Zonge Engineering and Research Organization (Australia) Limited.

White Spur Fixed Loop EM Survey

Logistics Summary

January 2004

for

Pasminco Rosebery Mine

Compiled by:

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APPENDIX I

White Spur DB/DT Fixed Loop EM Profile

SUMMARY

During January of 2004, Zonge Engineering and Research Organization (Zonge) mobilised a three-person geophysical field crew to the White Spur Prospect located at the Rosebery Mine in Western Tasmania to conduct fixed loop EM surveys for Pasminco Rosebery Mine.

Initially two lines of data were collected from a single loop, however the crew returned at a later date at the request of the client to resurvey the lines from a second loop location.

A total of 109 EM soundings, totalling 2.275 line kilometres of data were collected, at 25 metre station intervals along four lines from two separate loops.

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.

1. TEM INSTRUMENTATION:

A Zonge multipurpose GDP-32 receiver was used to take all of the data for this project. These receivers are backpack-portable, microprocessor-controlled and capable of simultaneously gathering data on up to sixteen channels (usually configured for eight channels). Each day's data were downloaded every evening from the receiver's solid-state memory to a portable computer. 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 GGT-30 geophysical transmitter powered by a ZMG-30 generator system. Signal frequency and synchronisation were controlled directly by an XMT-32 controller.

2. TEM SURVEY PARAMETERS:

Transmitter loops were approximately 400m by 400m wide and were made up of two turns of standard 2.5mm^2 insulated copper wire. Current for the survey was 20 amperes. The receiving antenna was a standard Zonge TEM-3 coil which has an effective area of 10,000 square metres. Data were collected at a base frequency of 16 hertz due to the high resistivity of the underlying rock. The transmitter delay (ramp) was measured using an oscilloscope and then set in the receiver at approximately 400 microseconds.

Each of the two survey lines was surveyed from two separate loops. Line separation was 200m and station separation was 25 m. Only the vertical (Hz) component of the EM field was collected.

3. PROBLEMS:

There did not appear to be any problems with equipment however there was a considerable self response from the loop which extended to late time and was unexpected. The receiver and coils were replaced in an attempt to determine whether the self response was due to the Zonge equipment however this had no effect on the data. Although the crew had a separate transmitter available this was not used at the request of the clients representative Jovan Silic due to its smaller ctransmitting capacity. In hindsight it would have been good to test this system also.

The tests completed to date do not suggest that there is anything wrong with the Zonge equipment and it can only be surmised that the strong self response seen in the data is due to a combination of the extremely resistive geology combined with the use of two turns of wire to increase the signal from the transmitter. Further testing will be conducted in Adelaide if similar geology can be found.

There was also two and a half days that the crew could not operate due to heavy rain.

4. PRODUCTION SUMMARY

Table 1 gives a short summary of the production of job 607.

Table 1. Production Summary

Date:	*Description:*
7th January	Mobilisation – Queenstown to Rosebery
8th January	Test loop, put out extra loop to increase resistance.
9th –10th January	Weather days
11th January	Surveyed line 9400N, 6600E-7325E, 9600N, from 600E-7350E
12th January	Surveyed line 9400N from 7325E-7900E
13th January	Demobilisation to next job
24th January	Travel from Cygnet to Rosebery
25th January	Lay out loop 2 and read line 9600N from 6800E –7350E
26th January	Line 9600N from 7350E-6800E – Pack Wires
27th January	Demobilised to next job

5. DATALIST

Prospect	Survey Type	Line	Loop	Start	Finish	No of stations
White Spur	Fixed Loop EM	9400N	1	6600E	7950E	55
White Spur	Fixed Loop EM	9600N	1	6600E	7350E	31
White Spur	Fixed Loop EM	9400N	2	6800E	7700E	36
White Spur	Fixed Loop EM	9600N	2	6800E	7700E	36
Total Number of Fixed Loop EM Stations						109

No other data were collected during this survey.

6. EXPLANATION OF FILES

EXPLANATION OF FILES

To uncompress data files use winzip.

EM files

Each grid line of Fixed Loop EM data has been zipped into two separate files under the transmitting loop folder. For example, line 9600n files are titled ZE9600N.ZIP and HP9600N.ZIP. The 'ZE' stands for Zonge Engineering files and 'HP' for Hewlett Packard vector graphics files.

The **ZE*.ZIP** file contains:

*.RAW - the edited raw data downloaded from the GDP-32

*.MDE - files containing processing information

*.AVG - files created by Zonge's CRAVG containing averaged data

*.TEM – files created by Zonge's CRAVG program containing averaged data in AMIRA format.

*.Z - files used for plotting containing amplitudes normalised by the amperage.

The **HP*.zip** file contains HPGL print files that can be copied to a printer.

*.x01 contains log-linear amplitude data in uV/A

Appendix 1

DB/DT line Profiles of White Spur Fixed Loop EM data