Zonge Engineering and Research Organization (Australia) Pty Ltd

Lea River
PDIP Survey

Logistics Summary

December 2008

for

Bass Metals Ltd

Compiled by:

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Report No: 828 Date : December 2008

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1. SUMMARY

During December 2008, Zonge Engineering and Research Organization (Zonge) mobilised a three-person geophysical field crew to the *Lea River* prospect near Moina, Tasmania to conduct a Pole-Dipole Induced Polarisation (PDIP) survey for Bass Metals Ltd.

The survey commenced on the 14th December and was completed on the 20th December. In this time Pole-dipole data were collected along one line at 25m and 50m a-spacing, producing 134 points of data over 3.925 line kilometres.

Data quality and repeatability were monitored throughout the course of the survey. Strict acquisition procedures were adhered to, which ensured that the best possible data were collected given local reading conditions.

2. IP INSTRUMENTATION

A GDD GRX-32 receiver was used to take all of the 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.

PDIP transmitted fields were generated with a Zonge GGT-10 geophysical transmitter which was powered by a 7.5kva generator system. Signal frequency was controlled directly by an XMT-32 controller.

3. IP SURVEY PARAMETERS

Apparent resistivity and chargeability data including decay window magnitudes were recorded using a frequency of 0.125 Hertz. Dipole length was 25m for channels 1 and 2 and 50m for channels 3-8, station spacing was 50 metres.

Line and station numbers were provided to the crew by Bass Metals staff and reflect a local grid system. Flagging of line positions was also performed by Bass Metals staff. Line station positions in UTM zone 55 coordinates are provided in Excel format accompanying this report.

Only one of the originally planned three lines (see Figure 1 below) was read during this survey period.

Table 1 Summary of *Lea River* Data Acquired for Job 828

Line	Frequency (Hz)	a-spacing (m)	Start*	Finish*	Data Points
C (40200N)	0.125	25/50	11450	15375	134
Total data points collected					**134**
Total line kilometres					**3.925**

* Line length is taken from maximum extent of data collected when plotted in pseudo-section.

4. PRODUCTION ISSUES

Delays were encountered due to:

- The need to source steel droppers to aid survey speed
- Hazardous working conditions due to the line layout on difficult terrain
- One line had been cut very erratically and was unusable, however the crew had laid out the transmitter wire on that line before it was decided not to proceed.
- The rugged terrain and survey layout caused the crew to work up the mountain for safety and all crew members were needed to move each wire in unison. Moving the receiver array downhill would have improved production significantly.
- One hour of travel each way to the survey area.

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 provides a summary of the production of Job 828. More detailed information on daily production may be found on the accompanying disc under *"Production Reports"*.

Table 2 Production Summary of Job 828

Date	Activity
14/12/08	Travel to Waratah, unload and charge equipment
15/12/08	Drive to Hellier mine Site and complete mine induction. Travel to survey site, set up transmission wires. Travel to Burnie and purchase steel droppers.
16/12/08	Connect Line C to transmitter wires and begin acquiring data.
17/12/08	Set out High Voltage signs on survey area, test receiver wire and continue acquiring data on Line C.
18/12/08	Continue acquiring data on Line C. Charge portable equipment.
19/12/08	Complete acquiring data on Line C, rehabilitate site and pack up equipment
20/12/08	Load equipment and travel to Adelaide via Devonport.

6. DATA PROCESSING

Raw data from the receiver (eg 2008-12-17.dat) was imported into a TQIP database on a daily basis to allow quality control of the data. The quality of each block of raw PDIP data was examined before being averaged to create a single record for each data point. Blocks or channels 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. Averaged and edited data was output from TQIP in dat format (*line#.dat*) and used for modelling and plotting.

Preliminary topography corrected smooth 2D inversion models of IP data were created using Zonge's TS2DIP software and may be found within the *"Processed_Data"* directory on the accompanying disc. These models are created for internal quality control and viewing of the data and no attempt has been made by Zonge to alter default modelling constraints to account for geological information or data fit. As a result these models should not be considered a finished product.

Topographic information used in modelling and contained within line position files (*line#.stn)* has been extracted from NASA's SRTM data set and should be considered roughly representative of actual topography. As this topographic data is interpolated from data with 90 metre lateral resolution and ±8 metre vertical accuracy this should not be considered a highly accurate representation of topographic features.

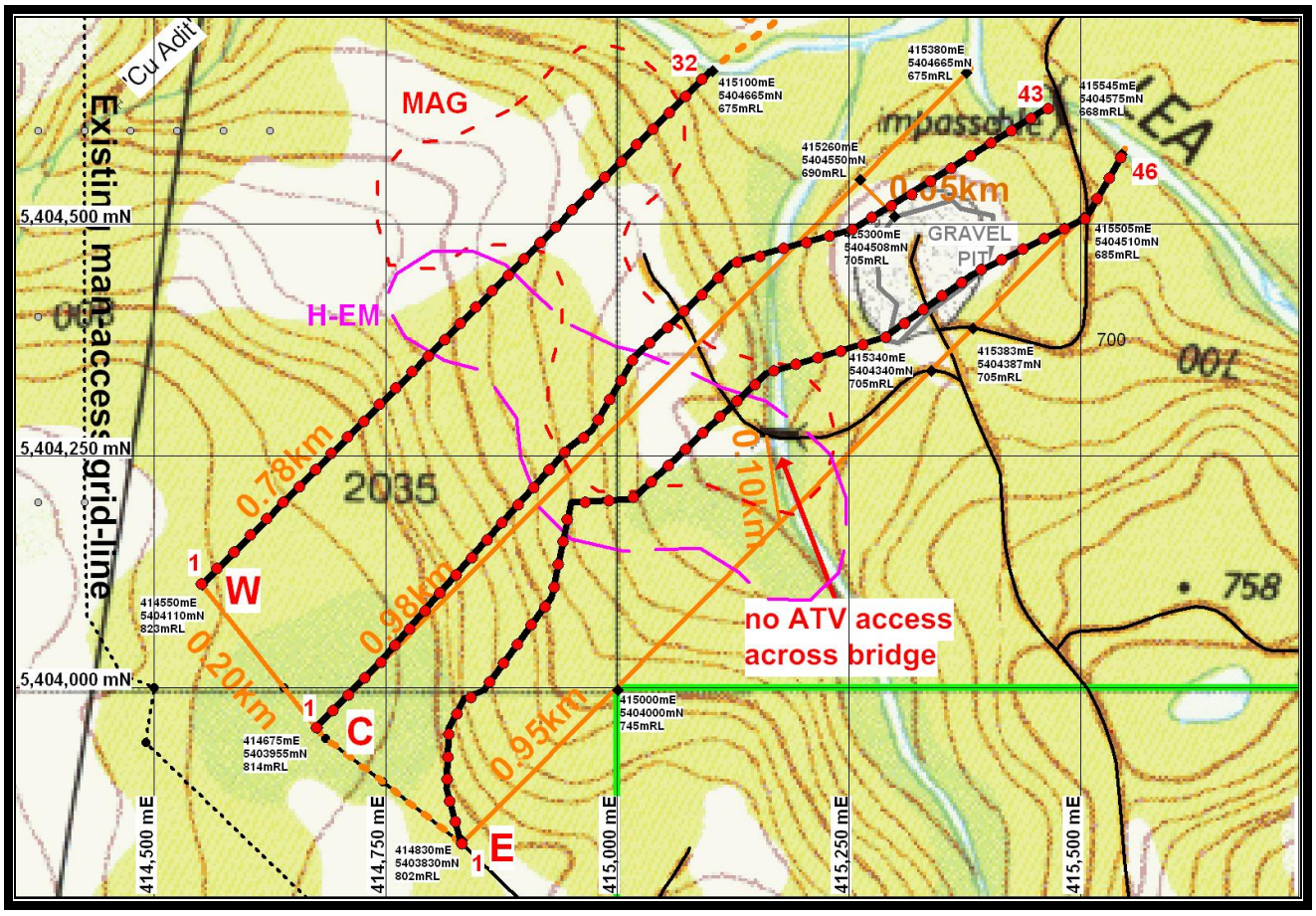
7. EXPLANATION OF FILES

Digital data is provided on disc along with paper plots of the data (Appendix I). Data from each surveyed line are placed in the following directory structure on the accompanying disc: *Processed_Data\line#*. File formats are explained below:

***.DAT**	Raw and averaged PDIP data files in column delimited text format.
***.GDD**	Raw data as dumped from receiver in GDD text format.
***.MDB**	TQIP database containing observed data. This can be viewed using demo TQIP software freely available.
***.MDE**	Input files containing processing information.
***.PDF**	Adobe Acrobat Portable Document File containing plot files and report.
***.PNG**	Windows format image files containing draft model results and observed resistivity and chargeability data.
***.STN**	Tab delimited columnar text files containing station, easting, northing and elevation data for each line.

All plot files are provided in HPGL and PDF formats.

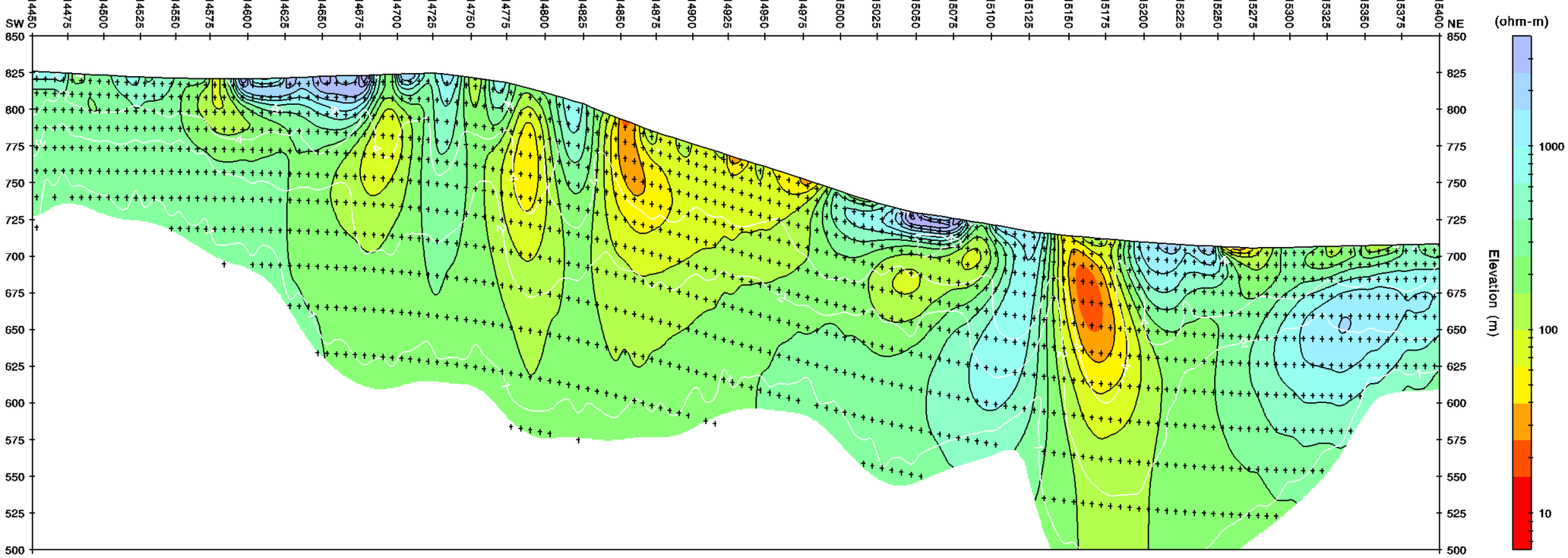
Figure 1 *Lea River* Proposed PDIP Survey Grid Layout



APPENDIX I

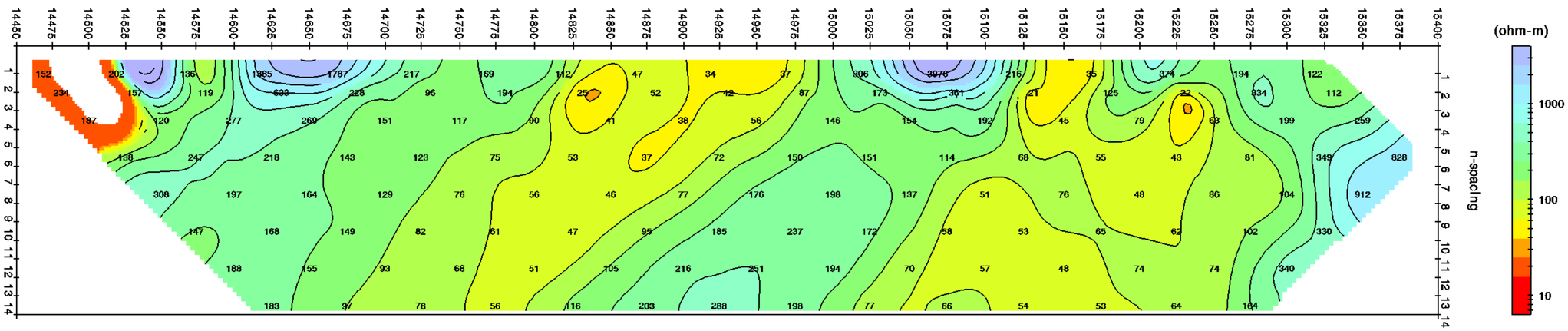
Preliminary models and observed data plots of *Lea River* PDIP Data

Resistivity Inversion Model



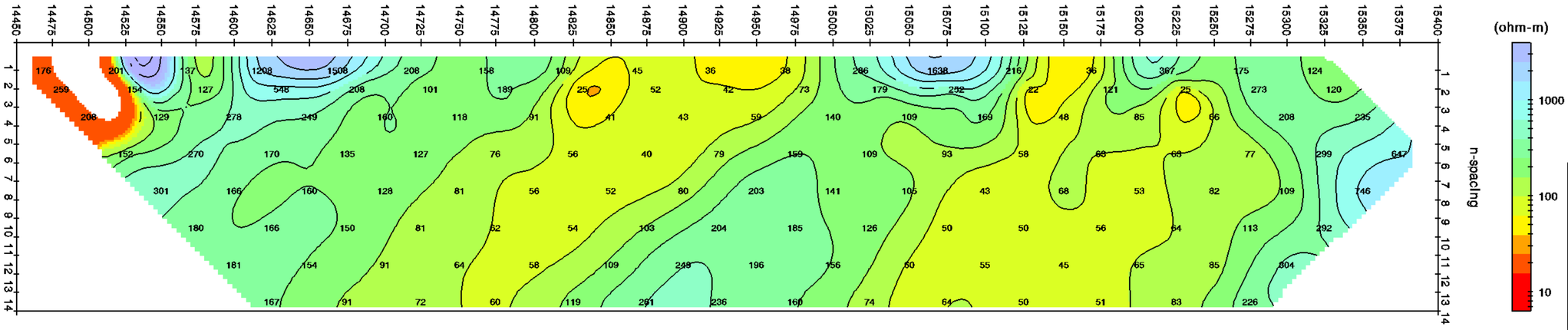
Lea River
Line C

Resistivity Observed Data



Survey Parameters:
25 and 50 m PoleDipole data
0.125 hertz repetition rate
Channels 1&2 using 25m dipole
Channels 3-8 using 50m dipole
Inversion control parameters:
ResSmth=1, dpW=0.5, dxW=1, dzW=1
IPSmth=0.1, dpW=0.5, dxW=1, dzW=1
White contours show Sensitivity
#@%$

Resistivity Calculated Data



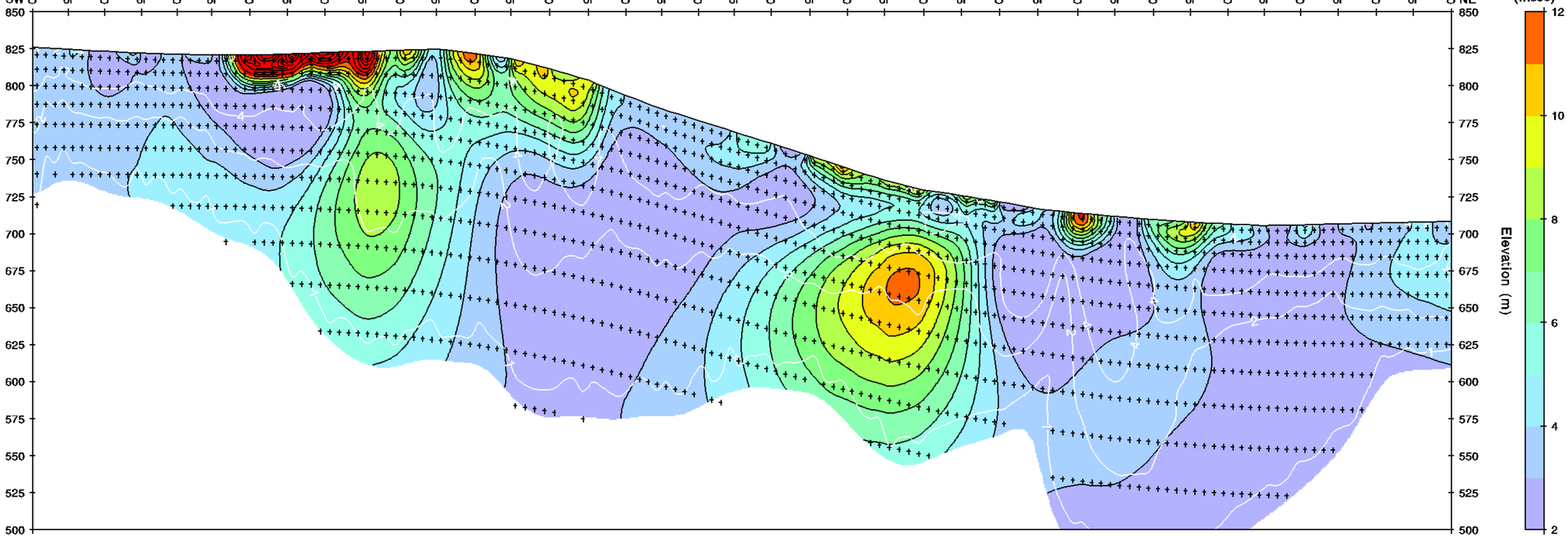
150 m

Bass Metals
Lea River
Line C
2D Smooth-Model Inversion
PoleDipole Resistivity/IP Data

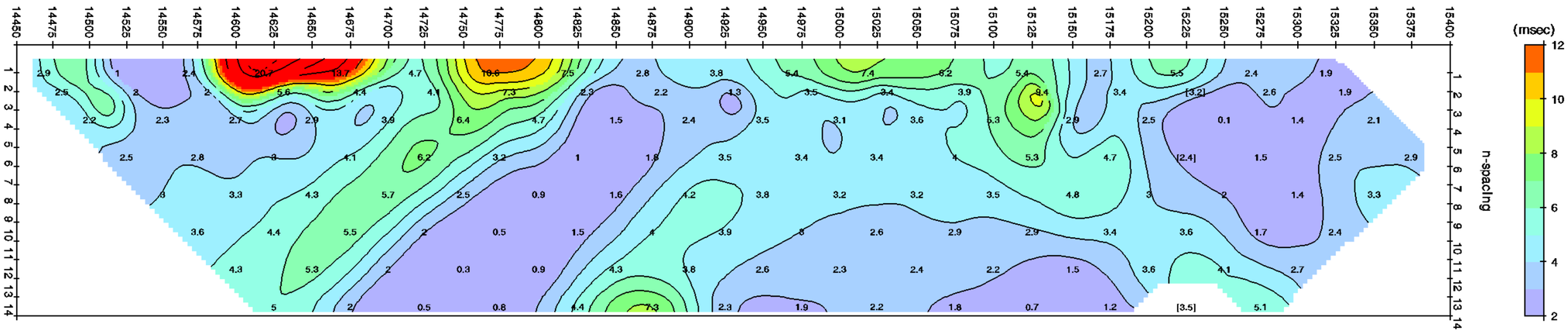
AUTHOR	DRAWN	DATE	SCALE	REPOR
Zonge	Zonge	19/12/08	1:2500	Job

REF: Line_CN.s2d

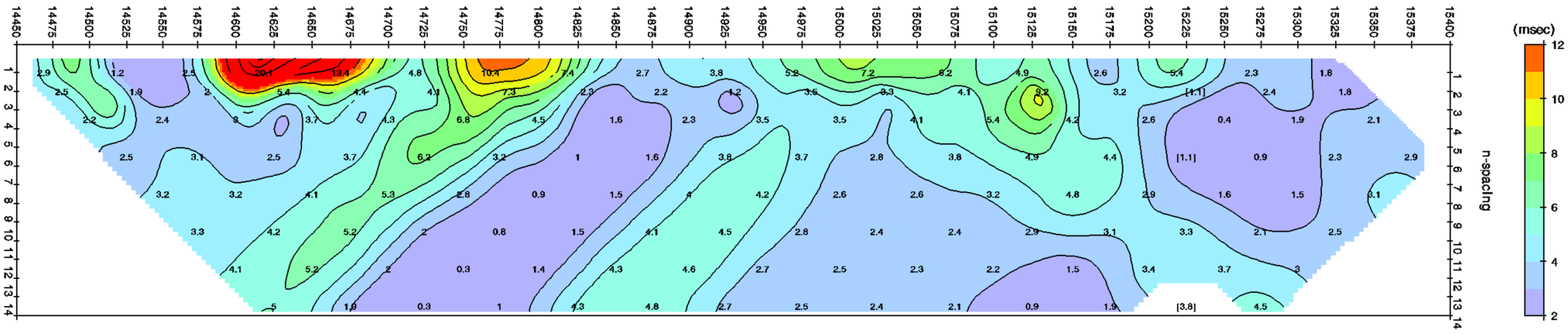
IP Inversion Model



IP Observed Data



IP Calculated Data



Lea River
Line C

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150 m

Bass Metals
Lea River
Line C
2D Smooth-Model Inversion
PoleDipole Resistivity/IP Data

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