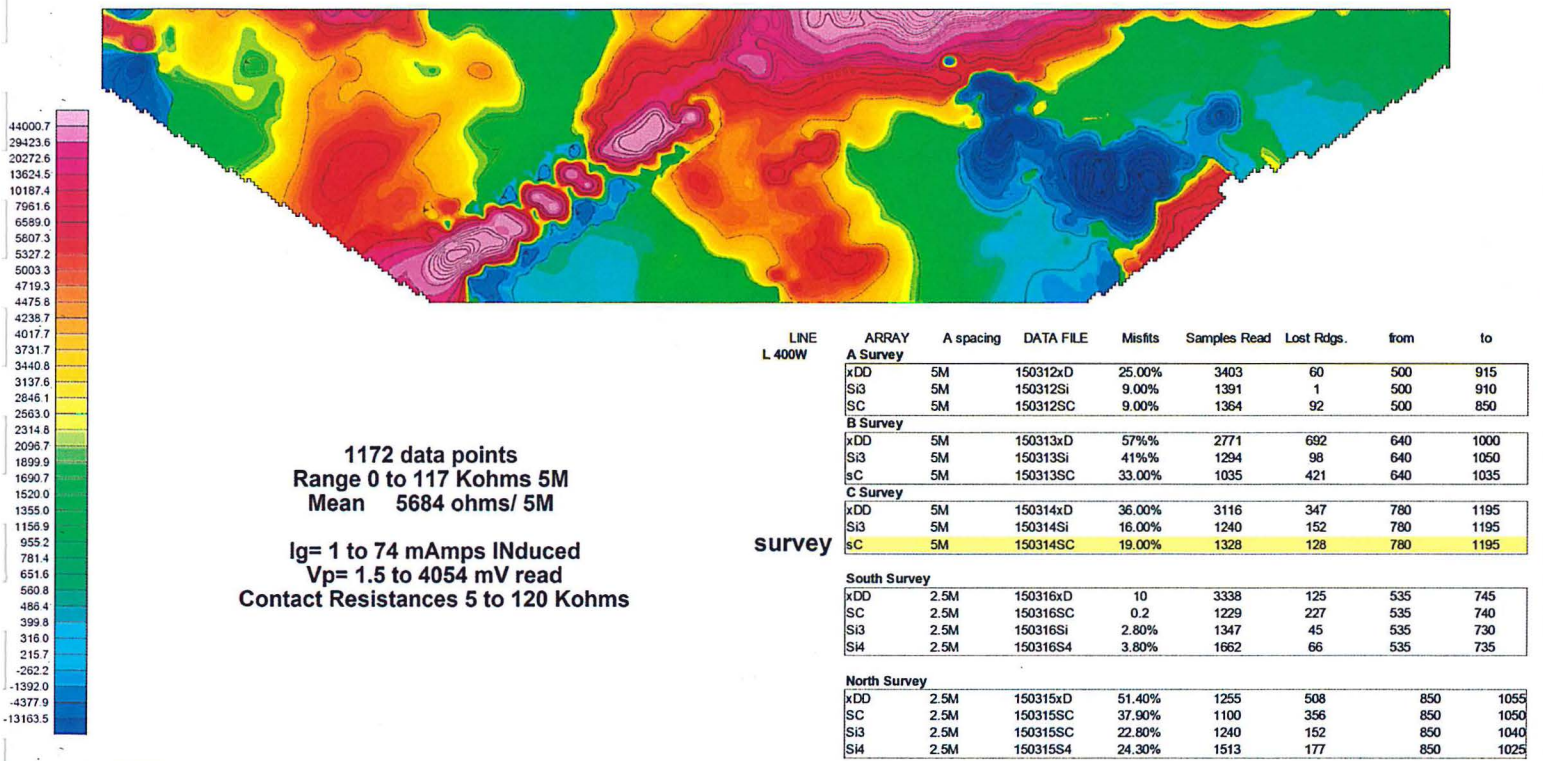
**Figure 7**  
**L 400W**  
**Scumberger Array**  
**A= 5M**



**Apparent RESistivity  
 Inversion Model by Earth Imager**



**DATA**

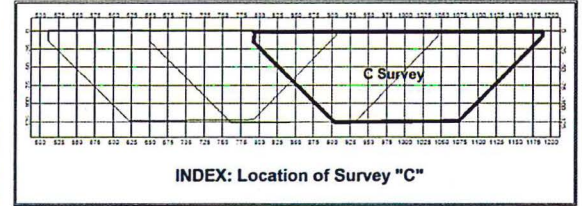
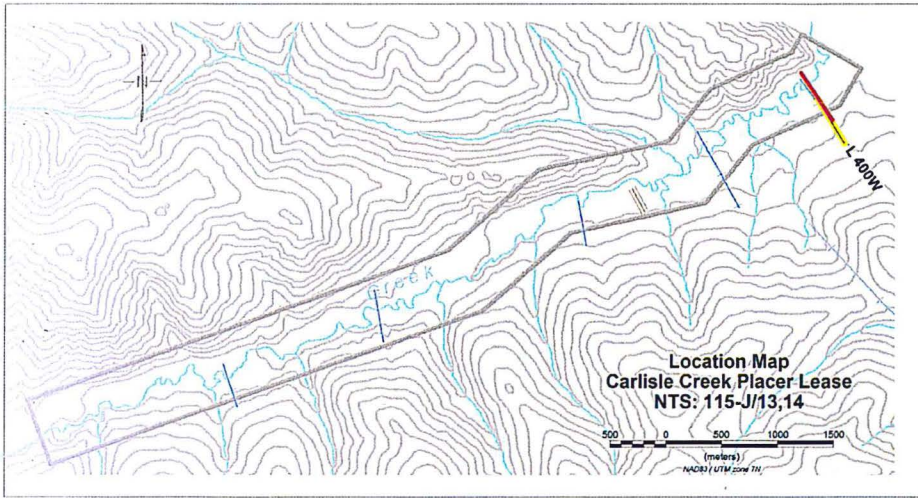


1172 data points  
 Range 0 to 117 Kohms 5M  
 Mean 5684 ohms/ 5M  
 Ig= 1 to 74 mAmps INDUCED  
 Vp= 1.5 to 4054 mV read  
 Contact Resistances 5 to 120 Kohms

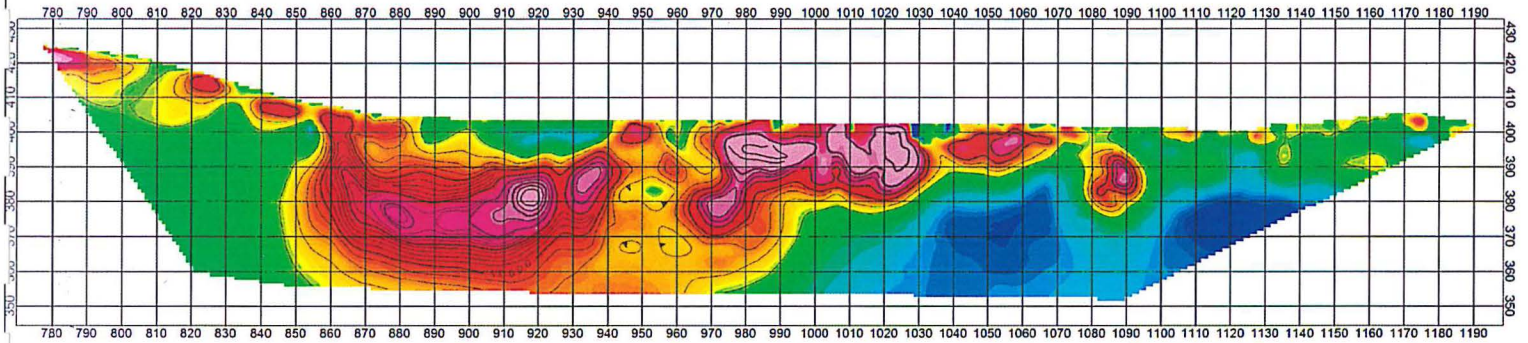
LINE	ARRAY	A spacing	DATA FILE	Misfits	Samples Read	Lost Rdgs.	from	to
L 400W	<b>A Survey</b>							
	xDD	5M	150312xD	25.00%	3403	60	500	915
	SI3	5M	150312SI	9.00%	1391	1	500	910
	SC	5M	150312SC	9.00%	1364	92	500	850
	<b>B Survey</b>							
	xDD	5M	150313xD	57%	2771	692	640	1000
	SI3	5M	150313SI	41%	1294	98	640	1050
	sC	5M	150313SC	33.00%	1035	421	640	1035
survey	<b>C Survey</b>							
	xDD	5M	150314xD	36.00%	3116	347	780	1195
	SI3	5M	150314SI	16.00%	1240	152	780	1195
	sC	5M	150314SC	19.00%	1328	128	780	1195
	<b>South Survey</b>							
	xDD	2.5M	150316xD	10	3338	125	535	745
	SC	2.5M	150316SC	0.2	1229	227	535	740
	SI3	2.5M	150316SI	2.80%	1347	45	535	730
	SI4	2.5M	150316S4	3.80%	1662	66	535	735
	<b>North Survey</b>							
	xDD	2.5M	150315xD	51.40%	1255	508	850	1055
	SC	2.5M	150315SC	37.00%	1100	356	850	1050
	SI3	2.5M	150315SI	22.80%	1240	152	850	1040
	SI4	2.5M	150315S4	24.30%	1513	177	850	1025

# Figure 8

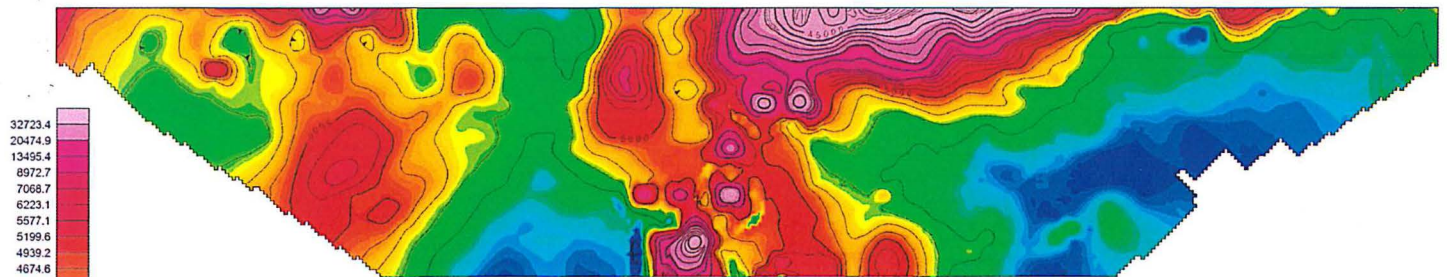
**L 400W**  
**Inverted Sculmberger Array**  
**A= 5M**



## Apparent RESistivity Inversion Model by Earth Imager



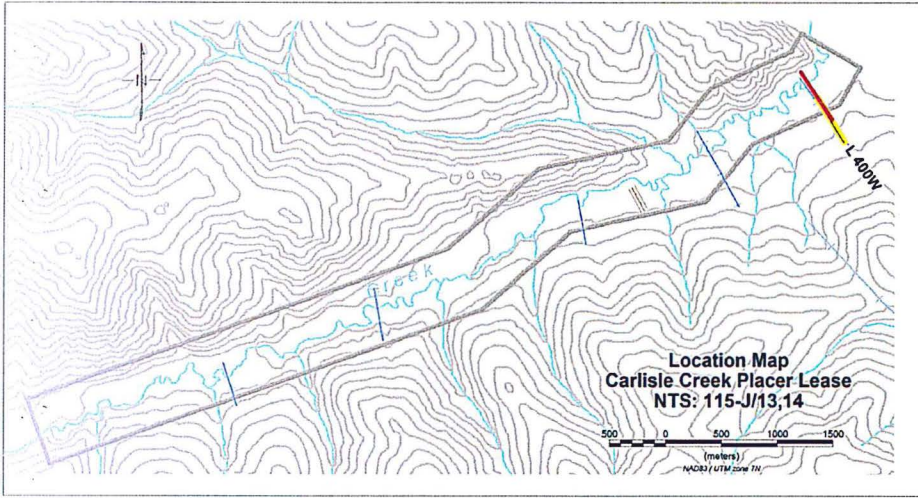
## DATA



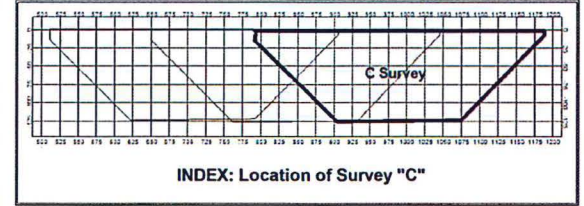
1062 data points  
 Range 0 to 78 Kohms/ 5M  
 Mean 49 Kohms/ 5M

Ig= 1 to 74 mAmps Induced  
 Vp= .35 to 4170 mV read  
 Contact Resistances 5 to 120 Kohms

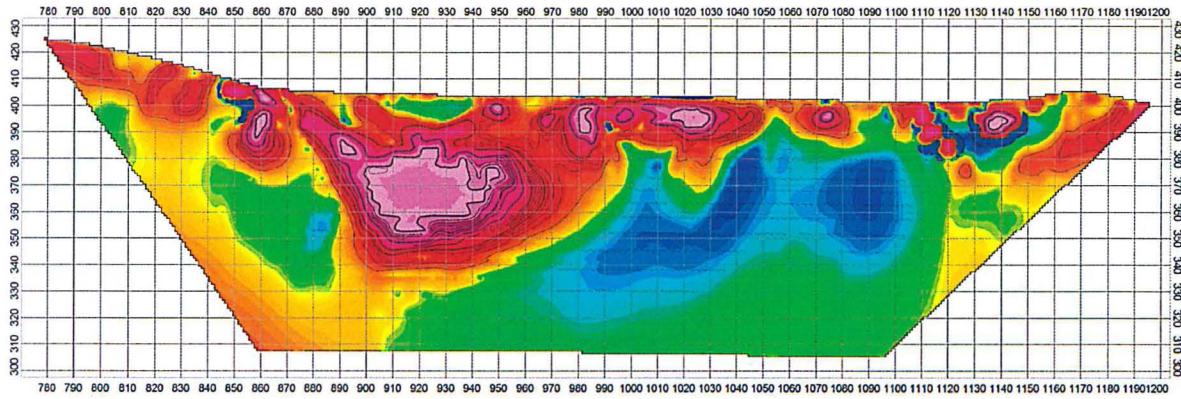
LINE	ARRAY	A spacing	DATA FILE	Misfits	Samples Read	Lost Rtdgs.	from	to	
L 400W	<b>A Survey</b>								
	xDD	5M	150312xD	25.00%	3403	60	500	915	
	Si3	5M	150312Si	9.00%	1391	1	500	910	
	SC	5M	150312SC	9.00%	1364	92	500	850	
	<b>B Survey</b>								
	xDD	5M	150313xD	57%	2771	692	640	1000	
	Si3	5M	150313Si	41%	1294	98	640	1050	
	sC	5M	150313SC	33.00%	1035	421	640	1035	
survey	<b>C Survey</b>								
	xDD	5M	150314xD	36.00%	3116	347	780	1195	
	Si3	5M	150314Si	16.00%	1240	152	780	1195	
	sC	5M	150314SC	19.00%	1328	128	780	1195	
	<b>South Survey</b>								
	xDD	2.5M	150316xD	10	3338	125	535	745	
	SC	2.5M	150316SC	0.2	1229	227	535	740	
	Si3	2.5M	150316Si	2.80%	1347	45	535	730	
	Si4	2.5M	150316S4	3.80%	1662	66	535	735	
	<b>North Survey</b>								
	xDD	2.5M	150315xD	51.40%	1255	508	850	1055	
	SC	2.5M	150315SC	37.90%	1100	356	850	1050	
	Si3	2.5M	150315Si	22.80%	1240	152	850	1040	
	Si4	2.5M	150315S4	24.30%	1513	177	850	1025	



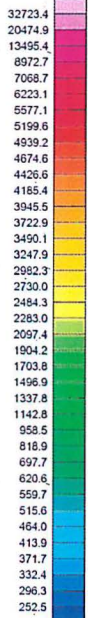
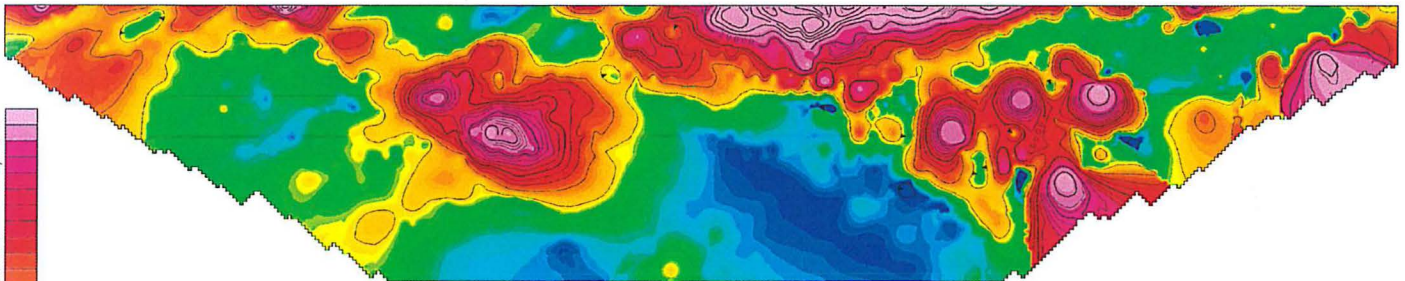
**Figure 9**  
**L 400W**  
**Extended Schlumberger Array**  
**A= 5M**



**Apparent RESistivity  
 Inversion Model by Earth Imager**



**DATA**



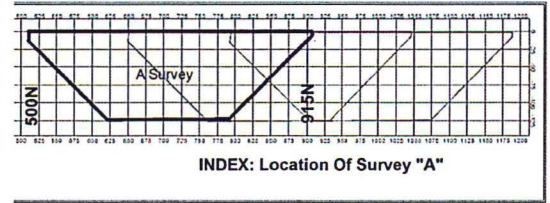
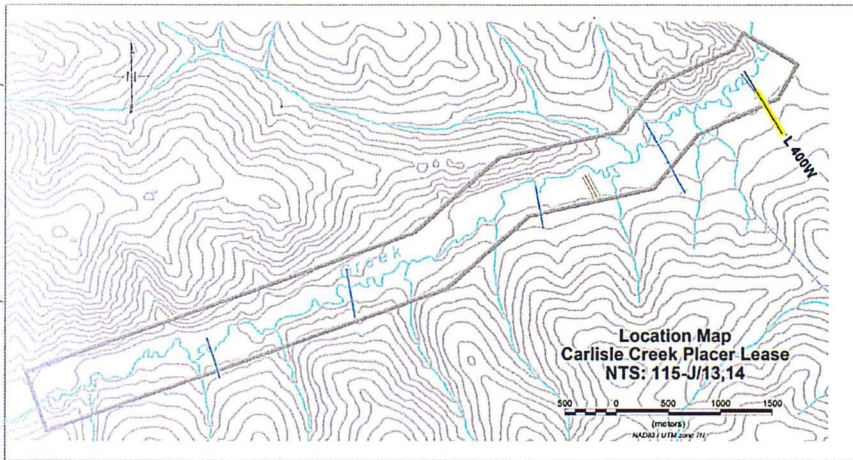
**1062 data points**  
**Range 0 to 78 Kohms/ 5M**  
**Mean 49 Kohms/ 5M**

**Ig= 1 to 74 mAmps INDUCED**  
**Vp= .35 to 4170 mV read**  
**Contact Resistances 5 to 120 Kohms**

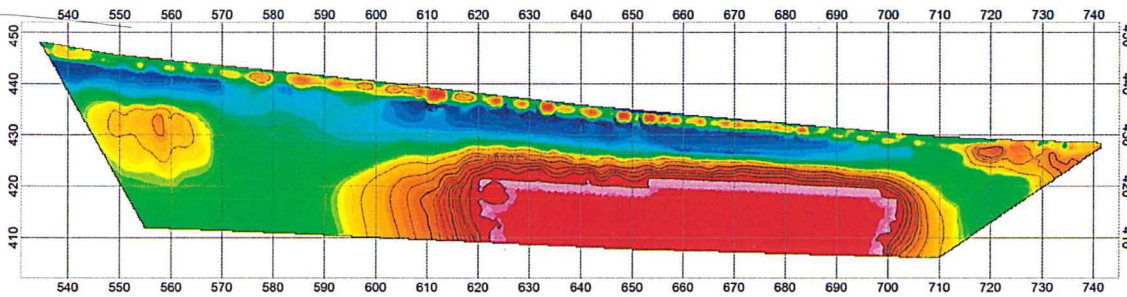
LINE	ARRAY	A spacing	DATA FILE	Misfits	Samples Read	Lost Rtdgs.	from	to
L 400W	<b>A Survey</b>							
	xDD	5M	150312xD	25.00%	3403	60	500	915
	Si3	5M	150312Si	9.00%	1391	1	500	910
	SC	5M	150312SC	9.00%	1364	92	500	850
survey	<b>B Survey</b>							
	xDD	5M	150313xD	57%	2771	692	640	1000
	Si3	5M	150313Si	41%	1294	98	640	1050
	sC	5M	150313SC	33.00%	1035	421	640	1035
survey	<b>C Survey</b>							
	xDD	5M	150314xD	36.00%	3116	347	780	1195
	Si3	5M	150314Si	16.00%	1240	152	780	1195
	sC	5M	150314SC	19.00%	1328	128	780	1195
survey	<b>South Survey</b>							
	xDD	2.5M	150316xD	10	3338	125	535	745
	SC	2.5M	150316SC	0.2	1229	227	535	740
	Si3	2.5M	150316Si	2.80%	1347	45	535	730
	Si4	2.5M	150316S4	3.80%	1662	66	535	735
survey	<b>North Survey</b>							
	xDD	2.5M	150315xD	51.40%	1255	508	850	1055
	SC	2.5M	150315SC	37.90%	1100	356	850	1050
	Si3	2.5M	150315SC	22.80%	1240	152	850	1040
	Si4	2.5M	150315S4	24.30%	1513	177	850	1025

**Figure 10**

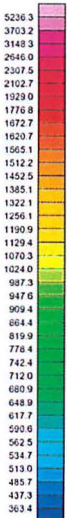
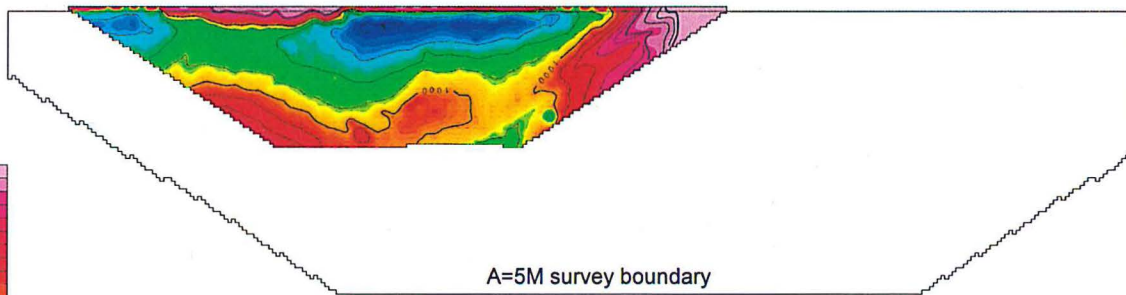
**L 400W  
Scumberger Array  
A= 2.5M**



**Apparent Resistivity  
Inversion MODEL by Earth Imager**



**A=2.5M DATA**



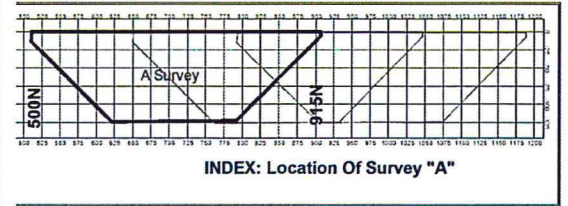
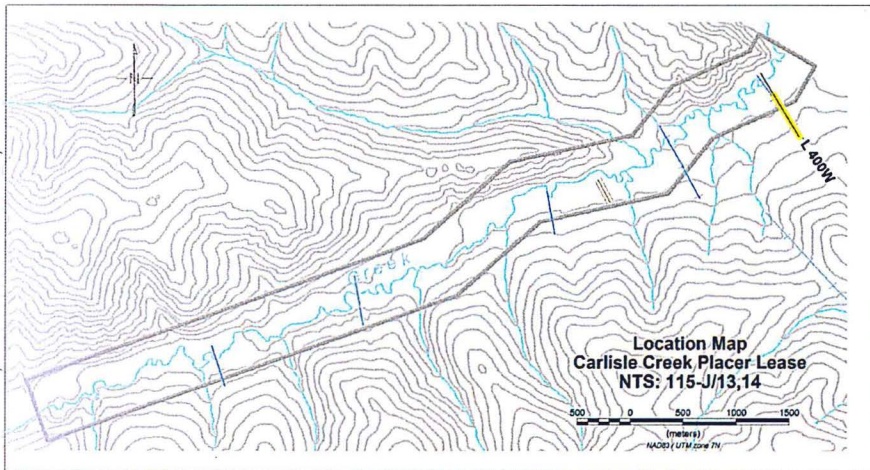
1229 plot points  
Range: 154 to 11756 ohms/ 5M  
Mean: 1080 ohms/ 5M

Ig= 1 to 52 mA induced  
Vp= 7.8 to 3954 Mv primary voltages read  
contact resistances from 5Kohm to 115Kohm

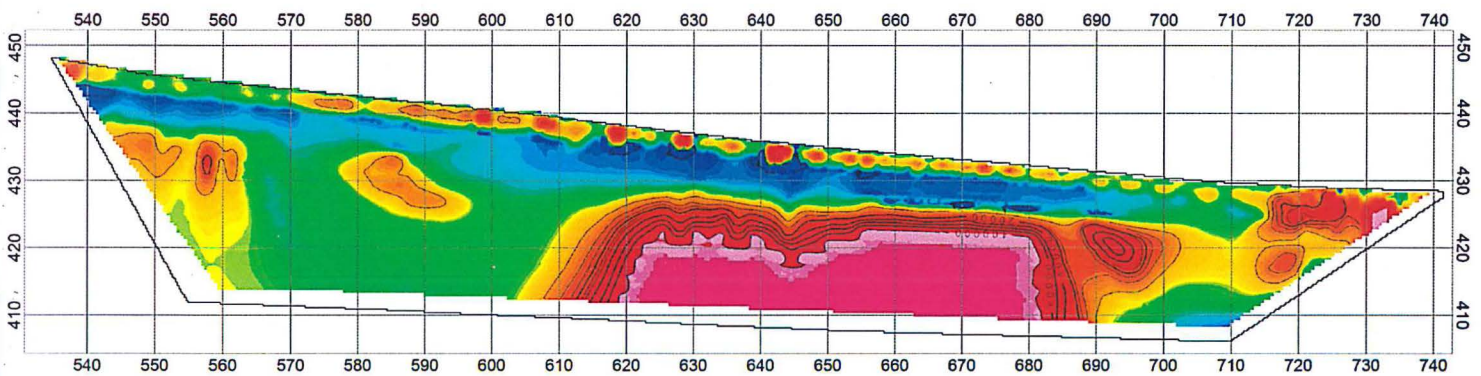
LINE	ARRAY	A spacing	DATA FILE	MsIts	Samples Read	Lost Pkgs.	from	to
<b>A Survey</b>								
xDD	5M	150310xD	150310xD	25.00%	3403	60	500	915
SI3	5M	150312SI	150312SI	9.00%	1391	1	500	910
SC	5M	150312SC	150312SC	9.00%	1364	92	500	850
<b>B Survey</b>								
xDD	5M	150313xD	150313xD	57%	2771	692	640	1000
SI3	5M	150313SI	150313SI	41%	1254	98	640	1050
bC	5M	150313SC	150313SC	33.00%	1035	421	640	1035
<b>C Survey</b>								
xDD	5M	150314xD	150314xD	36.00%	3116	347	780	1195
SI3	5M	150314SI	150314SI	16.00%	1240	152	780	1195
bC	5M	150314SC	150314SC	19.00%	1328	128	780	1195
<b>South Survey</b>								
xDD	2.5M	150316xD	150316xD	10	3338	125	535	745
SC	2.5M	150316SC	150316SC	0.2	1229	227	535	740
SI3	2.5M	150316SI	150316SI	2.80%	1347	45	535	730
SI4	2.5M	150316S4	150316S4	3.80%	1662	66	535	735
<b>North Survey</b>								
xDD	2.5M	150315xD	150315xD	51.40%	1255	508	850	1055
SC	2.5M	150315SC	150315SC	37.90%	1100	356	850	1050
SI3	2.5M	150315SI	150315SI	22.80%	1240	152	850	1040
SI4	2.5M	150315S4	150315S4	24.30%	1513	177	850	1025

**Figure 11**

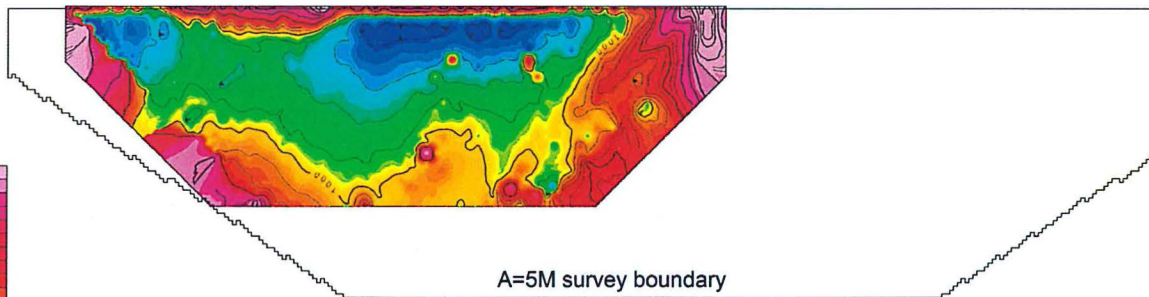
**L 400W**  
**Inverted Schlumberger Array**  
**A= 2.5M**



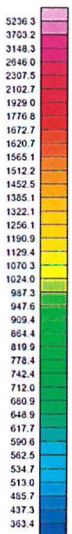
**Apparent Resistivity  
 Inversion MODEL by Earth Imager**



**A=2.5M DATA**



A=5M survey boundary

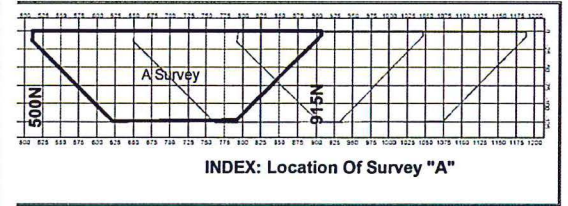
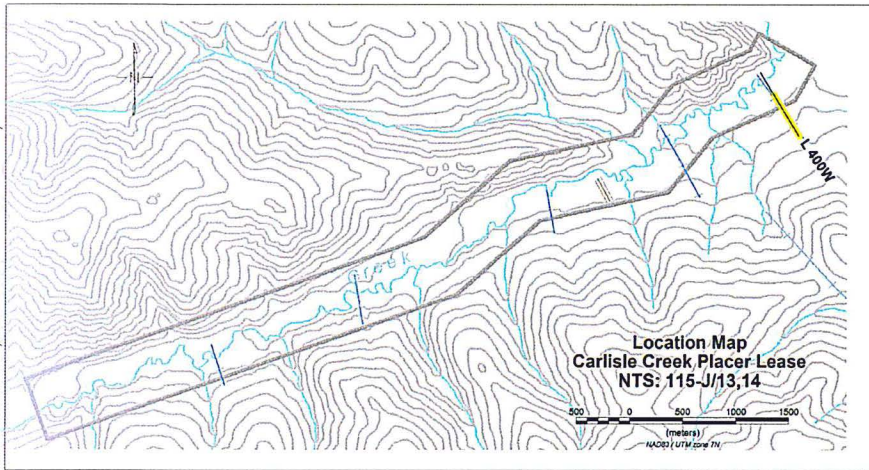


1244 plot points  
 Range: 0 to 14 Kohms/ 5M  
 Mean: 1071 ohms/ 5M  
 Ig= 1 to 51 mA induced  
 Vp= 1.6 to 4343 Mv primary voltages read  
 contact resistances from 5Kohm to 115Kohm

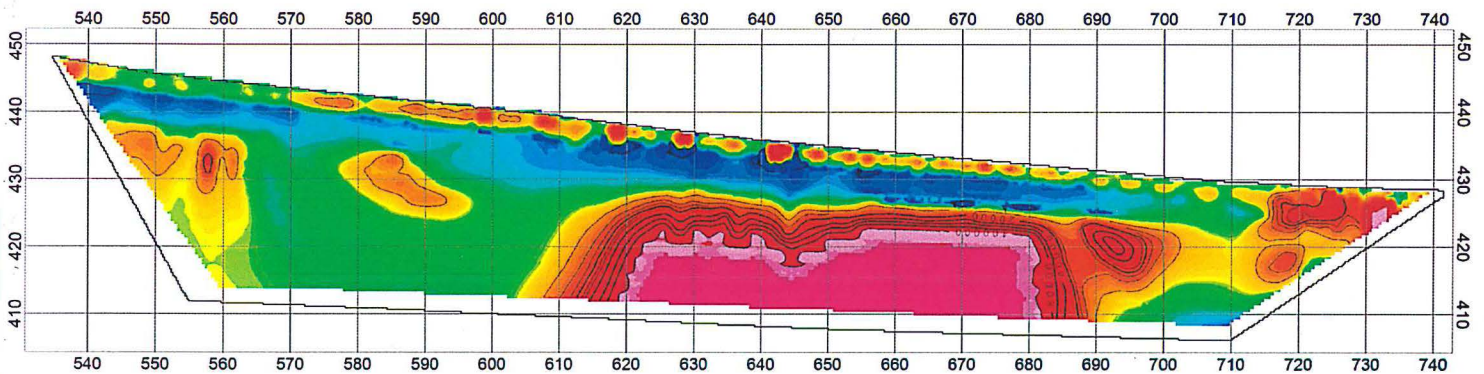
LINE	ARRAY	A spacing	DATA FILE	Misfits	Samples Read	Lost Rds.	from	to	
L 400W	<b>A Survey</b>								
	xDD	5M	150312xD	25.00%	3403	60	500	915	
	Si3	5M	150312Si	9.00%	1391	1	500	910	
	SC	5M	150312SC	9.00%	1364	92	500	850	
	<b>B Survey</b>								
	xDD	5M	150313xD	57%	2771	692	640	1000	
	Si3	5M	150313Si	41%	1294	98	640	1050	
	eC	5M	150313SC	33.00%	1035	421	640	1035	
	<b>C Survey</b>								
	xDD	5M	150314xD	36.00%	3116	347	780	1195	
Si3	5M	150314Si	16.00%	1240	152	780	1195		
eC	5M	150314SC	19.00%	1328	128	780	1195		
<b>South Survey</b>									
xDD	2.5M	150316xD	10	3338	125	535	745		
SC	2.5M	150316SC	0.2	1229	227	535	740		
Si3	2.5M	150316Si	2.80%	1347	45	535	730		
Si4	2.5M	150316S4	3.80%	1662	66	535	735		
<b>North Survey</b>									
xDD	2.5M	150315xD	51.40%	1255	508	850	1050		
SC	2.5M	150315SC	37.90%	1100	356	850	1050		
Si3	2.5M	150315Si	22.80%	1240	152	850	1040		
Si4	2.5M	150315S4	24.30%	1513	177	850	1025		

**Figure 11**

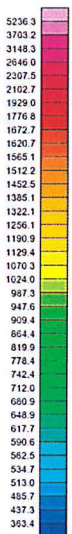
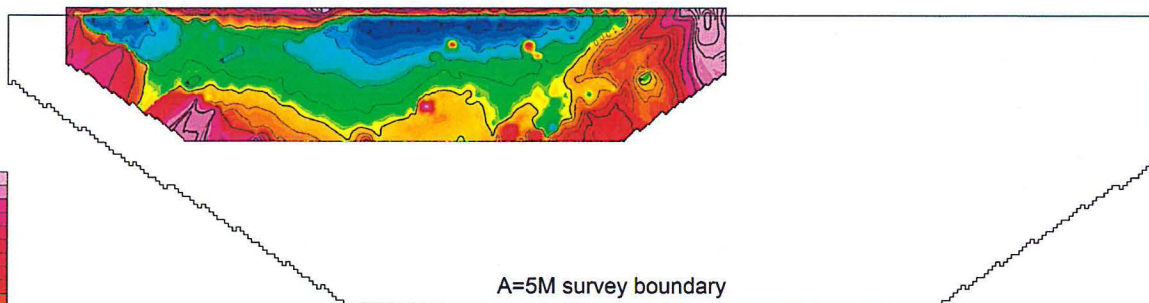
**L 400W  
Inverted Schlumberger Array  
A= 2.5M**



**Apparent Resistivity  
Inversion MODEL by Earth Imager**



**A=2.5M DATA**

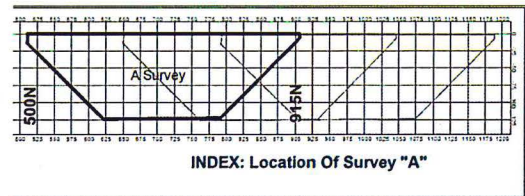
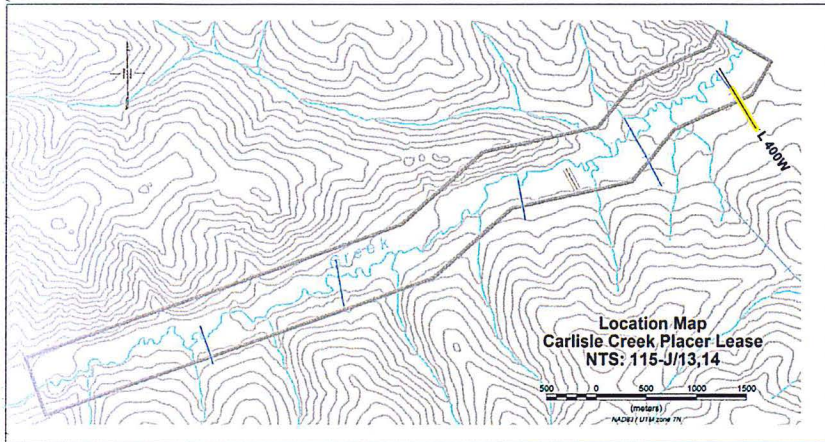


1244 plot points  
Range: 0 to 14 Kohms/ 5M  
Mean: 1071 ohms/ 5M  
  
I<sub>g</sub>= 1 to 51 mA induced  
V<sub>p</sub>= 1.6 to 4343 Mv primary voltages read  
contact resistances from 5Kohm to 115Kohm

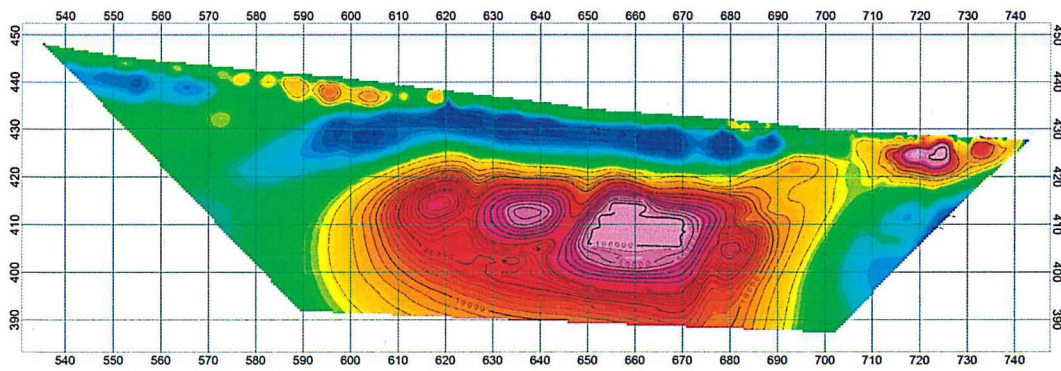
LINE	ARRAY	A spacing	DATA FILE	Missits	Samples Read	Lost Rds.	from	to
L 400W	<b>A Survey</b>							
	xDD	5M	150312xD	25.00%	3403	60	500	915
	Si3	5M	150312Si	8.00%	1391	1	500	910
	SC	5M	150312SC	9.00%	1364	92	500	850
	<b>B Survey</b>							
	xDD	5M	150313xD	57.1%	2771	692	640	1000
	Si3	5M	150313Si	41.1%	1294	98	640	1050
	SC	5M	150313SC	33.00%	1035	421	640	1035
	<b>C Survey</b>							
	xDD	5M	150314xD	36.00%	3116	347	780	1195
	Si3	5M	150314Si	16.00%	1240	152	780	1195
	SC	5M	150314SC	19.00%	1328	128	780	1195
<b>South Survey</b>								
xDD	2.5M	150316xD		10	3338	125	535	745
SC	2.5M	150316SC		0.2	1229	227	535	740
Si3	2.5M	150316Si		2.80%	1347	45	535	730
Si4	2.5M	150316S4		3.80%	1662	66	535	735
<b>North Survey</b>								
xDD	2.5M	150315xD		51.40%	1255	508	850	1050
SC	2.5M	150315SC		37.90%	1100	356	850	1050
Si3	2.5M	150315Si		22.80%	1240	152	850	1040
Si4	2.5M	150315S4		24.30%	1513	177	850	1025

**Figure 12**

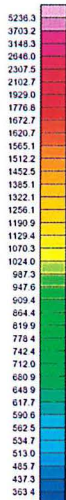
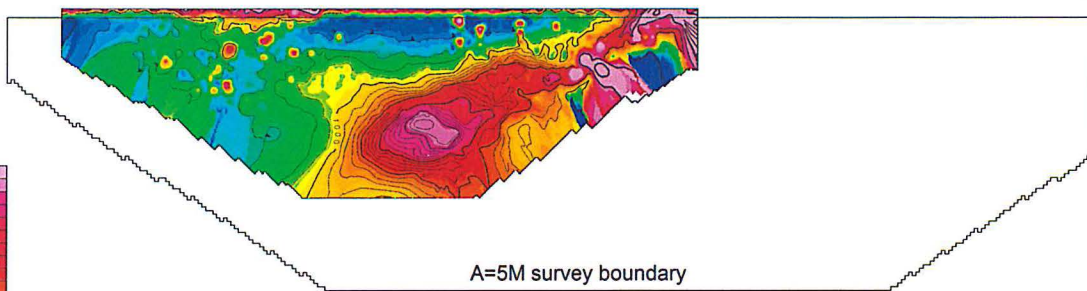
**L 400W**  
**extended Dipole Dipole Array**  
**A= 2.5M**



**Apparent Resistivity  
 Inversion MODEL by Earth Imager**



**A=2.5M DATA**



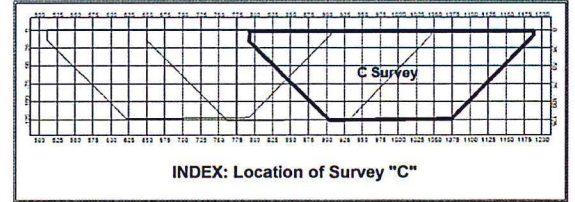
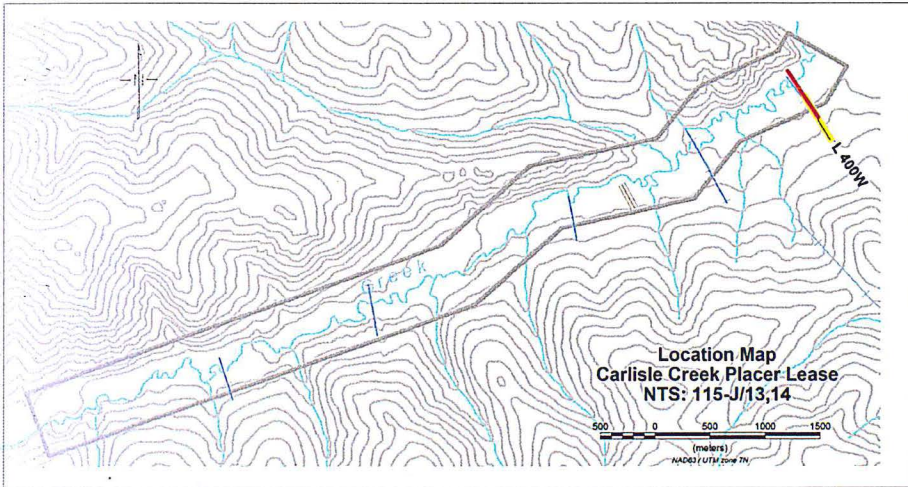
2738 plot points  
 Range: 0 to 313 Kohms/ 5M  
 Mean: 1247 ohms/ 5M  
 I<sub>g</sub>= .1 to 73 mA induced  
 V<sub>p</sub>= 1.2 to 3573 Mv primary voltages read  
 contact resistances from 5Kohm to 115Kohm

LINE	ARRAY	A spacing	DATA FILE	Misfits	Samples Read	Lost Rds.	from	to
<b>L 400W</b>								
<b>A Survey</b>								
4DD	5M	150312D	25.00%	3403	60	500	915	
S13	5M	150312SI	9.00%	1391	1	500	910	
SC	5M	150312SC	9.00%	1364	92	500	850	
<b>B Survey</b>								
4DD	5M	150313D	57%	2771	692	640	1000	
S13	5M	150313SI	41%	1294	98	640	1050	
4C	5M	150313SC	33.00%	1035	421	640	1035	
<b>C Survey</b>								
4DD	5M	150314D	36.00%	3116	347	780	1195	
S13	5M	150314SI	16.00%	1240	152	780	1195	
4C	5M	150314SC	19.00%	1328	128	780	1195	
<b>South Survey</b>								
4DD	2.5M	150316D	10	3338	125	535	745	
SC	2.5M	150316SC	0.2	1229	227	535	740	
S13	2.5M	150316SI	2.80%	1347	45	535	730	
S14	2.5M	150316S4	3.80%	1662	66	535	735	
<b>North Survey</b>								
4DD	2.5M	150315D	51.40%	1255	508	850	1058	
SC	2.5M	150315SC	37.90%	1100	356	850	1050	
S13	2.5M	150315SI	22.80%	1240	152	850	1040	
S14	2.5M	150315S4	24.30%	1513	177	850	1025	

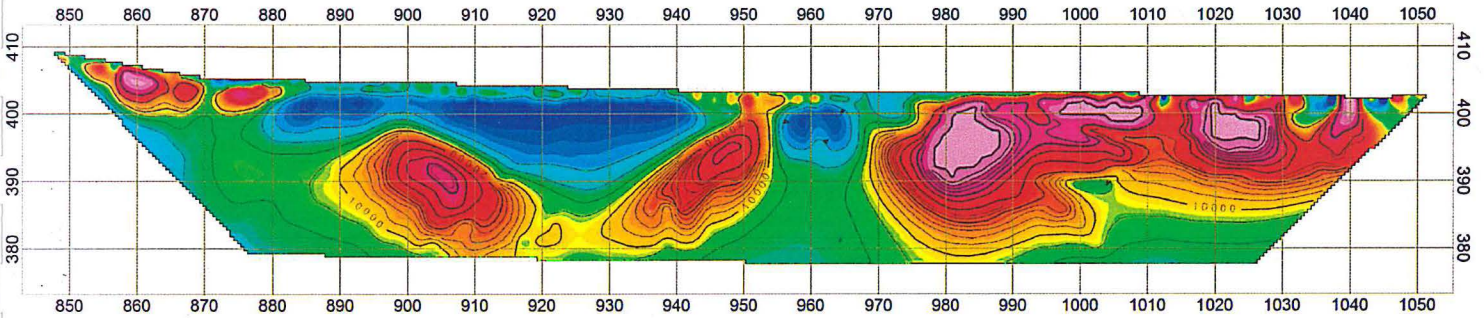


**Figure 13**

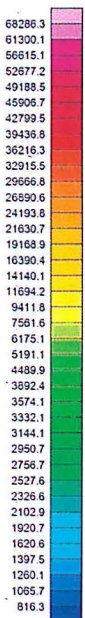
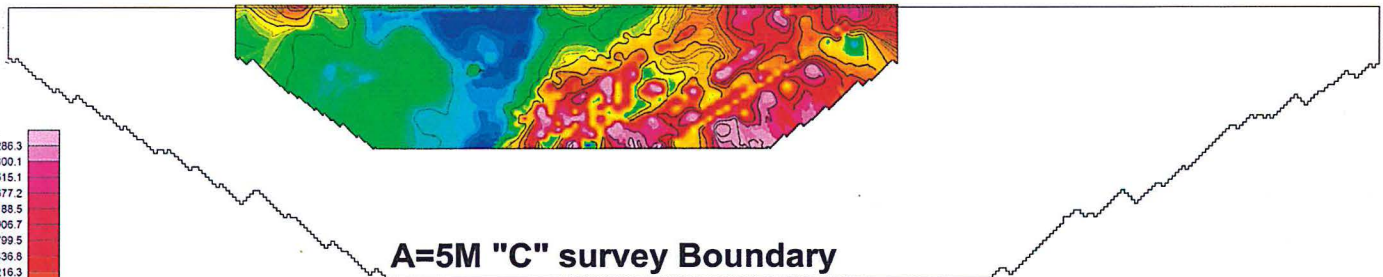
**L 400W  
Schlumberger Array  
A= 5M**



**Apparent RESistivity  
Inversion Model by Earth Imager**



**2.5M Array DATA**



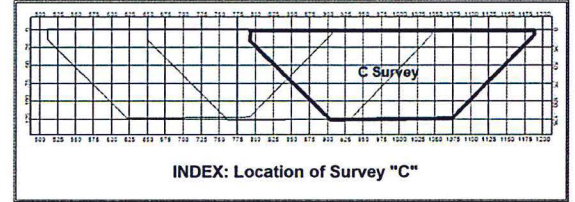
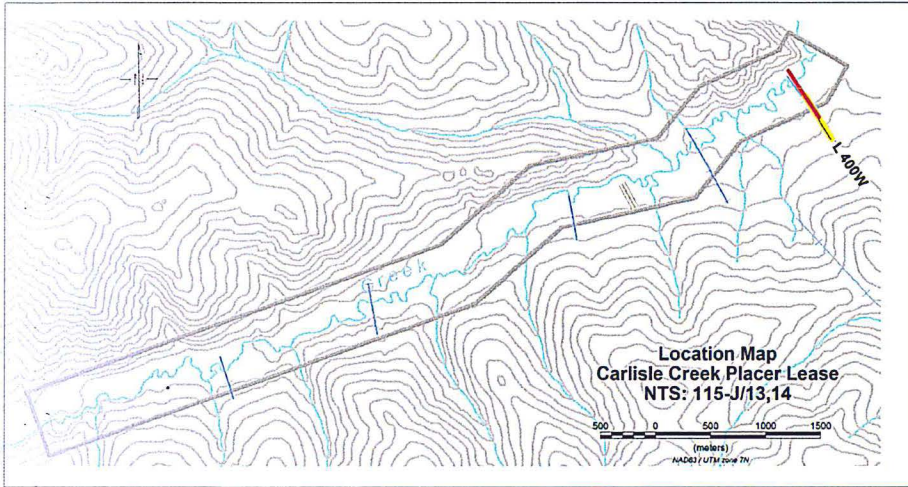
**1077 data points  
Range 0 to 190 Kohms/ 5M  
Mean 17 Kohms/ 5M**

**Ig= 1 to 37 mAmps INDUCED  
Vp= 7 to 4396 mV read  
Contact Resistances 5 to 120 Kohms**

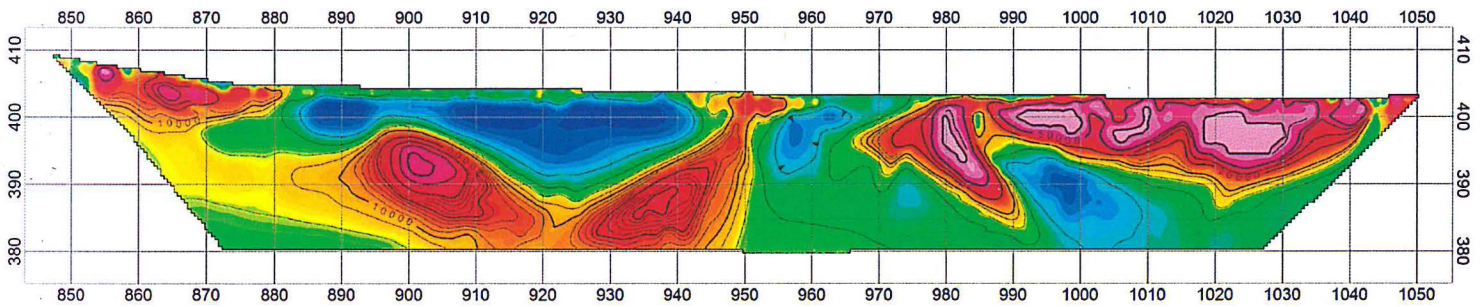
LINE	ARRAY	A spacing	DATA FILE	Misfits	Samples Read	Lost Rdgs.	from	to
L 400W	<b>A Survey</b>							
	xDD	5M	150312xD	25.00%	3403	60	500	915
	S13	5M	150312SI	9.00%	1391	1	500	910
	SC	5M	150312SC	9.00%	1364	92	500	850
	<b>B Survey</b>							
	xDD	5M	150313xD	57.0%	2771	692	640	1000
	S13	5M	150313SI	41.0%	1294	98	640	1050
	sC	5M	150313SC	33.00%	1035	421	640	1035
	<b>C Survey</b>							
	xDD	5M	150314xD	36.00%	3116	347	780	1195
S13	5M	150314SI	16.00%	1240	152	780	1195	
sC	5M	150314SC	19.00%	1328	128	780	1195	
<b>South Survey</b>								
xDD	2.5M	150316xD	10	3338	125	535	745	
SC	2.5M	150316SC	0.2	1229	227	535	740	
S13	2.5M	150316SI	2.80%	1347	45	535	730	
S14	2.5M	150316S4	3.80%	1662	66	535	735	
<b>North Survey</b>								
xDD	2.5M	150315xD	51.40%	1255	508	850	1065	
SC	2.5M	150315SC	37.90%	1100	356	850	1060	
S13	2.5M	150315SI	22.80%	1240	152	850	1040	
S14	2.5M	150315S4	24.30%	1513	177	850	1025	

**Figure 14**

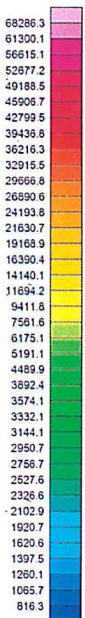
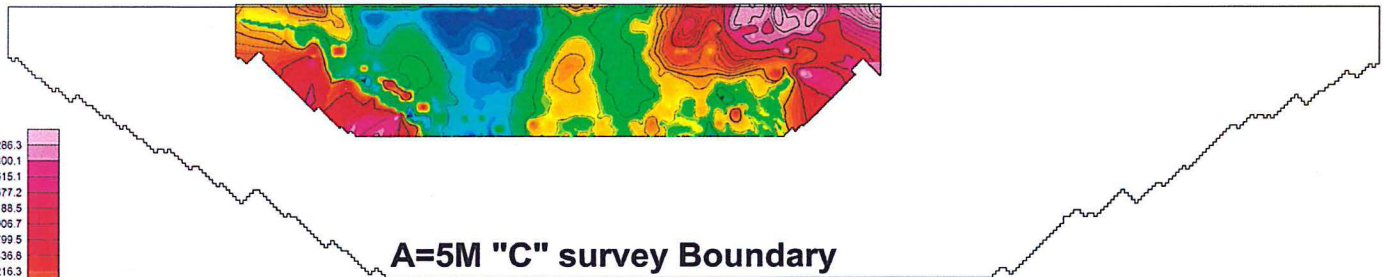
**L 400W  
Inverted Schlumberger Array  
A= 5M**



**Apparent RESistivity  
Inversion Model by Earth Imager**



**2.5M Dipole DATA**



**Si3 Array**

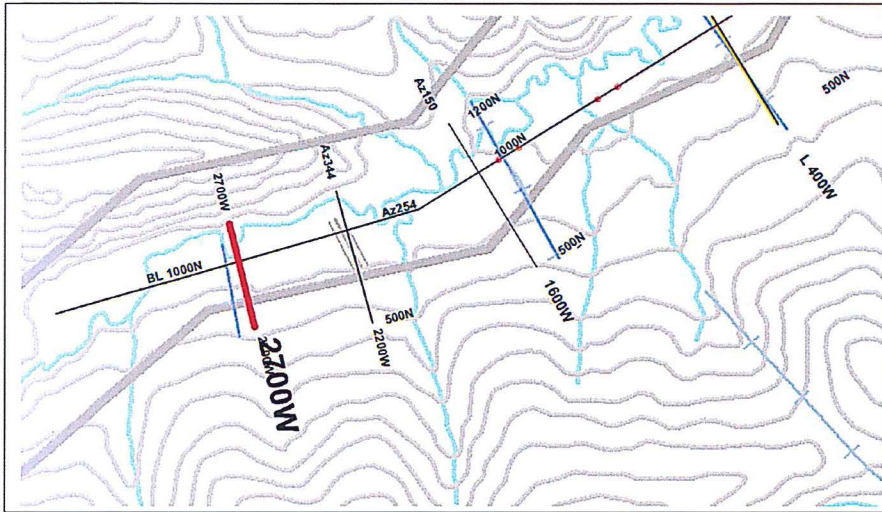
1144 data points  
Range 0 to 76 Kohms/ 5M  
Mean 7.5 Kohms/ 5M

Ig= 1 to 32 mAmps INDuced  
Vp= 3.9 to 4358 mV read  
Contact Resistances 5 to 110 Kohms

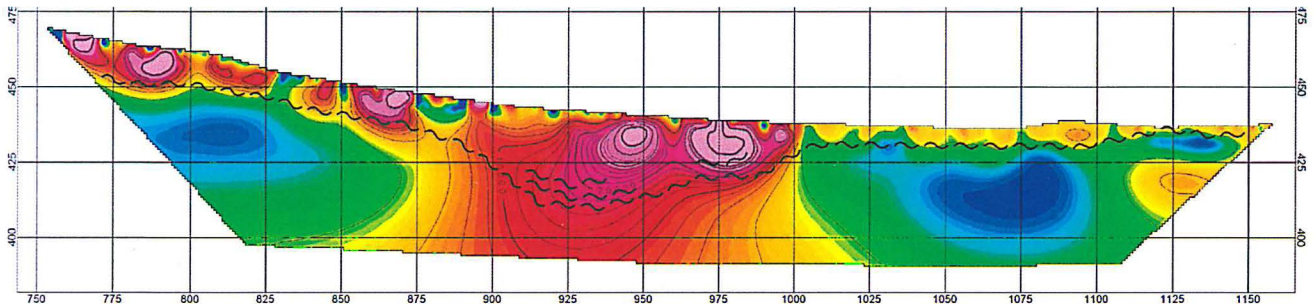
LINE	ARRAY	A spacing	DATA FILE	Misfits	Samples Read	Lost Rdgs.	from	to
L 400W	<b>A Survey</b>							
	xDD	5M	150312xD	25.00%	3403	60	500	915
	Si3	5M	150312Si	9.00%	1391	1	500	910
	SC	5M	150312SC	9.00%	1364	92	500	850
	<b>B Survey</b>							
	xDD	5M	150313xD	57.00%	2771	692	640	1000
	Si3	5M	150313Si	41.00%	1294	98	640	1050
	sC	5M	150313SC	33.00%	1035	421	640	1035
	<b>C Survey</b>							
	xDD	5M	150314xD	36.00%	3116	347	780	1195
	Si3	5M	150314Si	16.00%	1240	152	780	1195
	sC	5M	150314SC	19.00%	1328	128	780	1195
	<b>South Survey</b>							
	xDD	2.5M	150316xD	10	3338	125	535	745
	SC	2.5M	150316SC	0.2	1229	227	535	740
	Si3	2.5M	150316Si	2.80%	1347	45	535	730
	Si4	2.5M	150316S4	3.80%	1662	66	535	735
	<b>North Survey</b>							
	xDD	2.5M	150315xD	51.40%	1255	508	850	1055
	SC	2.5M	150315SC	37.90%	1100	356	850	1050
	Si3	2.5M	150315Si	22.80%	1240	152	850	1040
	Si4	2.5M	150315S4	24.30%	1513	177	850	1025

survey

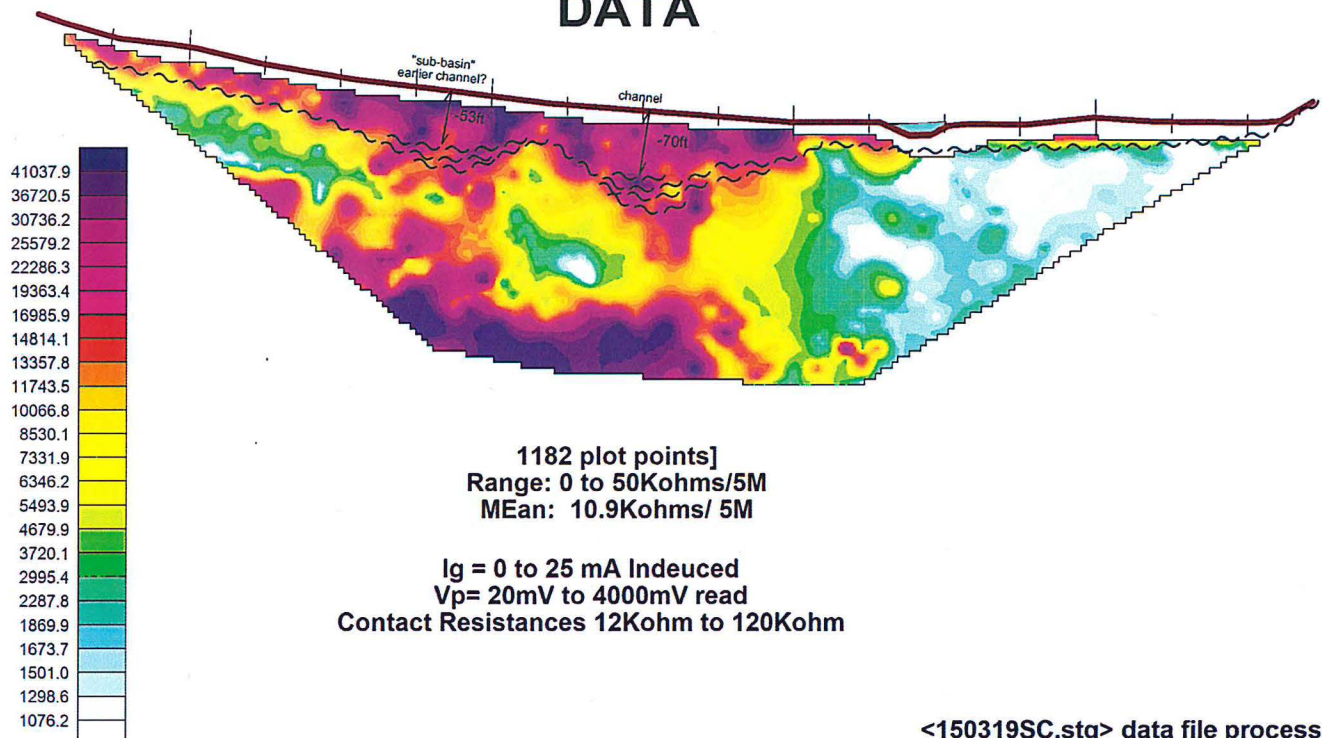
**Figure 15**  
**L 2700W**  
**Schlumberger Array**

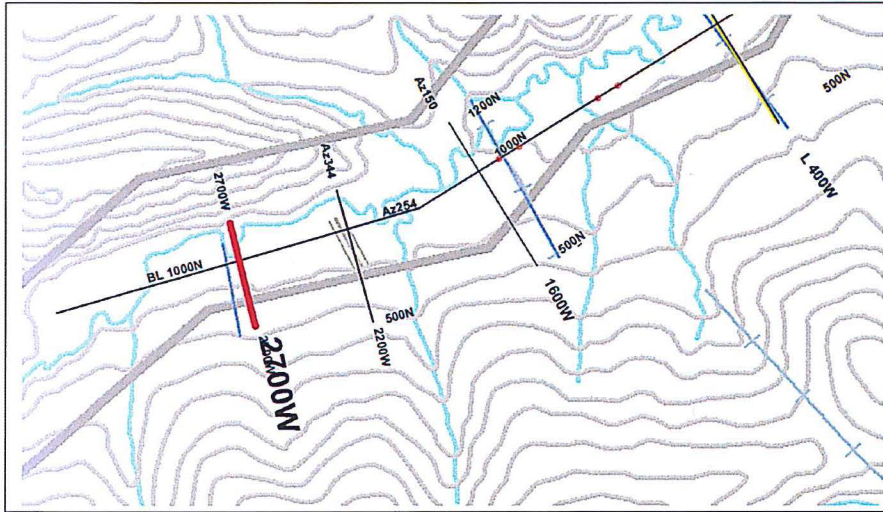


**Apparent Resistivity  
 Inversion MODEL by Earth Imager**



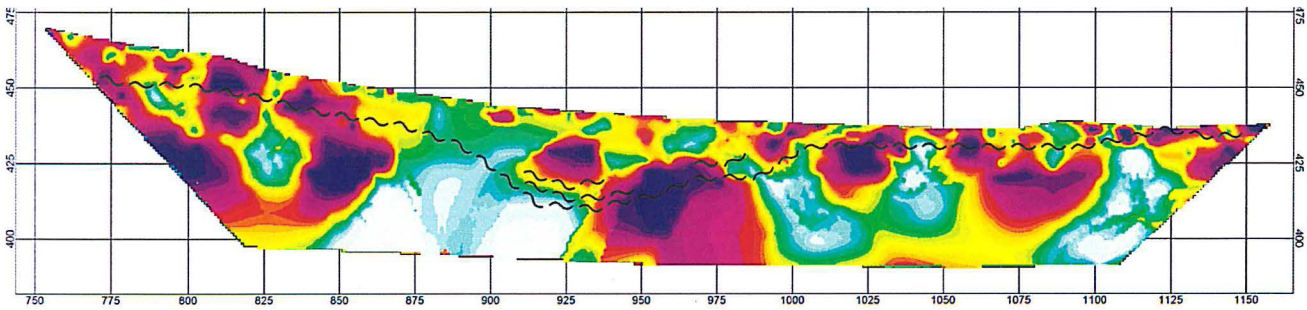
**DATA**



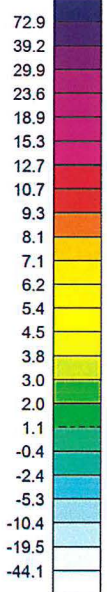
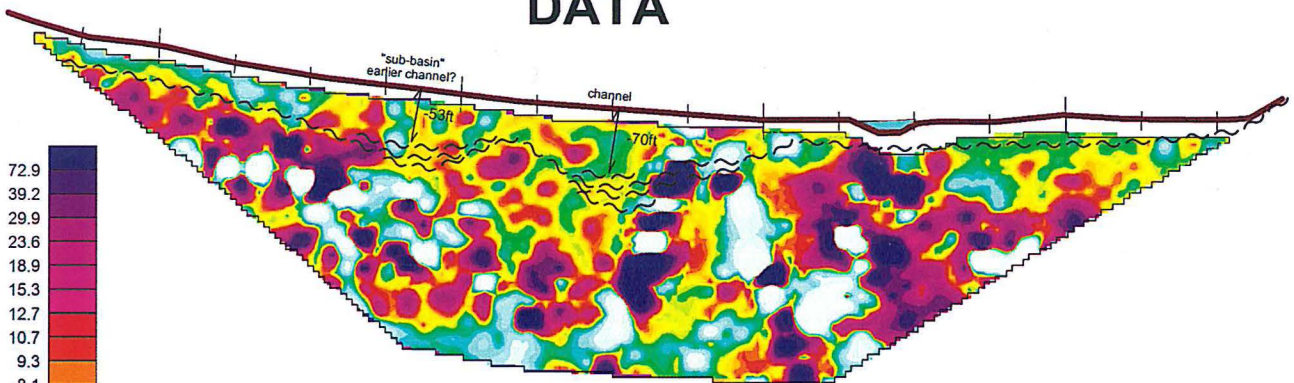


**Figure 15a**  
**L 2700W**  
 Schlumberger Array

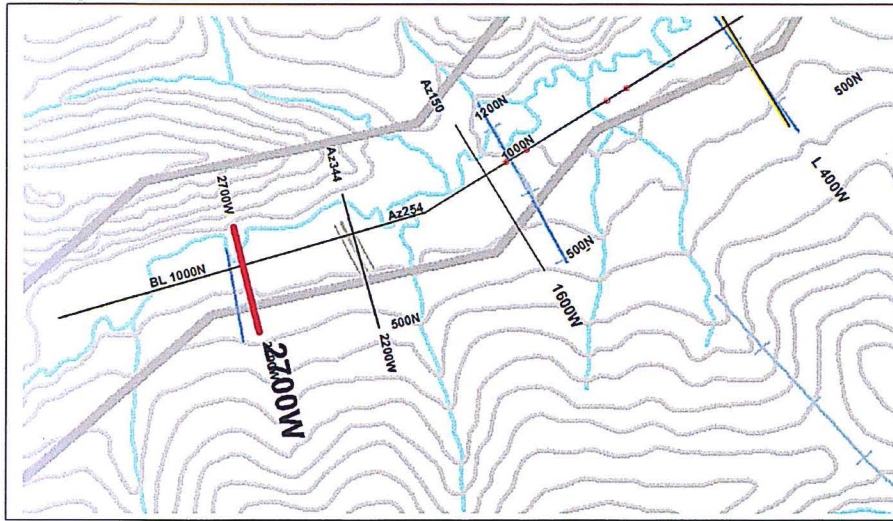
**Apparent Chargeability  
 Inversion MODEL by Earth Imager**



**DATA**

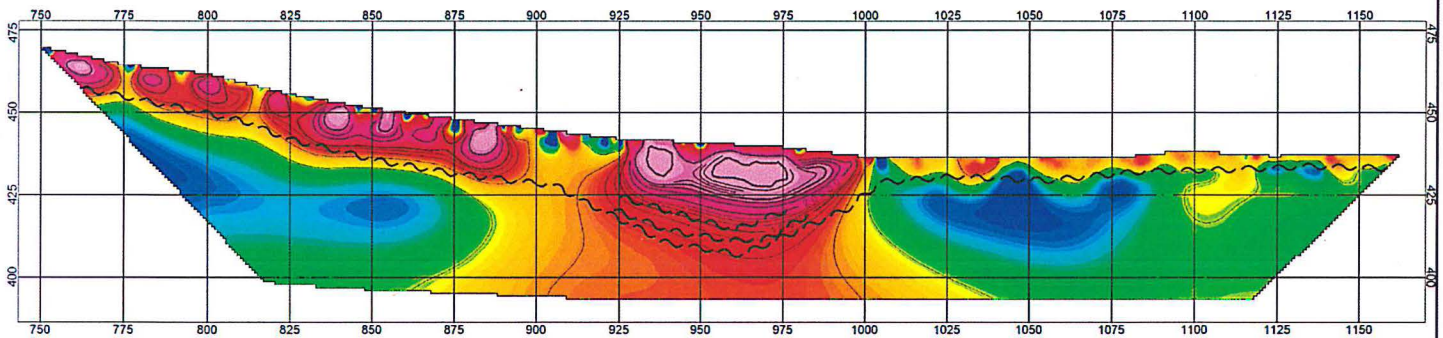


1182 plot points]  
 Range: 0 to 100 mV/V  
 Mean: 7.6 mV/V  
 Ig = 0 to 25 mA Induced  
 Vp = 20mV to 4000mV read  
 Contact Resistances 12Kohm to 120Kohm

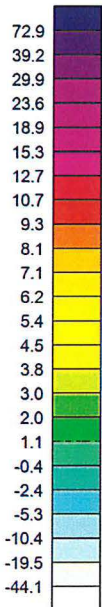
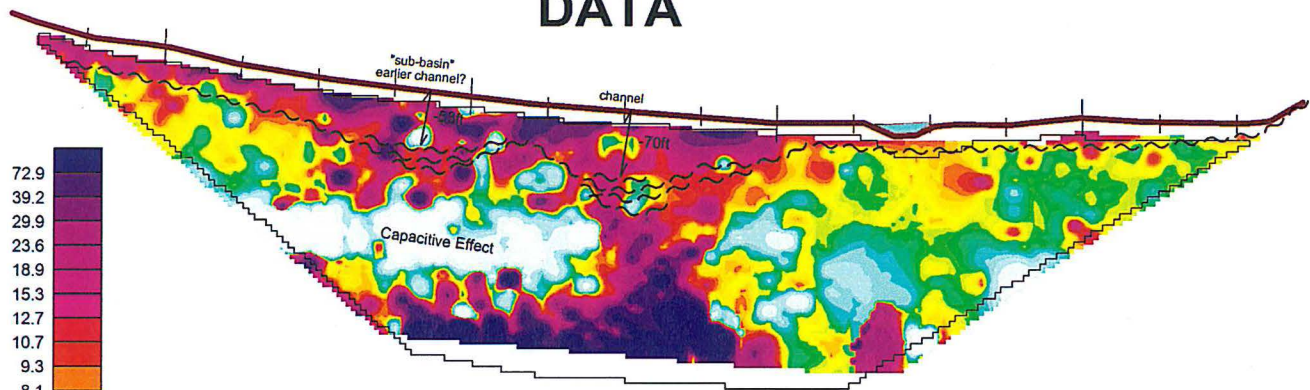


**Figure 16**  
**L 2700W**  
 Inverted Schlumberger Array

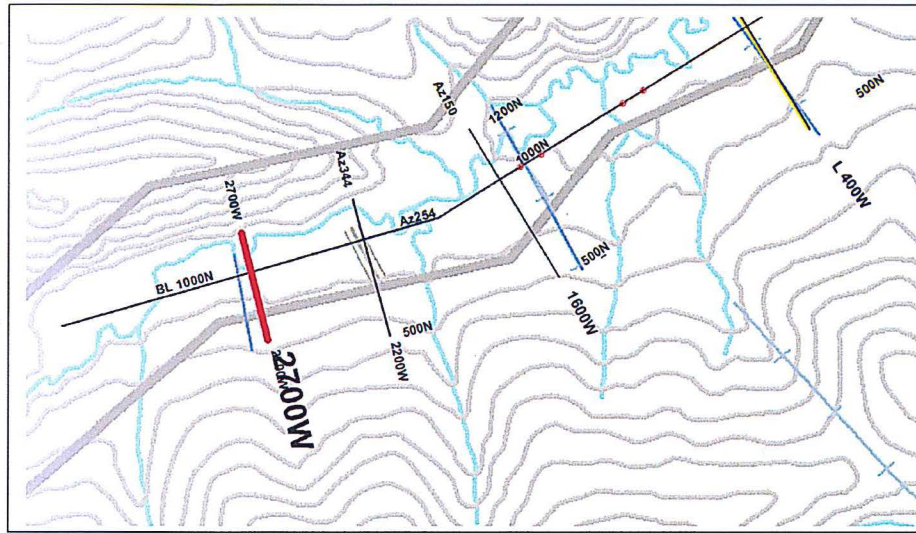
**Apparent Resistivity  
 Inversion MODEL by Earth Imager**



**DATA**

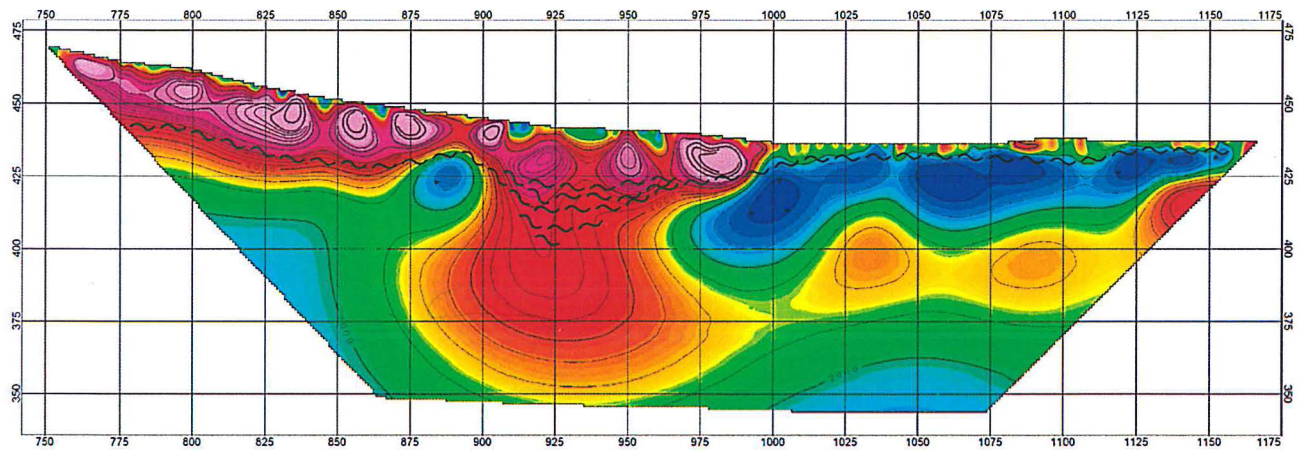


1143 plot points]  
 Range: 0 to 50 Kohms/ 5M  
 Mean: 21 Kohms/5M  
 I<sub>g</sub> = 1 to 23 mA Induced  
 V<sub>p</sub> = 1.2mV to 4200mV read  
 Contact Resistances 12 Kohm to 120 Kohm

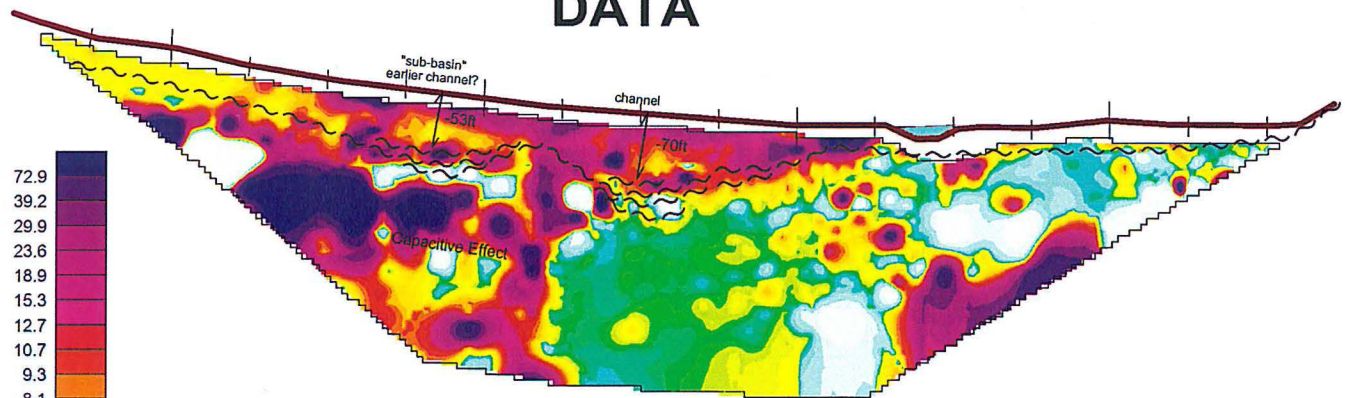


**Figure 17**  
**L 2700W**  
 extended Dipole-Dipole Array

**Apparent Resistivity  
 Inversion MODEL by Earth Imager**



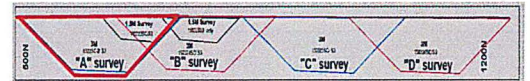
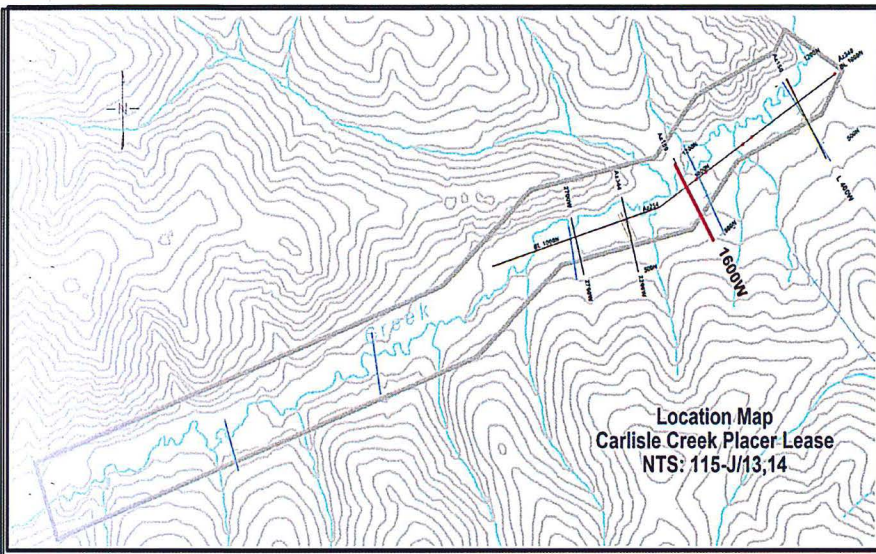
**DATA**



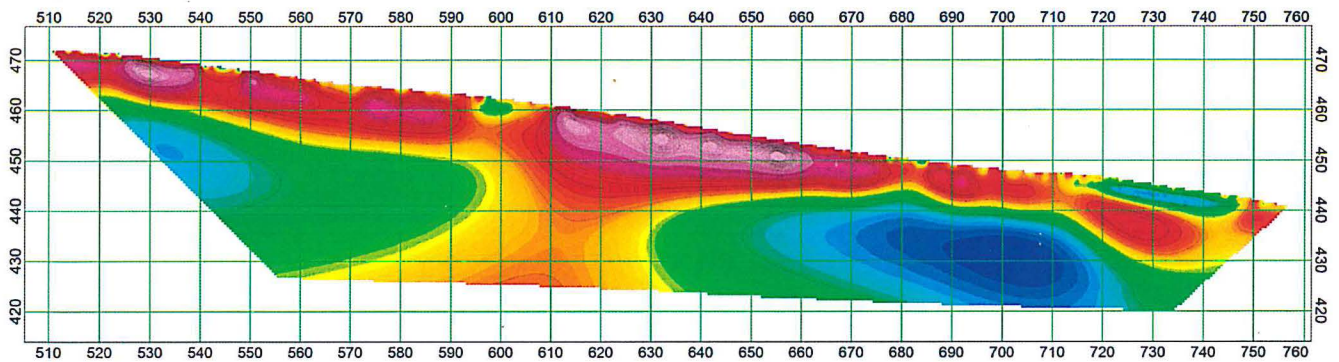
1426 plot points]  
 Range: 0 to 150 Kohms/ 5M  
 Mean: 36 Kohms/5M

Ig = 1 to 27 mA Induced  
 Vp = 1.01mV to 4095mV read  
 Contact Resistances 12Kohm to 120Kohm

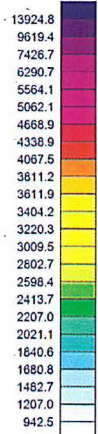
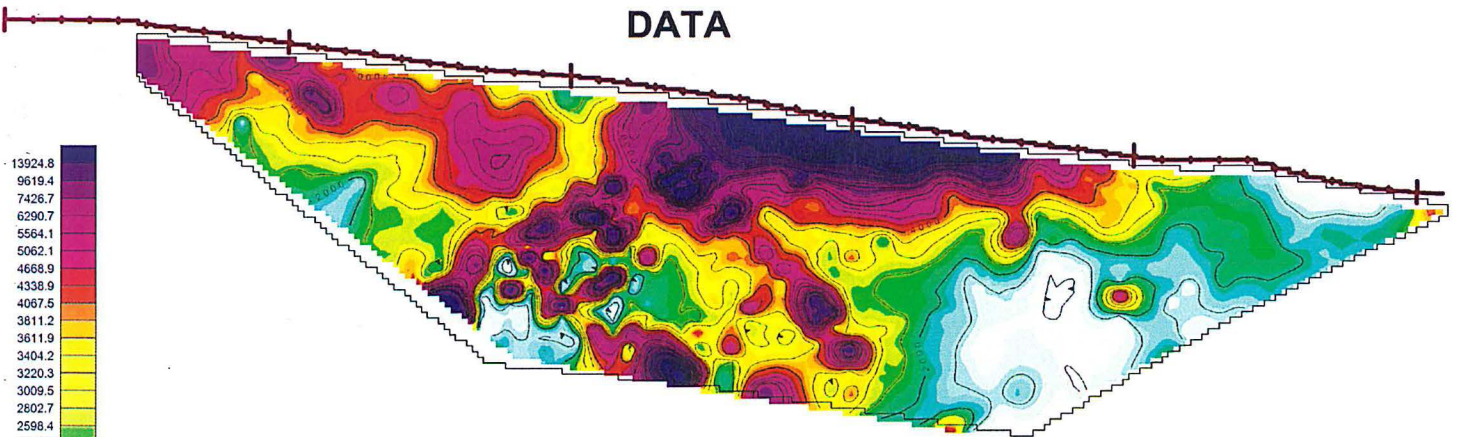
**Figure 18**  
**Line 1600W**  
**Schlumberger Array**



**Apparent Resistivity  
 Inversion MODEL by Earth Imager**



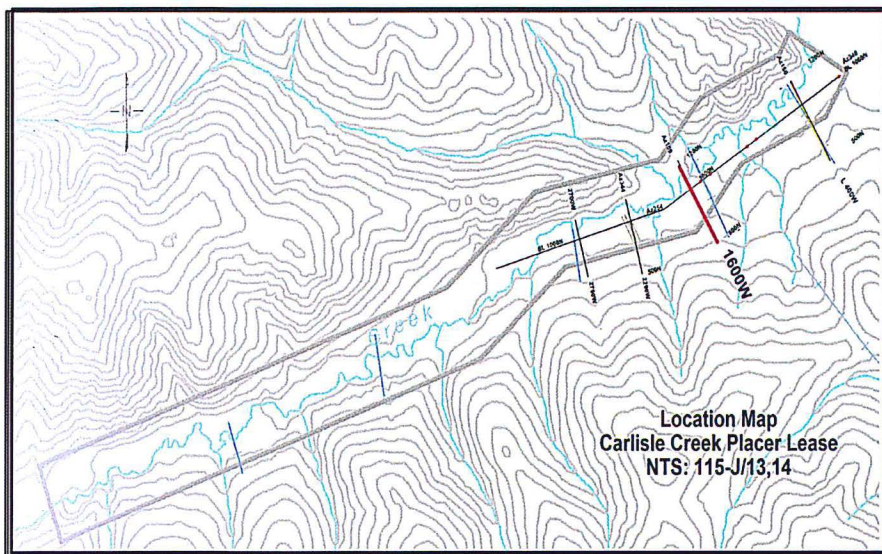
**DATA**



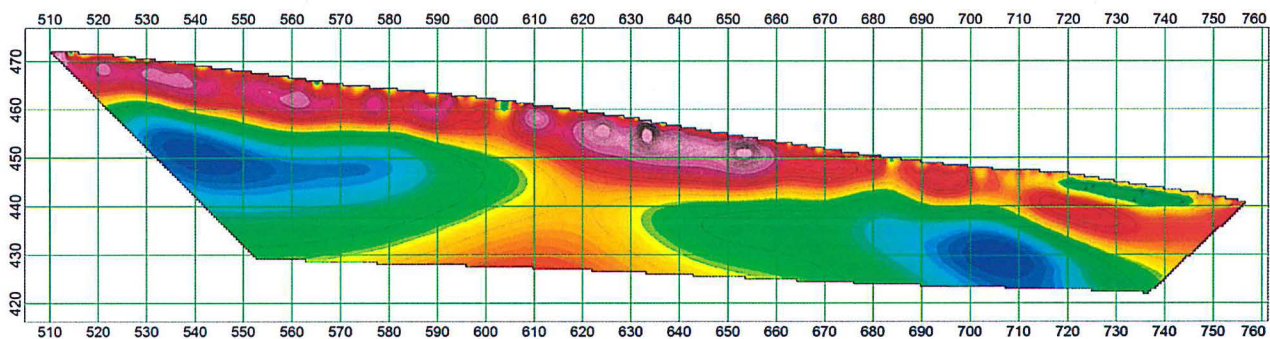
Apparent Resistivity

**0322SC-2.stg**  
 Data Read: 1098 points  
 1049plot points  
 From 235 ohm to 45Kohm, 4892ohm mean  
 Ig= 1.0 to 93mA, Vp= 3.8 to 4158mV

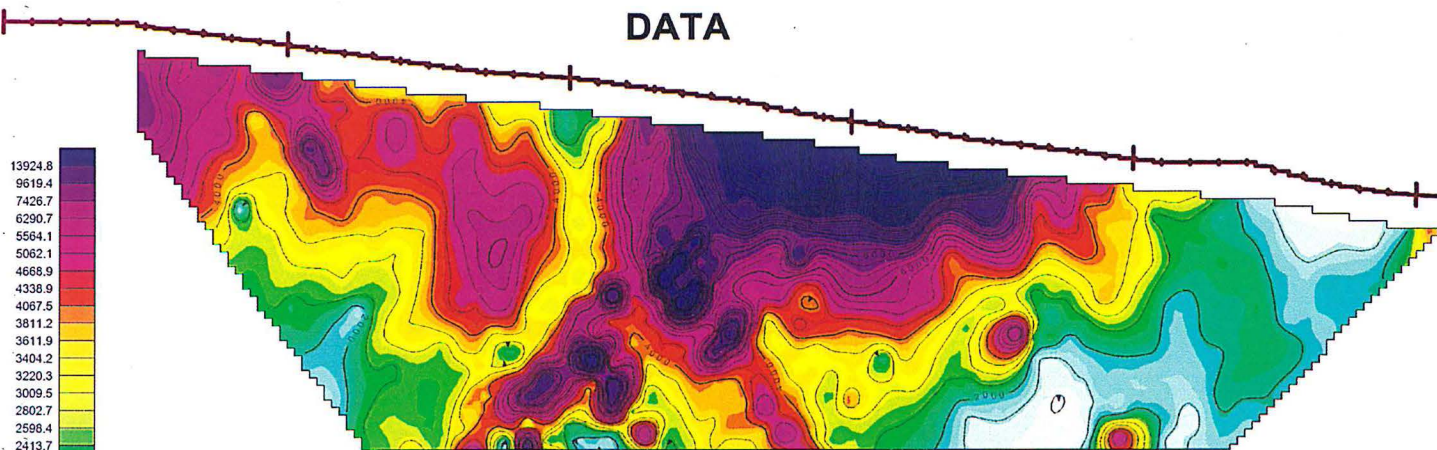
**Figure 19**  
**Line 1600W**  
**Inverted Schlumberger Array**



**Apparent Resistivity  
 Inversion MODEL by Earth Imager**



**DATA**



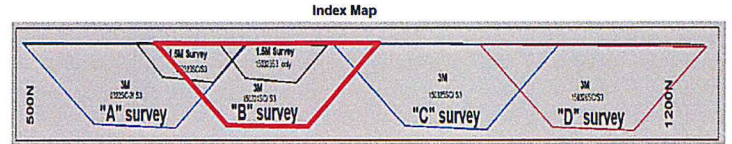
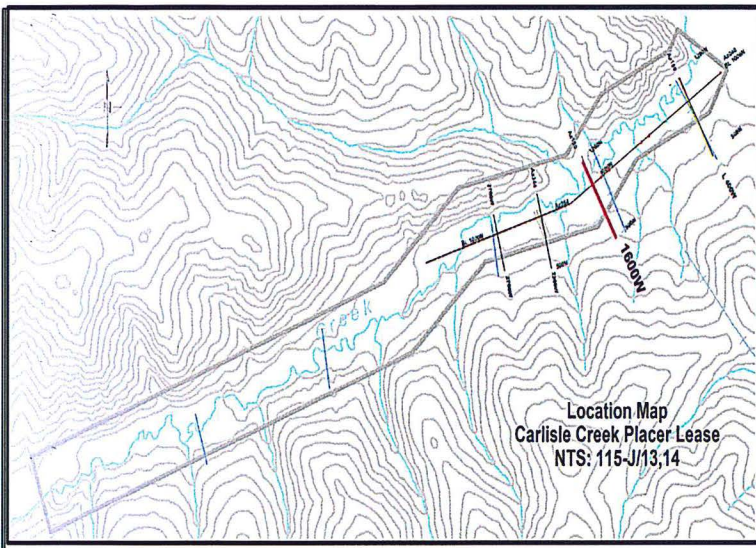
- 13924.8
- 9619.4
- 7426.7
- 6290.7
- 5564.1
- 5062.1
- 4668.9
- 4338.9
- 4067.5
- 3811.2
- 3611.9
- 3404.2
- 3220.3
- 3009.5
- 2802.7
- 2598.4
- 2413.7
- 2207.0
- 2021.1
- 1840.6
- 1680.8
- 1462.7
- 1207.0
- 942.5

Apparent Resistivity

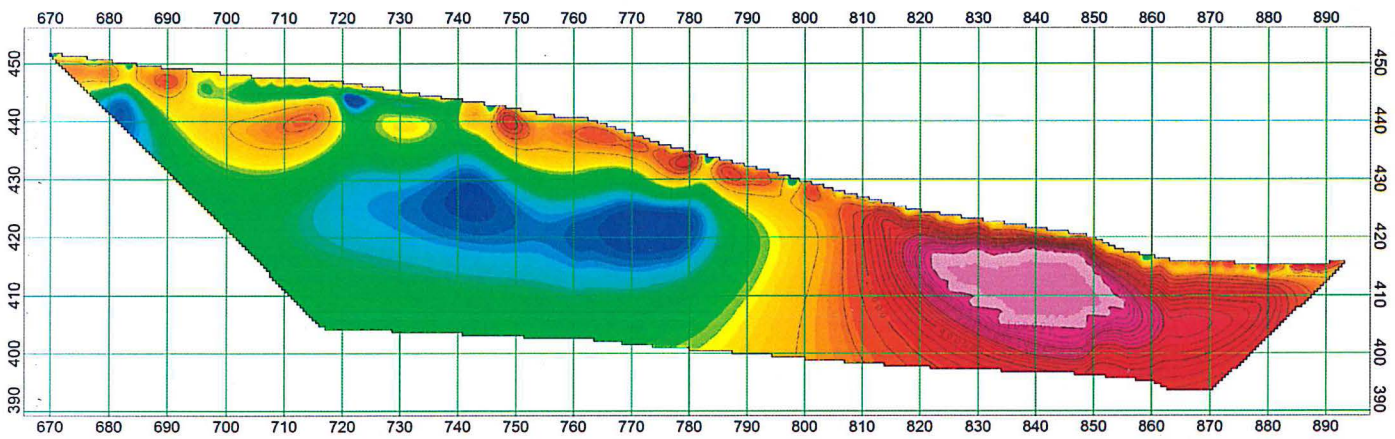
**150322S3.stg**  
 Data Read: 1390 points  
 10002plot points  
 From 1012 ohm to 24Kohm, 4.6Kohm mean  
 I<sub>g</sub> = 1.0 to 38mA, V<sub>p</sub> = 2.58 to 4.3mV



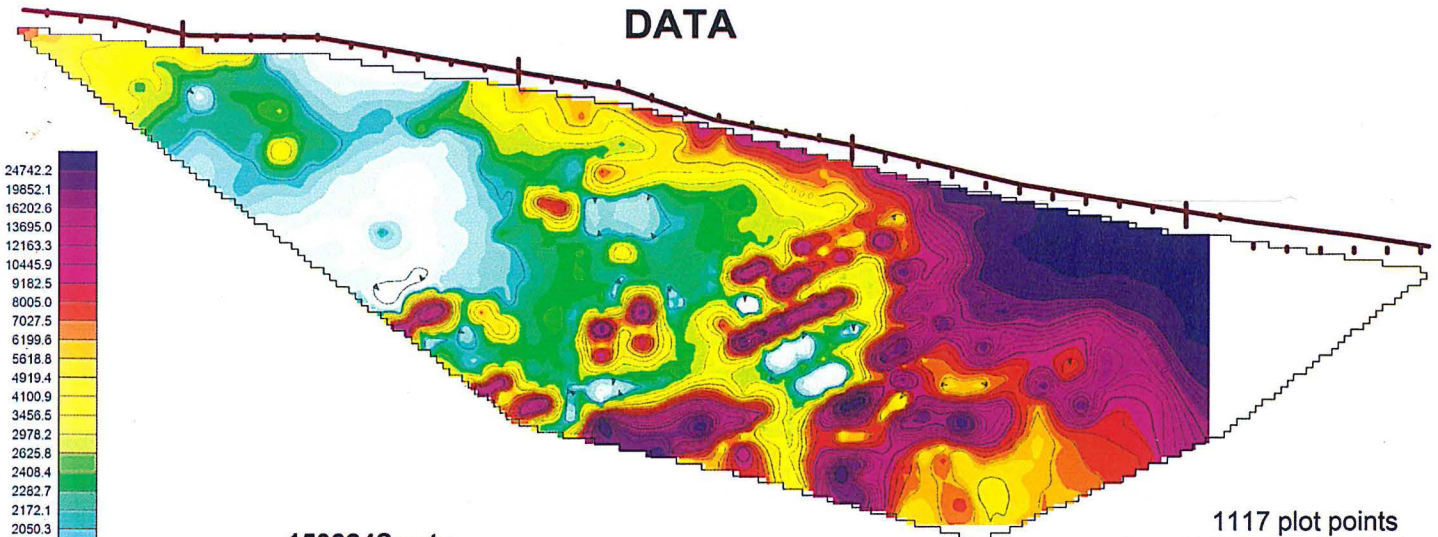
**Figure 20**  
**Line 1600W**  
**Schlumberger Array**



**Apparent Resistivity**  
**Inversion Model by Earth Imager**



**DATA**

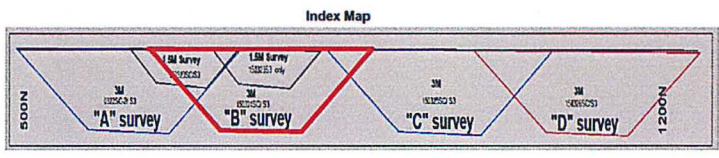
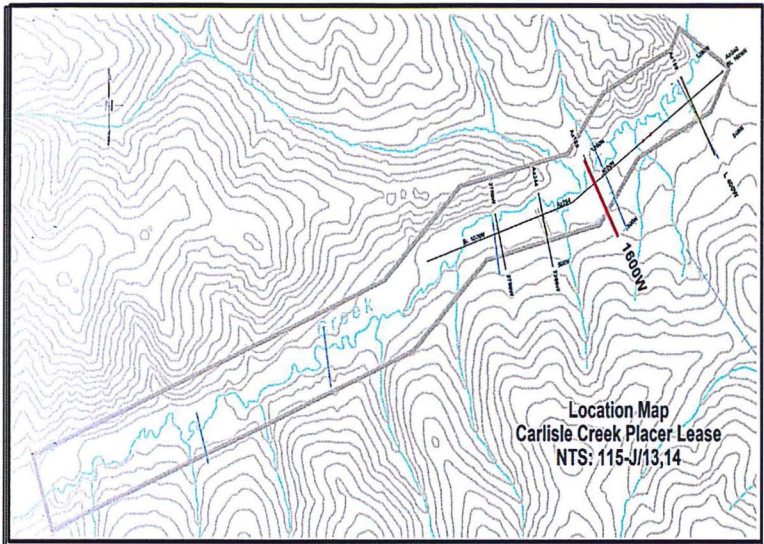


**150324Sc.stg**  
 Data REad: 1449 points

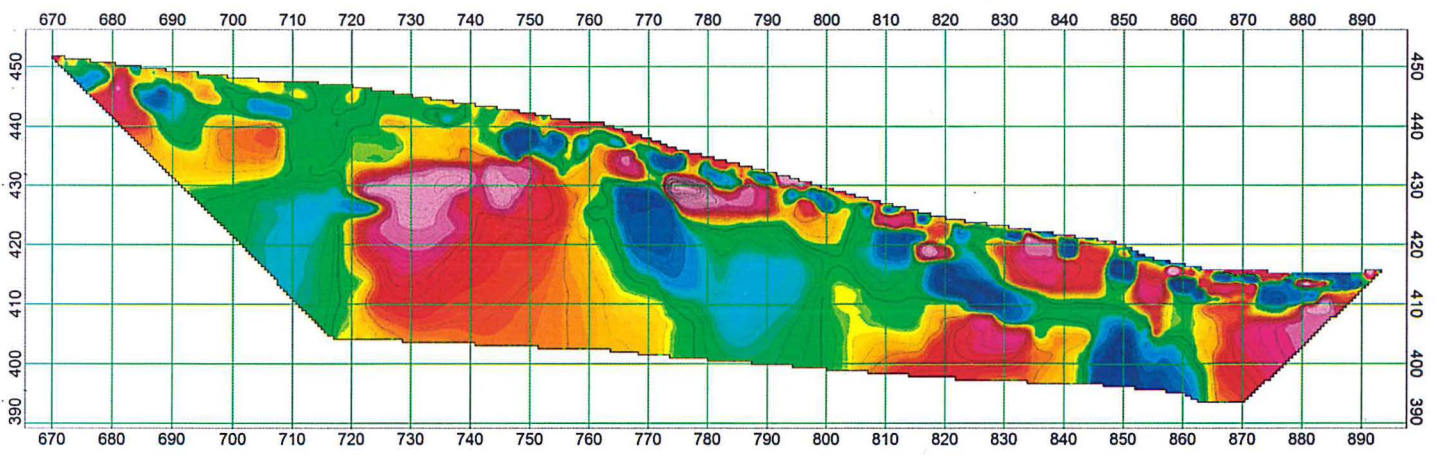
1117 plot points  
 from 579ohm to 28.6Kohm/ 3M  
 23Kohm Mean  
 Ig= 1.0 to 104 mA  
 Vp= 8.8 to 4309 mV

Apparent Resistivity

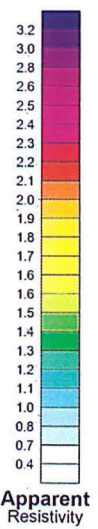
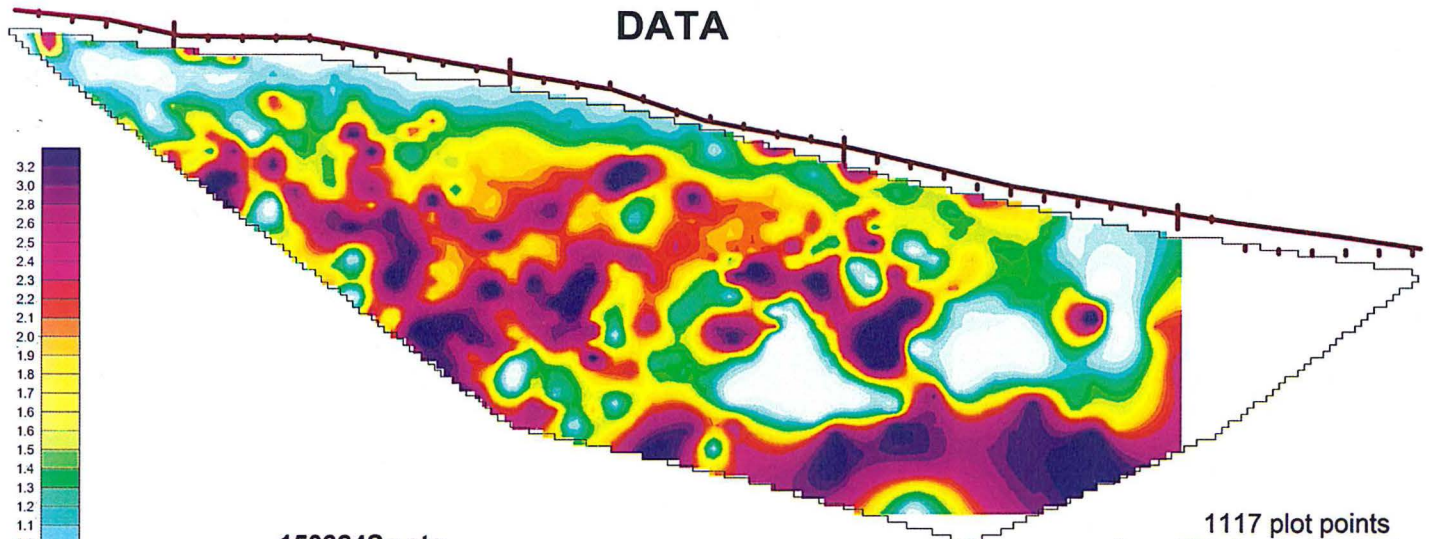
# Figure 20a Line 1600W Schlumberger Array



## Apparent Chargeability Inversion Model by Earth Imager



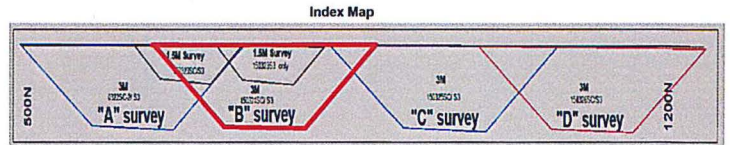
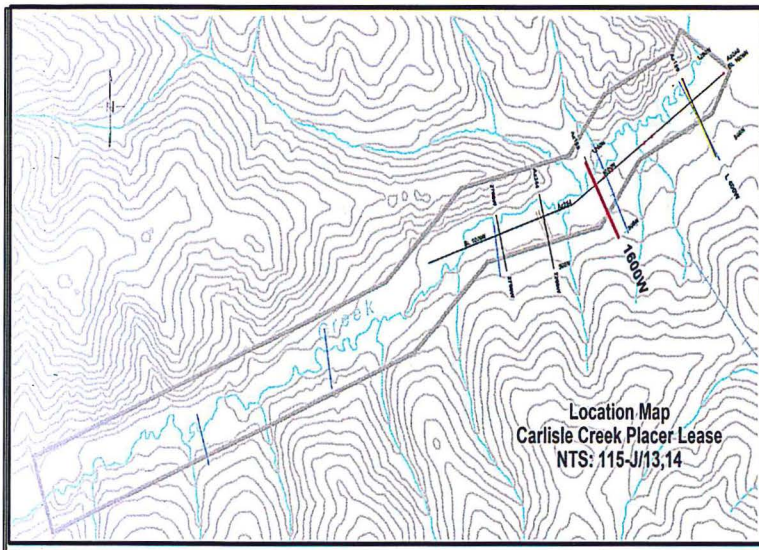
## DATA



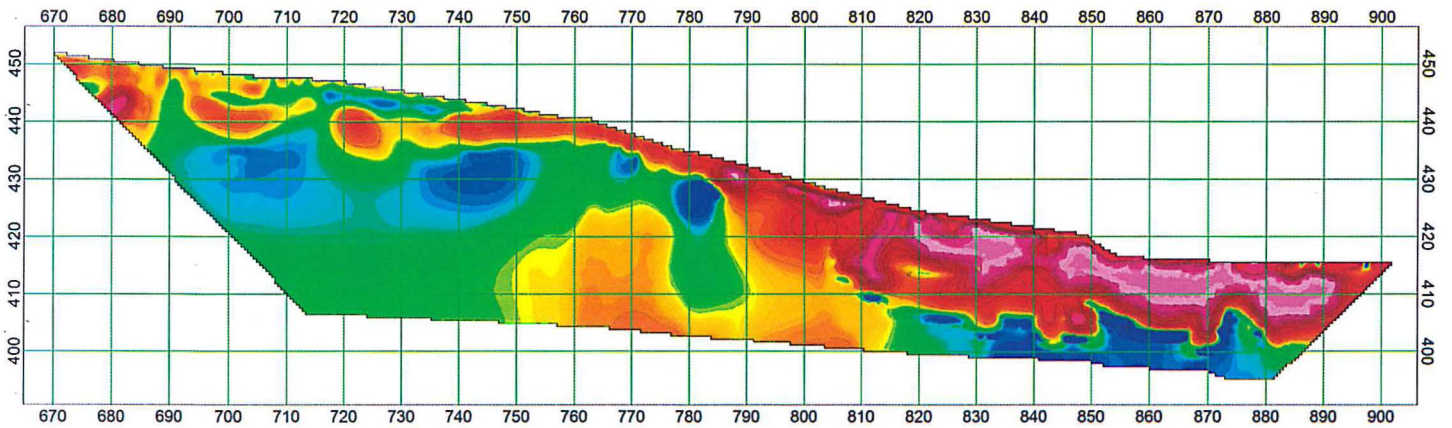
150324Sc.stg  
Data REad: 1449 points

1117 plot points  
from 579ohm to 28.6Kohm/ 3M  
23Kohm Mean  
I<sub>g</sub>= 1.0 to 104 mA  
V<sub>p</sub>= 8.8 to 4309 mV

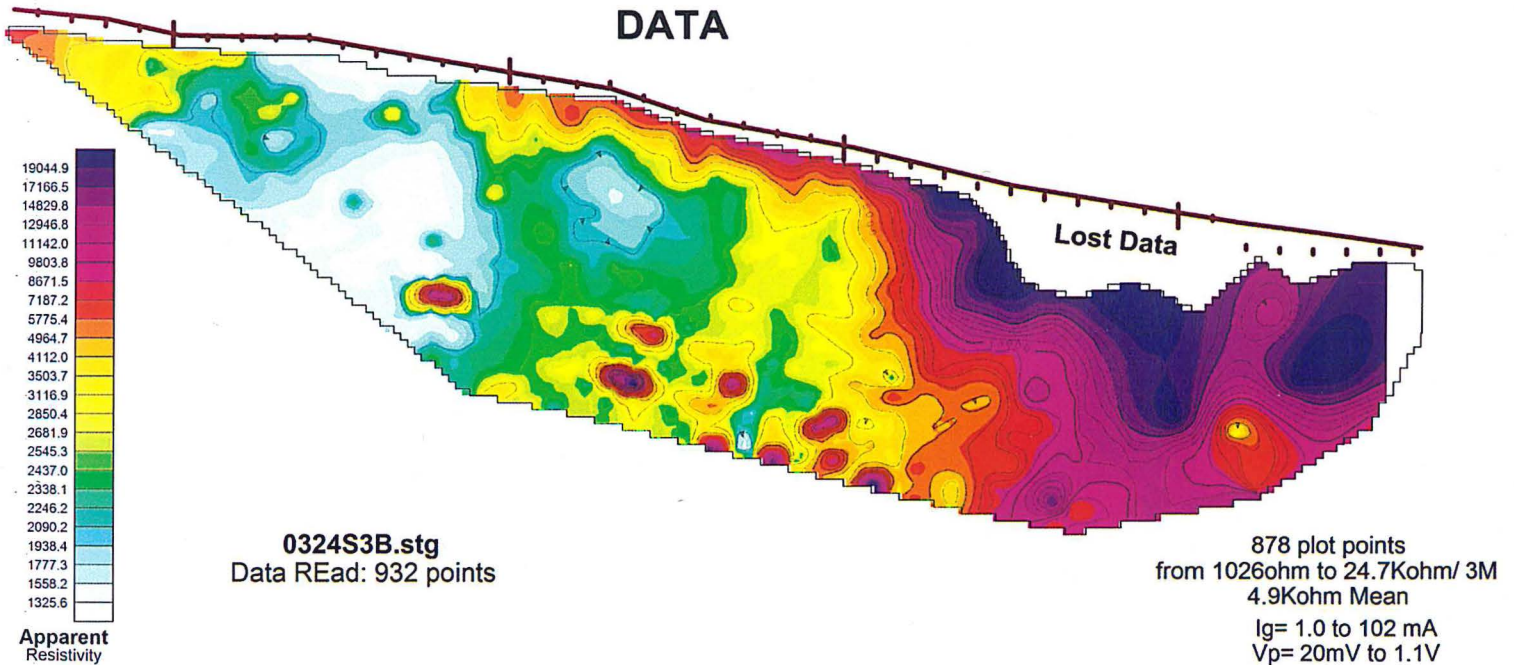
# Figure 21 Line 1600W Inverted Schlumberger Array



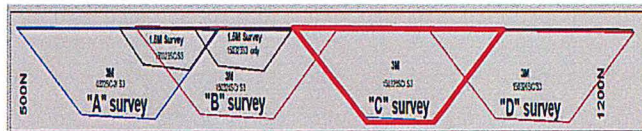
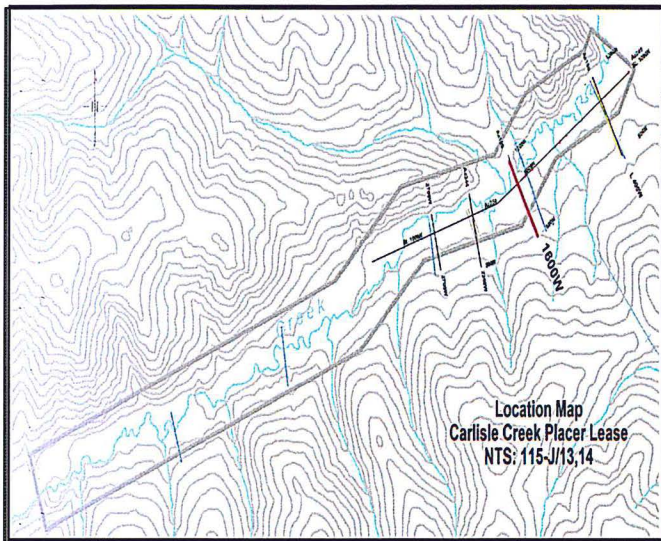
## Apparent Resistivity Inversion Model by Earth Imager



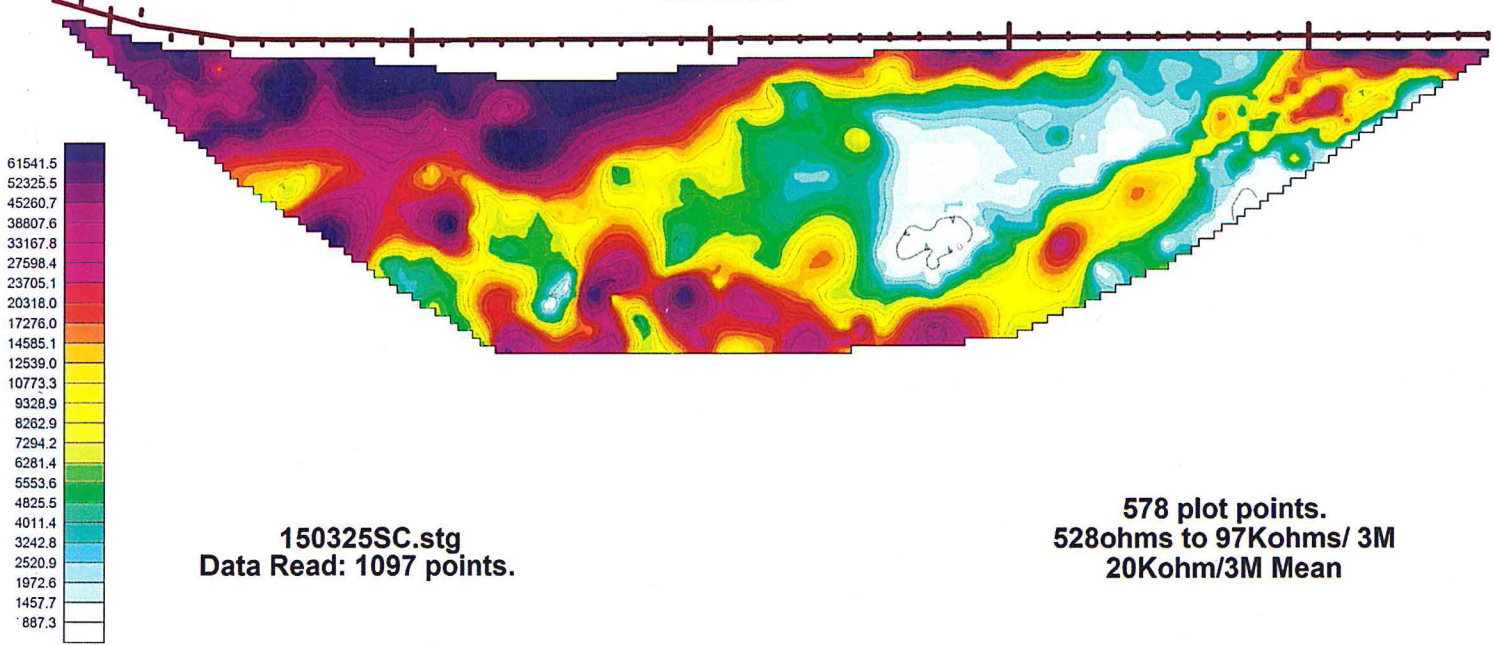
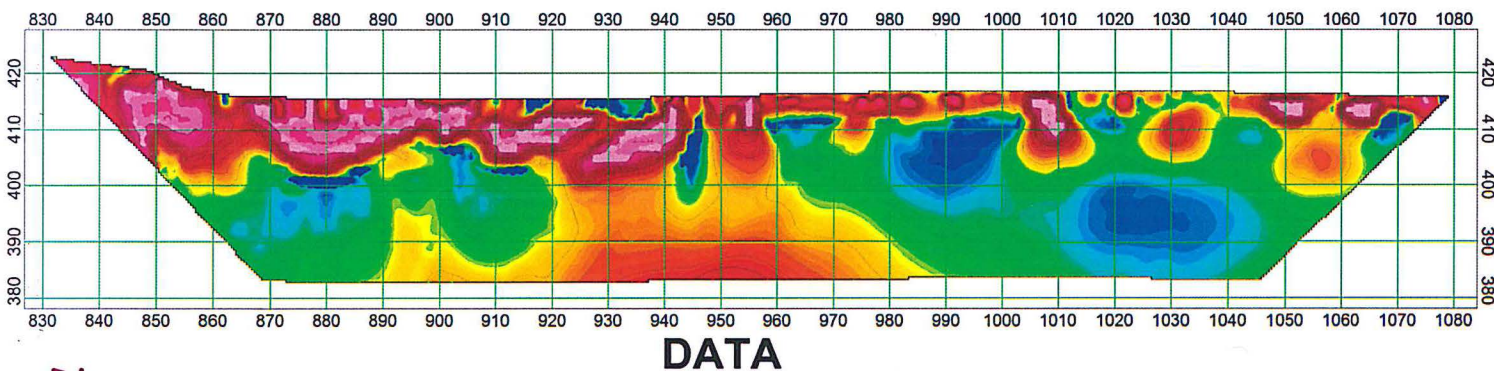
## DATA



**Figure 22**  
**Line 1600W**  
**Schlumberger Array**



**Apparent Resistivity**  
**Inversion Model by Earth Imager**

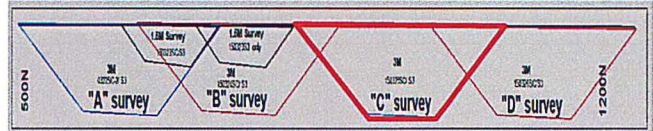
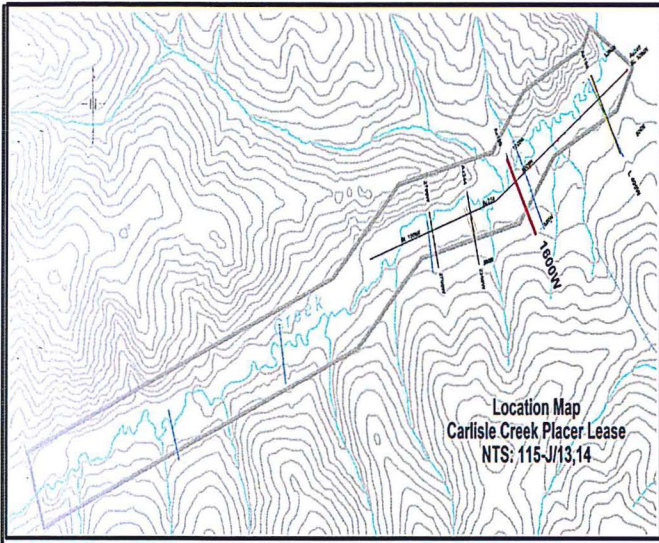


**150325SC.stg**  
**Data Read: 1097 points.**

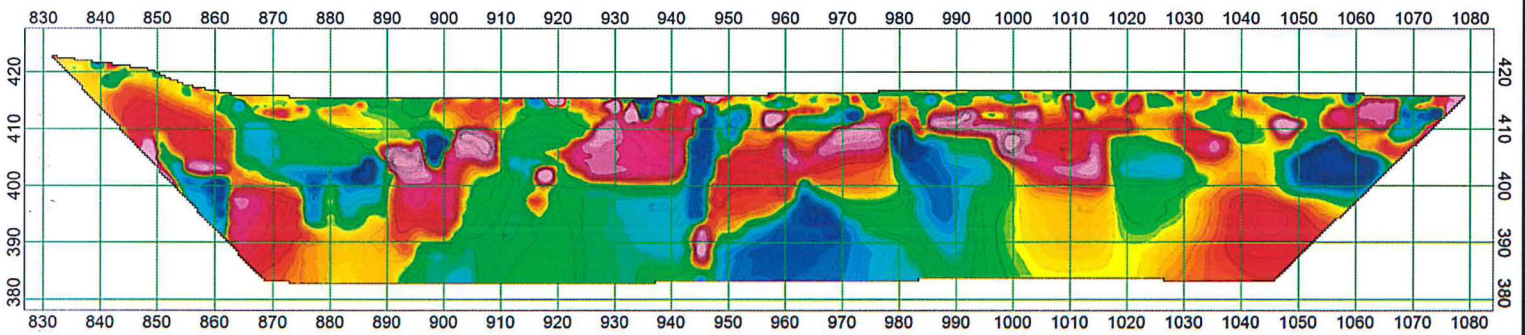
**578 plot points.**  
**528ohms to 97Kohms/ 3M**  
**20Kohm/3M Mean**

**Apparent Resistivity**

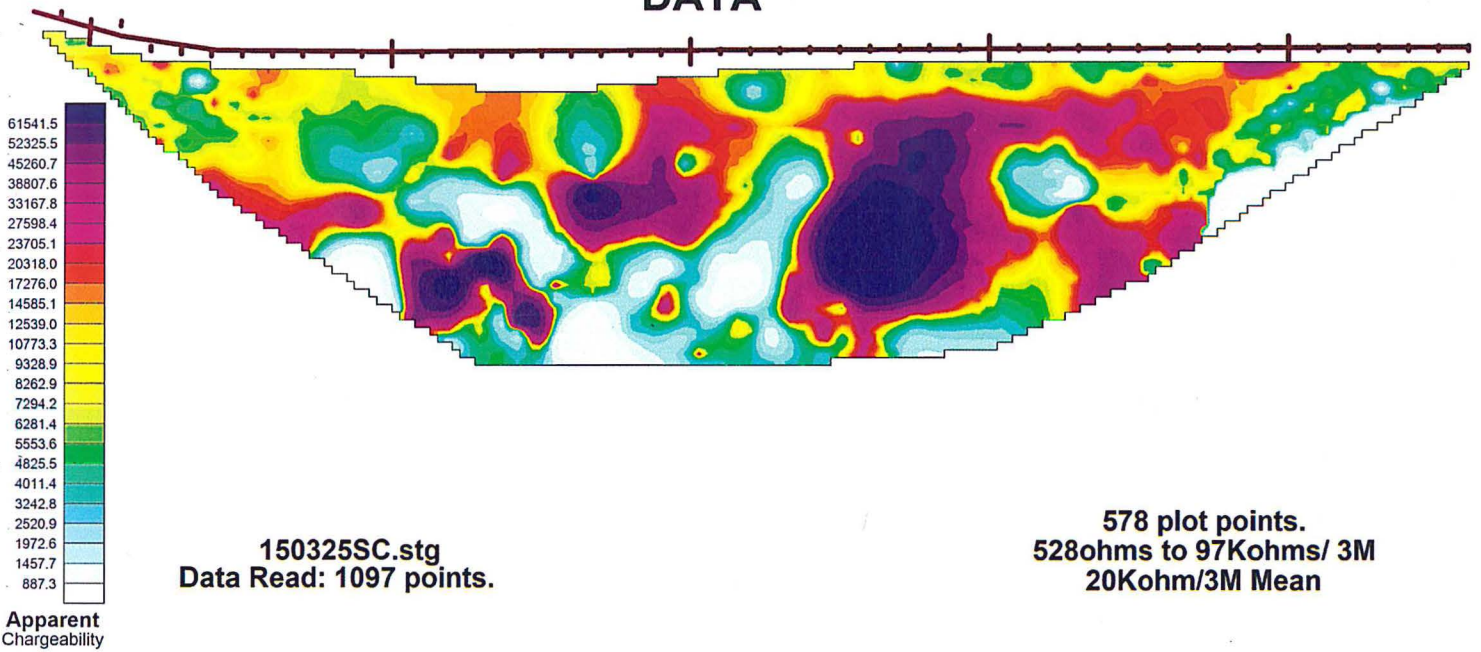
**Figure 22a**  
**Line 1600W**  
**Schlumberger Array**



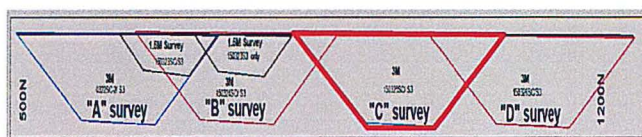
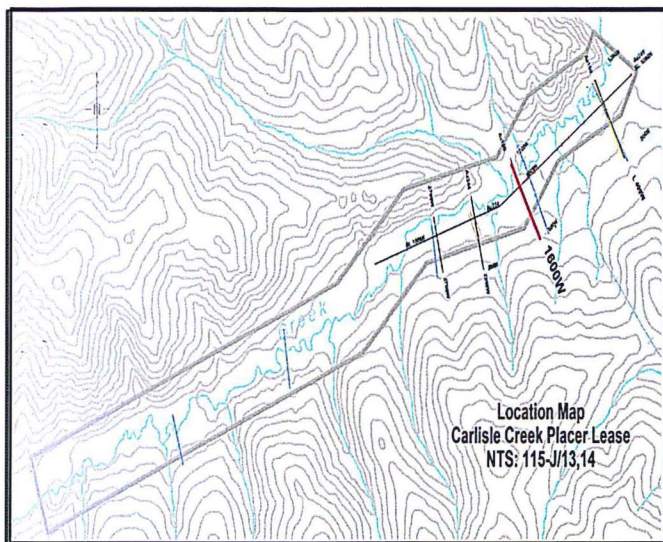
**Apparent Chargeability**  
**Inversion Model by Earth Imager**



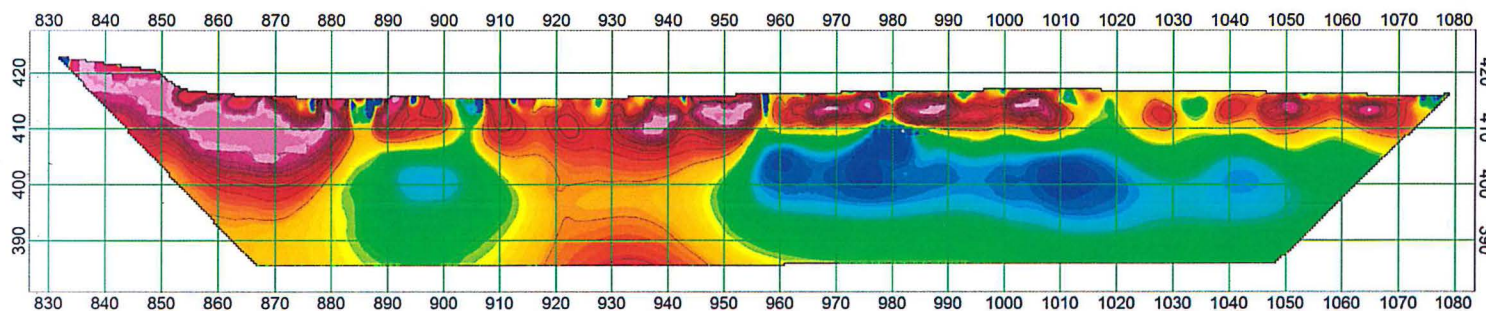
**DATA**



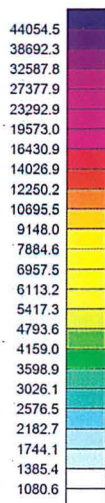
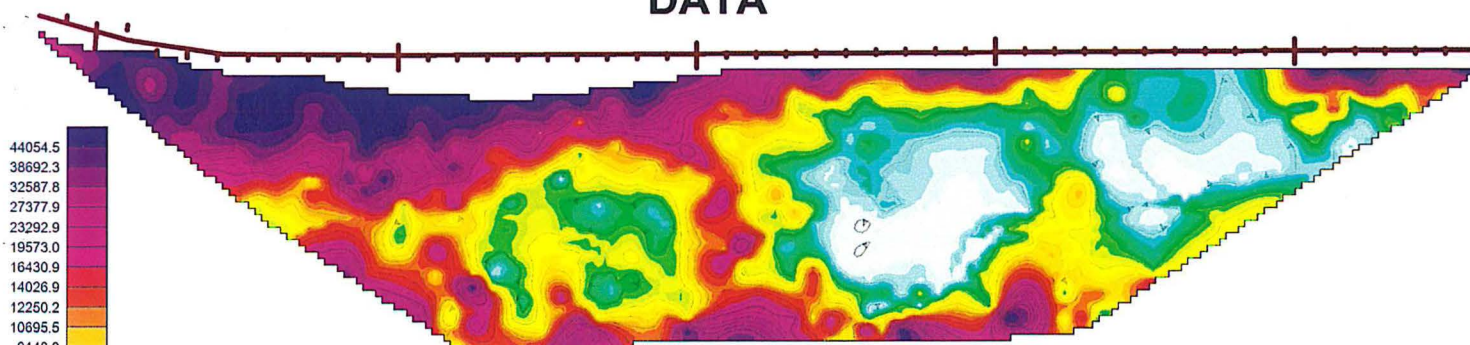
**Figure 23**  
**Line 1600W**  
**Inverted Schlumberger Array**



**Apparent Chargeability**  
**Inversion Model by Earth Imager**



**DATA**



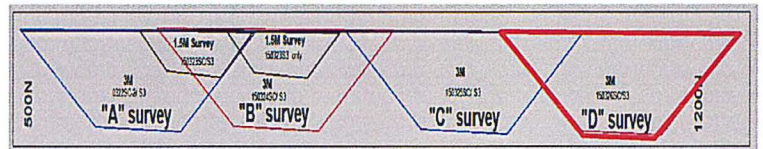
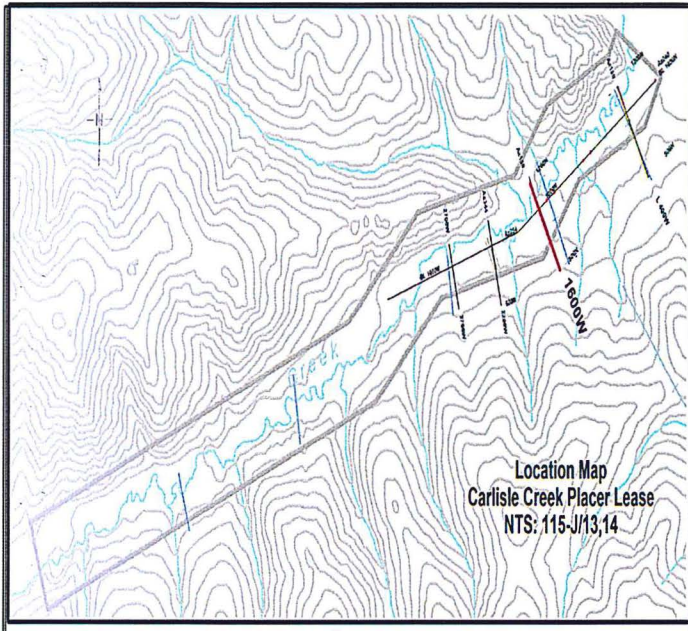
**1503253C.stg**  
**Data Read: 1097 points.**

**963 plot points.**  
**1.0Kohms to 49.9Kohms/ 3M**  
**14.6Kohm/3M Mean**

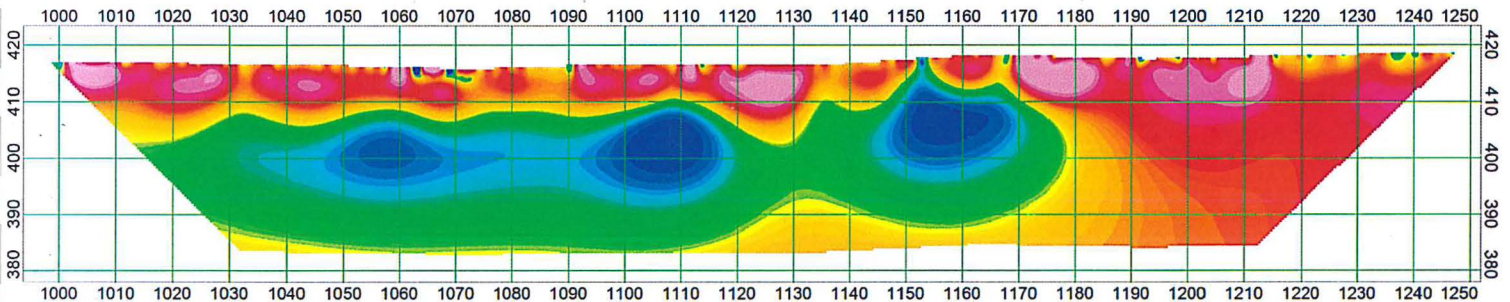
**Apparent Resistivity**

**Ig= 1 to 18 mAmps**  
**Vp= 1 to 4560 mVolts**

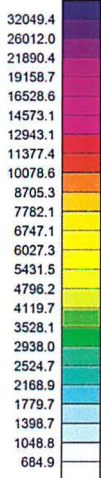
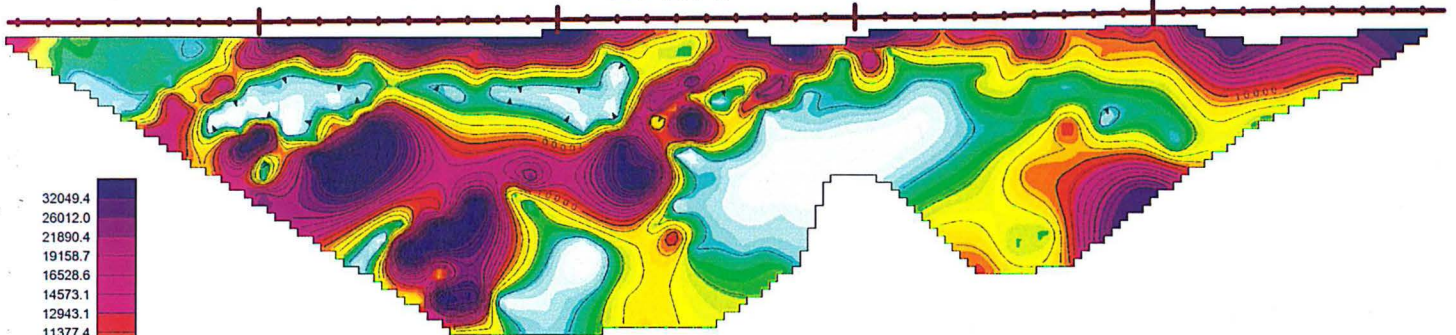
**Figure 24**  
**L 1600W**  
**Scumberger Array**



**Apparent Resistivity  
 Inversion Model by Earth Imager**



**DATA**



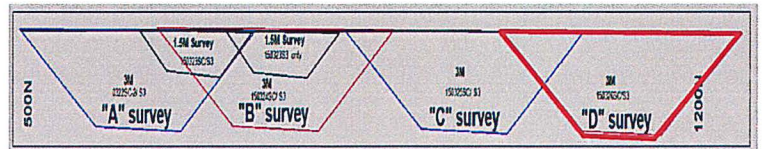
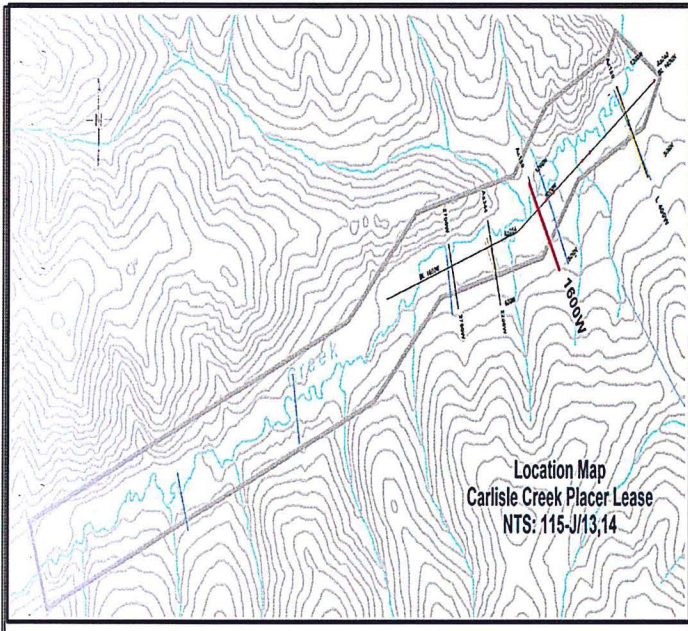
Apparent Resistivity

**150326SC.stg**  
**Data Read: 1044 points.**

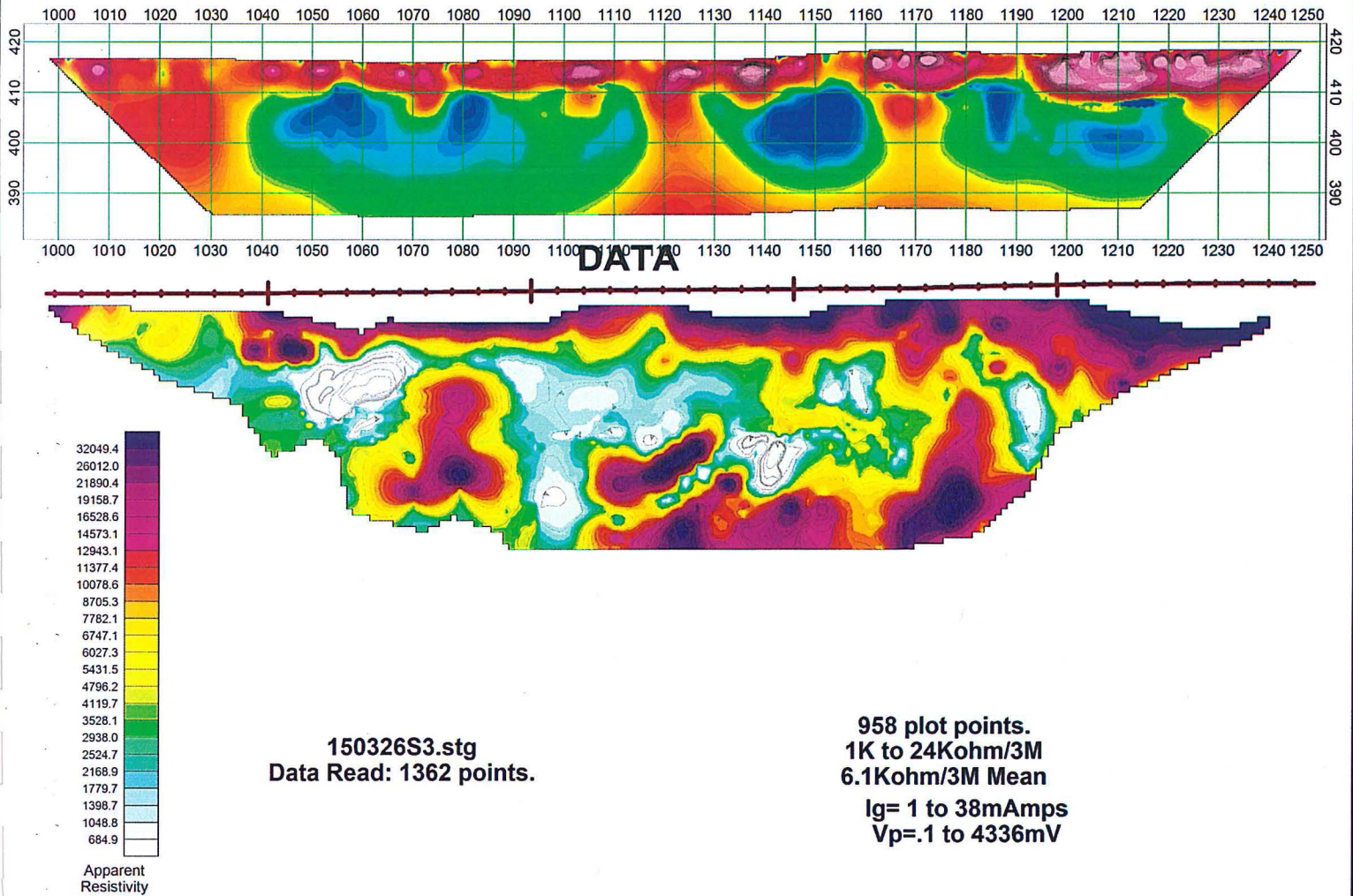
**469 plot points.**  
**1K to 49Kohm/3M**  
**10.4Kohm/3M Mean**  
**Ig= 1 to 38mAmps**  
**Vp=.1 to 4336mV**

# Figure 25 L 1600W

## Inverted Schlumberger Array



### Apparent Resistivity Inversion Model by Earth Imager





Carlisle Placer Survey Invoice: March 7-27, 2015			
<b>Overview:</b>			
GroundTruth Exploration ran DC Resistivity, Ground Penetrating Radar and Ground Magnetic surveys on the Carlisle Creek Placer Project. A crew of 5 conducted the surveys. The Project was accessed by 3 snowmobiles from Dawson, YT (3 days to trail in with crew of 3-March7-9) and 1 fixed wing Islander load to nearby Coffee creek airstrip which was moved over with An Astar D2 (March 10). One resupply was done with Astar on March 17/15. The team demobilized by snowmobiling to Coffee airstrip and all gear/staff was hauled out by fixed wing on March 27/15.			
The DC Resistivity survey was run on 4 cross valley lines which included 13 resistivity profile setups, reading a total of 31 arrays. Survey conditions were tough and the planned lines were adjusted during the field survey.			
The Magnetic and Ground Penetrating Radar surveys were conducted over the DC Resistivity Survey profiles.			
<b>IP Survey Cost Breakdown:</b>			
<b>Wages:</b>		<b>Total</b>	<b>Description</b>
Geophysical Operator * \$450/day	\$ 450.00	\$ 7,650.00	17 Operator days (Mar 10-26 x1)
Field Assistants * \$350/day	\$ 350.00	\$ 23,800.00	68 Tech days (Mar 10-26 x4)
Travel Days * \$250/day	\$ 250.00	\$ 3,500.00	9 md mobe, 5 md demobe
Packing/Prep * \$250/day	\$ 250.00	\$ 1,500.00	6 man days prep
<b>Food/Camp:</b>			
Food @ \$50/ man day	\$ 50.00	\$ 4,700.00	94 man days food
Camp @ \$35/ man day	\$ 35.00	\$ 3,115.00	89 man days camp
<b>Data Management and Processing Services</b>			
Resistivity Inversions/Geosoft Plots @ \$75/hr - 16h, C. Cote Mag processing 4h, GPR, 8h @ \$75/h	\$ 75.00	\$ 2,100.00	R. Daigle DC Res, C. Cote Mag/GPR
<b>Survey Equipment:</b>			
IP/Resistivity Meter: Supersting 8 Channel meter w/cables, electrodes	\$ 600.00	\$ 10,200.00	17 Survey Days
Precision GPS: Ashtech Promark 100 differential GPS - DC Resistivity and GPR terrain corrections	\$ 50.00	\$ 850.00	17 Survey Days
Mala 25 Mhz RTA Ground Penetrating Radar, w/processing software: 1 month rental from Terraplus		\$ 6,940.00	as per Terraplus Rental
Gem Systems Proton Magnetometer: Walk + Base \$300/day	\$ 300.00	\$ 900.00	3 Days mag survey on Carlisle
Field Laptop w/Inversion software for nightly dowload and review @ \$50/day	\$ 50.00	\$ 850.00	17 Survey Days
Iridium Sat Phone @ \$35/day	\$ 35.00	\$ 735.00	17 Survey+ 4 travel days
Satellite Internet @ \$40/day	\$ 40.00	\$ 680.00	17 Survey days
Chainsaws (2) @ \$35/day	\$ 70.00	\$ 1,400.00	2 chainsaws * 20 days
Radios/ Garmin GPS @ \$5/day	\$ 5.00	\$ 470.00	94 field/travel man days
<b>Consumable Supplies:</b>			
Stainless Electrodes: wear & tear- 2 per profile, \$6 ea	\$ 12.00	\$ 156.00	2 electrodes *13 profiles
Calcium Chloride: 4kg per profile, \$2/kg	\$ 8.00	\$ 104.00	4 kg NaCl *13 profiles
Pickets, 9 per profile, \$1/picket	\$ 9.00		cut pickets in field
Spray paint: 1/2 can per profile, \$10/can	\$ 5.00	\$ 65.00	1/2 can paint *13 profiles
<b>Transportation:</b>			
Snowmobile (\$100/day) + Skimmer (\$25/day) *3 (63 rental days)	\$ 125.00	\$ 7,875.00	17 survey + 4 travel days (x3 sleds)
Gasoline for Skidoos, Camp Generator, Survey Generator (450 litres @ \$1.50/litre)	\$ 1.50	\$ 675.00	Total fuel purchased/burned
Pickup gear from Dawson Airport - 4 hours @ \$75/hr incl. truck/labour	\$ 75.00	\$ 300.00	
<b>DC Resistivity/GPR/Mag Survey Expense :</b>		<b>\$ 78,565.00</b>	
<b>Helicopter Expenses:</b>			
Trans North Helicopters: Astar D2, Mobilization March 10, Resupply March 17 @ \$2,000/hr wet			
Mar 10/15	Ticket# 58792	1 load w/pax from Dawson, Sling gear from Coffee Strip	2.3 hours \$ 4,600.00
Mar 17/15	Ticket# 58794	1 Resupply load from Dawson	1.5 hours \$ 3,000.00
			<b>Helicopter Expenses: \$ 7,600.00</b>
<b>Fixed Wing Expenses:</b>			
Great River Air: Islander, Mobilization load, Feb 28/15			
Feb 28/15	Ticket #4536	1 Islander load of gear: YDA-Coffee Airstrip, 160 miles	<b>Fixed Wing Expense: \$ 1,835.23</b>

Report by Ground Truth Exploration \$1,000  
 Total \$89,000.23