



Zonge Engineering and Research Organization (Australia) Pty Ltd

**Scottsdale
NanoTEM Survey
Logistics Summary**

January 2008

for

Arcadia Resources Limited

Compiled by:

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APPENDICES

APPENDIX I

Pseudo-section Plots of Scottsdale NanoTEM Data

1. SUMMARY

During January 2008 Zonge Engineering and Research Organization (Zonge) mobilised a two-person geophysical field crew to the Scottsdale prospect near Launceston Tasmania to conduct a NanoTEM survey for Arcadia Resources Ltd. The survey was originally planned to include both resistivity/Induced Polarisation (IP) as well as NanoTEM surveying. The logistics of these surveys were discussed between the Zonge crew and Arcadia representatives on-site and it was determined that resistivity/IP surveying would be impractical in the given conditions. The Zonge crew were subsequently instructed by Arcadia to conduct only the NanoTEM portion of the survey.

The survey commenced on the 14th January 2008 and was completed on the 25th January 2008. In this time NanoTEM data were collected along 6 lines at a 20 metre station spacing producing 226 individual soundings over 3.72 line kilometres.

Data quality and repeatability were monitored throughout the course of the survey. Strict acquisition procedures were adhered to, which ensured that good quality data were collected. Despite this, several sections of data were unusable due to high cultural noise levels.

2. NANOTEM INSTRUMENTATION

A Zonge multipurpose GDP-32II receiver was used to take all of the NanoTEM data for this project. The raw data from each day was downloaded every evening from the receiver to laptop computer and emailed to Zonge's Adelaide office. Preliminary processing and plotting were completed in the field. Final processing and plotting were completed in Zonge Engineering's Adelaide office.

Transmitted fields were generated with a Zonge battery powered NT-20 geophysical transmitter. Signal frequency and synchronisation were controlled directly the GDP-32 receiver.

3. NANOTEM SURVEY PARAMETERS

All data recorded during this survey was taken with a Zonge GDP-32II receiver equipped with a NanoTEM time domain EM acquisition card. Data were recorded at a frequency of 32 Hertz. Decay data is sampled at a rate of 1.6 microseconds and averaged over 31 logarithmically spaced windows. A minimum of three separate stacks of data were recorded for each station. The number of cycles within each stack varied and was determined based on noise levels and data repeatability.

Station spacing was 20m on all six lines. Data were recorded using an in-loop configuration using a 20x20 metre single turn transmitter loop with a 5x5 metre receiver loop placed at the centre of each transmitting loop.

The location of the centre of each transmitter loop was recorded using handheld GPS in the AGD66 Zone 55 datum. In many instances GPS reception was poor and the accuracy of recorded points was reduced. Station locations as recorded using GPS are presented in figures 1 to 3. Station numbers reflect distance along line with '0' reflecting the start of the line, the actual position of each station (AGD66) is recorded within .stn text files within the '*Processed Data*' directory on the accompanying disc.

Table 1 Summary of Scottsdale NanoTEM Data

| Line | Frequency (Hz) | Station Spacing (m) | Start | Finish | Soundings |
|------------------------------|-----------------------|----------------------------|--------------|---------------|------------------|
| 04 | 32 | 20 | 0 | 480 | 32 |
| 05 | 32 | 20 | 0 | 780 | 49 |
| 07a | 32 | 20 | 0 | 760 | 48 |
| 09 | 32 | 20 | 0 | 320 | 17 |
| 10a | 32 | 20 | 0 | 640 | 33 |
| 10b | 32 | 20 | 0 | 740 | 47 |
| Total soundings | | | | | 226 |
| Total line kilometres | | | | | 3.72 |

4. PRODUCTION ISSUES

Delays were encountered due to persistent rain, and a GDP receiver failure. A replacement receiver unit was sent to the crew from Adelaide the next day. Some difficulty was experienced recording consistently accurate GPS data in some locations.

No other significant delays to production occurred during the survey. More detailed information on daily production may be found on the accompanying disc under "*Production Reports*".

5. PRODUCTION SUMMARY

Table 2 gives a summary of the production of Job 780. More detailed information on daily production may be found on the accompanying disc under "*Production Reports*".

Table 2 Scottsdale NanoTEM Production Summary

| Date | Description |
|------------|---|
| 14-15/1/08 | Travel from Adelaide to Scottsdale via Melbourne and Devonport |
| 16/1/08 | Prepare Line 10a and read data, start preparation on Line 10b |
| 17/1/08 | Read data on Line 10b and start preparation on Line 9. |
| 18/1/08 | Read data on Line 9 and start preparation on Line 4. |
| 19/1/08 | Read data on Line 4. Persistent rain all day hampered progress. |
| 20/1/08 | Experienced a GDP receiver failure. Ordered a replacement unit from Adelaide. |
| 21/1/08 | Travel to Launceston to pick up replacement receiver. |
| 22-23/1/08 | Prepare Lines and read data on Lines 5 and 7a. |
| 24-25/1/08 | Travel to Adelaide via Devonport and Melbourne. |

6. DATA PROCESSING

The quality of each block of NanoTEM data was examined before being averaged to create a single record for each station. Blocks or time windows that were considered of poor quality were skipped before averaging each station's data. All raw data taken during this survey are included on the accompanying disc so that this data may be re-averaged if necessary.

The averaged decay data for each NanoTEM line were then used to produce pseudo-section plots for each line and are presented in Appendix I.

The edited and averaged NanoTEM data were used to produce 1D inversion smooth models using Zonge's STEMINV modelling program. Plots of 1D models are presented in Appendices II.

7. EXPLANATION OF FILES

Digital data is provided on CD along with paper plots of the data. Data from each CSAMT line are placed in the following directory structure on the accompanying CD: `Processed_Data\line#`. File formats are explained below:

| | |
|--------------|---|
| *.AVG | files created by Zonge's TEMAVG containing averaged data |
| *.FLD | Zonge field file format produced from SHRED.EXE from *.RAW files |
| *.MDE | input files containing processing information |
| *.PDF | Adobe Acrobat Portable Document File containing plot files and report |
| *.RAW | raw data downloaded from the GDP-32 |
| *.X01 | contain plot files of decay window magnitude |
| *.M1D | STEMINV model file in columnar format |
| *.OBS | STEMINV observed and calculated data output file |
| *.PNG | Plots of inversion models |
| *.STD | STEMINV inversion control and observed data input file |
| *.STN | Station coordinates text file |
| *.TEM | Amira format channel information text file |
| *.Z | files used for plotting containing averaged TEM data |

All plot files are provided in HPGL and PDF formats.

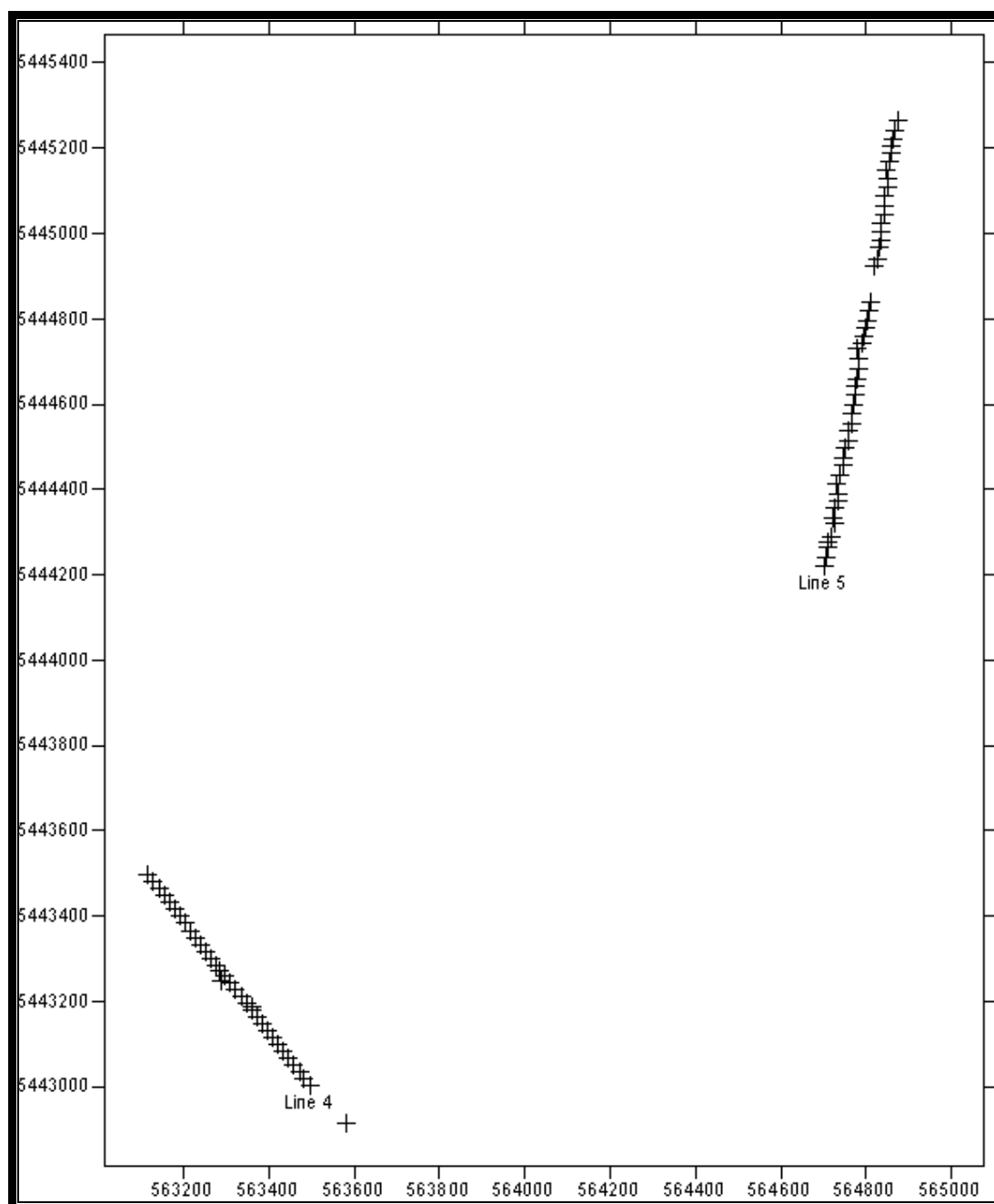


Figure 1 Scottsdale Lines 4 and 5 stations

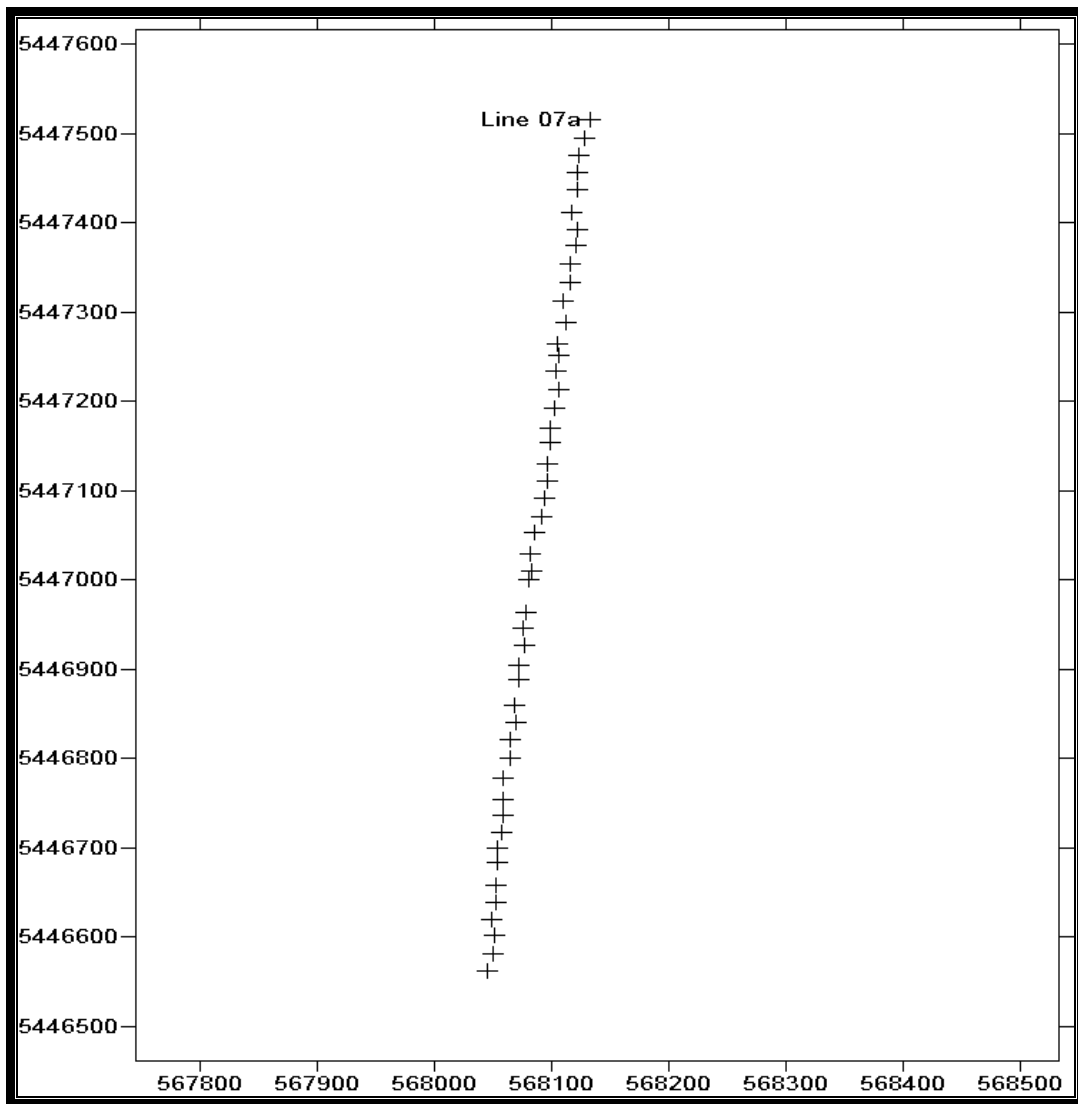


Figure 2 Scottsdale Line 7a stations

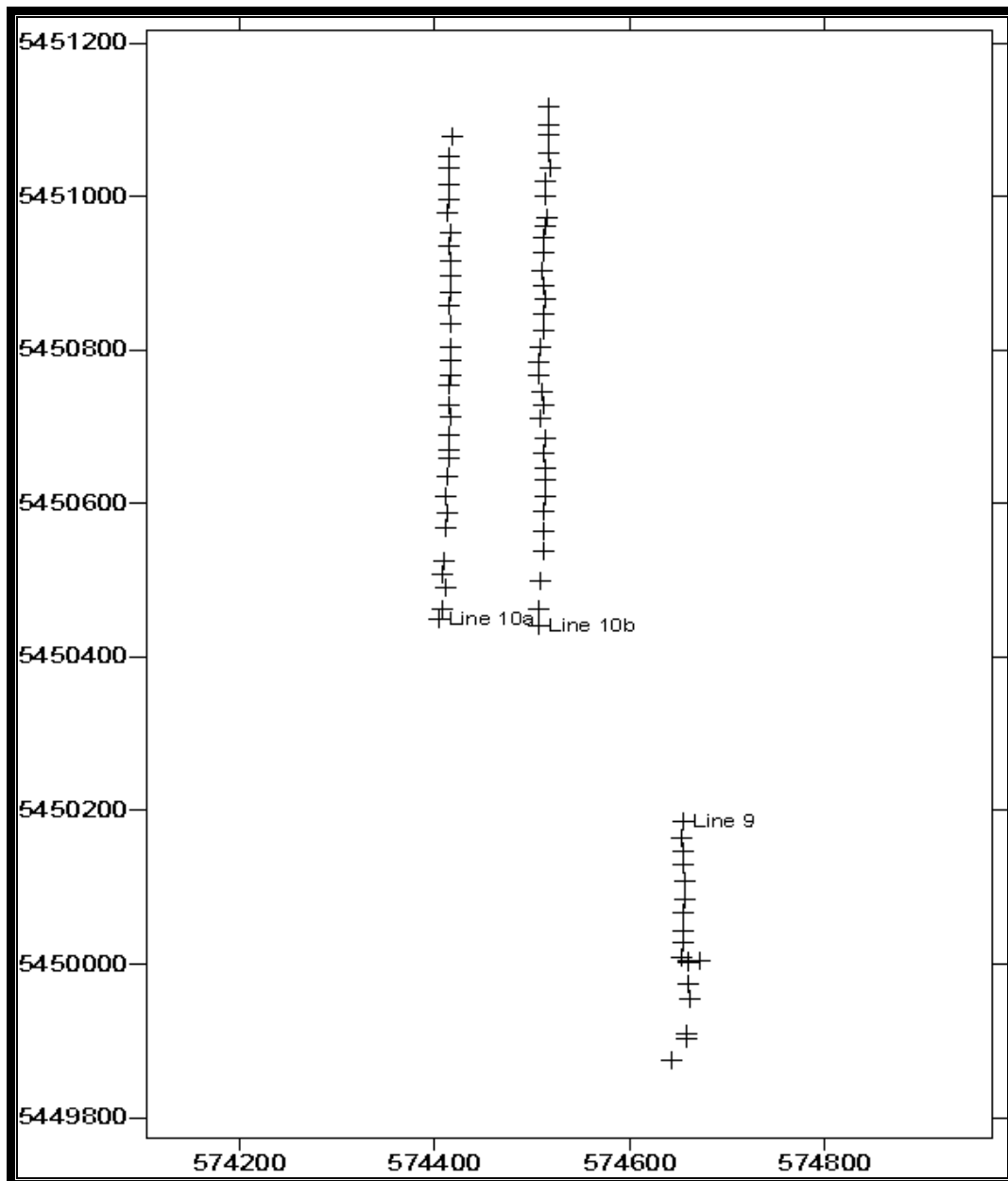


Figure 3 Scottsdale Lines 9, 10a and 10b stations

APPENDIX I

Pseudo-section plots of Scottsdale NanoTEM Data

Line 04
Scottsdale
for
Arcadia Resources

Field Job 780
ZONGE ZPLOT 7.35
File 04.Z, Plotted 21 Jan 08



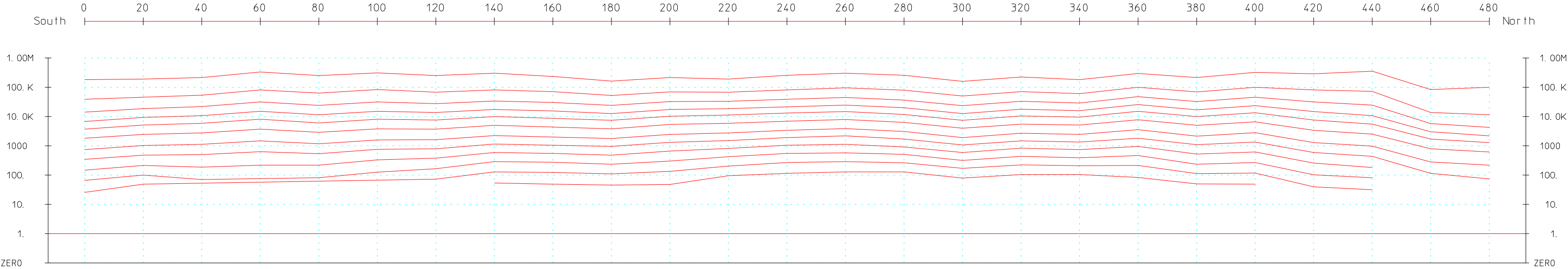
TEM SURVEY DATA
dBz/dt uV/amp

Tx -1760

SURVEY LINE DATA
Line Orient= North


Survey Date= Jan 2008

Window NUMBER and TIME (seconds)
: 1. 920u* : 32. 28u*
: 3. 530u* : 41. 07u*
: 5. 140u*
: 6. 740u*
: 8. 350u*
: 10. 73u*
: 13. 95u*
: 17. 16u*
: 21. 13u*
: 25. 96u*



Line 05
Scottsdale
for
Arcadia Resources

Field Job 780
ZONGE ZPLOT 7.35
File 05.Z, Plotted 12 Feb 08



TEM SURVEY DATA
dBz/dt uV/amp

Tx -3380

SURVEY LINE DATA
Line Orient= North

Survey Date= Jan 2008

Window NUMBER and TIME (seconds)

| | |
|---|---------|
| : | 3.530u* |
| : | 5.140u* |
| : | 6.740u* |
| : | 8.350u* |
| : | 10.73u* |
| : | 13.95u* |
| : | 17.16u* |

Window NUMBER and TIME (seconds)

| | |
|---|---------|
| : | 3.530u* |
| : | 5.140u* |
| : | 6.740u* |
| : | 8.350u* |
| : | 10.73u* |
| : | 13.95u* |
| : | 17.16u* |

Window NUMBER and TIME (seconds)

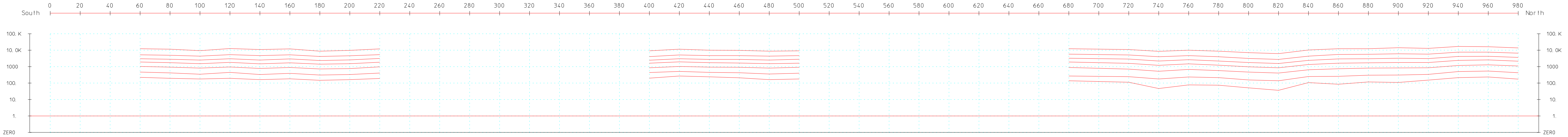
| | |
|---|---------|
| : | 3.530u* |
| : | 5.140u* |
| : | 6.740u* |
| : | 8.350u* |
| : | 10.73u* |
| : | 13.95u* |
| : | 17.16u* |

Window NUMBER and TIME (seconds)

| | |
|---|---------|
| : | 3.530u* |
| : | 5.140u* |
| : | 6.740u* |
| : | 8.350u* |
| : | 10.73u* |
| : | 13.95u* |
| : | 17.16u* |

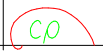
Window NUMBER and TIME (seconds)

| | |
|---|---------|
| : | 3.530u* |
| : | 5.140u* |
| : | 6.740u* |
| : | 8.350u* |
| : | 10.73u* |
| : | 13.95u* |
| : | 17.16u* |



Line 07a
Scottsdale
for
Arcadia Resources

Field Job 780
ZONGE ZPLOT 7.35
File 07A.Z, Plotted 12 Feb 08



TEM SURVEY DATA
dBz/dt uV/amp

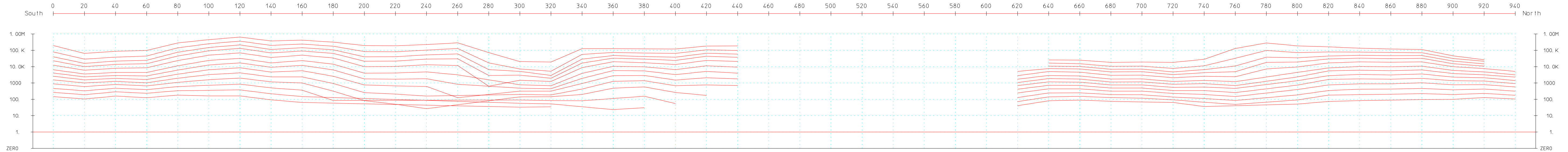
Tx -2420

SURVEY LINE DATA
Line Orient= North

Survey Date= Jan 2008

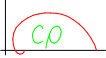
Window NUMBER and TIME (seconds)

| | |
|-----------|-----------|
| : 3.530u* | : 41.07u* |
| : 5.140u* | : 51.48u* |
| : 6.740u* | : 64.24u* |
| : 8.350u* | |
| : 10.73u* | |
| : 13.95u* | |
| : 17.16u* | |
| : 21.13u* | |
| : 25.96u* | |
| : 32.28u* | |



Line 09
Scottsdale
for
Arcadia Resources

Field Job 780
ZONGE ZPLOT 7.35
File 09.Z, Plotted 18 Jan 08



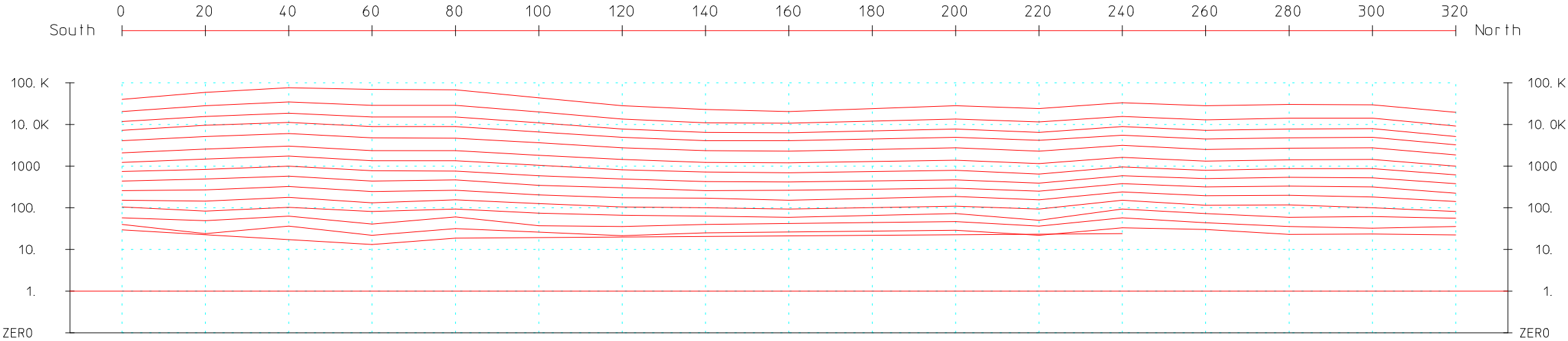
TEM SURVEY DATA
dBz/dt uV/amp

Tx -1420

SURVEY LINE DATA
Line Orient= North

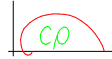
Survey Date= Jan 2008

| Window NUMBER and TIME (seconds) | | |
|----------------------------------|-----------|-----------|
| | : 3.530u* | : 41.07u* |
| | : 5.140u* | : 51.48u* |
| | : 6.740u* | : 64.24u* |
| | : 8.350u* | : 80.22u* |
| | : 10.73u* | : 100.9u* |
| | : 13.95u* | |
| | : 17.16u* | |
| | : 21.13u* | |
| | : 25.96u* | |
| | : 32.28u* | |



Line 10A
Scottsdale
for
Arcadia Resources

Field Job 780
ZONGE ZPLOT 7.35
File 10A.Z, Plotted 18 Jan 08



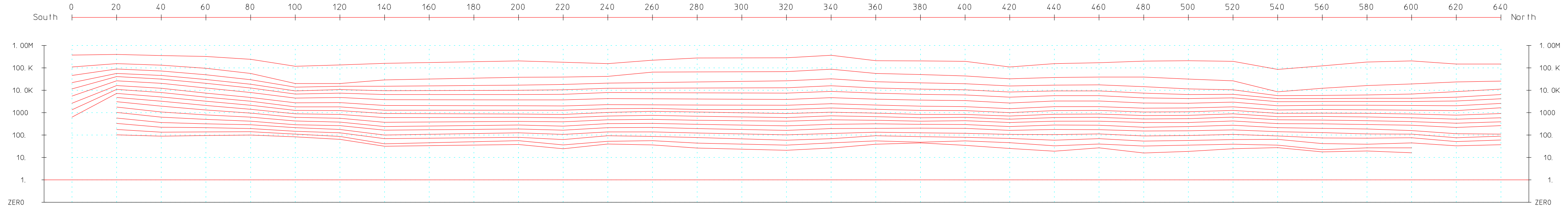
Tx -40

SURVEY LINE DATA
Line Orient= North

Survey Date= Jan 2008

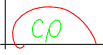
TEM SURVEY DATA
dBz/dt uV/amp

Window NUMBER and TIME (seconds)
: 1.920u* : 32.28u*
: 3.530u* : 41.07u*
: 5.140u* : 51.48u*
: 6.740u* : 64.24u*
: 8.350u* : 80.22u*
: 10.73u* : 100.9u*
: 13.95u* : 128.0u*
: 17.16u*
: 21.13u*
: 25.96u*



Line 10B
Scottsdale
for
Arcadia Resources

Field Job 780
ZONGE ZPLOT 7.35 Duplicates Not Used
File 10B.Z, Plotted 12 Feb 08



TEM SURVEY DATA
dBz/dt uV/amp

Tx -700

SURVEY LINE DATA
Line Orient= North

Survey Date= Jan 2008

Window NUMBER and TIME (seconds)

| | |
|-----------|-----------|
| : 3.530u* | : 41.07u* |
| : 5.140u* | : 51.48u* |
| : 6.740u* | : 64.24u* |
| : 8.350u* | : 80.22u* |
| : 10.73u* | : 100.9u* |
| : 13.95u* | : 128.0u* |
| : 17.16u* | |
| : 21.13u* | |
| : 25.96u* | |
| : 32.28u* | |

