Energy Research and Development Division
FINAL PROJECT REPORT

# MT SURVEY FOR RESOURCE ASSESSMENT AND ENVIRONMENTAL MITIGATION AT THE GLASS MOUNTAIN KGRA

## APPENDICES I-L

Prepared for: California Energy Commission – Geothermal Resources Development Account
Prepared by: Cumming Geoscience
GSY-USA, Inc.

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***Prepared by:***

***Primary Author(s):***
William Cumming

Cumming Geoscience
4728 Shade Tree Lane
Santa Rosa CA 95405-7841

Randall Mackie

GSY-USA, Inc.
2261 Market St.
San Francisco, CA 94114-1600

***Contract Number: GEO-02-007***

***Prepared for:***

**California Energy Commission**
**Geothermal Resources Development Account**

Gail Wiggett
***Project Manager***

Linda Spiegel
***Office Manager***
***Energy Generation Research Office***

Laurie ten Hope
***Deputy Director***
***RESEARCH AND DEVELOPMENT DIVISION***

Robert P. Oglesby
***Executive Director***

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# PREFACE

The California Legislature created the Geothermal Resources Development Account (GRDA) and the Geothermal Program in 1980. Funding comes from revenues paid to the United States government by geothermal developers for leases on federal land in California. Under the Geothermal Program, the California Energy Commission has assisted numerous eligible private entities and local jurisdictions in geothermal research, development, demonstration, commercialization, planning, mitigations, and environmental enhancement projects related to geothermal energy. The purpose of the program is to enhance and promote geothermal development in California. For more information on the Geothermal Program, please visit the California Energy Commission's Web site at. http://www.energy.ca.gov/geothermal/index.html

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*MT Survey for Resource Assessment and Environmental Mitigation in the Glass Mountain KGRA* is the final report for the Geothermal Reserouces Development Account contract number GEO-02-007 conducted by GSY-USA, Inc. The information from this project contributes to Energy Research and Development Division's Renewable Program.

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# ABSTRACT

The objectives of this project were to use non-invasive methods to indirectly image the permeable geothermal reservoir geometry and mitigate the drilling costs and environmental impact of future geothermal development at Glass Mountain Known Geothermal Resource Area. This was done by more efficiently focusing exploration wells on the most promising target zones. Significant advances were achieved in three dimensional magnetotelluric imaging, allowing three dimensional imaging to be given greater weight than two dimensional imaging in interpreting the data. Magnetotellurics is a geophysical investigation technique that images the earth's subsurface by measuring natural variations of electric and magnetic fields at the surface. Magnetotelluric resistivity patterns were correlated with detailed data on subsurface temperatures, downhole resistivity logging, patterns of rock alteration zones and water entry zones from wells along geologic cross-sections. This confirmed that reservoir interpretation based on correlating magnetotelluric resistivity with temperature sensitive clay alteration was feasible. The magnetotelluric resistivity maps and cross-sections extended these correlations to undrilled areas, revealing the likely geometry of the geothermal system.

Conceptual models based on the resistivity images indicated that major northeast trending structures and the Medicine Lake Volcano rim structure form permeable zones and reservoir boundaries in the Glass Mountain Known Geothermal Resource Area. Several areas that appear to host a relatively shallow permeable reservoir were identified. The magnetotelluric interpretation also indicated that a significant part of the Medicine Lake Volcano was unlikely to host a developable geothermal resource. Depending on the resource development strategy and supporting studies, follow-up magnetotelluric surveys could be justified. The conceptual resource model derived from this study's integrated interpretation illustrates well-targeting strategies that can be reviewed with respect to engineering and environmental issues. By more efficiently directing well targeting, magnetotelluric resistivity imaging can reduce dry hole costs, as well as focus planning efforts and mitigate the environmental impacts of resource development.

**Keywords:** electromagnetic survey, geothermal exploration, geophysics resistivity, magnetotellurics, petrography, Medicine Lake, Glass Mountain Known Geothermal Resource Area

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# APPENDIX I:
# Schlumberger electrical sounding survey, Medicine Lake Area, California; Report #8377C Prepared for Occidental Geothermal, Inc. Bakersfield, CA

# Attachment VIII

## CEC-500-2007-XXX-ATVIII

## Schlumberger electrical sounding survey, Medicine Lake Area, California; Report #8377C Prepared for Occidental Geothermal, Inc. Bakersfield, CA.

This document is an attachment to a report funded by the California Energy Commission's Geothermal Resource Development Account (GRDA) Program. The GRDA Program did not fund this document, but the authors of the GRDA funded report have attached it as a supporting document.

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# MEDICINE LAKE AREA, CALIFORNIA

# SCHLUMBERGER ELECTRICAL SOUNDING SURVEY

AUGUST 1983

Report #8377C

Prepared for:

Occidental Geothermal, Inc
Bakersfield, California

September 1983

ELECTROMAGNETIC SURVEYS, INC
2161 Shattuck Avenue Suite 303
Berkeley California 94704
(415) 845 8745

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## Introduction

A Schlumberger resistivity survey was conducted by ElectroMagnetic Surveys (EMSurveys) for Occidental Geothermal Inc. from 1 August to 9 August 1983 in the Medicine Lake Highland area, California (see Figure 1).

During the survey soundings were performed at nine sites in an area west of Medicine Lake. Data taken on line #11 was of poor quality due to nearby powerlines and railroad tracks and has not been presented. The survey was perfomed without difficulty. Numerous roads provided good access to the area and no time was lost due to inclement weather.

## Equipment

The resistivity system used by EMSurveys consists of a Huntec Mark IV transmitter and receiver system as described in Appendix I. The transmitter is a 2.5 kW three-phase switching bridge capable of transmitting rectified DC signals into the ground through current electrodes which consist of either several steel pipes driven into the surface soil or aluminum foil buried in pits. The choice of transmitter period ranges from 2 to 128 seconds. The receiver consists of porous-pot, copper-sulphate receiver electrodes (the potential electrodes) which feed into a signal averager (the Mark IV receiver). The output of the receiver is the average amplitude (in millivolts) at the selected frequency matched to that of the transmitter.

## Field Procedure

Cable was laid out in each direction from a center position to AB/2 distances ranging from 10,000 ft to 15,000 ft, and an electric current between 0.10 A and 3.0 A was applied to the ground. Distance between the two current electrodes (AB) varied from 20 ft to 30,000 ft, while the potential electrode spread (MN) varied from 2 ft to 2000 ft. The ratio of half the current electrode spread (AB/2) to the total potential electrode spread was restricted to between 5:1 and 15:1 and many overlap readings were taken. Transmitter periods used during the course of the survey ranged from 8 to 32 seconds. The current electrodes were watered with a salt and detergent solution to reduce the contact resistance.

Measuring began at the end of a line and proceeded inward. The wire was rewound while data was being recorded at the small AB/2 spacings, so that all wire had been retrieved by the end of the data acquisition.

This field procedure usually permitted a sounding to be completed in one day, even under difficult conditions.

Data Processing and Inversion

Field data were entered into a notebook and later transferred into an HP-85 computer for which a series of EMSurveys software packages has been developed. Printouts of the raw data are presented in Appendix II. For each station the electrode spacings, the field readings of potential and current, and the apparent resistivity have been tabulated. A plot of apparent resistivity versus current electrode spacing (AB/2) is also included for each site. Data points are represented on these plots by crosses and solid lines are used to connect data from common MN spreads.

Each data profile was inverted using an EMSurveys proprietary program based on linear filters (O'Neill, 1975). The results of this inversion process are found in Appendix III. Data are provided for each station showing the interpreted model and compare field and model apparent resistivities for various AB/2 spacings. The following notations were used on this output:

| | |
|---|---|
| L | = logarithmically spaced AB/2 values |
| RA-F | = field apparent resistivities |
| RA-M | = model apparent resistivities |
| %ERR | = percent error |
| R | = interpreted resistivity |
| E | = interpreted thickness |
| T | = transverse resistance |
| S | = longitudinal conductance |

Included with the inversion results for each line is a plot of apparent resistivity versus AB/2. The rectangles on this

plot represent the apparent resistivities associated with the model, while the solid curved line represents the raw field data. The straight lines indicate the geology of the interpreted model.

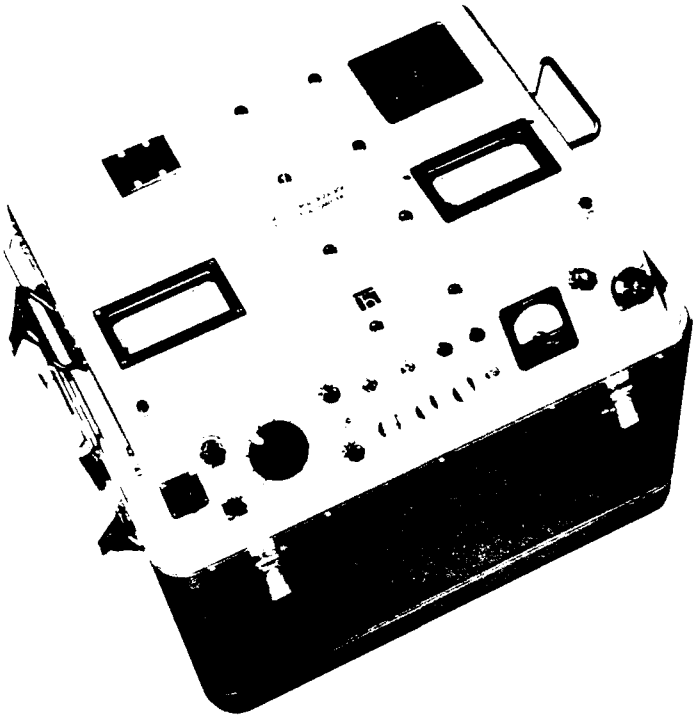
In general, the inversion results are good as indicated by the %RMS which measures quality of fit. For the sites where the %RMS is large, model values deviate from the field values most often for small AB/2 spacings.

# BIBLIOGRAPHY

O'Neill, D. J., 1975, Improved Linear Filter Coefficients for Application in Apparent Resistivity Computations, Bull. Aust. Soc. Explor. Geophys., v. 6, no. 4, p. 104-109.

# Appendix I

## Huntec Mark IV Transmitter and Receiver System



M-4 SERIES

# Induced Polarization/ Resistivity 7.5 kW Transmitter

## DESCRIPTION

The HUNTEC M 4 7 5 kW Induced Polarization transmitter is designed for time domain frequency domain (PFE) and complex resistivity applications The unit converts primary 400 Hz ac power from an engine alternator set to a regulated dc output current set by the operator Current regulation eliminates output waveform distortion due to elec trode polarization effects It is achieved in the trans mitter by varying the alternator field currents The transmitter is equipped with dummy loads to smooth out generator load variations

## FEATURES

- Solid state switching for long life and precise timing
- Open circuit during the off time ensures no counter current flow
- Resistance measurement for load matching
- Precision crystal controlled timing
- Failsafe operation protects against short circuit and overvoltage
- Automatic regulation of output current eliminates errors due to changing polarization potential and load resistance

## SPECIFICATIONS

### M-4 7 5 kW Transmitter

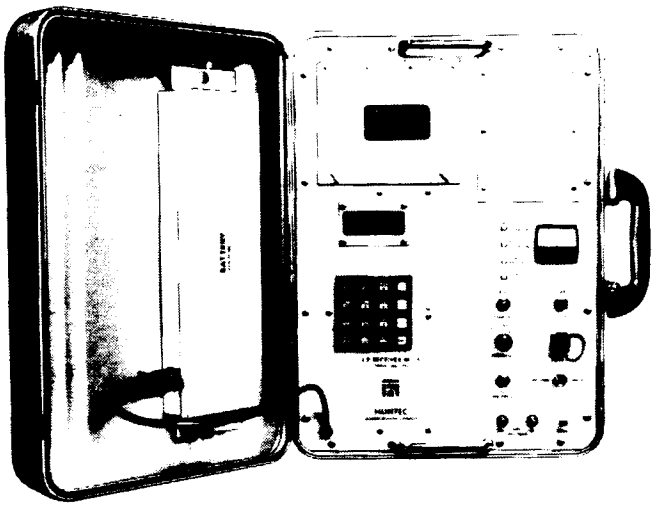
| | |
|---|---|
| ***A) Power input:*** | **96 — 144 V line to neutral 3 phase 400 Hz (from Huntec generator set)** |
| ***B) Output:*** | **Voltage: 100 — 3200 V dc in 10 steps Current: 0 4 — 16 A regulated** |
| ***C) Current regulation:*** | **Less than ±0 1% change for ±10% load change** |
| ***D) Output frequency:*** | **0 0625 Hz to 1 Hz (time domain complex resistivity) 0 0625 Hz to 4 Hz (frequency domain) selectable on front panel** |
| ***E) Frequency accuracy:*** | **±50 ppm − 30 C to + 60 C** |
| ***F) Output duty cycle:*** $T_{on}/(T_{on} + T_{off})$ | **0 5 to 0 9375 in increments of 0 0625 (time domain) 0 9375 (complex resistivity) 0 75 (frequency domain)** |
| ***G) Output current meter:*** | **Two ranges: 0 10 A and 0 20 A** |
| ***H) Ground resistance meter:*** | **Two ranges: 0 10 kΩ 0 100 kΩ** |
| ***I) Input voltage meter:*** | **0 150 V** |
| ***J) Dummy load:*** | **Two levels: 2 kW and 6 kW** |
| ***K) Temperature range:*** | **−34 C to + 50 C** |
| ***L) Size:*** | **53 cm x 43 cm x 43 cm** |
| ***M) Weight:*** | **50 kg** |

**smaller currents are obtainable but outside the current regulation range the transmitter voltage is regulated not the current**

huntec (70) LIMITED

25 HOWDEN ROAD, SCARBOROUGH, ONTARIO, CANADA M1R 3A6
PHONE (416) 751-8055
TELEX 06-963640
CABLE: HUNTOR, TORONTO

# M-4 Induced Polarization Receiver



## DESCRIPTION

The Huntec M-4 is a microprocessor based receiver for time and frequency domain IP and complex resistivity measurement. It is

**Easy to operate.** One switch starts a measurement, of up to 29 quantities simultaneously. The optional Cassette DataLogger records them all in seconds. Calibration, gain setting and SP buckout are all automatic.

**Reliable.** Using advanced digital signal processing techniques, the M-4 delivers consistently accurate data even in noisy, highly conductive areas. For mechanical reliability it is packaged in a rugged aluminum case for backpack or hand carrying.

**Versatile.** The operator may adjust delay and integration times, operating frequency and other measurement parameters, to adapt to a wide range of survey conditions and requirements. An independent reference channel facilitates drillhole and underground work, and guarantees transmitter-receiver synchronization in high-noise conditions.

**Highly accurate.** With a frequency bandwidth of 100 Hz and noise-cancelling digital signal stacking, the M-4 delivers very precise results. The details are summarized in a table overleaf.

**Sensitive.** The same features that make the M-4 accurate allow detection of very weak signals. The Huntec receiver requires lower transmitter power than any other, for a given set of operating conditions. Automatic correction for drifts in self-potential and gain allow long stacking times for significant signal-to-noise improvements.

**Intelligent.** Under the control of a powerful 16-bit microprocessor, the M-4 calibrates and tests itself between measurements. Coded error messages, flashed onto the display, inform the operator of any malfunction.

The M-4 Receiver is complemented by Huntec's new M-4 transmitters, which offer precisely timed constant-current output and both time and frequency domain waveforms, compatible with the receiver's accuracy and multi-mode measurement capabilities. The RL-2 Reference Isolator connects any IP transmitter to the receiver's reference channel. The GeoDataBase field computer reads, stores and processes data from M-4 cassettes.

Contact Huntec for more information on the benefits offered by the M-4 product line.

## FEATURES

- Time and Frequency domain IP and Complex Resistivity operation
- Simultaneous Time domain and Complex Resistivity measurement
- Automatic calibration
  - gain setting
  - SP cancellation
  - fault diagnosis
  - filter tuning
- Independent reference channel for drillhole and underground work
- 33 quantities, displayable on large 3½ digit low-temperature liquid-crystal readout
- Analogue meter for source resistance measurement
- $10^9$ ohms differential input resistance
- 8 hours continuous operation with replaceable, rechargeable nickel-cadmium battery pack (2 supplied)
- Optional Cassette DataLogger fits inside case, has read-after-write error checking. Up to 350 stations per tape.
- Conveniently packaged for backpacking or hand carrying
- 100 Hz bandwidth, fine time-resolution
- Advanced digital signal stacking
- Delivers reliable, accurate data in noisy, highly conductive areas.

huntec (70) LIMITED

25 Howden Road,
Scarborough,
Ontario, Canada
M1R 5A6
Phone (416) 751-8055
Telex 06-963640
Cable: Huntor,
Toronto

## SPECIFICATIONS

Inputs

**Signal Channel**

| | |
|---|---|
| Range | 5 x 10 to 10 volts Automatic ranging Overload indication |
| Resistance | Greater than 10 ohms differential |
| Bandwidth: | 100 Hz |
| SP Cancellation: | −5 to +5 volts (automatic) |
| Protection | Low leakage diode clamps gas dis charge surge arrestors replaceable fuses |

**Reference Channel**

| | |
|---|---|
| Level: | 500 mV minimum 10 volts peak max imum overload indication |
| Resistance | 2 x $10^5$ ohms differential |

Controls and Functions

**Operating Controls**

| | |
|---|---|
| Keypad: | 16 keys calculator format function associated with each key |
| Reference Registers: | Keypad may be used to store up to ten 3½ digit numeric values with floating decim al point to represent station number line number operator time date weather transmitter current etc for recording on cassette |

**Programming Controls**

| | |
|---|---|
| Sub-panel | All programming controls are on a co vered sub-panel not accessible during normal operation |
| Thumbwheel Switches: | Select delay time $t_D$ in milliseconds chargeability window $t_p$ in milliseconds; operating frequency; PFE frequency ratio |

**Displayable Quantities**

| | |
|---|---|
| Time domain | Primary voltage; self potential; charge ability (total or each of 10 windows of equal width); phases of odd harmonics 3 to 15; amplitudes of odd harmonics 1 to 15; cycle count; repeating display of polarization potential and total chargeability |
| Freq domain: | Primary amplitude; Percent Frequency Effect; self potential cycle count |
| Complex Resistivity | Phases of odd harmonics 3 to 15; ampli tudes of odd harmonics 1 to 15; fun damental phase (with ref input); cycle count |
| Any mode | Battery voltage Frequency error |

Outputs

**Displays**

| | |
|---|---|
| Digital Display | 3½ digit low temperature liquid crystal display Indicates measurement results and diagnostic error messages |
| Analogue Meter | Ohms scale for source resistance; also gives qualitative indication of signal to noise ratio |

Cassette DataLogger (Optional)

| | |
|---|---|
| Description | Accommodated within M 4 chassis If not acquired with receiver may be retro fitted by user at any time Two recording modes |
| Partial | All sub panel settings measurement re sults and contents of reference registers are recorded (2 seconds recording time) |
| Full | As in partial mode but also recorded is one cycle of averaged signal waveform (28 seconds recording time) If external reference is used one cycle of reference waveform is also recorded (60 seconds recording time) Extra memory and soft ware available to average and store the reference waveform for advanced offline resistivity computation |
| Format: | ANSI/ECMA/ISO standard for saturation recording 80 bytes/record all data re corded in ASCII code |
| Verification: | Read after write data verification (auto matic) |

Mechanical

| | |
|---|---|
| M-4 Receiver with battery pack: | 45 cm x 33 cm x 14 cm 10 0 kg |
| M-4 Receiver with battery pack and Cassette DataLogger: | Dimensions as above 11 0 kg |
| Replaceable Battery pack: | 33 cm x 11 cm x 4 5 cm 3 kg |

Environmental

| | |
|---|---|
| Temperature: | Operation: −20 C to +55 C<br>Storage: −40 C to +70 C |
| Humidity: | Moisture proof operable in light drizzle |
| Altitude | −1 525 m to +4 775 m |
| Shock Vibration: | Suitable for transport in bush vehicles |

### OUTPUT ACCURACY AND SENSITIVITY

| m ll di | olt | olt | l | sec nd | % |
|---|---|---|---|---|---|
| 2 mill radia s 1 | 1% 40H<br>2% to 80Hz | 1% | 1% | 0 1% 2 | 0 1% 3 full scale |
| 0 01 m ll ad | 10 lt | 10 lt | 10 l | 10 second | 0 001% ull scale |

1) Frequency domain mode: at harmonic frequencies up to 15 Hz increases to not more than 5 milliradians at 80 Hz
Time domain mode: at harmonic frequencies up to 7 5 Hz increases to not more than 5 milliradians at 30 Hz

2) of total OFF time

3) Full scale defined as 100% PFE

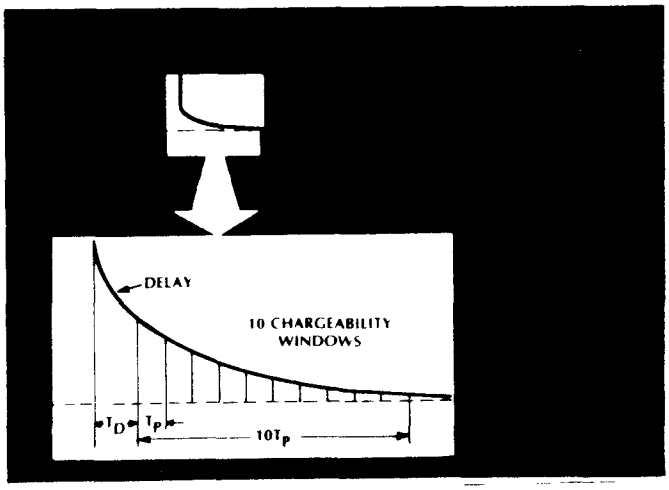
Cassette Data recorded in ASCII 9 digits with decimal point fixed for four decimal digits

Display Data: 3½ digits floating decimal point

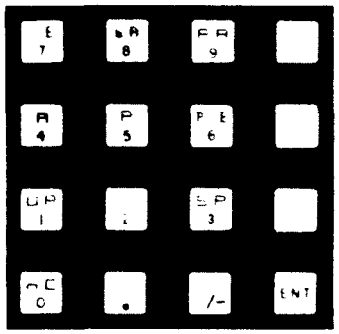
Resolution of averaged waveform limited by A/D converter to one part or 4096 x (square root of cycle count)

Resolution of reference waveform (not averaged) limited by available memory to one part in 256 Additional memory and averaging software available as option

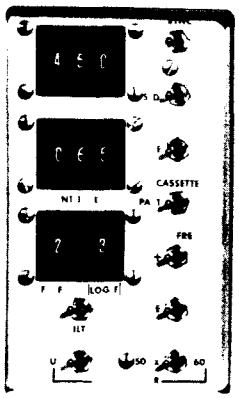
### CHARGEABILITY WINDOWS



## SWITCHES AND CONTROLS



Keypad configuration



Sub panel thumbwheels and switches

### CONSOLE

| | |
|---|---|
| *Keypad* | Digits, decimals and sign arranged in calculator format. The following quantities may be displayed via keypad entry: |

### TIME DOMAIN MODE

| | |
|---|---|
| *Primary Voltage* | UP |
| *Self Potential* | SP |
| *Chargeability* | Ch 0 to Ch 9 Ten windows of equal width<br>Ch Sum of all ten windows |
| *Phases of Odd Harmonics* | P 3 to P 1 5 |
| *Amplitudes of Odd Harmonics* | A 1 to A 1 5 |
| *Cycle Count* | nC |
| *Repeat* | RPT initiates automatic sequential display of polarization potential ($V_p$) and total chargeability |

### FREQUENCY DOMAIN MODE

| | |
|---|---|
| *Primary Amplitude* | A 1 |
| *Percent Frequency Effect* | PFE |
| *Self Potential* | SP |
| *Cycle Count* | nC |

### COMPLEX RESISTIVITY

| | |
|---|---|
| *Phases of Odd Harmonics* | P 3 to P 1 5 |
| *Amplitudes of Odd Harmonics* | A 1 to A 1 5 |
| *With Reference Input* | Fundamental phase P 1 |
| *Cycle Count* | nC |

### OPERATION

| | |
|---|---|
| *Battery Voltage* | bA |
| *Frequency Error* | FA |

### CASSETTE DATALOGGING

| | |
|---|---|
| *10 Reference Registers* | rE 0 to rE 9 for coded operating data such as station number, line number, time, date, operator, weather, transmitter current, etc. |
| *Storage* | STO instructs the storage of keyed data to storage register |

### SWITCHES

| Designation | Type | Function |
|---|---|---|
| *START/STOP* | *2 position spring loaded toggle* | Main power switch |
| *RUN/STANDBY* | *2 position toggle* | RUN instructs receiver to execute measurement routine<br>STANDBY: stops measurement cycle, retains data for display or logging |
| *HI/LO* | *2 position toggle* | HI: high frequency measurement<br>LO: low frequency measurement |
| *RECORD/ABORT* | *2 position spring loaded toggle* | RECORD logs data<br>ABORT arrests data logging |
| *X1/OFF/X10 RESISTANCE* | *3 position rotary* | Source resistance measurement scale factor |

### PROGRAMMING SUB PANEL CONTROLS

| Designation | Position | Function |
|---|---|---|
| *SYNC* | *INT* | Select when no external reference is available |
| | *EXT* | Select with external reference |
| *FREQ* | *STD* | Informs receiver that standard frequencies are used |
| | *CUST* | Instructs receiver to interpret frequency thumbwheel setting as a code for customer defined frequencies |
| | *TIME* | For time domain mode |
| | *FREQ* | For frequency domain or complex resistivity modes |
| *CASSETTE* | *PART* | |
| | *FULL* | See cassette description |
| *LOG FREQ* | + or − | Informs receiver of sign of LOG F thumbwheel setting |
| | *PFE* | Select for frequency domain operation employing dual transmitted frequencies |
| | *Z* | Select for complex resistivity |
| *NOTCH FILTER* | *OUT* | Select for no line rejection filter |
| | *IN* | Select for line rejection filter |
| | *50 Hz* | Select for line rejection at 50 Hz |
| | *60 Hz* | Select for line rejection at 60 Hz |
| *LP FILTER* | *OUT* | Full 100 Hz bandwidth at input stage |
| | *IN* | At input frequencies above 0.125 Hz restricts bandwidth to 12 Hz for rapid convergence |

### THUMBWHEEL SWITCHES

| Designation | Number | Function |
|---|---|---|
| *DELAY* | *3 digits* | Sets delay ($T_F$) in milliseconds for time domain measurements (see Fig. 2) |
| *INT TIME* | *3 digits* | Sets chargeability window width ($T_L$) in milliseconds (see Fig. 2) |
| *LOG F* | *1 digit* | Represents $\log_2$ of programmed frequencies 1.64 Hz to 16 Hz<br>or<br>Code representing customer defined frequencies |
| *$F_1/F_2$* | *1 digit* | Represents ratio of 1 to 10 (0 digit represents 10) of the high frequency to the LOG F setting in PFE mode |

*In complex resistivity mode the maximum input frequency is determined by highest odd harmonic measured.*

| Frequency Hz | Maximum Odd Harmonic |
|---|---|
| *1/64 to 4 Hz* | *15 (15/64 to 60 Hz)* |
| *8 Hz* | *11 (88 Hz)* |
| *16 Hz* | *5 (80 Hz)* |

# Appendix II

## Raw Field Data

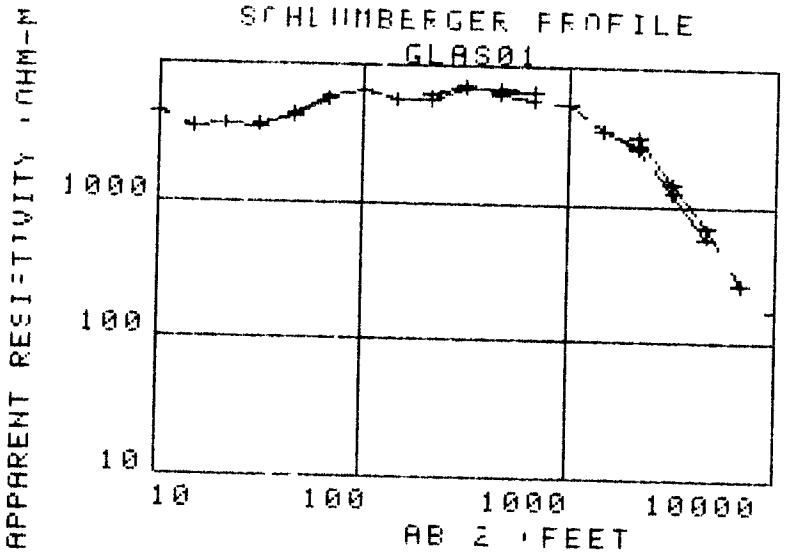
Crosses represent data points.

Data from common MN spreads
are connected by a solid line.

EMSURVEYS

ELECTROMAGNETIC SURVEYS INC
SCHLUMBERGER DATA PROGRAM
CLIENT OCCIDENTAL
AREA GLASS MOUNTAIN
STATION ID GLAS01

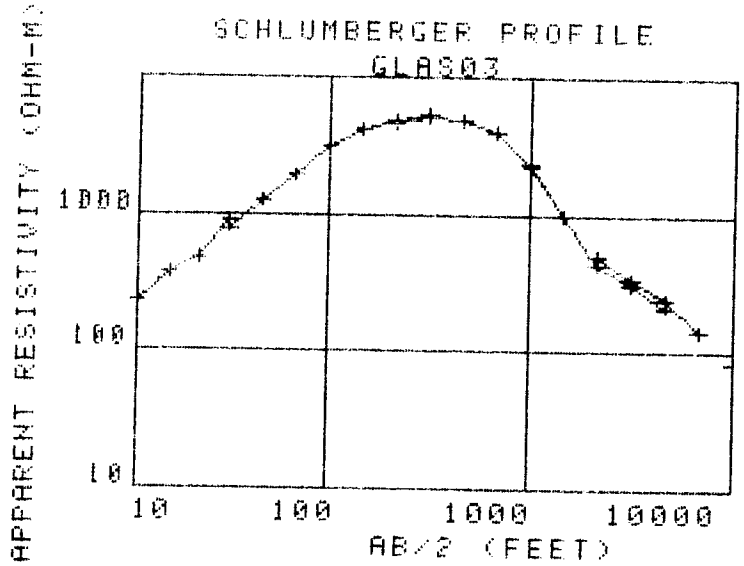
| AB 2 FEET | MN/2 FEET | POTENTL MVOLTS | CUR AMP | RHO A OHM-M |
|---|---|---|---|---|
| 10000 | 1000 | 2 5 | 70 | 171 |
| 10000 | 500 | 1 2 | 70 | 164 |
| 6810 | 500 | 3 8 | 60 | 281 |
| 6810 | 200 | 1 4 | 60 | 266 |
| 4640 | 500 | 43 7 1 | 10 | 809 |
| 4640 | 200 | 14 6 1 | 10 | 683 |
| 4640 | 100 | 6 3 1 | 10 | 590 |
| 3160 | 200 | 21 6 | 35 | 1470 |
| 3160 | 100 | 9 2 | 35 | 1260 |
| 2150 | 200 | 167 2 | 60 | 3058 |
| 2150 | 100 | 71 2 | 60 | 2620 |
| 2150 | 50 | 35 8 | 60 | 2641 |
| 1470 | 100 | 133 1 | 40 | 3428 |
| 1470 | 50 | 67 2 | 40 | 3475 |
| 1000 | 100 | 550 5 | 50 | 5220 |
| 1000 | 50 | 279 0 | 50 | 5331 |
| 681 | 50 | 449 2 | 35 | 5670 |
| 681 | 20 | 203 0 | 35 | 6435 |
| 681 | 10 | 99 4 | 35 | 6306 |
| 464 | 50 | 1507 0 | 50 | 6143 |
| 464 | 20 | 628 5 | 50 | 6468 |
| 464 | 10 | 326 7 | 50 | 6734 |
| 316 | 20 | 1058 0 | 35 | 7199 |
| 316 | 10 | 499 5 | 35 | 6818 |
| 316 | 5 | 250 5 | 35 | 6844 |
| 215 | 20 | 1908 0 | 35 | 5982 |
| 215 | 10 | 887 0 | 35 | 5598 |
| 215 | 5 | 442 0 | 35 | 5588 |
| 147 | 10 | 1869 0 | 35 | 5501 |
| 147 | 5 | 922 8 | 35 | 5451 |
| 100 | 10 | 9378 0 | 70 | 6352 |
| 100 | 5 | 4783 0 | 70 | 6528 |
| 68 | 5 | 7100 0 | 55 | 5703 |
| 68 | 3 | 4217 0 | 55 | 5665 |
| 46 | 5 | 6338 0 | 30 | 4306 |
| 46 | 3 | 3707 0 | 30 | 4229 |
| 32 | 3 | 4979 0 | 22 | 3575 |
| 32 | 1 | 1617 0 | 22 | 3511 |
| 22 | 1 | 4979 0 | 30 | 3666 |
| 15 | 1 | 5034 0 | 15 | 3457 |
| 10 | 1 | 9920 0 | 11 | 4276 |



EMSURVEYS

ELECTROMAGNETIC SURVEYS, INC
SCHLUMBERGER DATA PROGRAM
CLIENT: OCCIDENTAL
AREA: GLASS MOUNTAIN
STATION ID: GLAS03

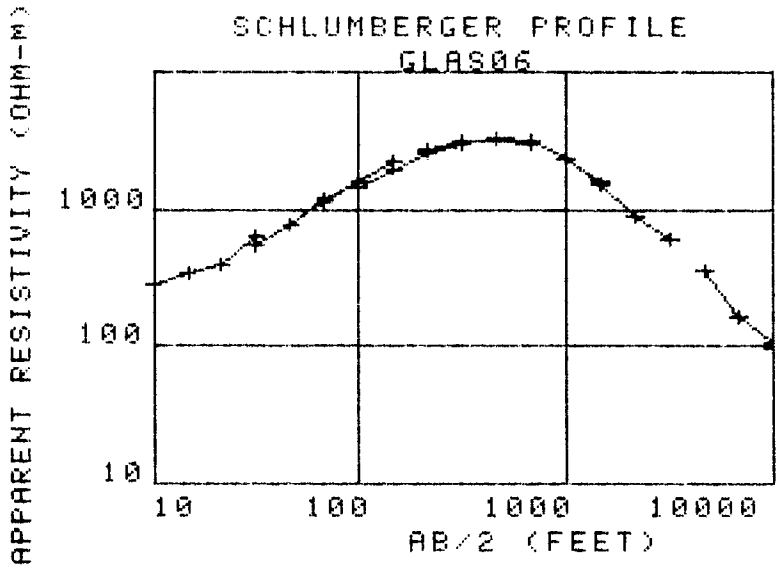
| AB/2 FEET | MN/2 FEET | POTENTL MVOLTS | CUR AMP | RHO(A) OHM-M |
|---|---|---|---|---|
| 10000 | 1000 | 3.2 | 1.80 | 85 |
| 10000 | 500 | 1.6 | 1.80 | 87 |
| 6810 | 500 | 4.7 | 1.40 | 149 |
| 6810 | 200 | 1.8 | 1.40 | 142 |
| 4640 | 500 | 17.5 | 1.40 | 255 |
| 4640 | 200 | 6.5 | 1.40 | 239 |
| 4640 | 100 | 2.9 | 1.40 | 214 |
| 3160 | 200 | 14.5 | 1.00 | 345 |
| 3160 | 100 | 6.4 | 1.00 | 305 |
| 2150 | 200 | 89.7 | 2.00 | 492 |
| 2150 | 100 | 38.3 | 2.00 | 423 |
| 2150 | 50 | 19.1 | 2.00 | 422 |
| 1470 | 100 | 132.7 | 1.40 | 976 |
| 1470 | 50 | 65.1 | 1.40 | 961 |
| 1000 | 100 | 875.7 | 1.80 | 2307 |
| 1000 | 50 | 426.0 | 1.80 | 2261 |
| 681 | 50 | 879.0 | 1.00 | 3883 |
| 681 | 20 | 352.6 | 1.00 | 3912 |
| 464 | 50 | 2324.0 | 1.00 | 4737 |
| 464 | 20 | 930.0 | 1.00 | 4785 |
| 316 | 20 | 3872.0 | 1.80 | 5123 |
| 316 | 10 | 2010.0 | 1.80 | 5335 |
| 215 | 20 | 4170.0 | 1.00 | 4576 |
| 215 | 10 | 2167.0 | 1.00 | 4787 |
| 147 | 10 | 3620.0 | .90 | 4143 |
| 147 | 5 | 1830.0 | .90 | 4204 |
| 100 | 10 | 6628.0 | 1.00 | 3142 |
| 100 | 5 | 3275.0 | 1.00 | 3129 |
| 68 | 5 | 3997.0 | .90 | 1962 |
| 68 | 3 | 2379.0 | .90 | 1953 |
| 46 | 5 | 6196.0 | 1.00 | 1263 |
| 46 | 3 | 3667.0 | 1.00 | 1255 |
| 32 | 3 | 3989.0 | .80 | 788 |
| 32 | 1 | 1486.0 | .80 | 887 |
| 22 | 1 | 1837.0 | .85 | 477 |
| 15 | 1 | 3597.0 | 1.00 | 371 |
| 10 | 1 | 5317.0 | 1.10 | 229 |



EMSURVEYS

ELECTROMAGNETIC SURVEYS, INC.
SCHLUMBERGER DATA PROGRAM
CLIENT: OCCIDENTAL
AREA: GLASS MOUNTAIN
STATION ID: GLAS06

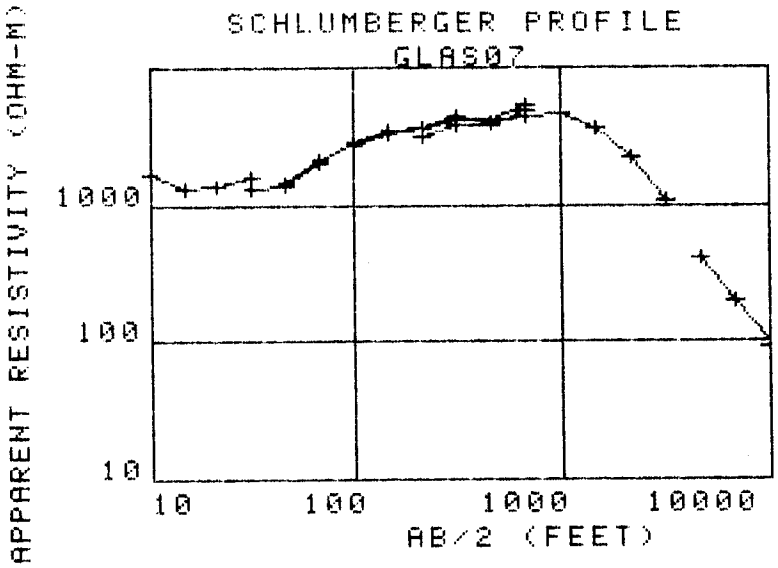
| AB/2 FEET | MN/2 FEET | POTENTL MVOLTS | CUR AMP | RHO(A) OHM-M |
|---|---|---|---|---|
| 10000 | 1000 | 2.7 | 1.35 | 96 |
| 10000 | 500 | 1.5 | 1.35 | 109 |
| 10000 | 200 | .5 | 1.35 | 96 |
| 6810 | 500 | 3.0 | .80 | 163 |
| 6810 | 200 | 1.2 | .80 | 171 |
| 4640 | 500 | 27.4 | 1.60 | 349 |
| 4640 | 200 | 11.0 | 1.60 | 355 |
| 3160 | 200 | 30.5 | 1.20 | 605 |
| 3160 | 100 | 15.2 | 1.20 | 605 |
| 2150 | 200 | 90.8 | 1.10 | 906 |
| 2150 | 100 | 44.6 | 1.10 | 896 |
| 1470 | 100 | 133.1 | .90 | 1524 |
| 1470 | 50 | 67.5 | .90 | 1551 |
| 1000 | 100 | 540.3 | 1.10 | 2329 |
| 1000 | 50 | 272.5 | 1.10 | 2367 |
| 681 | 50 | 695.8 | 1.00 | 3074 |
| 681 | 20 | 270.9 | 1.00 | 3006 |
| 464 | 50 | 1288.0 | .80 | 3281 |
| 464 | 20 | 495.6 | .80 | 3188 |
| 316 | 20 | 1310.0 | 1.00 | 3120 |
| 316 | 10 | 622.0 | 1.00 | 2971 |
| 215 | 20 | 2427.0 | 1.00 | 2663 |
| 215 | 10 | 1143.0 | 1.00 | 2525 |
| 147 | 10 | 2481.0 | 1.30 | 1966 |
| 147 | 5 | 1380.0 | 1.30 | 2195 |
| 100 | 10 | 3652.0 | 1.20 | 1443 |
| 100 | 5 | 2034.0 | 1.20 | 1619 |
| 100 | 3 | 1199.0 | 1.20 | 1594 |
| 68 | 5 | 3471.0 | 1.30 | 1180 |
| 68 | 3 | 2026.0 | 1.30 | 1152 |
| 46 | 5 | 3032.0 | .80 | 772 |
| 46 | 3 | 1782.0 | .80 | 762 |
| 32 | 3 | 2380.0 | .70 | 537 |
| 32 | 1 | 921.0 | .70 | 629 |
| 22 | 1 | 533.0 | .30 | 392 |
| 15 | 1 | 681.0 | .21 | 334 |
| 10 | 1 | 1152.0 | .20 | 273 |



EMSURVEYS

ELECTROMAGNETIC SURVEYS, INC.
SCHLUMBERGER DATA PROGRAM
CLIENT: OCCIDENTAL
AREA: GLASS MOUNTAIN
STATION ID: GLAS07

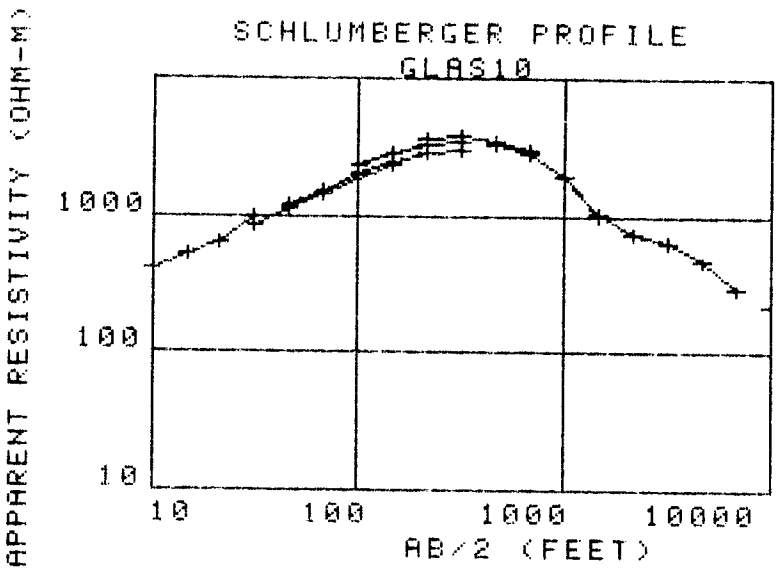
| AB/2 FEET | MN/2 FEET | POTENTL MVOLTS | CUR AMP | RHO(A) OHM-M |
|---|---|---|---|---|
| 10000 | 1000 | 1.4 | .70 | 92 |
| 10000 | 500 | .7 | .70 | 101 |
| 10000 | 200 | .4 | .70 | 120 |
| 6810 | 500 | 3.2 | .70 | 199 |
| 6810 | 200 | 1.3 | .70 | 206 |
| 4640 | 500 | 10.1 | .50 | 410 |
| 4640 | 200 | 4.2 | .50 | 433 |
| 3160 | 200 | 33.3 | .75 | 1057 |
| 3160 | 100 | 17.1 | .75 | 1091 |
| 2150 | 200 | 148.8 | .75 | 2177 |
| 2150 | 100 | 76.3 | .75 | 2246 |
| 1470 | 100 | 560.0 | 1.60 | 3605 |
| 1470 | 50 | 273.0 | 1.60 | 3527 |
| 1000 | 100 | 774.4 | .80 | 4589 |
| 1000 | 50 | 375.4 | .80 | 4483 |
| 681 | 50 | 593.0 | .60 | 4366 |
| 681 | 20 | 259.0 | .60 | 4789 |
| 681 | 10 | 143.8 | .60 | 5322 |
| 464 | 50 | 1376.0 | .70 | 4006 |
| 464 | 20 | 514.0 | .70 | 3778 |
| 464 | 10 | 277.0 | .70 | 4078 |
| 316 | 20 | 637.0 | .40 | 3793 |
| 316 | 10 | 351.0 | .40 | 4192 |
| 316 | 5 | 183.0 | .40 | 4375 |
| 215 | 20 | 1012.0 | .35 | 3173 |
| 215 | 10 | 559.0 | .35 | 3528 |
| 215 | 5 | 289.0 | .35 | 3654 |
| 147 | 10 | 2214.0 | .70 | 3258 |
| 147 | 5 | 1149.0 | .70 | 3393 |
| 100 | 10 | 3998.0 | .70 | 2708 |
| 100 | 5 | 2081.0 | .70 | 2840 |
| 68 | 5 | 3330.0 | .70 | 2102 |
| 68 | 3 | 1908.0 | .70 | 2014 |
| 46 | 5 | 3157.0 | .45 | 1430 |
| 46 | 3 | 1767.0 | .45 | 1344 |
| 32 | 3 | 4909.0 | .60 | 1292 |
| 32 | 1 | 2026.0 | .60 | 1613 |
| 22 | 1 | 2168.0 | .35 | 1368 |
| 15 | 1 | 6315.0 | .50 | 1301 |
| 10 | 1 | 7806.0 | .22 | 1682 |



EMSURVEYS

ELECTROMAGNETIC SURVEYS, INC.
SCHLUMBERGER DATA PROGRAM
CLIENT: OCCIDENTAL
AREA: GLASS MOUNTAIN
STATION ID: GLAS10

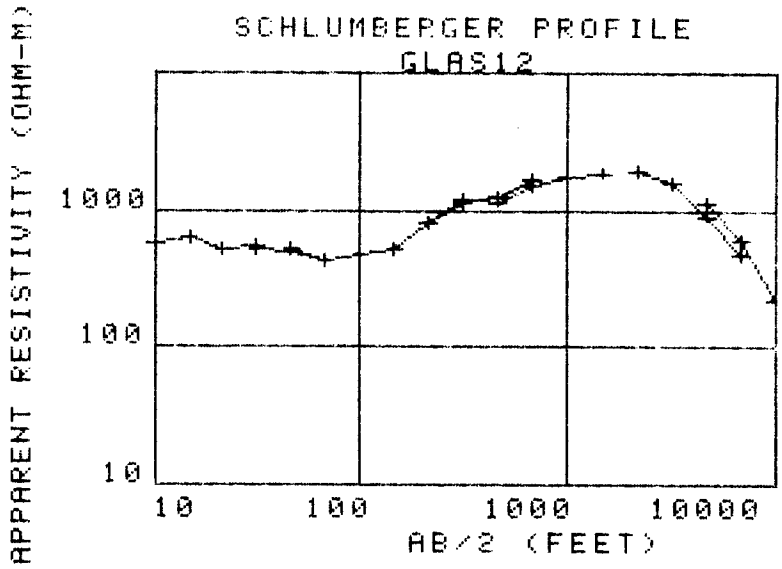
| AB/2 FEET | MN/2 FEET | POTENTL MVOLTS | CUR AMP | RHO(A) OHM-M |
|---|---|---|---|---|
| 10000 | 1000 | 4.2 | .90 | 219 |
| 10000 | 500 | 2.0 | .90 | 207 |
| 6810 | 500 | 5.5 | .80 | 302 |
| 6810 | 200 | 2.1 | .80 | 287 |
| 4640 | 500 | 23.6 | 1.00 | 482 |
| 4640 | 200 | 9.1 | 1.00 | 466 |
| 3160 | 200 | 27.0 | 1.00 | 643 |
| 3160 | 100 | 13.4 | 1.00 | 642 |
| 2150 | 200 | 67.3 | 1.00 | 739 |
| 2150 | 100 | 33.2 | 1.00 | 734 |
| 1470 | 100 | 70.2 | .70 | 1033 |
| 1470 | 50 | 33.8 | .70 | 997 |
| 1000 | 100 | 444.0 | 1.10 | 1914 |
| 1000 | 50 | 217.5 | 1.10 | 1889 |
| 681 | 50 | 1244.0 | 1.95 | 2818 |
| 681 | 20 | 516.7 | 1.95 | 2940 |
| 464 | 50 | 2890.0 | 1.80 | 3272 |
| 464 | 20 | 1196.0 | 1.80 | 3419 |
| 316 | 20 | 2049.0 | 1.30 | 3754 |
| 316 | 10 | 924.0 | 1.30 | 3396 |
| 316 | 5 | 409.0 | 1.30 | 3008 |
| 215 | 20 | 2097.0 | .65 | 3540 |
| 215 | 10 | 944.0 | .65 | 3208 |
| 215 | 5 | 422.5 | .65 | 2876 |
| 147 | 10 | 2426.0 | .90 | 2777 |
| 147 | 5 | 1076.0 | .90 | 2472 |
| 147 | 3 | 616.0 | .90 | 2360 |
| 100 | 10 | 3872.0 | .80 | 2295 |
| 100 | 5 | 1712.0 | .80 | 2045 |
| 68 | 5 | 1735.0 | .50 | 1533 |
| 68 | 3 | 994.0 | .50 | 1469 |
| 46 | 5 | 2371.0 | .40 | 1208 |
| 46 | 3 | 1302.0 | .40 | 1114 |
| 32 | 3 | 4374.0 | .80 | 864 |
| 32 | 1 | 1610.0 | .80 | 961 |
| 22 | 1 | 2293.0 | .80 | 633 |
| 15 | 1 | 2741.0 | .55 | 513 |
| 10 | 1 | 2544.0 | .30 | 402 |



EMSURVEYS

ELECTROMAGNETIC SURVEYS, INC.
SCHLUMBERGER DATA PROGRAM
CLIENT: OCCIDENTAL
AREA: GLASS MOUNTAIN
STATION ID: GLAS12

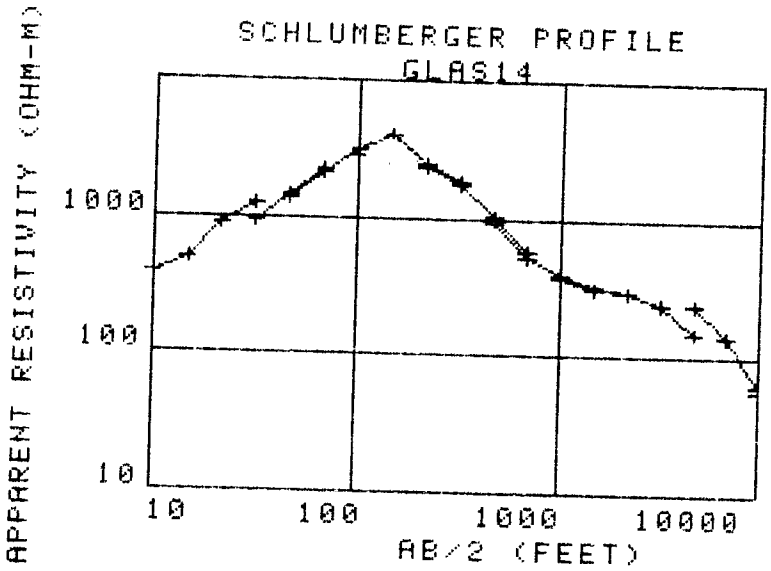
| AB/2 FEET | MN/2 FEET | POTENTL MVOLTS | CUR AMP | RHO(A) OHM-M |
|---|---|---|---|---|
| 10000 | 1000 | 2.1 | .45 | 222 |
| 10000 | 500 | 1.0 | .45 | 221 |
| 6810 | 500 | 12.4 | .90 | 607 |
| 6810 | 200 | 3.9 | .90 | 480 |
| 6810 | 100 | 1.4 | .90 | 338 |
| 4640 | 500 | 28.1 | .50 | 1146 |
| 4640 | 200 | 8.8 | .50 | 910 |
| 4640 | 100 | 4.3 | .50 | 880 |
| 3160 | 200 | 74.2 | 1.10 | 1607 |
| 3160 | 100 | 35.9 | 1.10 | 1559 |
| 2150 | 200 | 104.7 | .60 | 1915 |
| 2150 | 100 | 50.7 | .60 | 1865 |
| 1470 | 100 | 98.9 | .55 | 1852 |
| 1470 | 50 | 49.8 | .55 | 1871 |
| 1000 | 100 | 166.5 | .45 | 1754 |
| 1000 | 50 | 84.0 | .45 | 1783 |
| 681 | 50 | 172.0 | .50 | 1520 |
| 681 | 20 | 73.8 | .50 | 1638 |
| 464 | 50 | 199.0 | .35 | 1159 |
| 464 | 20 | 85.2 | .35 | 1253 |
| 316 | 20 | 240.0 | .50 | 1143 |
| 316 | 10 | 122.6 | .50 | 1171 |
| 215 | 20 | 289.9 | .40 | 795 |
| 215 | 10 | 147.3 | .40 | 813 |
| 147 | 10 | 128.9 | .25 | 531 |
| 147 | 5 | 64.0 | .25 | 529 |
| 100 | 10 | 354.0 | .35 | 480 |
| 100 | 5 | 172.0 | .35 | 470 |
| 68 | 5 | 343.0 | .35 | 433 |
| 68 | 3 | 201.9 | .35 | 426 |
| 46 | 5 | 1279.0 | .50 | 521 |
| 46 | 3 | 745.0 | .50 | 510 |
| 32 | 3 | 1306.0 | .40 | 516 |
| 32 | 1 | 457.0 | .40 | 546 |
| 22 | 1 | 706.0 | .30 | 520 |
| 15 | 1 | 3377.0 | .55 | 632 |
| 10 | 1 | 4209.0 | .35 | 570 |



EMSURVEYS

ELECTROMAGNETIC SURVEYS, INC.
SCHLUMBERGER DATA PROGRAM
CLIENT: OCCIDENTAL
AREA: GLASS MOUNTAIN
STATION ID: GLAS14

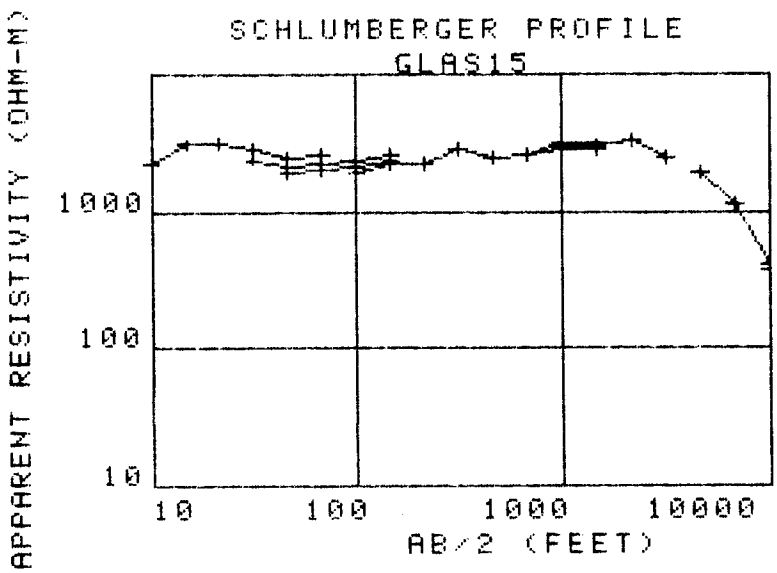
| AB/2 FEET | MN/2 FEET | POTENTL MVOLTS | CUR AMP | RHO(A) OHM-M |
|---|---|---|---|---|
| 15000 | 1000 | 1.3 | 1.60 | 87 |
| 15000 | 500 | .7 | 1.60 | 94 |
| 10000 | 1000 | .9 | .75 | 57 |
| 10000 | 500 | .5 | .75 | 64 |
| 10000 | 200 | .2 | .75 | 64 |
| 6810 | 500 | 4.9 | 1.55 | 140 |
| 6810 | 200 | 1.7 | 1.55 | 122 |
| 4640 | 500 | 16.9 | 1.40 | 246 |
| 4640 | 200 | 5.8 | 1.40 | 213 |
| 4640 | 100 | 2.0 | 1.40 | 147 |
| 3160 | 200 | 12.8 | .90 | 339 |
| 3160 | 100 | 4.5 | .90 | 239 |
| 2150 | 200 | 61.3 | 1.60 | 420 |
| 2150 | 100 | 21.1 | 1.60 | 291 |
| 2150 | 50 | 10.7 | 1.60 | 296 |
| 1470 | 100 | 42.0 | 1.40 | 309 |
| 1470 | 50 | 21.4 | 1.40 | 316 |
| 1000 | 100 | 127.7 | 1.60 | 378 |
| 1000 | 50 | 64.9 | 1.60 | 388 |
| 681 | 50 | 215.0 | 1.80 | 528 |
| 681 | 20 | 92.0 | 1.80 | 567 |
| 464 | 50 | 656.0 | 1.40 | 955 |
| 464 | 20 | 275.0 | 1.40 | 1011 |
| 316 | 20 | 514.0 | .70 | 1749 |
| 316 | 10 | 268.0 | .70 | 1829 |
| 215 | 20 | 1083.0 | .50 | 2377 |
| 215 | 10 | 560.0 | .50 | 2474 |
| 147 | 5 | 1567.0 | .80 | 4049 |
| 100 | 10 | 4704.0 | .80 | 2788 |
| 100 | 5 | 2599.0 | .80 | 3104 |
| 68 | 5 | 2851.0 | .60 | 2099 |
| 68 | 3 | 1782.0 | .60 | 2194 |
| 46 | 5 | 4060.0 | .60 | 1379 |
| 46 | 3 | 2536.0 | .60 | 1447 |
| 32 | 3 | 2890.0 | .50 | 913 |
| 32 | 1 | 1288.0 | .50 | 1231 |
| 22 | 1 | 2222.0 | .55 | 892 |
| 15 | 1 | 1456.0 | .30 | 500 |
| 10 | 1 | 2913.0 | .35 | 395 |



EMSURVEYS

ELECTROMAGNETIC SURVEYS, INC.
SCHLUMBERGER DATA PROGRAM
CLIENT: OCCIDENTAL
AREA: GLASS MOUNTAIN
STATION ID: GLAS15

| AB/2 FEET | MN/2 FEET | POTENTL MVOLTS | CUR AMP | RHO(A) OHM-M |
|---|---|---|---|---|
| 10000 | 1000 | 4.4 | .55 | 380 |
| 10000 | 500 | 2.4 | .55 | 415 |
| 10000 | 200 | 1.1 | .55 | 479 |
| 6810 | 500 | 16.6 | .65 | 1126 |
| 6810 | 200 | 6.8 | .65 | 1164 |
| 4640 | 500 | 47.6 | .50 | 1940 |
| 4640 | 200 | 19.6 | .50 | 2013 |
| 3160 | 200 | 31.1 | .30 | 2469 |
| 3160 | 100 | 15.7 | .30 | 2497 |
| 2150 | 200 | 117.8 | .40 | 3231 |
| 2150 | 100 | 59.4 | .40 | 3279 |
| 1470 | 100 | 73.1 | .25 | 3013 |
| 1470 | 50 | 34.8 | .25 | 2877 |
| 1470 | 20 | 14.8 | .25 | 3052 |
| 1000 | 100 | 123.3 | .20 | 2923 |
| 1000 | 50 | 58.5 | .20 | 2795 |
| 1000 | 20 | 25.6 | .20 | 3064 |
| 681 | 50 | 86.8 | .15 | 2556 |
| 681 | 20 | 35.3 | .15 | 2614 |
| 464 | 50 | 236.4 | .20 | 2409 |
| 464 | 20 | 96.5 | .20 | 2484 |
| 316 | 20 | 415.4 | .35 | 2826 |
| 316 | 10 | 212.1 | .35 | 2895 |
| 215 | 20 | 400.5 | .20 | 2197 |
| 215 | 10 | 203.4 | .20 | 2246 |
| 147 | 10 | 633.0 | .30 | 2173 |
| 147 | 5 | 335.3 | .30 | 2311 |
| 147 | 3 | 220.7 | .30 | 2537 |
| 100 | 10 | 1657.0 | .40 | 1964 |
| 100 | 5 | 891.4 | .40 | 2129 |
| 100 | 3 | 574.9 | .40 | 2292 |
| 68 | 5 | 1150.6 | .25 | 2033 |
| 68 | 3 | 752.4 | .25 | 2224 |
| 68 | 1 | 289.8 | .25 | 2574 |
| 46 | 5 | 2875.0 | .30 | 1953 |
| 46 | 3 | 1837.0 | .30 | 2096 |
| 46 | 1 | 720.0 | .30 | 2473 |
| 32 | 3 | 3023.0 | .20 | 2388 |
| 32 | 1 | 1182.0 | .20 | 2823 |
| 22 | 1 | 3542.0 | .25 | 3130 |
| 15 | 1 | 5929.0 | .20 | 3054 |
| 10 | 1 | 4767.0 | .10 | 2260 |



# Appendix III

## Inversion Results

Curved solid line represents field data.

Rectangles indicate inversion model response.

Straight solid line represents model geometry and resistivity.

EMSURVEYS

GMTN01

| I | L | RA-F | RA-M | %ERR |
|---|---|---|---|---|
| 1 | 10.0 | 4300 | 4291 | -.21 |
| 2 | 14.7 | 3500 | 3669 | 4.82 |
| 3 | 21.5 | 3600 | 3529 | -1.96 |
| 4 | 31.6 | 3500 | 3849 | 9.97 |
| 5 | 46.4 | 4300 | 4482 | 4.23 |
| 6 | 68.1 | 5700 | 5209 | -8.62 |
| 7 | 100.0 | 6400 | 5842 | -8.73 |
| 8 | 146.8 | 5400 | 6291 | 16.51 |
| 9 | 215.4 | 5600 | 6541 | 16.81 |
| 10 | 316.2 | 6800 | 6589 | -3.11 |
| 11 | 464.2 | 6500 | 6375 | -1.92 |
| 12 | 681.3 | 6200 | 5752 | -7.23 |
| 13 | 1000.0 | 5300 | 4622 | -12.79 |
| 14 | 1467.9 | 2700 | 3242 | 20.06 |
| 15 | 2154.4 | 2200 | 2083 | -5.32 |
| 16 | 3162.3 | 1250 | 1263 | 1.00 |
| 17 | 4641.6 | 690 | 650 | -5.79 |
| 18 | 6812.9 | 270 | 287 | 6.18 |
| 19 | 10000.0 | 170 | 166 | -2.34 |

%RMS= 9.14

FITTED MODEL PARAMETERS

| RES(OHM-M) | DEPTH TO TOP(FT,M) | |
|---|---|---|
| 6,609 | 0 | 0 |
| 2,866 | 4 | 1 |
| 8,334 | 20 | 6 |
| 6,904 | 40 | 12 |
| 1,807 | 525 | 160 |
| 136 | 2,095 | 638 |

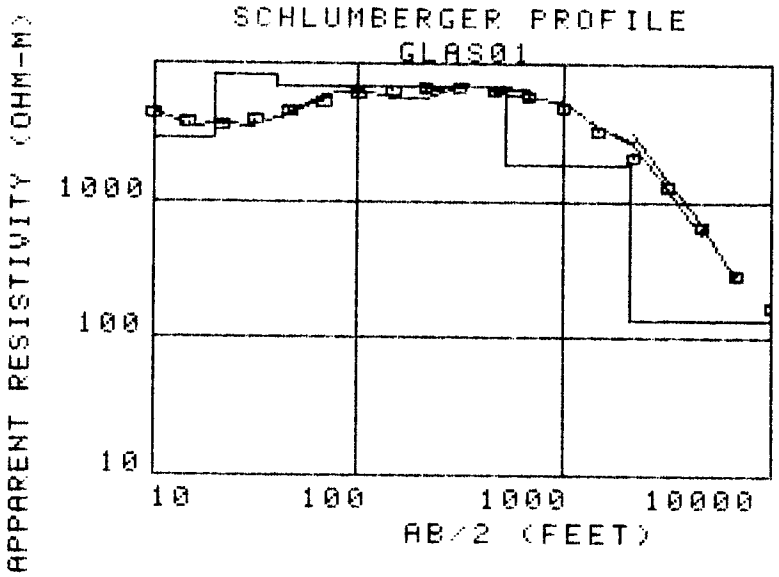
INTERPRETED MODEL :

| | |
|---|---|
| | 0.00 |
| R= 6,608.88 | |
| E= 3.74 | |
| | 3.74 |
| R= 2,865.86 | |
| E= 16.16 | |
| | 19.90 |
| R= 8,333.88 | |
| E= 19.80 | |
| | 39.70 |
| R= 6,904.35 | |
| E= 485.33 | |
| | 525.03 |
| R= 1,807.17 | |
| E= 1,569.77 | |
| | 2,094.80 |
| R= 136.30 | |

| LAYER | T | S |
|---|---|---|
| 1 | 24,735.0 | .00 |
| 2 | 46,306.0 | .01 |
| 3 | 165,014.1 | .00 |
| 4 | .3 , | .07 |
| 5 | .2 , | .87 |

T(TOTAL)=6,423,768.7
S(TOTAL)= .95

TIME= 98.35 MIN.



EMSURVEYS

GMTN03

| I | L | RA-F | RA-M | %ERR |
|---|---|---|---|---|
| 1 | 10.0 | 250 | 288 | 15.04 |
| 2 | 14.7 | 370 | 419 | 13.34 |
| 3 | 21.5 | 500 | 609 | 21.89 |
| 4 | 31.6 | 800 | 881 | 10.14 |
| 5 | 46.4 | 1250 | 1264 | 1.12 |
| 6 | 68.1 | 1900 | 1791 | -5.76 |
| 7 | 100.0 | 3100 | 2484 | -19.86 |
| 8 | 146.8 | 4200 | 3329 | -20.75 |
| 9 | 215.4 | 4600 | 4206 | -8.56 |
| 10 | 316.2 | 5200 | 4836 | -6.99 |
| 11 | 464.2 | 4700 | 4808 | 2.31 |
| 12 | 681.3 | 3800 | 3857 | 1.50 |
| 13 | 1000.0 | 2250 | 2304 | 2.42 |
| 14 | 1467.8 | 1000 | 1006 | .59 |
| 15 | 2154.4 | 430 | 438 | 1.91 |
| 16 | 3162.3 | 300 | 298 | -.66 |
| 17 | 4641.6 | 240 | 230 | -4.21 |
| 18 | 6812.9 | 145 | 152 | 4.74 |
| 19 | 10000.0 | 87 | 86 | -1.33 |

%RMS= 10.33

INTERPRETED MODEL :

| | |
|---|---|
| | 0.00 |
| R= .71 | |
| E= .02 | |
| | .02 |
| R=20,001.18 | |
| E= 106.39 | |
| | 106.41 |
| R= 317.57 | |
| E= 2,999.33 | |
| | 3,105.74 |
| R= 41.26 | |

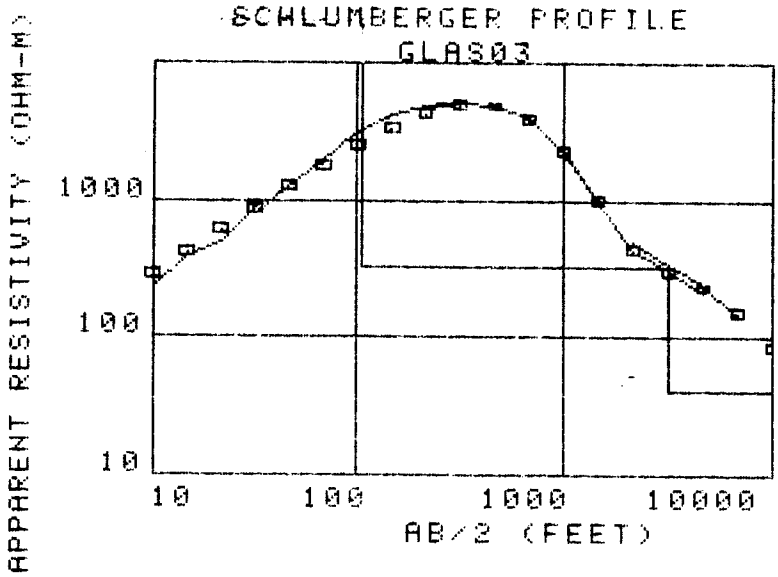
| LAYER | T | S |
|---|---|---|
| 1 | .0 | .03 |
| 2 | .2 , | .01 |
| 3 | 952,505.2 | 9.44 |

T(TOTAL)=3,080,401.6
S(TOTAL)= 9.48

TIME= 21.83 MIN.

FITTED MODEL PARAMETERS

| RES(OHM-M) | DEPTH TO TOP(FT,M) | |
|---|---|---|
| 1 | 0 | 0 |
| 20,001 | | |
| 318 | 106 | 32 |
| 41 | 3,106 | 947 |



EMSURVEYS

GMTN06

| I | L | RA-F | RA-M | %ERR |
|---|---|---|---|---|
| 1 | 10.0 | 285 | 282 | -1.20 |
| 2 | 14.7 | 330 | 326 | -1.34 |
| 3 | 21.5 | 390 | 419 | 7.33 |
| 4 | 31.6 | 540 | 579 | 7.17 |
| 5 | 46.4 | 750 | 814 | 8.48 |
| 6 | 68.1 | 1200 | 1132 | -5.70 |
| 7 | 100.0 | 2000 | 1543 | -22.85 |
| 8 | 146.8 | 2000 | 2045 | 2.23 |
| 9 | 215.4 | 2550 | 2599 | 1.93 |
| 10 | 316.2 | 3000 | 3102 | 3.41 |
| 11 | 464.2 | 3200 | 3357 | 4.91 |
| 12 | 681.3 | 3100 | 3134 | 1.08 |
| 13 | 1000.0 | 2350 | 2399 | 2.08 |
| 14 | 1467.8 | 1550 | 1499 | -3.29 |
| 15 | 2154.4 | 900 | 867 | -3.66 |
| 16 | 3162.3 | 500 | 543 | 8.64 |
| 17 | 4641.6 | 350 | 328 | -6.32 |
| 18 | 6812.9 | 165 | 170 | 2.83 |
| 19 | 10000.0 | 97 | 96 | -.64 |

%RMS= 7.00

FITTED MODEL PARAMETERS

| RES(OHM-M) | DEPTH TO TOP(FT,M) | |
|---|---|---|
| 255 | 0 | 0 |
| 6,380 | 13 | 4 |
| 670 | 278 | 85 |
| 71 | 2,253 | 687 |

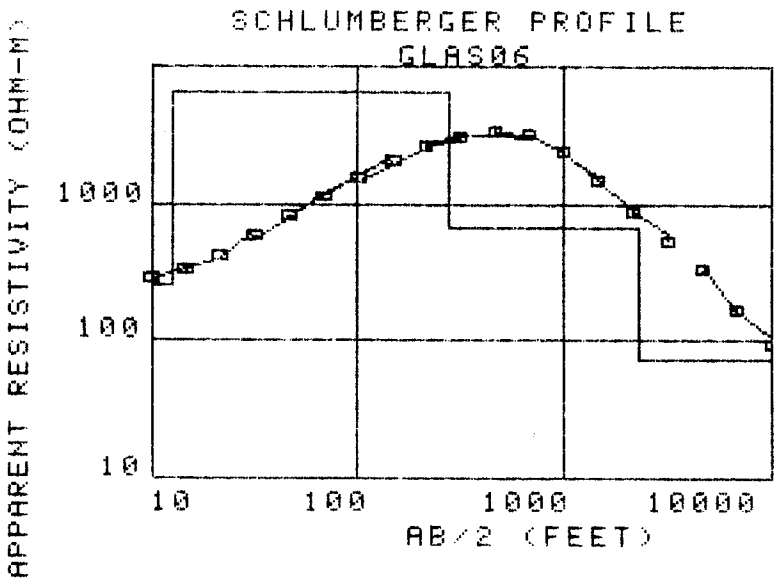
INTERPRETED MODEL :

| | |
|---|---|
| | 0.00 |
| R= 254.81 | |
| E= 12.88 | |
| | 12.88 |
| R= 6,380.50 | |
| E= 265.58 | |
| | 278.46 |
| R= 669.91 | |
| E= 1,974.77 | |
| | 2,253.23 |
| R= 71.44 | |

| LAYER | T | S |
|---|---|---|
| 1 | 3,282.3 | .05 |
| 2 | .1 , | .04 |
| 3 | .1 , | 2.95 |

T(TOTAL)=3,020,722.7
S(TOTAL)= 3.04

TIME= 47.07 MIN.



EMSURVEYS

GMTN07

| I | L | RA-F | RA-M | %ERR |
|---|---|---|---|---|
| 1 | 10.0 | 1800 | 1416 | -21.36 |
| 2 | 14.7 | 1350 | 1425 | 5.53 |
| 3 | 21.5 | 1400 | 1451 | 3.67 |
| 4 | 31.6 | 1400 | 1524 | 8.82 |
| 5 | 46.4 | 1350 | 1693 | 25.41 |
| 6 | 68.1 | 2100 | 2014 | -4.09 |
| 7 | 100.0 | 2800 | 2484 | -11.28 |
| 8 | 146.8 | 3300 | 3036 | -8.01 |
| 9 | 215.4 | 3500 | 3590 | 2.59 |
| 10 | 316.2 | 4000 | 4078 | 1.95 |
| 11 | 464.2 | 4100 | 4427 | 7.97 |
| 12 | 681.3 | 4600 | 4547 | -1.15 |
| 13 | 1000.0 | 4500 | 4300 | -4.45 |
| 14 | 1467.8 | 3500 | 3520 | .57 |
| 15 | 2154.4 | 2200 | 2270 | 3.20 |
| 16 | 3162.3 | 1100 | 1074 | -2.36 |
| 17 | 4641.6 | 420 | 423 | .82 |
| 18 | 6812.9 | 200 | 200 | -.19 |
| 19 | 10000.0 | 100 | 100 | .02 |

%RMS= 9.01

INTERPRETED MODEL :

| | |
|---|---|
| | 0.00 |
| R= 1,411.28 | |
| E= 36.55 | |
| | 36.55 |
| R= 5,216.84 | |
| E= 902.55 | |
| | 939.09 |
| R= 287.85 | |
| E= 3,590.74 | |
| | 4,529.83 |
| R= 23.17 | |

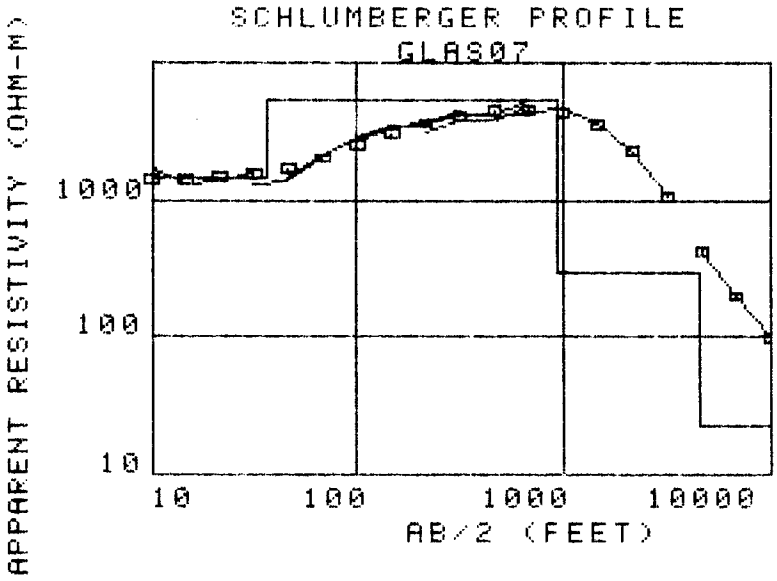
| LAYER | T | S |
|---|---|---|
| 1 | 51,577.7 | .03 |
| 2 | .4 , | .17 |
| 3 | .1 , | 12.47 |

T(TOTAL)=5,793,625.8
S(TOTAL)= 12.67

TIME= 21.30 MIN.

FITTED MODEL PARAMETERS

| RES(OHM-M) | DEPTH TO TOP(FT,M) | |
|---|---|---|
| 1,411 | 0 | 0 |
| 5,217 | 37 | 11 |
| 288 | 939 | 286 |
| 23 | 4,530 | 1,381 |



EMSURVEYS

GMTN10

| I | L | RA-F | RA-M | %ERR |
|---|---|---|---|---|
| 1 | 10.0 | 400 | 413 | 3.31 |
| 2 | 14.7 | 510 | 484 | -5.18 |
| 3 | 21.5 | 630 | 624 | -.94 |
| 4 | 31.6 | 870 | 851 | -2.19 |
| 5 | 46.4 | 1150 | 1164 | 1.21 |
| 6 | 68.1 | 1500 | 1561 | 4.07 |
| 7 | 100.0 | 2000 | 2034 | 1.69 |
| 8 | 146.8 | 2500 | 2549 | 1.96 |
| 9 | 215.4 | 3100 | 3031 | -2.23 |
| 10 | 316.2 | 3400 | 3337 | -1.84 |
| 11 | 464.2 | 3300 | 3270 | -.91 |
| 12 | 681.3 | 2900 | 2702 | -6.83 |
| 13 | 1000.0 | 1900 | 1820 | -4.19 |
| 14 | 1467.8 | 1050 | 1081 | 2.91 |
| 15 | 2154.4 | 730 | 712 | -2.51 |
| 16 | 3162.3 | 630 | 553 | -12.18 |
| 17 | 4641.6 | 470 | 426 | -9.39 |
| 18 | 6812.9 | 300 | 296 | -1.19 |
| 19 | 10000.0 | 210 | 202 | -3.70 |

%RMS= 4.63

INTERPRETED MODEL :

| | |
|---|---|
| | 0.00 |
| R= 368.27 | |
| E= 11.80 | |
| | 11.80 |
| R= 5,103.11 | |
| E= 267.89 | |
| | 279.69 |
| R= 647.53 | |
| E= 839.24 | |
| | 1,118.93 |
| R= 572.53 | |
| E= 1,820.82 | |
| | 2,939.75 |
| R= 139.24 | |

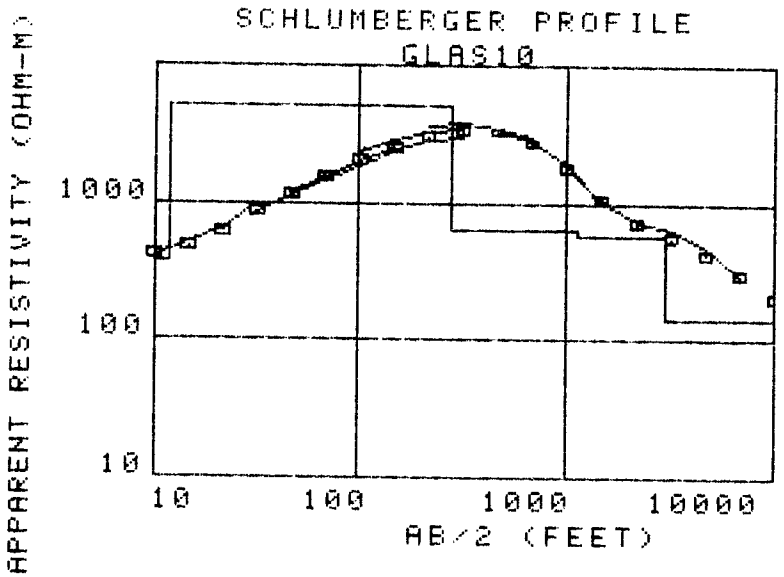
| LAYER | T | S |
|---|---|---|
| 1 | 4,344.4 | .03 |
| 2 | .1 , | .05 |
| 3 | 543,437.0 | 1.30 |
| 4 | .1 , | 3.18 |

T(TOTAL)=2,957,350.5
S(TOTAL)= 4.56

TIME= 36.86 MIN.

FITTED MODEL PARAMETERS

| RES(OHM-M) | DEPTH TO TOP(FT,M) | |
|---|---|---|
| 368 | 0 | 0 |
| 5,103 | 12 | 4 |
| 648 | 280 | 85 |
| 573 | 1,119 | 341 |
| 139 | 2,940 | 896 |



EMSURVEYS

GMTN12

| I | L | RA-F | RA-M | %ERR |
|---|---|---|---|---|
| 1 | 10.0 | 560 | 573 | 2.31 |
| 2 | 14.7 | 610 | 568 | -6.81 |
| 3 | 21.5 | 520 | 556 | 6.98 |
| 4 | 31.6 | 520 | 528 | 1.57 |
| 5 | 46.4 | 510 | 481 | -5.73 |
| 6 | 68.1 | 430 | 442 | 2.80 |
| 7 | 100.0 | 470 | 471 | .32 |
| 8 | 146.8 | 530 | 595 | 12.17 |
| 9 | 215.4 | 800 | 783 | -2.17 |
| 10 | 316.2 | 1150 | 1009 | -12.25 |
| 11 | 464.2 | 1200 | 1257 | 4.76 |
| 12 | 681.3 | 1550 | 1503 | -3.05 |
| 13 | 1000.0 | 1750 | 1711 | -2.21 |
| 14 | 1467.8 | 1800 | 1834 | 1.88 |
| 15 | 2154.4 | 1850 | 1799 | -2.75 |
| 16 | 3162.3 | 1500 | 1527 | 1.78 |
| 17 | 4641.6 | 900 | 1028 | 14.23 |
| 18 | 6812.9 | 580 | 516 | -11.11 |
| 19 | 10000.0 | 220 | 226 | 2.77 |

%RMS= 6.61

INTERPRETED MODEL :

| | |
|---|---|
| | 0.00 |
| R= 575.24 | |
| E= 31.40 | |
| | 31.40 |
| R= 32.95 | |
| E= 4.63 | |
| | 36.04 |
| R= 2,277.78 | |
| E= 1,905.92 | |
| | 1,941.96 |
| R= 125.51 | |

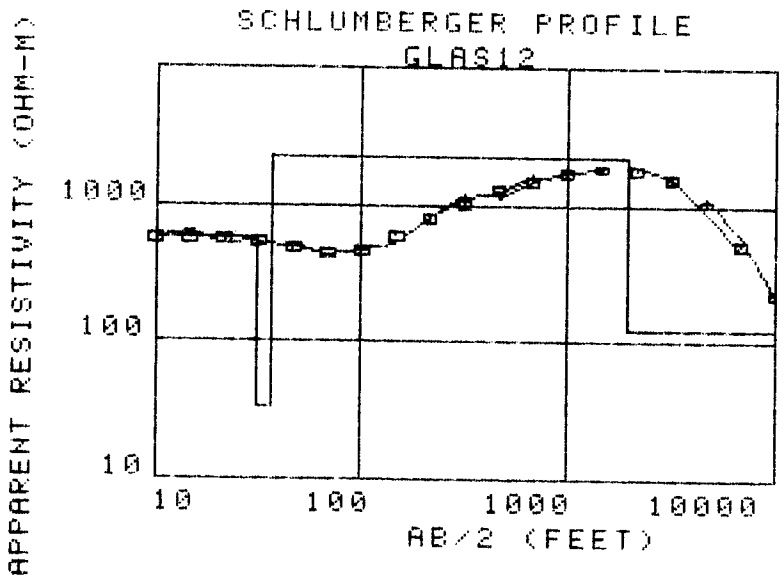
| LAYER | T | S |
|---|---|---|
| 1 | 18,064.7 | .05 |
| 2 | 152.7 | .14 |
| 3 | .4 , | .84 |

T(TOTAL)=4,359,485.8
S(TOTAL)= 1.03

TIME= 27.38 MIN.

FITTED MODEL PARAMETERS

| RES(OHM-M) | DEPTH TO TOP(FT,M) | |
|---|---|---|
| 575 | 0 | 0 |
| 33 | 31 | 10 |
| 2,278 | 36 | 11 |
| 126 | 1,942 | 592 |



EMSURVEYS

GMTN14

| I | L | RA-F | RA-M | %ERR |
|---|---|---|---|---|
| 1 | 10.0 | 400 | 405 | 1.19 |
| 2 | 14.7 | 510 | 583 | 14.23 |
| 3 | 21.5 | 900 | 830 | -7.77 |
| 4 | 31.6 | 1050 | 1164 | 10.83 |
| 5 | 46.4 | 1400 | 1588 | 13.46 |
| 6 | 68.1 | 2100 | 2074 | -1.25 |
| 7 | 100.0 | 2900 | 2517 | -13.20 |
| 8 | 146.8 | 3800 | 2727 | -28.23 |
| 9 | 215.4 | 2200 | 2499 | 13.58 |
| 10 | 316.2 | 1800 | 1822 | 1.24 |
| 11 | 464.2 | 970 | 1035 | 6.71 |
| 12 | 681.3 | 540 | 542 | .40 |
| 13 | 1000.0 | 390 | 373 | -4.46 |
| 14 | 1467.8 | 320 | 321 | .21 |
| 15 | 2154.4 | 280 | 284 | 1.60 |
| 16 | 3162.3 | 240 | 247 | 3.10 |
| 17 | 4641.6 | 210 | 199 | -5.11 |
| 18 | 6812.9 | 130 | 133 | 2.33 |
| 19 | 10000.0 | 66 | 66 | -.30 |

%RMS= 9.81

INTERPRETED MODEL :

| | |
|---|---|
| | 0.00 |
| R= .27<br>E= .01 | |
| | .01 |
| R=10,162.11<br>E= 43.00 | |
| | 43.01 |
| R= 349.97<br>E= 704.26 | |
| | 747.27 |
| R= 252.77<br>E= 3,049.89 | |
| | 3,797.16 |
| R= 11.81 | |

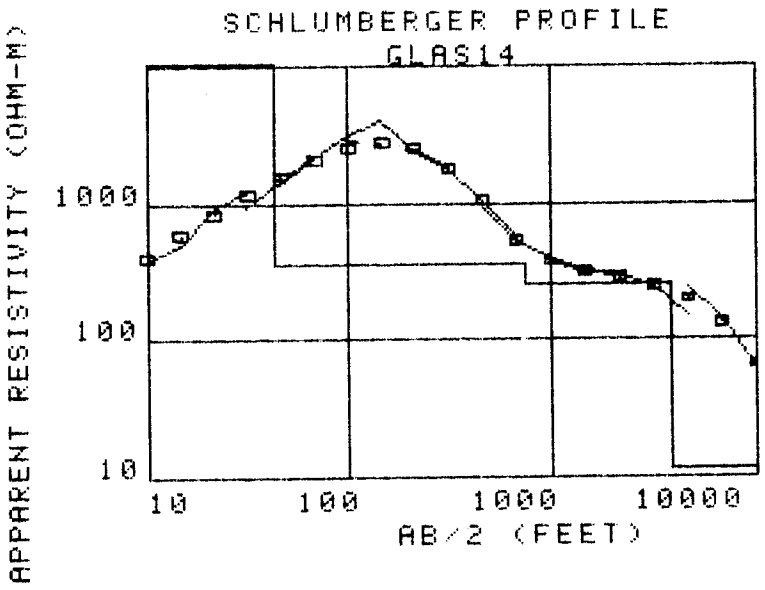
| LAYER | T | S |
|---|---|---|
| 1 | .0 | .02 |
| 2 | 436,977.4 | .00 |
| 3 | 246,471.4 | 2.01 |
| 4 | 770,927.4 | 12.07 |

T(TOTAL)=1,454,376.2
S(TOTAL)= 14.11

TIME= 49.09 MIN.

FITTED MODEL PARAMETERS

| RES(OHM-M) | DEPTH TO TOP(FT,M) | |
|---|---|---|
| | 0 | 0 |
| 10,162 | | |
| 350 | 43 | 13 |
| 253 | 747 | 228 |
| 12 | 3,797 | 1,157 |



EMSURVEYS

GMTN15

| I | L | RA-F | RA-M | %ERR |
|---|---|---|---|---|
| 1 | 10.0 | 2300 | 2582 | 12.24 |
| 2 | 14.7 | 3000 | 2578 | -14.06 |
| 3 | 21.5 | 3100 | 2569 | -17.12 |
| 4 | 31.6 | 2600 | 2547 | -2.03 |
| 5 | 46.4 | 2200 | 2503 | 13.76 |
| 6 | 68.1 | 2200 | 2437 | 10.78 |
| 7 | 100.0 | 2200 | 2371 | 7.79 |
| 8 | 146.8 | 2300 | 2331 | 1.36 |
| 9 | 215.4 | 2350 | 2334 | -.70 |
| 10 | 316.2 | 2800 | 2396 | -14.44 |
| 11 | 464.2 | 2500 | 2534 | 1.38 |
| 12 | 681.3 | 2600 | 2732 | 5.08 |
| 13 | 1000.0 | 2900 | 2924 | .84 |
| 14 | 1467.8 | 3000 | 3035 | 1.18 |
| 15 | 2154.4 | 3200 | 2985 | -6.72 |
| 16 | 3162.3 | 2500 | 2661 | 6.43 |
| 17 | 4641.6 | 2000 | 1986 | -.69 |
| 18 | 6812.9 | 1150 | 1132 | -1.56 |
| 19 | 10000.0 | 500 | 502 | .31 |

%RMS= 8.40

FITTED MODEL PARAMETERS

| RES(OHM-M) | DEPTH TO TOP(FT,M) | |
|---|---|---|
| 2,583 | 0 | 0 |
| 2,253 | 30 | 9 |
| 3,399 | 266 | 81 |
| 196 | 2,640 | 805 |

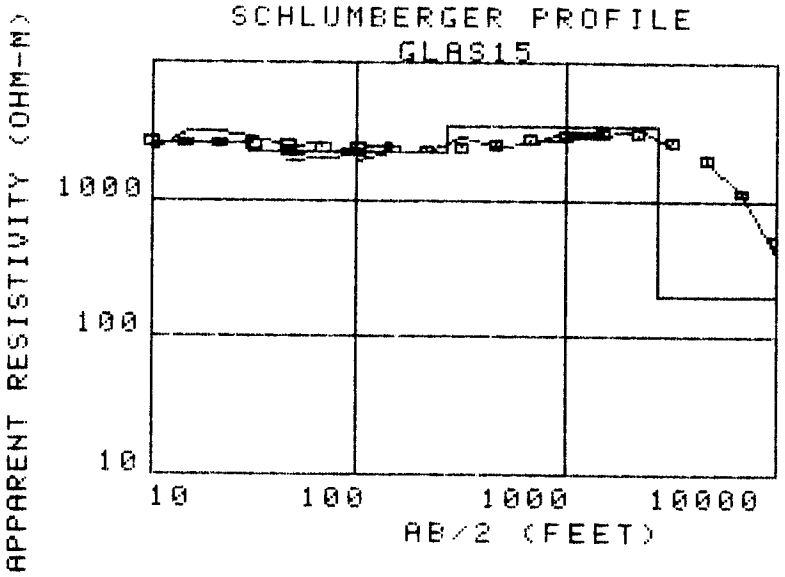
INTERPRETED MODEL :

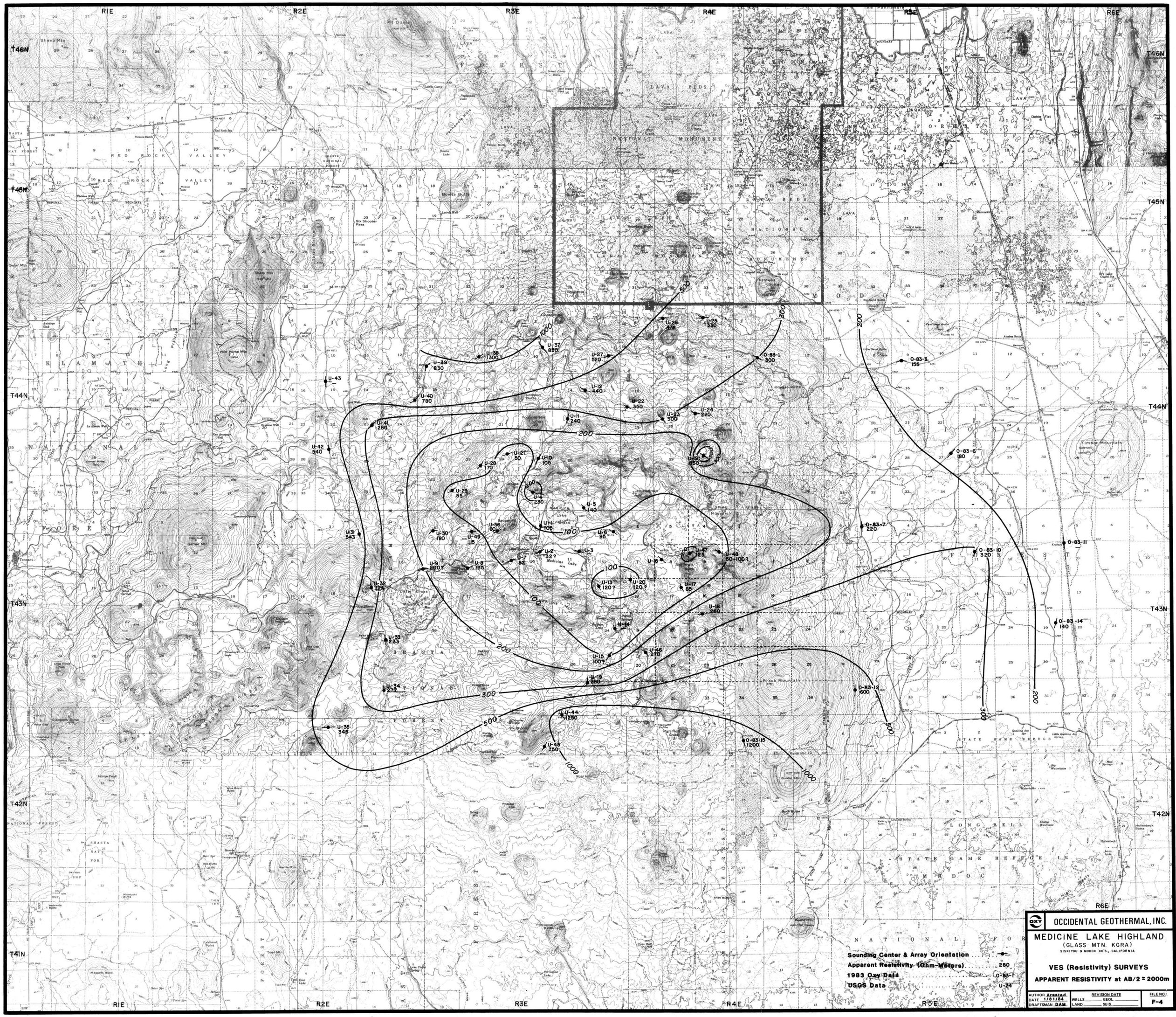
| | |
|---|---|
| | 0.00 |
| R= 2,583.17 | |
| E= 29.73 | |
| | 29.73 |
| R= 2,252.93 | |
| E= 236.54 | |
| | 266.27 |
| R= 3,399.35 | |
| E= 2,374.14 | |
| | 2,640.42 |
| R= 196.03 | |

| LAYER | T | S |
|---|---|---|
| 1 | 76,797.2 | .01 |
| 2 | 532,912.3 | .10 |
| 3 | .8 , | .70 |

T(TOTAL)=8,680,248.5
S(TOTAL)= .81

TIME= 25.81 MIN.




R1E
R2E
R3E
R4E
R5E
R6E
T46N
T45N
T44N
T43N
T42N
T41N
Sounding Center & Array Orientation
Apparent Resistivity (Ohm-Meters) 280
1983 Oxy Data O-83-1
USGS Data U-24
OCCIDENTAL GEOTHERMAL, INC.
MEDICINE LAKE HIGHLAND
(GLASS MTN. KGRA)
SISKIYOU & MODOC CO'S., CALIFORNIA
VES (Resistivity) SURVEYS
APPARENT RESISTIVITY at AB/2 = 2000m
AUTHOR Arestad
DATE 1/31/84
DRAFTSMAN DAM
REVISION DATE
WELLS GEOL.
LAND SEIS.
FILE NO.
F-4

# APPENDIX J:
# TEM central induction soundings, Siskiyou County, California; Report #838101 Prepared for: Union Oil Company of California, Geothermal Division

# Attachment IX

## CEC-500-2007-XXX-ATIX

## TEM central induction soundings, Siskiyou County, California; Report #838101 Prepared for: Union Oil Company of California, Geothermal Division

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GM 38.01a
UCA05.3801

# TEM CENTRAL INDUCTION SOUNDING

## SISKIYOU COUNTY, CALIFORNIA

~~Medicine Lake Caldera~~
Mt Shasta

Report #838101

Prepared for:

Union Oil Company of California
Geothermal Division
Santa Rosa, California

30 November 1983

ELECTROMAGNETIC SURVEYS, INC.
2161 Shattuck Avenue, Suite 303
Berkeley, California 94704
(415) 845-8745

# TEM CENTRAL INDUCTION COUNDING

# SISKIYOU COUNTY, CALIFORNIA

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UNION #8381: Siskiyou County

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| DATA PROCESSING AND PRESENTATION | Page 4 |
| RESULTS | Page 7 |

APPENDIX I. Geonics EM-37 Specifications

APPENDIX II. TEM Sounding Data and Inversion Results

PLATE I. Locality Map

UNION #8381: Siskiyou County

## SUMMARY

A transient electromagnetic survey was carried out by ElectroMagnetic Surveys, Inc. for Union Oil Company, Geothermal Division, in Siskiyou County, California, during the period from 7 August to 28 September 1983. The objective of the survey was to locate deep conductors attributable to geothermal sources. A total of 146 stations were occupied using transmitter loops 300 x 300 meters in size.

Two and three layer computer inversions of the data were performed and in general yielded RMS errors of less than 10 percent. A conductor was located throughout most of area at a depth between 100 and 1000 m.

UNION #8381: Siskiyou County

## INTRODUCTION

A transient electromagnetic (TEM) survey was carried out by Electromagnetic Surveys, Inc. (EMSurveys) for Union Oil Company, Geothermal Division in the Mount Shasta area of Siskiyou County, California. The objective of the survey was to locate deep conductors attributed to geothermal sources. The in-loop configuration was used to provide a relatively focused electromagnetic sounding to a depth of several kilometers. The Mount Shasta survey is part of a larger survey encompassing Siskiyou, Lassen and Lake counties. A separate report has been written for each area.

The survey was carried out between 7 August and 28 September 1983. Weather was generally very good, except for isolated storms. There was road access to each station, and total daily driving time ranged from one hour to over three hours. A total of 146 stations were occupied. A map showing the location of each station is included at the end of the report.

The EMSurveys field crew consisted of four people and at one time or another included H. A. Patsch and R. H. MacLeod (Crew Chiefs), and S. Holbek, L. Holbek, C. Jepsen, J. Grim, J. Keating, D. Hitchcock, and P. Rio (Field Operators). Dr. B. R. Spies, Chief Geophysicist of EMSurveys, was present in the field from 8 August to 10 August 1983 to assist in survey design and preliminary interpretation. Client representatives G. Nordquist and M. Stark were present during various stages of the survey. Their assistance in support of the field operations was constant and much appreciated.

UNION #8381: Siskiyou County

## EQUIPMENT AND FIELD PROCEDURES

A Geonics EM-37 system was used for the survey. Detailed specifications of this system can be found in Appendix I.

The transmitter loops were 300 x 300 meters square, with at least one corner located on a road. Loop orientation was determined by logistical considerations unless a specific orientation was requested by the client.

Initial measurements were made at a transmitter repetition rate of 30 Hz with a voltage setting of 110 V. The transmitter current was in the range of 18 to 20 amps and the turnoff ramp time was in the range of 200 to 225 $\mu$s. Three components were measured at each station, one vertical (Z) and two horizontal (X and Y). The horizontal components were oriented to magnetic north (X) and magnetic east (Y) unless other orientations were specified by the client.

The Z-component measurement was then repeated with a voltage setting of 20 V. This reduced the turnoff ramp time to the range of 48 to 58 $\mu$s and reduced the current to the range of 3.5 to 4.5 amps which enabled more accurate readings to be made at early times.

When the 30 Hz high voltage mode of operation yielded significant values in the later time channels, measurements were taken at a repetition rate of 3 Hz and a voltage setting of 110 V for further the definition of the decay curve at later times. Transmitter current was in the range of 18 to 20 amps and turnoff ramp time varied from 200 to 225 $\mu$s. Only the vertical (Z) component was measured in this mode. Several sets of readings

were recorded at each station to improve data statistics.

## DATA PROCESSING AND PRESENTATION

Field data were entered into a notebook and transferred to an HP-85 computer for which a series of EMSurveys software packages have been developed. Much of the data was entered into the HP-85 by client representatives, and decisions on survey planning could be made in the field on a daily basis. Voltages were normalized for transmitter current and receiver moment, and are given in units of $nV/Am^2$. After manual smoothing the transient decay voltages were inverted using a non-linear least squares algorithm developed by Dennis et al(1979) and adapted by Anderson (1982) for use in interpreting one dimensional TEM sounding data.

### Description of Inversion

All data points were weighted in the inversion process with a factor set equal to $1/(\text{standard deviation})^2$. The standard deviation (SD) value was based on an estimate of data reliability at various normalized voltage levels and is summarized below.

Table 1

| | |
|---|---|
| Voltage > 10 $nV/Am^2$ | SD =0.1 * Voltage |
| 5 < V < 10 | SD = 1 |
| 3 < V < 5 | SD = .5 |
| 1 < V < 3 | SD = .3 |
| V ≤ 1 | SD = .1 |

The inversion results are presented in Appendix II. Each

data set includes a summary computer output; a plot of apparent resistivity versus time for both observed and calculated data and a schematic diagram of the interpreted layered model.

The computer output includes a description of the layered model, parameter statistics, and a table containing values of the smoothed, normalized field voltages, the normalized voltages calculated from the layered model, the residual (or difference between the field and calculated values), the percent residual error (the residual/voltage *100), and the weighting factor, for each sample time. The root mean square of the percent residual error (%RMSERR) has been calculated and is used as a measure of the "goodness of fit".

The statistics are given in table form using a parameter number and not the parameter name. The inversion routine assigns numbers to the parameters for an N layered model as follows: 1 through N indicates the layer conductivity, N+1 to 2N-1 indicates the layer thickness and parameter number 2N indicates the shift factor. The shift factor is equal to the product of the receiver moment and the current, divided by the loop radius cubed ($M_R I/a^3$) and is used within the inversion routine for normalizing of the calculated voltages. The shift factor was fixed at a value of 207 for this field survey. In several cases the covariance matrix was not positive definite and thus the statistics could not be calculated (see Anderson 1982).

An absolute value of .9 or larger between any two parameters in the correlation matrix indicates that these parameters are highly correlated i.e. their combination is well

defined, but the individual parameters are not. A common example is a thin conductive layer where the conductivity - thickness product is well defined but the individual parameters cannot be resolved.

An estimate of the standard error and percent error are included in the parameter statistics. These parameters are not the same as those used in other error analyses. A percent error of 200 does not mean that this parameter can be varied by 200 percent and not change the calculated voltages within given error bounds. This error tends to be overestimated and will increase with increased correlation between parameters. These values should be used only in a relative manner to compare parameters within a given inversion. In general conductive units will have a smaller percent error than resistive units.

## RESULTS

The results of the inversions indicate that dramatic variations are present in the geoelectric section in the geothermal prospect area. The results varied from a homogeneous halfspace to a 4-layer model, with both resistive and conductive surficial units. EM sounding methods are more sensitive to conductive layers, and their parameters (conductivity and thickness) are better defined than are those of resistive units.

In general the data were inverted to a 2 or 3 layer section which fir the data to less than 10% RMS error. In some cases, a 4 layer model was used. Eighty percent of the soundings detected a conductor at depth. The depth to the conductor ranged from 100 to 1000 m. For several stations (51, 68, 95 and 102) the RMS error was over 20%, probably indicating a non-layered structure. Two stations (43 & 88) exhibited extremely large horizontal components and thus 1D inversions were not attempted.

UNION #8381: Siskiyou County

## REFERENCES

Anderson, W. L., 1982, Nonlinear Least Squares Inversion of Transient Soundings for a Central Induction Loop System: USGS open File Report. 82-1129

Dennis, J.E., Gay, D.M., and Welsch R.E., 1979, An adaptive nonlinear least-squares algorithm: Univ. of Wisconsin MRC Tech. Sum. Rept. 2010
(also avaliable as NTIS Rept. AD-A079-716), 40 p.

# APPENDIX I. GEONICS EM-37 SPECIFICATIONS

## Receiver

| | | |
|---|---|---|
| Measured quantity | - | time rate of decay of magnetic flux along 3 axes. |
| Sensor | - | air-cored coil of bandwidth 40 kHz; 100cm dia. by 7x5cm cross-section. Coil holder supplied to facilitate measurement along 3 axes. |
| Time channels | - | 20 time channels with locations and widths as shown in Fig. 2. Successive operation at 30Hz, then 3Hz, effectively gives 30 channels covering range from 80 μsec. to 80 msec. |
| Output display | - | 4 digit plus sign LED display; display also shows channel number and gain. |
| Integration time | - | $2^n$ cycles at 30Hz; n=4,6,8,10,12,14 (switch selectable); similar integration times at other base frequencies. |
| Receiver output noise referred to input | - | typically $1.5 \times 10^{-10}$ volt/$m^2$ at last gate at 30Hz with integration time of 34 seconds. Noise will be higher during intense local spherics activity. |
| Output connector | - | all 20 channels in analogue format and house-keeping functions in digital format available from output connector. |
| Synchronization to Tx | - | any of the following (switch selectable)<br>(1) reference cable<br>(2) primary pulse<br>(3) 27 MHz radio link (40 channels)<br>(4) high stability (oven controlled) quartz crystals. |
| Noise rejection circuitry | - | Selective clipping of atmospheric noise pulses at all times. Audio output of Rx coil (transmitter pulse blanked out) is available on built-in loud speaker for ready identification of interference. |
| Receiver batteries | - | 12 volt rechargeable Gel-cell; 9 hours continuous operating time at 17°C. Two batteries and a battery charger supplied to permit charging of second battery from transmitter motor-generator during survey. |

## Component Dimensions

| | |
|---|---|
| Transmitter console | 25x42x36 cm |
| GPU | 35x74x48 cm |
| Wirewinder | 42x38x35 cm each (2 off) |
| Wire reels (20 amp) | 33x31(dia.)cm each (6 off) |
| Receiver console | 38x37x27 cm |
| Receiver coil | 100 cm dia. 7x5 cm cross-section |

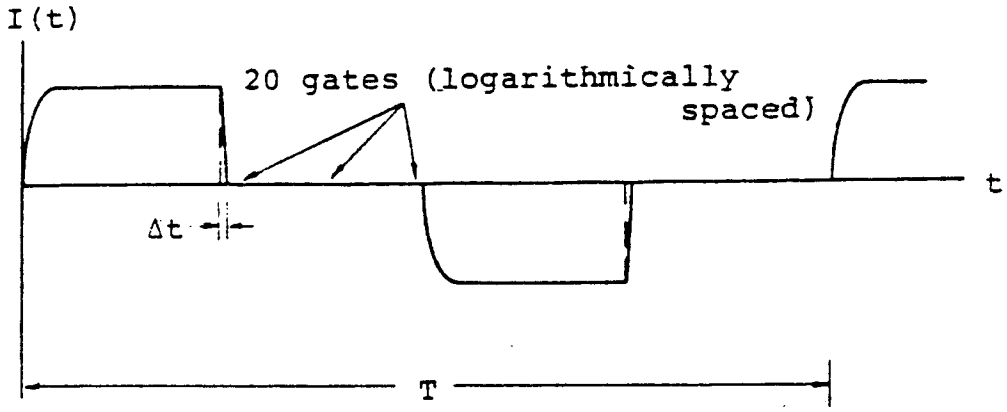
## Component Weights

| | |
|---|---|
| Transmitter console | 20 kg |
| GPU | 60 kg |
| Wirewinders and loaded reels (20 amp) | 120 kg (total) |
| Receiver console (incl.20 amp-hour battery) | 21.8 kg |
| Receiver coil | 8.0 kg |

## Shipping Information

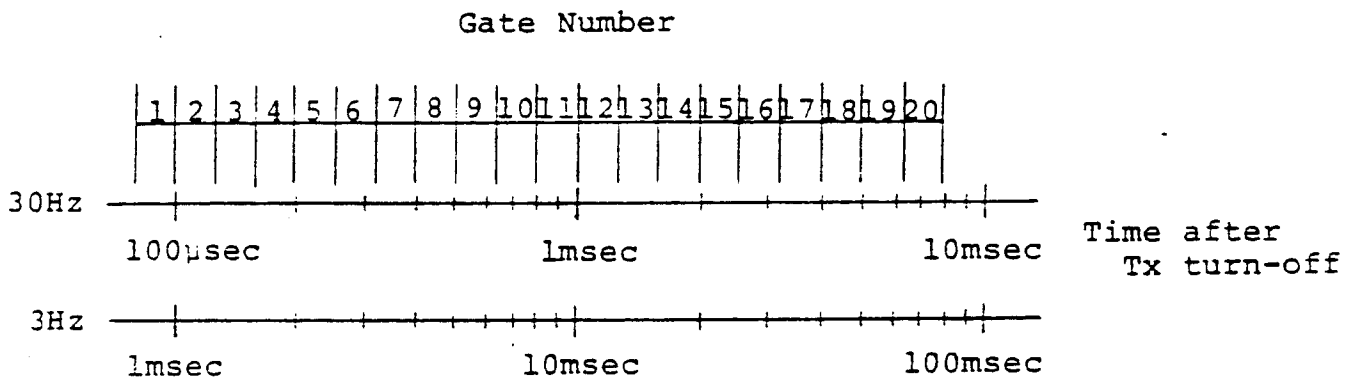
Shipment consists of 5 boxes

| | |
|---|---|
| Two wire boxes | 116x62x48 cm @ 186 kg (total) |
| GPU box | 96x61x73 cm @ 90 kg |
| Receiver/transmitter box | 96x75x73 cm @ 86 kg |
| Receiver coil/coil-holder box | 110x110x20 cm @ 34 kg |
| Total shipping volume | 1.90 cubic metres |
| Total shipping weight | 390 kg |




Transmitter Current Waveform

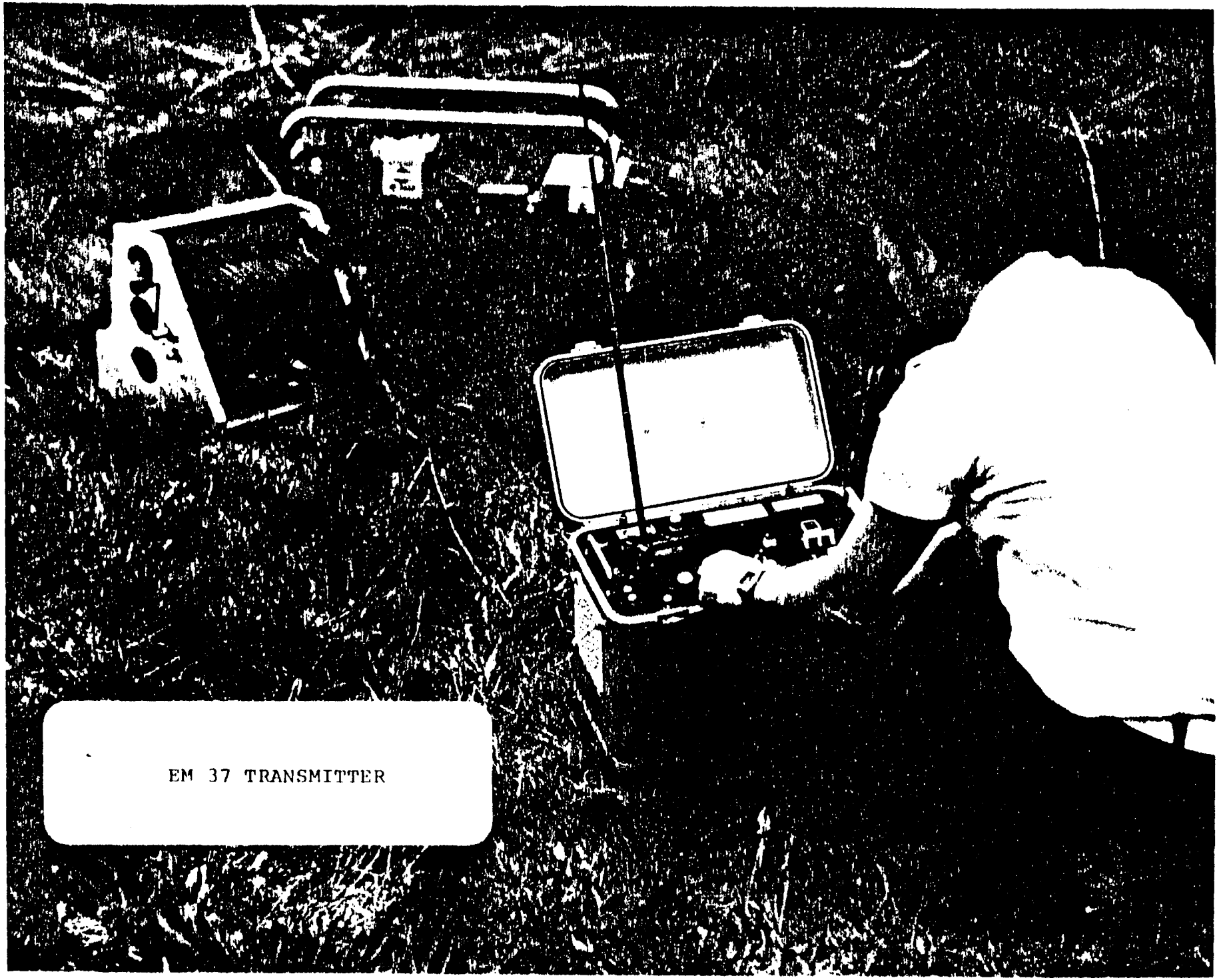
FIG. I-1



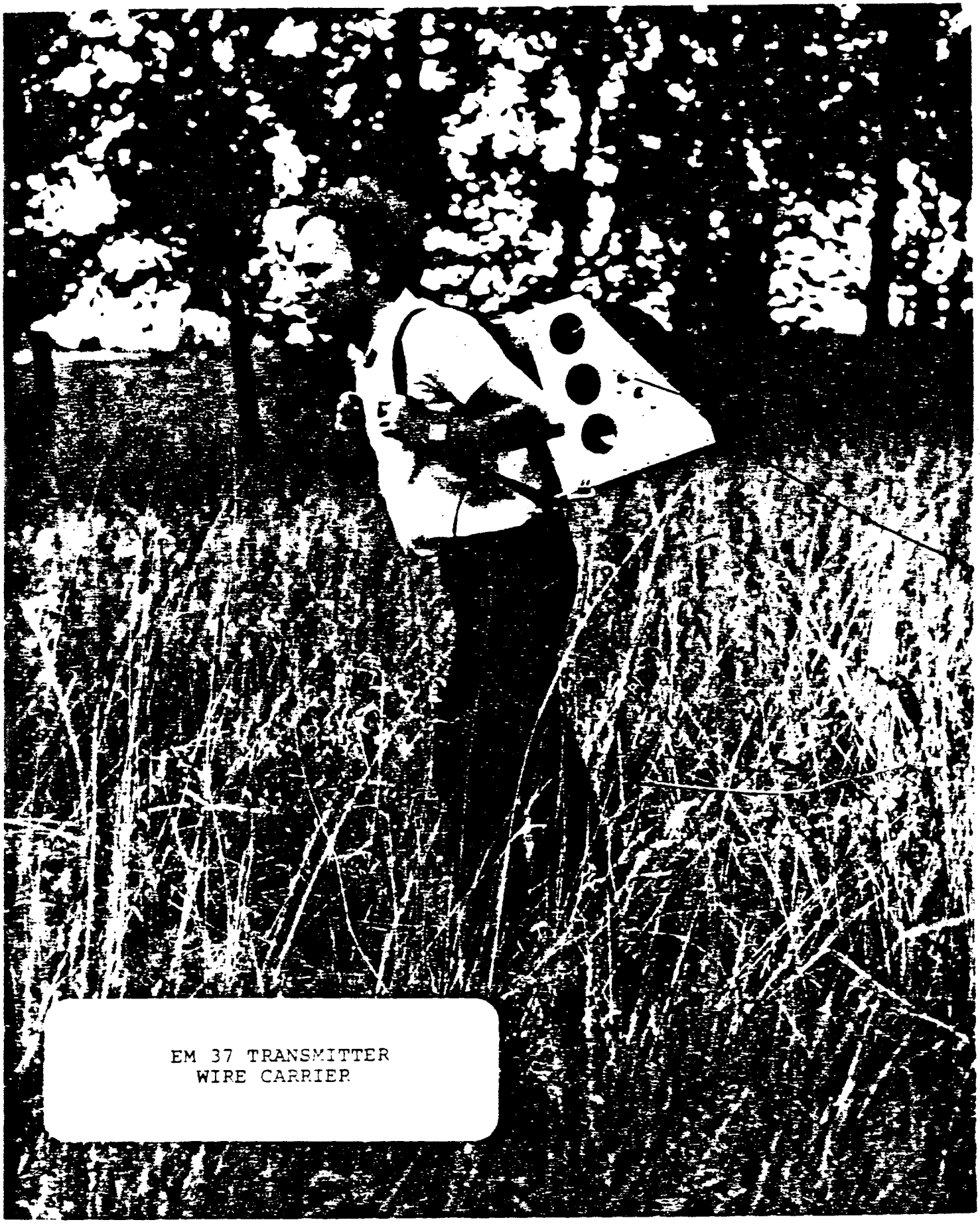

Gate Location and Widths (30 and 3Hz)

FIG. I-2

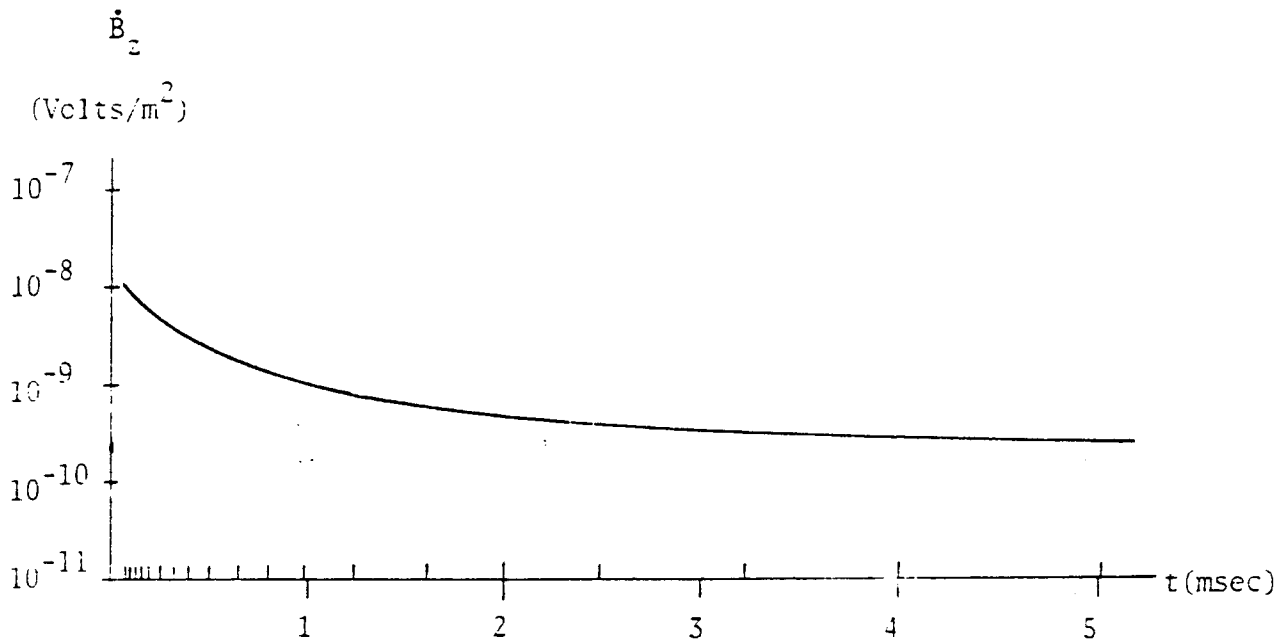
FM 37 RECEIVER



EM 37 TRANSMITTER



EM 37 TRANSMITTER
WIRE CARRIER




Average System Noise
(30Hz)

EM37 System Noise Graph for 300 m x 600 m Transmitter Loop

FIG. I-3

# APPENDIX II. TEM SOUNDING DATA AND INVERSION RESULTS

EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 2 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1214E+04 | 0.1217E+04 | -0.3145E+01 | -0.2584E+00 | 0.679E-04 |
| 2 | 0.1100E-03 | 0.7400E+03 | 0.7382E+03 | 0.1827E+01 | 0.2475E+00 | 0.183E-03 |
| 3 | 0.1400E-03 | 0.4186E+03 | 0.4164E+03 | 0.2167E+01 | 0.5204E+00 | 0.571E-03 |
| 4 | 0.1770E-03 | 0.2410E+03 | 0.2390E+03 | 0.1974E+01 | 0.8258E+00 | 0.172E-02 |
| 5 | 0.2200E-03 | 0.1407E+03 | 0.1406E+03 | 0.9372E-01 | 0.6667E-01 | 0.505E-02 |
| 6 | 0.2800E-03 | 0.7750E+02 | 0.7701E+02 | 0.4903E+00 | 0.6366E+00 | 0.166E-01 |
| 7 | 0.3550E-03 | 0.4198E+02 | 0.4207E+02 | -0.8675E-01 | -0.2062E+00 | 0.567E-01 |
| 8 | 0.4430E-03 | 0.2324E+02 | 0.2330E+02 | -0.5882E-01 | -0.2525E+00 | 0.185E+00 |
| 9 | 0.5540E-03 | 0.1225E+02 | 0.1258E+02 | -0.3328E+00 | -0.2645E+01 | 0.666E+00 |
| 10 | 0.7130E-03 | 0.6210E+01 | 0.6227E+01 | -0.1715E-01 | -0.2754E+00 | 0.100E+01 |
| 11 | 0.8810E-03 | 0.3410E+01 | 0.3365E+01 | 0.4500E-01 | 0.1337E+01 | 0.400E+01 |
| 12 | 0.1096E-02 | 0.1760E+01 | 0.1775E+01 | -0.1539E-01 | -0.8670E+00 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.8700E+00 | 0.8277E+00 | 0.4225E-01 | 0.5104E+01 | 0.250E+02 |
| 14 | 0.1795E-02 | 0.4100E+00 | 0.4007E+00 | 0.9318E-02 | 0.2325E+01 | 0.250E+02 |
| 15 | 0.2224E-02 | 0.2100E+00 | 0.2084E+00 | 0.1560E-02 | 0.7484E+00 | 0.250E+02 |

** %RMSERR= 1.70

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | 0.2794E+00 | 0.1000E+01 | |
| 3 | -0.4203E+00 | -0.2912E+00 | 0.1000E+01 |

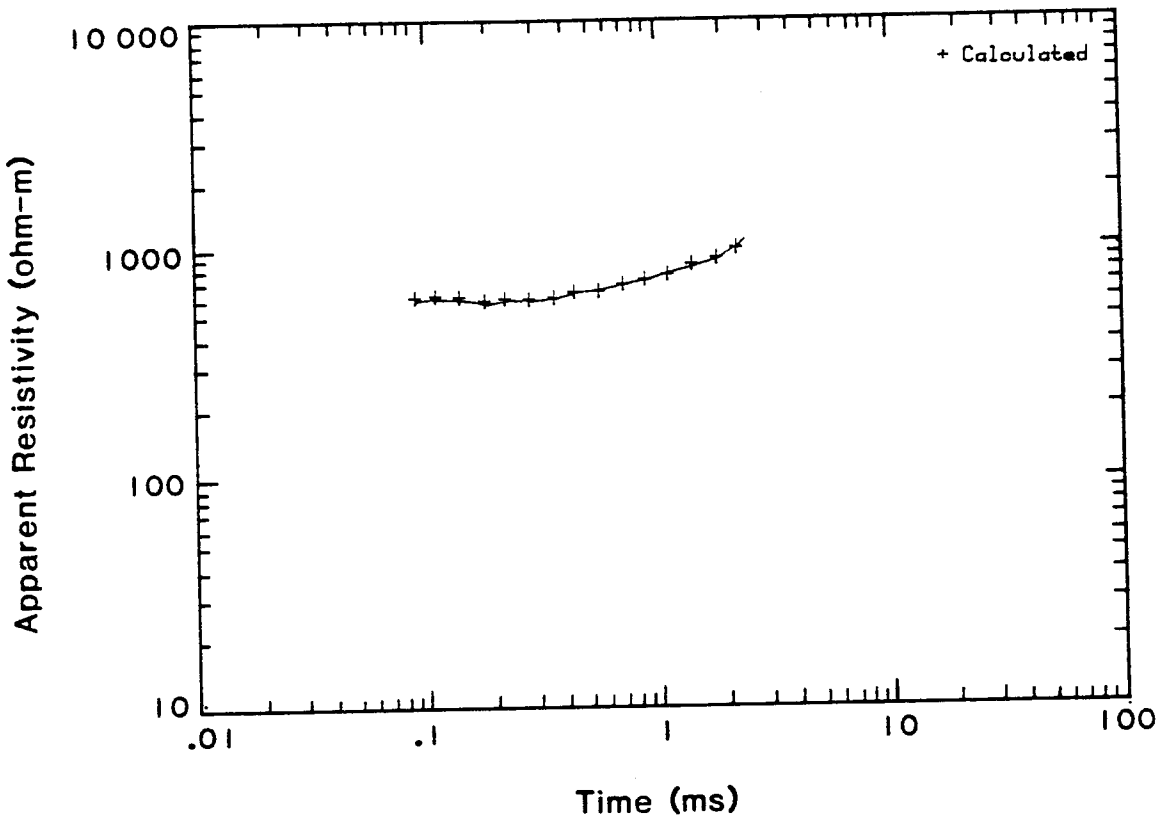
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1725E-02 | 0.1382E-04 | 0.8010E-02 | 0.8010E+00 |
| 2 | 0.3351E-03 | 0.8606E-04 | 0.2568E+00 | 0.2568E+02 |
| 3 | 0.4530E+03 | 0.1132E-02 | 0.2498E-05 | 0.2498E-03 |

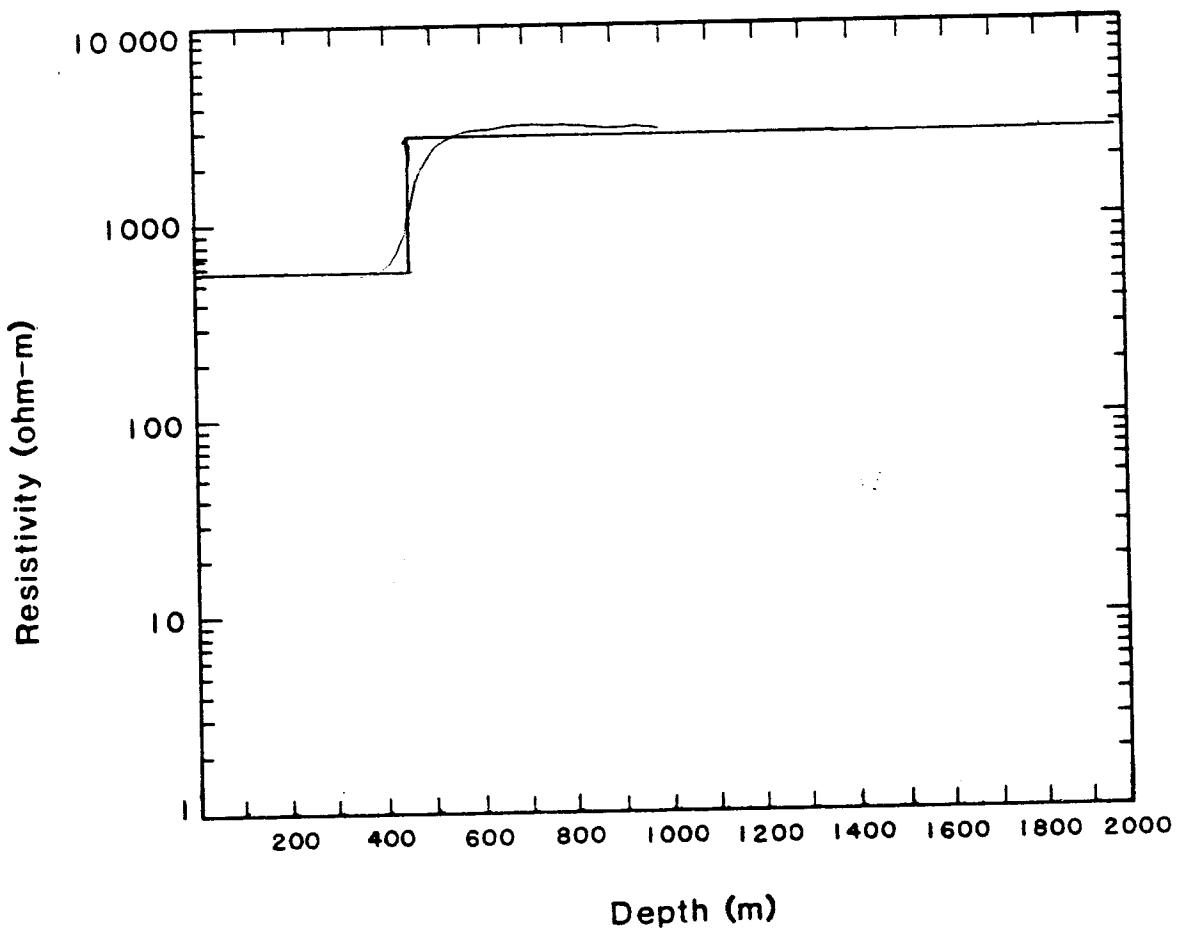
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.17255E-02 | 0.57955E+03 | |
| 2 | SIGMA( 2) | = | 0.33508E-03 | 0.29844E+04 | |
| 3 | THICK( 1) | = | 0.45302E+03 | | 0.45302E+03 |
| 4 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 2



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

**MOUNT SHASTA** STATION 3 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.9467E+03 | 0.7128E+03 | 0.2339E+03 | 0.3282E+02 | 0.112E-03 |
| 2 | 0.1100E-03 | 0.4636E+03 | 0.4032E+03 | 0.6048E+02 | 0.1500E+02 | 0.465E-03 |
| 3 | 0.1400E-03 | 0.2064E+03 | 0.2067E+03 | -0.3661E+00 | -0.1771E+00 | 0.235E-02 |
| 4 | 0.1770E-03 | 0.9971E+02 | 0.1056E+03 | -0.5923E+01 | -0.5607E+01 | 0.101E-01 |
| 5 | 0.2200E-03 | 0.5263E+02 | 0.5679E+02 | -0.4160E+01 | -0.7325E+01 | 0.361E-01 |
| 6 | 0.2800E-03 | 0.2668E+02 | 0.2844E+02 | -0.1760E+01 | -0.6190E+01 | 0.140E+00 |
| 7 | 0.3550E-03 | 0.1405E+02 | 0.1405E+02 | -0.5531E-03 | -0.3937E-02 | 0.507E+00 |
| 8 | 0.4430E-03 | 0.7480E+01 | 0.7355E+01 | 0.1249E+00 | 0.1699E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.3760E+01 | 0.4008E+01 | -0.2482E+00 | -0.6193E+01 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2110E+01 | 0.1993E+01 | 0.1171E+00 | 0.5874E+01 | 0.111E+02 |
| 11 | 0.9310E-03 | 0.1290E+01 | 0.1229E+01 | 0.6069E-01 | 0.4937E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.7900E+00 | 0.7519E+00 | 0.3810E-01 | 0.5067E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.4500E+00 | 0.4537E+00 | -0.3709E-02 | -0.8176E+00 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.2600E+00 | 0.2945E+00 | -0.3453E-01 | -0.1172E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.1600E+00 | 0.1951E+00 | -0.3513E-01 | -0.1800E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1100E+00 | 0.1273E+00 | -0.1730E-01 | -0.1359E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.6000E-01 | 0.8289E-01 | -0.2289E-01 | -0.2761E+02 | 0.100E+03 |

** SAMLERR= 13.20

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.6662E+00 | 0.1000E+01 | | | |
| 3 | -0.5535E+00 | -0.3875E+00 | 0.1000E+01 | | |
| 4 | -0.8056E+00 | -0.8036E+00 | 0.4732E+00 | 0.1000E+01 | |
| 5 | 0.2714E-03 | 0.1842E+00 | 0.2612E+01 | -0.2914E-01 | 0.1000E+01 |

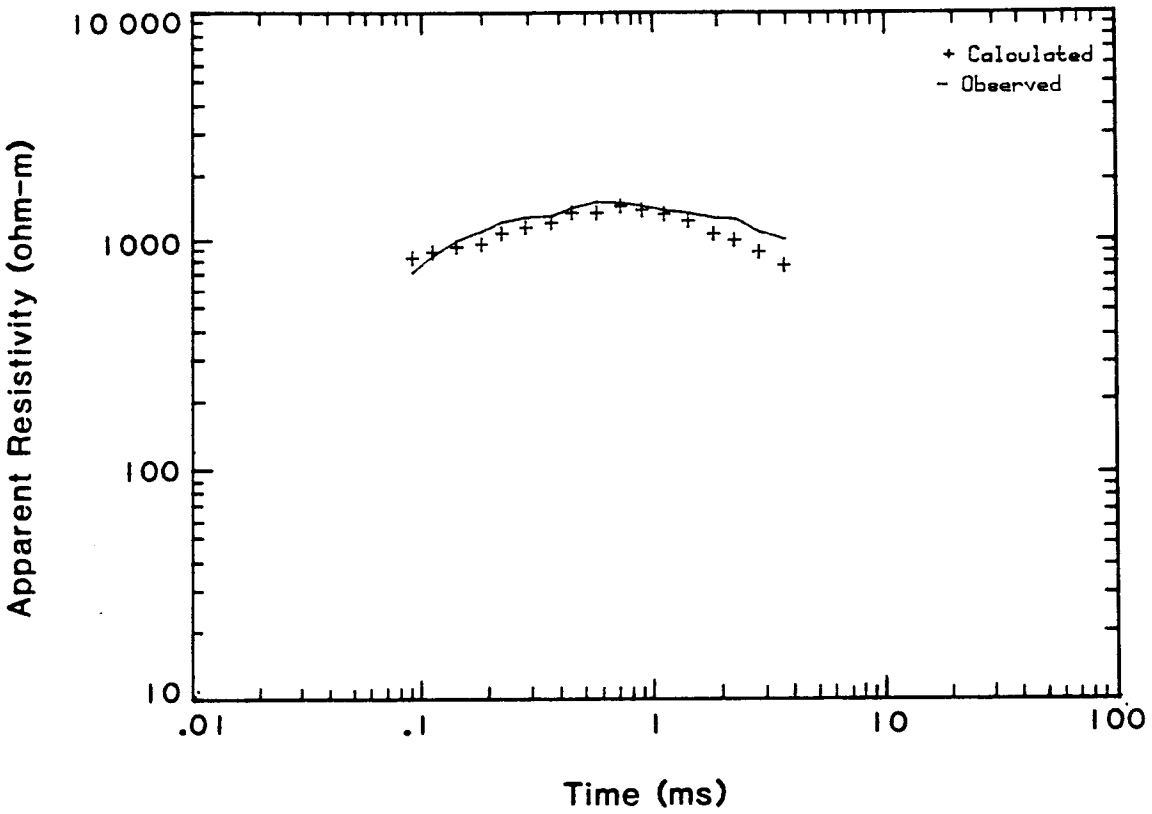
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1373E-02 | 0.6458E-03 | 0.4703E+00 | 0.4703E+02 |
| 2 0.5432E-03 | 0.2233E-02 | 0.4111E+01 | 0.4111E+03 |
| 3 0.4186E-02 | 0.1589E-01 | 0.3795E+01 | 0.3795E+03 |
| 4 0.1483E+03 | 0.8220E-02 | 0.5542E-04 | 0.5542E-02 |
| 5 0.8262E+03 | 0.1676E-01 | 0.2029E-04 | 0.2029E-02 |

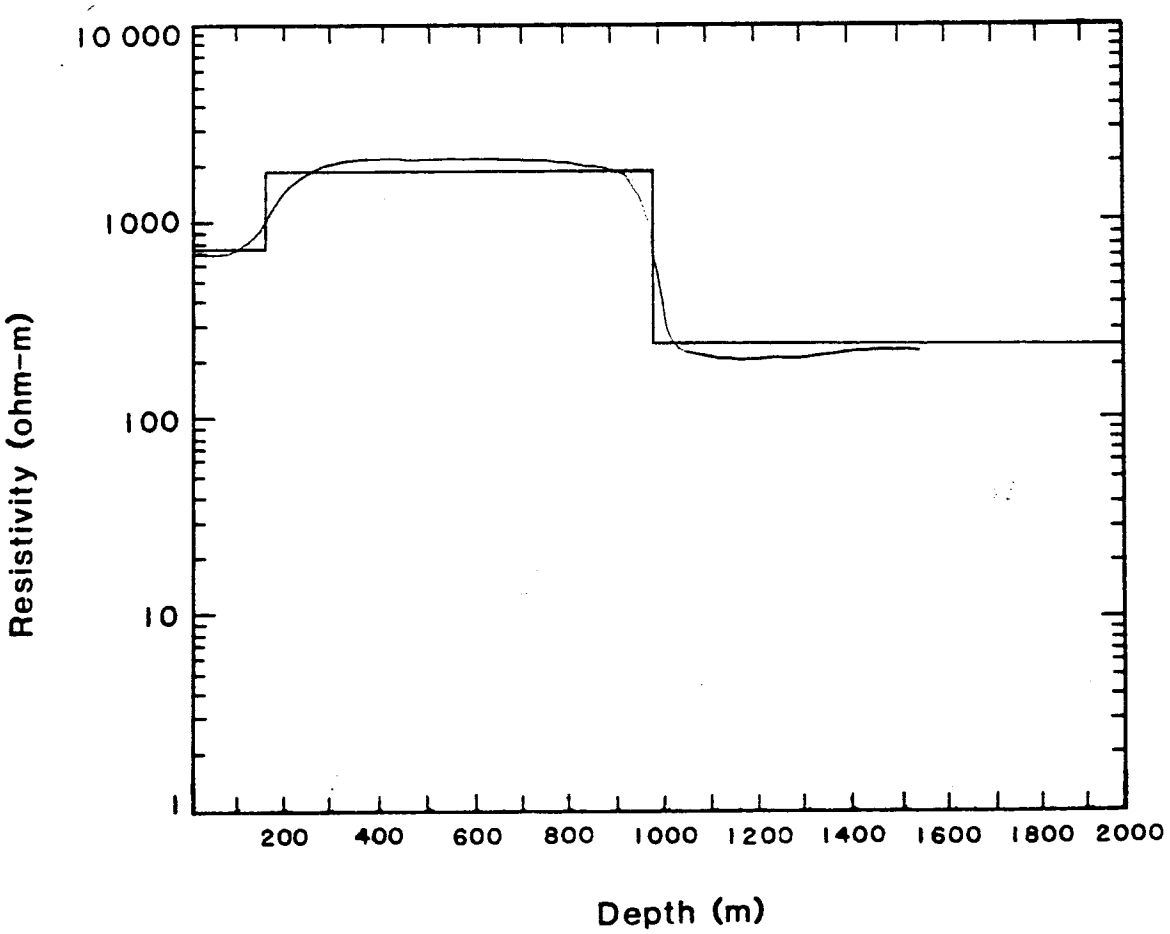
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 SIGMA( 1) | = | 0.13732E-02 | 0.72822E+03 | |
| 2 SIGMA( 2) | = | 0.54316E-03 | 0.18411E+04 | |
| 3 SIGMA( 3) | = | 0.41863E-02 | 0.23887E+03 | |
| 4 THICK( 1) | = | 0.14833E+03 | | 0.14833E+03 |
| 5 THICK( 2) | = | 0.82617E+03 | | 0.97450E+03 |
| 6 SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 3



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 4 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8700E-04 | 0.8082E+03 | 0.8236E+03 | -0.1543E+02 | -0.1873E+01 | 0.1333E-03 |
| 2 | 0.1100E-03 | 0.5261E+03 | 0.5250E+03 | 0.3079E+00 | 0.5855E-01 | 0.3618E-03 |
| 3 | 0.1400E-03 | 0.3237E+03 | 0.3178E+03 | 0.5941E+01 | 0.1870E+01 | 0.9546E-03 |
| 4 | 0.1770E-03 | 0.2074E+03 | 0.1988E+03 | 0.8557E+01 | 0.4304E+01 | 0.232E-02 |
| 5 | 0.2200E-03 | 0.1353E+03 | 0.1309E+03 | 0.4384E+01 | 0.3348E+01 | 0.546E-02 |
| 6 | 0.2800E-03 | 0.8491E+02 | 0.8299E+02 | 0.1917E+01 | 0.2310E+01 | 0.139E-01 |
| 7 | 0.3550E-03 | 0.5322E+02 | 0.5248E+02 | 0.7425E+00 | 0.1415E+01 | 0.352E-01 |
| 8 | 0.4430E-03 | 0.3405E+02 | 0.3441E+02 | -0.3636E+00 | -0.1056E+01 | 0.663E-01 |
| 9 | 0.5540E-03 | 0.2113E+02 | 0.2233E+02 | -0.1204E+01 | -0.5393E+01 | 0.224E+00 |
| 10 | 0.7130E-03 | 0.1292E+02 | 0.1350E+02 | -0.5770E+00 | -0.4275E+01 | 0.599E+00 |
| 11 | 0.8810E-03 | 0.8560E+01 | 0.8846E+01 | -0.2864E+00 | -0.3237E+01 | 0.100E+01 |
| 12 | 0.1096E-02 | 0.5240E+01 | 0.5652E+01 | -0.4123E+00 | -0.7294E+01 | 0.100E+01 |
| 13 | 0.1411E-02 | 0.3210E+01 | 0.3334E+01 | -0.1238E+00 | -0.3713E+01 | 0.400E+01 |
| 14 | 0.1795E-02 | 0.1960E+01 | 0.1999E+01 | -0.3908E-01 | -0.1955E+01 | 0.111E+02 |
| 15 | 0.2324E-02 | 0.1250E+01 | 0.1260E+01 | -0.9922E-02 | -0.7875E+00 | 0.111E+02 |
| 16 | 0.2850E-02 | 0.8100E+00 | 0.7317E+00 | 0.7827E-01 | 0.1070E-02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.5200E+00 | 0.4374E+00 | 0.8257E-01 | 0.1880E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.3700E+00 | 0.2661E+00 | 0.1039E+00 | 0.3907E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.2200E+00 | 0.1544E+00 | 0.6560E-01 | 0.4247E+02 | 0.100E+03 |
| 20 | 0.7100E-02 | 0.1400E+00 | 0.9043E-01 | 0.4957E-01 | 0.5481E+02 | 0.100E+03 |

** SUMSQR= 10.68

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.7955E+00 | 0.1000E+01 | | | |
| 3 | 0.3763E+00 | -0.1712E+00 | 0.1000E+01 | | |
| 4 | 0.4532E+00 | -0.1855E+00 | 0.8440E+00 | 0.1000E+01 | |
| 5 | 0.2467E+00 | 0.3182E+00 | -0.7399E+00 | -0.8780E+00 | 0.1000E+01 |

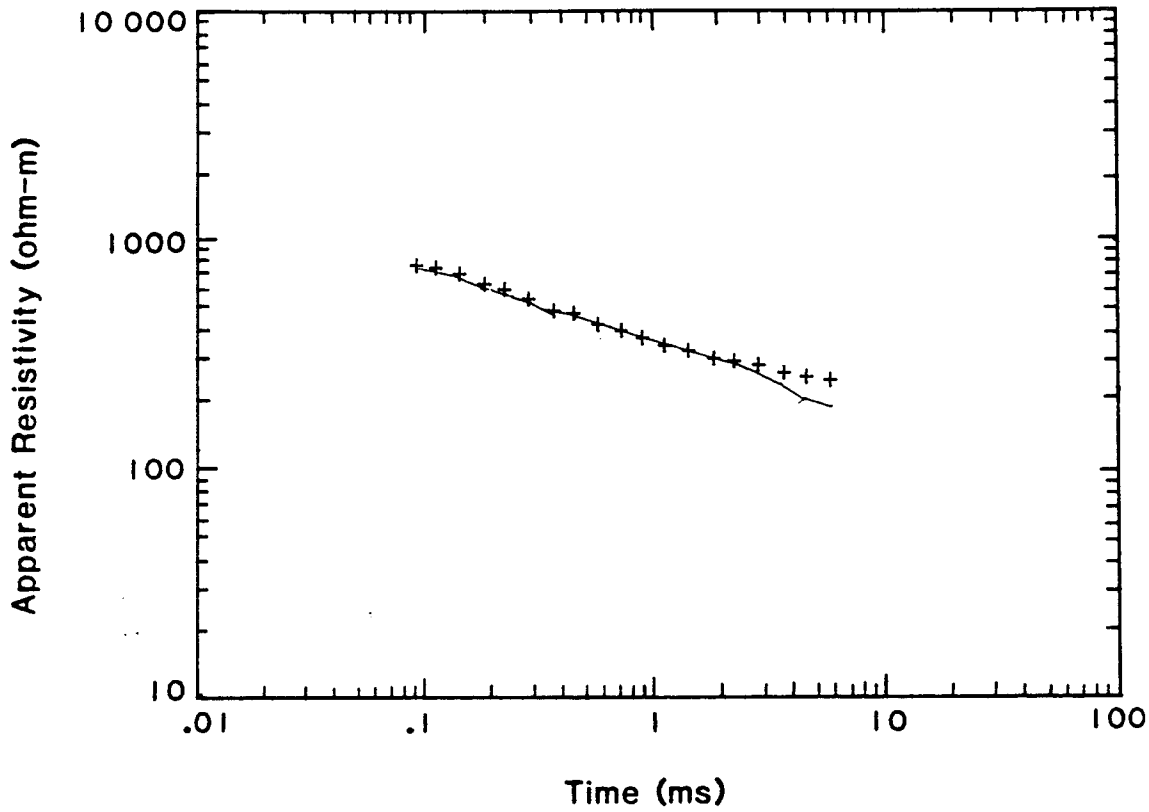
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1300E-02 | 0.3667E-02 | 0.2821E+01 | 0.2821E+03 |
| 2 0.1739E-02 | 0.6337E-02 | 0.3645E+01 | 0.3645E+03 |
| 3 0.5571E-02 | 0.7463E-02 | 0.1339E+01 | 0.1339E+03 |
| 4 0.1258E+03 | 0.8115E-02 | 0.6451E-04 | 0.6451E-02 |
| 5 0.1310E+03 | 0.5692E-02 | 0.4346E-04 | 0.4346E-02 |

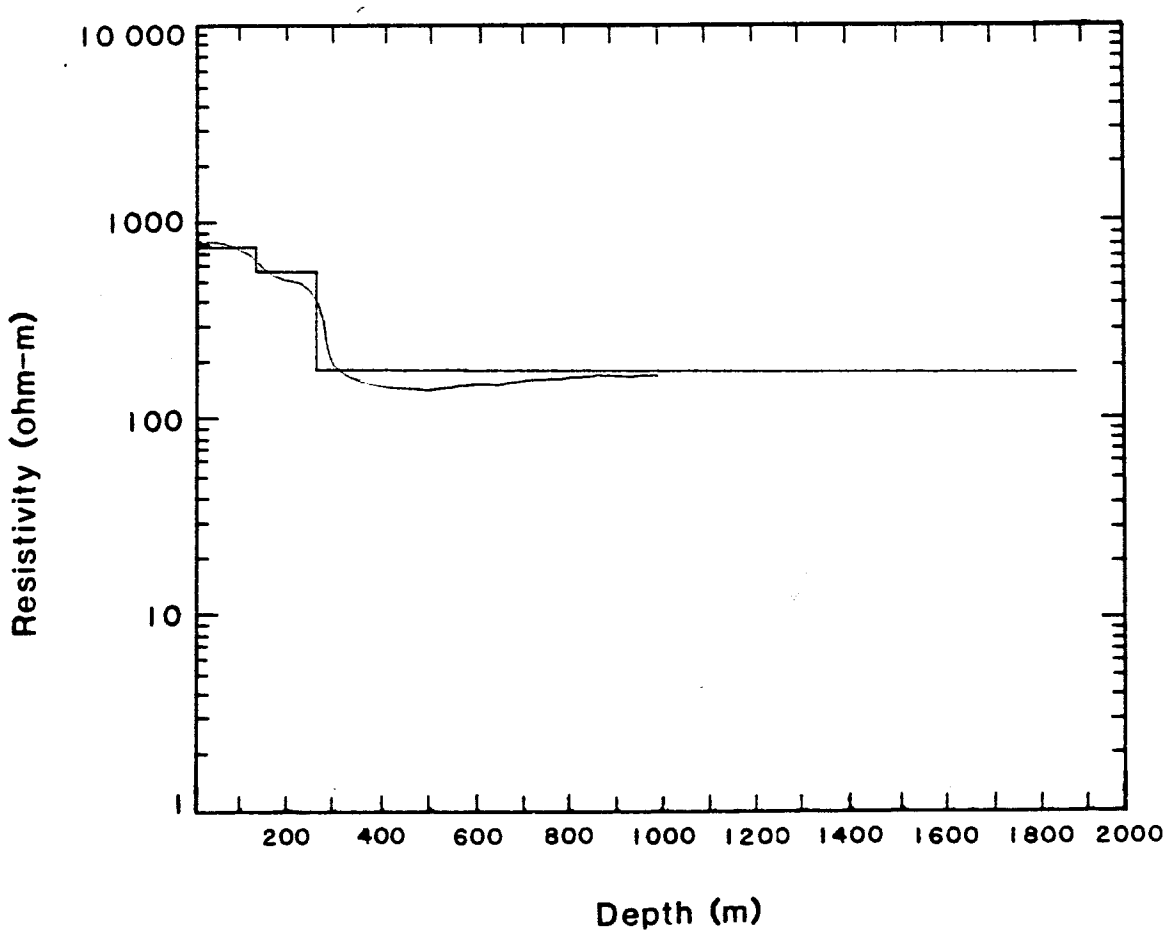
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 SIGMA( 1) | = | 0.12999E-02 | 0.76930E+03 | |
| 2 SIGMA( 2) | = | 0.17387E-02 | 0.57514E+03 | |
| 3 SIGMA( 3) | = | 0.55714E-02 | 0.17945E+03 | |
| 4 THICK( 1) | = | 0.12578E+03 | | 0.12578E+03 |
| 5 THICK( 2) | = | 0.13096E+03 | | 0.25675E+03 |
| 6 SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 4



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 5 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.8303E+03 | 0.7665E+03 | 0.6379E+02 | 0.8323E+01 | 0.145E-03 |
| 2 | 0.1100E-03 | 0.4573E+03 | 0.4415E+03 | 0.1588E+02 | 0.3597E+01 | 0.478E-03 |
| 3 | 0.1400E-03 | 0.2315E+03 | 0.2330E+03 | -0.1511E+01 | -0.6486E+00 | 0.137E-02 |
| 4 | 0.1770E-03 | 0.1207E+03 | 0.1232E+03 | -0.2543E+01 | -0.2064E+01 | 0.687E-02 |
| 5 | 0.2200E-03 | 0.6617E+02 | 0.6836E+02 | -0.2191E+01 | -0.3205E+01 | 0.228E-01 |
| 6 | 0.2800E-03 | 0.3450E+02 | 0.3555E+02 | -0.1046E+01 | -0.2943E+01 | 0.640E-01 |
| 7 | 0.3330E-03 | 0.1817E+02 | 0.1832E+02 | -0.1308E+00 | -0.7139E+00 | 0.302E+00 |
| 8 | 0.4430E-03 | 0.9480E+01 | 0.9852E+01 | -0.3724E+00 | -0.3779E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.5240E+01 | 0.5434E+01 | -0.1936E+00 | -0.3563E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.2710E+01 | 0.2719E+01 | -0.8545E-02 | -0.3143E+00 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1740E+01 | 0.1621E+01 | 0.1189E+00 | 0.7332E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1050E+01 | 0.9650E+00 | 0.8498E-01 | 0.8806E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.6400E+00 | 0.5520E+00 | 0.8798E-01 | 0.1594E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.3700E+00 | 0.3395E+00 | 0.3054E-01 | 0.8995E+01 | 0.100E+03 |
| 15 | 0.2234E-02 | 0.2400E+00 | 0.2176E+00 | 0.2243E-01 | 0.1031E+02 | 0.100E+03 |
| 16 | 0.2856E-02 | 0.1500E+00 | 0.1363E+00 | 0.1370E-01 | 0.1005E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.8000E-01 | 0.8637E-01 | -0.6366E-02 | -0.7371E+01 | 0.100E+03 |

** %RMSERR= 7.12

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.4760E+00 | 0.1000E+01 | | | |
| 3 | -0.7545E-01 | 0.2899E+00 | 0.1000E+01 | | |
| 4 | 0.1349E+00 | -0.4920E+00 | -0.8275E+00 | 0.1000E+01 | |
| 5 | -0.9971E-01 | -0.1639E+00 | 0.2853E+00 | -0.2780E+00 | 0.1000E+01 |

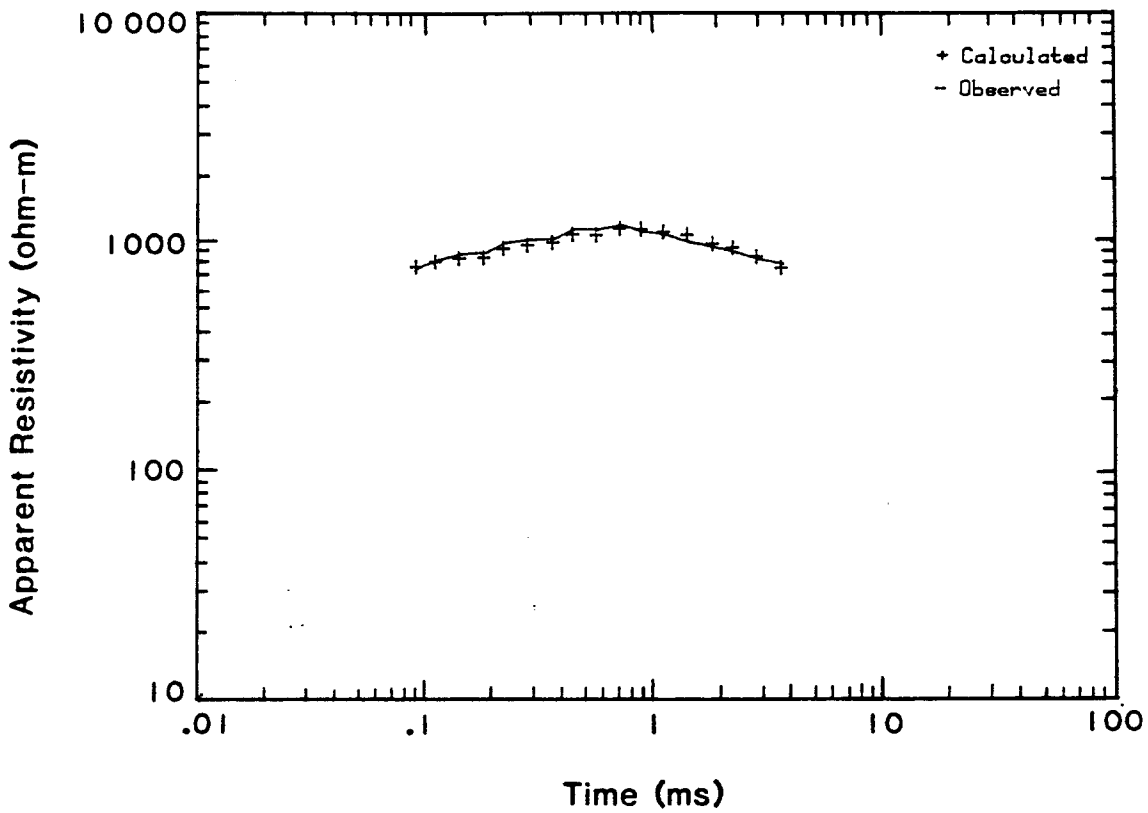
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1396E-02 | 0.3451E-03 | 0.2472E+00 | 0.2472E+02 |
| 2 0.7623E-03 | 0.1011E-02 | 0.1326E+01 | 0.1326E+03 |
| 3 0.3617E-02 | 0.7281E-02 | 0.2013E+01 | 0.2013E+03 |
| 4 0.1413E+03 | 0.3370E-02 | 0.2386E-04 | 0.2386E-02 |
| 5 0.8370E+03 | 0.7128E-02 | 0.8516E-05 | 0.8516E-03 |

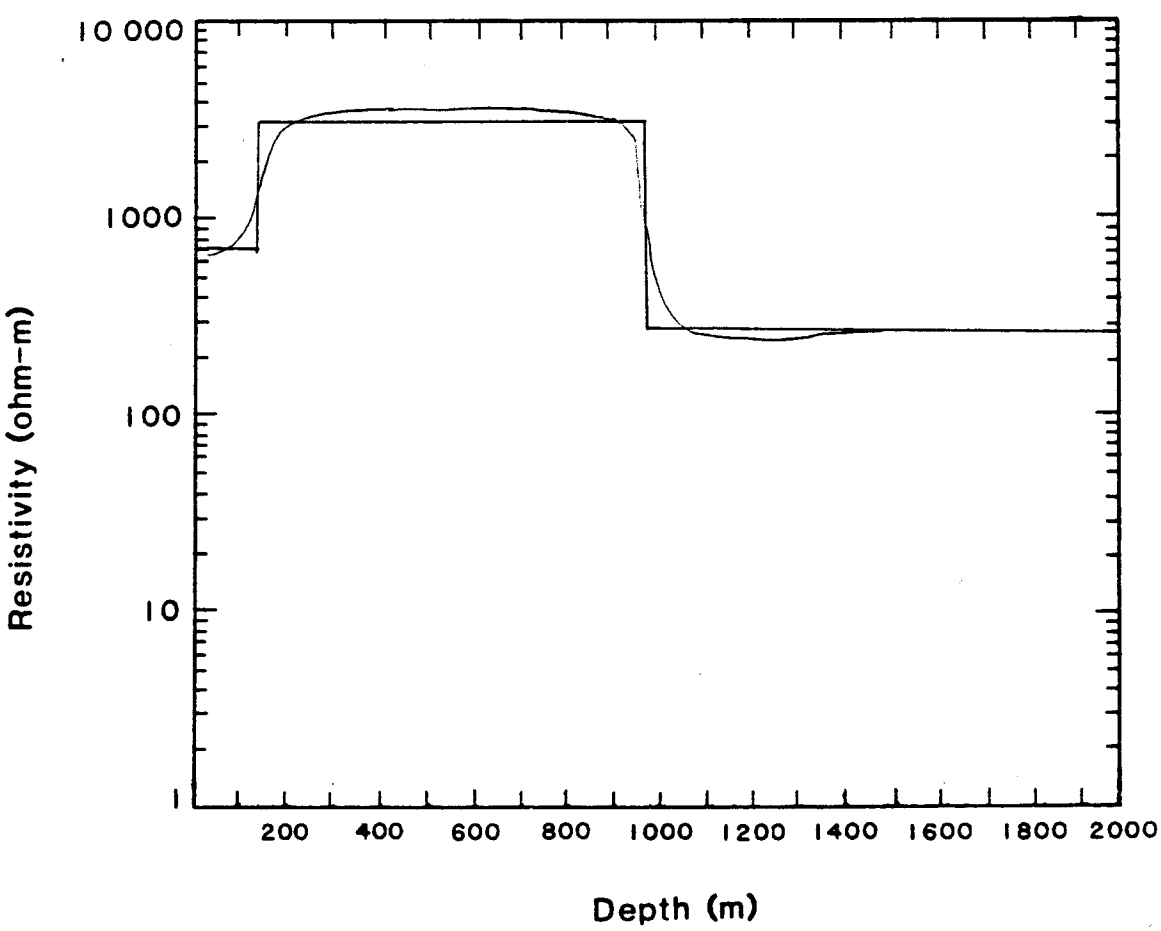
| PARAMETER NAME | | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.13962E-02 | 0.71624E+03 | |
| 2 | SIGMA( 2) | = | 0.76230E-03 | 0.13118E+04 | |
| 3 | SIGMA( 3) | = | 0.36172E-02 | 0.27645E+03 | |
| 4 | THICK( 1) | = | 0.14126E+03 | | 0.14126E+03 |
| 5 | THICK( 2) | = | 0.83696E+03 | | 0.97821E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 5



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 7 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1185E+04 | 0.1165E+04 | 0.2022E+02 | 0.1736E+01 | 0.712E-04 |
| 2 | 0.1100E-03 | 0.6681E+03 | 0.6766E+03 | -0.8572E+01 | -0.1267E+01 | 0.224E-03 |
| 3 | 0.1400E-03 | 0.3588E+03 | 0.3516E+03 | 0.1760E+00 | 0.5006E-01 | 0.808E-03 |
| 4 | 0.1770E-03 | 0.1914E+03 | 0.1905E+03 | 0.8999E+00 | 0.4724E+00 | 0.273E-02 |
| 5 | 0.2200E-03 | 0.1066E+03 | 0.1062E+03 | 0.4036E+00 | 0.3800E+00 | 0.880E-02 |
| 6 | 0.2800E-03 | 0.5669E+02 | 0.5518E+02 | 0.1506E+01 | 0.2729E+01 | 0.311E-01 |
| 7 | 0.3550E-03 | 0.3044E+02 | 0.2915E+02 | 0.1291E+01 | 0.4429E+01 | 0.108E+00 |
| 8 | 0.4430E-03 | 0.1710E+02 | 0.1600E+02 | 0.1102E+01 | 0.6888E+01 | 0.342E+00 |
| 9 | 0.5540E-03 | 0.8040E+01 | 0.8497E+01 | -0.4569E+00 | -0.5377E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.4030E+01 | 0.4380E+01 | -0.3501E+00 | -0.7992E+01 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2470E+01 | 0.2469E+01 | 0.9665E-03 | 0.3915E-01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1360E+01 | 0.1414E+01 | -0.5350E-01 | -0.3785E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.8100E+00 | 0.7851E+00 | 0.2493E-01 | 0.3175E+01 | 0.250E+02 |
| 14 | 0.1795E-02 | 0.5000E+00 | 0.4509E+00 | 0.4913E-01 | 0.1090E+02 | 0.250E+02 |
| 15 | 0.2224E-02 | 0.3000E+00 | 0.2922E+00 | 0.7839E-02 | 0.2683E+01 | 0.250E+02 |
| 16 | 0.2850E-02 | 0.1800E+00 | 0.1749E+00 | 0.5094E-02 | 0.2913E+01 | 0.250E+02 |
| 17 | 0.3600E-02 | 0.1000E+00 | 0.1113E+00 | -0.1133E-01 | -0.1018E+02 | 0.250E+02 |

** %RMSERR= 5.06

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3709E+00 | 0.1000E+01 | | | |
| 3 | 0.2102E+00 | 0.5693E+00 | 0.1000E+01 | | |
| 4 | -0.1610E+00 | -0.7322E+00 | -0.5123E+00 | 0.1000E+01 | |
| 5 | -0.7458E+00 | 0.5608E+00 | -0.1283E-01 | -0.3030E+00 | 0.1000E+01 |

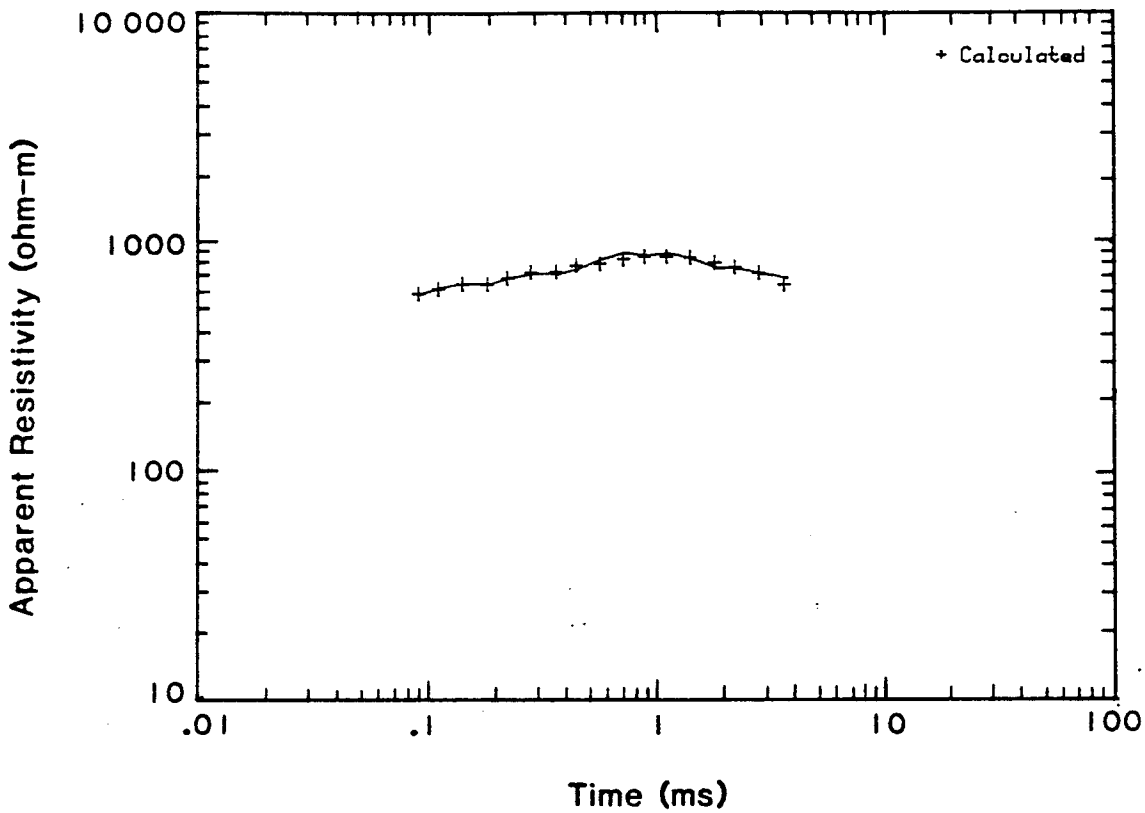
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1912E-02 | 0.1059E-02 | 0.5537E+00 | 0.5537E+02 |
| 2 | 0.1044E-02 | 0.1510E-02 | 0.1446E+01 | 0.1446E+03 |
| 3 | 0.4538E-02 | 0.1398E-01 | 0.3081E+01 | 0.3081E+03 |
| 4 | 0.1124E+03 | 0.4472E-02 | 0.3978E-04 | 0.3978E-02 |
| 5 | 0.8621E+03 | 0.6192E-02 | 0.7183E-05 | 0.7183E-03 |

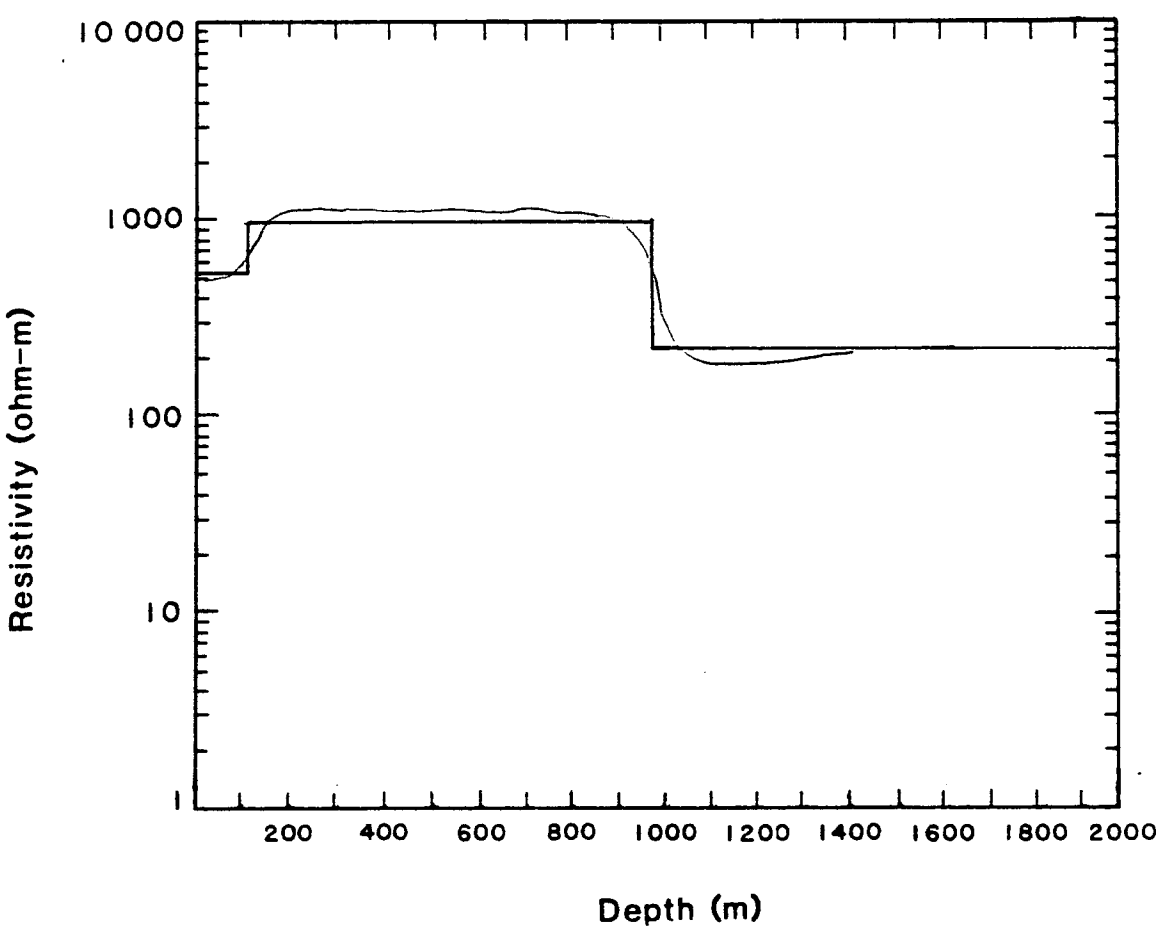
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.19122E-02 | 0.52294E+03 | |
| 2 | SIGMA( 2) | = | 0.10436E-02 | 0.95823E+03 | |
| 3 | SIGMA( 3) | = | 0.45376E-02 | 0.22038E+03 | |
| 4 | THICK( 1) | = | 0.11242E+03 | | 0.11242E+03 |
| 5 | THICK( 2) | = | 0.86215E+03 | | 0.97457E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 7



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 8 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1564E+04 | 0.1541E+04 | 0.2267E+02 | 0.1471E+01 | 0.409E-04 |
| 2 | 0.1100E-03 | 0.1083E+04 | 0.1088E+04 | -0.4794E+01 | -0.4407E+00 | 0.853E-04 |
| 3 | 0.1400E-03 | 0.7084E+03 | 0.7191E+03 | -0.1074E+02 | -0.1494E+01 | 0.199E-03 |
| 4 | 0.1770E-03 | 0.4660E+03 | 0.4696E+03 | -0.3571E+01 | -0.7606E+00 | 0.461E-03 |
| 5 | 0.2200E-03 | 0.3024E+03 | 0.3031E+03 | -0.6957E+00 | -0.2295E+00 | 0.109E-02 |
| 6 | 0.2800E-03 | 0.1811E+03 | 0.1785E+03 | 0.2649E+01 | 0.1485E+01 | 0.305E-02 |
| 7 | 0.3550E-03 | 0.1043E+03 | 0.1034E+03 | 0.9093E+00 | 0.8797E+00 | 0.920E-02 |
| 8 | 0.4430E-03 | 0.6012E+02 | 0.5948E+02 | 0.6402E+00 | 0.1076E+01 | 0.277E-01 |
| 9 | 0.5540E-03 | 0.3240E+02 | 0.3287E+02 | -0.4707E+00 | -0.1432E+01 | 0.953E-01 |
| 10 | 0.7130E-03 | 0.1661E+02 | 0.1653E+02 | 0.8022E-01 | 0.4853E+00 | 0.362E+00 |
| 11 | 0.8810E-03 | 0.8770E+01 | 0.9079E+01 | -0.3088E+00 | -0.3402E+01 | 0.100E+01 |
| 12 | 0.1096E-02 | 0.4670E+01 | 0.4681E+01 | -0.1092E-01 | -0.2333E+00 | 0.400E+01 |
| 13 | 0.1411E-02 | 0.2250E+01 | 0.2221E+01 | 0.2885E-01 | 0.1299E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.1050E+01 | 0.1051E+01 | -0.1325E-02 | -0.1260E+00 | 0.111E+02 |
| 15 | 0.2224E-02 | 0.5600E+00 | 0.5330E+00 | 0.2703E-01 | 0.5072E+01 | 0.250E+02 |
| 16 | 0.2850E-02 | 0.2200E+00 | 0.2483E+00 | -0.2832E-01 | -0.1141E+02 | 0.250E+02 |
| 17 | 0.3600E-02 | 0.8000E-01 | 0.1207E+00 | -0.4066E-01 | -0.3370E+02 | 0.250E+02 |

** %RMSERR= 8.80

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.6079E+00 | 0.1000E+01 | | | |
| 3 | 0.2935E-01 | -0.3754E+00 | 0.1000E+01 | | |
| 4 | 0.6984E+00 | 0.8081E+00 | -0.3611E+00 | 0.1000E+01 | |
| 5 | -0.7182E+00 | -0.8823E+00 | 0.1985E-01 | -0.6915E+00 | 0.1000E+01 |

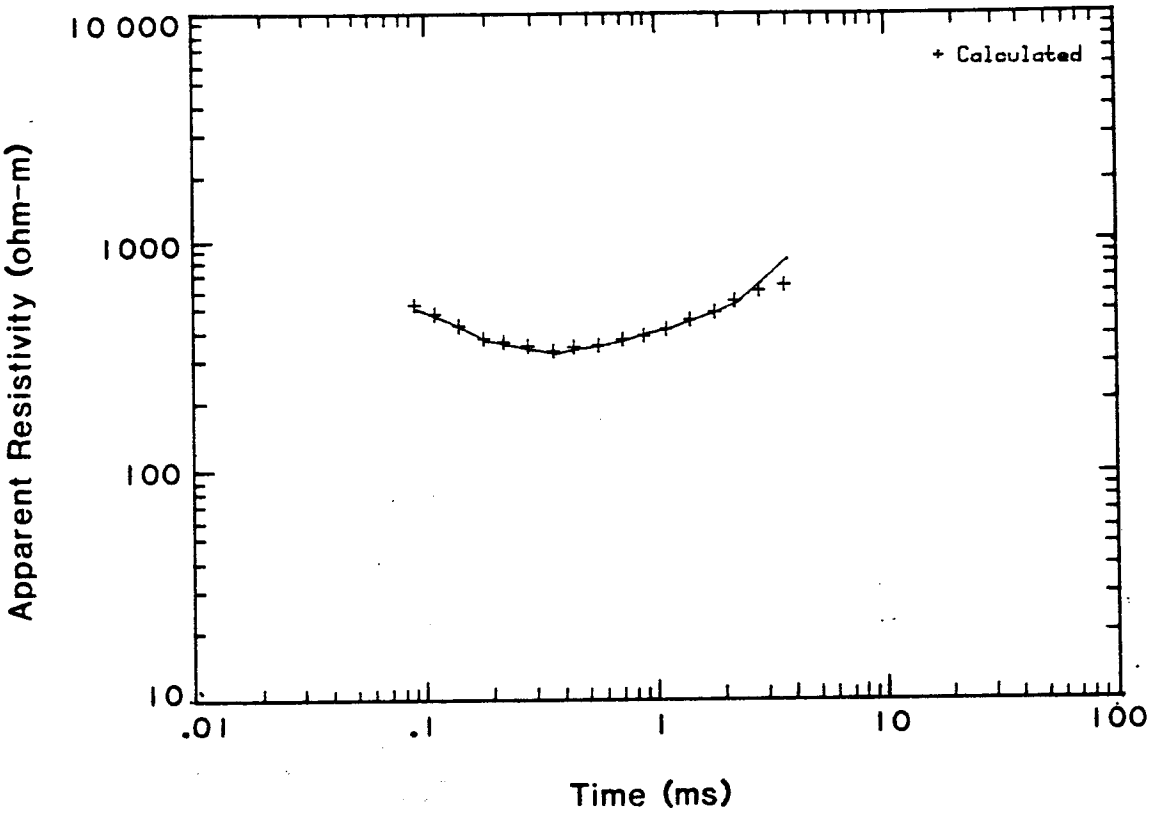
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1614E-02 | 0.6216E-03 | 0.3853E+00 | 0.3853E+02 |
| 2 | 0.7229E-02 | 0.2196E-02 | 0.3037E+00 | 0.3037E+02 |
| 3 | 0.5471E-03 | 0.1337E-02 | 0.2443E+01 | 0.2443E+03 |
| 4 | 0.1425E+03 | 0.1389E-02 | 0.9751E-05 | 0.9751E-03 |
| 5 | 0.1121E+03 | 0.1844E-02 | 0.1645E-04 | 0.1645E-02 |

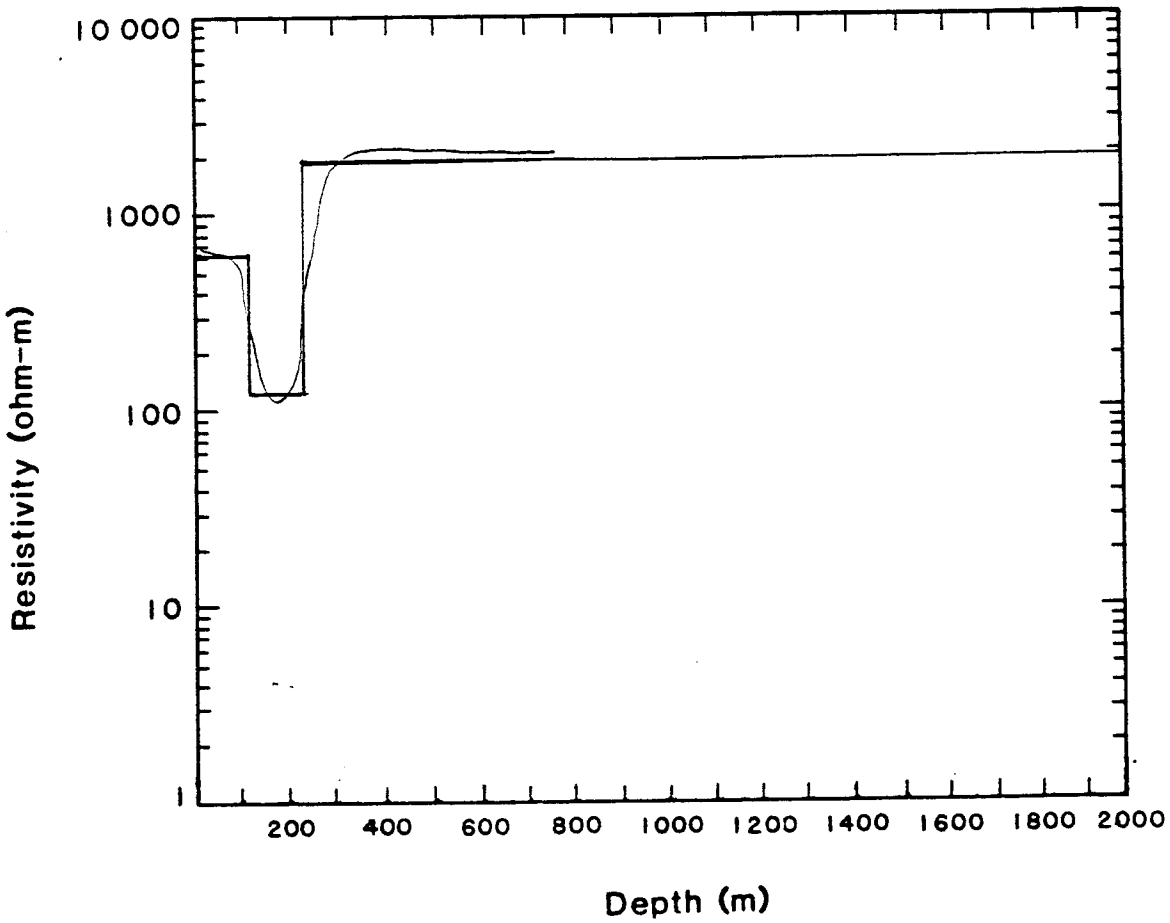
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.16135E-02 | 0.61977E+03 | |
| 2 | SIGMA( 2) | = | 0.72292E-02 | 0.13833E+03 | |
| 3 | SIGMA( 3) | = | 0.54714E-03 | 0.18277E+04 | |
| 4 | THICK( 1) | = | 0.14247E+03 | | 0.14247E+03 |
| 5 | THICK( 2) | = | 0.11208E+03 | | 0.25455E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 8



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 9 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1064E+04 | 0.1085E+04 | -0.2125E+02 | -0.1958E+01 | 0.883E-04 |
| 2 | 0.1100E-03 | 0.6207E+03 | 0.6494E+03 | -0.2870E+02 | -0.4419E+01 | 0.260E-03 |
| 3 | 0.1400E-03 | 0.3436E+03 | 0.3629E+03 | -0.1922E+02 | -0.5295E+01 | 0.847E-03 |
| 4 | 0.1770E-03 | 0.1914E+03 | 0.2068E+03 | -0.1534E+02 | -0.7418E+01 | 0.273E-02 |
| 5 | 0.2200E-03 | 0.1166E+03 | 0.1231E+03 | -0.6466E+01 | -0.5252E+01 | 0.735E-02 |
| 6 | 0.2800E-03 | 0.6825E+02 | 0.7000E+02 | -0.1755E+01 | -0.2507E+01 | 0.215E-01 |
| 7 | 0.3550E-03 | 0.4018E+02 | 0.4033E+02 | -0.1493E+00 | -0.3701E+00 | 0.619E-01 |
| 8 | 0.4430E-03 | 0.2505E+02 | 0.2393E+02 | 0.1119E+01 | 0.4676E+01 | 0.159E+00 |
| 9 | 0.5540E-03 | 0.1446E+02 | 0.1421E+02 | 0.2512E+00 | 0.1768E+01 | 0.478E+00 |
| 10 | 0.7130E-03 | 0.8250E+01 | 0.7740E+01 | 0.5096E+00 | 0.6584E+01 | 0.100E+01 |
| 11 | 0.8810E-03 | 0.4420E+01 | 0.4574E+01 | -0.1538E+00 | -0.3362E+01 | 0.400E+01 |
| 12 | 0.1096E-02 | 0.2470E+01 | 0.2662E+01 | -0.1923E+00 | -0.7223E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1200E+01 | 0.1373E+01 | -0.1733E+00 | -0.1262E+02 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.6000E+00 | 0.7299E+00 | -0.1299E+00 | -0.1780E+02 | 0.250E+02 |
| 15 | 0.2224E-02 | 0.3300E+00 | 0.4126E+00 | -0.8257E-01 | -0.2001E+02 | 0.250E+02 |
| 16 | 0.2850E-02 | 0.1700E+00 | 0.2121E+00 | -0.4209E-01 | -0.1984E+02 | 0.250E+02 |

** %RMSERR= 9.82

CORRELATION MATRIX

| | | | | |
|---|---|---|---|---|
| 2 | 0.1000E+01 | | | |
| 3 | -0.3635E+00 | 0.1000E+01 | | |
| 4 | -0.3702E+00 | -0.3144E+00 | 0.1000E+01 | |
| 5 | -0.3207E+00 | -0.6011E+00 | 0.7018E+00 | 0.1000E+01 |

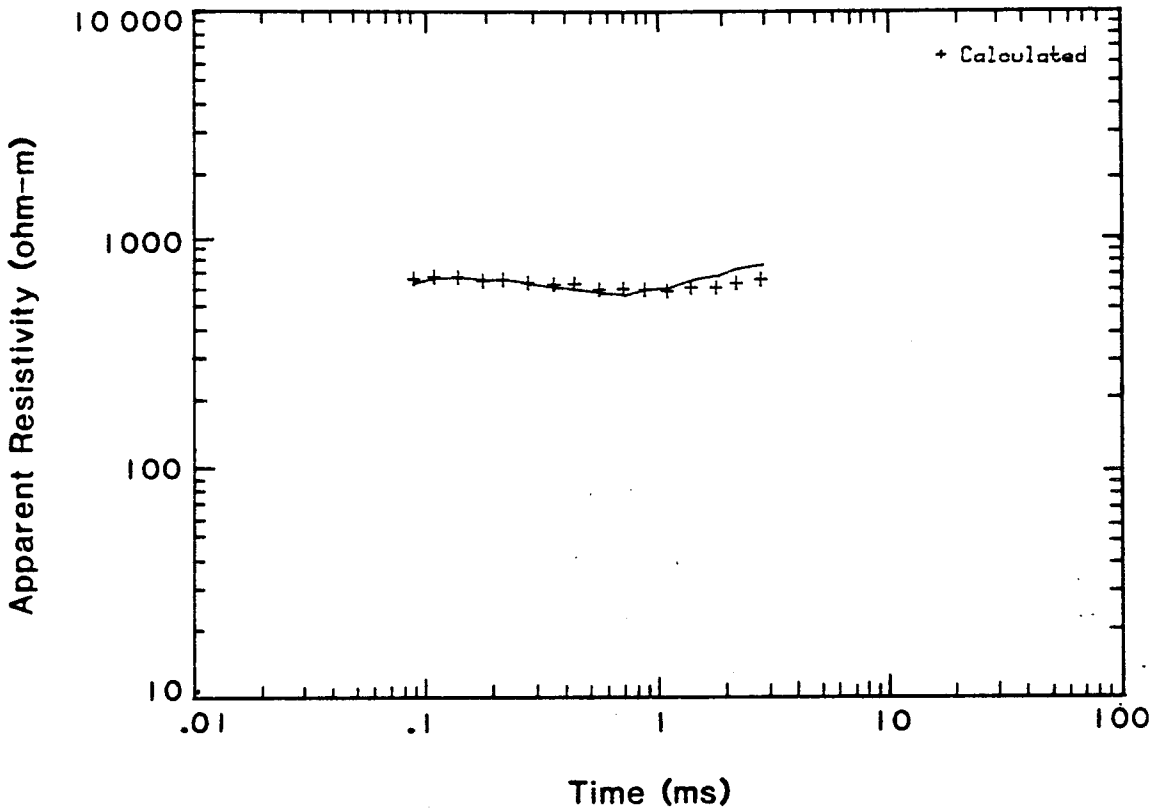
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 2 | 0.2303E-02 | 0.4456E-02 | 0.1935E+01 | 0.1935E+03 |
| 3 | 0.1010E-02 | 0.9296E-02 | 0.9206E+01 | 0.9206E+03 |
| 4 | 0.3443E+03 | 0.7008E-02 | 0.2035E-04 | 0.2035E-02 |
| 5 | 0.2718E+03 | 0.2544E-01 | 0.9361E-04 | 0.9361E-02 |

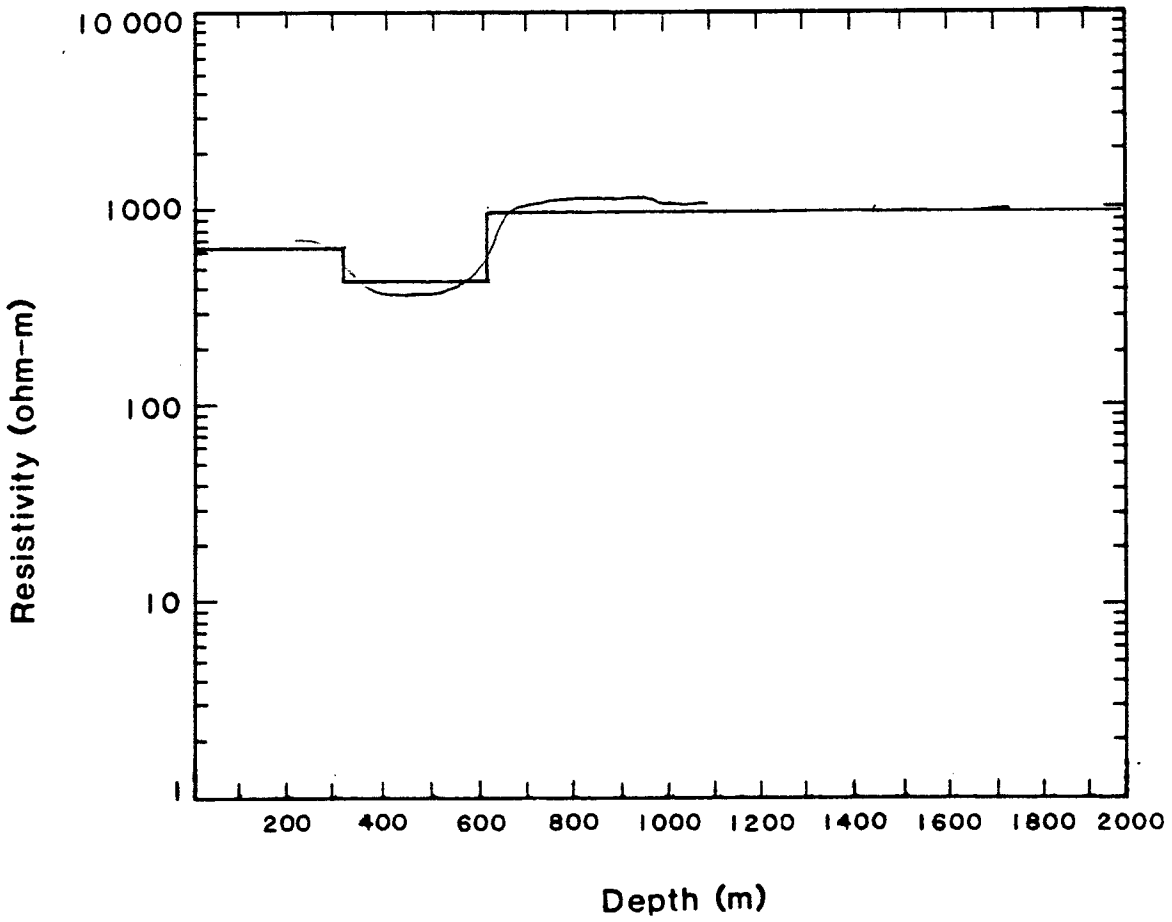
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.16103E-02 | 0.62100E+03 | |
| 2 | SIGMA( 2) | = | 0.23027E-02 | 0.43427E+03 | |
| 3 | SIGMA( 3) | = | 0.10097E-02 | 0.99038E+03 | |
| 4 | THICK( 1) | = | 0.34430E+03 | | 0.34430E+03 |
| 5 | THICK( 2) | = | 0.27178E+03 | | 0.61609E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 9



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 10 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1708E+04 | 0.1666E+04 | 0.4241E+02 | 0.2546E+01 | 0.343E-04 |
| 2 | 0.1100E-03 | 0.9470E+03 | 0.9306E+03 | 0.1638E+02 | 0.1760E+01 | 0.112E-03 |
| 3 | 0.1400E-03 | 0.4690E+03 | 0.4696E+03 | -0.5900E+00 | -0.1256E+00 | 0.455E-03 |
| 4 | 0.1770E-03 | 0.2239E+03 | 0.2298E+03 | -0.5921E+01 | -0.2576E+01 | 0.199E-02 |
| 5 | 0.2200E-03 | 0.1155E+03 | 0.1212E+03 | -0.5702E+01 | -0.4705E+01 | 0.750E-02 |
| 6 | 0.2800E-03 | 0.5742E+02 | 0.5818E+02 | -0.7650E+00 | -0.1315E+01 | 0.303E-01 |
| 7 | 0.3550E-03 | 0.2919E+02 | 0.2797E+02 | 0.1217E+01 | 0.4351E+01 | 0.117E+00 |
| 8 | 0.4430E-03 | 0.1562E+02 | 0.1446E+02 | 0.1155E+01 | 0.7988E+01 | 0.410E+00 |
| 9 | 0.5540E-03 | 0.7290E+01 | 0.7716E+01 | -0.4259E+00 | -0.5520E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.3740E+01 | 0.3692E+01 | 0.4797E-01 | 0.1299E+01 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2080E+01 | 0.2205E+01 | -0.1246E+00 | -0.5653E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1190E+01 | 0.1289E+01 | -0.9861E-01 | -0.7652E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.6800E+00 | 0.6877E+00 | -0.7668E-02 | -0.1115E+01 | 0.250E+02 |
| 14 | 0.1795E-02 | 0.3700E+00 | 0.4171E+00 | -0.4710E-01 | -0.1129E+02 | 0.250E+02 |
| 15 | 0.2224E-02 | 0.2300E+00 | 0.2454E+00 | -0.1541E-01 | -0.6279E+01 | 0.250E+02 |
| 16 | 0.2850E-02 | 0.1300E+00 | 0.1434E+00 | -0.1341E-01 | -0.9353E+01 | 0.250E+02 |

** %RMSERR= 5.60

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3000E+00 | 0.1000E+01 | | | |
| 3 | -0.6050E+00 | -0.7214E-01 | 0.1000E+01 | | |
| 4 | -0.7062E+00 | -0.2344E+00 | 0.6477E+00 | 0.1000E+01 | |
| 5 | -0.4761E+00 | -0.3516E+00 | 0.5627E+00 | 0.4877E+00 | 0.1000E+01 |

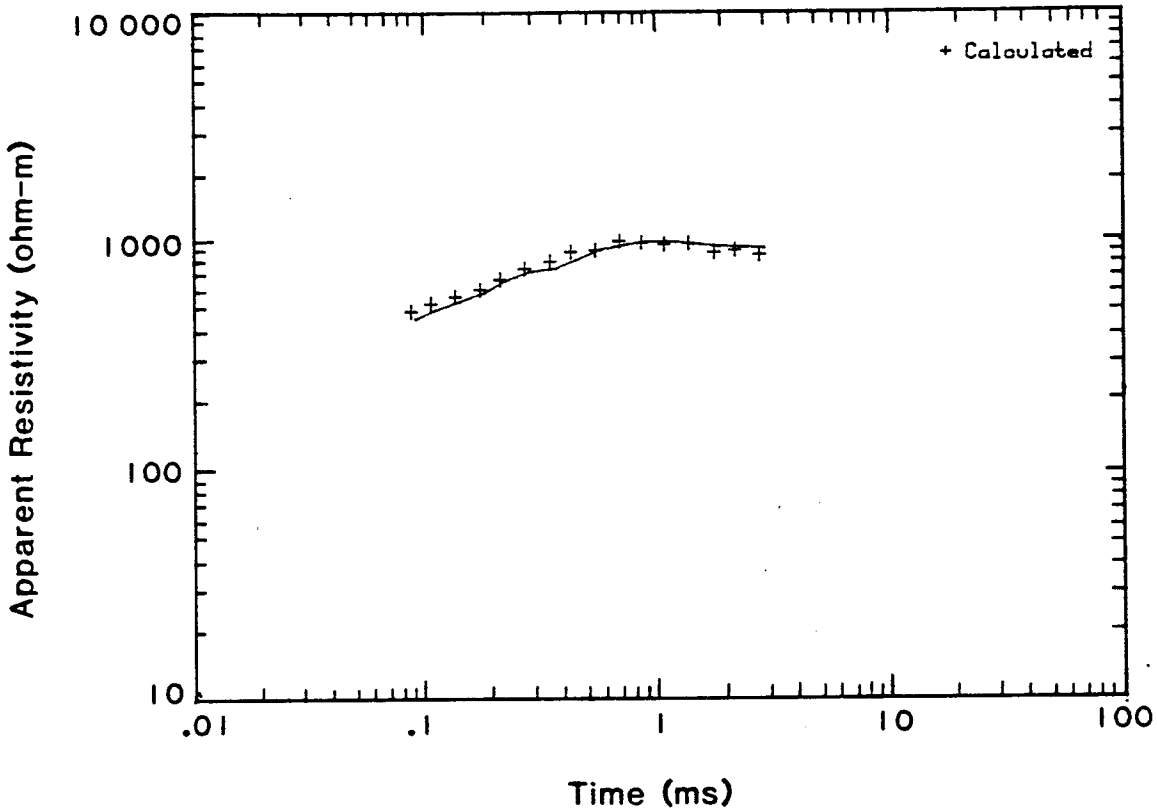
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2531E-02 | 0.1081E-02 | 0.4270E+00 | 0.4270E+02 |
| 2 | 0.5302E-03 | 0.1581E-02 | 0.2983E+01 | 0.2983E+03 |
| 3 | 0.2047E-02 | 0.6029E-02 | 0.2945E+01 | 0.2945E+03 |
| 4 | 0.1220E+03 | 0.2518E-02 | 0.2064E-04 | 0.2064E-02 |
| 5 | 0.5926E+03 | 0.2313E-02 | 0.3903E-05 | 0.3903E-03 |

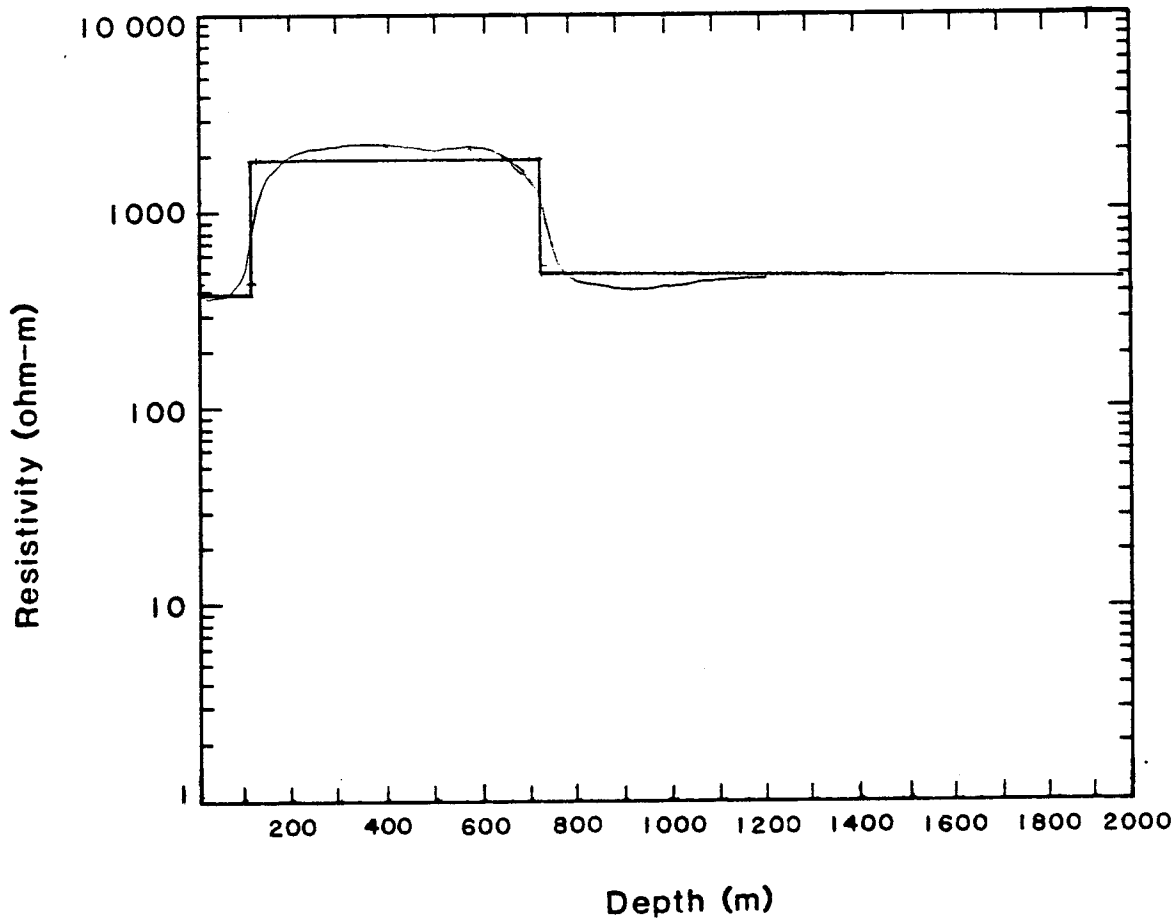
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.25306E-02 | 0.39516E+03 | |
| 2 | SIGMA( 2) | = | 0.53017E-03 | 0.18862E+04 | |
| 3 | SIGMA( 3) | = | 0.20471E-02 | 0.48850E+03 | |
| 4 | THICK( 1) | = | 0.12203E+03 | | 0.12203E+03 |
| 5 | THICK( 2) | = | 0.59261E+03 | | 0.71464E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 10



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 11 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.5761E+03 | 0.6578E+03 | -0.8174E+02 | -0.1243E+02 | 0.301E-03 |
| 2 | 0.1100E-03 | 0.3996E+03 | 0.3978E+03 | 0.1783E+01 | 0.4481E+00 | 0.626E-03 |
| 3 | 0.1400E-03 | 0.2315E+03 | 0.2193E+03 | 0.1217E+02 | 0.5550E+01 | 0.187E-02 |
| 4 | 0.1770E-03 | 0.1364E+03 | 0.1235E+03 | 0.1295E+02 | 0.1049E+02 | 0.537E-02 |
| 5 | 0.2200E-03 | 0.7982E+02 | 0.7247E+02 | 0.7346E+01 | 0.1014E+02 | 0.157E-01 |
| 6 | 0.2800E-03 | 0.4323E+02 | 0.3985E+02 | 0.3383E+01 | 0.8490E+01 | 0.535E-01 |
| 7 | 0.3550E-03 | 0.2316E+02 | 0.2209E+02 | 0.1070E+01 | 0.4843E+01 | 0.186E+00 |
| 8 | 0.4430E-03 | 0.1281E+02 | 0.1282E+02 | -0.1258E-01 | -0.9808E-01 | 0.609E+00 |
| 9 | 0.5540E-03 | 0.6520E+01 | 0.7304E+01 | -0.7844E+00 | -0.1074E+02 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.3380E+01 | 0.3922E+01 | -0.5421E+00 | -0.1382E+02 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2130E+01 | 0.2308E+01 | -0.1785E+00 | -0.7731E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1300E+01 | 0.1333E+01 | -0.3316E-01 | -0.2487E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.6900E+00 | 0.7147E+00 | -0.2475E-01 | -0.3463E+01 | 0.250E+02 |
| 14 | 0.1795E-02 | 0.3800E+00 | 0.3883E+00 | -0.8259E-02 | -0.2127E+01 | 0.250E+02 |
| 15 | 0.2224E-02 | 0.2400E+00 | 0.2297E+00 | 0.1026E-01 | 0.4467E+01 | 0.250E+02 |

** %RMSERR= 7.76

CORRELATION MATRIX

1 0.1000E+01

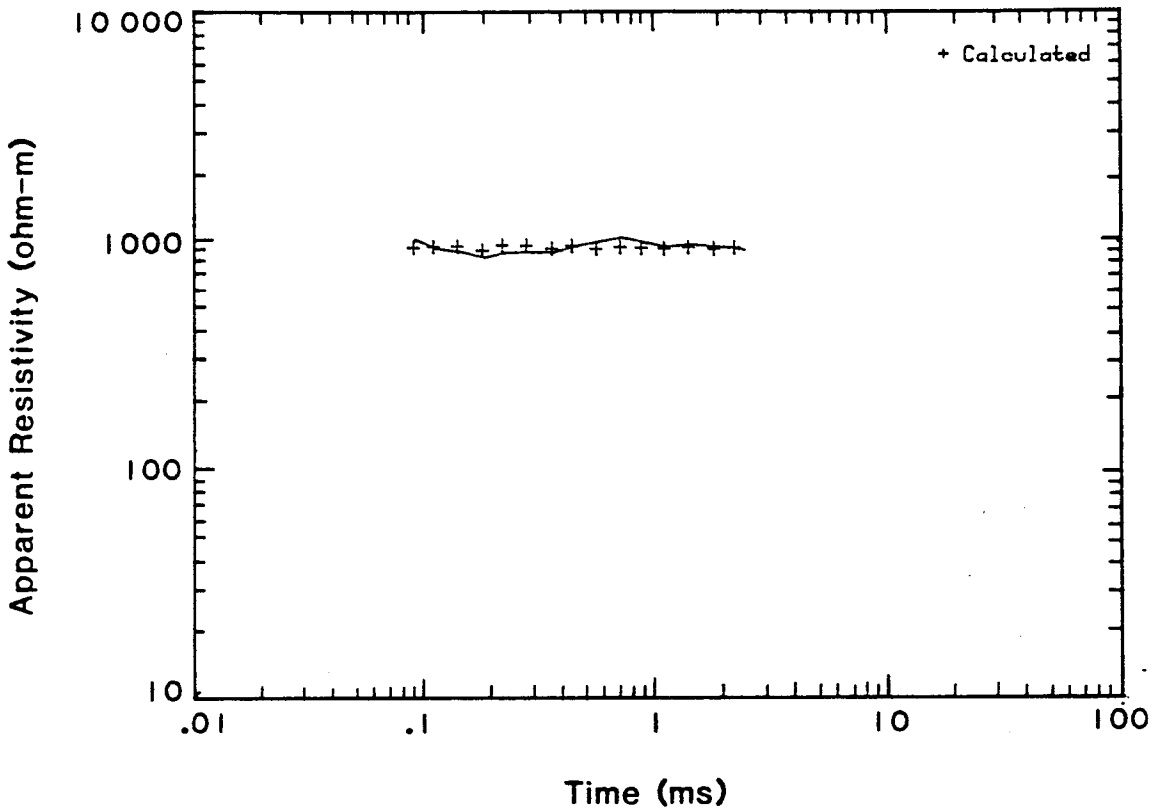
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1123E-02 | 0.6838E-03 | 0.6087E+00 | 0.6087E+02 |

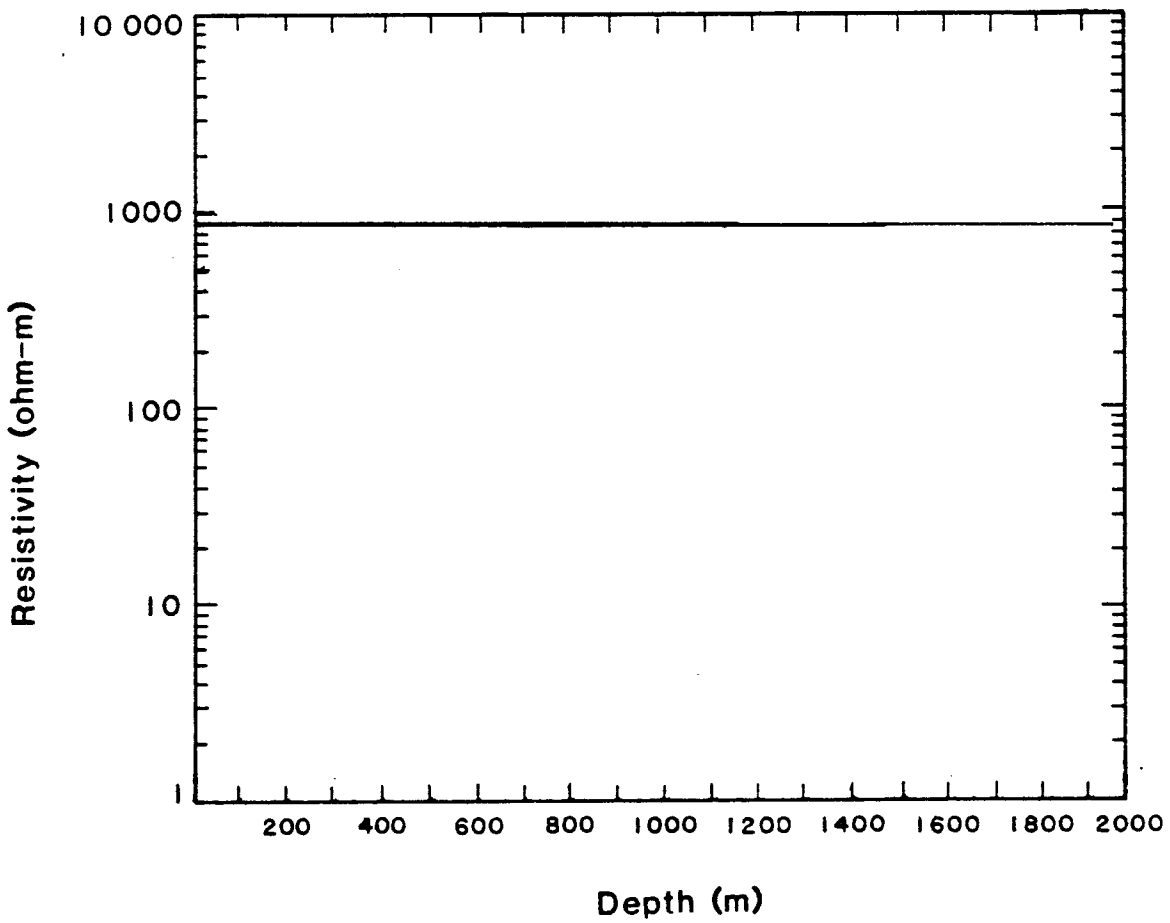
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.11235E-02 | 0.89010E+03 | |
| 2 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 11



ELECTROMAGNETIC SURVEYS INC.

EMSURVEYS

MOUNT SHASTA STATION 12 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.5207E+04 | 0.5304E+04 | -0.9664E+02 | -0.1822E+01 | 0.369E-05 |
| 2 | 0.1100E-03 | 0.3676E+04 | 0.3673E+04 | 0.3223E+01 | 0.8775E-01 | 0.740E-05 |
| 3 | 0.1400E-03 | 0.2405E+04 | 0.2378E+04 | 0.2745E+02 | 0.1154E+01 | 0.173E-04 |
| 4 | 0.1770E-03 | 0.1569E+04 | 0.1532E+04 | 0.3742E+02 | 0.2443E+01 | 0.406E-04 |
| 5 | 0.2200E-03 | 0.1022E+04 | 0.1004E+04 | 0.1819E+02 | 0.1812E+01 | 0.957E-04 |
| 6 | 0.2800E-03 | 0.6224E+03 | 0.6169E+03 | 0.5508E+01 | 0.8929E+00 | 0.258E-03 |
| 7 | 0.3550E-03 | 0.3723E+03 | 0.3761E+03 | -0.3822E+01 | -0.1016E+01 | 0.722E-03 |
| 8 | 0.4430E-03 | 0.2268E+03 | 0.2329E+03 | -0.6136E+01 | -0.2635E+01 | 0.194E-02 |
| 9 | 0.5540E-03 | 0.1333E+03 | 0.1406E+03 | -0.7257E+01 | -0.5163E+01 | 0.563E-02 |
| 10 | 0.7130E-03 | 0.7705E+02 | 0.7847E+02 | -0.1421E+01 | -0.1811E+01 | 0.168E-01 |
| 11 | 0.8810E-03 | 0.4859E+02 | 0.4756E+02 | 0.1028E+01 | 0.2161E+01 | 0.424E-01 |
| 12 | 0.1096E-02 | 0.2964E+02 | 0.2850E+02 | 0.1136E+01 | 0.3984E+01 | 0.114E+00 |
| 13 | 0.1411E-02 | 0.1657E+02 | 0.1601E+02 | 0.5586E+00 | 0.3489E+01 | 0.364E+00 |
| 14 | 0.1795E-02 | 0.9100E+01 | 0.9427E+01 | -0.3265E+00 | -0.3464E+01 | 0.100E+01 |
| 15 | 0.2224E-02 | 0.6200E+01 | 0.6097E+01 | 0.1033E+00 | 0.1695E+01 | 0.100E+01 |
| 16 | 0.2850E-02 | 0.3800E+01 | 0.3760E+01 | 0.4013E-01 | 0.1067E+01 | 0.400E+01 |
| 17 | 0.3630E-02 | 0.2400E+01 | 0.2411E+01 | -0.1125E-01 | -0.4666E+00 | 0.111E+02 |
| 18 | 0.4490E-02 | 0.1630E+01 | 0.1605E+01 | 0.2506E-01 | 0.1561E+01 | 0.111E+02 |
| 19 | 0.5700E-02 | 0.1010E+01 | 0.1039E+01 | -0.2854E-01 | -0.2748E+01 | 0.111E+02 |
| 20 | 0.7190E-02 | 0.6600E+00 | 0.6694E+00 | -0.9382E-02 | -0.1402E+01 | 0.100E+03 |
| 21 | 0.8890E-02 | 0.4700E+00 | 0.4590E+00 | 0.1099E-01 | 0.2394E+01 | 0.100E+03 |
| 22 | 0.1100E-01 | 0.3100E+00 | 0.3001E+00 | 0.9894E-02 | 0.3297E+01 | 0.100E+03 |
| 23 | 0.1410E-01 | 0.2000E+00 | 0.1840E+00 | 0.1600E-01 | 0.8694E+01 | 0.100E+03 |

** %ERROR= 2.99

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.3146E+00 | 0.1000E+01 | | | |
| 3 | 0.3653E+00 | 0.2953E+00 | 0.1000E+01 | | |
| 4 | 0.2341E+00 | 0.6074E+00 | -0.1670E-01 | 0.1000E+01 | |
| 5 | -0.2061E+00 | 0.2673E+00 | 0.7940E+00 | -0.2677E-02 | 0.1000E+01 |

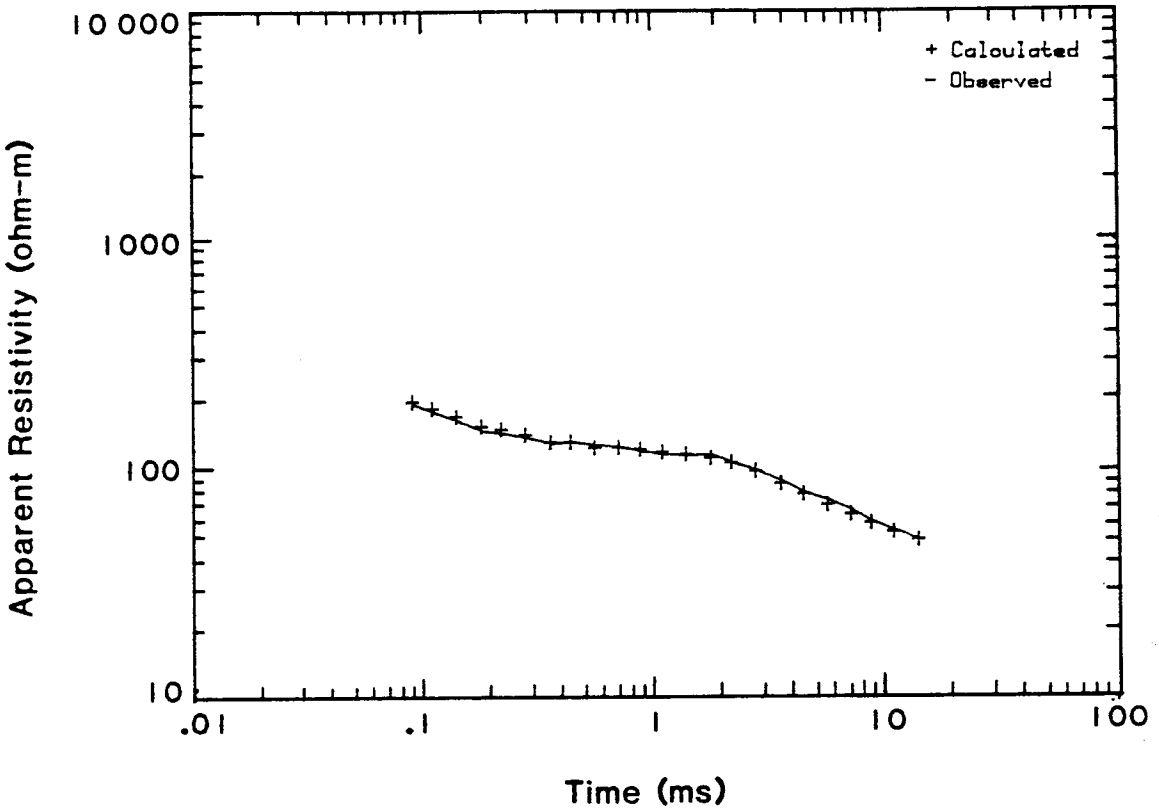
| | **PARA_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4552E-02 | 0.1937E-02 | 0.4255E+00 | 0.4255E+02 |
| 2 | 0.1189E-01 | 0.2082E-02 | 0.1751E+00 | 0.1751E+02 |
| 3 | 0.4763E-01 | 0.3095E-01 | 0.6500E+00 | 0.6500E+02 |
| 4 | 0.6487E+02 | 0.1586E-02 | 0.2444E-04 | 0.2444E-02 |
| 5 | 0.3235E+03 | 0.7048E-02 | 0.2178E-04 | 0.2178E-02 |

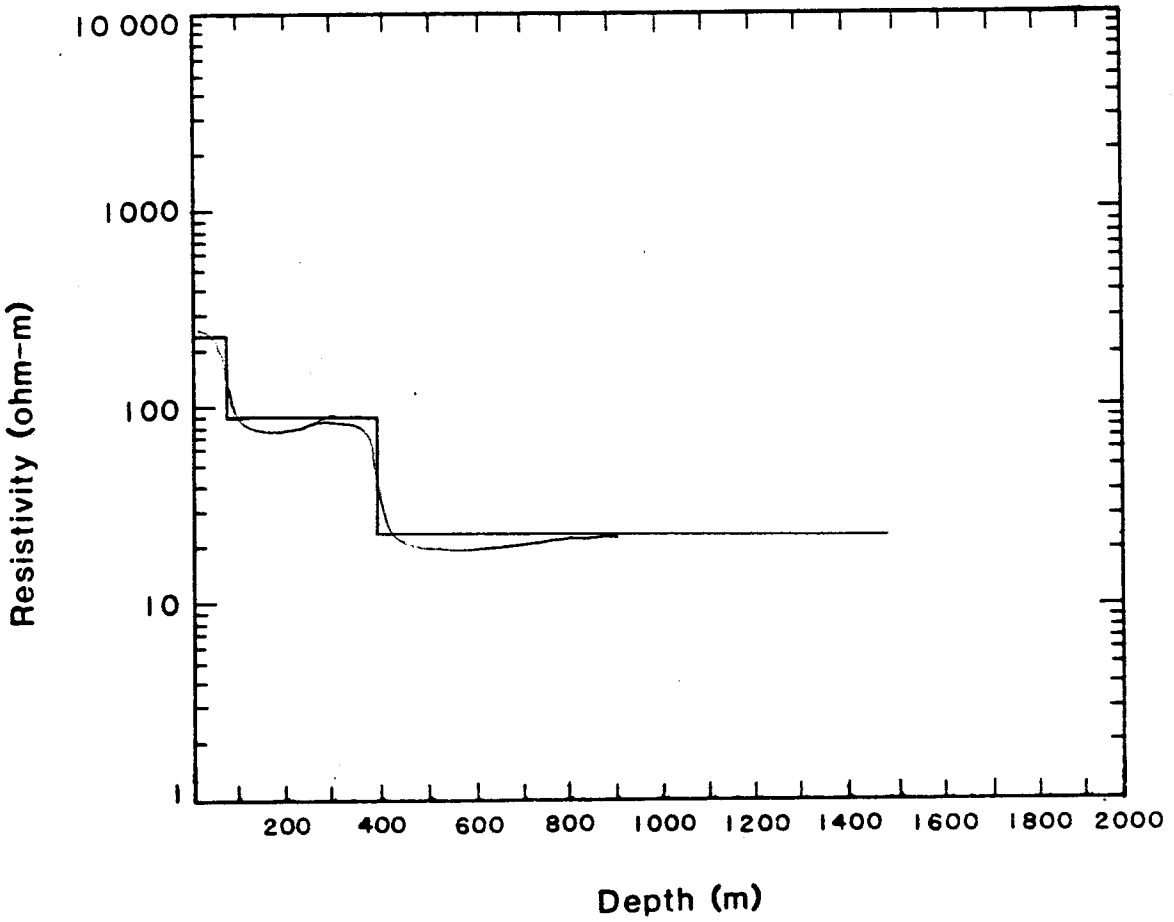
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.45523E-02 | 0.21967E+03 | |
| 2 | SIGMA( 2) | = | 0.11890E-01 | 0.84102E+02 | |
| 3 | SIGMA( 3) | = | 0.47625E-01 | 0.20997E+02 | |
| 4 | THICK( 1) | = | 0.64894E+02 | | 0.64894E+02 |
| 5 | THICK( 2) | = | 0.32353E+03 | | 0.38843E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 12



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 17 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2065E+04 | 0.2099E+04 | -0.3424E+02 | -0.1631E+01 | 0.235E-04 |
| 2 | 0.1100E-03 | 0.1446E+04 | 0.1457E+04 | -0.1053E+02 | -0.7231E+00 | 0.478E-04 |
| 3 | 0.1400E-03 | 0.9248E+03 | 0.9285E+03 | -0.3666E+01 | -0.3949E+00 | 0.117E-03 |
| 4 | 0.1770E-03 | 0.5873E+03 | 0.5777E+03 | 0.9579E+01 | 0.1658E+01 | 0.290E-03 |
| 5 | 0.2200E-03 | 0.3688E+03 | 0.3625E+03 | 0.6315E+01 | 0.1742E+01 | 0.733E-03 |
| 6 | 0.2800E-03 | 0.2136E+03 | 0.2095E+03 | 0.4120E+01 | 0.1967E+01 | 0.219E-03 |
| 7 | 0.3550E-03 | 0.1205E+03 | 0.1179E+03 | 0.2591E+01 | 0.2198E+01 | 0.689E-02 |
| 8 | 0.4430E-03 | 0.6852E+02 | 0.6766E+02 | 0.8633E+00 | 0.1276E+01 | 0.213E-01 |
| 9 | 0.5540E-03 | 0.3680E+02 | 0.3823E+02 | -0.1431E+01 | -0.3743E+01 | 0.738E-01 |
| 10 | 0.7130E-03 | 0.1947E+02 | 0.1933E+02 | 0.1410E+00 | 0.7293E+00 | 0.264E+00 |
| 11 | 0.8810E-03 | 0.1148E+02 | 0.1096E+02 | 0.5210E+00 | 0.4754E+01 | 0.759E+00 |
| 12 | 0.1096E-02 | 0.5330E+01 | 0.6050E+01 | -0.7197E+00 | -0.1190E+02 | 0.100E+01 |
| 13 | 0.1411E-02 | 0.2760E+01 | 0.2975E+01 | -0.2154E+00 | -0.7239E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.1510E+01 | 0.1539E+01 | -0.2889E-01 | -0.1877E+01 | 0.111E+02 |
| 15 | 0.2224E-02 | 0.8700E+00 | 0.8519E+00 | 0.1811E-01 | 0.2125E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.4700E+00 | 0.4251E+00 | 0.4492E-01 | 0.1057E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.2600E+00 | 0.2253E+00 | 0.3502E-01 | 0.1557E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.1500E+00 | 0.1242E+00 | 0.2584E-01 | 0.2081E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.8000E-01 | 0.6305E-01 | 0.1695E-01 | 0.2688E+02 | 0.100E+03 |

** WRMSERR= 9.65

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.5123E+00 | 0.1000E+01 | | | |
| 3 | 0.5730E+00 | -0.6047E+00 | 0.1000E+01 | | |
| 4 | -0.5002E+00 | 0.4056E+00 | -0.5635E+00 | 0.1000E+01 | |
| 5 | 0.2422E+00 | 0.3771E+00 | -0.8691E+00 | 0.6012E+00 | 0.1000E+01 |

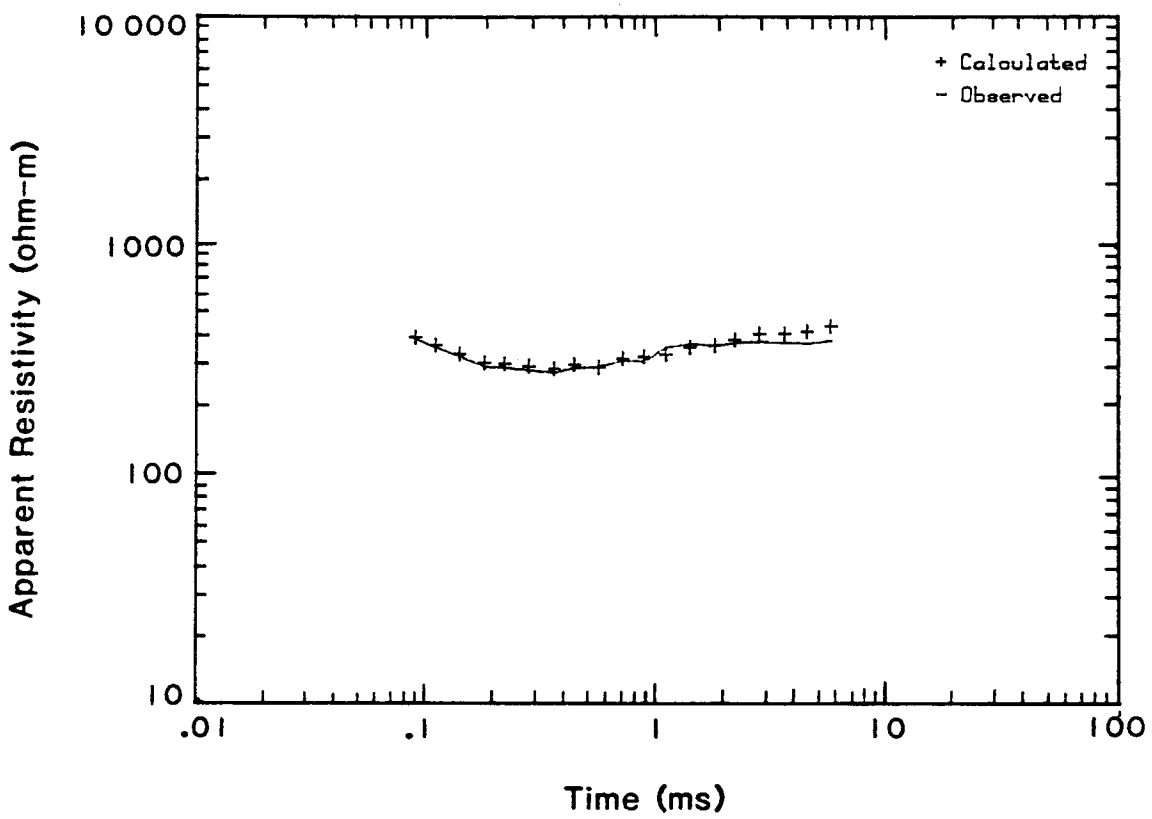
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1080E-02 | 0.1287E-02 | 0.1191E+01 | 0.1191E+03 |
| 2 0.6423E-02 | 0.1792E-02 | 0.2790E+00 | 0.2790E+02 |
| 3 0.1737E-02 | 0.5153E-02 | 0.2966E+01 | 0.2966E+03 |
| 4 0.8767E+02 | 0.1616E-02 | 0.1844E-04 | 0.1844E-02 |
| 5 0.1230E+03 | 0.3227E-02 | 0.2617E-04 | 0.2617E-02 |

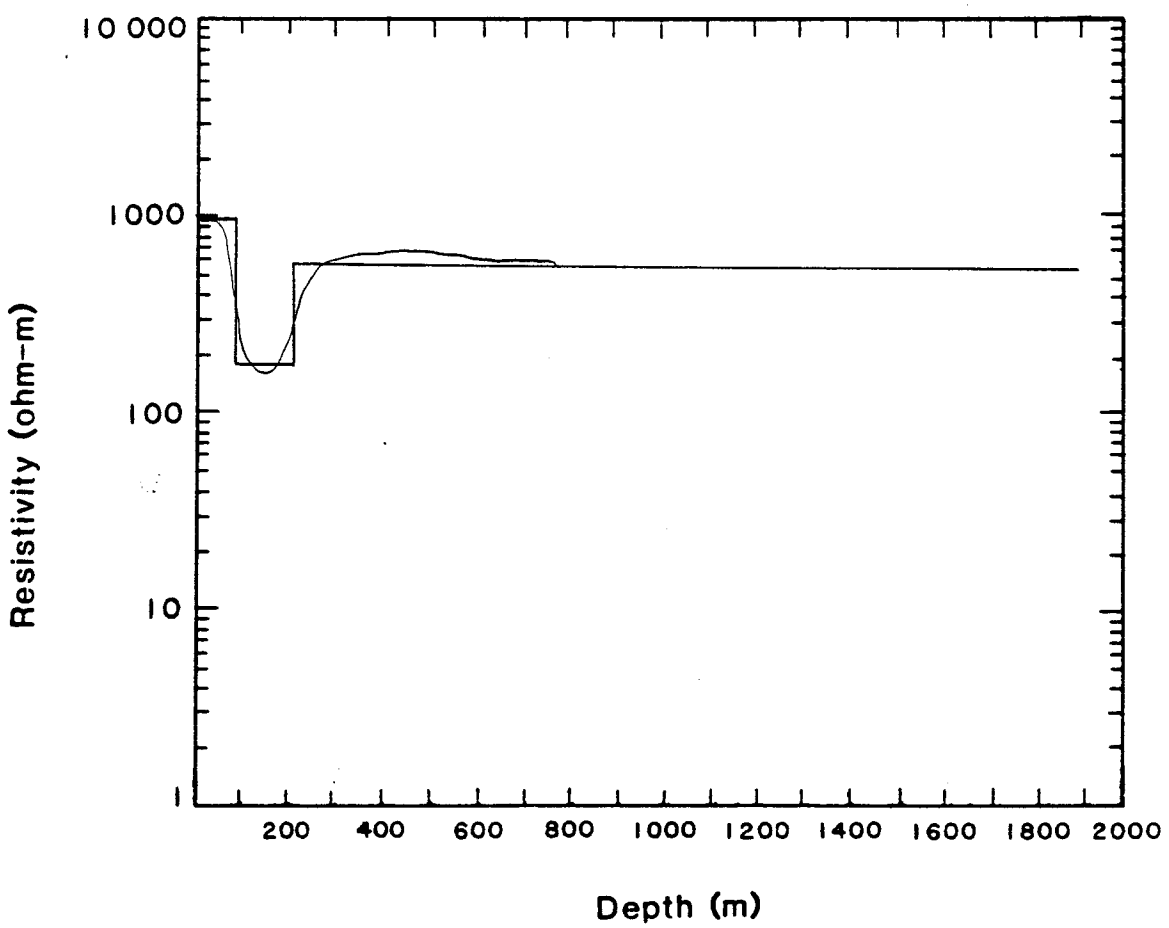
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.10802E-02 | 0.92564E+03 | |
| 2 SIGMA( 2) = | 0.64227E-02 | 0.15570E+03 | |
| 3 SIGMA( 3) = | 0.17372E-02 | 0.57564E+03 | |
| 4 THICK( 1) = | 0.87673E+02 | | 0.87673E+02 |
| 5 THICK( 2) = | 0.12301E+03 | | 0.21098E+03 |
| 6 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 17



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 18 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2873E+04 | 0.3073E+04 | -0.2000E+03 | -0.6510E+01 | 0.121E-04 |
| 2 | 0.1100E-03 | 0.1827E+04 | 0.1908E+04 | -0.8085E+02 | -0.4238E+01 | 0.300E-04 |
| 3 | 0.1400E-03 | 0.1056E+04 | 0.1068E+04 | -0.1161E+02 | -0.1088E+01 | 0.897E-04 |
| 4 | 0.1770E-03 | 0.6137E+03 | 0.5997E+03 | 0.1400E+02 | 0.2334E+01 | 0.266E-03 |
| 5 | 0.2200E-03 | 0.3559E+03 | 0.3398E+03 | 0.1611E+02 | 0.4740E+01 | 0.789E-03 |
| 6 | 0.2800E-03 | 0.1890E+03 | 0.1780E+03 | 0.1097E+02 | 0.6163E+01 | 0.280E-02 |
| 7 | 0.3550E-03 | 0.9661E+02 | 0.9150E+02 | 0.5113E+01 | 0.5588E+01 | 0.107E-01 |
| 8 | 0.4430E-03 | 0.4988E+02 | 0.4825E+02 | 0.1630E+01 | 0.3379E+01 | 0.402E-01 |
| 9 | 0.5540E-03 | 0.2392E+02 | 0.2519E+02 | -0.1266E+01 | -0.5027E+01 | 0.175E+00 |
| 10 | 0.7130E-03 | 0.1117E+02 | 0.1181E+02 | -0.6410E+00 | -0.5427E+01 | 0.801E+00 |
| 11 | 0.8810E-03 | 0.5790E+01 | 0.6180E+01 | -0.3897E+00 | -0.6306E+01 | 0.100E+01 |
| 12 | 0.1096E-02 | 0.3170E+01 | 0.3198E+01 | -0.2795E-01 | -0.8741E+00 | 0.400E+01 |
| 13 | 0.1411E-02 | 0.1560E+01 | 0.1484E+01 | 0.7571E-01 | 0.5101E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.7400E+00 | 0.6885E+00 | 0.5149E-01 | 0.7479E+01 | 0.250E+02 |
| 15 | 0.2224E-02 | 0.3900E+00 | 0.3752E+00 | 0.1478E-01 | 0.3938E+01 | 0.250E+02 |
| 16 | 0.2850E-02 | 0.1800E+00 | 0.1707E+00 | 0.9276E-02 | 0.5433E+01 | 0.250E+02 |
| 17 | 0.3600E-02 | 0.8000E-01 | 0.8612E-01 | -0.6122E-02 | -0.7109E+01 | 0.250E+02 |
| 18 | 0.4490E-02 | 0.4000E-01 | 0.4607E-01 | -0.6071E-02 | -0.1318E+02 | 0.250E+02 |

** %RMSERR= 5.85

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | 0.3354E+00 | 0.1000E+01 | |
| 3 | -0.8437E+00 | -0.5184E+00 | 0.1000E+01 |

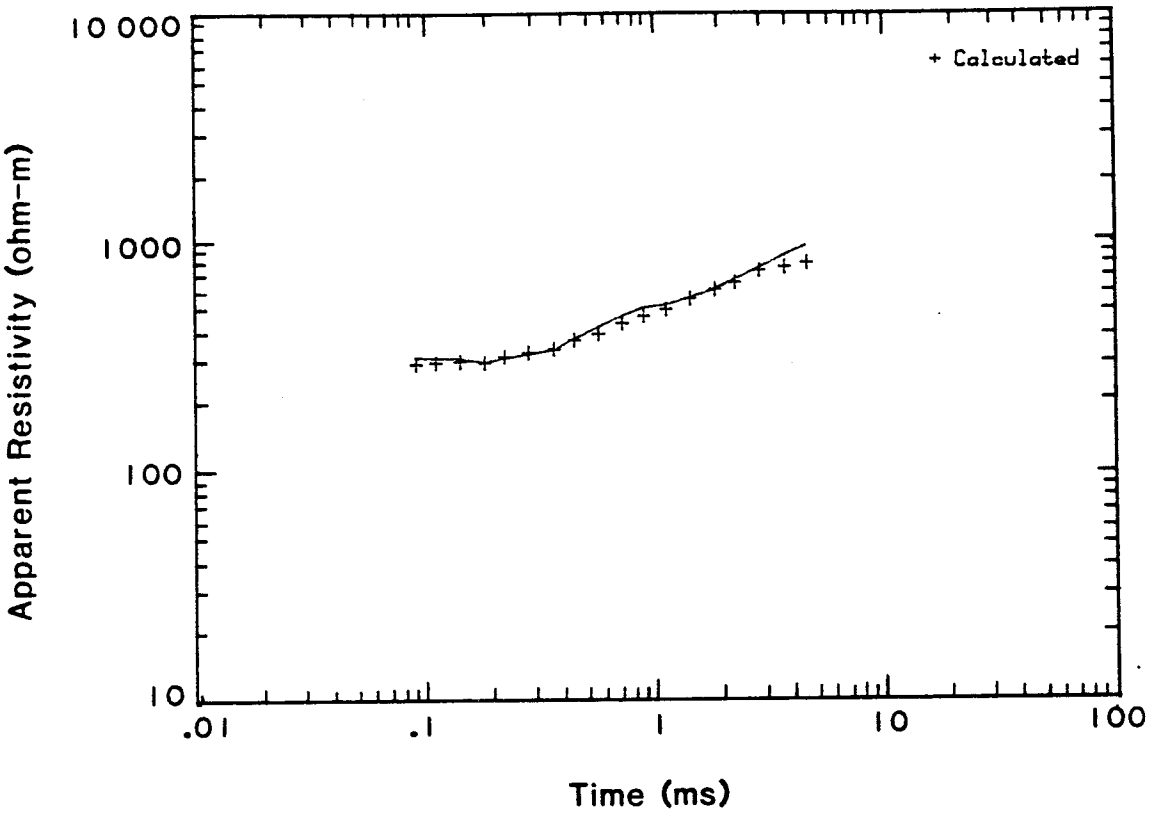
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.3380E-02 | 0.1194E-03 | 0.3532E-01 | 0.3532E+01 |
| 2 0.6606E-03 | 0.2994E-03 | 0.4532E+00 | 0.4532E+02 |
| 3 0.2199E+03 | 0.4642E-02 | 0.2111E-04 | 0.2111E-02 |

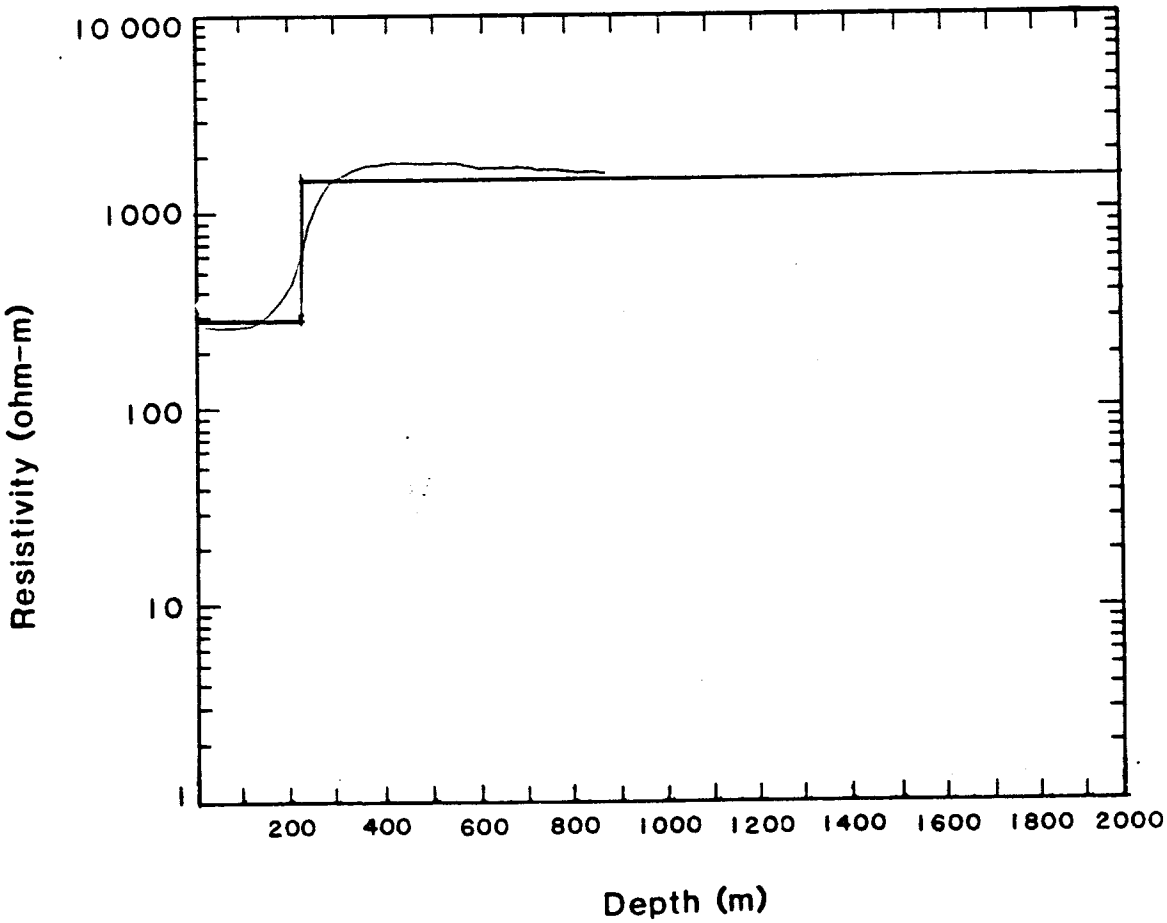
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.33799E-02 | 0.29587E+03 | |
| 2 SIGMA( 2) = | 0.66059E-03 | 0.15138E+04 | |
| 3 THICK( 1) = | 0.21987E+03 | | 0.21987E+03 |
| 4 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 18



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 19 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1857E+04 | 0.2086E+04 | -0.2290E+03 | -0.1098E+02 | 0.290E-04 |
| 2 | 0.1100E-03 | 0.1201E+04 | 0.1274E+04 | -0.7307E+02 | -0.5735E+01 | 0.693E-04 |
| 3 | 0.1400E-03 | 0.6960E+03 | 0.7167E+03 | -0.2071E+02 | -0.2889E+01 | 0.206E-03 |
| 4 | 0.1770E-03 | 0.4048E+03 | 0.3987E+03 | 0.6035E+01 | 0.1514E+01 | 0.610E-03 |
| 5 | 0.2200E-03 | 0.2383E+03 | 0.2299E+03 | 0.8355E+01 | 0.3634E+01 | 0.176E-02 |
| 6 | 0.2800E-03 | 0.1310E+03 | 0.1225E+03 | 0.8500E+01 | 0.6939E+01 | 0.583E-02 |
| 7 | 0.3550E-03 | 0.7103E+02 | 0.6522E+02 | 0.5812E+01 | 0.8912E+01 | 0.198E-01 |
| 8 | 0.4430E-03 | 0.3982E+02 | 0.3594E+02 | 0.3884E+01 | 0.1081E+02 | 0.631E-01 |
| 9 | 0.5540E-03 | 0.2053E+02 | 0.1954E+02 | 0.9913E+00 | 0.5073E+01 | 0.237E+00 |
| 10 | 0.7130E-03 | 0.1049E+02 | 0.9745E+01 | 0.7446E+00 | 0.7640E+01 | 0.909E+00 |
| 11 | 0.8810E-03 | 0.4840E+01 | 0.5479E+01 | -0.6392E+00 | -0.1167E+02 | 0.400E+01 |
| 12 | 0.1096E-02 | 0.2770E+01 | 0.2995E+01 | -0.2255E+00 | -0.7527E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1520E+01 | 0.1490E+01 | 0.3033E-01 | 0.2036E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.8300E+00 | 0.7846E+00 | 0.4542E-01 | 0.5789E+01 | 0.250E+02 |
| 15 | 0.2224E-02 | 0.4600E+00 | 0.4298E+00 | 0.3024E-01 | 0.7036E+01 | 0.250E+02 |
| 16 | 0.2850E-02 | 0.2700E+00 | 0.2228E+00 | 0.4715E-01 | 0.2116E+02 | 0.250E+02 |
| 17 | 0.3600E-02 | 0.1400E+00 | 0.1173E+00 | 0.2271E-01 | 0.1936E+02 | 0.250E+02 |

** %RMSERR= 9.70

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.3251E+00 | 0.1000E+01 | |
| 3 | -0.2993E+00 | -0.6413E+00 | 0.1000E+01 |

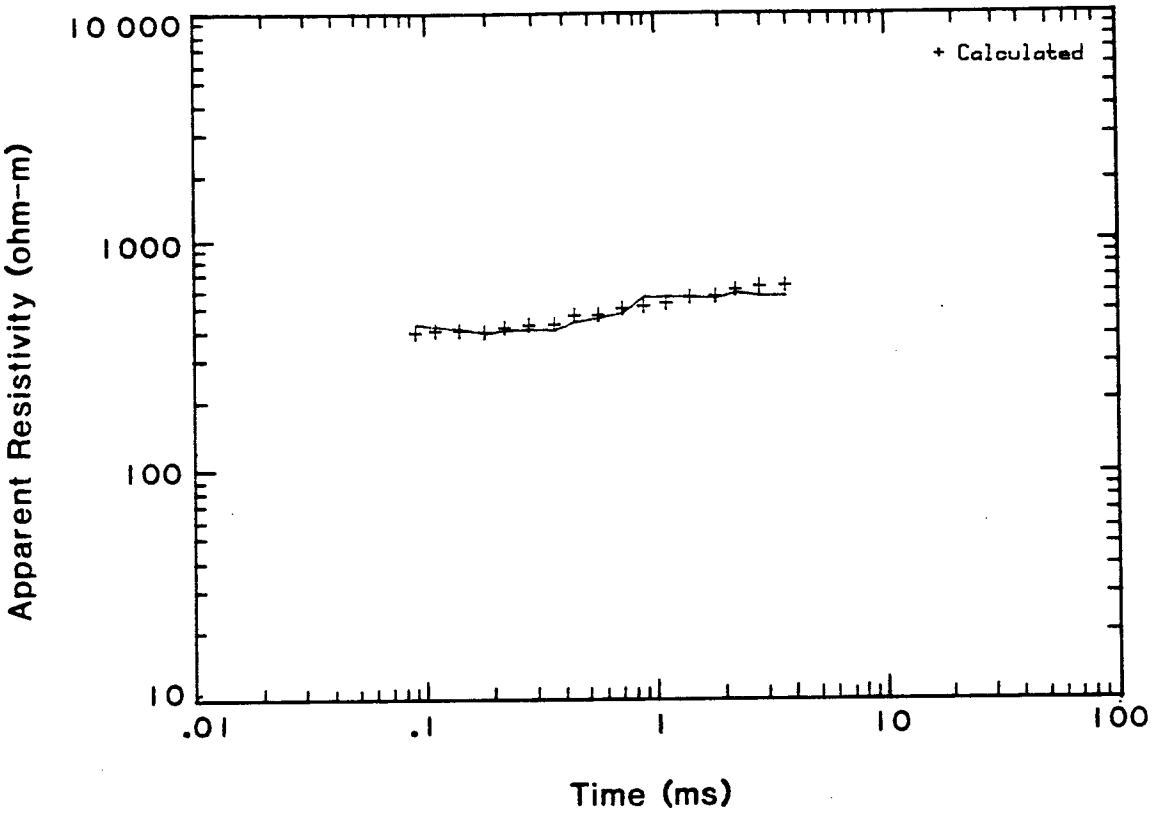
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2546E-02 | 0.1096E-03 | 0.4304E-01 | 0.4304E+01 |
| 2 | 0.1256E-02 | 0.3988E-03 | 0.3176E+00 | 0.3176E+02 |
| 3 | 0.2410E+03 | 0.5803E-02 | 0.2408E-04 | 0.2408E-02 |

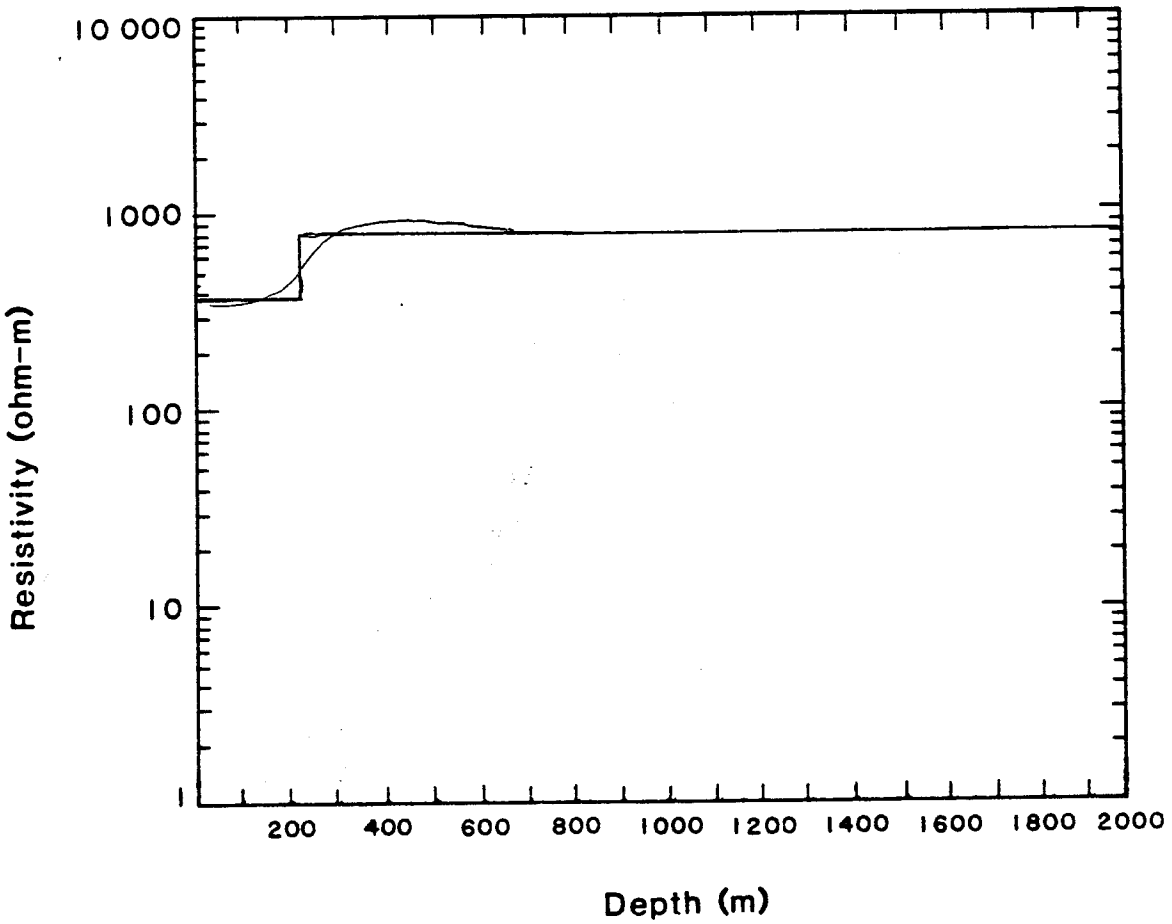
| PARAMETER | NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.25463E-02 | 0.39272E+03 | |
| 2 | SIGMA( 2) | = | 0.12557E-02 | 0.79639E+03 | |
| 3 | THICK( 1) | = | 0.24102E+03 | | 0.24102E+03 |
| 4 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 19



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 20 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.6018E+04 | 0.6683E+04 | -0.6648E+03 | -0.9948E+01 | 0.276E-05 |
| 2 | 0.1100E-03 | 0.4120E+04 | 0.4049E+04 | 0.7086E+02 | 0.1750E+01 | 0.589E-05 |
| 3 | 0.1400E-03 | 0.2476E+04 | 0.2195E+04 | 0.2808E+03 | 0.1279E+02 | 0.163E-04 |
| 4 | 0.1770E-03 | 0.1405E+04 | 0.1170E+04 | 0.2349E+03 | 0.2008E+02 | 0.507E-04 |
| 5 | 0.2200E-03 | 0.7608E+03 | 0.6181E+03 | 0.1427E+03 | 0.2309E+02 | 0.173E-03 |
| 6 | 0.2800E-03 | 0.3578E+03 | 0.2966E+03 | 0.6122E+02 | 0.2064E+02 | 0.781E-03 |
| 7 | 0.3550E-03 | 0.1604E+03 | 0.1435E+03 | 0.1692E+02 | 0.1179E+02 | 0.389E-02 |
| 8 | 0.4430E-03 | 0.7132E+02 | 0.6661E+02 | 0.4708E+01 | 0.7067E+01 | 0.197E-01 |
| 9 | 0.5540E-03 | 0.2857E+02 | 0.3132E+02 | -0.2746E+01 | -0.8769E+01 | 0.123E+00 |
| 10 | 0.7130E-03 | 0.1071E+02 | 0.1311E+02 | -0.2401E+01 | -0.1831E+02 | 0.872E+00 |
| 11 | 0.8810E-03 | 0.5520E+01 | 0.5912E+01 | -0.3920E+00 | -0.6631E+01 | 0.100E+01 |
| 12 | 0.1096E-02 | 0.2650E+01 | 0.2606E+01 | 0.4393E-01 | 0.1686E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1110E+01 | 0.1203E+01 | -0.9340E-01 | -0.7761E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.5100E+00 | 0.4963E+00 | 0.1371E-01 | 0.2762E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.2500E+00 | 0.3272E+00 | -0.7721E-01 | -0.2360E+02 | 0.100E+03 |

** %RMSERR= 13.91

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.7334E+00 | 0.1000E+01 | | | |
| 3 | -0.1565E+00 | 0.1419E+00 | 0.1000E+01 | | |
| 4 | -0.9569E+00 | -0.6916E+00 | 0.2250E+00 | 0.1000E+01 | |
| 5 | -0.4734E+00 | -0.3523E+00 | -0.1430E+00 | 0.5399E+00 | 0.1000E+01 |

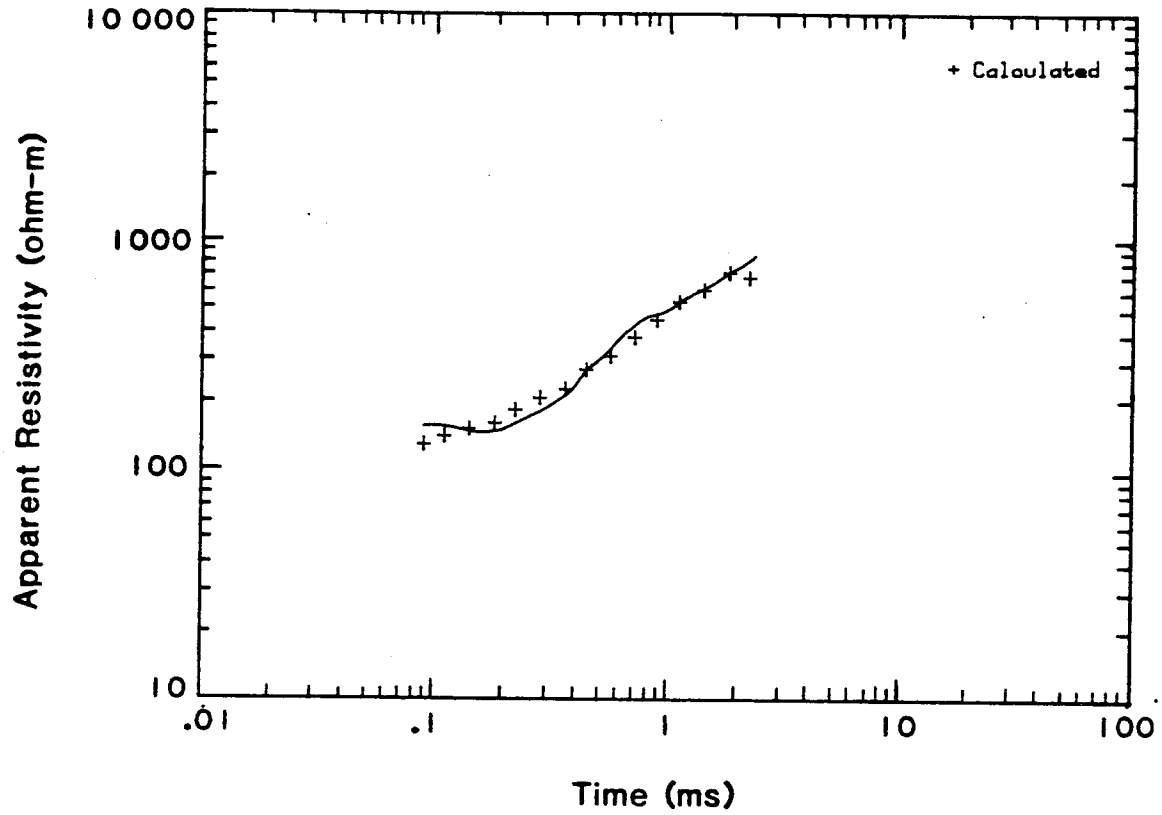
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.6509E-02 | 0.3013E-02 | 0.4629E+00 | 0.4629E+02 |
| 2 | 0.2126E-03 | 0.1379E-02 | 0.6487E+01 | 0.6487E+03 |
| 3 | 0.7180E-01 | 0.7342E-01 | 0.1023E+01 | 0.1023E+03 |
| 4 | 0.1135E+03 | 0.1065E-01 | 0.9382E-04 | 0.9382E-02 |
| 5 | 0.8106E+03 | 0.5908E-01 | 0.7289E-04 | 0.7289E-02 |

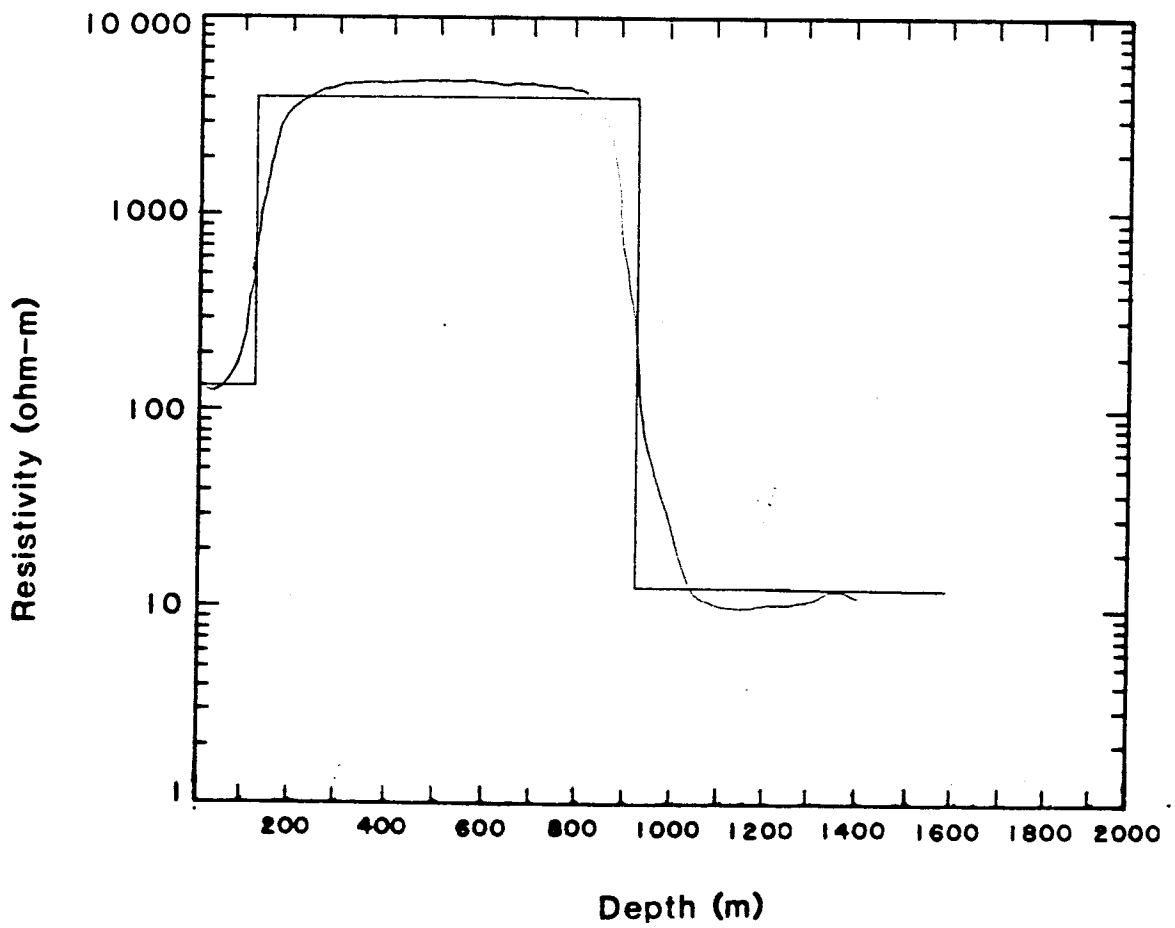
| PARAMETER | NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.65093E-02 | 0.15363E+03 | |
| 2 | SIGMA( 2) | = | 0.21261E-03 | 0.47034E+04 | |
| 3 | SIGMA( 3) | = | 0.71800E-01 | 0.13928E+02 | |
| 4 | THICK( 1) | = | 0.11352E+03 | | 0.11352E+03 |
| 5 | THICK( 2) | = | 0.81056E+03 | | 0.92408E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 20



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 21 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3259E+04 | 0.3379E+04 | -0.1201E+03 | -0.3554E+01 | 0.942E-05 |
| 2 | 0.1100E-03 | 0.2052E+04 | 0.2096E+04 | -0.4396E+02 | -0.2098E+01 | 0.237E-04 |
| 3 | 0.1400E-03 | 0.1162E+04 | 0.1163E+04 | -0.7571E+00 | -0.6511E-01 | 0.741E-04 |
| 4 | 0.1770E-03 | 0.6586E+03 | 0.6476E+03 | 0.1103E+02 | 0.1703E+01 | 0.231E-03 |
| 5 | 0.2200E-03 | 0.3722E+03 | 0.3650E+03 | 0.7196E+01 | 0.1971E+01 | 0.722E-03 |
| 6 | 0.2800E-03 | 0.1936E+03 | 0.1898E+03 | 0.3764E+01 | 0.1983E+01 | 0.267E-02 |
| 7 | 0.3550E-03 | 0.9996E+02 | 0.9852E+02 | 0.1441E+01 | 0.1462E+01 | 0.100E-01 |
| 8 | 0.4430E-03 | 0.5232E+02 | 0.5195E+02 | 0.3723E+00 | 0.7168E+00 | 0.365E-01 |
| 9 | 0.5540E-03 | 0.2576E+02 | 0.2728E+02 | -0.1521E+01 | -0.5577E+01 | 0.151E+00 |
| 10 | 0.7130E-03 | 0.1250E+02 | 0.1314E+02 | -0.6366E+00 | -0.4846E+01 | 0.640E+00 |
| 11 | 0.8810E-03 | 0.7280E+01 | 0.6998E+01 | 0.2822E+00 | 0.4032E+01 | 0.100E+01 |
| 12 | 0.1096E-02 | 0.3770E+01 | 0.3668E+01 | 0.1021E+00 | 0.2783E+01 | 0.400E+01 |
| 13 | 0.1411E-02 | 0.1870E+01 | 0.1782E+01 | 0.8772E-01 | 0.4922E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.8300E+00 | 0.8494E+00 | -0.1944E-01 | -0.2288E+01 | 0.250E+02 |
| 15 | 0.2224E-02 | 0.4500E+00 | 0.4653E+00 | -0.1530E-01 | -0.3289E+01 | 0.250E+02 |
| 16 | 0.2850E-02 | 0.2200E+00 | 0.2296E+00 | -0.9580E-02 | -0.4173E+01 | 0.250E+02 |

** %RMSERR= 3.23

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.3675E+00 | 0.1000E+01 | |
| 3 | -0.7287E+00 | -0.9395E-01 | 0.1000E+01 |

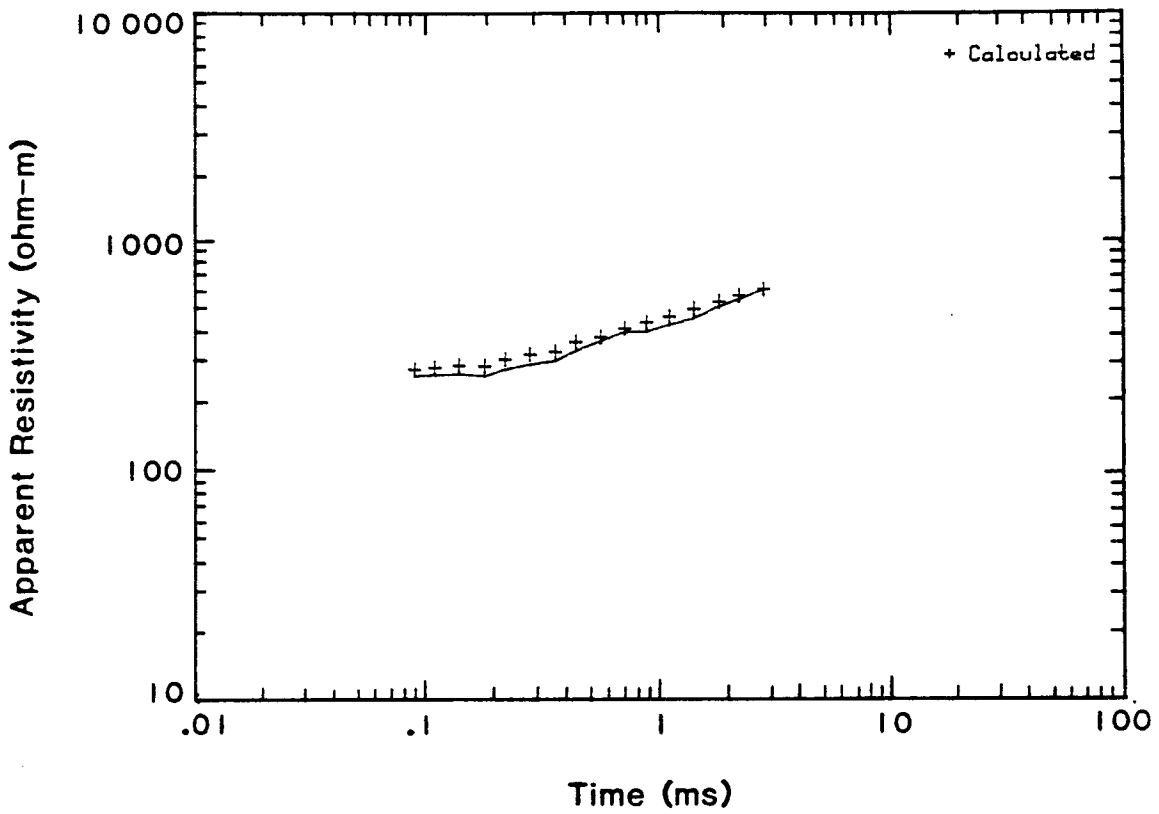
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.3656E-02 | 0.9989E-04 | 0.2733E-01 | 0.2733E+01 |
| 2 0.1017E-02 | 0.1590E-03 | 0.1564E+00 | 0.1564E+02 |
| 3 0.1896E+03 | 0.3314E-02 | 0.1748E-04 | 0.1748E-02 |

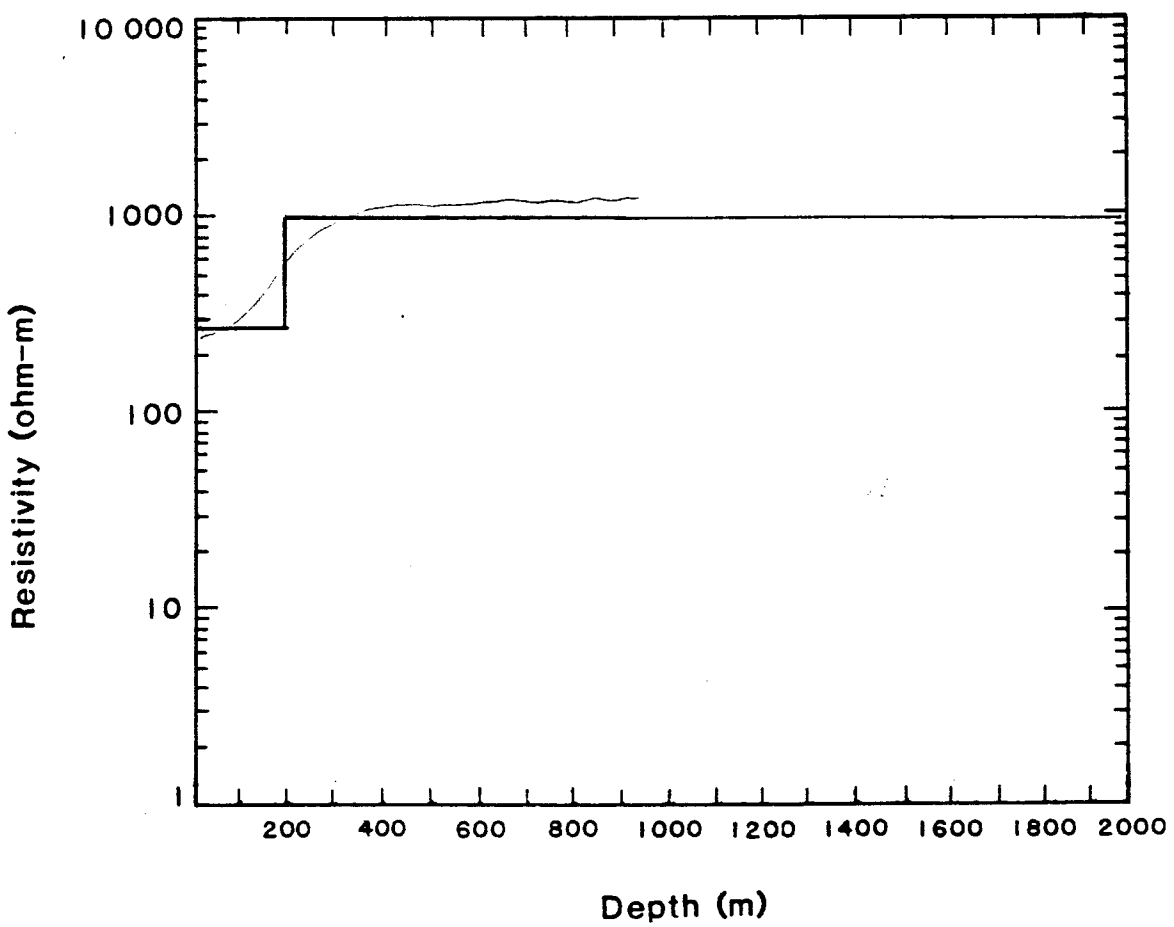
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.36557E-02 | 0.27355E+03 | |
| 2 SIGMA( 2) = | 0.10171E-02 | 0.98315E+03 | |
| 3 THICK( 1) = | 0.18956E+03 | | 0.18956E+03 |
| 4 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 21



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

**MOUNT SHASTA** STATION 22 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8700E-04 | 0.4183E+03 | 0.5214E+03 | -0.1031E+03 | -0.1978E+02 | 0.572E-03 |
| 2 | 0.1100E-03 | 0.3089E+03 | 0.3361E+03 | -0.2716E+02 | -0.8081E+01 | 0.105E-02 |
| 3 | 0.1400E-03 | 0.2059E+03 | 0.1994E+03 | 0.6434E+01 | 0.3227E+01 | 0.236E-02 |
| 4 | 0.1770E-03 | 0.1329E+03 | 0.1199E+03 | 0.1299E+02 | 0.1084E+02 | 0.567E-02 |
| 5 | 0.2200E-03 | 0.8460E+02 | 0.7394E+02 | 0.1066E+02 | 0.1441E+02 | 0.140E-01 |
| 6 | 0.2800E-03 | 0.4914E+02 | 0.4288E+02 | 0.6255E+01 | 0.1459E+02 | 0.414E-01 |
| 7 | 0.3550E-03 | 0.2771E+02 | 0.2495E+02 | 0.2757E+01 | 0.1105E+02 | 0.130E+00 |
| 8 | 0.4430E-03 | 0.1613E+02 | 0.1480E+02 | 0.1332E+01 | 0.8998E+01 | 0.364E+00 |
| 9 | 0.5540E-03 | 0.8540E+01 | 0.8634E+01 | -0.9411E-01 | -0.1090E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.4210E+01 | 0.4613E+01 | -0.4030E+00 | -0.8736E+01 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2470E+01 | 0.2681E+01 | -0.2108E+00 | -0.7862E+01 | 0.111E+02 |
| 12 | 0.1076E-02 | 0.1430E+01 | 0.1519E+01 | -0.8909E-01 | -0.5865E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.8400E+00 | 0.8020E+00 | 0.3797E-01 | 0.4734E+01 | 0.100E+03 |
| 14 | 0.1793E-02 | 0.4600E+00 | 0.4562E+00 | 0.3808E-02 | 0.8347E+00 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.2800E+00 | 0.2899E+00 | -0.9938E-02 | -0.3428E+01 | 0.100E+03 |
| 16 | 0.2550E-02 | 0.1700E+00 | 0.1834E+00 | -0.1335E-01 | -0.7283E+01 | 0.100E+03 |
| 17 | 0.3400E-02 | 0.1000E+00 | 0.1266E+00 | -0.2664E-01 | -0.2103E+02 | 0.100E+03 |

** %RMSERR= 10.61

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.6719E+00 | 0.1000E+01 | | | |
| 3 | 0.2236E+00 | -0.1831E+00 | 0.1000E+01 | | |
| 4 | -0.7637E+00 | 0.5742E+00 | -0.1633E+00 | 0.1000E+01 | |
| 5 | 0.2155E-01 | -0.2906E+00 | -0.6572E+00 | -0.1396E+00 | 0.1000E+01 |

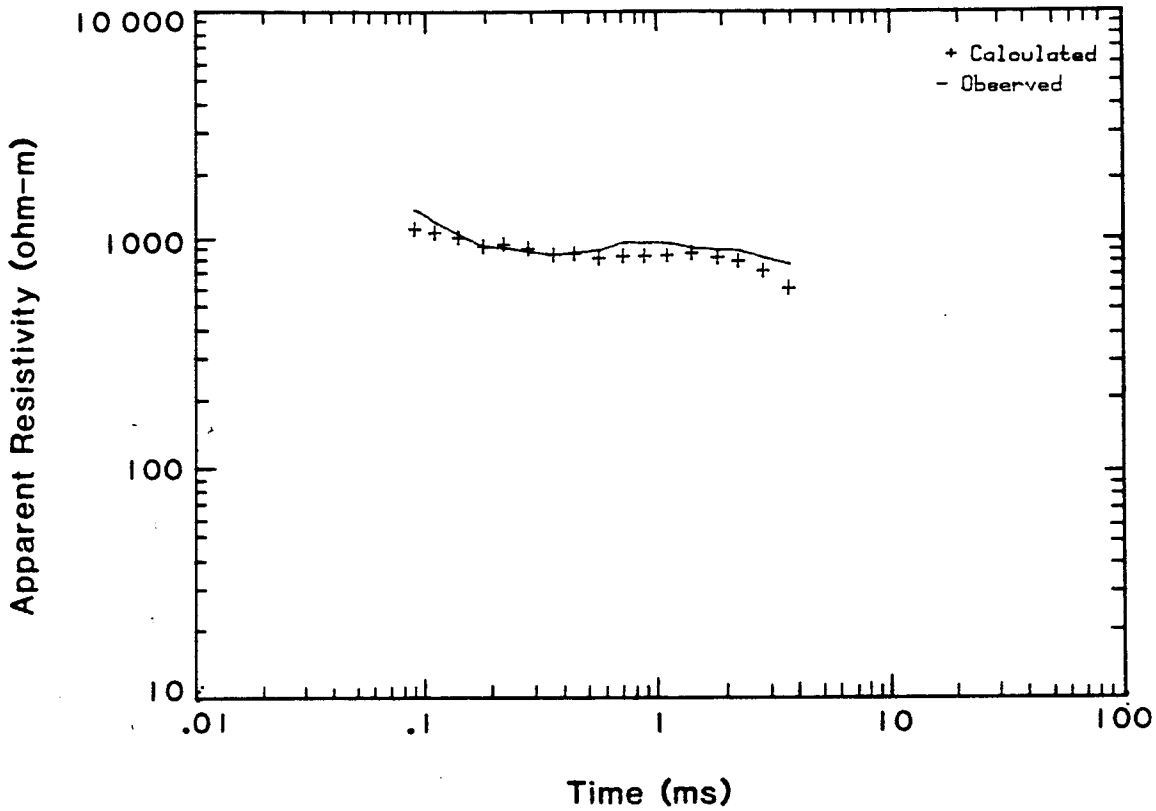
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.6666E-04 | 0.9530E-03 | 0.1430E+02 | 0.1430E+04 |
| 2 | 0.1573E-02 | 0.2186E-02 | 0.1390E+01 | 0.1390E+03 |
| 3 | 0.1622E-01 | 0.3763E-01 | 0.2320E+01 | 0.2320E+03 |
| 4 | 0.7806E+02 | 0.6525E-02 | 0.8360E-04 | 0.8360E-02 |
| 5 | 0.1061E+04 | 0.2767E-01 | 0.2607E-04 | 0.2607E-02 |

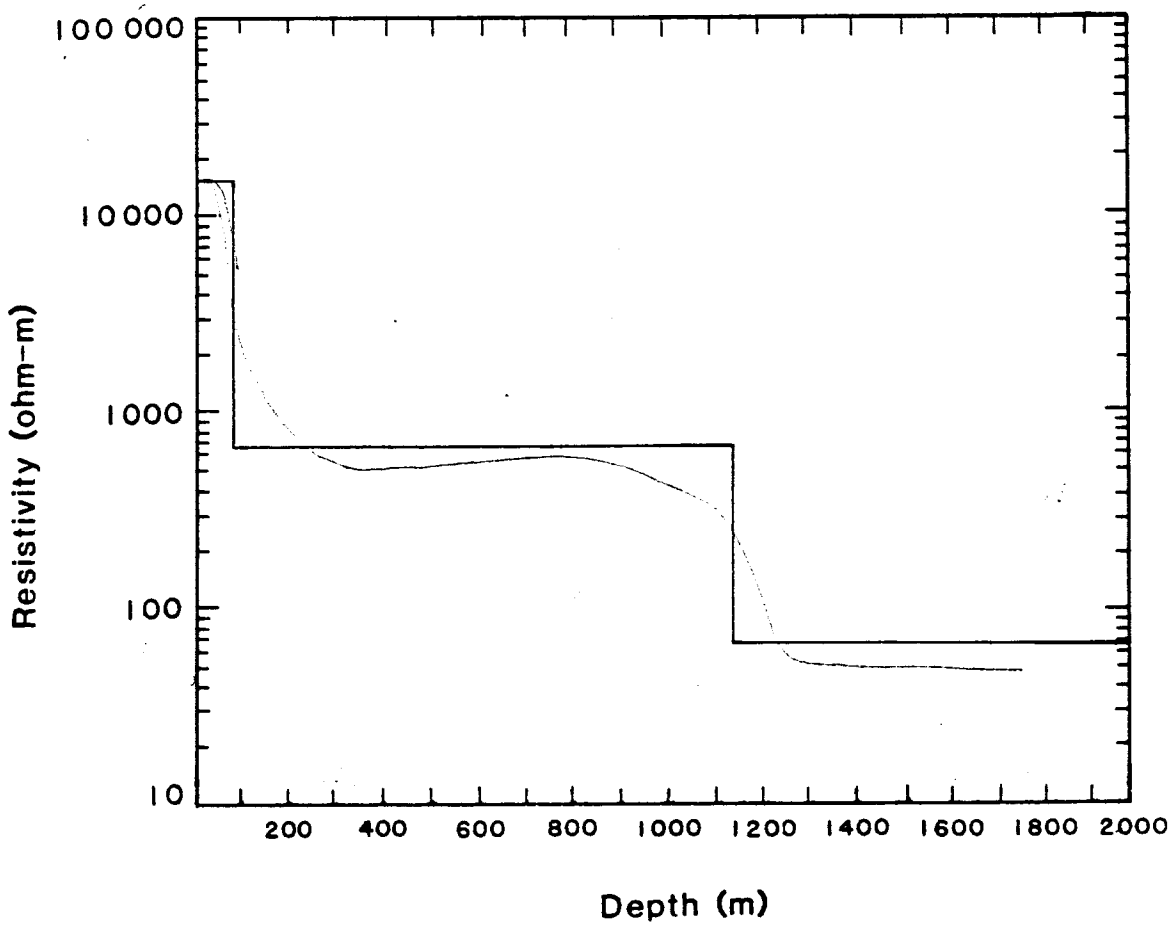
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.66663E-04 | 0.15001E+05 | |
| 2 | SIGMA( 2) | = | 0.15731E-02 | 0.63567E+03 | |
| 3 | SIGMA( 3) | = | 0.16221E-01 | 0.61648E+02 | |
| 4 | THICK( 1) | = | 0.78057E+02 | | 0.78057E+02 |
| 5 | THICK( 2) | = | 0.10610E+04 | | 0.11391E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 22



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

**MOUNT SHASTA** STATION 23 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.6798E+03 | 0.7466E+03 | -0.6675E+02 | -0.8941E+01 | 0.216E-03 |
| 2 | 0.1100E-03 | 0.4846E+03 | 0.4904E+03 | -0.5852E+01 | -0.1193E+01 | 0.426E-03 |
| 3 | 0.1400E-03 | 0.3112E+03 | 0.2996E+03 | 0.1166E+02 | 0.3891E+01 | 0.103E-02 |
| 4 | 0.1770E-03 | 0.1943E+03 | 0.1833E+03 | 0.1107E+02 | 0.6041E+01 | 0.265E-02 |
| 5 | 0.2200E-03 | 0.1187E+03 | 0.1136E+03 | 0.5049E+01 | 0.4443E+01 | 0.710E-02 |
| 6 | 0.2900E-03 | 0.6636E+02 | 0.6489E+02 | 0.1475E+01 | 0.2273E+01 | 0.227E-01 |
| 7 | 0.3550E-03 | 0.3647E+02 | 0.3625E+02 | 0.2183E+00 | 0.6021E+00 | 0.752E-01 |
| 8 | 0.4430E-03 | 0.2034E+02 | 0.2052E+02 | -0.1835E+00 | -0.8943E+00 | 0.242E+00 |
| 9 | 0.5340E-03 | 0.1092E+02 | 0.1130E+02 | -0.3786E+00 | -0.3351E+01 | 0.839E+00 |
| 10 | 0.7130E-03 | 0.5200E+01 | 0.5551E+01 | -0.3509E+00 | -0.6321E+01 | 0.100E+01 |
| 11 | 0.8210E-03 | 0.3180E+01 | 0.3014E+01 | 0.1664E+00 | 0.5522E+01 | 0.400E+01 |
| 12 | 0.1096E-02 | 0.1420E+01 | 0.1587E+01 | -0.1666E+00 | -0.1050E+02 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.7200E+00 | 0.7261E+00 | -0.6136E-02 | -0.8450E+00 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.3900E+00 | 0.3439E+00 | 0.4608E-01 | 0.1340E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.2100E+00 | 0.1761E+00 | 0.3394E-01 | 0.1928E+02 | 0.100E+03 |

** %RMSERR= 7.76

CORRELATION MATRIX

| | | | | |
|---|---|---|---|---|
| 1 | 0.1000E+01 | | | |
| 2 | 0.3689E+00 | 0.1000E+01 | | |
| 3 | -0.7442E+00 | -0.3326E+00 | 0.1000E+01 | |
| 4 | 0.3764E+00 | 0.5598E+00 | -0.4920E+00 | 0.1000E+01 |
| 5 | -0.8614E+00 | -0.3995E+00 | 0.4563E+00 | -0.4104E+00 | 0.1000E+01 |

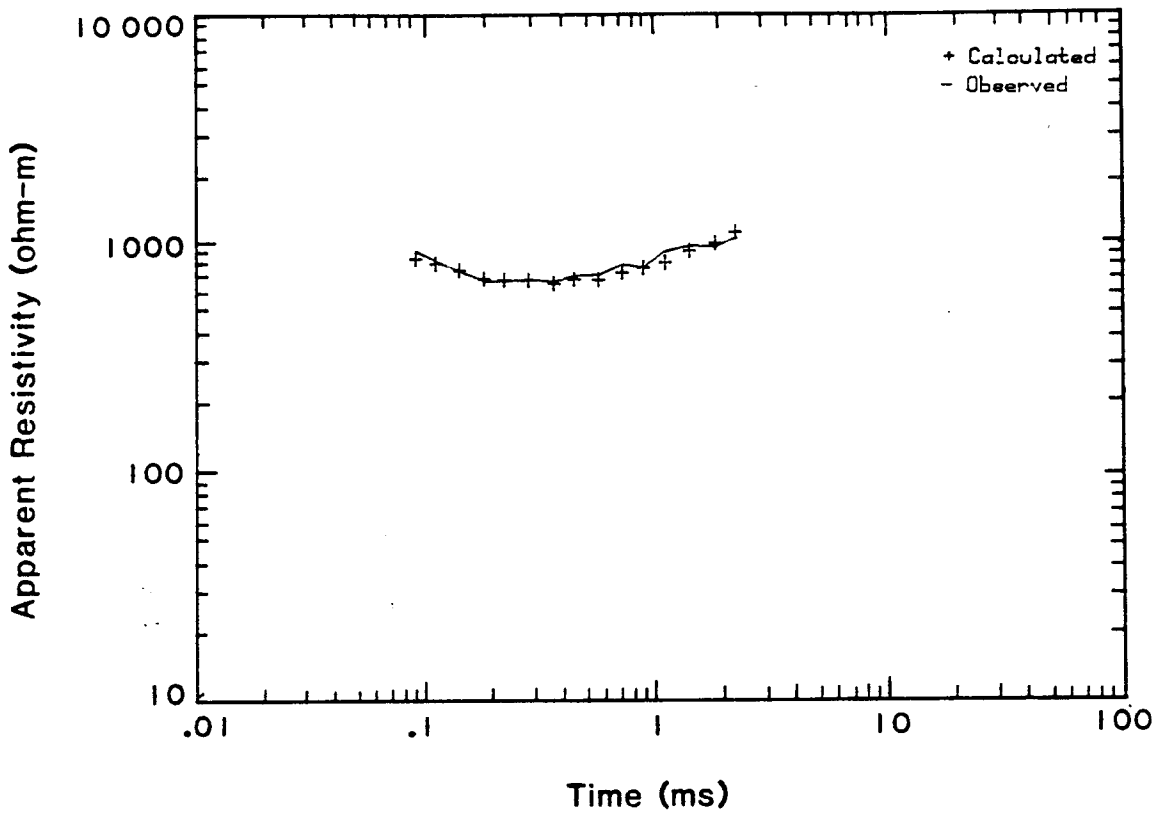
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.6467E-03 | 0.1627E-02 | 0.2516E+01 | 0.2516E+03 |
| 2 0.2122E-02 | 0.1173E-02 | 0.5528E+00 | 0.5528E+02 |
| 3 0.2111E-03 | 0.1825E-02 | 0.8645E+01 | 0.8645E+03 |
| 4 0.1066E+03 | 0.3591E-02 | 0.3367E-04 | 0.3367E-02 |
| 5 0.3256E+03 | 0.4291E-02 | 0.1318E-04 | 0.1318E-02 |

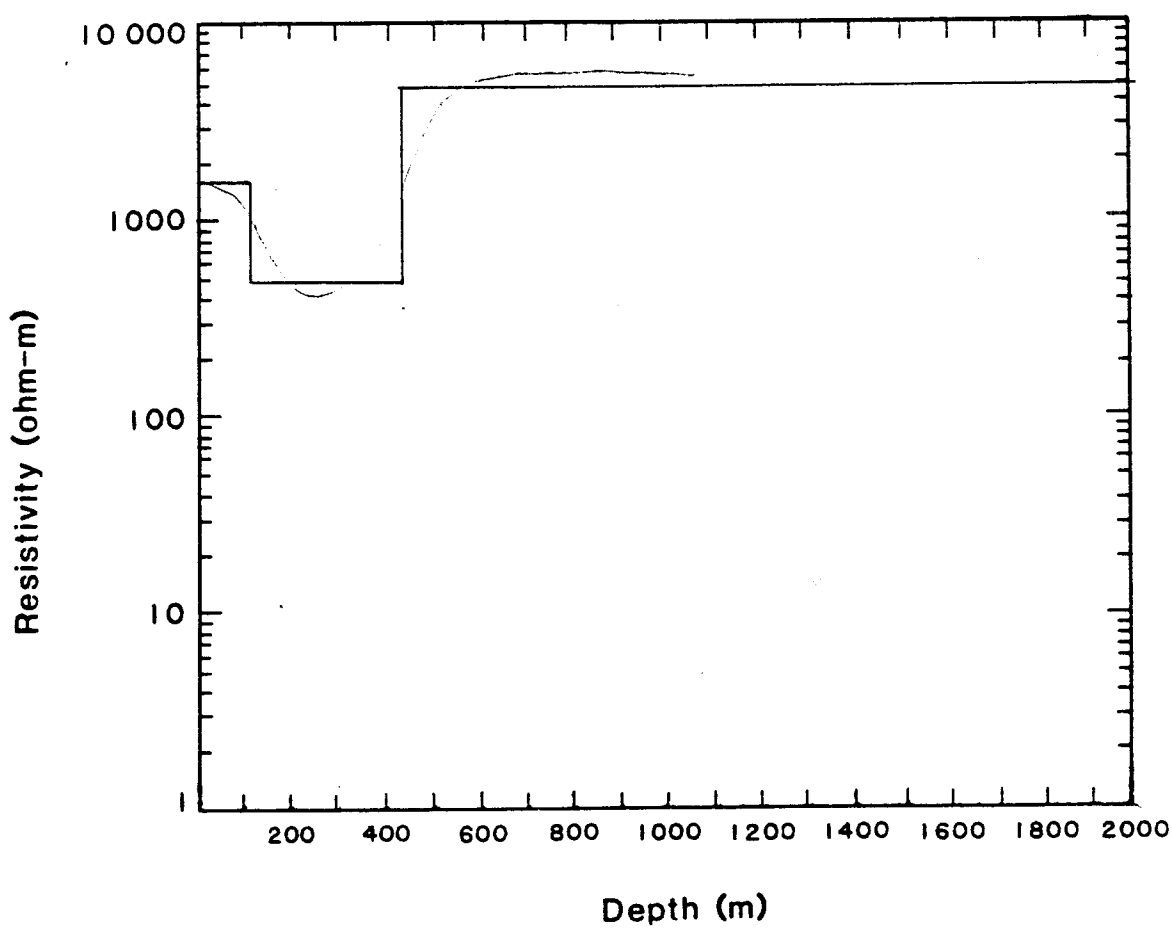
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 SIGMA( 1) | = | 0.64671E-03 | 0.15463E+04 | |
| 2 SIGMA( 2) | = | 0.21221E-02 | 0.47123E+03 | |
| 3 SIGMA( 3) | = | 0.21109E-03 | 0.47372E+04 | |
| 4 THICK( 1) | = | 0.10663E+03 | | 0.10663E+03 |
| 5 THICK( 2) | = | 0.32558E+03 | | 0.43221E+03 |
| 6 SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 23



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 24 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.6494E+03 | 0.6972E+03 | -0.4779E+02 | -0.6855E+01 | 0.237E-03 |
| 2 | 0.1100E-03 | 0.4005E+03 | 0.4235E+03 | -0.2294E+02 | -0.5417E+01 | 0.623E-03 |
| 3 | 0.1400E-03 | 0.2263E+03 | 0.2328E+03 | -0.6523E+01 | -0.2802E+01 | 0.195E-02 |
| 4 | 0.1770E-03 | 0.1310E+03 | 0.1291E+03 | 0.1851E+01 | 0.1433E+01 | 0.583E-02 |
| 5 | 0.2200E-03 | 0.7705E+02 | 0.7412E+02 | 0.2927E+01 | 0.3949E+01 | 0.168E-01 |
| 6 | 0.2800E-03 | 0.4237E+02 | 0.3948E+02 | 0.2892E+01 | 0.7325E+01 | 0.557E-01 |
| 7 | 0.3550E-03 | 0.2285E+02 | 0.2086E+02 | 0.1988E+01 | 0.9532E+01 | 0.192E+00 |
| 8 | 0.4430E-03 | 0.1188E+02 | 0.1153E+02 | 0.3542E+00 | 0.3073E+01 | 0.709E+00 |
| 9 | 0.5540E-03 | 0.5560E+01 | 0.6224E+01 | -0.6644E+00 | -0.1067E+02 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.2910E+01 | 0.3116E+01 | -0.2056E+00 | -0.6598E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1660E+01 | 0.1727E+01 | -0.6739E-01 | -0.3901E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.9500E+00 | 0.9368E+00 | 0.1318E-01 | 0.1407E+01 | 0.250E+02 |
| 13 | 0.1411E-02 | 0.5200E+00 | 0.4724E+00 | 0.4765E-01 | 0.1009E+02 | 0.250E+02 |
| 14 | 0.1795E-02 | 0.2900E+00 | 0.2403E+00 | 0.4969E-01 | 0.2068E+02 | 0.250E+02 |
| 15 | 0.2224E-02 | 0.1800E+00 | 0.1356E+00 | 0.4441E-01 | 0.3275E+02 | 0.250E+02 |

** RMSERR= 11.7

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | 0.7955E+00 | 0.1000E+01 | |
| 3 | -0.8624E+00 | -0.8303E+00 | 0.1000E+01 |

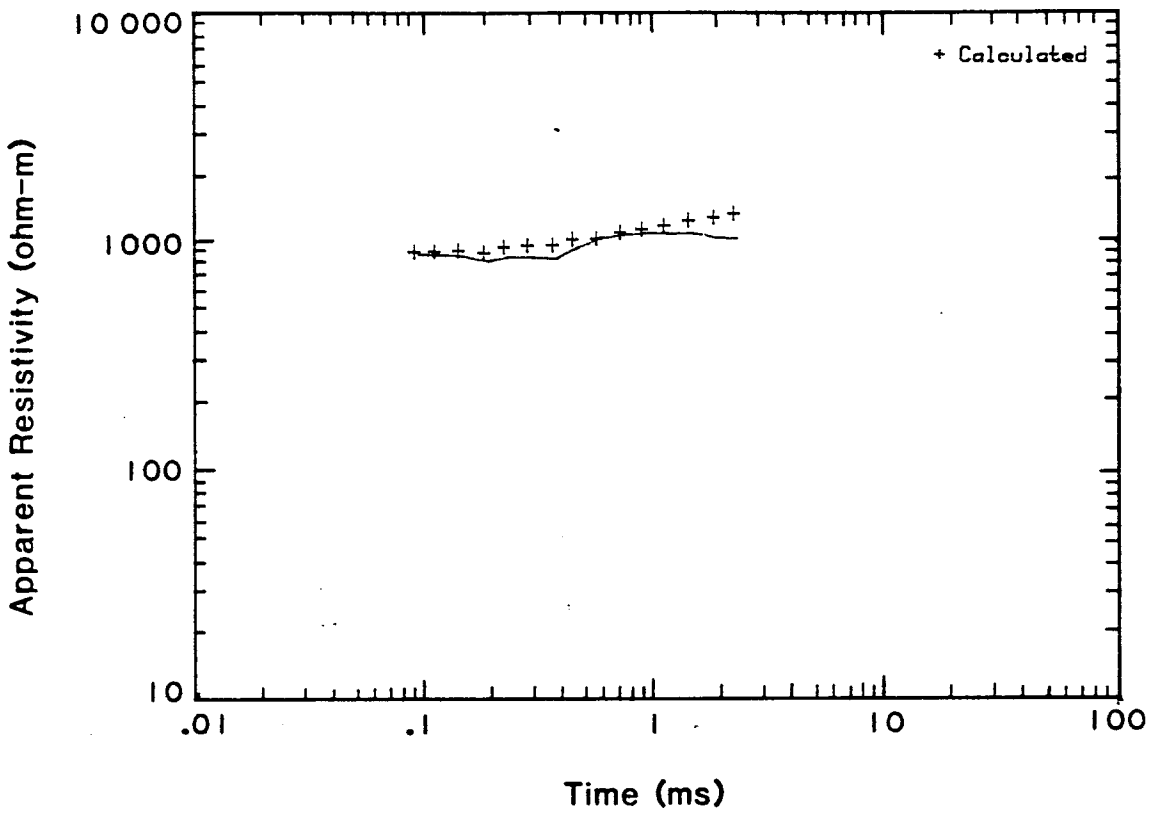
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1154E-02 | 0.6725E-04 | 0.5828E-01 | 0.5828E+01 |
| 2 0.5532E-03 | 0.3009E-03 | 0.5438E+00 | 0.5438E+02 |
| 3 0.3873E+03 | 0.8628E-02 | 0.2227E-04 | 0.2227E-02 |

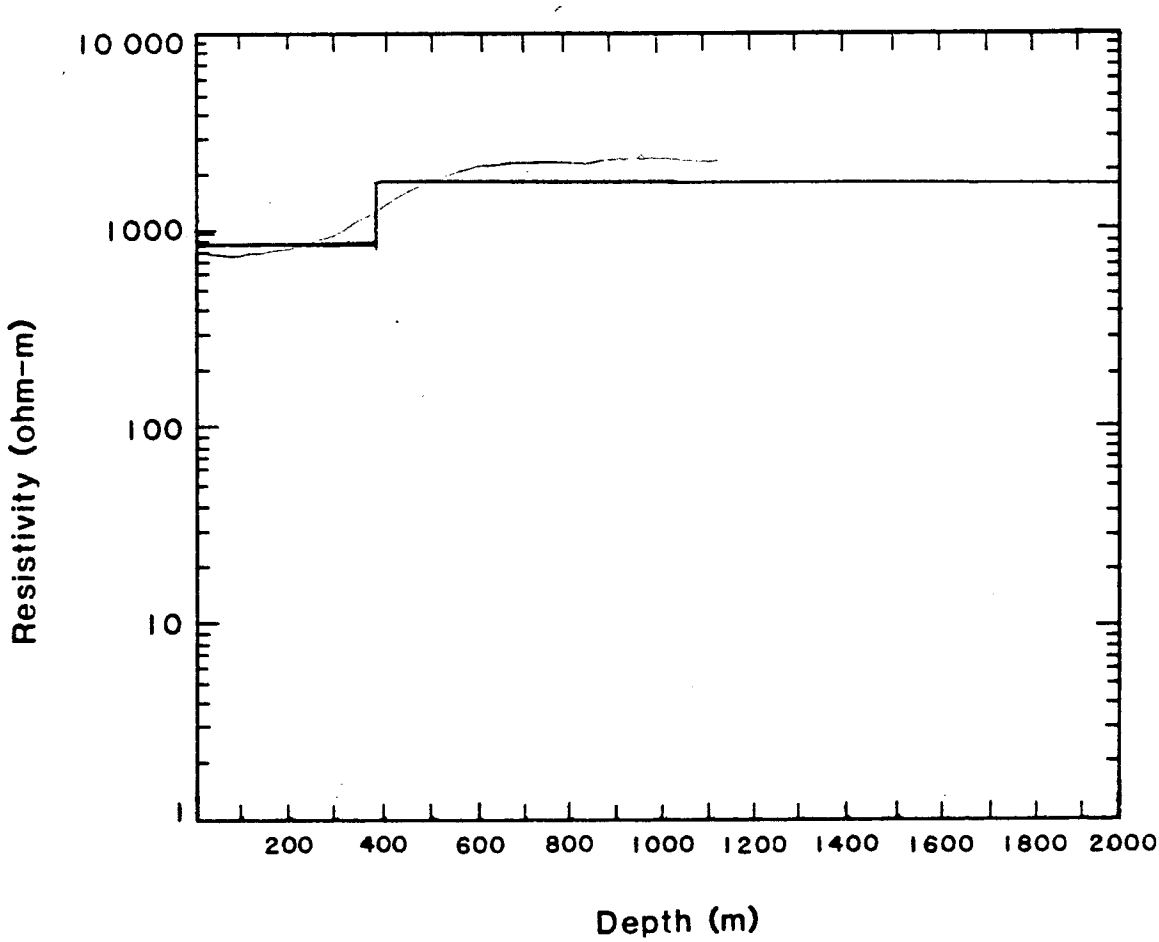
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 SIGMA( 1) | = | 0.11538E-02 | 0.86669E+03 | |
| 2 SIGMA( 2) | = | 0.55324E-03 | 0.18075E+04 | |
| 3 THICK( 1) | = | 0.38732E+03 | | 0.38732E+03 |
| 4 SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 24



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 25 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4219E+03 | 0.3875E+03 | 0.3435E+02 | 0.8865E+01 | 0.542E-03 |
| 2 | 0.1100E-03 | 0.2194E+03 | 0.2184E+03 | 0.9580E+00 | 0.4386E+00 | 0.208E-02 |
| 3 | 0.1400E-03 | 0.1069E+03 | 0.1126E+03 | -0.5644E+01 | -0.5014E+01 | 0.873E-02 |
| 4 | 0.1770E-03 | 0.5581E+02 | 0.5924E+02 | -0.3426E+01 | -0.5784E+01 | 0.321E-01 |
| 5 | 0.2200E-03 | 0.3132E+02 | 0.3212E+02 | -0.7985E+00 | -0.2486E+01 | 0.102E+00 |
| 6 | 0.2800E-03 | 0.1667E+02 | 0.1642E+02 | 0.2538E+00 | 0.1546E+01 | 0.360E+00 |
| 7 | 0.3550E-03 | 0.8720E+01 | 0.8654E+01 | 0.6591E-01 | 0.7616E+00 | 0.100E+01 |
| 8 | 0.4430E-03 | 0.4430E+01 | 0.4649E+01 | -0.2191E+00 | -0.4714E+01 | 0.40[illegible]E+01 |
| 9 | 0.5540E-03 | 0.2500E+01 | 0.2641E+01 | -0.1405E+00 | -0.5322E+01 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.1380E+01 | 0.1392E+01 | -0.1220E-01 | -0.8763E+00 | 0.111E+02 |
| 11 | 0.8210E-03 | 0.9000E+00 | 0.8337E+00 | 0.6633E-01 | 0.7957E+01 | 0.100E+03 |
| 12 | 0.1096E-02 | 0.5700E+00 | 0.5118E+00 | 0.5815E-01 | 0.1136E+02 | 0.100E+03 |
| 13 | 0.1311E-02 | 0.3500E+00 | 0.2803E+00 | 0.6967E-01 | 0.2485E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.2100E+00 | 0.1670E+00 | 0.4302E-01 | 0.2577E+02 | 0.100E+03 |

% VARIERR= 10.93

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.6513E+00 | 0.1000E+01 | | | |
| 3 | 0.4370E+00 | 0.4718E+00 | 0.1000E+01 | | |
| 4 | -0.9520E+00 | -0.7780E+00 | -0.5677E+00 | 0.1000E+01 | |
| 5 | 0.3907E+00 | 0.1423E+00 | -0.4886E+00 | -0.2180E+00 | 0.1000E+01 |

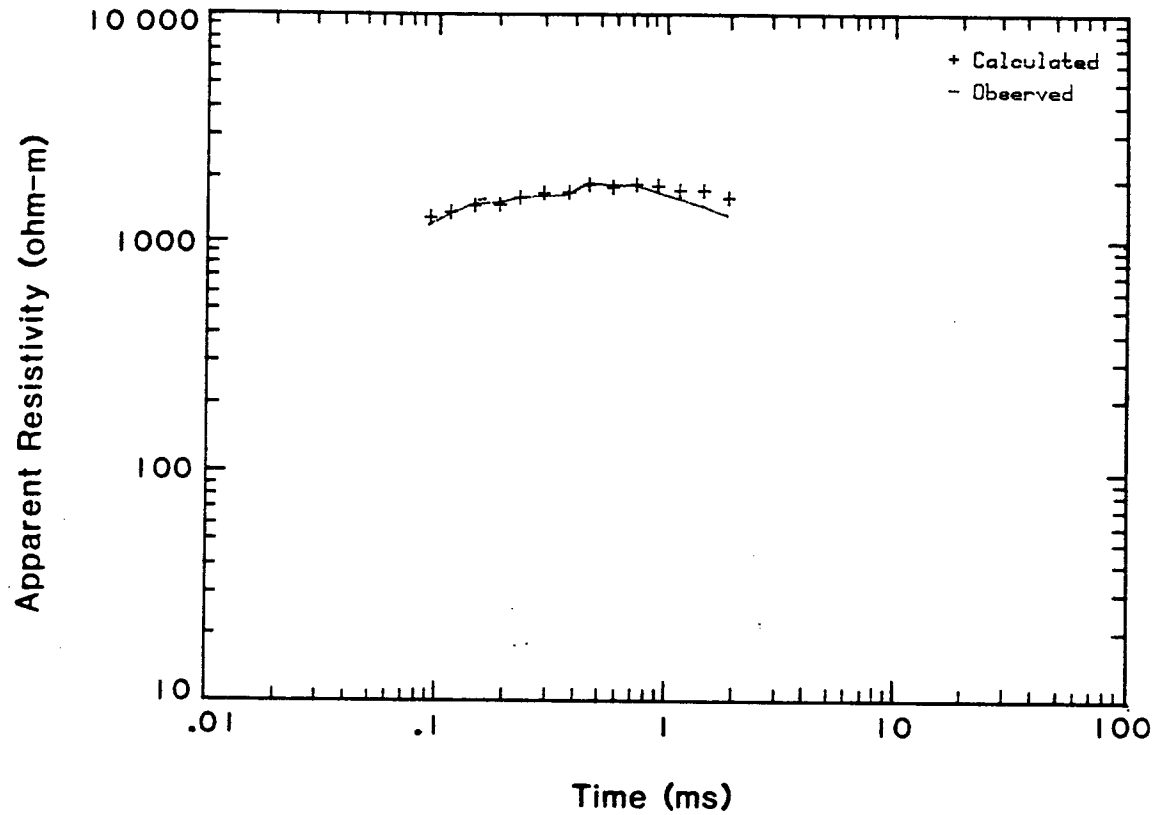
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.8811E-03 | 0.1352E-02 | 0.1534E+01 | 0.1534E+03 |
| 2 0.4326E-03 | 0.1776E-02 | 0.4106E+01 | 0.4106E+03 |
| 3 0.1141E-02 | 0.4312E-02 | 0.3779E+01 | 0.3779E+03 |
| 4 0.1771E+03 | 0.1018E-01 | 0.5747E-04 | 0.5747E-02 |
| 5 0.8047E+03 | 0.4466E-02 | 0.5550E-05 | 0.5550E-03 |

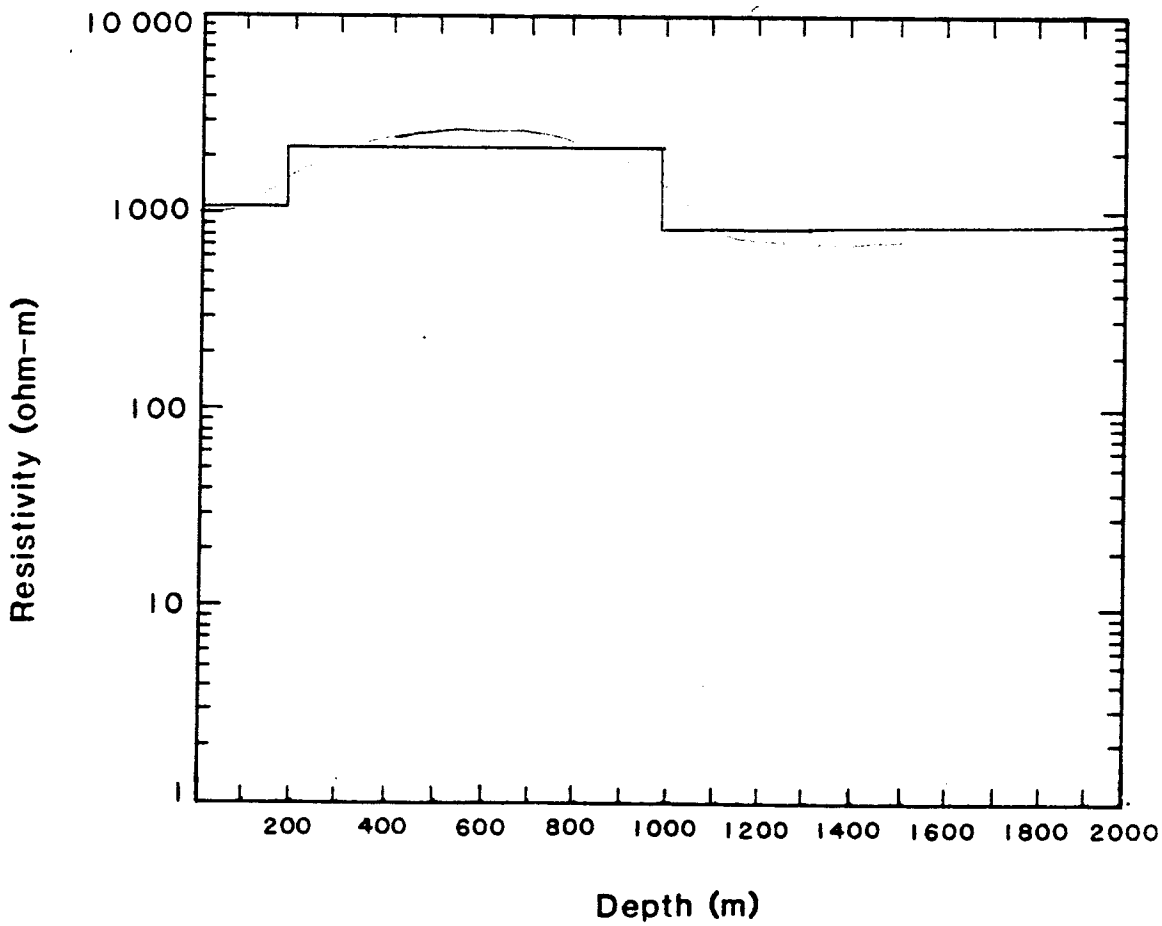
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 SIGMA( 1) | = | 0.88108E-03 | 0.11350E+04 | |
| 2 SIGMA( 2) | = | 0.43265E-03 | 0.23113E+04 | |
| 3 SIGMA( 3) | = | 0.11413E-02 | 0.87623E+03 | |
| 4 THICK( 1) | = | 0.17713E+03 | | 0.17713E+03 |
| 5 THICK( 2) | = | 0.80466E+03 | | 0.98180E+03 |
| 6 SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 25



ELECTROMAGNETIC SURVEYS INC.

EMSURVEYS

MOUNT SHASTA STATION 26 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.5566E+03 | 0.5967E+03 | -0.4009E+02 | -0.6719E+01 | 0.323E-03 |
| 2 | 0.1100E-03 | 0.3645E+03 | 0.3651E+03 | -0.5682E+00 | -0.1556E+00 | 0.753E-03 |
| 3 | 0.1400E-03 | 0.2099E+03 | 0.2040E+03 | 0.5891E+01 | 0.2888E+01 | 0.227E-02 |
| 4 | 0.1770E-03 | 0.1222E+03 | 0.1147E+03 | 0.7538E+01 | 0.6574E+01 | 0.670E-02 |
| 5 | 0.2200E-03 | 0.7124E+02 | 0.6615E+02 | 0.5087E+01 | 0.7690E+01 | 0.197E-01 |
| 6 | 0.2800E-03 | 0.3769E+02 | 0.3485E+02 | 0.2837E+01 | 0.8139E+01 | 0.704E-01 |
| 7 | 0.3550E-03 | 0.1965E+02 | 0.1834E+02 | 0.1313E+01 | 0.7163E+01 | 0.259E+00 |
| 8 | 0.4430E-03 | 0.1047E+02 | 0.9863E+01 | 0.6072E+00 | 0.6157E+01 | 0.912E+00 |
| 9 | 0.5540E-03 | 0.4550E+01 | 0.5231E+01 | -0.6809E+00 | -0.1302E+02 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2370E+01 | 0.2596E+01 | -0.2256E+00 | -0.8693E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1450E+01 | 0.1481E+01 | -0.3055E-01 | -0.2064E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.8400E+00 | 0.8675E+00 | -0.2754E-01 | -0.3174E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.5200E+00 | 0.4924E+00 | 0.2763E-01 | 0.5612E+01 | 0.100E+03 |
| 14 | 0.1755E-02 | 0.3500E+00 | 0.3083E+00 | 0.4173E-01 | 0.1354E+02 | 0.100E+03 |
| 15 | 0.2234E-02 | 0.2400E+00 | 0.2090E+00 | 0.3102E-01 | 0.1484E+02 | 0.100E+03 |
| 16 | 0.2853E-02 | 0.1700E+00 | 0.1333E+00 | 0.3675E-01 | 0.2758E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1200E+00 | 0.8999E-01 | 0.3001E-01 | 0.3335E+02 | 0.100E+03 |

** SENSERR= 13.01

CORRELATION MATRIX

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | |
| 2 | -0.1723E-01 | 0.1000E+01 | | | | |
| 3 | 0.1424E+00 | -0.4581E+00 | 0.1000E+01 | | | |
| 4 | 0.3051E+00 | -0.4145E+00 | -0.1112E-01 | 0.1000E+01 | | |
| 5 | 0.1432E+00 | 0.5546E+00 | 0.1805E+00 | -0.4833E+00 | 0.1000E+01 | |
| 6 | -0.2240E+00 | -0.6560E+00 | -0.1251E+00 | 0.4902E+00 | -0.9320E+00 | 0.1000E+01 |
| 7 | 0.3949E+00 | -0.3591E-02 | -0.4020E+00 | 0.2205E+00 | -0.3741E+00 | 0.3455E+00 0.1000E+01 |

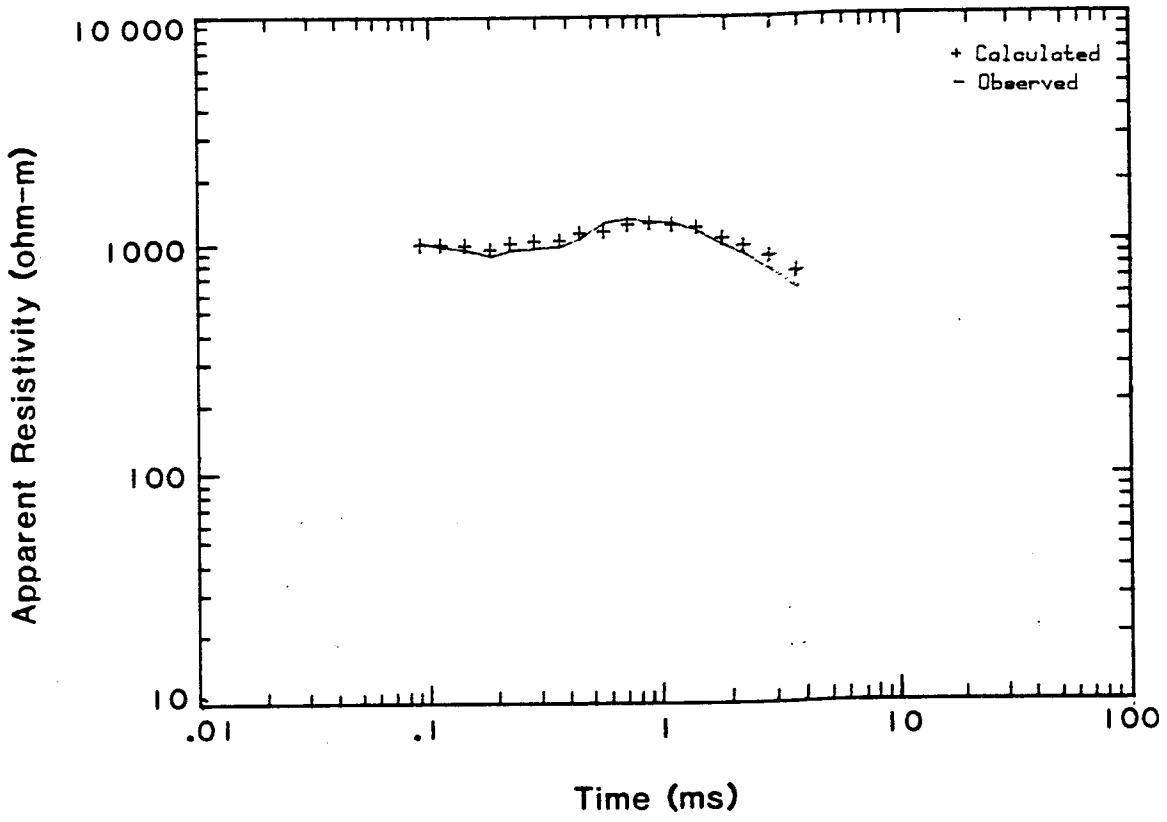
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.9702E-03 | 0.9352E-03 | 0.9639E+00 | 0.9639E+02 |
| 2 0.1190E-02 | 0.3085E-02 | 0.2592E+01 | 0.2592E+03 |
| 3 0.5541E-03 | 0.4813E-02 | 0.8686E+01 | 0.8686E+03 |
| 4 0.5518E-02 | 0.1013E-01 | 0.1837E+01 | 0.1837E+03 |
| 5 0.1451E+02 | 0.1645E-01 | 0.1134E-03 | 0.1134E-01 |
| 6 0.2468E+03 | 0.2270E-01 | 0.9196E-04 | 0.9196E-02 |
| 7 0.6443E+03 | 0.1115E-01 | 0.1731E-04 | 0.1731E-02 |

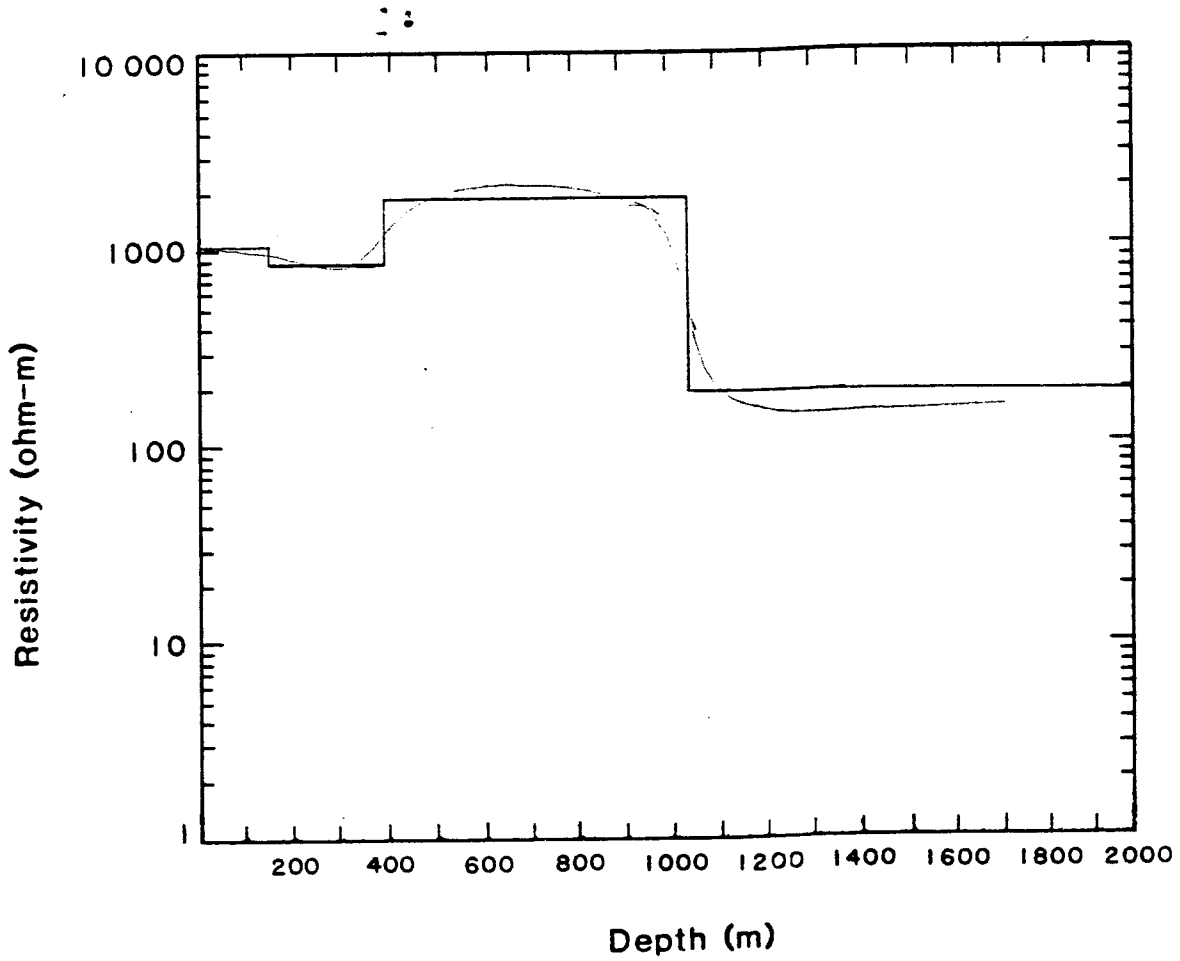
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.97021E-03 | 0.10307E+04 | |
| 2 SIGMA( 2) = | 0.11901E-02 | 0.84024E+03 | |
| 3 SIGMA( 3) = | 0.55413E-03 | 0.18046E+04 | |
| 4 SIGMA( 4) = | 0.55180E-02 | 0.18123E+03 | |
| 5 THICK( 1) = | 0.14509E+03 | | 0.14509E+03 |
| 6 THICK( 2) = | 0.24681E+03 | | 0.39191E+03 |
| 7 THICK( 3) = | 0.64433E+03 | | 0.10362E+04 |
| 8 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 26



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 27 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2162E+03 | 0.2359E+03 | -0.1968E+02 | -0.8344E+01 | 0.214E-02 |
| 2 | 0.1100E-03 | 0.1536E+03 | 0.1496E+03 | 0.3916E+01 | 0.2617E+01 | 0.424E-02 |
| 3 | 0.1400E-03 | 0.1040E+03 | 0.9501E+02 | 0.8950E+01 | 0.9420E+01 | 0.925E-02 |
| 4 | 0.1770E-03 | 0.7169E+02 | 0.6596E+02 | 0.5728E+01 | 0.8683E+01 | 0.195E-01 |
| 5 | 0.2200E-03 | 0.5161E+02 | 0.4961E+02 | 0.1999E+01 | 0.4029E+01 | 0.375E-01 |
| 6 | 0.2800E-03 | 0.3692E+02 | 0.3696E+02 | -0.4181E-01 | -0.1131E+00 | 0.734E-01 |
| 7 | 0.3550E-03 | 0.2674E+02 | 0.2727E+02 | -0.5265E+00 | -0.1931E+01 | 0.140E+00 |
| 8 | 0.4430E-03 | 0.1985E+02 | 0.2084E+02 | -0.9868E+00 | -0.4736E+01 | 0.254E+00 |
| 9 | 0.5540E-03 | 0.1457E+02 | 0.1567E+02 | -0.1097E+01 | -0.6999E+01 | 0.471E+00 |
| 10 | 0.7130E-03 | 0.1050E+02 | 0.1117E+02 | -0.6681E+00 | -0.5982E+01 | 0.907E+00 |
| 11 | 0.8810E-03 | 0.8080E+01 | 0.8371E+01 | -0.2911E+00 | -0.3477E+01 | 0.100E+01 |
| 12 | 0.1096E-02 | 0.5950E+01 | 0.6115E+01 | -0.1645E+00 | -0.2691E+01 | 0.100E+01 |
| 13 | 0.1411E-02 | 0.4200E+01 | 0.4199E+01 | 0.1491E-02 | 0.3551E-01 | 0.400E+01 |
| 14 | 0.1795E-02 | 0.2910E+01 | 0.2885E+01 | 0.2459E-01 | 0.8522E+00 | 0.111E+02 |
| 15 | 0.2224E-02 | 0.2170E+01 | 0.2038E+01 | 0.1316E+00 | 0.6458E+01 | 0.111E+02 |
| 16 | 0.2850E-02 | 0.1470E+01 | 0.1343E+01 | 0.1268E+00 | 0.9441E+01 | 0.111E+02 |
| 17 | 0.3600E-02 | 0.1010E+01 | 0.8931E+00 | 0.1169E+00 | 0.1309E+02 | 0.111E+02 |
| 18 | 0.4490E-02 | 0.7100E+00 | 0.5991E+00 | 0.1109E+00 | 0.1851E+02 | 0.250E+02 |
| 19 | 0.5700E-02 | 0.4800E+00 | 0.3847E+00 | 0.9529E-01 | 0.2477E+02 | 0.250E+02 |
| 20 | 0.7190E-02 | 0.3200E+00 | 0.2465E+00 | 0.7350E-01 | 0.2982E+02 | 0.250E+02 |

** RMSERR= 11.3

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | 0.5774E+00 | 0.1000E+01 | |
| 3 | 0.5878E+00 | 0.6154E+00 | 0.1000E+01 |

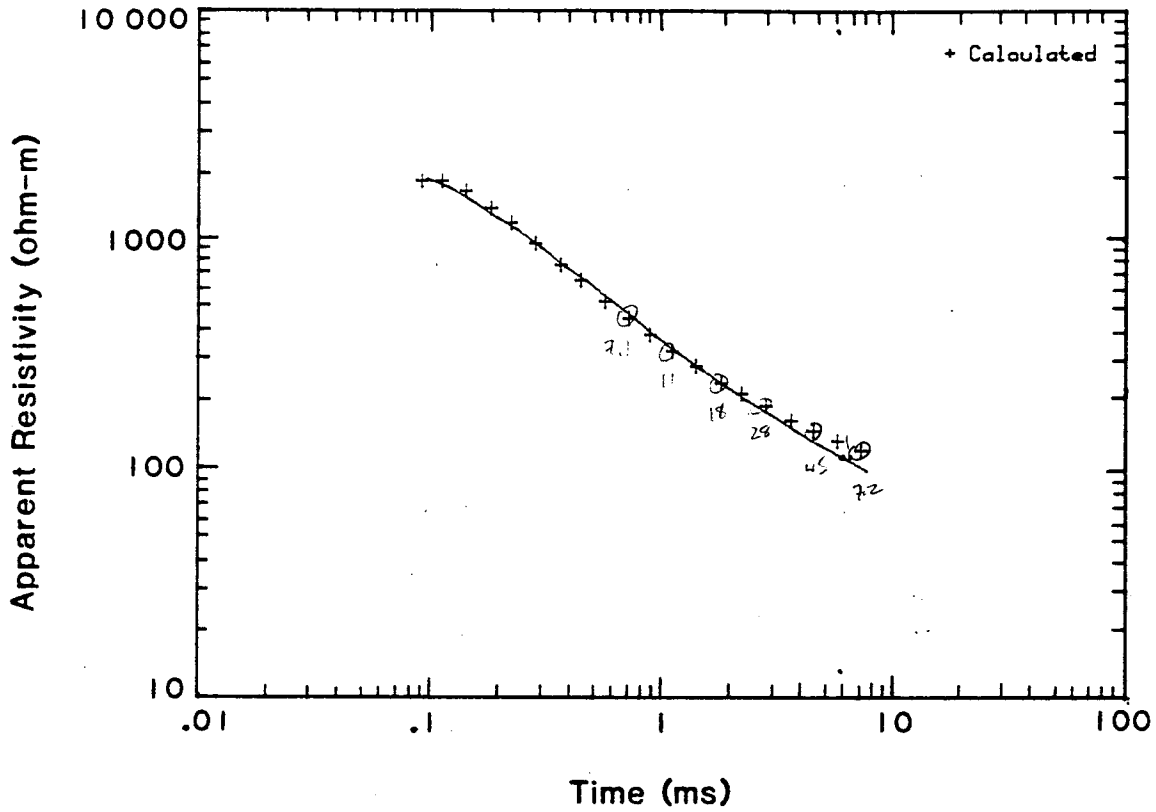
| **PARM_SOL. | | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.7119E-03 | 0.1065E-03 | 0.1496E+00 | 0.1496E+02 |
| 2 | 0.1902E-01 | 0.1471E-02 | 0.7735E-01 | 0.7735E+01 |
| 3 | 0.3528E+03 | 0.1866E-02 | 0.5289E-05 | 0.5289E-03 |

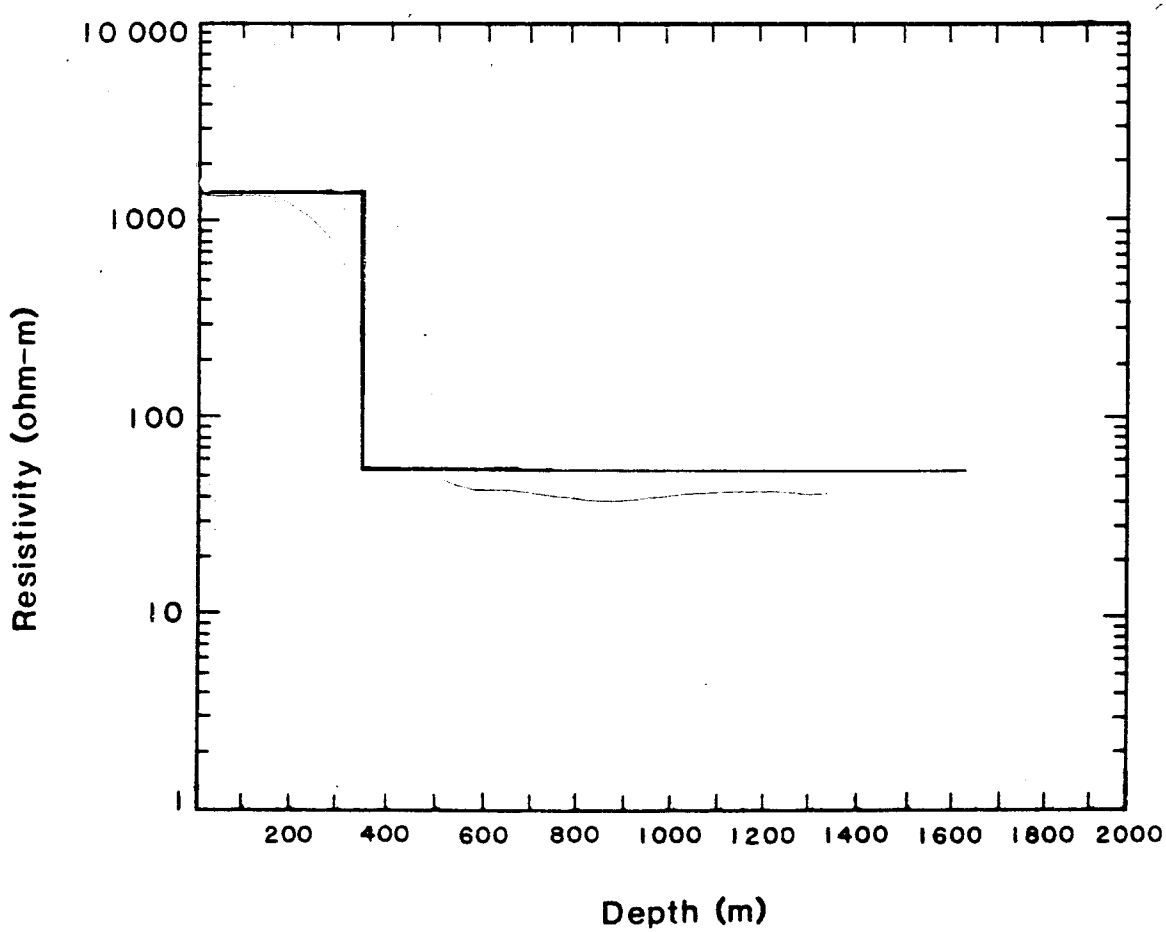
| PARAMETER | NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.71186E-03 | 0.14048E+04 | |
| 2 | SIGMA( 2) | = | 0.19023E-01 | 0.52569E+02 | |
| 3 | THICK( 1) | = | 0.35284E+03 | | 0.35284E+03 |
| 4 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 27



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 29 TEM INVERSION

| I | TIME (sec) | VOLTAGE (mV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.2000E-04 | 0.3730E+03 | 0.2994E+03 | -0.2650E+02 | -0.8848E+01 | 0.134E-02 |
| 2 | 0.1100E-03 | 0.2006E+03 | 0.2022E+03 | -0.1557E+01 | -0.7700E+00 | 0.248E-03 |
| 3 | 0.1400E-03 | 0.1324E+03 | 0.1254E+03 | 0.6963E+01 | 0.5353E+01 | 0.571E-02 |
| 4 | 0.1770E-03 | 0.8184E+02 | 0.7636E+02 | 0.5483E+01 | 0.7181E+01 | 0.149E-01 |
| 5 | 0.2200E-03 | 0.4974E+02 | 0.4673E+02 | 0.3010E+01 | 0.6441E+01 | 0.404E-01 |
| 6 | 0.2800E-03 | 0.2805E+02 | 0.2597E+02 | 0.2080E+01 | 0.8011E+01 | 0.127E+00 |
| 7 | 0.3550E-03 | 0.1546E+02 | 0.1406E+02 | 0.1395E+01 | 0.9919E+01 | 0.418E+00 |
| 8 | 0.4400E-03 | 0.7470E+01 | 0.7832E+01 | -0.3619E+00 | -0.4621E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.3620E+01 | 0.4286E+01 | -0.6661E+00 | -0.1554E+02 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2000E+01 | 0.2153E+01 | -0.1526E+00 | -0.7089E+01 | 0.111E+02 |
| 11 | 0.9610E-03 | 0.1260E+01 | 0.1270E+01 | 0.1043E-01 | 0.8219E+00 | 0.111E+02 |
| 12 | 0.1076E-02 | 0.7800E+00 | 0.7480E+00 | 0.3150E-01 | 0.4209E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.4700E+00 | 0.4191E+00 | 0.5085E-01 | 0.1213E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.2800E+00 | 0.2557E+00 | 0.2434E-01 | 0.9519E+01 | 0.100E+03 |
| 15 | 0.2724E-02 | 0.1700E+00 | 0.1670E+00 | 0.2967E-02 | 0.1777E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.9000E-01 | 0.1013E+00 | -0.1129E-01 | -0.1115E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.4000E-01 | 0.6463E-01 | -0.2463E-01 | -0.3811E+02 | 0.100E+03 |

RMSERR= 12.16

CORRELATION MATRIX

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | |
| 2 | 0.4400E+00 | 0.1000E+01 | | | | |
| 3 | -0.7174E+00 | 0.2943E+00 | 0.1000E+01 | | | |
| 4 | 0.8173E-01 | -0.5651E-01 | -0.8356E+00 | 0.1000E+01 | | |
| 5 | -0.2287E+00 | 0.8202E+00 | 0.8932E-01 | 0.1643E+00 | 0.1000E+01 | |
| 6 | 0.3217E-01 | -0.5251E+00 | 0.3659E-01 | -0.3324E+00 | -0.6674E+00 | 0.1000E+01 |
| 7 | -0.8646E-00 | 0.5359E+00 | 0.7094E-00 | -0.6767E+00 | 0.2714E+00 | -0.2268E+00 |
| 0.1000E+01 | | | | | | |

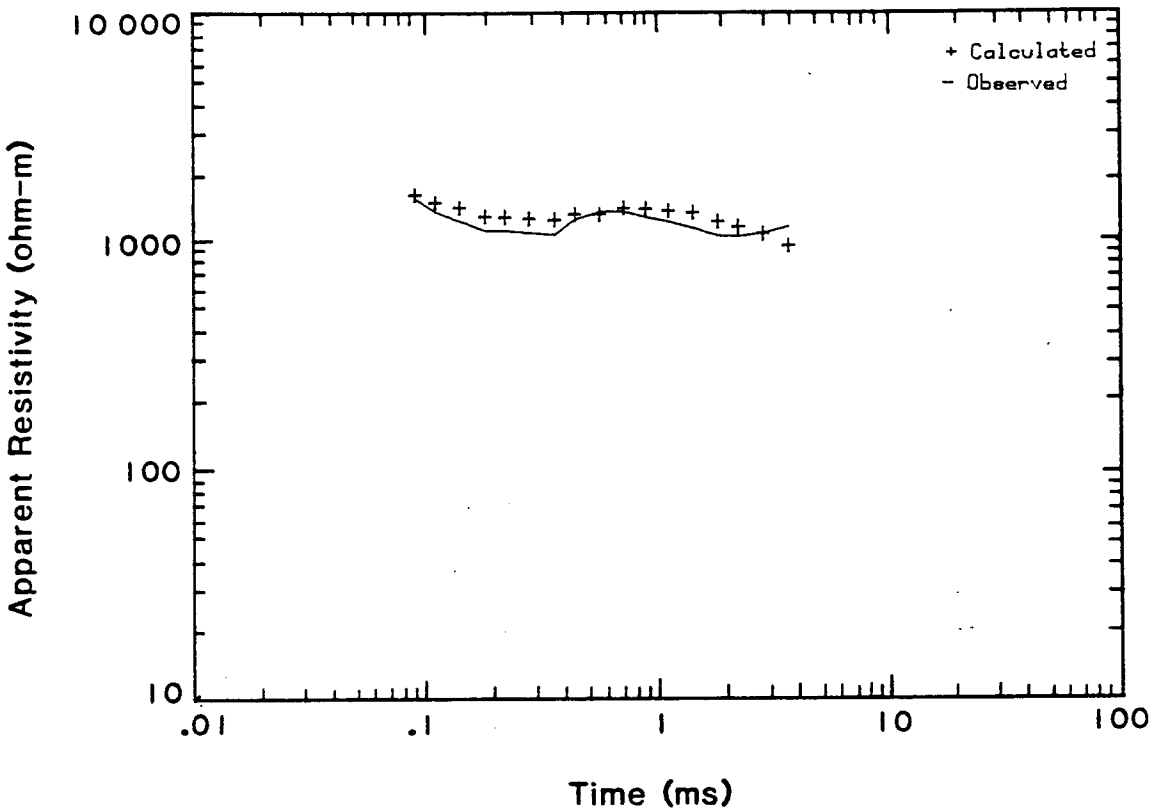
| **FINAL_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.3233E-03 | 0.2046E-02 | 0.6330E+01 | 0.6330E+03 |
| 2 0.1472E-02 | 0.5109E-02 | 0.3470E+01 | 0.3470E+03 |
| 3 0.1448E-04 | 0.7900E-03 | 0.5456E+02 | 0.5456E+04 |
| 4 0.2752E-02 | 0.1204E-01 | 0.4373E+01 | 0.4373E+03 |
| 5 0.1852E+03 | 0.8600E-02 | 0.4644E-04 | 0.4644E-02 |
| 6 0.3208E+03 | 0.2338E-01 | 0.7289E-04 | 0.7289E-02 |
| 7 0.4709E+03 | 0.1439E-01 | 0.3056E-04 | 0.3056E-02 |

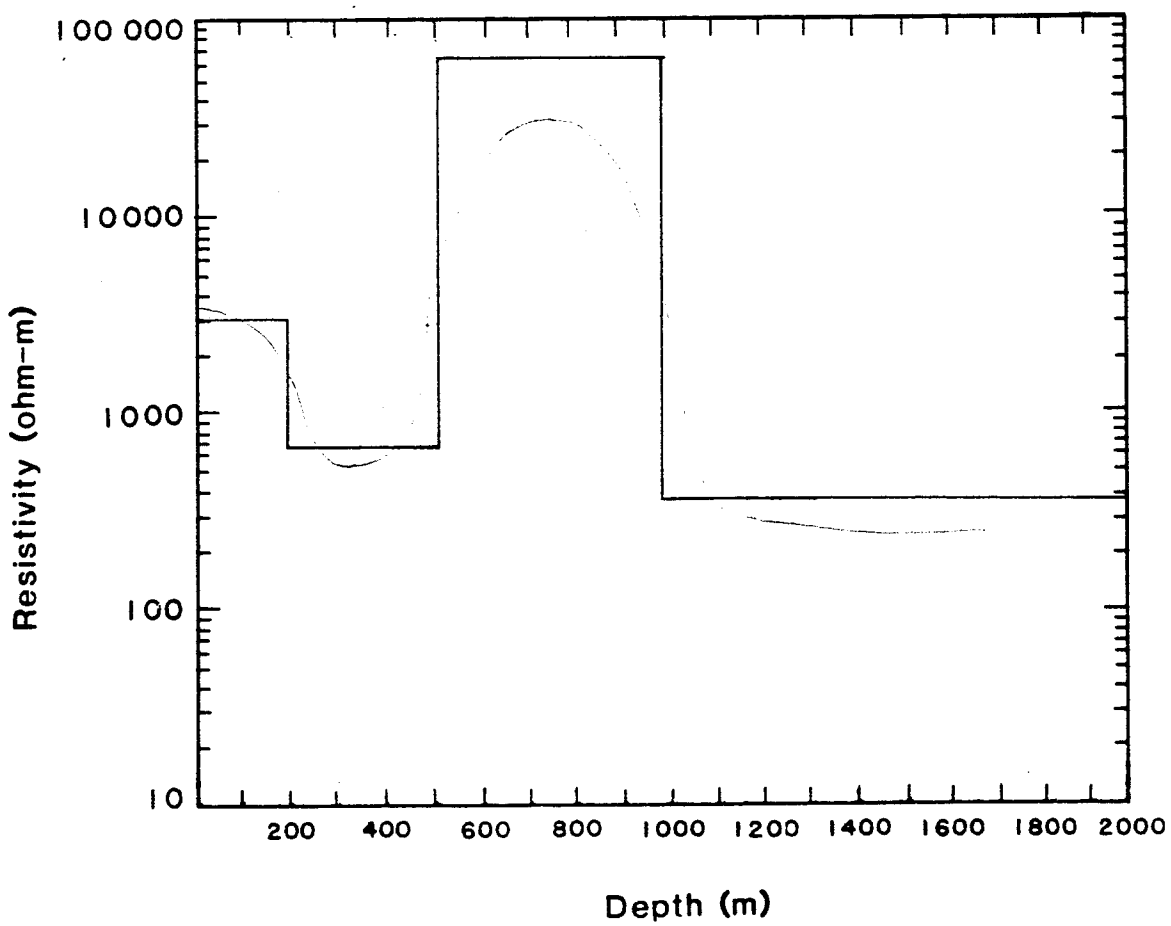
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.32328E-02 | 0.30933E+04 | |
| 2 SIGMA( 2) = | 0.14723E-02 | 0.67922E+03 | |
| 3 SIGMA( 3) = | 0.14478E-04 | 0.69069E+05 | |
| 4 SIGMA( 4) = | 0.27522E-02 | 0.36335E+03 | |
| 5 THICK( 1) = | 0.18319E+03 | | 0.18319E+03 |
| 6 THICK( 2) = | 0.32079E+03 | | 0.50398E+03 |
| 7 THICK( 3) = | 0.47068E+03 | | 0.97686E+03 |
| 8 POINT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 29



EMSURVEYS ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 31 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1965E+03 | 0.2075E+03 | -0.1097E+02 | -0.5289E+01 | 0.259E-02 |
| 2 | 0.1100E-03 | 0.1651E+03 | 0.1581E+03 | 0.6993E+01 | 0.4423E+01 | 0.367E-02 |
| 3 | 0.1400E-03 | 0.1177E+03 | 0.1146E+03 | 0.3123E+01 | 0.2725E+01 | 0.722E-02 |
| 4 | 0.1770E-03 | 0.8512E+02 | 0.8233E+02 | 0.2787E+01 | 0.3385E+01 | 0.138E-01 |
| 5 | 0.2200E-03 | 0.6009E+02 | 0.5940E+02 | 0.6940E+00 | 0.1168E+01 | 0.277E-01 |
| 6 | 0.2800E-03 | 0.4043E+02 | 0.4024E+02 | 0.1865E+00 | 0.4633E+00 | 0.612E-01 |
| 7 | 0.3550E-03 | 0.2638E+02 | 0.2667E+02 | -0.2893E+00 | -0.1085E+01 | 0.144E+00 |
| 8 | 0.4430E-03 | 0.1730E+02 | 0.1766E+02 | -0.3608E+00 | -0.2043E+01 | 0.334E+00 |
| 9 | 0.5540E-03 | 0.1080E+02 | 0.1132E+02 | -0.5157E+00 | -0.4557E+01 | 0.857E+00 |
| 10 | 0.7130E-03 | 0.6610E+01 | 0.6660E+01 | -0.4993E-01 | -0.7497E+00 | 0.100E+01 |
| 11 | 0.8810E-03 | 0.4350E+01 | 0.4193E+01 | 0.1670E+00 | 0.3992E+01 | 0.400E+01 |
| 12 | 0.1096E-02 | 0.2630E+01 | 0.2528E+01 | 0.1016E+00 | 0.4016E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1390E+01 | 0.1387E+01 | 0.3498E-02 | 0.2523E+00 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.7600E+00 | 0.7776E+00 | -0.1758E-01 | -0.2261E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.4400E+00 | 0.4545E+00 | -0.1448E-01 | -0.3186E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.2400E+00 | 0.2472E+00 | -0.7247E-02 | -0.2931E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1400E+00 | 0.1401E+00 | -0.7784E-04 | -0.5557E-01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.8000E-01 | 0.8261E-01 | -0.2608E-02 | -0.3157E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.4000E-01 | 0.4775E-01 | -0.7747E-02 | -0.1623E+02 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.3000E-01 | 0.2850E-01 | 0.1501E-02 | 0.5268E+01 | 0.100E+03 |

** %RMSERR= 4.75

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.1243E+00 | 0.1000E+01 | | | |
| 3 | -0.1706E-01 | -0.2461E+00 | 0.1000E+01 | | |
| 4 | -0.6459E-01 | 0.7499E+00 | -0.3884E+00 | 0.1000E+01 | |
| 5 | -0.5530E+00 | -0.6192E+00 | -0.3395E+00 | -0.2918E+00 | 0.1000E+01 |

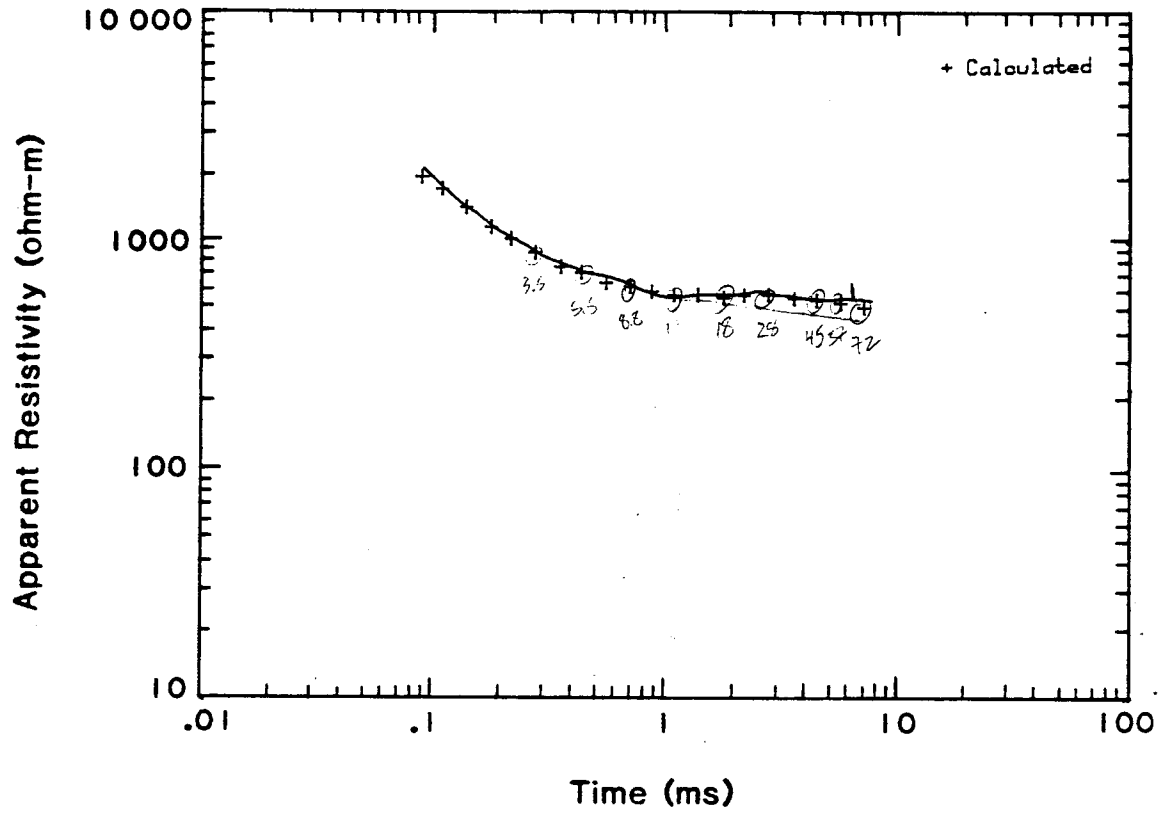
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3392E-04 | 0.3533E-03 | 0.1042E+02 | 0.1042E+04 |
| 2 | 0.3965E-02 | 0.2091E-02 | 0.5272E+00 | 0.5272E+02 |
| 3 | 0.1413E-02 | 0.2205E-02 | 0.1561E+01 | 0.1561E+03 |
| 4 | 0.2502E+03 | 0.1343E-02 | 0.5368E-05 | 0.5368E-03 |
| 5 | 0.2553E+03 | 0.6216E-02 | 0.2435E-04 | 0.2435E-02 |

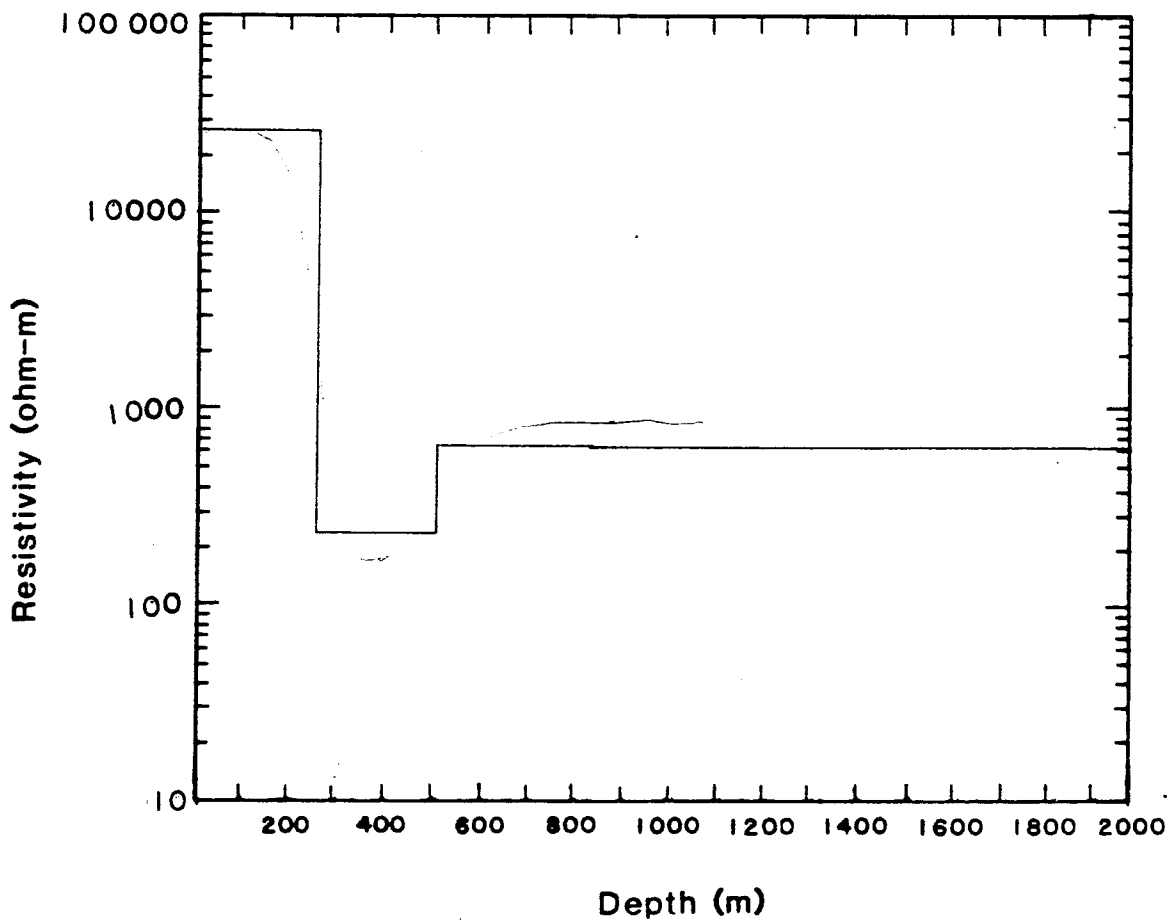
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.33923E-04 | 0.29479E+05 | |
| 2 | SIGMA( 2) | = | 0.39652E-02 | 0.25219E+03 | |
| 3 | SIGMA( 3) | = | 0.14128E-02 | 0.70781E+03 | |
| 4 | THICK( 1) | = | 0.25017E+03 | | 0.25017E+03 |
| 5 | THICK( 2) | = | 0.25527E+03 | | 0.50544E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 31



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 32 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3078E+03 | 0.3343E+03 | -0.2653E+02 | -0.7936E+01 | 0.106E-02 |
| 2 | 0.1100E-03 | 0.1832E+03 | 0.1977E+03 | -0.1447E+02 | -0.7320E+01 | 0.298E-02 |
| 3 | 0.1400E-03 | 0.1050E+03 | 0.1080E+03 | -0.3018E+01 | -0.2795E+01 | 0.907E-02 |
| 4 | 0.1770E-03 | 0.6203E+02 | 0.6096E+02 | 0.1074E+01 | 0.1761E+01 | 0.260E-01 |
| 5 | 0.2200E-03 | 0.3831E+02 | 0.3639E+02 | 0.1919E+01 | 0.5273E+01 | 0.681E-01 |
| 6 | 0.2800E-03 | 0.2300E+02 | 0.2115E+02 | 0.1845E+01 | 0.8723E+01 | 0.189E+00 |
| 7 | 0.3550E-03 | 0.1361E+02 | 0.1255E+02 | 0.1063E+01 | 0.8469E+01 | 0.540E+00 |
| 8 | 0.4430E-03 | 0.8080E+01 | 0.7925E+01 | 0.1553E+00 | 0.1959E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.4710E+01 | 0.4987E+01 | -0.2772E+00 | -0.5559E+01 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2810E+01 | 0.2961E+01 | -0.1509E+00 | -0.5095E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1830E+01 | 0.1939E+01 | -0.1091E+00 | -0.5627E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1260E+01 | 0.1229E+01 | 0.3078E-01 | 0.2504E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.7700E+00 | 0.7293E+00 | 0.4069E-01 | 0.5580E+01 | 0.250E+02 |
| 14 | 0.1795E-02 | 0.4900E+00 | 0.4399E+00 | 0.5007E-01 | 0.1138E+02 | 0.250E+02 |
| 15 | 0.2224E-02 | 0.3200E+00 | 0.2775E+00 | 0.4247E-01 | 0.1530E+02 | 0.250E+02 |
| 16 | 0.2850E-02 | 0.2100E+00 | 0.1631E+00 | 0.4694E-01 | 0.2879E+02 | 0.250E+02 |
| 17 | 0.3600E-02 | 0.1400E+00 | 0.9791E-01 | 0.4209E-01 | 0.4299E+02 | 0.250E+02 |

** %RMSERR= 14.29

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.2860E+00 | 0.1000E+01 | | | |
| 3 | 0.2535E+00 | -0.6292E+00 | 0.1000E+01 | | |
| 4 | 0.1888E+00 | 0.1412E+00 | 0.2286E+00 | 0.1000E+01 | |
| 5 | -0.1871E+00 | -0.5605E+00 | 0.3914E+00 | -0.3653E+00 | 0.1000E+01 |

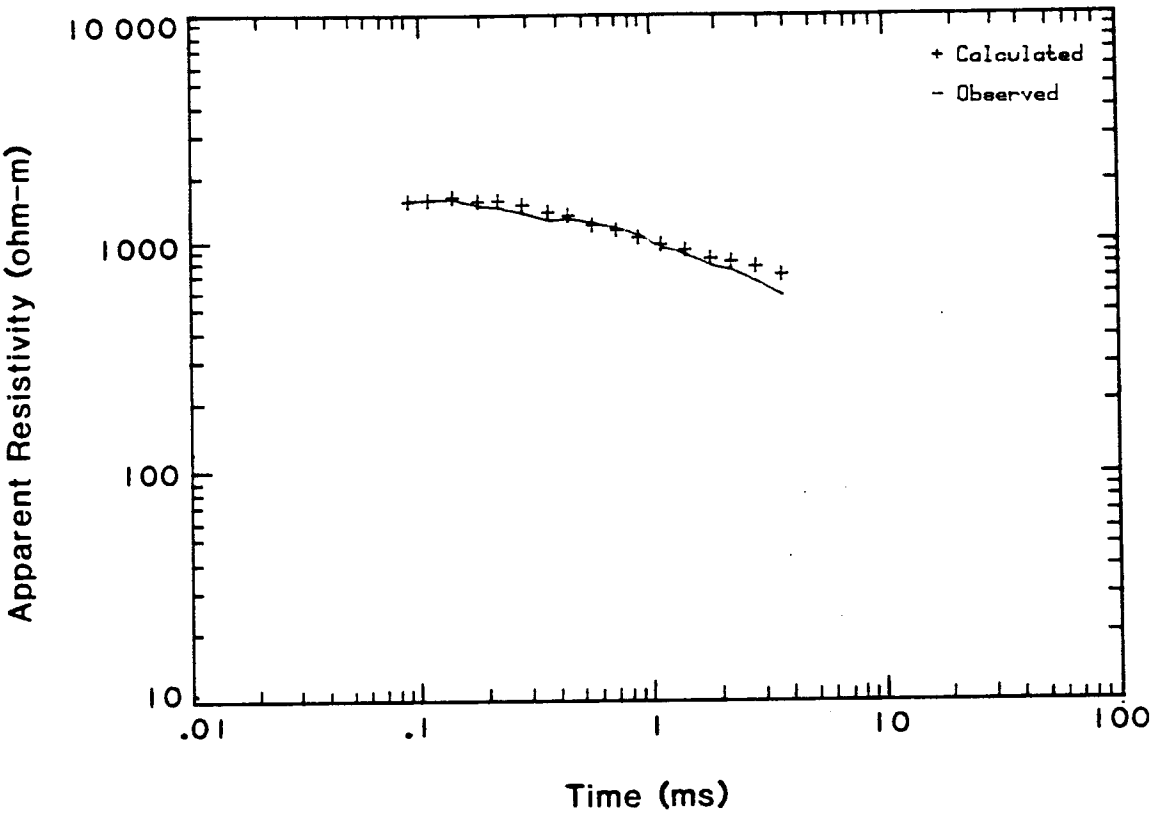
| **PARM_SOL. | | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.7186E-03 | 0.4523E-03 | 0.6295E+00 | 0.6295E+02 |
| 2 | 0.9031E-03 | 0.5222E-02 | 0.5782E+01 | 0.5782E+03 |
| 3 | 0.2185E-02 | 0.6164E-02 | 0.2821E+01 | 0.2821E+03 |
| 4 | 0.4262E+03 | 0.9229E-02 | 0.2165E-04 | 0.2165E-02 |
| 5 | 0.1198E+03 | 0.6768E-02 | 0.5650E-04 | 0.5650E-02 |

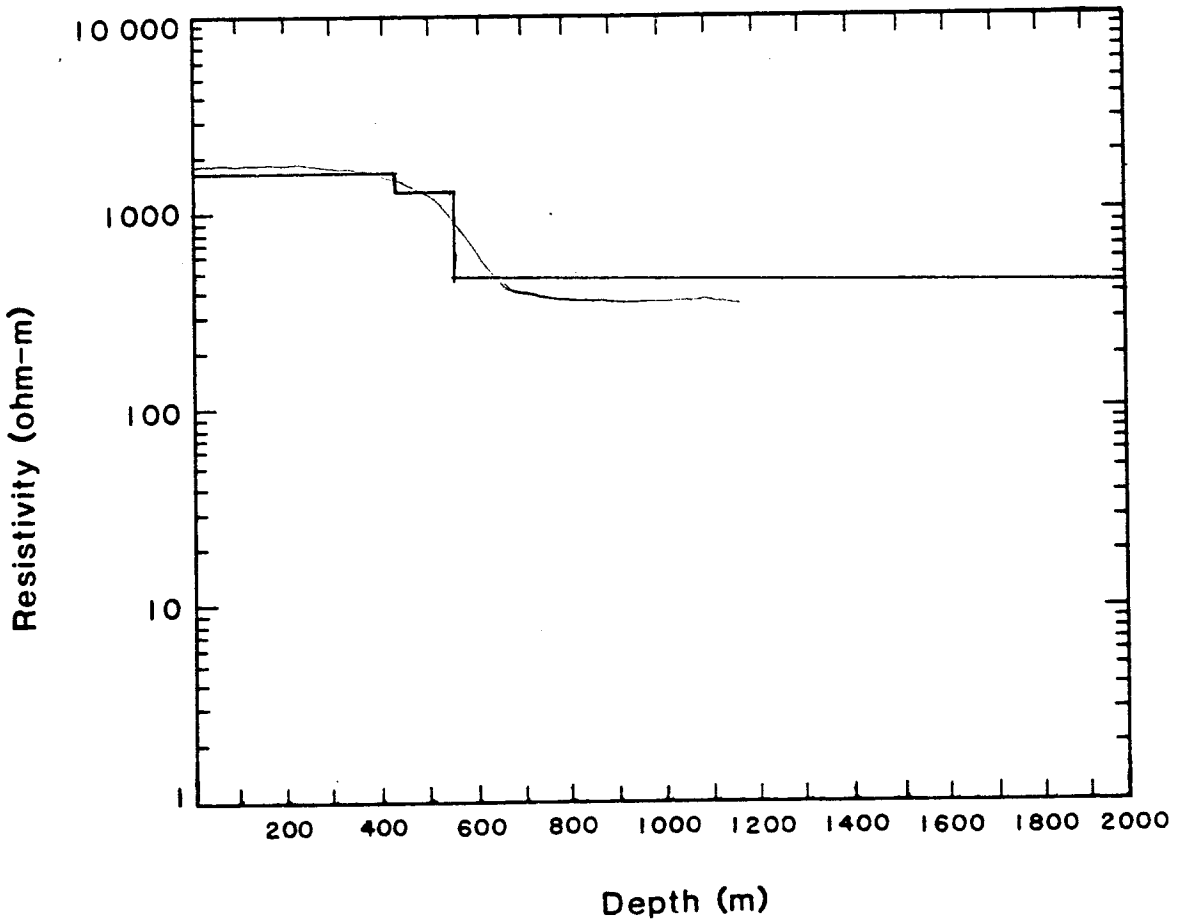
| PARAMETER | NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.71860E-03 | 0.13916E+04 | |
| 2 | SIGMA( 2) | = | 0.90309E-03 | 0.11073E+04 | |
| 3 | SIGMA( 3) | = | 0.21851E-02 | 0.45765E+03 | |
| 4 | THICK( 1) | = | 0.42622E+03 | | 0.42622E+03 |
| 5 | THICK( 2) | = | 0.11977E+03 | | 0.54599E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 32



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 33 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.1100E-03 | 0.1729E+03 | 0.1751E+03 | -0.2105E+01 | -0.1203E+01 | 0.334E-02 |
| 2 | 0.1400E-03 | 0.1006E+03 | 0.9494E+02 | 0.5627E+01 | 0.5927E+01 | 0.989E-02 |
| 3 | 0.1770E-03 | 0.5173E+02 | 0.5087E+02 | 0.8599E+00 | 0.1690E+01 | 0.374E-01 |
| 4 | 0.2200E-03 | 0.2997E+02 | 0.2863E+02 | 0.1335E+01 | 0.4662E+01 | 0.111E+00 |
| 5 | 0.2800E-03 | 0.1455E+02 | 0.1512E+02 | -0.5726E+00 | -0.3787E+01 | 0.472E+00 |
| 6 | 0.3550E-03 | 0.7510E+01 | 0.8108E+01 | -0.5978E+00 | -0.7373E+01 | 0.100E+01 |
| 7 | 0.4430E-03 | 0.4590E+01 | 0.4723E+01 | -0.1331E+00 | -0.2819E+01 | 0.400E+01 |
| 8 | 0.5540E-03 | 0.2930E+01 | 0.2807E+01 | 0.1231E+00 | 0.4387E+01 | 0.111E+02 |
| 9 | 0.7130E-03 | 0.1790E+01 | 0.1655E+01 | 0.1351E+00 | 0.8165E+01 | 0.111E+02 |
| 10 | 0.8810E-03 | 0.1270E+01 | 0.1090E+01 | 0.1802E+00 | 0.1653E+02 | 0.111E+02 |
| 11 | 0.1096E-02 | 0.8400E+00 | 0.7199E+00 | 0.1201E+00 | 0.1668E+02 | 0.100E+03 |
| 12 | 0.1411E-02 | 0.5200E+00 | 0.4573E+00 | 0.6267E-01 | 0.1370E+02 | 0.100E+03 |
| 13 | 0.1795E-02 | 0.3200E+00 | 0.2903E+00 | 0.2970E-01 | 0.1023E+02 | 0.100E+03 |
| 14 | 0.2224E-02 | 0.1900E+00 | 0.1960E+00 | -0.5974E-02 | -0.3049E+01 | 0.100E+03 |
| 15 | 0.2850E-02 | 0.1200E+00 | 0.1236E+00 | -0.3572E-02 | -0.2890E+01 | 0.100E+03 |
| 16 | 0.3600E-02 | 0.7400E-01 | 0.7888E-01 | -0.4881E-02 | -0.6188E+01 | 0.100E+03 |
| 17 | 0.4490E-02 | 0.4700E-01 | 0.5154E-01 | -0.4544E-02 | -0.8815E+01 | 0.100E+03 |
| 18 | 0.5700E-02 | 0.3100E-01 | 0.3210E-01 | -0.1099E-02 | -0.3423E+01 | 0.100E+03 |

** %RMSERR= 8.21

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.4658E+00 | 0.1000E+01 | | | |
| 3 | 0.6386E+00 | -0.5160E+00 | 0.1000E+01 | | |
| 4 | -0.6330E+00 | -0.1329E+00 | -0.2911E+00 | 0.1000E+01 | |
| 5 | -0.2903E+00 | 0.3826E-01 | 0.1581E+00 | -0.1256E-01 | 0.1000E+01 |

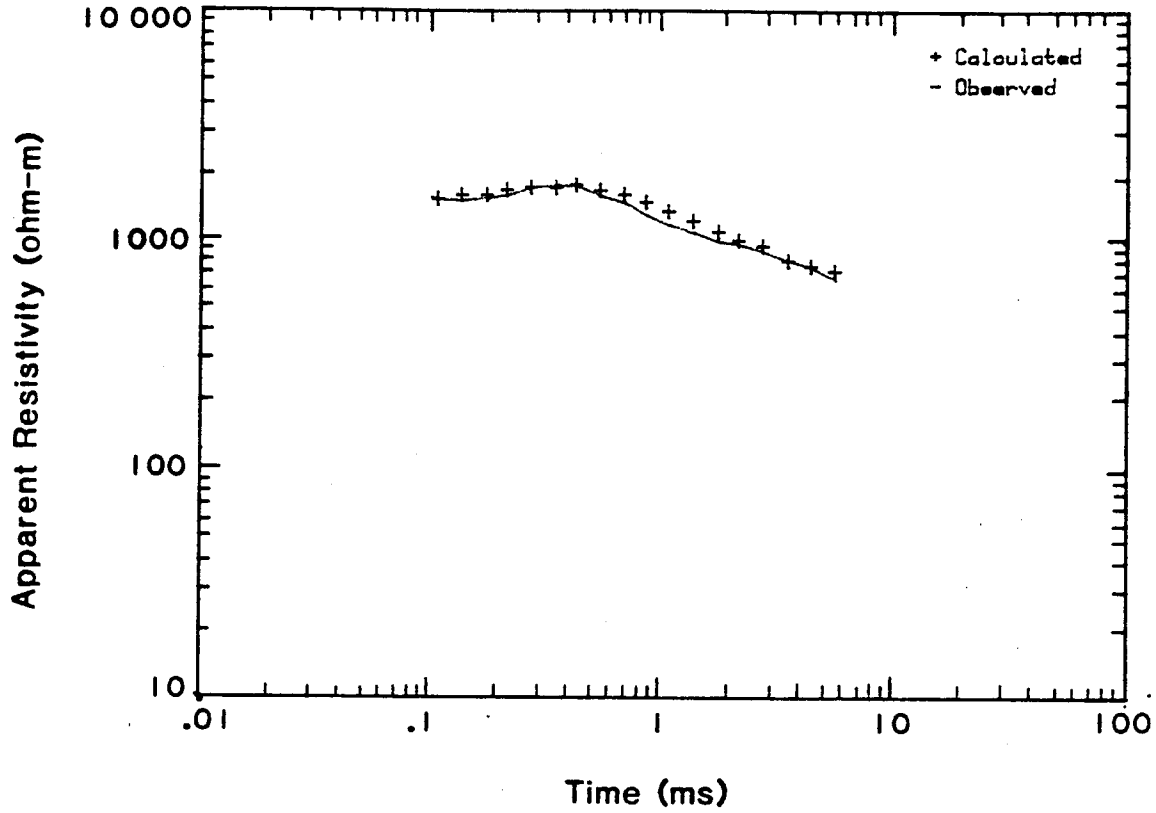
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.6534E-03 | 0.6653E-03 | 0.1018E+01 | 0.1018E+03 |
| 2 | 0.5536E-03 | 0.2056E-02 | 0.3714E+01 | 0.3714E+03 |
| 3 | 0.3101E-02 | 0.7804E-02 | 0.2516E+01 | 0.2516E+03 |
| 4 | 0.3064E+03 | 0.9673E-02 | 0.3157E-04 | 0.3157E-02 |
| 5 | 0.5530E+03 | 0.1415E-01 | 0.2559E-04 | 0.2559E-02 |

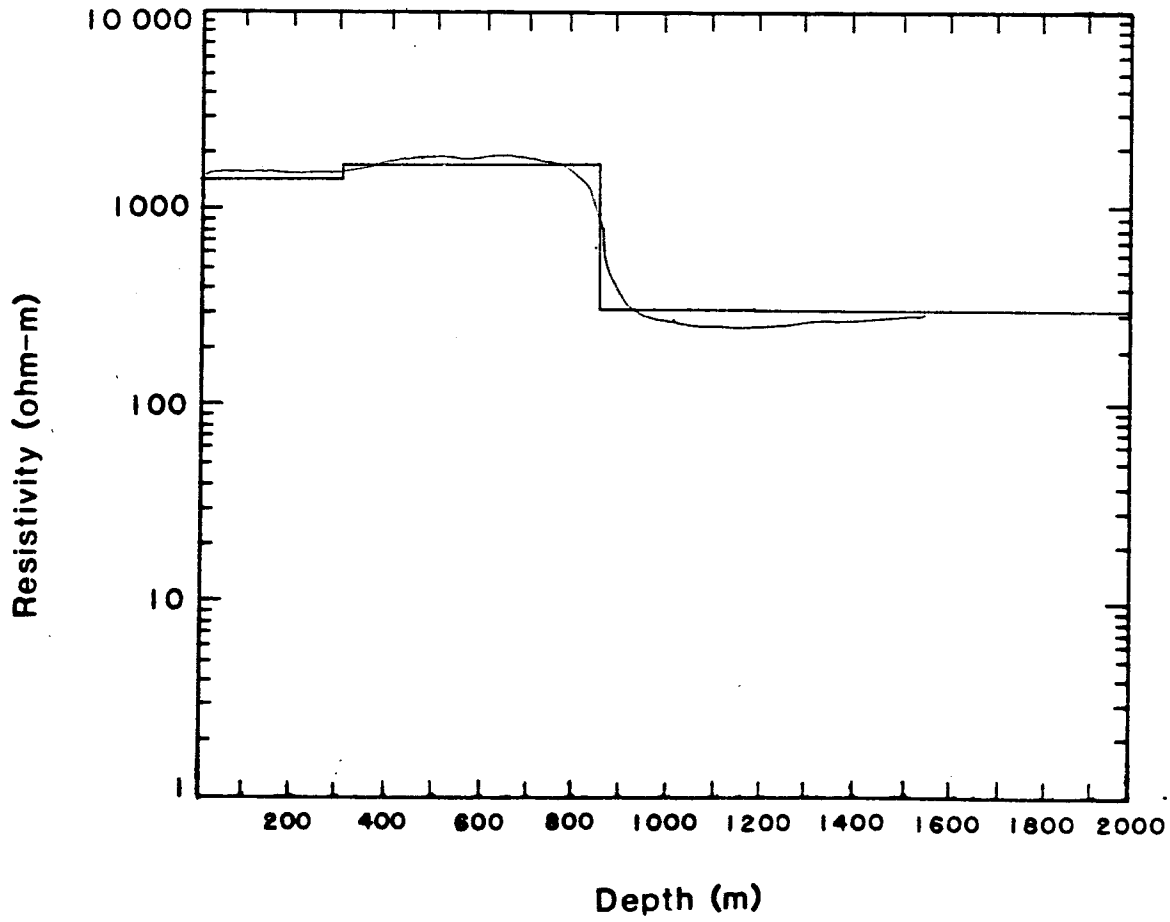
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.65340E-03 | 0.15305E+04 | |
| 2 | SIGMA( 2) | = | 0.55363E-03 | 0.18063E+04 | |
| 3 | SIGMA( 3) | = | 0.31013E-02 | 0.32244E+03 | |
| 4 | THICK( 1) | = | 0.30645E+03 | | 0.30645E+03 |
| 5 | THICK( 2) | = | 0.55300E+03 | | 0.85945E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 33



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 34 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3441E+03 | 0.3578E+03 | -0.1366E+02 | -0.3817E+01 | 0.844E-03 |
| 2 | 0.1100E-03 | 0.2426E+03 | 0.2406E+03 | 0.1958E+01 | 0.8139E+00 | 0.170E-02 |
| 3 | 0.1400E-03 | 0.1537E+03 | 0.1482E+03 | 0.5538E+01 | 0.3738E+01 | 0.423E-02 |
| 4 | 0.1770E-03 | 0.9503E+02 | 0.9170E+02 | 0.3330E+01 | 0.3631E+01 | 0.111E-01 |
| 5 | 0.2200E-03 | 0.6074E+02 | 0.5746E+02 | 0.3276E+01 | 0.5701E+01 | 0.271E-01 |
| 6 | 0.2800E-03 | 0.3571E+02 | 0.3380E+02 | 0.1908E+01 | 0.5645E+01 | 0.784E-01 |
| 7 | 0.3550E-03 | 0.1968E+02 | 0.2018E+02 | -0.5003E+00 | -0.2479E+01 | 0.258E+00 |
| 8 | 0.4430E-03 | 0.1221E+02 | 0.1263E+02 | -0.4210E+00 | -0.3333E+01 | 0.671E+00 |
| 9 | 0.5540E-03 | 0.7480E+01 | 0.8001E+01 | -0.5210E+00 | -0.6512E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.4710E+01 | 0.4985E+01 | -0.2753E+00 | -0.5522E+01 | 0.278E+01 |
| 11 | 0.8810E-03 | 0.3550E+01 | 0.3426E+01 | 0.1236E+00 | 0.3606E+01 | 0.278E+01 |
| 12 | 0.1096E-02 | 0.2600E+01 | 0.2341E+01 | 0.2594E+00 | 0.1108E+02 | 0.494E+01 |
| 13 | 0.1411E-02 | 0.1720E+01 | 0.1527E+01 | 0.1930E+00 | 0.1264E+02 | 0.494E+01 |
| 14 | 0.1795E-02 | 0.1160E+01 | 0.1016E+01 | 0.1436E+00 | 0.1413E+02 | 0.494E+01 |
| 15 | 0.2224E-02 | 0.7800E+00 | 0.7010E+00 | 0.7904E-01 | 0.1128E+02 | 0.816E+01 |
| 16 | 0.2850E-02 | 0.4800E+00 | 0.4537E+00 | 0.2627E-01 | 0.5791E+01 | 0.816E+01 |
| 17 | 0.3600E-02 | 0.2900E+00 | 0.2995E+00 | -0.9510E-02 | -0.3175E+01 | 0.816E+01 |
| 18 | 0.4490E-02 | 0.1700E+00 | 0.1994E+00 | -0.2936E-01 | -0.1473E+02 | 0.816E+01 |
| 19 | 0.5700E-02 | 0.9000E-01 | 0.1273E+00 | -0.3731E-01 | -0.2931E+02 | 0.816E+01 |

** %RMSERR= 10.10

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.4090E+00 | 0.1000E+01 | | | |
| 3 | -0.6035E+00 | -0.4908E+00 | 0.1000E+01 | | |
| 4 | 0.7827E+00 | 0.7189E+00 | -0.7147E+00 | 0.1000E+01 | |
| 5 | -0.9617E+00 | -0.5065E+00 | 0.5607E+00 | -0.7843E+00 | 0.1000E+01 |

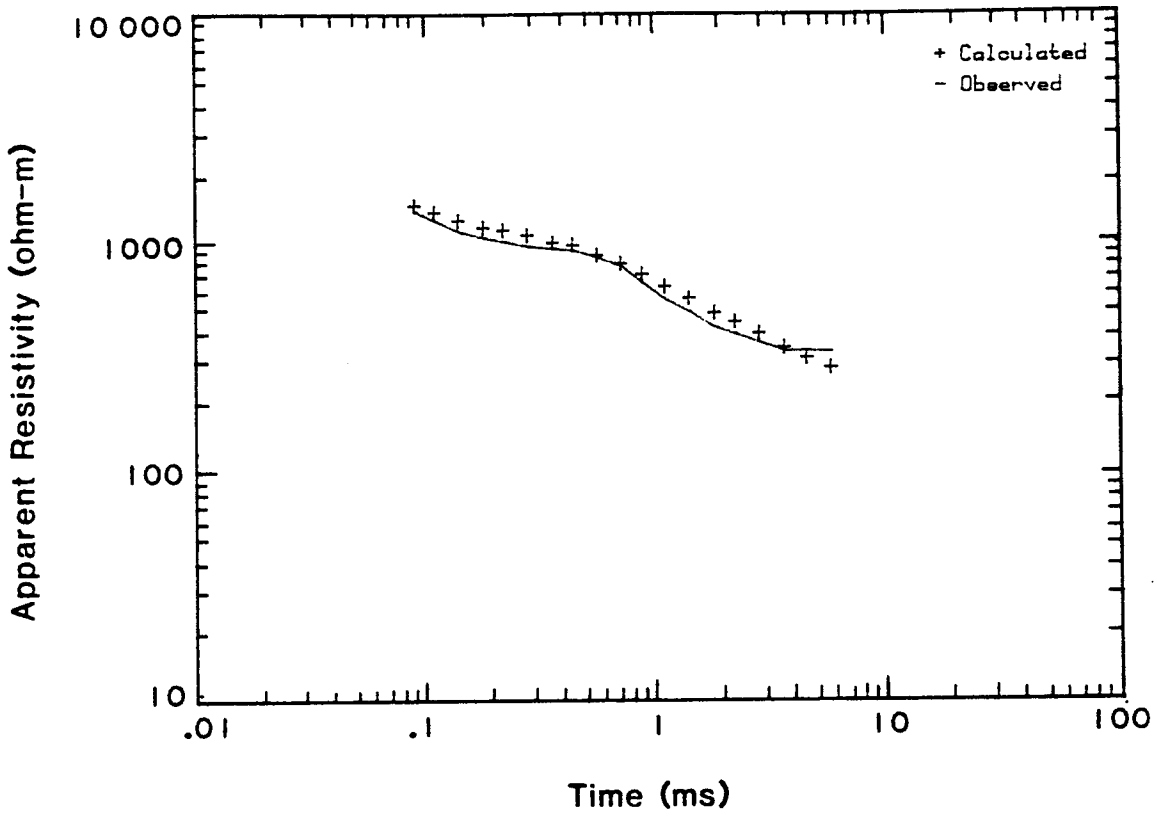
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4866E-03 | 0.1646E-02 | 0.3382E+01 | 0.3382E+03 |
| 2 | 0.2057E-02 | 0.1804E-02 | 0.8772E+00 | 0.8772E+02 |
| 3 | 0.9168E-02 | 0.1319E-01 | 0.1438E+01 | 0.1438E+03 |
| 4 | 0.2013E+03 | 0.4851E-02 | 0.2409E-04 | 0.2409E-02 |
| 5 | 0.4031E+03 | 0.9055E-02 | 0.2247E-04 | 0.2247E-02 |

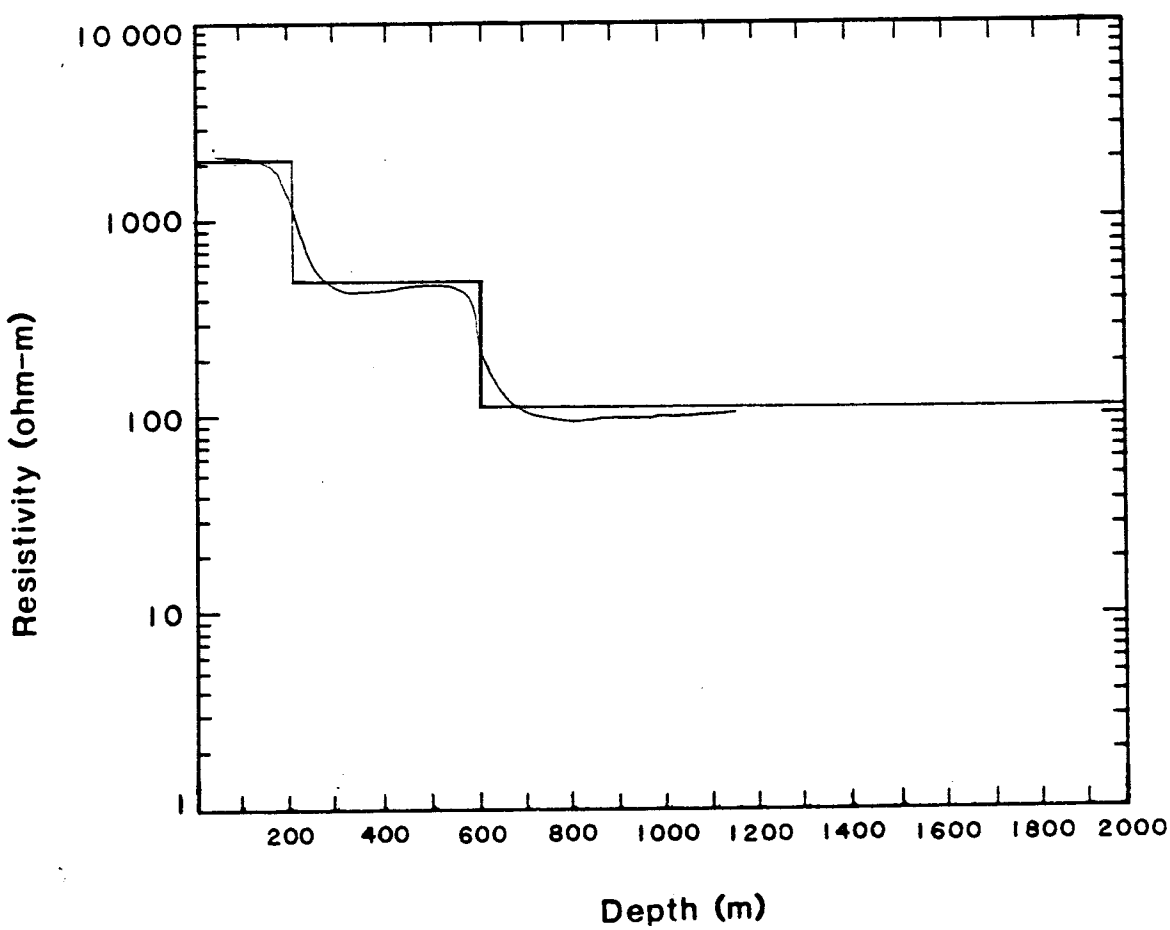
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.48661E-03 | 0.20550E+04 | |
| 2 | SIGMA( 2) | = | 0.20569E-02 | 0.48616E+03 | |
| 3 | SIGMA( 3) | = | 0.91682E-02 | 0.10907E+03 | |
| 4 | THICK( 1) | = | 0.20133E+03 | | 0.20133E+03 |
| 5 | THICK( 2) | = | 0.40306E+03 | | 0.60439E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 34



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 35 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2282E+03 | 0.2546E+03 | -0.2633E+02 | -0.1035E+02 | 0.192E-02 |
| 2 | 0.1100E-03 | 0.1762E+03 | 0.1786E+03 | -0.2399E+01 | -0.1343E+01 | 0.322E-02 |
| 3 | 0.1400E-03 | 0.1221E+03 | 0.1157E+03 | 0.6415E+01 | 0.5546E+01 | 0.671E-02 |
| 4 | 0.1770E-03 | 0.8095E+02 | 0.7469E+02 | 0.6256E+01 | 0.8376E+01 | 0.153E-01 |
| 5 | 0.2200E-03 | 0.5637E+02 | 0.4862E+02 | 0.7750E+01 | 0.1594E+02 | 0.315E-01 |
| 6 | 0.2800E-03 | 0.3137E+02 | 0.2951E+02 | 0.1858E+01 | 0.6297E+01 | 0.102E+00 |
| 7 | 0.3550E-03 | 0.1688E+02 | 0.1777E+02 | -0.8862E+00 | -0.4988E+01 | 0.351E+00 |
| 8 | 0.4430E-03 | 0.1046E+02 | 0.1101E+02 | -0.5322E+00 | -0.4833E+01 | 0.910E+00 |
| 9 | 0.5540E-03 | 0.6150E+01 | 0.6835E+01 | -0.7049E+00 | -0.1028E+02 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.3904E+01 | 0.4181E+01 | -0.2811E+00 | -0.6723E+01 | 0.278E+01 |
| 11 | 0.8810E-03 | 0.2920E+01 | 0.2822E+01 | 0.9750E-01 | 0.3454E+01 | 0.494E+01 |
| 12 | 0.1096E-02 | 0.1980E+01 | 0.1919E+01 | 0.6148E-01 | 0.3205E+01 | 0.494E+01 |
| 13 | 0.1411E-02 | 0.1380E+01 | 0.1271E+01 | 0.1094E+00 | 0.8613E+01 | 0.494E+01 |
| 14 | 0.1795E-02 | 0.9000E+00 | 0.8607E+00 | 0.3928E-01 | 0.4563E+01 | 0.816E+01 |
| 15 | 0.2224E-02 | 0.6600E+00 | 0.6082E+00 | 0.5176E-01 | 0.8510E+01 | 0.816E+01 |
| 16 | 0.2850E-02 | 0.4000E+00 | 0.4072E+00 | -0.7170E-02 | -0.1761E+01 | 0.816E+01 |
| 17 | 0.3600E-02 | 0.2600E+00 | 0.2768E+00 | -0.1685E-01 | -0.6085E+01 | 0.816E+01 |
| 18 | 0.4450E-02 | 0.1600E+00 | 0.1899E+00 | -0.2994E-01 | -0.1576E+02 | 0.816E+01 |

** TOTAL ERROR= 0.10

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.1331E+00 | 0.1000E+01 | | | |
| 3 | 0.1213E+00 | -0.9040E-02 | 0.1000E+01 | | |
| 4 | 0.2710E+00 | 0.7605E+03 | -0.2437E+00 | 0.1000E+01 | |
| 5 | -0.5809E+00 | -0.3328E+00 | 0.3978E+00 | -0.2441E+00 | 0.1000E+01 |

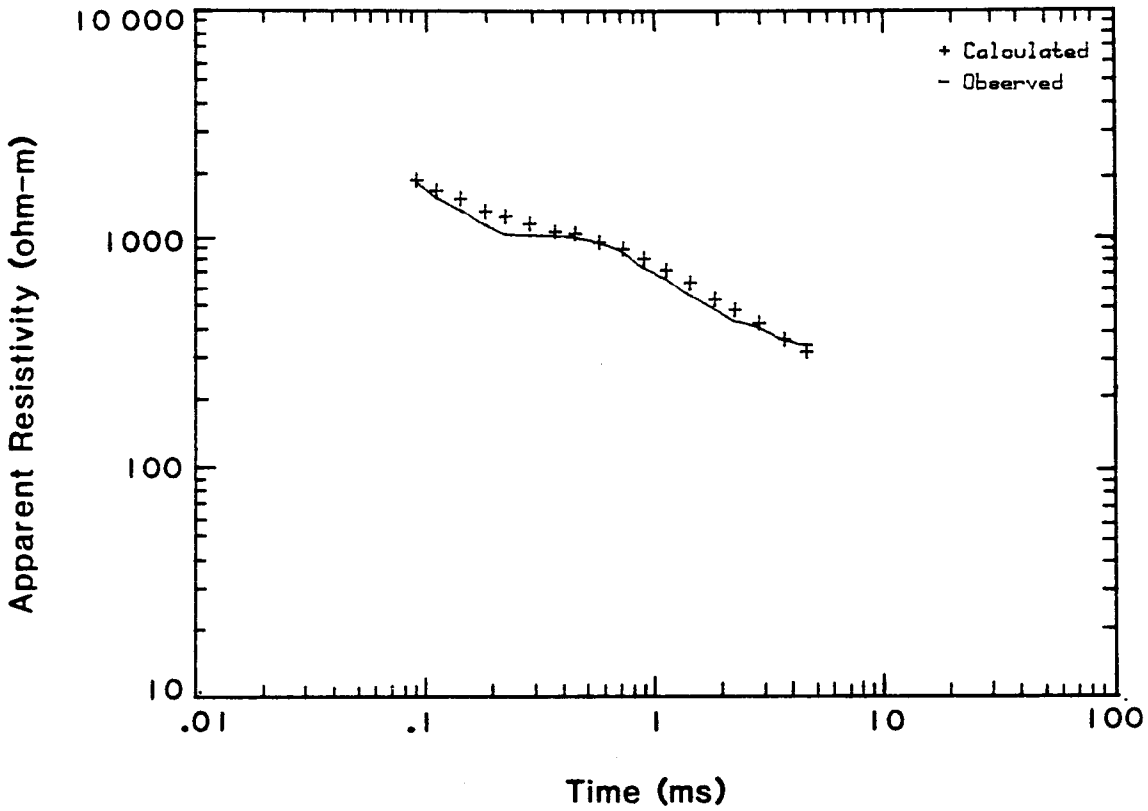
| PARAM_NOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 | 0.2678E-03 | 0.8374E-03 | 0.3111E+01 | 0.3111E+03 |
| 2 | 0.2243E-02 | 0.3237E-02 | 0.1443E+01 | 0.1443E+03 |
| 3 | 0.1101E-01 | 0.2351E-01 | 0.1990E+01 | 0.1990E+03 |
| 4 | 0.2248E+03 | 0.4431E-02 | 0.1970E-04 | 0.1970E-02 |
| 5 | 0.4637E+03 | 0.9822E-02 | 0.2118E-04 | 0.2118E-02 |

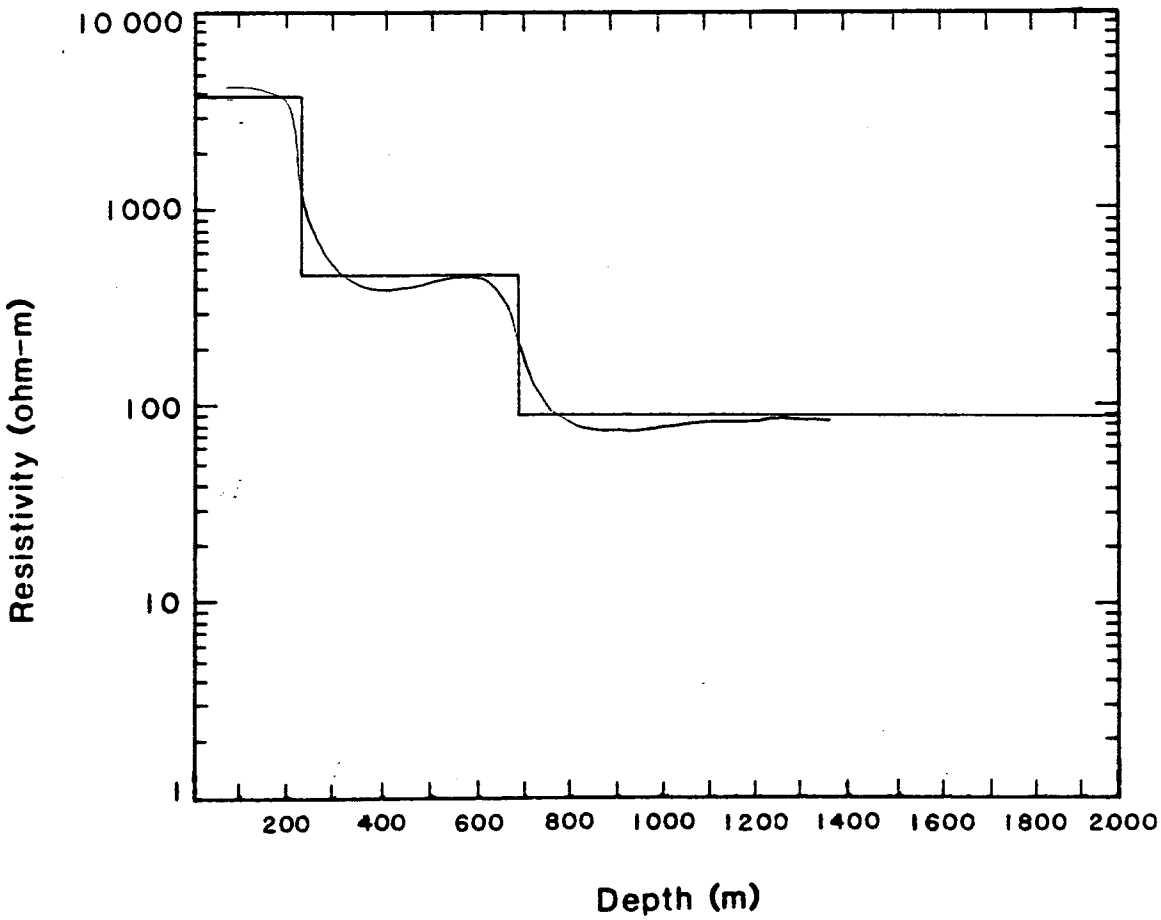
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.26980E-03 | 0.37065E+04 | |
| 2 SIGMA( 2) = | 0.22428E-02 | 0.44588E+03 | |
| 3 SIGMA( 3) = | 0.11815E-01 | 0.84641E-02 | |
| 4 THICK( 1) = | 0.22495E+03 | | 0.22495E+03 |
| 5 THICK( 2) = | 0.46370E+03 | | 0.68865E+03 |
| 6 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 35



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 36 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8700E-04 | 0.1171E+03 | 0.1348E+03 | -0.1768E+02 | -0.1312E+02 | 0.729E-02 |
| 2 | 0.1100E-03 | 0.8766E+02 | 0.9296E+02 | -0.5304E+01 | -0.5706E+01 | 0.130E-01 |
| 3 | 0.1400E-03 | 0.6280E+02 | 0.6017E+02 | 0.2629E+01 | 0.4369E+01 | 0.254E-01 |
| 4 | 0.1770E-03 | 0.4362E+02 | 0.3950E+02 | 0.4124E+01 | 0.1044E+02 | 0.526E-01 |
| 5 | 0.2200E-03 | 0.2950E+02 | 0.2617E+02 | 0.3330E+01 | 0.1272E+02 | 0.115E+00 |
| 6 | 0.2800E-03 | 0.1878E+02 | 0.1641E+02 | 0.2368E+01 | 0.1443E+02 | 0.284E+00 |
| 7 | 0.3550E-03 | 0.1140E+02 | 0.1015E+02 | 0.1253E+01 | 0.1235E+02 | 0.769E+00 |
| 8 | 0.4430E-03 | 0.6650E+01 | 0.6336E+01 | 0.3136E+00 | 0.4950E+01 | 0.100E+01 |
| 9 | 0.5530E-03 | 0.3290E+01 | 0.3852E+01 | -0.5625E+00 | -0.1460E+02 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.1860E+01 | 0.2159E+01 | -0.2992E+00 | -0.1386E+02 | 0.111E+02 |
| 11 | 0.8910E-03 | 0.1340E+01 | 0.1324E+01 | -0.8404E-01 | -0.6347E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.7700E+00 | 0.8160E+00 | -0.4601E-01 | -0.5638E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.4700E+00 | 0.4799E+00 | -0.9875E-02 | -0.2058E+01 | 0.100E+03 |
| 14 | 0.1793E-02 | 0.2900E+00 | 0.3020E+00 | -0.1202E-01 | -0.3978E+01 | 0.100E+03 |
| 15 | 0.2234E-02 | 0.1800E+00 | 0.2100E+00 | -0.3003E-01 | -0.1430E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1100E+00 | 0.1378E+00 | -0.2980E-01 | -0.2132E+02 | 0.100E+03 |

CHI SQUARE= 11.22

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.7738E+00 | 0.1000E+01 | | | |
| 3 | 0.7787E-01 | 0.5783E-01 | 0.1000E+01 | | |
| 4 | -0.6234E+00 | 0.5659E+00 | 0.8459E-01 | 0.1000E+01 | |
| 5 | -0.1512E+00 | -0.7567E-01 | -0.6239E+00 | 0.1612E+00 | 0.1000E+01 |

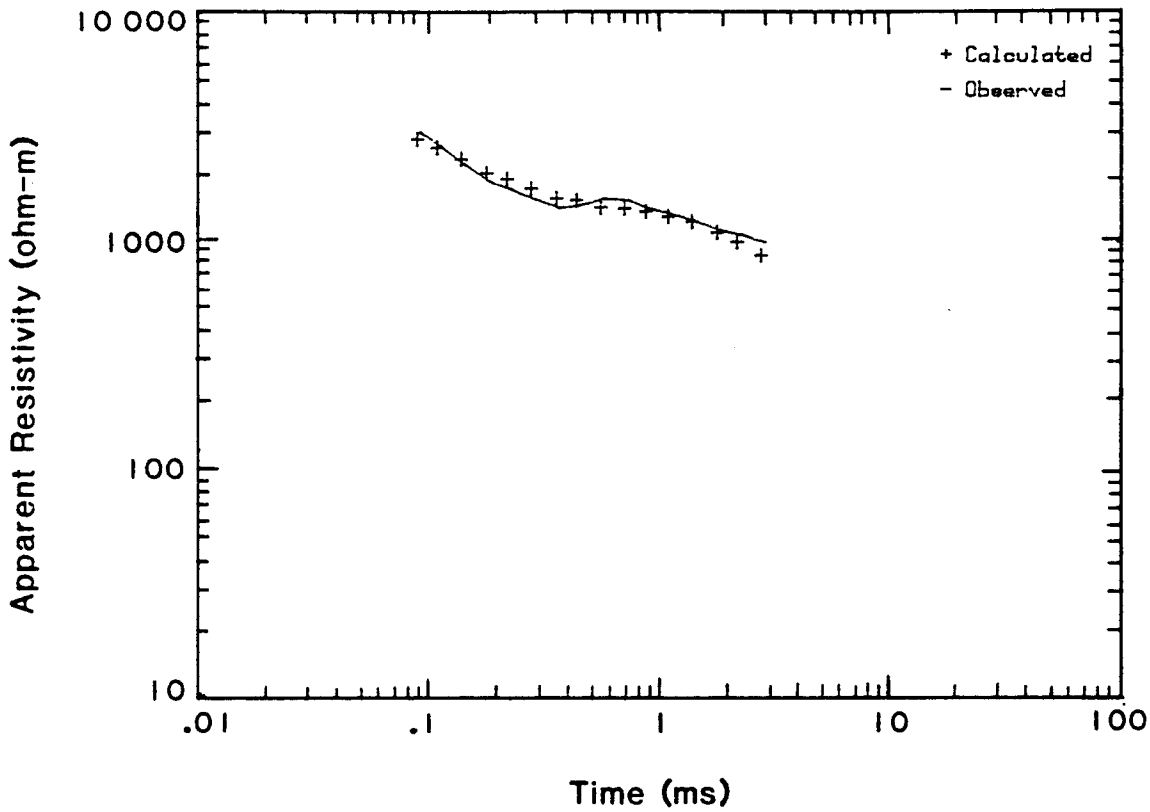
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.2433E-03 | 0.9664E-03 | 0.3972E+01 | 0.3972E+03 |
| 2 0.1469E-02 | 0.3165E-02 | 0.2154E+01 | 0.2154E+03 |
| 3 0.1030E-01 | 0.2243E-01 | 0.2177E+01 | 0.2177E+03 |
| 4 0.3080E+03 | 0.5007E-02 | 0.1625E-04 | 0.1625E-02 |
| 5 0.8306E+03 | 0.8976E-02 | 0.1080E-04 | 0.1080E-02 |

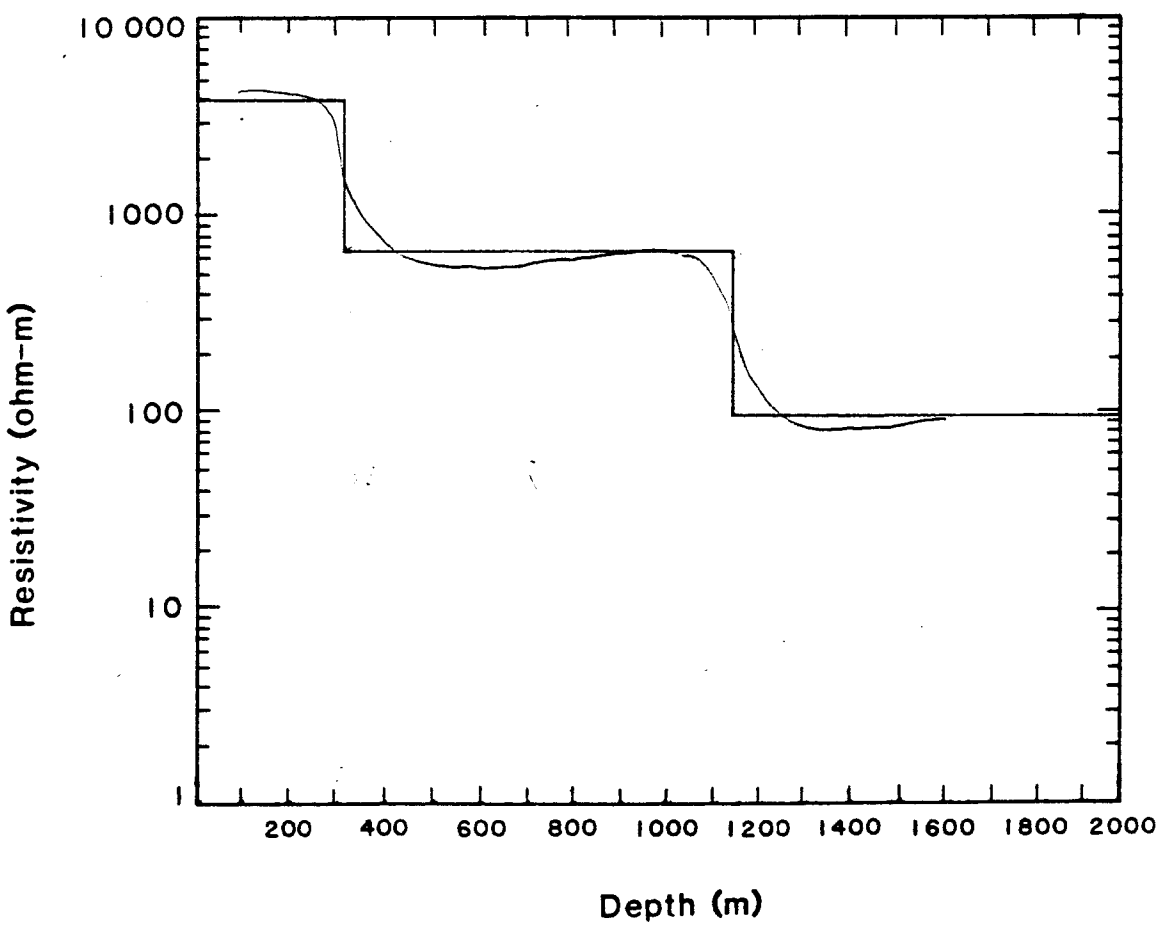
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 SIGMA( 1) | = | 0.24338E-03 | 0.41105E+04 | |
| 2 SIGMA( 2) | = | 0.14692E-02 | 0.68063E+03 | |
| 3 SIGMA( 3) | = | 0.10303E-01 | 0.97056E+02 | |
| 4 THICK( 1) | = | 0.30804E+03 | | 0.30804E+03 |
| 5 THICK( 2) | = | 0.83068E+03 | | 0.11387E+04 |
| 6 SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 36



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 37 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.6196E+02 | 0.7564E+02 | -0.1368E+02 | -0.1808E+02 | 0.260E-01 |
| 2 | 0.1100E-03 | 0.5494E+02 | 0.5698E+02 | -0.2044E+01 | -0.3587E+01 | 0.331E-01 |
| 3 | 0.1400E-03 | 0.4357E+02 | 0.4055E+02 | 0.3024E+01 | 0.7459E+01 | 0.527E-01 |
| 4 | 0.1770E-03 | 0.3315E+02 | 0.2867E+02 | 0.4482E+01 | 0.1563E+02 | 0.910E-01 |
| 5 | 0.2200E-03 | 0.2457E+02 | 0.2048E+02 | 0.4089E+01 | 0.1996E+02 | 0.166E+00 |
| 6 | 0.2800E-03 | 0.1651E+02 | 0.1388E+02 | 0.2632E+01 | 0.1897E+02 | 0.367E+00 |
| 7 | 0.3550E-03 | 0.1074E+02 | 0.9284E+01 | 0.1456E+01 | 0.1568E+02 | 0.867E+00 |
| 8 | 0.4430E-03 | 0.6360E+01 | 0.6259E+01 | 0.1006E+00 | 0.1608E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.3770E+01 | 0.4109E+01 | -0.3390E+00 | -0.8250E+01 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2310E+01 | 0.2479E+01 | -0.1688E+00 | -0.6808E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1510E+01 | 0.1584E+01 | -0.7440E-01 | -0.4696E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.8900E+00 | 0.9818E+00 | -0.9185E-01 | -0.9354E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.5400E+00 | 0.5602E+00 | -0.2019E-01 | -0.3604E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.3000E+00 | 0.3341E+00 | -0.3405E-01 | -0.1019E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.1800E+00 | 0.2173E+00 | -0.3734E-01 | -0.1718E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1100E+00 | 0.1376E+00 | -0.2758E-01 | -0.2005E+02 | 0.100E+03 |

** %RMSERR= 12.95

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3026E+00 | 0.1000E+01 | | | |
| 3 | 0.8396E-01 | 0.3755E+00 | 0.1000E+01 | | |
| 4 | -0.3537E+00 | 0.7578E+00 | 0.1788E+00 | 0.1000E+01 | |
| 5 | -0.2977E+00 | -0.3847E+00 | -0.8586E-01 | -0.3227E+00 | 0.1000E+01 |

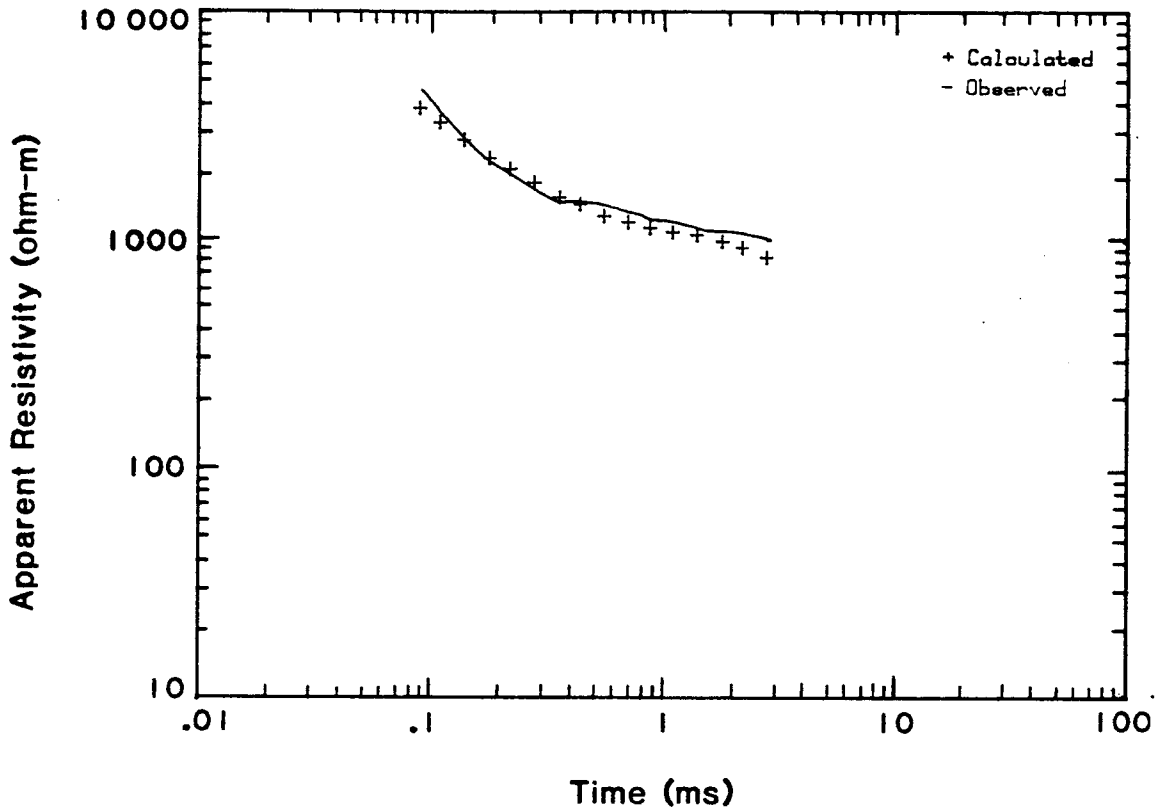
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1253E-04 | 0.1808E-03 | 0.1442E+02 | 0.1442E+04 |
| 2 | 0.2131E-02 | 0.2077E-02 | 0.9746E+00 | 0.9746E+02 |
| 3 | 0.1553E-01 | 0.7203E-01 | 0.4638E+01 | 0.4638E+03 |
| 4 | 0.3559E+03 | 0.6079E-02 | 0.1708E-04 | 0.1708E-02 |
| 5 | 0.8994E+03 | 0.3720E-01 | 0.4136E-04 | 0.4136E-02 |

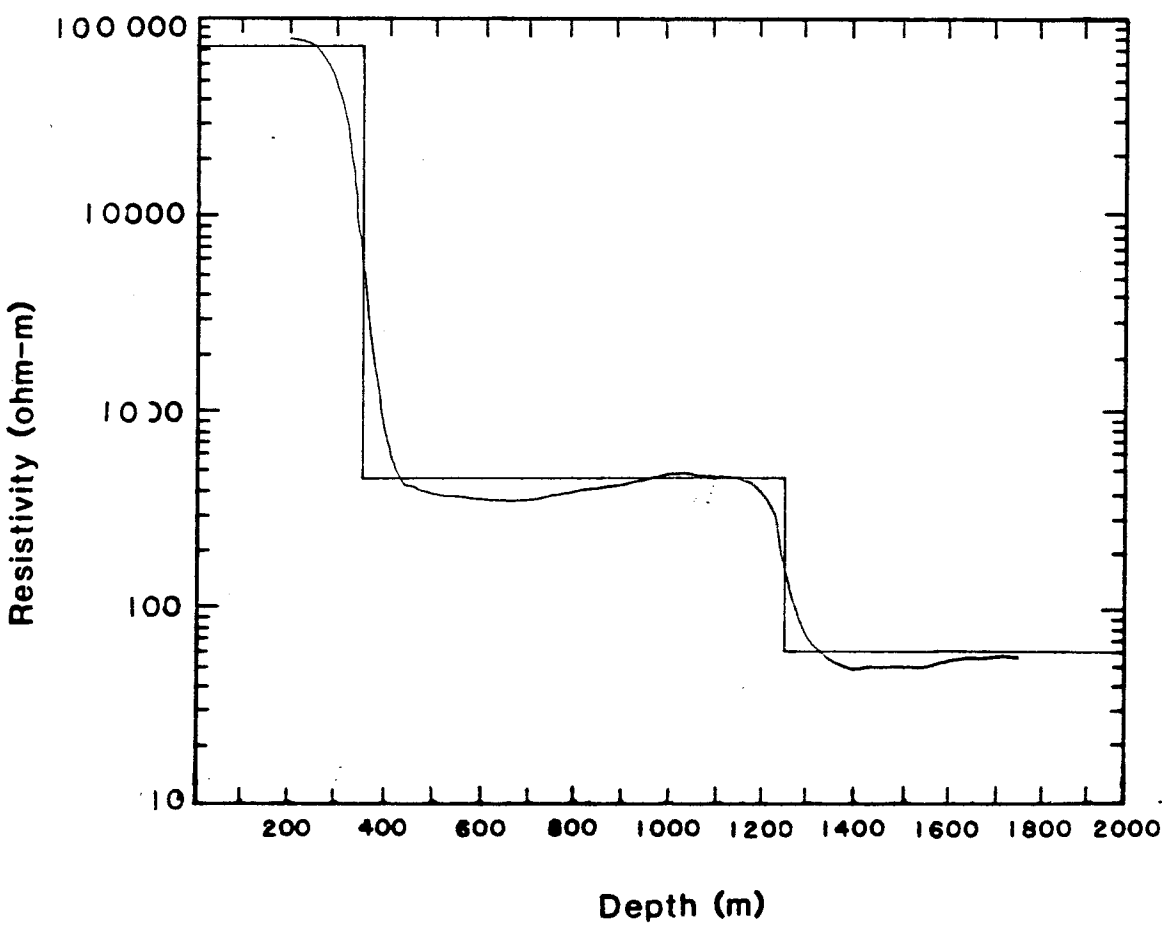
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.12534E-04 | 0.79781E+05 | |
| 2 | SIGMA( 2) | = | 0.21306E-02 | 0.46936E+03 | |
| 3 | SIGMA( 3) | = | 0.15530E-01 | 0.64392E+02 | |
| 4 | THICK( 1) | = | 0.35594E+03 | | 0.35594E+03 |
| 5 | THICK( 2) | = | 0.89939E+03 | | 0.12553E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 37



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 38 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8700E-04 | 0.8255E+02 | 0.9592E+02 | -0.1337E+02 | -0.1394E+02 | 0.147E-01 |
| 2 | 0.1100E-03 | 0.6734E+02 | 0.6814E+02 | -0.8043E+00 | -0.1180E+01 | 0.221E-01 |
| 3 | 0.1400E-03 | 0.4848E+02 | 0.4508E+02 | 0.3397E+01 | 0.7534E+01 | 0.425E-01 |
| 4 | 0.1770E-03 | 0.3286E+02 | 0.2967E+02 | 0.2994E+01 | 0.1002E+02 | 0.726E-01 |
| 5 | 0.2200E-03 | 0.2241E+02 | 0.2028E+02 | 0.2133E+01 | 0.1052E+02 | 0.197E+00 |
| 6 | 0.2800E-03 | 0.1461E+02 | 0.1297E+02 | 0.1636E+01 | 0.1261E+02 | 0.468E+00 |
| 7 | 0.3550E-03 | 0.8430E+01 | 0.8269E+01 | 0.1613E+00 | 0.1950E+01 | 0.100E+01 |
| 8 | 0.4430E-03 | 0.5170E+01 | 0.5377E+01 | -0.2087E+00 | -0.3880E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.3170E+01 | 0.3444E+01 | -0.2741E+00 | -0.7959E+01 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.1940E+01 | 0.2059E+01 | -0.1191E+00 | -0.5766E+01 | -0.111E-02 |
| 11 | 0.8610E-03 | 0.1250E+01 | 0.1330E+01 | -0.7957E-01 | -0.5986E-01 | 0.111E+02 |
| 12 | 0.1098E-02 | 0.7600E+00 | 0.8336E+00 | -0.7361E-01 | -0.9047E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.4500E+00 | 0.4873E+00 | -0.3723E-01 | -0.7646E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.2600E+00 | 0.2877E+00 | -0.2764E-01 | -0.9614E+01 | 0.100E+03 |
| 15 | 0.2284E-02 | 0.1600E+00 | 0.1766E+00 | -0.1663E-01 | -0.1043E+02 | 0.100E+03 |

[illegible] 6.62

[illegible] MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | 0.1777E+00 | 0.1000E+01 | |
| 3 | 0.4027E+00 | 0.4384E+00 | 0.1000E+01 |

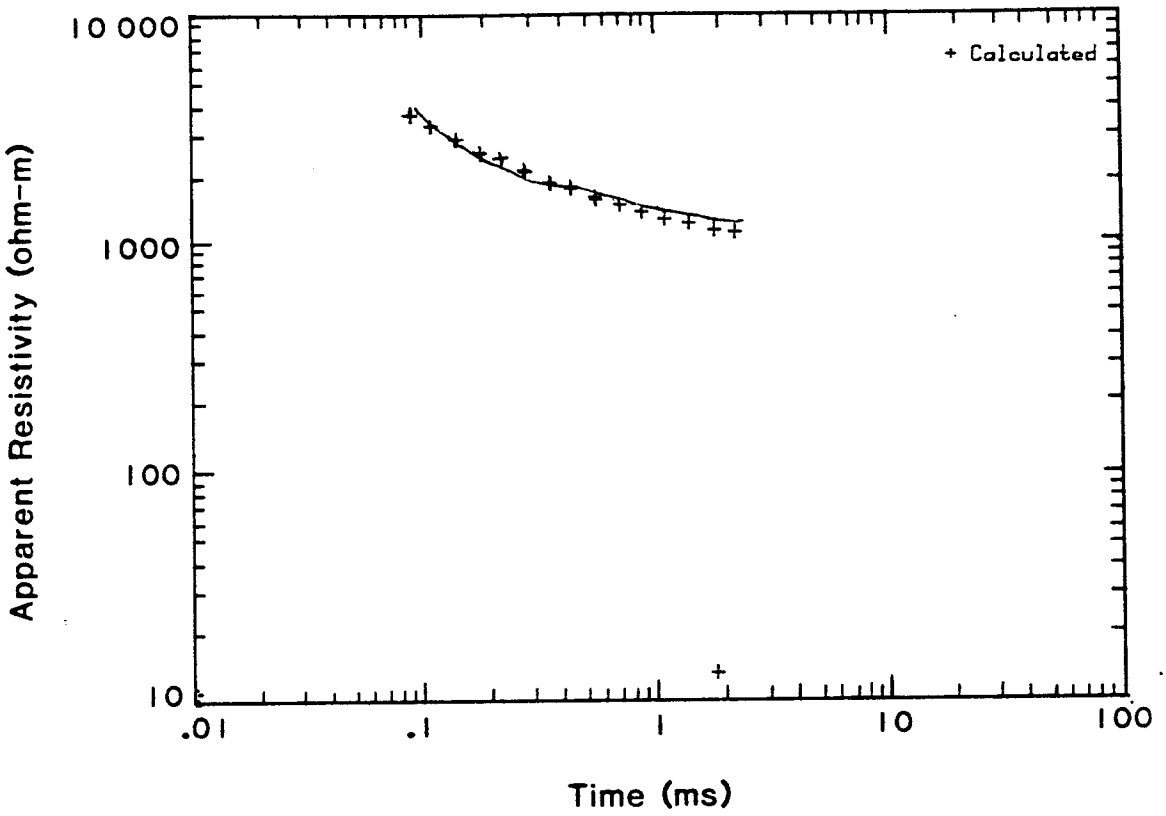
| [illegible] | [illegible]_DUL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1718E-03 | 0.3997E-02 | 0.2327E+01 | 0.2327E+03 |
| 2 | 0.1026E-02 | 0.2122E-02 | 0.1531E+01 | 0.1531E+03 |
| 3 | 0.3436E+03 | 0.3742E-02 | 0.1089E-04 | 0.1089E-02 |

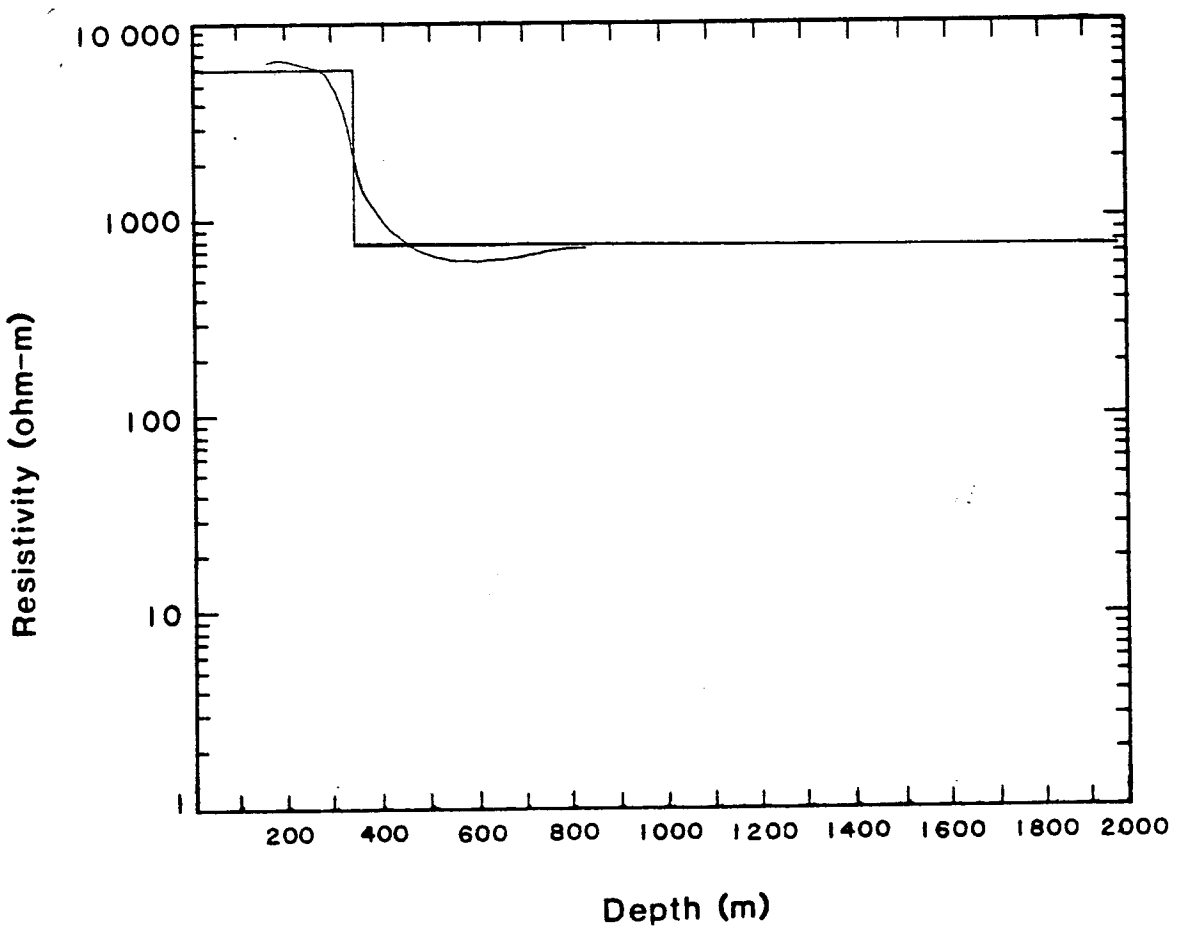
| PARAMETER NAME | | FINAL SOLUTION | RESISTIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 SIGMA( 1) | = | 0.17177E-03 | 0.58216E+04 | |
| 2 SIGMA( 2) | = | 0.13860E-02 | 0.72148E+03 | |
| 3 THICK( 1) | = | 0.34364E+03 | | 0.34364E+03 |
| 4 SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 38



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 39 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.5494E+02 | 0.5367E+02 | 0.1265E+01 | 0.2357E+01 | 0.331E-01 |
| 2 | 0.1100E-03 | 0.4174E+02 | 0.4139E+02 | 0.3525E+00 | 0.8517E+00 | 0.574E-01 |
| 3 | 0.1400E-03 | 0.2972E+02 | 0.3034E+02 | -0.6174E+00 | -0.2035E+01 | 0.113E+00 |
| 4 | 0.1770E-03 | 0.2108E+02 | 0.2209E+02 | -0.1011E+01 | -0.4575E+01 | 0.225E+00 |
| 5 | 0.2200E-03 | 0.1613E+02 | 0.1622E+02 | -0.9286E-01 | -0.5724E+00 | 0.384E+00 |
| 6 | 0.2800E-03 | 0.1204E+02 | 0.1135E+02 | 0.6906E+00 | 0.6085E+01 | 0.690E+00 |
| 7 | 0.3550E-03 | 0.7570E+01 | 0.7854E+01 | -0.2839E+00 | -0.3615E+01 | 0.100E+01 |
| 8 | 0.4430E-03 | 0.5470E+01 | 0.5500E+01 | -0.3036E-01 | -0.5520E+00 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.3820E+01 | 0.3799E+01 | 0.2126E-01 | 0.5598E+00 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2550E+01 | 0.2470E+01 | 0.7995E-01 | 0.3237E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1820E+01 | 0.1707E+01 | 0.1129E+00 | 0.6612E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1230E+01 | 0.1164E+01 | 0.6649E-01 | 0.5715E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.7000E+00 | 0.7431E+00 | -0.4308E-01 | -0.5798E+01 | 0.250E+02 |
| 14 | 0.1795E-02 | 0.4100E+00 | 0.4883E+00 | -0.7830E-01 | -0.1603E+02 | 0.250E+02 |
| 15 | 0.2224E-02 | 0.2200E+00 | 0.3368E+00 | -0.1168E+00 | -0.3469E+02 | 0.250E+02 |
| 16 | 0.2850E-02 | 0.1300E+00 | 0.2176E+00 | -0.8759E-01 | -0.4026E+02 | 0.250E+02 |

** %RMSERR= 14.33

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.8078E-01 | 0.1000E+01 | |
| 3 | -0.4733E-01 | 0.5176E+00 | 0.1000E+01 |

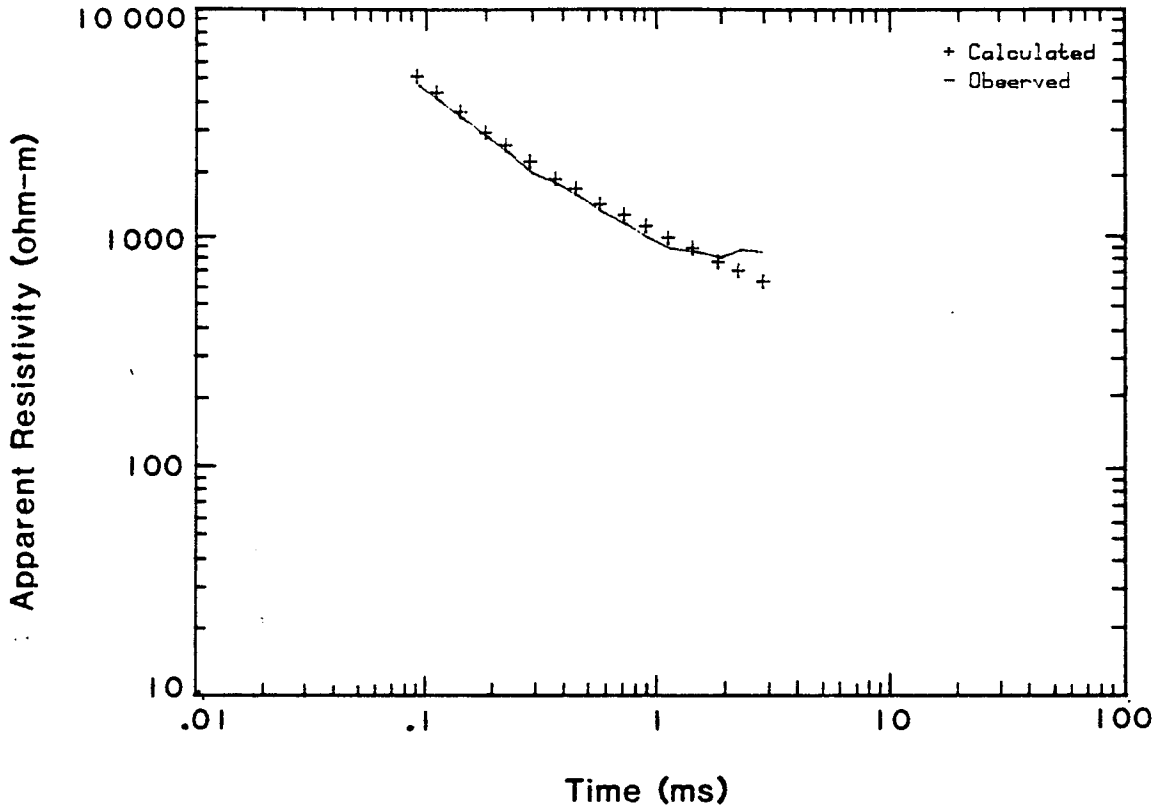
| **PARM_SOL. | | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1337E-04 | 0.1560E-03 | 0.1167E+02 | 0.1167E+04 |
| 2 | 0.2392E-02 | 0.1822E-02 | 0.7616E+00 | 0.7616E+02 |
| 3 | 0.4160E+03 | 0.1358E-02 | 0.3266E-05 | 0.3266E-03 |

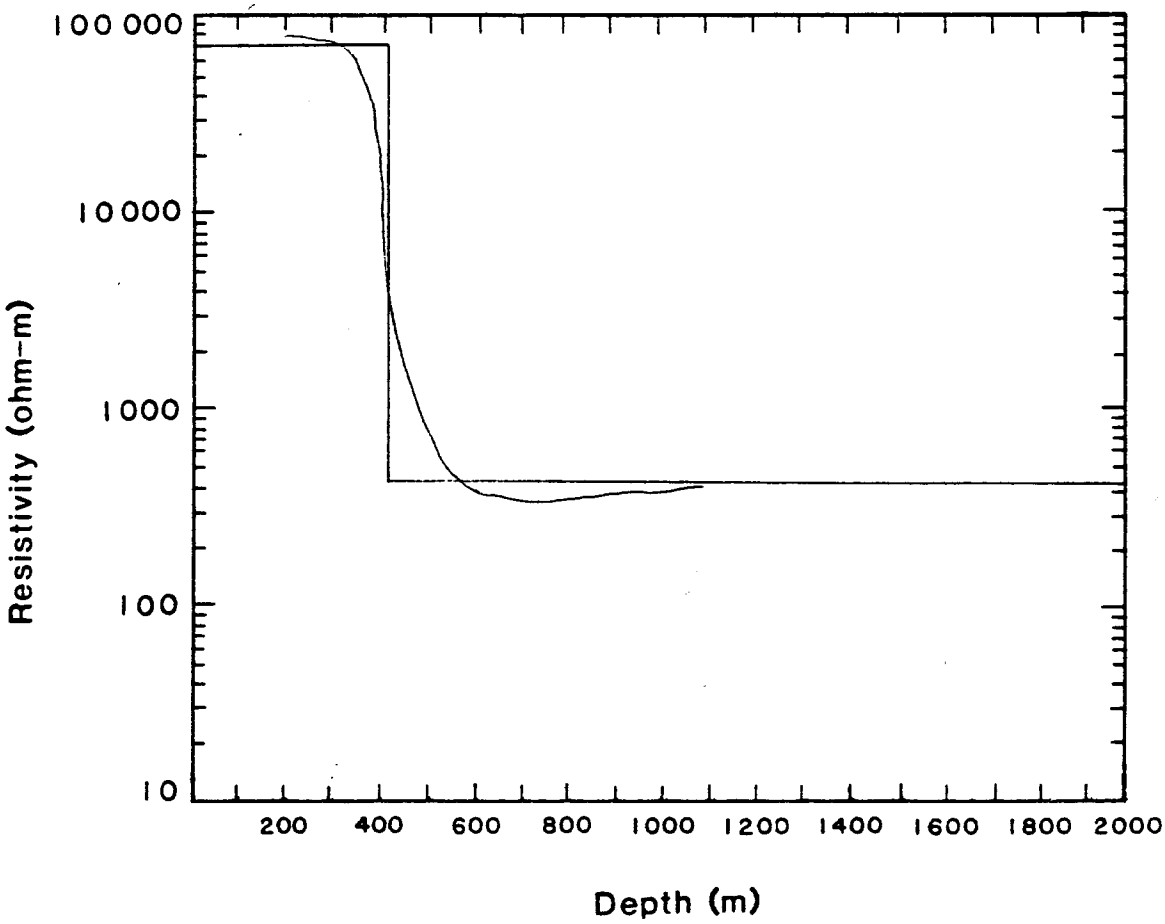
| PARAMETER NAME | | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.13369E-04 | 0.74802E+05 | |
| 2 | SIGMA( 2) | = | 0.23922E-02 | 0.41803E+03 | |
| 3 | THICK( 1) | = | 0.41596E+03 | | 0.41596E+03 |
| 4 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 39



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 57 TEM INVERSION

| | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | [illegible] | 0.1500E+04 | 0.1674E+04 | -0.1744E+02 | -0.1042E+02 | 0.444[illegible] |
| 2 | [illegible] | 0.1001E+04 | 0.1034E+04 | -0.3300E+02 | -0.3191E+01 | [illegible] |
| 3 | [illegible] | 0.5817E+03 | 0.5804E+03 | 0.1292E+01 | 0.2226E+00 | 0.296E-03 |
| 4 | [illegible] | 0.3449E+03 | 0.3324E+03 | 0.1249E+02 | 0.3759E+01 | 0.841E-03 |
| 5 | [illegible] | 0.2455E+03 | 0.1976E+03 | 0.7958E+01 | 0.4038E+01 | 0.237E-03 |
| 6 | [illegible] | 0.1140E+03 | 0.1093E+03 | 0.5530E+01 | 0.5061E+01 | 0.757E-03 |
| 7 | [illegible] | 0.6333E+02 | 0.6031E+02 | 0.3017E+01 | 0.5002E+01 | 0.249E-01 |
| 8 | [illegible] | 0.3598E+02 | 0.3441E+02 | 0.1570E+01 | 0.4564E+01 | 0.772E-01 |
| 9 | [illegible] | 0.1926E+02 | 0.1921E+02 | -0.2463E+00 | -0.1614E-01 | 0.281E+01 |
| 10 | [illegible] | 0.9410E+01 | 0.9792E+01 | -0.3823E+00 | -0.3904E+01 | 0.1[illegible]E+01 |
| 11 | [illegible] | 0.5740E+01 | 0.5851E+01 | 0.1132E-01 | 0.2041E+01 | [illegible] |
| 12 | [illegible] | 0.3110E+01 | 0.2[illegible]17E+01 | 0.8187E-01 | 0.2491E+01 | [illegible] |
| 13 | [illegible] | 0.1310E+01 | 0.1306E+01 | 0.3204E-02 | 0.2311E+00 | [illegible] |
| 14 | [illegible] | 0.7600E+01 | 0.7621E+00 | -0.2115E-02 | -0.2591E+01 | [illegible] |
| 15 | [illegible] | 0.4[illegible]E+00 | 0.4[illegible]E+00 | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | 0.2[illegible]E+00 | 0.2[illegible]E+00 | 0.1589E-01 | 0.7011E+01 | [illegible] |
| 17 | [illegible] | 0.1[illegible]E+00 | 0.1[illegible]E+00 | 0.4679E-02 | 0.6075E+01 | [illegible] |
| 18 | [illegible] | 0.[illegible]E+01 | 0.6667E-01 | 0.1333E-01 | 0.1799E+02 | [illegible] |
| 19 | [illegible] | 0.5000E-01 | 0.3656E-01 | 0.1344E-01 | 0.3677E+02 | [illegible] |

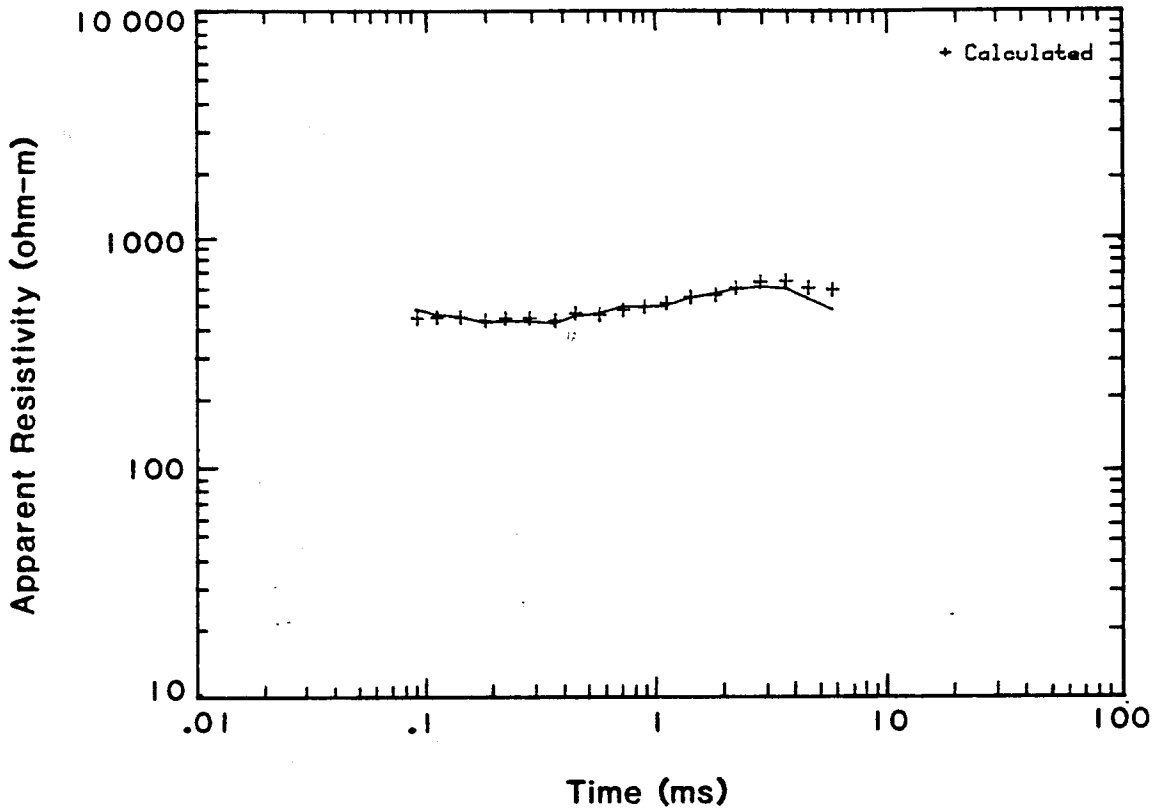
[illegible] 10.44

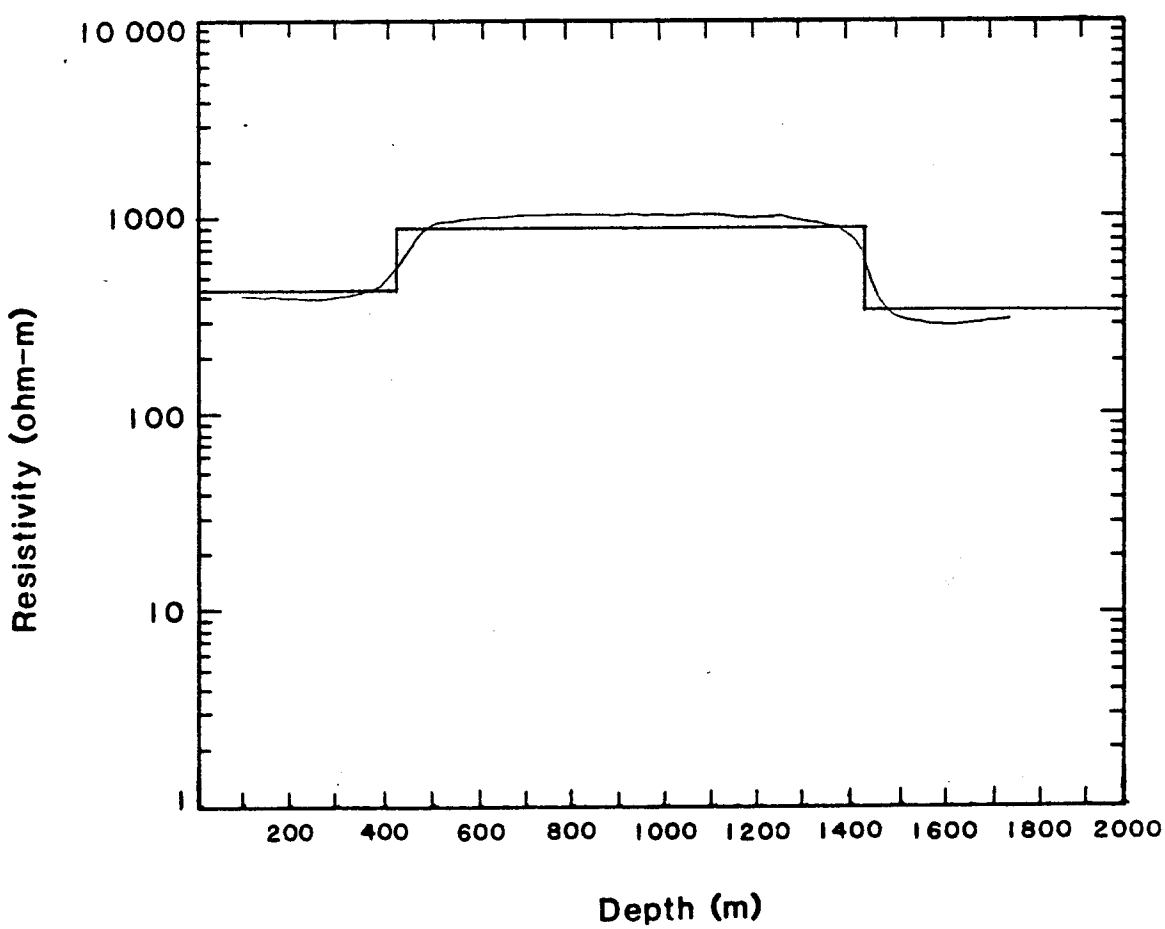
| | PARAMETER NAME | FINAL SOLUTION | RESISTIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | [illegible]OHA( 1) = | 0.22037E-02 | 0.45376E+02 | |
| 2 | [illegible]BHA( 2) = | 0.10553E-02 | 0.94758E+03 | |
| 3 | [illegible]OHA( 3) = | 0.27972E-02 | 0.35750E+03 | |
| 4 | [illegible]( 1) = | 0.41616E+03 | | 0.41611E+03 |
| 5 | [illegible]( 2) = | 0.10071E+04 | | 0.14233E+04 |
| 6 | [illegible] = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 57



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 58 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3151E+04 | 0.2973E+04 | 0.1776E+03 | 0.5974E+01 | 0.101E-04 |
| 2 | 0.1100E-03 | 0.1912E+04 | 0.1938E+04 | -0.2559E+02 | -0.1321E+01 | 0.274E-04 |
| 3 | 0.1400E-03 | 0.1139E+04 | 0.1173E+04 | -0.3431E+02 | -0.2924E+01 | 0.771E-04 |
| 4 | 0.1770E-03 | 0.6981E+03 | 0.7243E+03 | -0.2626E+02 | -0.3625E+01 | 0.205E-03 |
| 5 | 0.2200E-03 | 0.4565E+03 | 0.4574E+03 | -0.9020E+00 | -0.1972E+00 | 0.480E-03 |
| 6 | 0.2800E-03 | 0.2696E+03 | 0.2730E+03 | -0.3430E+01 | -0.1257E+01 | 0.138E-02 |
| 7 | 0.3550E-03 | 0.1590E+03 | 0.1629E+03 | -0.3891E+01 | -0.2388E+01 | 0.395E-02 |
| 8 | 0.4430E-03 | 0.1059E+03 | 0.9997E+02 | 0.5974E+01 | 0.5976E+01 | 0.891E-02 |
| 9 | 0.5540E-03 | 0.6220E+02 | 0.6045E+02 | 0.1754E+01 | 0.2902E+01 | 0.258E-01 |
| 10 | 0.7130E-03 | 0.3642E+02 | 0.3393E+02 | 0.2488E+01 | 0.7332E+01 | 0.754E-01 |
| 11 | 0.8810E-03 | 0.2162E+02 | 0.2071E+02 | 0.9069E+00 | 0.4379E+01 | 0.214E+00 |
| 12 | 0.1096E-02 | 0.1207E+02 | 0.1237E+02 | -0.2962E+00 | -0.2395E+01 | 0.686E+00 |
| 13 | 0.1411E-02 | 0.6750E+01 | 0.6781E+01 | -0.3124E-01 | -0.4607E+00 | 0.100E+01 |
| 14 | 0.1795E-02 | 0.3520E+01 | 0.3834E+01 | -0.3140E+00 | -0.8189E+01 | 0.400E+01 |
| 15 | 0.2224E-02 | 0.2280E+01 | 0.2328E+01 | -0.4815E-01 | -0.2068E+01 | 0.111E+02 |
| 16 | 0.2850E-02 | 0.1320E+01 | 0.1328E+01 | -0.8325E-02 | -0.6267E+00 | 0.111E+02 |
| 17 | 0.3600E-02 | 0.7700E+00 | 0.7950E+00 | -0.2497E-01 | -0.3141E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.5000E+00 | 0.4922E+00 | 0.7802E-02 | 0.1585E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.3000E+00 | 0.2963E+00 | 0.3713E-02 | 0.1253E+01 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.1700E+00 | 0.1819E+00 | -0.1192E-01 | -0.6551E+01 | 0.100E+03 |
| 21 | 0.8800E-02 | 0.1100E+00 | 0.1179E+00 | -0.7855E-02 | -0.6665E+01 | 0.100E+03 |

** %RMSERR= 4.15

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.4268E+00 | 0.1000E+01 | | | |
| 3 | -0.5800E-01 | -0.7275E-01 | 0.1000E+01 | | |
| 4 | 0.5252E+00 | 0.2835E+00 | -0.1972E+00 | 0.1000E+01 | |
| 5 | -0.9015E+00 | 0.2586E+00 | 0.7990E-01 | -0.6525E+00 | 0.1000E+01 |

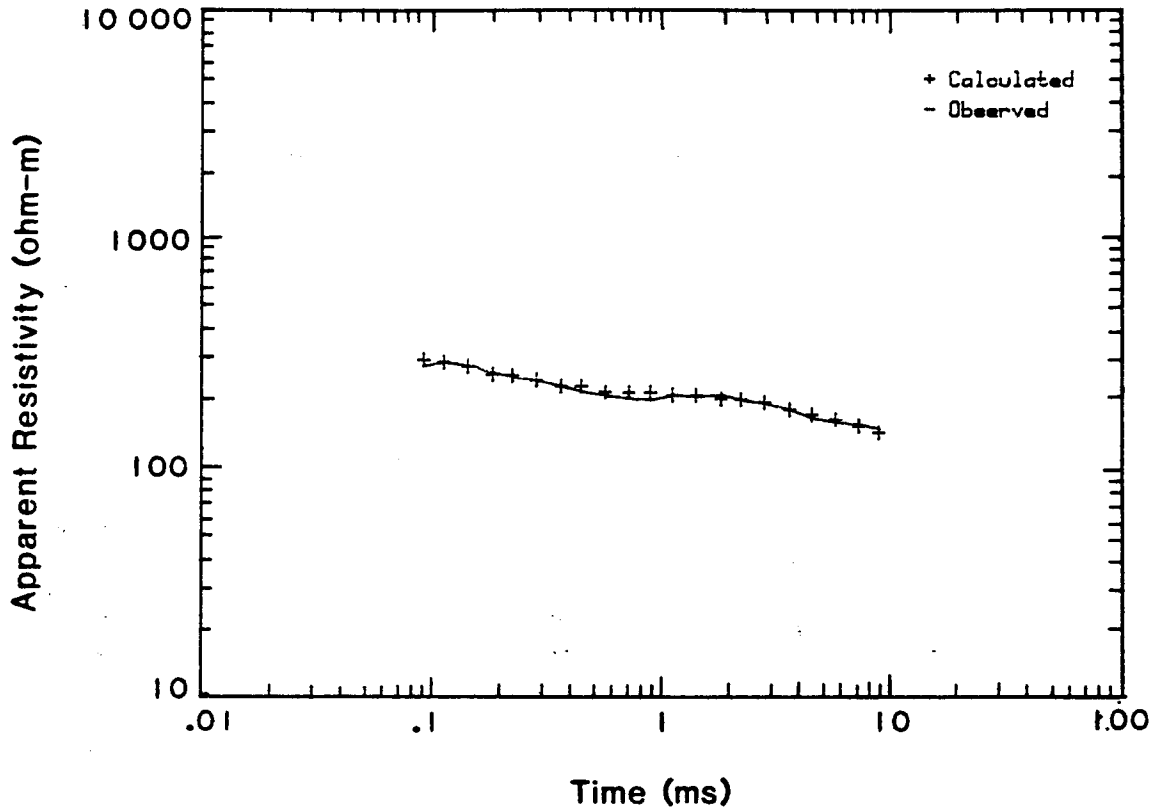
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3276E-02 | 0.6990E-03 | 0.2134E+00 | 0.2134E+02 |
| 2 | 0.6342E-02 | 0.7382E-03 | 0.1164E+00 | 0.1164E+02 |
| 3 | 0.1402E-01 | 0.6250E-02 | 0.4457E+00 | 0.4457E+02 |
| 4 | 0.1120E+03 | 0.4049E-02 | 0.3616E-04 | 0.3616E-02 |
| 5 | 0.5330E+03 | 0.8439E-02 | 0.1583E-04 | 0.1583E-02 |

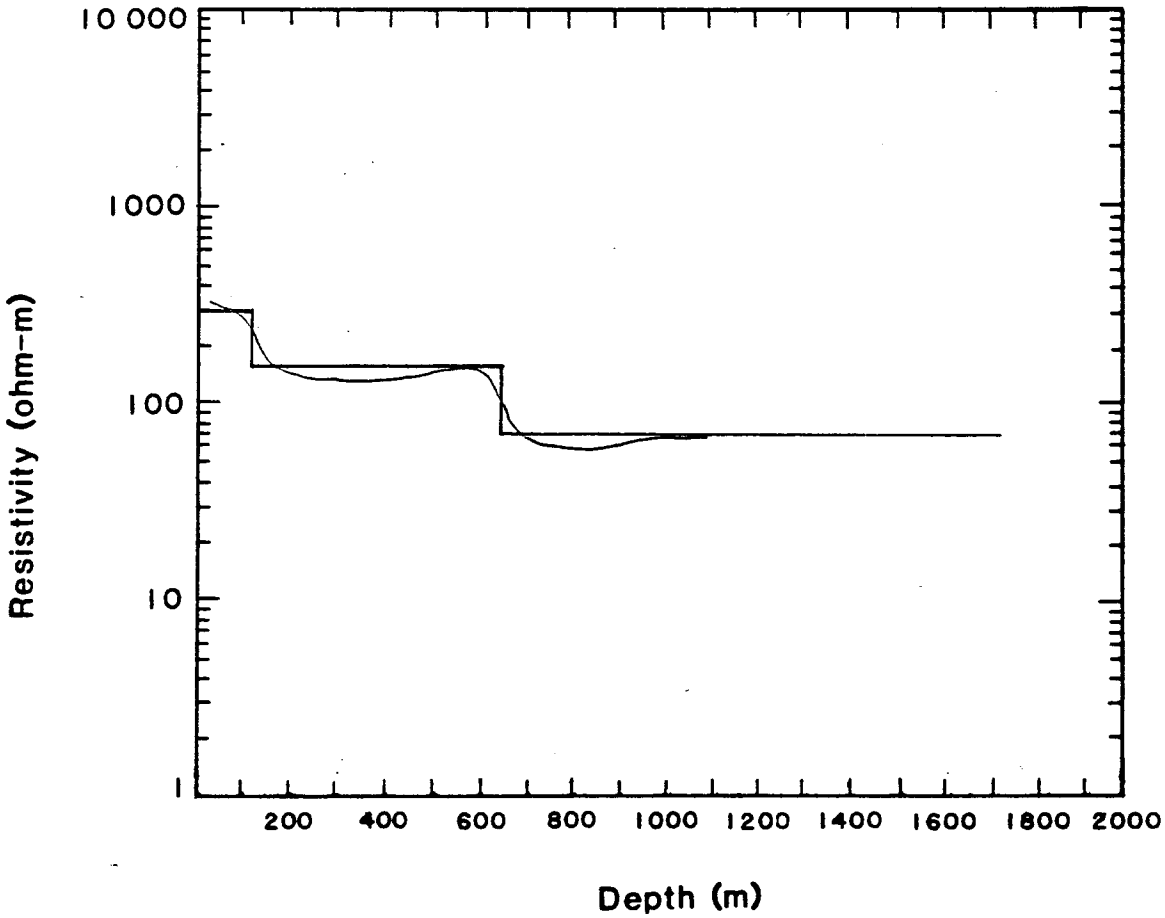
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY R | | LAYER DEPTH |
|---|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.32757E-02 | 0.30528E+03 | 305.3 | |
| 2 | SIGMA( 2) | = | 0.63425E-02 | 0.15767E+03 | 157.6 | |
| 3 | SIGMA( 3) | = | 0.14023E-01 | 0.71313E+02 | 71.3 | |
| 4 | THICK( 1) | = | 0.11198E+03 | | | 0.11198E+03 |
| 5 | THICK( 2) | = | 0.53299E+03 | | | 0.64497E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 58



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

**MOUNT SHASTA** STATION 59 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4141E+03 | 0.4032E+03 | 0.1084E+02 | 0.2688E+01 | 0.583E-03 |
| 2 | 0.1100E-03 | 0.2498E+03 | 0.2526E+03 | -0.2752E+01 | -0.1089E+01 | 0.160E-02 |
| 3 | 0.1400E-03 | 0.1552E+03 | 0.1543E+03 | 0.9165E+00 | 0.5939E+00 | 0.415E-02 |
| 4 | 0.1770E-03 | 0.9704E+02 | 0.9904E+02 | -0.2004E+01 | -0.2023E+01 | 0.106E-01 |
| 5 | 0.2200E-03 | 0.6586E+02 | 0.6610E+02 | -0.2435E+00 | -0.3683E+00 | 0.231E-01 |
| 6 | 0.2800E-03 | 0.4330E+02 | 0.4315E+02 | 0.1471E+00 | 0.3409E+00 | 0.533E-01 |
| 7 | 0.3550E-03 | 0.2853E+02 | 0.2857E+02 | -0.3669E-01 | -0.1284E+00 | 0.123E+00 |
| 8 | 0.4430E-03 | 0.1904E+02 | 0.1910E+02 | -0.5908E-01 | -0.3093E+00 | 0.276E+00 |
| 9 | 0.5640E-03 | 0.1247E+02 | 0.1288E+02 | -0.4141E+00 | -0.3214E+01 | 0.643E+00 |
| 10 | 0.7130E-03 | 0.7920E+01 | 0.8133E+01 | -0.2132E+00 | -0.2622E+01 | 0.100E+01 |
| 11 | 0.8610E-03 | 0.5550E+01 | 0.5488E+01 | 0.6169E-01 | 0.1124E+01 | 0.100E+0. |
| 12 | 0.1076E-02 | 0.3750E+01 | 0.3644E+01 | 0.1061E+00 | 0.2911E+01 | 0.400E+01 |
| 13 | 0.1431E-02 | 0.2400E+01 | 0.2237E+01 | 0.1629E+00 | 0.7280E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.1470E+01 | 0.1390E+01 | 0.7981E-01 | 0.5741E+01 | 0.111E+02 |
| 15 | 0.2224E-02 | 0.9000E+00 | 0.9032E+00 | -0.3246E-02 | -0.3593E+00 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.5100E+00 | 0.5424E+00 | -0.3239E-01 | -0.5971E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.3100E+00 | 0.3326E+00 | -0.2255E-01 | -0.6781E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.2000E+00 | 0.2083E+00 | -0.8280E-02 | -0.3975E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.1200E+00 | 0.1237E+00 | -0.3867E-02 | -0.3122E+01 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.7000E-01 | 0.7453E-01 | -0.4534E-02 | -0.6083E+01 | 0.100E+03 |

* %RMSERR= 3.68

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.8314E-01 | 0.1000E+01 | | | |
| 3 | -0.2250E-01 | -0.6891E+00 | 0.1000E+01 | | |
| 4 | 0.3372E+00 | 0.5764E+00 | -0.5924E+00 | 0.1000E+01 | |
| 5 | 0.1714E+00 | -0.2786E+00 | 0.2213E+00 | -0.6309E-01 | 0.1000E+01 |

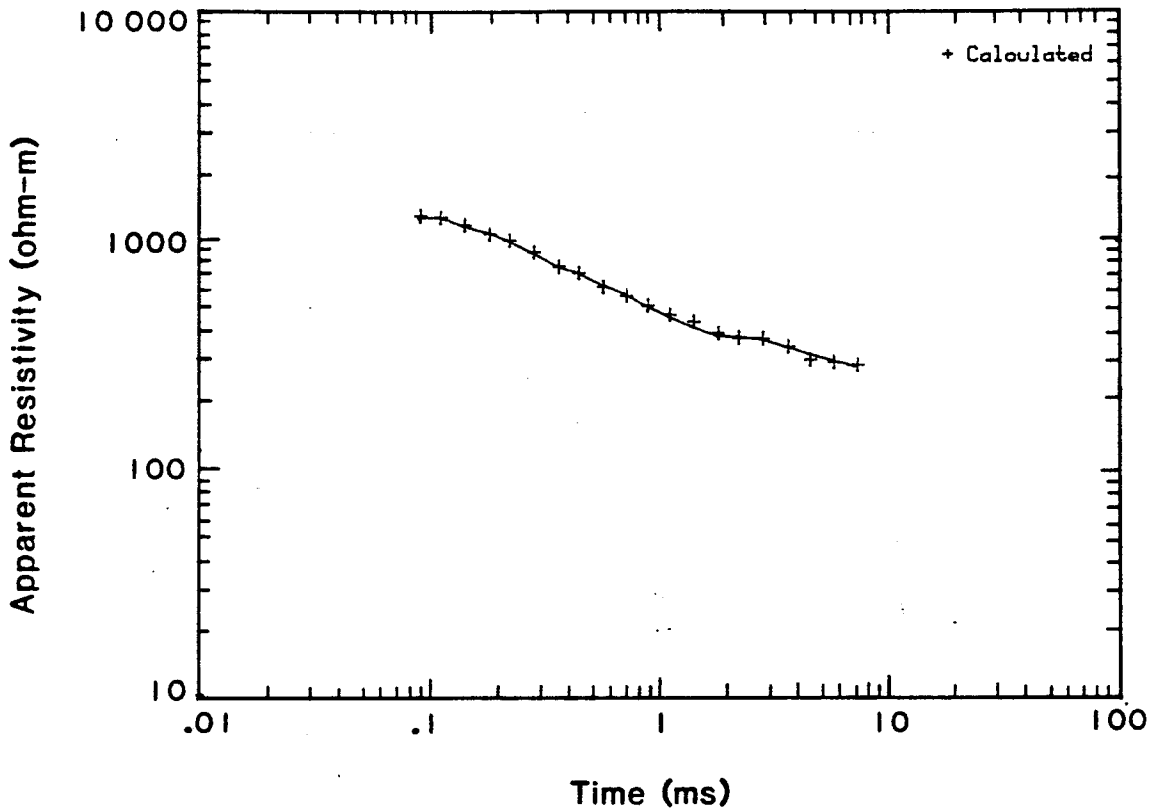
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.8649E-03 | 0.1058E-03 | 0.1223E+00 | 0.1223E+02 |
| 2 0.4934E-02 | 0.7819E-03 | 0.1585E+00 | 0.1585E+02 |
| 3 0.5639E-02 | 0.1322E-02 | 0.2344E+00 | 0.2344E+02 |
| 4 0.3198E+03 | 0.1160E-02 | 0.3627E-05 | 0.3627E-03 |
| 5 0.1677E+03 | 0.4208E-01 | 0.2509E-03 | 0.2509E-01 |

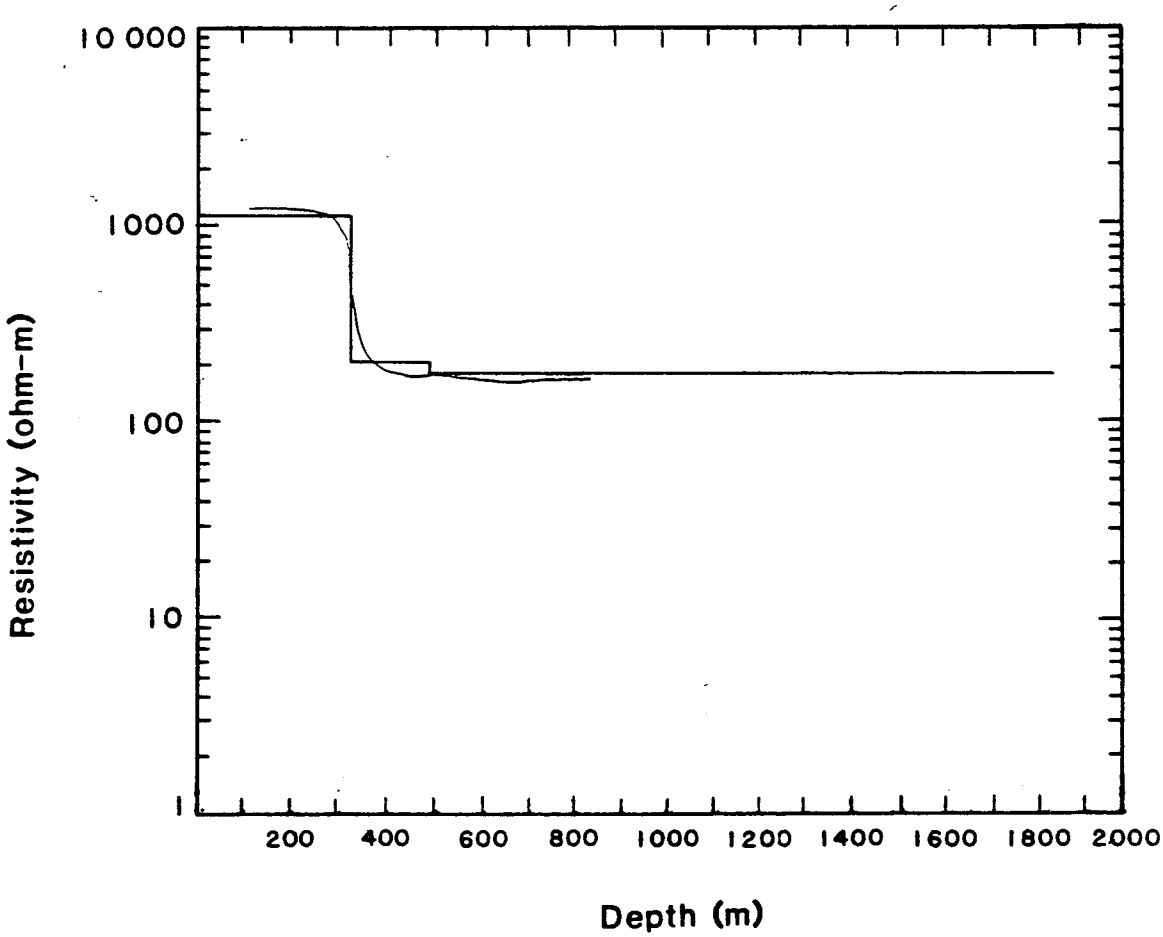
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.86493E-03 | 0.11562E+04 | |
| 2 | SIGMA( 2) | = | 0.49342E-02 | 0.20267E+03 | |
| 3 | SIGMA( 3) | = | 0.56392E-02 | 0.17733E+03 | |
| 4 | THICK( 1) | = | 0.31977E+03 | | 0.31977E+03 |
| 5 | THICK( 2) | = | 0.16767E+03 | | 0.48744E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 59



ELECTROMAGNETIC SURVEYS INC.

EMSURVEYS

MOUNT SHASTA STATION 61 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1479E+04 | 0.1532E+04 | -0.5347E+02 | -0.3489E+01 | 0.457E-04 |
| 2 | 0.1100E-03 | 0.1066E+04 | 0.1051E+04 | 0.1473E+02 | 0.1401E+01 | 0.880E-04 |
| 3 | 0.1400E-03 | 0.6914E+03 | 0.7021E+03 | -0.1064E+02 | -0.1516E+01 | 0.209E-03 |
| 4 | 0.1770E-03 | 0.4910E+03 | 0.4808E+03 | 0.1028E+02 | 0.2139E+01 | 0.415E-03 |
| 5 | 0.2200E-03 | 0.3465E+03 | 0.3448E+03 | 0.1685E+01 | 0.4885E+00 | 0.833E-03 |
| 6 | 0.2800E-03 | 0.2372E+03 | 0.2383E+03 | -0.1100E+01 | -0.4615E+00 | 0.178E-02 |
| 7 | 0.3550E-03 | 0.1600E+03 | 0.1619E+03 | -0.1889E+01 | -0.1167E+01 | 0.391E-02 |
| 8 | 0.4430E-03 | 0.1120E+03 | 0.1119E+03 | 0.1550E-01 | 0.1384E-01 | 0.798E-02 |
| 9 | 0.5540E-03 | 0.7433E+02 | 0.7602E+02 | -0.1692E+01 | -0.2225E+01 | 0.181E-01 |
| 10 | 0.7130E-03 | 0.4916E+02 | 0.4798E+02 | 0.1183E+01 | 0.2467E+01 | 0.414E-01 |
| 11 | 0.9810E-03 | 0.3399E+02 | 0.3260E+02 | 0.1394E+01 | 0.4276E+01 | 0.866E-01 |
| 12 | 0.1096E-02 | 0.2265E+02 | 0.2177E+02 | 0.8790E+00 | 0.4038E+01 | 0.195E+00 |
| 13 | 0.1411E-02 | 0.1423E+02 | 0.1365E+02 | 0.5847E+00 | 0.4285E+01 | 0.494E+00 |
| 14 | 0.1795E-02 | 0.8440E+01 | 0.8823E+01 | -0.3831E+00 | -0.4342E+01 | 0.100E+01 |
| 15 | 0.2224E-02 | 0.5640E+01 | 0.6025E+01 | -0.3850E+00 | -0.6391E+01 | 0.100E+01 |
| 16 | 0.2850E-02 | 0.3670E+01 | 0.3857E+01 | -0.1868E+00 | -0.4843E+01 | 0.400E+01 |
| 17 | 0.3600E-02 | 0.2420E+01 | 0.2543E+01 | -0.1227E+00 | -0.4824E+01 | 0.111E+02 |
| 18 | 0.4490E-02 | 0.1630E+01 | 0.1706E+01 | -0.7620E-01 | -0.4466E+01 | 0.111E+02 |
| 19 | 0.5700E-02 | 0.1060E+01 | 0.1100E+01 | -0.4042E-01 | -0.3673E+01 | 0.111E+02 |
| 20 | 0.7190E-02 | 0.7300E+00 | 0.7122E+00 | 0.1778E-01 | 0.2496E+01 | 0.100E+03 |
| 21 | 0.9000E-02 | 0.5000E+00 | 0.4847E+00 | 0.1533E-01 | 0.3163E+01 | 0.100E+03 |
| 22 | 0.1100E-01 | 0.3400E+00 | 0.3138E+00 | 0.2618E-01 | 0.8342E+01 | 0.100E+03 |
| 23 | 0.1400E-01 | 0.2300E+00 | 0.1941E+00 | 0.3592E-01 | 0.1851E+02 | 0.100E+03 |
| 24 | 0.1800E-01 | 0.1500E+00 | 0.1165E+00 | 0.3347E-01 | 0.2872E+02 | 0.100E+03 |

** %RMSERR= 7.85

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.5378E+00 | 0.1000E+01 | | | |
| 3 | 0.3338E+00 | 0.5032E-01 | 0.1000E+01 | | |
| 4 | 0.8099E+00 | 0.7897E+00 | -0.2709E+00 | 0.1000E+01 | |
| 5 | -0.3367E+00 | 0.2023E+00 | 0.8661E+00 | -0.1590E+00 | 0.1000E+01 |

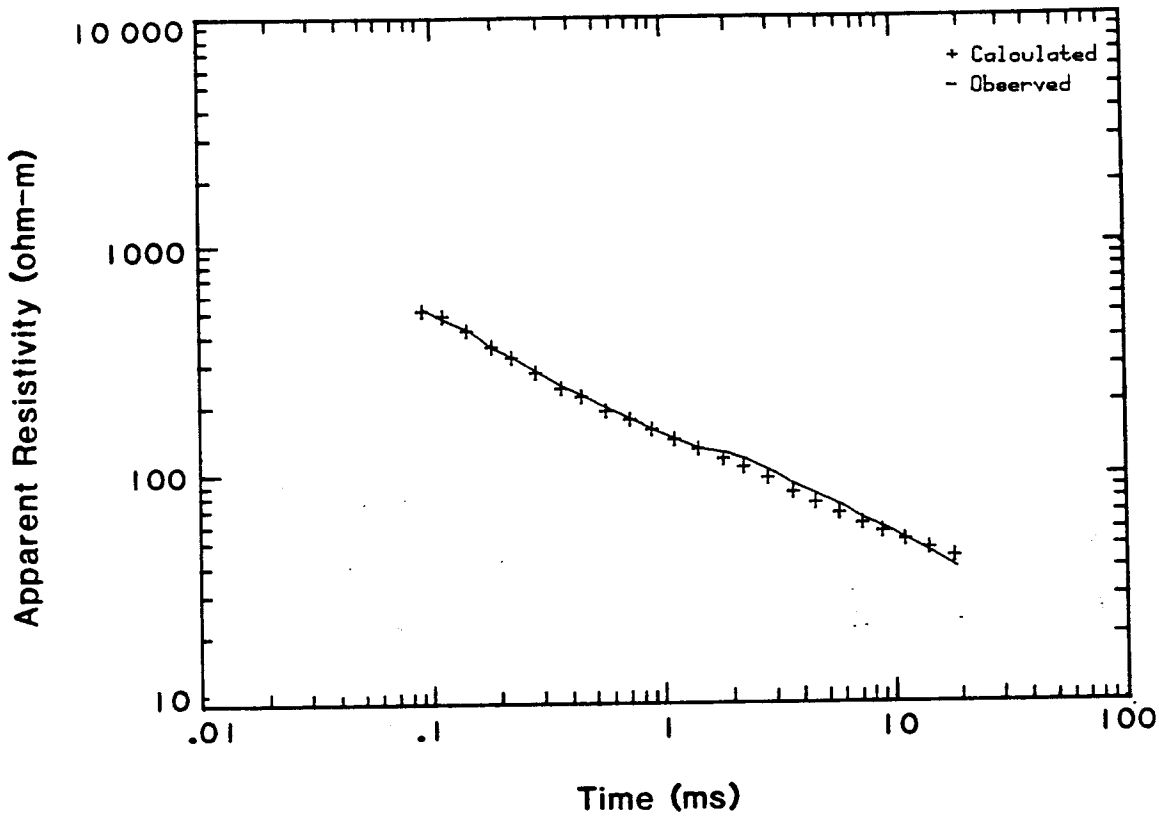
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2344E-02 | 0.2136E-02 | 0.9115E+00 | 0.9115E+02 |
| 2 | 0.2011E-01 | 0.7195E-02 | 0.3577E+00 | 0.3577E+02 |
| 3 | 0.4509E-01 | 0.3721E-01 | 0.8253E+00 | 0.8253E+02 |
| 4 | 0.1684E+03 | 0.1990E-02 | 0.1181E-04 | 0.1181E-02 |
| 5 | 0.2057E+03 | 0.7927E-02 | 0.3854E-04 | 0.3854E-02 |

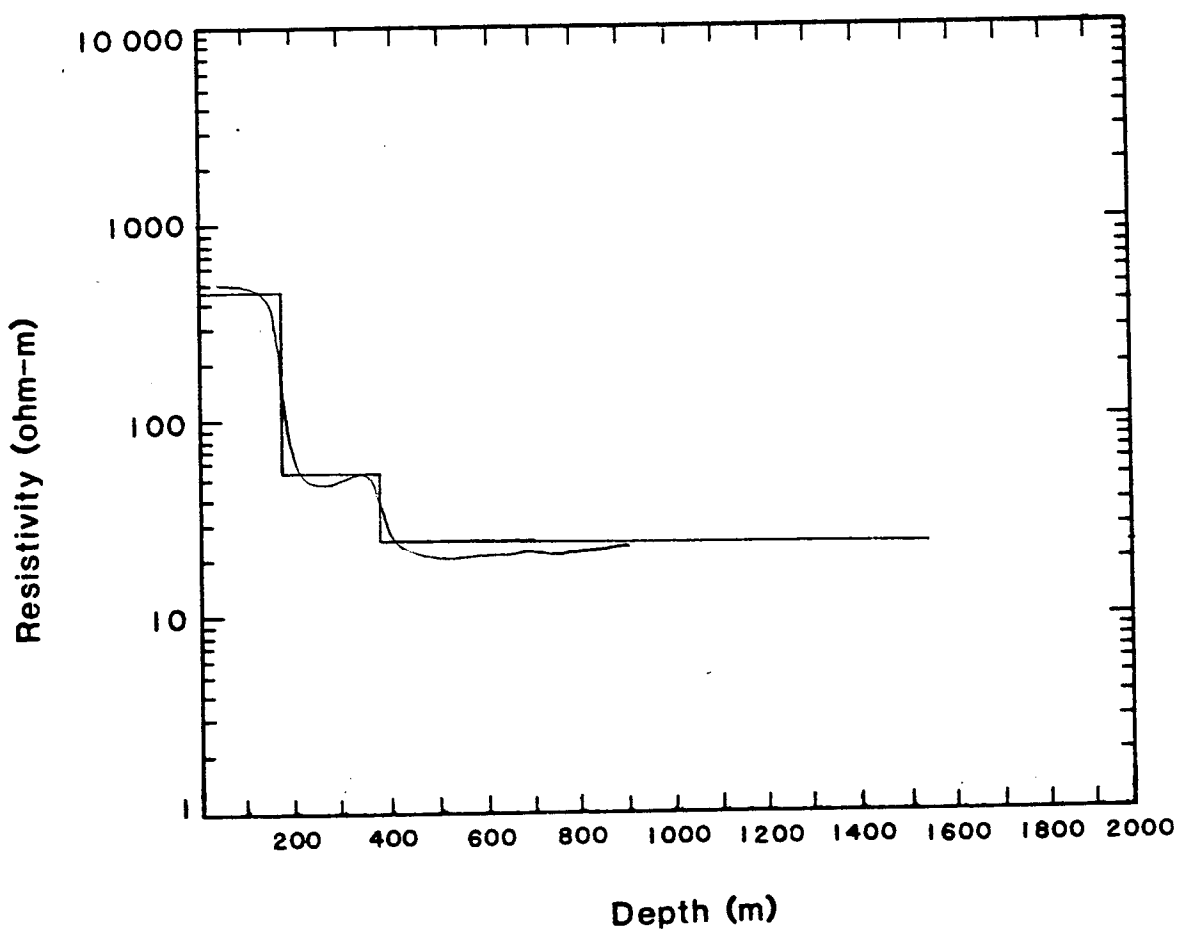
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 SIGMA( 1) | = | 0.23438E-02 | 0.42666E+03 | |
| 2 SIGMA( 2) | = | 0.20115E-01 | 0.49715E+02 | |
| 3 SIGMA( 3) | = | 0.45091E-01 | 0.22178E+02 | |
| 4 THICK( 1) | = | 0.16842E+03 | | 0.16842E+03 |
| 5 THICK( 2) | = | 0.20570E+03 | | 0.37411E+03 |
| 6 SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 61



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 62 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2873E+04 | 0.2808E+04 | 0.6477E+02 | 0.2306E+01 | 0.121E-04 |
| 2 | 0.1100E-03 | 0.2162E+04 | 0.2243E+04 | -0.8127E+02 | -0.3623E+01 | 0.214E-04 |
| 3 | 0.1400E-03 | 0.1659E+04 | 0.1706E+04 | -0.4717E+02 | -0.2764E+01 | 0.363E-04 |
| 4 | 0.1770E-03 | 0.1259E+04 | 0.1284E+04 | -0.2507E+02 | -0.1952E+01 | 0.631E-04 |
| 5 | 0.2200E-03 | 0.9695E+03 | 0.9674E+03 | 0.2016E+01 | 0.2084E+00 | 0.106E-03 |
| 6 | 0.2800E-03 | 0.7152E+03 | 0.6937E+03 | 0.2151E+02 | 0.3101E+01 | 0.195E-03 |
| 7 | 0.3550E-03 | 0.5180E+03 | 0.4890E+03 | 0.2899E+02 | 0.5929E+01 | 0.373E-03 |
| 8 | 0.4430E-03 | 0.3742E+03 | 0.3461E+03 | 0.2810E+02 | 0.8121E+01 | 0.714E-03 |
| 9 | 0.5540E-03 | 0.2442E+03 | 0.2402E+03 | 0.3964E+01 | 0.1650E+01 | 0.168E-02 |
| 10 | 0.7130E-03 | 0.1603E+03 | 0.1556E+03 | 0.4724E+01 | 0.3036E+01 | 0.389E-02 |
| 11 | 0.2810E-03 | 0.9816E+02 | 0.1064E+03 | -0.8198E+01 | -0.7708E+01 | 0.104E-01 |
| 12 | 0.1096E-02 | 0.6786E+02 | 0.7093E+02 | -0.3070E+01 | -0.4328E+01 | 0.217E-01 |
| 13 | 0.1411E-02 | 0.4155E+02 | 0.4374E+02 | -0.2185E+01 | -0.4996E+01 | 0.579E-01 |
| 14 | 0.1793E-02 | 0.2758E+02 | 0.2730E+02 | 0.2773E+00 | 0.1015E+01 | 0.131E+00 |
| 15 | 0.2234E-02 | 0.1761E+02 | 0.1790E+02 | -0.2853E+00 | -0.1594E+01 | 0.322E+00 |
| 16 | 0.2850E-02 | 0.1106E+02 | 0.1083E+02 | 0.2329E+00 | 0.2151E+01 | 0.818E+00 |
| 17 | 0.3600E-02 | 0.6920E+01 | 0.6682E+01 | 0.2384E+00 | 0.3567E+01 | 0.100E+01 |
| 18 | 0.4490E-02 | 0.4300E+01 | 0.4168E+01 | 0.1325E+00 | 0.3179E+01 | 0.400E+01 |
| 19 | 0.5700E-02 | 0.2420E+01 | 0.2424E+01 | -0.4461E-02 | -0.1840E+00 | 0.111E+02 |
| 20 | 0.7190E-02 | 0.1350E+01 | 0.1392E+01 | -0.4220E-01 | -0.3031E+01 | 0.111E+02 |
| 21 | 0.8800E-02 | 0.8500E+00 | 0.8379E+00 | 0.1210E-01 | 0.1444E+01 | 0.100E+03 |
| 22 | 0.1100E-01 | 0.4800E+00 | 0.4670E+00 | 0.1299E-01 | 0.2782E+01 | 0.100E+03 |
| 23 | 0.1400E-01 | 0.2200E+00 | 0.2402E+00 | -0.2015E-01 | -0.8391E+01 | 0.100E+03 |
| 24 | 0.1800E-01 | 0.1100E+00 | 0.1161E+00 | -0.6081E-02 | -0.5238E+01 | 0.100E+03 |
| 25 | 0.2200E-01 | 0.6000E-01 | 0.6466E-01 | -0.4664E-02 | -0.7213E+01 | 0.100E+03 |
| 26 | 0.2800E-01 | 0.3000E-01 | 0.3131E-01 | -0.1309E-02 | -0.4181E+01 | 0.100E+03 |

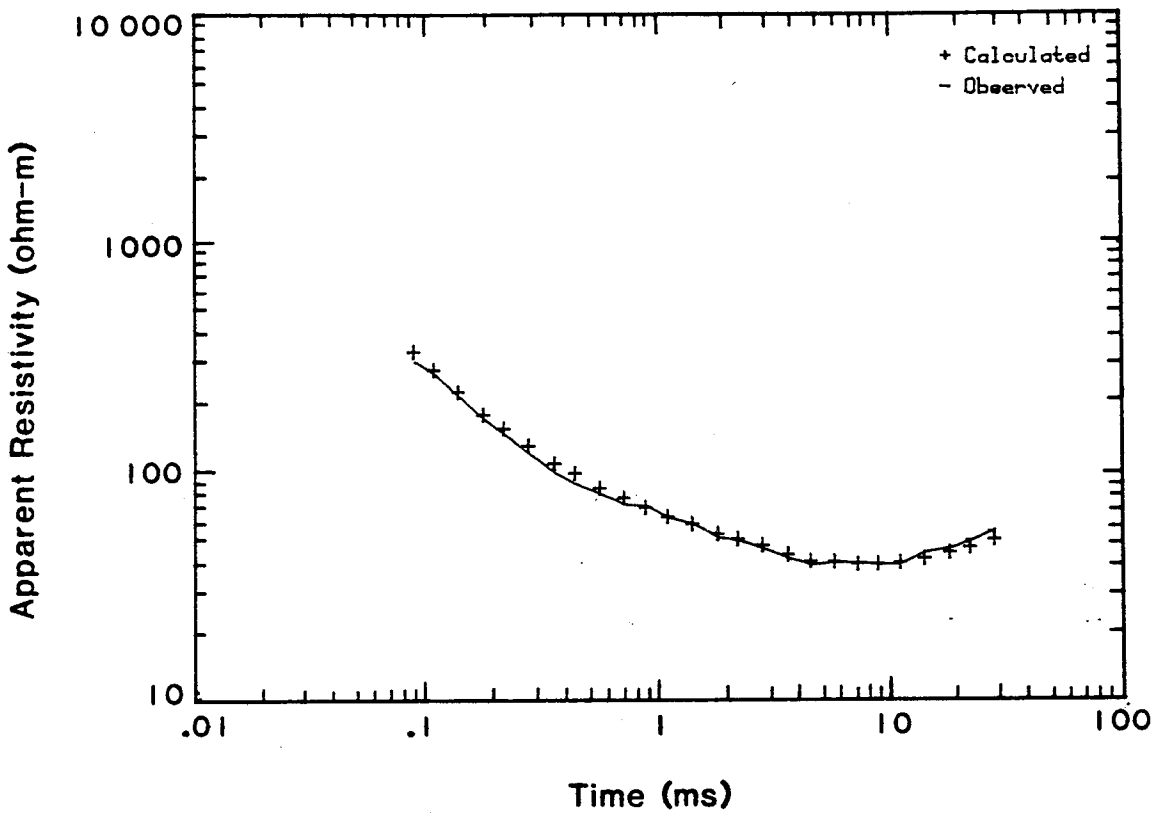
** %RMSERR= 4.27

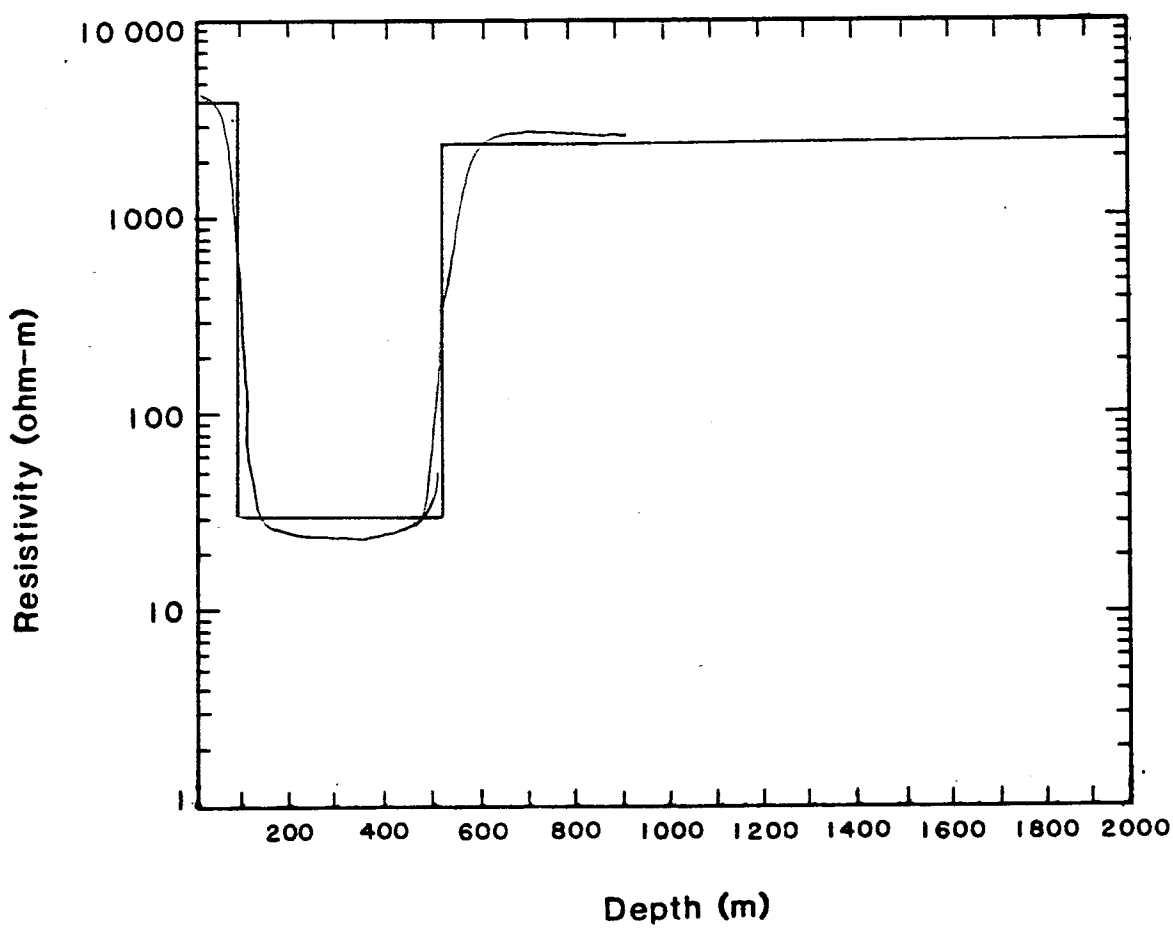
| PARAMETER NAME | | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.25823E-03 | 0.38725E+04 | |
| 2 | SIGMA( 2) | = | 0.35568E-01 | 0.28115E+02 | |
| 3 | SIGMA( 3) | = | 0.42744E-03 | 0.23395E+04 | |
| 4 | THICK( 1) | = | 0.84235E+02 | | 0.84235E+02 |
| 5 | THICK( 2) | = | 0.43704E+03 | | 0.52127E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 62



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 74 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2706E+03 | 0.3182E+03 | -0.4761E+02 | -0.1496E+02 | 0.137E-02 |
| 2 | 0.1100E-03 | 0.2573E+03 | 0.2548E+03 | 0.2490E+01 | 0.9771E+00 | 0.151E-02 |
| 3 | 0.1400E-03 | 0.1962E+03 | 0.1910E+03 | 0.5265E+01 | 0.2757E+01 | 0.260E-02 |
| 4 | 0.1770E-03 | 0.1462E+03 | 0.1397E+03 | 0.6493E+01 | 0.4648E+01 | 0.468E-02 |
| 5 | 0.2200E-03 | 0.1054E+03 | 0.1003E+03 | 0.5109E+01 | 0.5096E+01 | 0.901E-02 |
| 6 | 0.2800E-03 | 0.7108E+02 | 0.6666E+02 | 0.4420E+01 | 0.6630E+01 | 0.198E-01 |
| 7 | 0.3550E-03 | 0.4587E+02 | 0.4278E+02 | 0.3093E+01 | 0.7230E+01 | 0.475E-01 |
| 8 | 0.4430E-03 | 0.2910E+02 | 0.2698E+02 | 0.2118E+01 | 0.7849E+01 | 0.118E+00 |
| 9 | 0.5540E-03 | 0.1737E+02 | 0.1638E+02 | 0.9864E+00 | 0.6021E+01 | 0.331E+00 |
| 10 | 0.7130E-03 | 0.9180E+01 | 0.8985E+01 | 0.1952E+00 | 0.2173E+01 | 0.100E+01 |
| 11 | 0.8810E-03 | 0.4850E+01 | 0.5219E+01 | -0.3688E+00 | -0.7067E+01 | 0.400E+01 |
| 12 | 0.1096E-02 | 0.2640E+01 | 0.2890E+01 | -0.2497E+00 | -0.8641E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1310E+01 | 0.1449E+01 | -0.1388E+00 | -0.9577E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.6500E+00 | 0.7091E+00 | -0.5912E-01 | -0.8338E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.3800E+00 | 0.3761E+00 | 0.3907E-02 | 0.1039E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.2000E+00 | 0.1814E+00 | 0.1861E-01 | 0.1026E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1100E+00 | 0.8710E-01 | 0.2290E-01 | 0.2629E+02 | 0.100E+03 |

** %RMSERR= 9.59

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.1535E+00 | 0.1000E+01 | | | |
| 3 | -0.7369E+00 | 0.5856E+00 | 0.1000E+01 | | |
| 4 | 0.4720E-01 | 0.6170E+00 | 0.3460E+00 | 0.1000E+01 | |
| 5 | 0.1534E+00 | -0.9505E+00 | -0.6492E+00 | -0.5616E+00 | 0.1000E+01 |

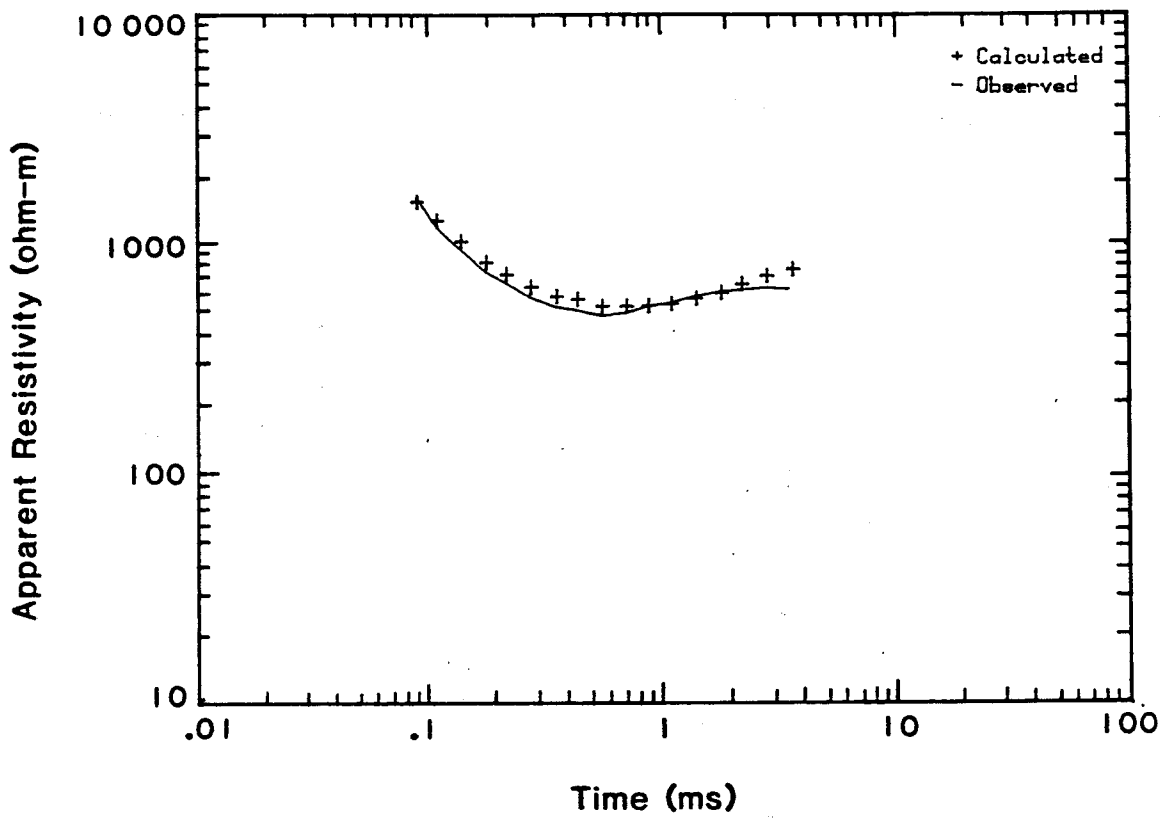
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.2785E-03 | 0.1233E-02 | 0.4427E+01 | 0.4427E+03 |
| 2 0.7507E-02 | 0.1108E-01 | 0.1476E+01 | 0.1476E+03 |
| 3 0.4635E-03 | 0.6453E-02 | 0.1392E+02 | 0.1392E+04 |
| 4 0.2473E+03 | 0.2646E-02 | 0.1070E-04 | 0.1070E-02 |
| 5 0.1249E+03 | 0.1056E-01 | 0.8456E-04 | 0.8456E-02 |

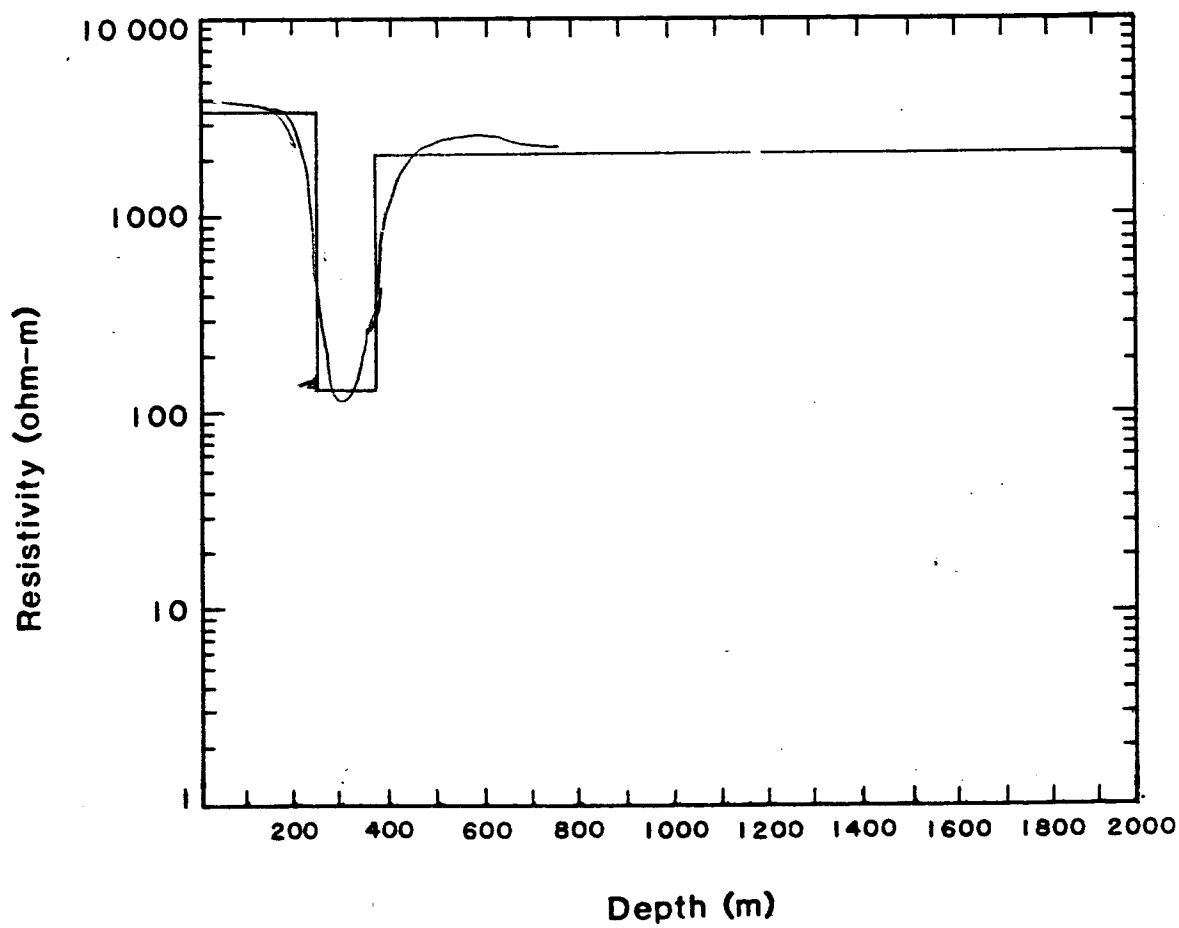
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.27850E-03 | 0.35907E+04 | |
| 2 SIGMA( 2) = | 0.75068E-02 | 0.13321E+03 | |
| 3 SIGMA( 3) = | 0.46349E-03 | 0.21575E+04 | |
| 4 THICK( 1) = | 0.24733E+03 | | 0.24733E+03 |
| 5 THICK( 2) = | 0.12489E+03 | | 0.37221E+03 |
| 6 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 74



EMSURVEYS ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 77 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1027E+04 | 0.1091E+04 | -0.6411E+02 | -0.5876E+01 | 0.948E-04 |
| 2 | 0.1100E-03 | 0.8111E+03 | 0.7856E+03 | 0.2551E+02 | 0.3247E+01 | 0.152E-03 |
| 3 | 0.1400E-03 | 0.6035E+03 | 0.5646E+03 | 0.3890E+02 | 0.6889E+01 | 0.275E-03 |
| 4 | 0.1770E-03 | 0.4664E+03 | 0.4236E+03 | 0.4276E+02 | 0.1009E+02 | 0.460E-03 |
| 5 | 0.2200E-03 | 0.3640E+03 | 0.3349E+03 | 0.2907E+02 | 0.8681E+01 | 0.755E-03 |
| 6 | 0.2800E-03 | 0.2786E+03 | 0.2593E+03 | 0.1929E+02 | 0.7438E+01 | 0.129E-02 |
| 7 | 0.3550E-03 | 0.2119E+03 | 0.1980E+03 | 0.1393E+02 | 0.7036E+01 | 0.223E-02 |
| 8 | 0.4430E-03 | 0.1620E+03 | 0.1543E+03 | 0.7662E+01 | 0.4964E-01 | 0.301E-02 |
| 9 | 0.5540E-03 | 0.1204E+03 | 0.1187E+03 | 0.1661E+01 | 0.1399E+01 | 0.690E-02 |
| 10 | 0.7130E-03 | 0.8741E+02 | 0.8674E+02 | 0.6712E+00 | 0.7739E+00 | 0.171E-0[illegible] |
| 11 | 0.8810E-03 | 0.5998E+02 | 0.6607E+02 | -0.6089E+01 | -0.9217E+01 | 0.278E-01 |
| 12 | 0.1096E-02 | 0.4404E+02 | 0.4909E+02 | -0.5054E+01 | -0.1030E+02 | 0.516E-01 |
| 13 | 0.1411E-02 | 0.3112E+02 | 0.3429E+02 | -0.3171E+01 | -0.9247E+01 | 0.103E+00 |
| 14 | 0.1795E-02 | 0.2144E+02 | 0.2391E+02 | -0.2473E+01 | -0.1034E+02 | 0.218E+00 |
| 15 | 0.2224E-02 | 0.1543E+02 | 0.1709E+02 | -0.1660E+01 | -0.9711E+01 | 0.423E+00 |
| 16 | -0.2850E-02 | 0.1081E+02 | 0.1140E+02 | -0.5931E+00 | -0.5201E+01 | 0.856E+00 |
| 17 | 0.3600E-02 | 0.7220E+01 | 0.7657E+01 | -0.4369E+00 | -0.5707E+01 | 0.[illegible]E+01 |
| 18 | -0.4490E-02 | 0.5010E+01 | 0.5179E+01 | -0.1686E+00 | -0.3256E+01 | 0.[illegible]E+01 |
| 19 | 0.5700E-02 | 0.3590E+01 | 0.3347E+01 | 0.2427E+00 | 0.7251E+01 | 0.[illegible]E+01 |
| 20 | -0.7190E-02 | 0.2510E+01 | 0.2157E+01 | 0.3534E+00 | 0.1638E+02 | 0.111E+02 |
| 21 | 0.9000E-02 | 0.1700E+01 | 0.1455E+01 | 0.2451E+00 | 0.1684E+02 | 0.111E+02 |
| 22 | -0.1100E-01 | 0.1170E+01 | 0.9344E+00 | 0.2356E+00 | 0.2521E+02 | 0.111E+02 |
| 23 | 0.1400E-01 | 0.7400E+00 | 0.5706E+00 | 0.1694E+00 | 0.2969E+02 | 0.100E+03 |
| 24 | -0.1800E-01 | 0.4500E+00 | 0.3361E+00 | 0.1139E+00 | 0.3311E+02 | 0.100E+03 |
| 25 | 0.2300E-01 | 0.3100E+00 | 0.2208E+00 | 0.8915E-01 | 0.4037E+02 | 0.100E+03 |
| 26 | -0.2800E-01 | 0.1700E+00 | 0.1306E+00 | 0.3923E-01 | 0.3006E+02 | 0.100E+03 |
| 27 | 0.3600E-01 | 0.9000E-01 | 0.7547E-01 | 0.1453E-01 | 0.1725E+02 | 0.100E+03 |
| 28 | -0.4500E-01 | 0.5000E-01 | 0.4584E-01 | 0.4162E-02 | 0.9080E+01 | 0.100E+03 |

[illegible] 15.9[illegible]

[illegible]ELATION MATRIX

1 [illegible]
2 [illegible] 0.1000E+01
3 [illegible] 0.5637E+00 0.1000E+01

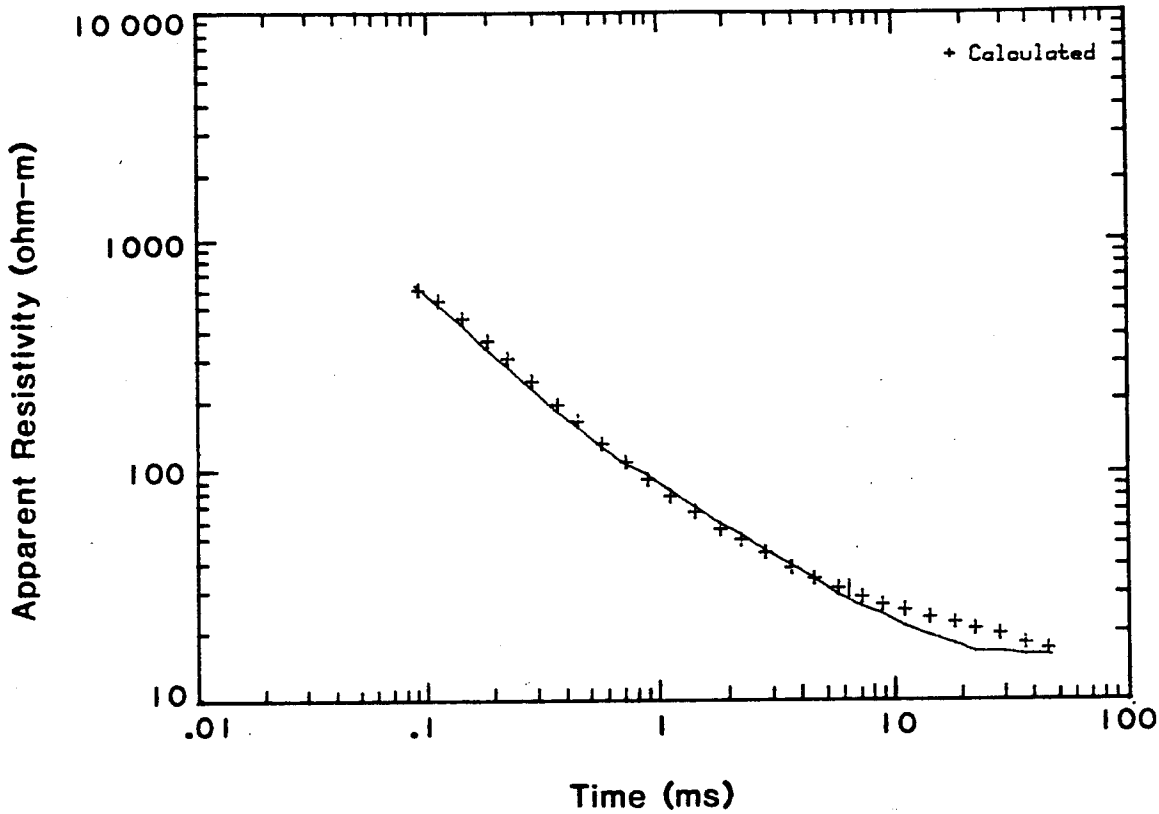
| [illegible] | [illegible]_CAL. | STD_ERROR | REL_ERROR | % ERROR [illegible] |
|---|---|---|---|---|
| [illegible] | [illegible] | 0.4616E-03 | 0.2014E+00 | 0.2[illegible]E+02 |
| [illegible] | [illegible] | 0.2464E-02 | 0.3010E-01 | 0.3[illegible]E+01 |
| [illegible] | [illegible] | 0.1905E-02 | 0.1132E-01 | 0.1[illegible]E-1[illegible] |

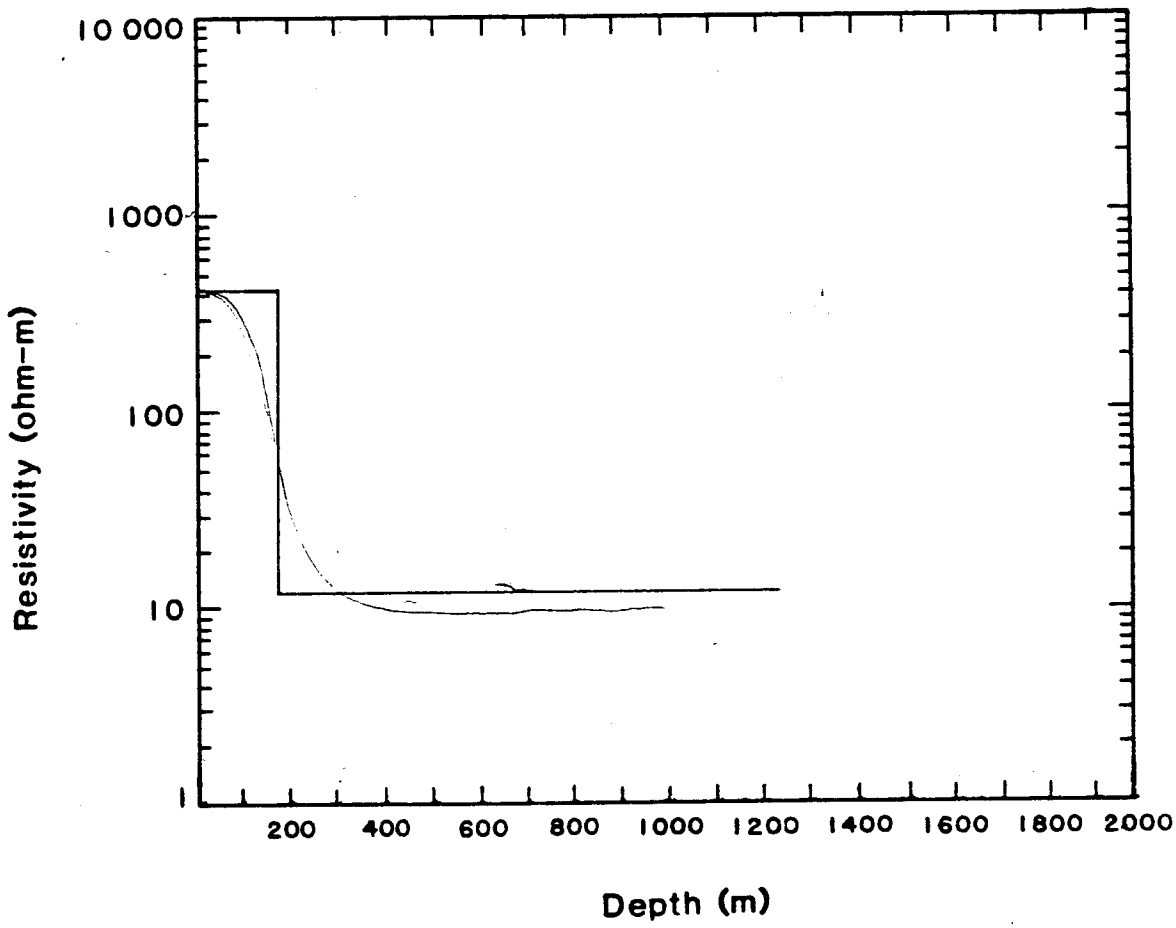
| [illegible] | [illegible] NAME | FINAL SOLUTION | RESISTIVITY | [illegible] |
|---|---|---|---|---|
| [illegible] | [illegible] | 0.2291E-02 | 0.4364E[illegible] | |
| [illegible] | [illegible] | 0.8160E+01 | 0.1224E[illegible] | |
| [illegible] | [illegible] | 0.1653E+03 | | |
| [illegible] | [illegible] | 0.2[illegible]E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 77



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 78 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1727E+03 | 0.1861E+03 | -0.1345E+02 | -0.7224E+01 | 0.335E-02 |
| 2 | 0.1100E-03 | 0.1331E+03 | 0.1302E+03 | 0.2867E+01 | 0.2201E+01 | 0.564E-02 |
| 3 | 0.1400E-03 | 0.9190E+02 | 0.8520E+02 | 0.6702E+01 | 0.7867E+01 | 0.118E-01 |
| 4 | 0.1770E-03 | 0.5910E+02 | 0.5559E+02 | 0.3513E+01 | 0.6320E+01 | 0.286E-01 |
| 5 | 0.2200E-03 | 0.3769E+02 | 0.3688E+02 | 0.8108E+00 | 0.2198E+01 | 0.704E-01 |
| 6 | 0.2800E-03 | 0.2307E+02 | 0.2314E+02 | -0.7146E-01 | -0.3088E+00 | 0.188E+00 |
| 7 | 0.3550E-03 | 0.1425E+02 | 0.1446E+02 | -0.2082E+00 | -0.1440E+01 | 0.492E+00 |
| 8 | 0.4430E-03 | 0.9100E+01 | 0.9237E+01 | -0.1368E+00 | -0.1481E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.5400E+01 | 0.5862E+01 | -0.4624E+00 | -0.7888E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.3360E+01 | 0.3469E+01 | -0.1085E+00 | -0.3129E+01 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2170E+01 | 0.2225E+01 | -0.5493E-01 | -0.2469E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1360E+01 | 0.1403E+01 | -0.4255E-01 | -0.3034E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.8300E+00 | 0.8146E+00 | 0.1540E-01 | 0.1891E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.5000E+00 | 0.4850E+00 | 0.1498E-01 | 0.3088E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.3200E+00 | 0.3036E+00 | 0.1639E-01 | 0.5397E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1900E+00 | 0.1756E+00 | 0.1439E-01 | 0.8195E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1000E+00 | 0.1050E+00 | -0.4989E-02 | -0.4752E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.6000E-01 | 0.6446E-01 | -0.4457E-02 | -0.6914E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.4000E-01 | 0.3827E-01 | 0.1731E-02 | 0.4524E+01 | 0.100E+03 |

(* %RMSERR= 4.90

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.4741E+00 | 0.1000E+01 | | | |
| 3 | -0.2874E+00 | -0.4402E-01 | 0.1000E+01 | | |
| 4 | 0.3230E-01 | 0.6283E+00 | -0.1852E+00 | 0.1000E+01 | |
| 5 | -0.1240E+00 | -0.1585E+00 | -0.7065E+00 | -0.2635E+00 | 0.1000E+01 |

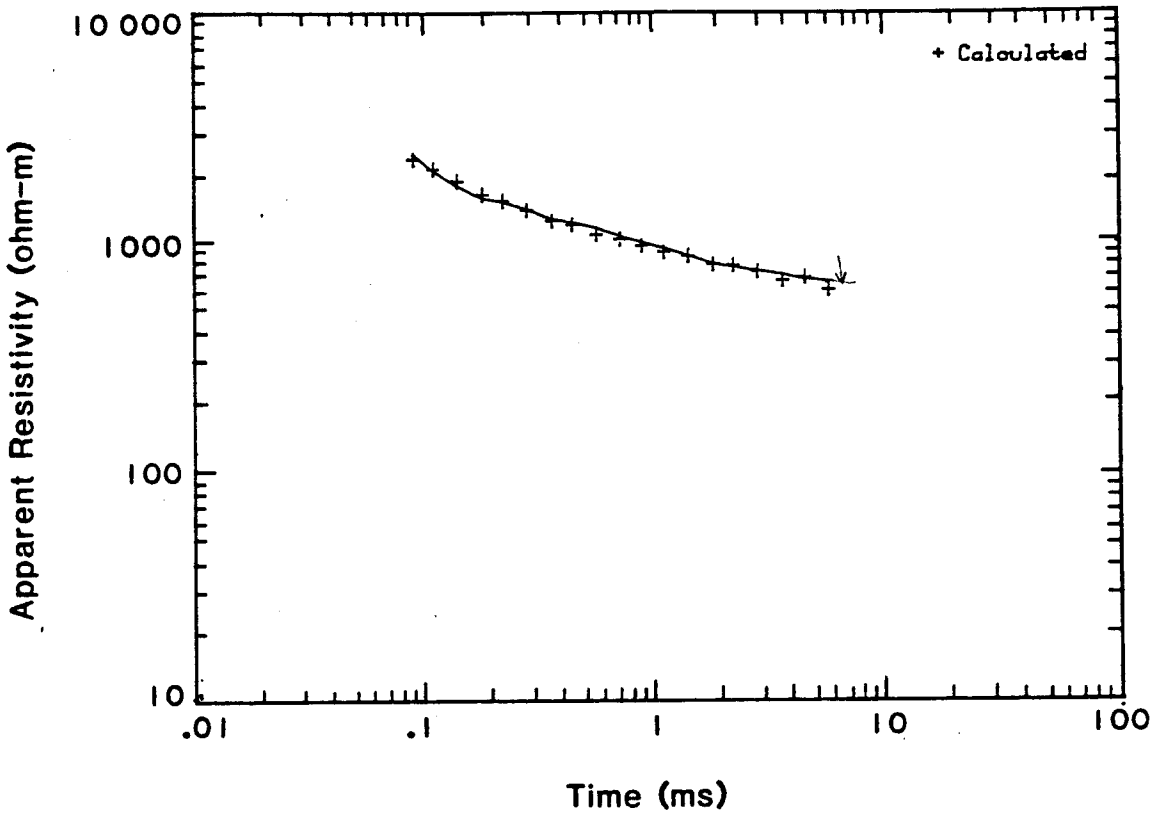
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.6368E-04 | 0.4418E-03 | 0.6938E+01 | 0.6938E+03 |
| 2 | 0.1728E-02 | 0.1150E-02 | 0.6655E+00 | 0.6655E+02 |
| 3 | 0.2072E-02 | 0.4160E-02 | 0.2007E+01 | 0.2007E+03 |
| 4 | 0.2196E+03 | 0.2172E-02 | 0.9892E-05 | 0.9892E-03 |
| 5 | 0.4696E+03 | 0.1146E-01 | 0.2439E-04 | 0.2439E-02 |

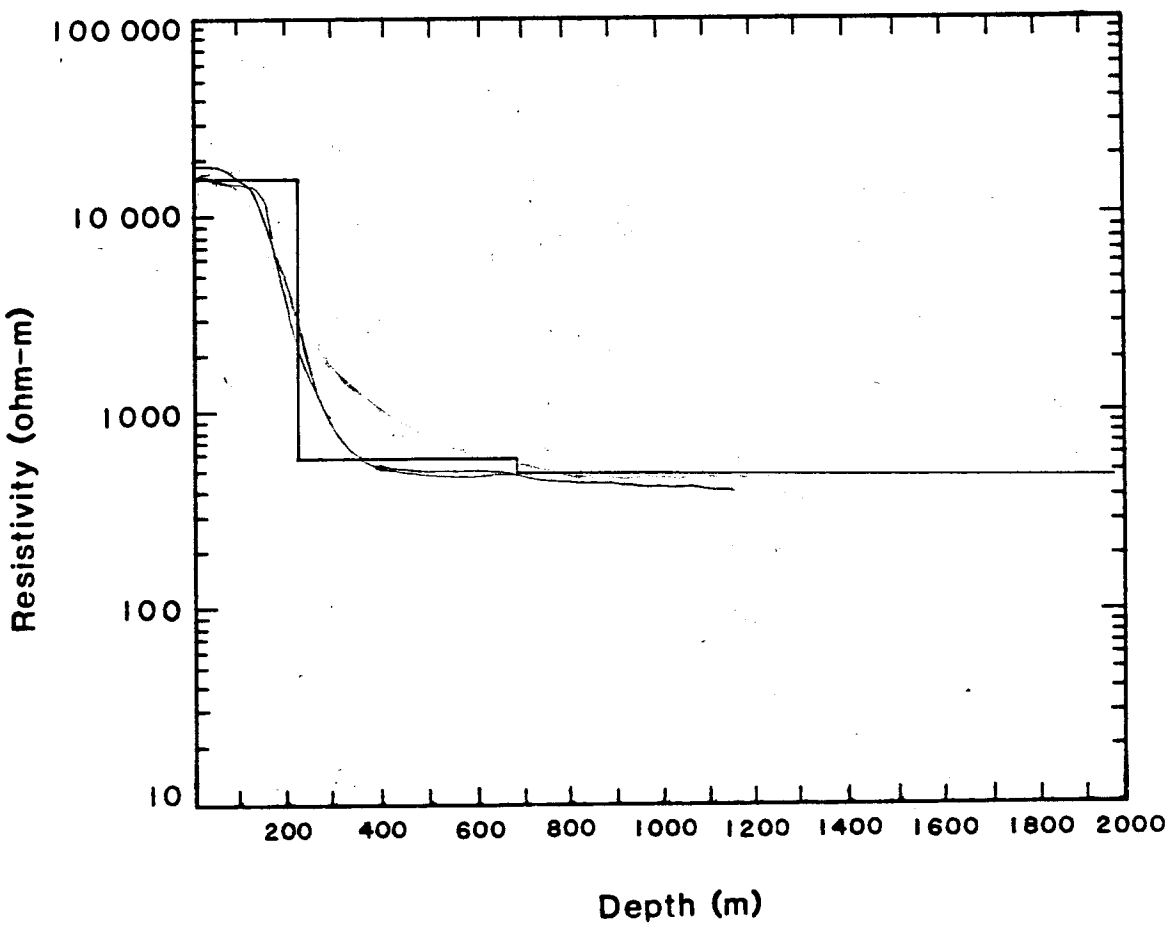
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.63682E-04 | 0.15703E+05 | |
| 2 | SIGMA( 2) | = | 0.17276E-02 | 0.57883E+03 | |
| 3 | SIGMA( 3) | = | 0.20724E-02 | 0.48254E+03 | |
| 4 | THICK( 1) | = | 0.21958E+03 | | 0.21958E+03 |
| 5 | THICK( 2) | = | 0.46965E+03 | | 0.68923E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 78



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 79 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1177E+03 | 0.1256E+03 | -0.7903E+01 | -0.6293E+01 | 0.722E-02 |
| 2 | 0.1100E-03 | 0.7204E+02 | 0.7150E+02 | 0.5387E+00 | 0.7534E+00 | 0.193E-01 |
| 3 | 0.1400E-03 | 0.3882E+02 | 0.3765E+02 | 0.1167E+01 | 0.3098E+01 | 0.664E-01 |
| 4 | 0.1770E-03 | 0.2129E+02 | 0.2033E+02 | 0.9622E+00 | 0.4734E+01 | 0.221E+00 |
| 5 | 0.2200E-03 | 0.1341E+02 | 0.1185E+02 | 0.1557E+01 | 0.1314E+02 | 0.556E+00 |
| 6 | 0.2800E-03 | 0.6440E+01 | 0.6907E+01 | -0.4674E+00 | -0.6766E+01 | 0.100E+01 |
| 7 | 0.3550E-03 | 0.3960E+01 | 0.4305E+01 | -0.3453E+00 | -0.8020E+01 | 0.400E+01 |
| 8 | 0.4430E-03 | 0.2760E+01 | 0.2925E+01 | -0.1648E+00 | -0.5634E+01 | 0.111E+02 |
| 9 | 0.5540E-03 | 0.1910E+01 | 0.2009E+01 | -0.9938E-01 | -0.4946E+01 | 0.111E-02 |
| 10 | 0.7130E-03 | 0.1390E+01 | 0.1357E+01 | 0.3309E-01 | 0.2438E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1040E+01 | 0.9745E+00 | 0.6352E-01 | 0.6724E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.7600E+00 | 0.6839E+00 | 0.7610E-01 | 0.1113E+02 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.5200E+00 | 0.4576E+00 | 0.6238E-01 | 0.1363E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.3400E+00 | 0.3047E+00 | 0.3526E-01 | 0.1157E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.2400E+00 | 0.2105E+00 | 0.2953E-01 | 0.1403E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1500E+00 | 0.1354E+00 | 0.1458E-01 | 0.1077E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1000E+00 | 0.8808E-01 | 0.1192E-01 | 0.1354E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.7000E-01 | 0.5814E-01 | 0.1186E-01 | 0.2041E+02 | 0.100E+03 |

** %RMSERR= 10.05

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | 0.5735E+00 | 0.1000E+01 | |
| 3 | -0.1709E+00 | -0.4409E+00 | 0.1000E+01 |

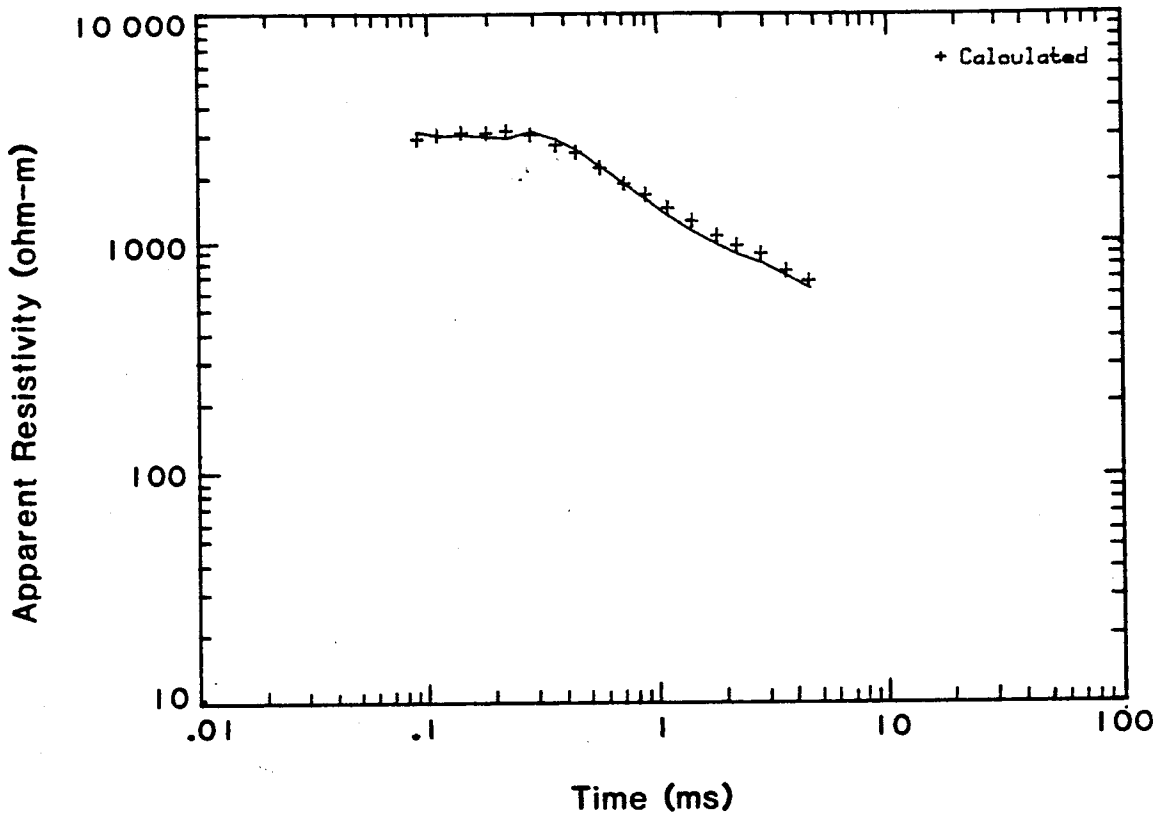
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3741E-03 | 0.3855E-03 | 0.1031E+01 | 0.1031E+03 |
| 2 | 0.3680E-02 | 0.3471E-02 | 0.9432E+00 | 0.9432E+02 |
| 3 | 0.7840E+03 | 0.2064E-02 | 0.2633E-05 | 0.2633E-03 |

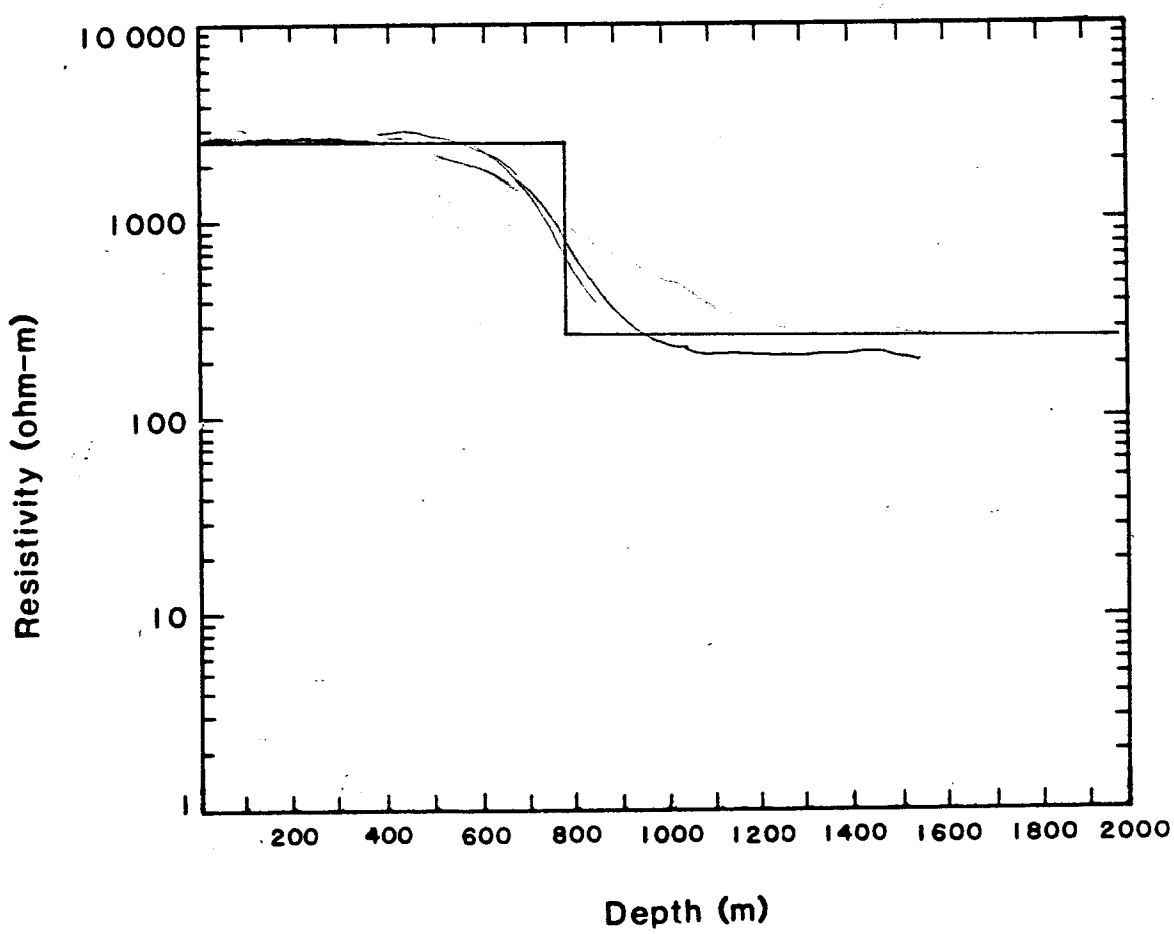
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.37413E-03 | 0.26729E+04 | |
| 2 | SIGMA( 2) | = | 0.36800E-02 | 0.27174E+03 | |
| 3 | THICK( 1) | = | 0.78398E+03 | | 0.78398E+03 |
| 4 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 79



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 80 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4768E+02 | 0.6157E+02 | -0.1389E+02 | -0.2256E+02 | 0.440E-01 |
| 2 | 0.1100E-03 | 0.3870E+02 | 0.4041E+02 | -0.1706E+01 | -0.4222E+01 | 0.668E-01 |
| 3 | 0.1400E-03 | 0.2869E+02 | 0.2479E+02 | 0.3904E+01 | 0.1575E+02 | 0.121E-00 |
| 4 | 0.1770E-03 | 0.1976E+02 | 0.1531E+02 | 0.4452E+01 | 0.2908E+02 | 0.256E-00 |
| 5 | 0.2200E-03 | 0.1227E+02 | 0.9616E+01 | 0.2654E+01 | 0.2760E+02 | 0.664E+00 |
| 6 | 0.2800E-03 | 0.6480E+01 | 0.5630E+01 | 0.8505E+00 | 0.1511E+02 | 0.100E+01 |
| 7 | 0.3550E-03 | 0.3550E+01 | 0.3212E+01 | 0.3379E+00 | 0.1052E+02 | 0.400E+01 |
| 8 | 0.4430E-03 | 0.2030E+01 | 0.1856E+01 | 0.1744E+00 | 0.9398E+01 | 0.111E+02 |
| 9 | 0.5540E-03 | 0.1010E+01 | 0.1033E+01 | -0.2511E-01 | -0.2426E+01 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.4700E+00 | 0.5171E+00 | -0.4714E-01 | -0.9115E+01 | 0.100E+03 |
| 11 | 0.8810E-03 | 0.2400E+00 | 0.2806E+00 | -0.4065E-01 | -0.1448E+02 | 0.100E+03 |
| 12 | 0.1096E-02 | 0.1200E+00 | 0.1465E+00 | -0.2654E-01 | -0.1811E+02 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.5000E-01 | 0.6616E-01 | -0.1616E-01 | -0.2443E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.2000E-01 | 0.3083E-01 | -0.1083E-01 | -0.3512E+02 | 0.100E+03 |

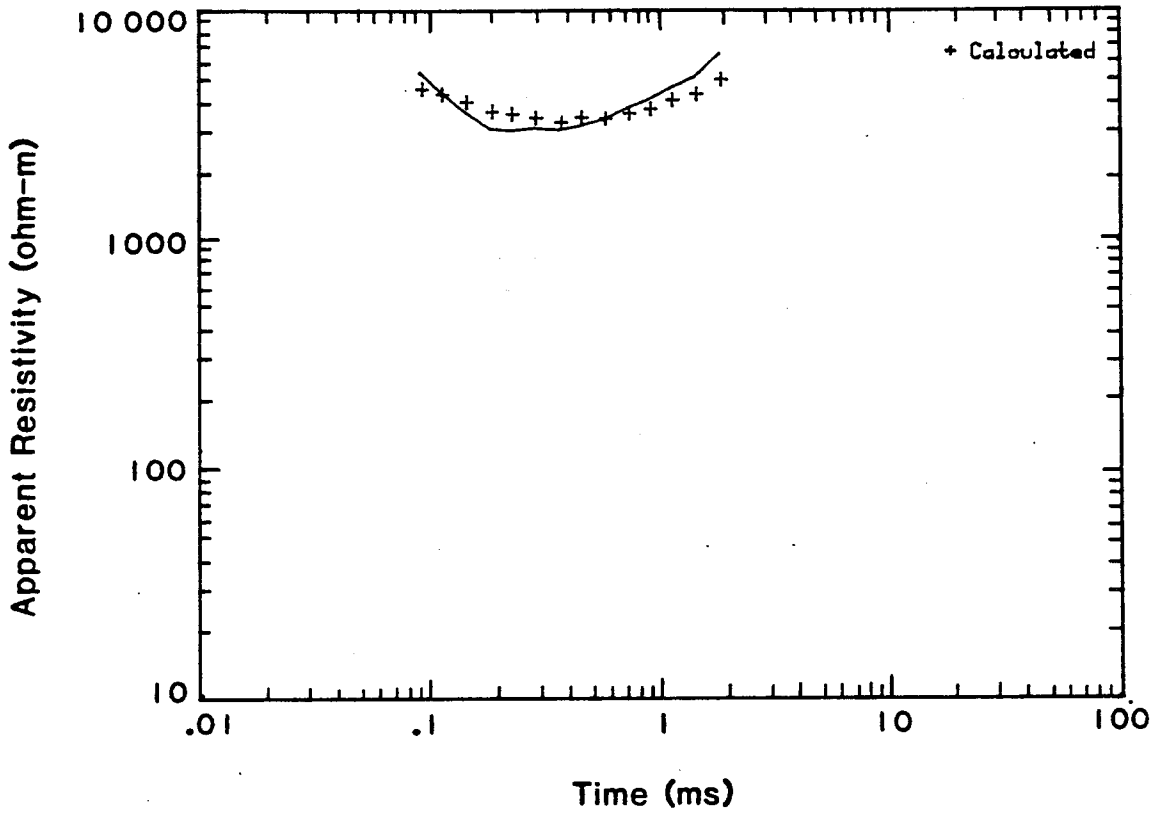
* %RMSERR= 17.40

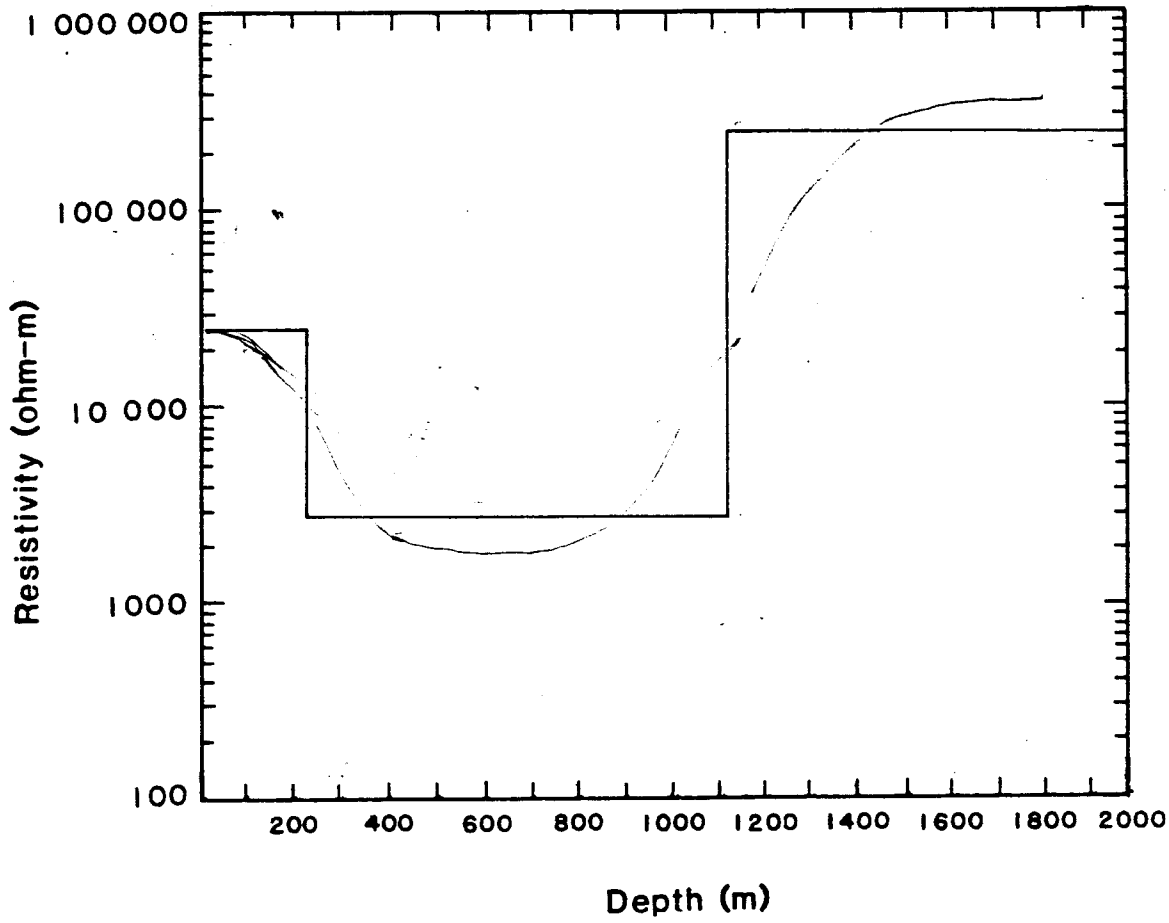
| PARAMETER | NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.38958E-04 | 0.25669E+05 | |
| 2 | SIGMA( 2) | = | 0.42177E-03 | 0.23710E+04 | |
| 3 | SIGMA( 3) | = | 0.37302E-05 | 0.26808E+06 | |
| 4 | THICK( 1) | = | 0.21594E+03 | | 0.21594E+03 |
| 5 | THICK( 2) | = | 0.89864E+03 | | 0.11146E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 80



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 81 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1506E+03 | 0.1667E+03 | -0.1616E+02 | -0.9693E+01 | 0.441E-02 |
| 2 | 0.1100E-03 | 0.9298E+02 | 0.9788E+02 | -0.4905E+01 | -0.5011E+01 | 0.116E-01 |
| 3 | 0.1400E-03 | 0.5714E+02 | 0.5289E+02 | 0.4252E+01 | 0.8039E+01 | 0.306E-01 |
| 4 | 0.1770E-03 | 0.3447E+02 | 0.3015E+02 | 0.4319E+01 | 0.1432E+02 | 0.842E-01 |
| 5 | 0.2200E-03 | 0.2067E+02 | 0.1809E+02 | 0.2581E+01 | 0.1427E+02 | 0.234E+00 |
| 6 | 0.2800E-03 | 0.1164E+02 | 0.1061E+02 | 0.1030E+01 | 0.9704E+01 | 0.738E+00 |
| 7 | 0.3550E-03 | 0.6210E+01 | 0.6316E+01 | -0.1059E+00 | -0.1676E+01 | 0.100E+01 |
| 8 | 0.4430E-03 | 0.3690E+01 | 0.3947E+01 | -0.2574E+00 | -0.6521E+01 | 0.400E+01 |
| 9 | 0.5540E-03 | 0.2050E+01 | 0.2512E+01 | -0.4621E+00 | -0.1840E+02 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.1390E+01 | 0.1499E+01 | -0.1093E+00 | -0.7288E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1000E+01 | 0.1002E+01 | -0.1679E-02 | -0.1676E+00 | 0.100E+03 |
| 12 | 0.1096E-02 | 0.7300E+00 | 0.6718E+00 | 0.5817E-01 | 0.8659E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.5000E+00 | 0.4246E+00 | 0.7539E-01 | 0.1776E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.3400E+00 | 0.2757E+00 | 0.6434E-01 | 0.2334E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.2400E+00 | 0.1866E+00 | 0.5344E-01 | 0.2865E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1600E+00 | 0.1185E+00 | 0.4155E-01 | 0.3507E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1000E+00 | 0.7646E-01 | 0.2354E-01 | 0.3079E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.7000E-01 | 0.5033E-01 | 0.1967E-01 | 0.3907E+02 | 0.100E+03 |

* %RMSERR= 19.13

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3446E+00 | 0.1000E+01 | | | |
| 3 | 0.3834E+00 | -0.5319E+00 | 0.1000E+01 | | |
| 4 | -0.6061E+00 | 0.5161E+00 | -0.6635E+00 | 0.1000E+01 | |
| 5 | 0.4727E+00 | -0.9344E+00 | 0.5808E+00 | -0.6524E+00 | 0.1000E+01 |

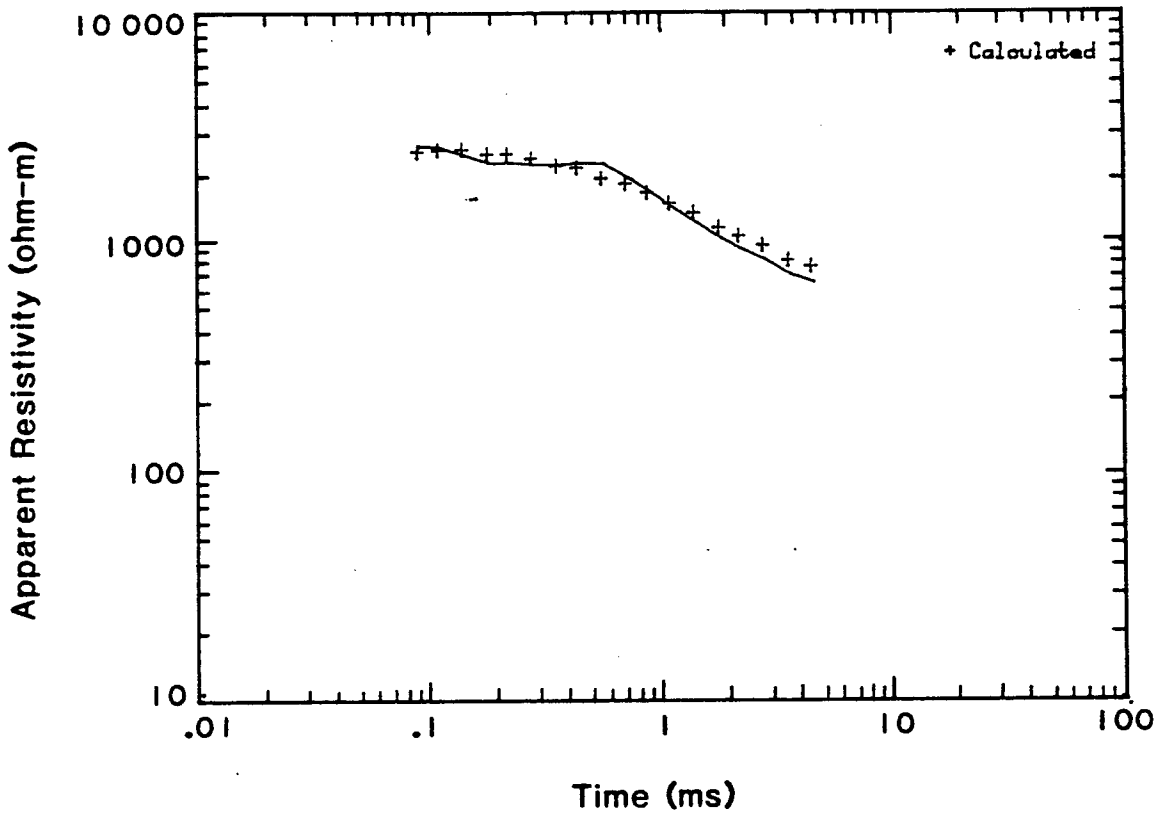
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4508E-03 | 0.3334E-03 | 0.7395E+00 | 0.7395E+02 |
| 2 | 0.1623E-02 | 0.6681E-02 | 0.4115E+01 | 0.4115E+03 |
| 3 | 0.3606E-02 | 0.2116E-01 | 0.5868E+01 | 0.5868E+03 |
| 4 | 0.6355E+03 | 0.4036E-02 | 0.6350E-05 | 0.6350E-03 |
| 5 | 0.4295E+03 | 0.2613E-01 | 0.6084E-04 | 0.6084E-02 |

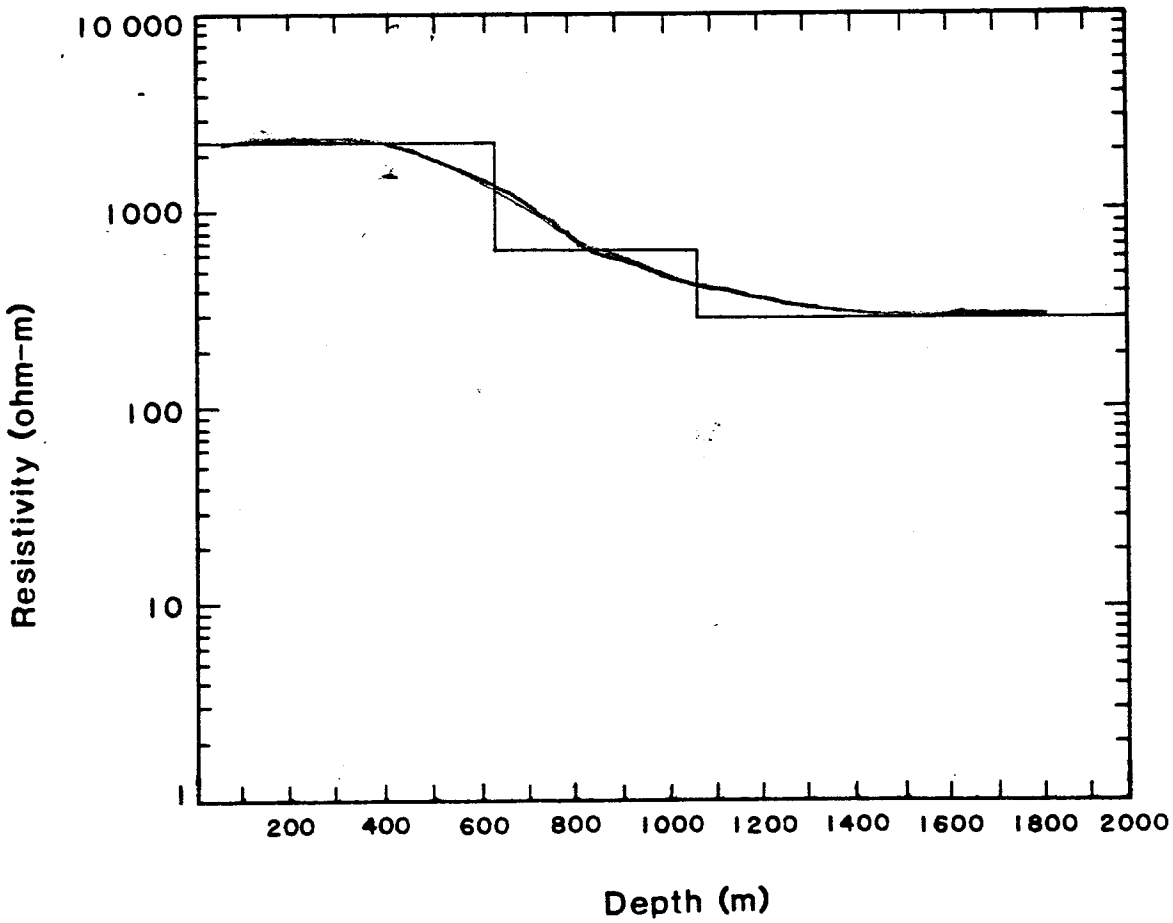
| PARAMETER NAME | | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.45082E-03 | 0.22182E+04 | |
| 2 | SIGMA( 2) | = | 0.16233E-02 | 0.61603E+03 | |
| 3 | SIGMA( 3) | = | 0.36064E-02 | 0.27728E+03 | |
| 4 | THICK( 1) | = | 0.63552E+03 | | 0.63552E+03 |
| 5 | THICK( 2) | = | 0.42952E+03 | | 0.10650E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 81



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 82 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2173E+03 | 0.1811E+03 | 0.3614E+02 | 0.1995E+02 | 0.212E-03 |
| 2 | 0.1100E-03 | 0.9471E+02 | 0.9969E+02 | -0.4983E+01 | -0.4999E+01 | 0.111E-01 |
| 3 | 0.1400E-03 | 0.4713E+02 | 0.4778E+02 | -0.6480E+00 | -0.1356E+01 | 0.450E-01 |
| 4 | 0.1770E-03 | 0.2366E+02 | 0.2373E+02 | -0.6523E-01 | -0.2749E+00 | 0.179E+00 |
| 5 | 0.2200E-03 | 0.1198E+02 | 0.1275E+02 | -0.7713E+00 | -0.6048E+01 | 0.697E+00 |
| 6 | 0.2800E-03 | 0.5600E+01 | 0.5744E+01 | -0.1436E+00 | -0.2501E+01 | 0.100E+01 |
| 7 | 0.3550E-03 | 0.2990E+01 | 0.3095E+01 | -0.1053E+00 | -0.3403E+01 | 0.111E+02 |
| 8 | 0.4430E-03 | 0.1830E+01 | 0.1692E+01 | 0.1377E+00 | 0.8136E+01 | 0.111E+02 |
| 9 | 0.5540E-03 | 0.1070E+01 | 0.9964E+00 | 0.7363E-01 | 0.7390E+01 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.7200E+00 | 0.6270E+00 | 0.9304E-01 | 0.1484E+02 | 0.100E+03 |
| 11 | 0.8810E-03 | 0.5300E+00 | 0.4299E+00 | 0.1001E+00 | 0.2329E+02 | 0.100E+03 |
| 12 | 0.1096E-02 | 0.3900E+00 | 0.3132E+00 | 0.7676E-01 | 0.2450E+02 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.2600E+00 | 0.2141E+00 | 0.4587E-01 | 0.2142E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.1800E+00 | 0.1512E+00 | 0.2877E-01 | 0.1902E+02 | 0.100E+03 |
| 15 | 0.2234E-02 | 0.1300E+00 | 0.1113E+00 | 0.1867E-01 | 0.1677E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.8000E-01 | 0.7605E-01 | 0.3954E-02 | 0.5200E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.6000E-01 | 0.5265E-01 | 0.7345E-02 | 0.1395E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.4000E-01 | 0.3662E-01 | 0.3384E-02 | 0.9241E+01 | 0.100E+03 |

** %RMSERR= 13.69

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.3069E+00 | 0.1000E+01 | | | |
| 3 | 0.1138E+00 | 0.4134E-01 | 0.1000E+01 | | |
| 4 | -0.2372E-01 | -0.4169E+00 | 0.3918E+00 | 0.1000E+01 | |
| 5 | 0.2230E-01 | 0.7332E+00 | -0.2593E-01 | -0.3130E+00 | 0.1000E+01 |

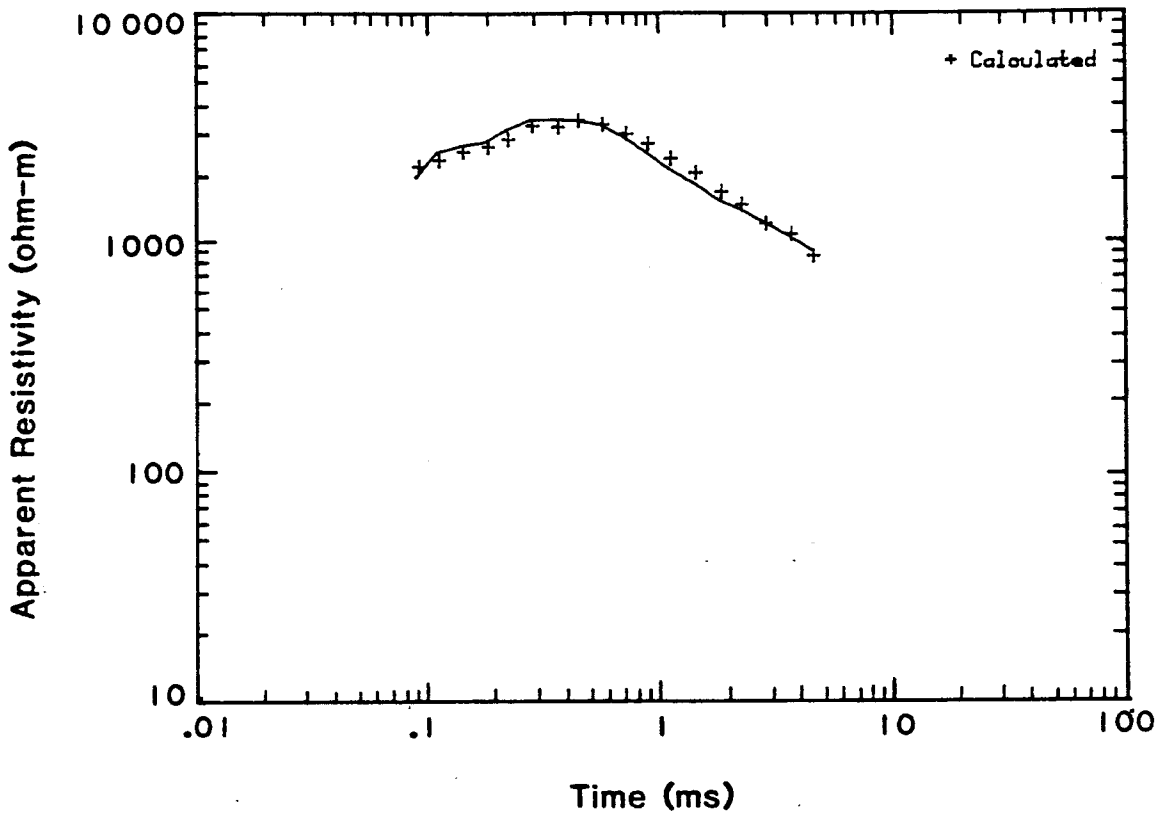
| ** | PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.9606E-03 | 0.2113E-03 | 0.2199E+00 | 0.2199E+02 |
| 2 | 0.2470E-03 | 0.6686E-03 | 0.2707E+01 | 0.2707E+03 |
| 3 | 0.4545E-02 | 0.1422E-01 | 0.3128E+01 | 0.3128E+03 |
| 4 | 0.7540E+02 | 0.1148E-02 | 0.1522E-04 | 0.1522E-02 |
| 5 | 0.1074E+04 | 0.6751E-02 | 0.6285E-05 | 0.6285E-03 |

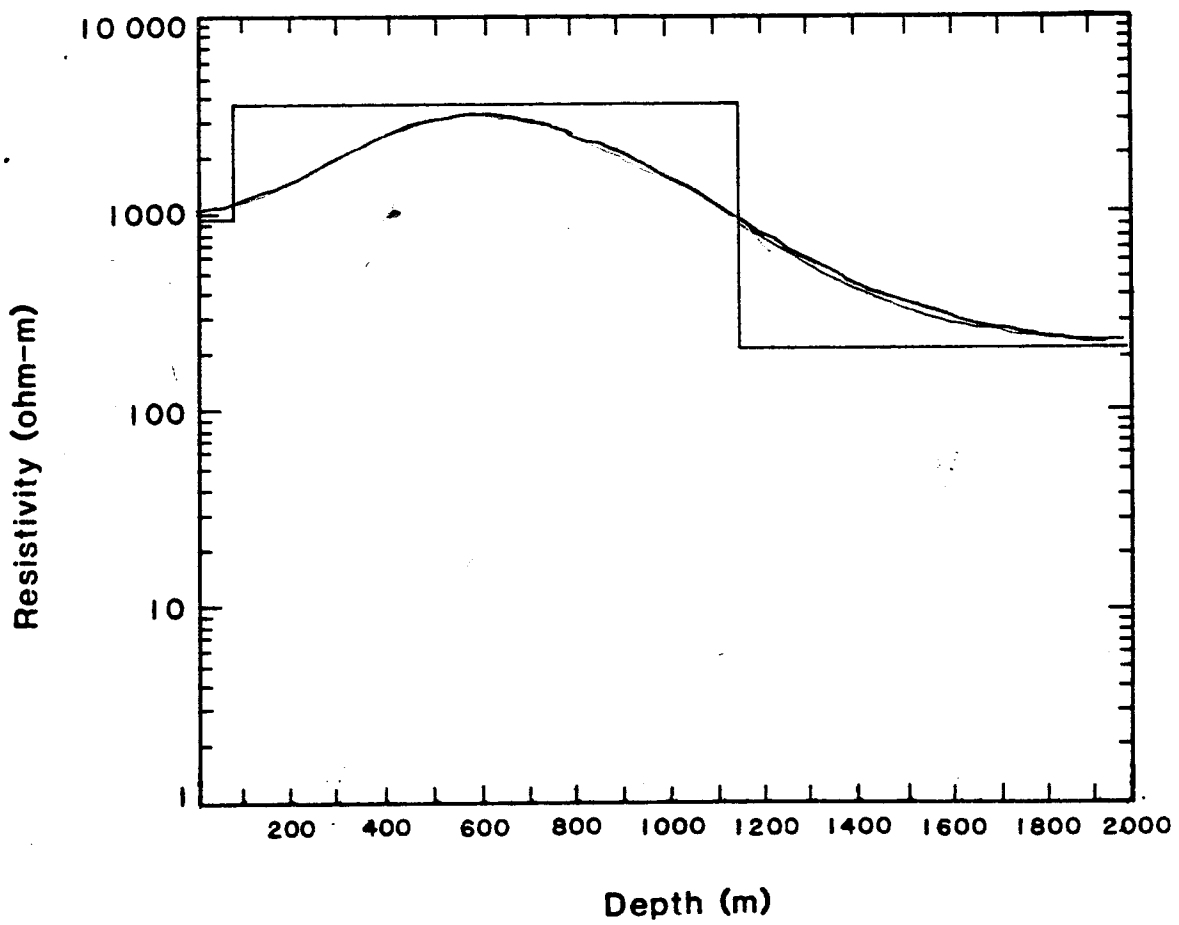
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.96063E-03 | 0.10410E+04 | |
| 2 | SIGMA( 2) = | 0.24699E-03 | 0.40488E+04 | |
| 3 | SIGMA( 3) = | 0.45451E-02 | 0.22002E+03 | |
| 4 | THICK( 1) = | 0.75402E+02 | | 0.75402E+02 |
| 5 | THICK( 2) = | 0.10742E+04 | | 0.11176E+04 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 82



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 83 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1494E+03 | 0.1570E+03 | -0.7634E+01 | -0.4862E+01 | 0.448E-02 |
| 2 | 0.1100E-03 | 0.9215E+02 | 0.8852E+02 | 0.3632E+01 | 0.4103E+01 | 0.118E-01 |
| 3 | 0.1400E-03 | 0.4553E+02 | 0.4439E+02 | 0.1144E+01 | 0.2578E+01 | 0.482E-01 |
| 4 | 0.1770E-03 | 0.2325E+02 | 0.2336E+02 | -0.1105E+00 | -0.4731E+00 | 0.185E+00 |
| 5 | 0.2200E-03 | 0.1250E+02 | 0.1298E+02 | -0.4782E+00 | -0.3685E+01 | 0.640E+00 |
| 6 | 0.2800E-03 | 0.6310E+01 | 0.7262E+01 | -0.9521E+00 | -0.1311E+02 | 0.100E+01 |
| 7 | 0.3550E-03 | 0.4220E+01 | 0.4453E+01 | -0.2331E+00 | -0.5234E+01 | 0.400E+01 |
| 8 | 0.4430E-03 | 0.3200E+01 | 0.3039E+01 | 0.1607E+00 | 0.5286E+01 | 0.400E+01 |
| 9 | 0.5540E-03 | 0.2230E+01 | 0.2187E+01 | 0.4265E-01 | 0.1950E+01 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.1630E+01 | 0.1525E+01 | 0.1050E+00 | 0.6885E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1210E+01 | 0.1154E+01 | 0.5610E-01 | 0.4861E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.8700E+00 | 0.8590E+00 | 0.1105E-01 | 0.1286E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.6400E+00 | 0.6004E+00 | 0.3956E-01 | 0.6589E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.4400E+00 | 0.4282E+00 | 0.1180E-01 | 0.2756E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.3300E+00 | 0.3111E+00 | 0.1886E-01 | 0.6061E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.2500E+00 | 0.2125E+00 | 0.3750E-01 | 0.1765E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1700E+00 | 0.1464E+00 | 0.2359E-01 | 0.1611E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.1200E+00 | 0.1013E+00 | 0.1867E-01 | 0.1842E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.9000E-01 | 0.6735E-01 | 0.2265E-01 | 0.3363E+02 | 0.100E+03 |

* %RMSERR= 11.46

ORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.5412E+00 | 0.1000E+01 | | | |
| 3 | 0.7702E+00 | -0.6027E+00 | 0.1000E+01 | | |
| 4 | -0.3982E+00 | 0.1857E+00 | -0.6802E+00 | 0.1000E+01 | |
| 5 | -0.5444E+00 | -0.1947E-01 | -0.4114E+00 | 0.2262E+00 | 0.1000E+01 |

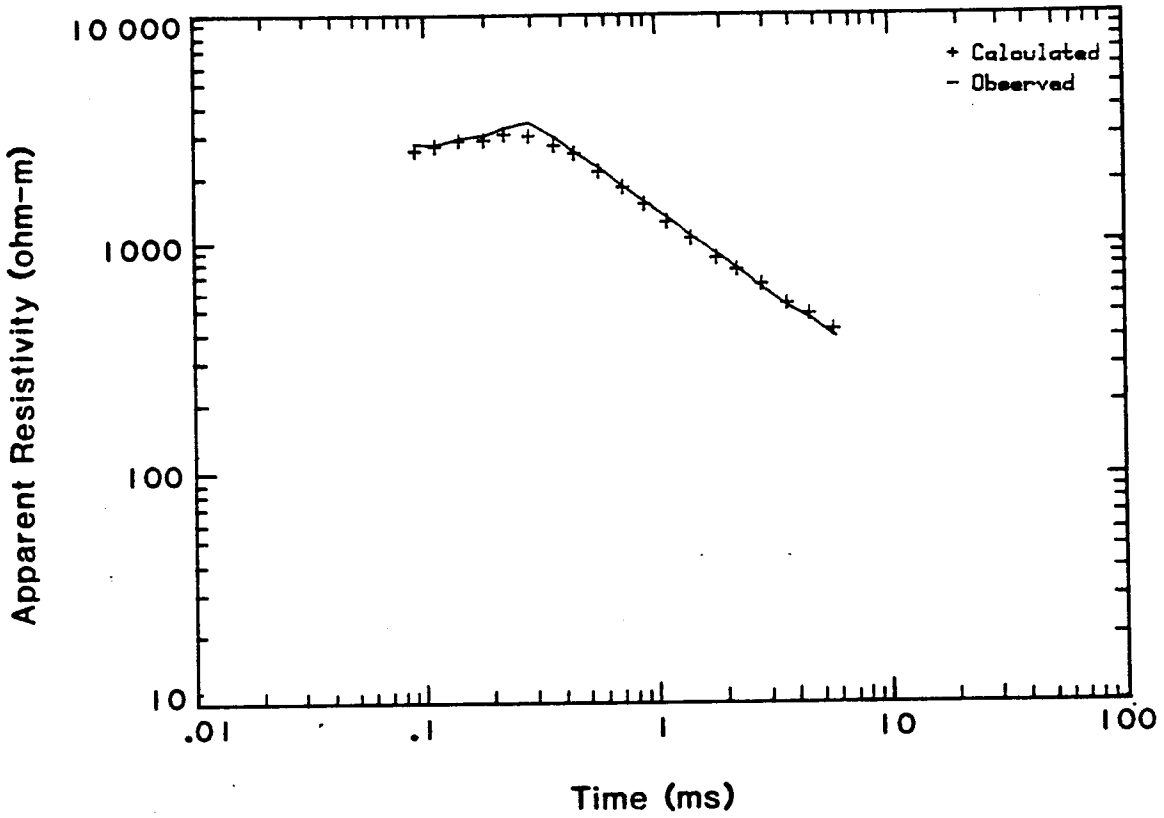
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4599E-03 | 0.4284E-03 | 0.9315E+00 | 0.9315E+02 |
| 2 | 0.4068E-03 | 0.5299E-03 | 0.1303E+01 | 0.1303E+03 |
| 3 | 0.7970E-02 | 0.4483E-02 | 0.5625E+00 | 0.5625E+02 |
| 4 | 0.1481E+03 | 0.2739E-02 | 0.1850E-04 | 0.1850E-02 |
| 5 | 0.6223E+03 | 0.2370E-02 | 0.3809E-05 | 0.3809E-03 |

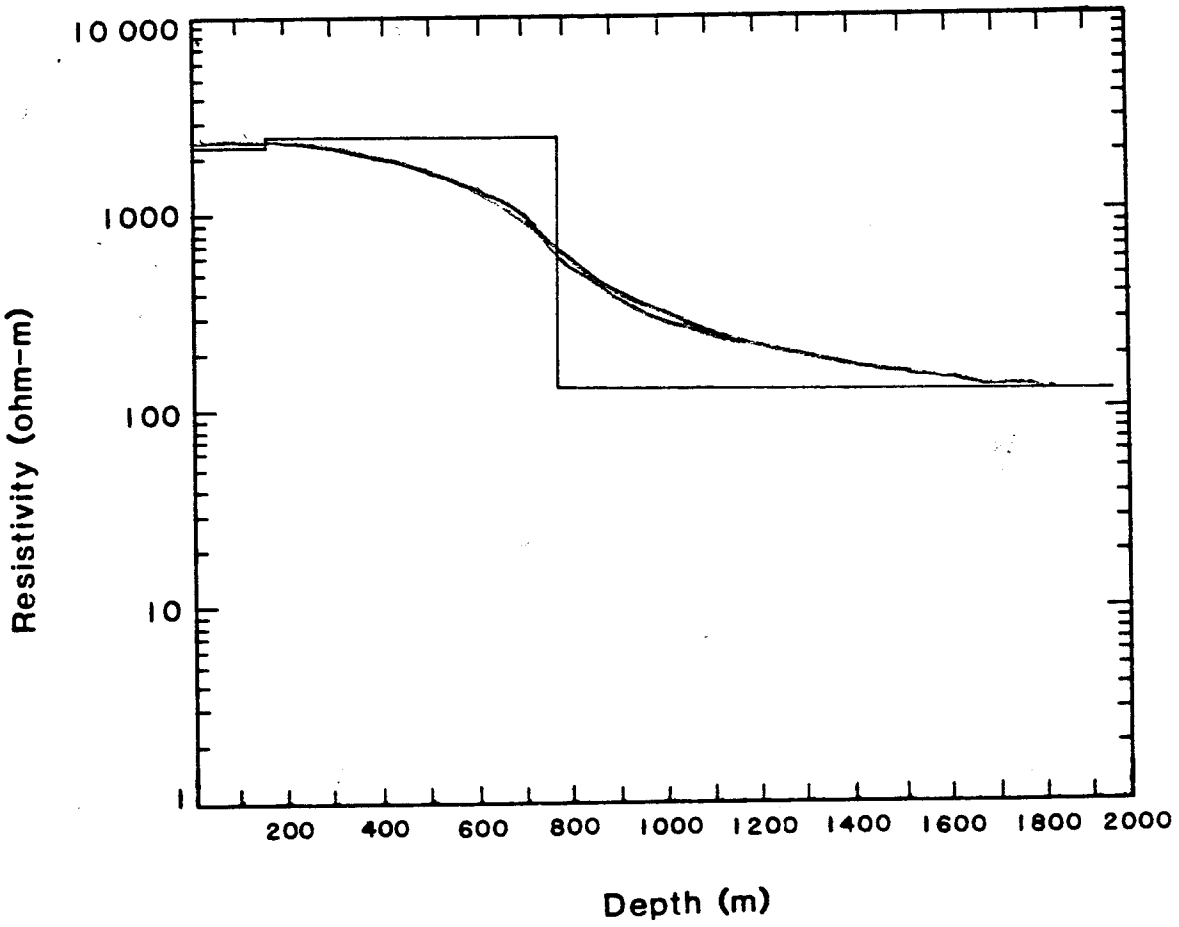
| | ARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.45992E-03 | 0.21743E+04 | |
| 2 | SIGMA( 2) | = | 0.40677E-03 | 0.24584E+04 | |
| 3 | SIGMA( 3) | = | 0.79697E-02 | 0.12548E+03 | |
| 4 | THICK( 1) | = | 0.14809E+03 | | 0.14809E+03 |
| 5 | THICK( 2) | = | 0.62228E+03 | | 0.77037E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 83



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 84 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1056E+03 | 0.1124E+03 | -0.6801E+01 | -0.6049E+01 | 0.896E-02 |
| 2 | 0.1100E-03 | 0.7879E+02 | 0.8262E+02 | -0.3828E+01 | -0.4634E+01 | 0.161E-01 |
| 3 | 0.1400E-03 | 0.5913E+02 | 0.5694E+02 | 0.2191E+01 | 0.3849E+01 | 0.286E-01 |
| 4 | 0.1770E-03 | 0.4093E+02 | 0.3893E+02 | 0.1996E+01 | 0.5126E+01 | 0.597E-01 |
| 5 | 0.2200E-03 | 0.2758E+02 | 0.2681E+02 | 0.7659E+00 | 0.2857E+01 | 0.131E+00 |
| 6 | 0.2800E-03 | 0.1773E+02 | 0.1725E+02 | 0.4806E+00 | 0.2786E+01 | 0.318E+00 |
| 7 | 0.3550E-03 | 0.1117E+02 | 0.1082E+02 | 0.3461E+00 | 0.3198E+01 | 0.801E+00 |
| 8 | 0.4430E-03 | 0.6210E+01 | 0.6831E+01 | -0.6208E+00 | -0.9089E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.3800E+01 | 0.4229E+01 | -0.4289E+00 | -0.1014E+02 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2480E+01 | 0.2481E+01 | -0.8473E-03 | -0.3416E-01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1690E+01 | 0.1613E+01 | 0.7724E-01 | 0.4789E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1150E+01 | 0.1059E+01 | 0.9114E-01 | 0.8608E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.7500E+00 | 0.6918E+00 | 0.5815E-01 | 0.8405E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.5000E+00 | 0.4751E+00 | 0.2490E-01 | 0.5242E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.3600E+00 | 0.3448E+00 | 0.1522E-01 | 0.4413E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.2400E+00 | 0.2429E+00 | -0.2923E-02 | -0.1203E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1600E+00 | 0.1748E+00 | -0.1476E-01 | -0.8444E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.1200E+00 | 0.1272E+00 | -0.7165E-02 | -0.5635E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.8000E-01 | 0.9041E-01 | -0.1041E-01 | -0.1151E+02 | 0.100E+03 |

** %RMSERR= 6.33

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3663E+00 | 0.1000E+01 | | | |
| 3 | -0.6083E+00 | 0.2827E+00 | 0.1000E+01 | | |
| 4 | -0.3685E+00 | 0.7117E+00 | 0.1928E+00 | 0.1000E+01 | |
| 5 | -0.6488E+00 | -0.2051E+00 | 0.2817E+00 | -0.6981E-01 | 0.1000E+01 |

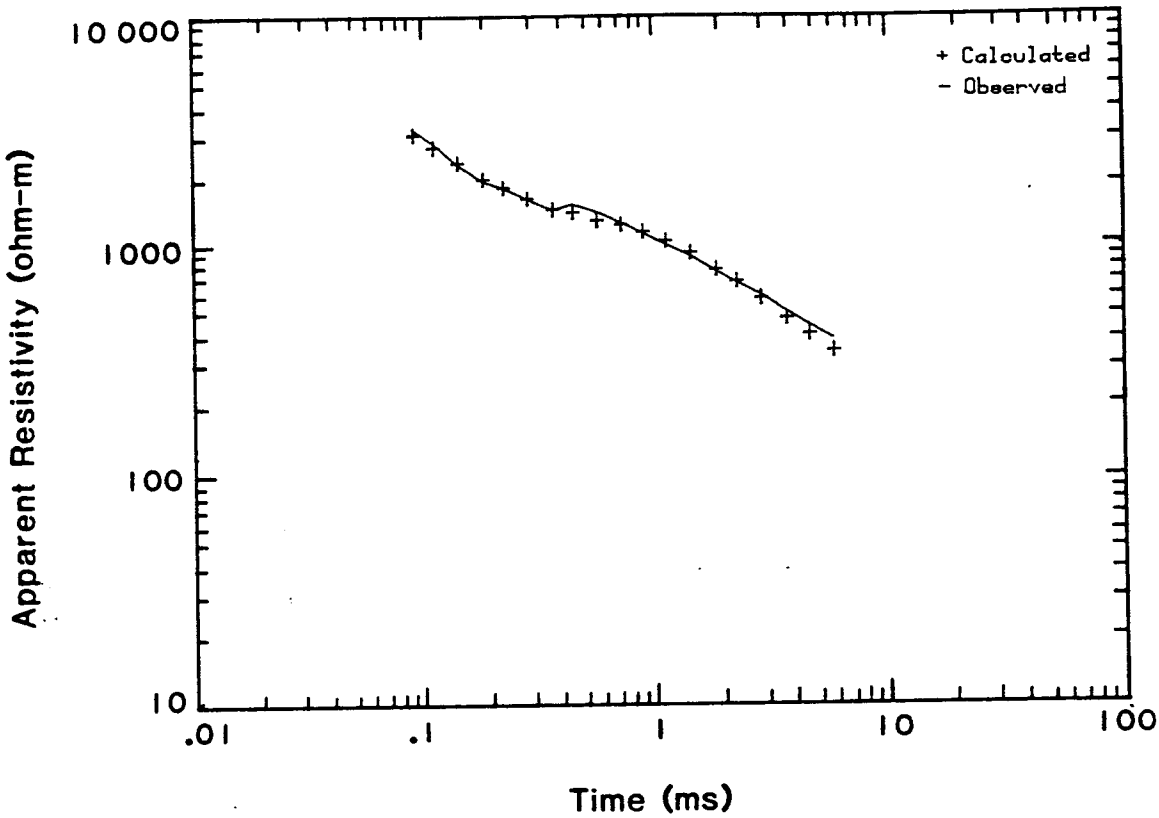
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.9446E-04 | 0.4402E-03 | 0.4661E+01 | 0.4661E+02 |
| 2 | 0.2091E-02 | 0.1889E-02 | 0.9033E+00 | 0.9033E+02 |
| 3 | 0.1570E-01 | 0.1653E-01 | 0.1053E+01 | 0.1053E+03 |
| 4 | 0.3125E+03 | 0.2298E-02 | 0.7354E-05 | 0.7354E-03 |
| 5 | 0.5935E+03 | 0.8391E-02 | 0.1414E-04 | 0.1414E-02 |

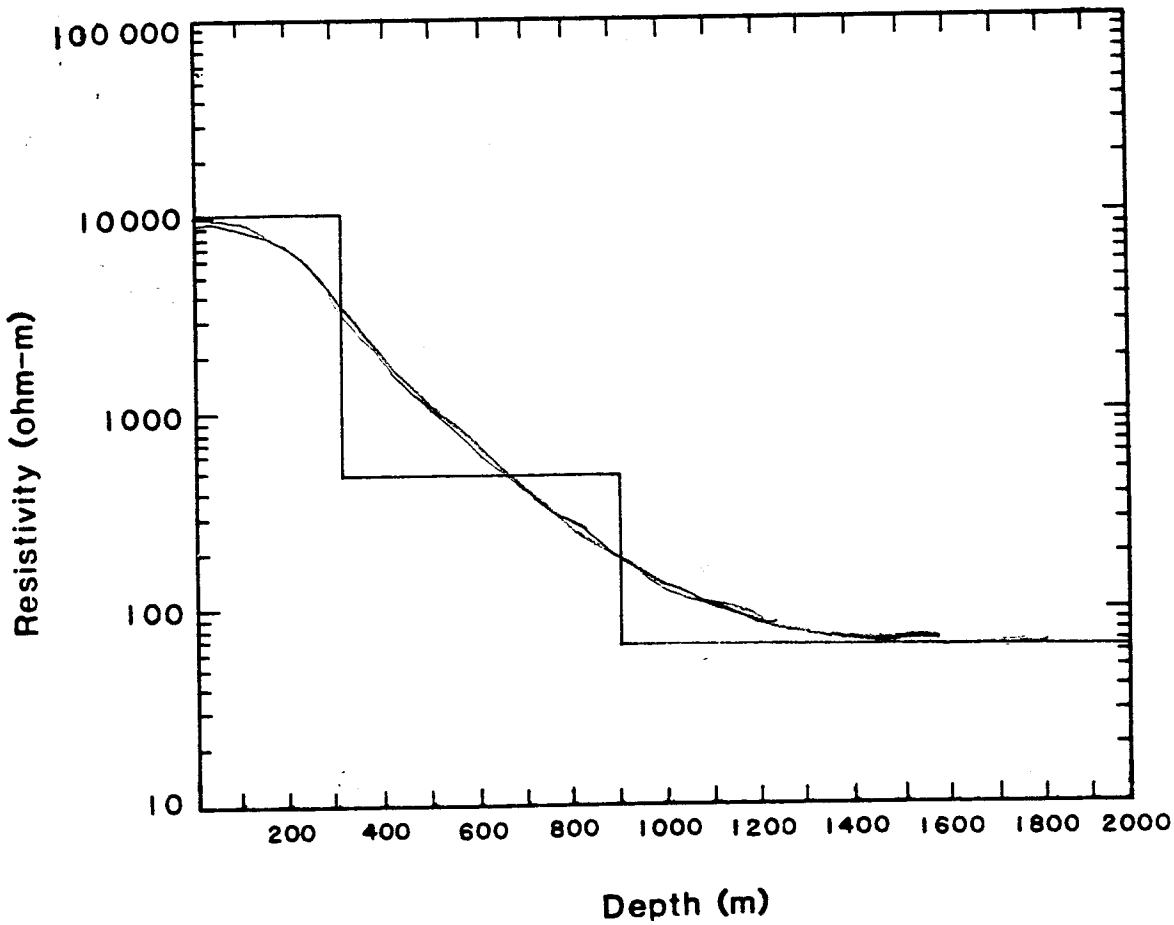
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.94463E-04 | 0.10586E+05 | |
| 2 | SIGMA( 2) | = | 0.20913E-02 | 0.47817E+03 | |
| 3 | SIGMA( 3) | = | 0.15696E-01 | 0.63710E+02 | |
| 4 | THICK( 1) | = | 0.31245E+03 | | 0.31245E+03 |
| 5 | THICK( 2) | = | 0.59348E+03 | | 0.90593E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 84



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 85 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1333E+03 | 0.1369E+03 | -0.3570E+01 | -0.2608E+01 | 0.563E-02 |
| 2 | 0.1100E-03 | 0.9226E+02 | 0.9125E+02 | 0.1008E+01 | 0.1105E+01 | 0.117E-01 |
| 3 | 0.1400E-03 | 0.5740E+02 | 0.5575E+02 | 0.1647E+01 | 0.2955E+01 | 0.304E-01 |
| 4 | 0.1770E-03 | 0.3480E+02 | 0.3351E+02 | 0.1292E+01 | 0.3855E+01 | 0.826E-01 |
| 5 | 0.2200E-03 | 0.2087E+02 | 0.2031E+02 | 0.5580E+00 | 0.2747E+01 | 0.230E+00 |
| 6 | 0.2800E-03 | 0.1187E+02 | 0.1135E+02 | 0.5158E+00 | 0.4543E+01 | 0.710E+00 |
| 7 | 0.3550E-03 | 0.5760E+01 | 0.6381E+01 | -0.6213E+00 | -0.9736E+01 | 0.100E+01 |
| 8 | 0.4430E-03 | 0.3540E+01 | 0.3787E+01 | -0.2474E+00 | -0.6533E+01 | 0.400E+01 |
| 9 | 0.5540E-03 | 0.2160E+01 | 0.2315E+01 | -0.1546E+00 | -0.6681E+01 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.1480E+01 | 0.1461E+01 | 0.1913E-01 | 0.1309E+01 | 0.111E+02 |
| 11 | 0.6810E-03 | 0.1100E+01 | 0.1042E+01 | 0.5820E-01 | 0.5587E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.8000E+00 | 0.7558E+00 | 0.4416E-01 | 0.5842E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.5700E+00 | 0.5428E+00 | 0.2718E-01 | 0.5007E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.3800E+00 | 0.3983E+00 | -0.1830E-01 | -0.4595E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.2900E+00 | 0.3003E+00 | -0.1029E-01 | -0.3428E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.2100E+00 | 0.2166E+00 | -0.6601E-02 | -0.3047E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1500E+00 | 0.1579E+00 | -0.7878E-02 | -0.4996E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.1000E+00 | 0.1155E+00 | -0.1554E-01 | -0.1345E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.7000E-01 | 0.8217E-01 | -0.1217E-01 | -0.1481E+02 | 0.100E+03 |

% %RMSERR= 6.49

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.2242E+00 | 0.1000E+01 | | | |
| 3 | 0.1384E-01 | -0.6946E-01 | 0.1000E+01 | | |
| 4 | 0.6337E+00 | 0.6684E+00 | -0.1516E+00 | 0.1000E+01 | |
| 5 | 0.2478E+00 | 0.2689E+00 | 0.3279E+00 | 0.2766E+00 | 0.1000E+01 |

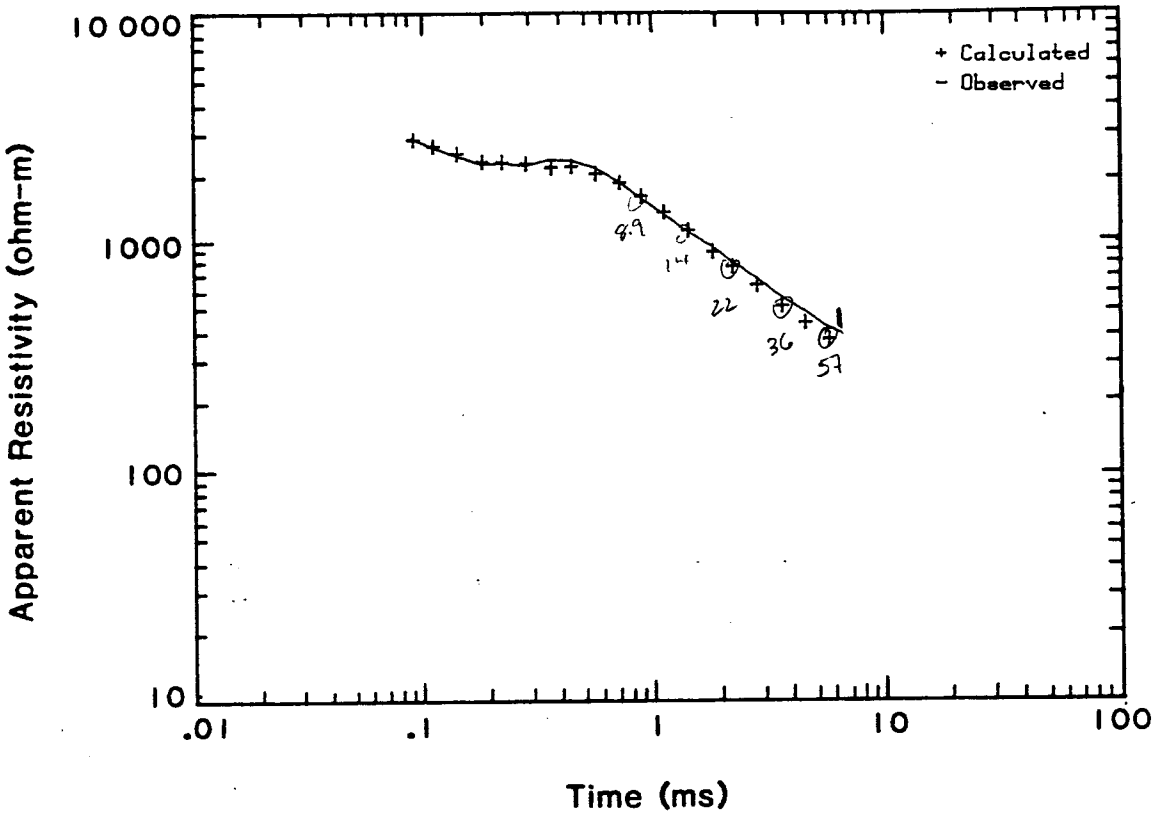
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1493E-03 | 0.1947E-04 | 0.1304E+00 | 0.1304E+02 |
| 2 0.9826E-03 | 0.8046E-04 | 0.8188E-01 | 0.8188E-01 |
| 3 0.1496E-01 | 0.6356E-03 | 0.4247E-01 | 0.4247E+01 |
| 4 0.2318E+03 | 0.3273E-02 | 0.1412E-04 | 0.1412E-02 |
| 5 0.6434E+03 | 0.2369E-02 | 0.3682E-05 | 0.3682E-03 |

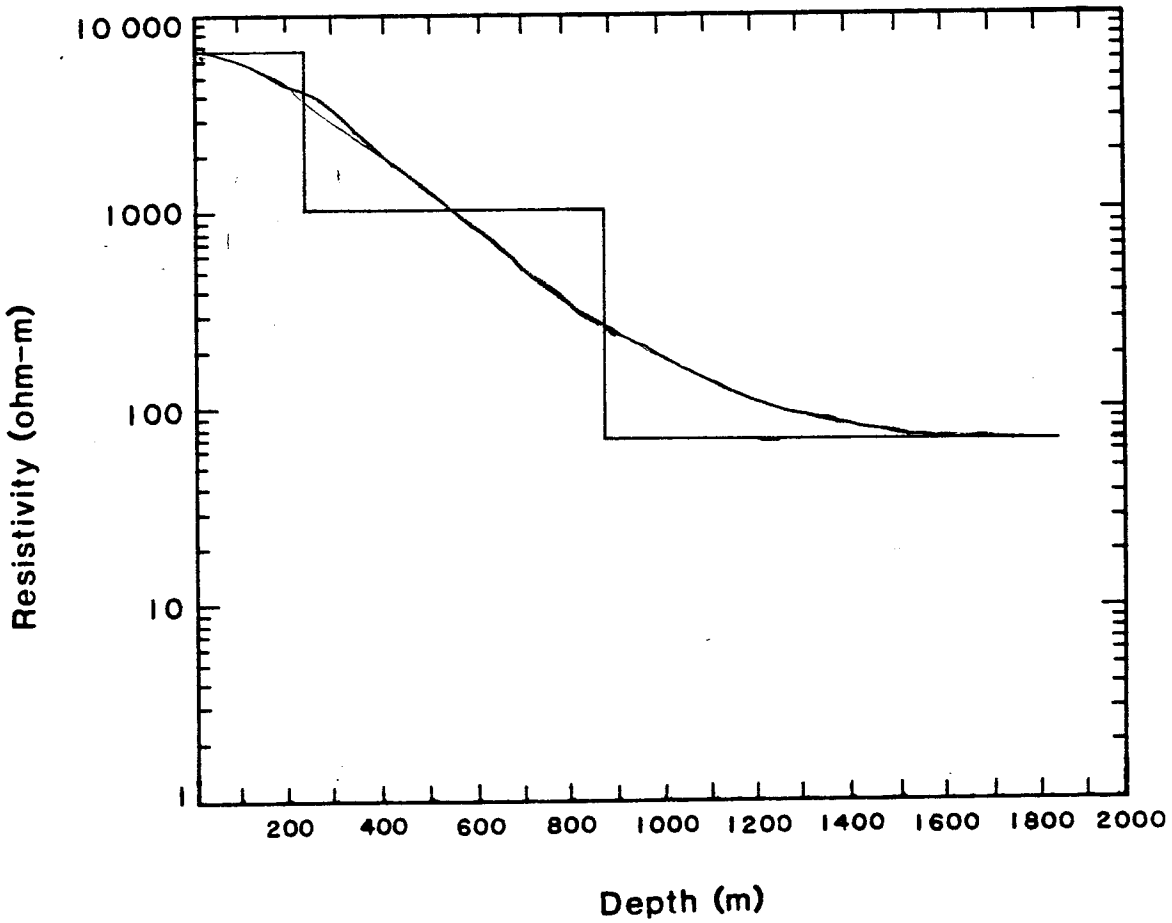
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 SIGMA( 1) | = | 0.14925E-03 | 0.67002E+04 | |
| 2 SIGMA( 2) | = | 0.98258E-03 | 0.10177E+04 | |
| 3 SIGMA( 3) | = | 0.14964E-01 | 0.66829E+02 | |
| 4 THICK( 1) | = | 0.23181E+03 | | 0.23181E+03 |
| 5 THICK( 2) | = | 0.64342E+03 | | 0.87515E+03 |
| 6 SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 85



EMSURVEYS ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 86 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1764E+03 | 0.1825E+03 | -0.6074E+01 | -0.3329E+01 | 0.321E-02 |
| 2 | 0.1100E-03 | 0.1322E+03 | 0.1205E+03 | 0.1170E+02 | 0.9713E+01 | 0.572E-02 |
| 3 | 0.1400E-03 | 0.7986E+02 | 0.7698E+02 | 0.2879E+01 | 0.3739E+01 | 0.157E-01 |
| 4 | 0.1770E-03 | 0.5315E+02 | 0.5135E+02 | 0.1800E+01 | 0.3506E+01 | 0.354E-01 |
| 5 | 0.2200E-03 | 0.3319E+02 | 0.3473E+02 | -0.1543E+01 | -0.4441E+01 | 0.908E-01 |
| 6 | 0.2800E-03 | 0.2103E+02 | 0.2255E+02 | -0.1517E+01 | -0.6728E+01 | 0.226E+00 |
| 7 | 0.3550E-03 | 0.1354E+02 | 0.1449E+02 | -0.9489E+00 | -0.6549E+01 | 0.545E+00 |
| 8 | 0.4430E-03 | 0.8920E+01 | 0.9264E+01 | -0.3440E+00 | -0.3713E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.5700E+01 | 0.5898E+01 | -0.1981E+00 | -0.3359E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.3440E+01 | 0.3470E+01 | -0.3039E-01 | -0.8757E+00 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2250E+01 | 0.2234E+01 | 0.1598E-01 | 0.7153E+00 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1570E+01 | 0.1456E+01 | 0.1136E+00 | 0.7800E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1020E+01 | 0.9211E+00 | 0.9893E-01 | 0.1074E+02 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.7000E+00 | 0.6101E+00 | 0.8992E-01 | 0.1474E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.4600E+00 | 0.4362E+00 | 0.2376E-01 | 0.5446E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.3200E+00 | 0.2998E+00 | 0.2025E-01 | 0.6755E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1900E+00 | 0.2096E+00 | -0.1964E-01 | -0.9369E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.1300E+00 | 0.1497E+00 | -0.1968E-01 | -0.1315E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.8000E-01 | 0.1037E+00 | -0.2372E-01 | -0.2287E+02 | 0.100E+03 |

** %RMSERR= 8.94

CORRELATION MATRIX.

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.9571E-01 | 0.1000E+01 | | | |
| 3 | -0.3536E+00 | 0.3397E+00 | 0.1000E+01 | | |
| 4 | 0.3331E+00 | 0.6314E+00 | 0.2991E-01 | 0.1000E+01 | |
| 5 | 0.1093E+00 | -0.1718E-01 | -0.3701E+00 | 0.1451E+00 | 0.1000E+01 |

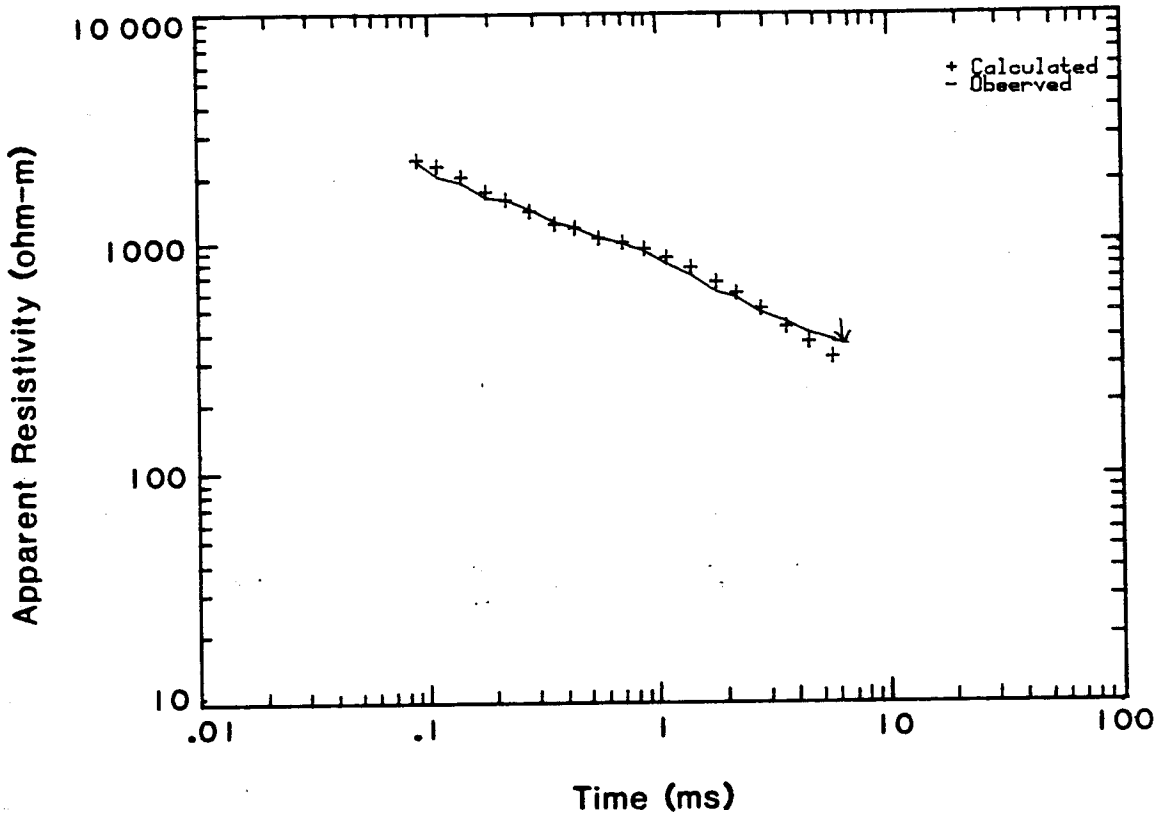
| **PARM_SOL. | | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4737E-03 | 0.6006E-03 | 0.1268E+01 | 0.1268E+03 |
| 2 | 0.2943E-02 | 0.3831E-02 | 0.1302E+01 | 0.1302E+03 |
| 3 | 0.1703E-01 | 0.2197E-01 | 0.1291E+01 | 0.1291E+03 |
| 4 | 0.3718E+03 | 0.3453E-02 | 0.9287E-05 | 0.9287E-03 |
| 5 | 0.4902E+03 | 0.9689E-02 | 0.1976E-04 | 0.1976E-02 |

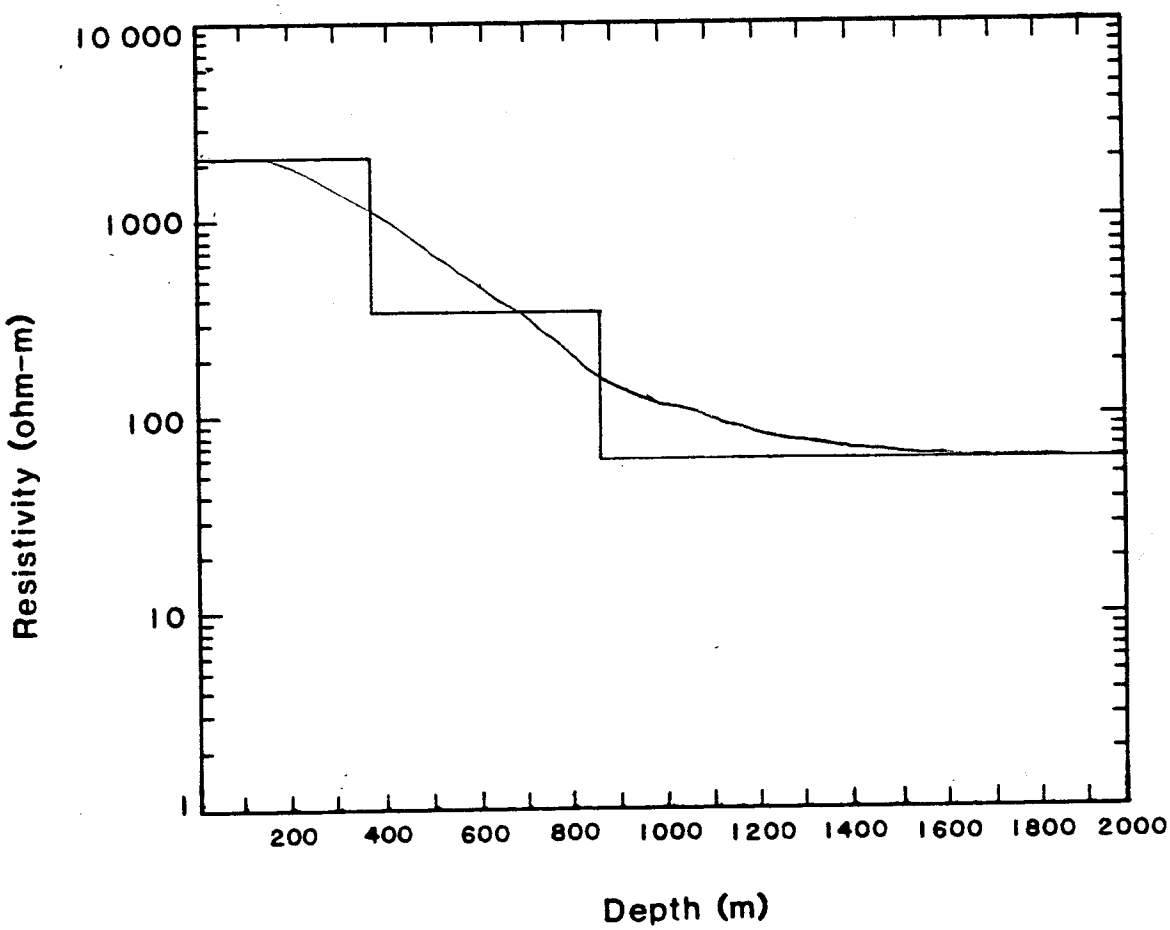
| PARAMETER NAME | | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.47372E-03 | 0.21110E+04 | |
| 2 | SIGMA( 2) | = | 0.29434E-02 | 0.33974E+03 | |
| 3 | SIGMA( 3) | = | 0.17025E-01 | 0.58736E+02 | |
| 4 | THICK( 1) | = | 0.37183E+03 | | 0.37183E+03 |
| 5 | THICK( 2) | = | 0.49025E+03 | | 0.86208E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 86



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 87 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1399E+03 | 0.1509E+03 | -0.1105E+02 | -0.7319E+01 | 0.511E-02 |
| 2 | 0.1100E-03 | 0.8713E+02 | 0.8944E+02 | -0.2306E+01 | -0.2579E+01 | 0.132E-01 |
| 3 | 0.1400E-03 | 0.4997E+02 | 0.4875E+02 | 0.1221E+01 | 0.2505E+01 | 0.400E-01 |
| 4 | 0.1770E-03 | 0.2824E+02 | 0.2674E+02 | 0.1502E+01 | 0.5618E+01 | 0.125E+00 |
| 5 | 0.2200E-03 | 0.1580E+02 | 0.1503E+02 | 0.7650E+00 | 0.5088E+01 | 0.401E+00 |
| 6 | 0.2800E-03 | 0.8140E+01 | 0.7918E+01 | 0.2218E+00 | 0.2801E+01 | 0.100E+01 |
| 7 | 0.3550E-03 | 0.3860E+01 | 0.4085E+01 | -0.2247E+00 | -0.5500E+01 | 0.400E+01 |
| 8 | 0.4430E-03 | 0.2220E+01 | 0.2261E+01 | -0.4086E-01 | -0.1807E+01 | 0.111E+02 |
| 9 | 0.5540E-03 | 0.1210E+01 | 0.1295E+01 | -0.8518E-01 | -0.6576E+01 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.7400E+00 | 0.7316E+00 | 0.8165E-02 | 0.1116E+01 | 0.100E+03 |
| 11 | 0.8810E-03 | 0.4800E+00 | 0.4817E+00 | -0.1677E-02 | -0.3482E+00 | 0.100E+03 |
| 12 | 0.1096E-02 | 0.3300E+00 | 0.3270E+00 | 0.3028E-02 | 0.9262E+00 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.2300E+00 | 0.2220E+00 | 0.8045E-02 | 0.3625E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.1500E+00 | 0.1545E+00 | -0.4549E-02 | -0.2943E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.1100E+00 | 0.1114E+00 | -0.1428E-02 | -0.1281E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.8000E-01 | 0.7688E-01 | 0.3123E-02 | 0.4063E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.5000E-01 | 0.5271E-01 | -0.2711E-02 | -0.5144E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.4000E-01 | 0.3712E-01 | 0.2885E-02 | 0.7772E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.3000E-01 | 0.2539E-01 | 0.4614E-02 | 0.1818E+02 | 0.100E+03 |

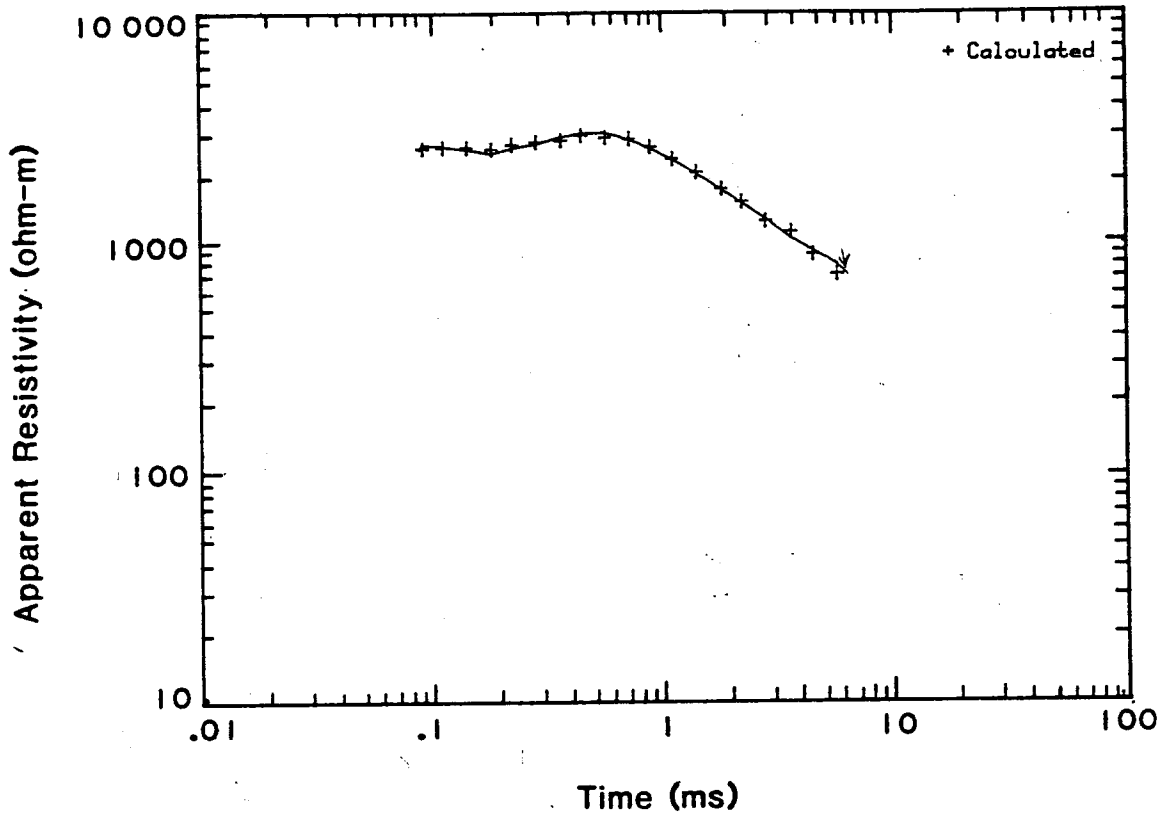
** %RMSERR= 5.93

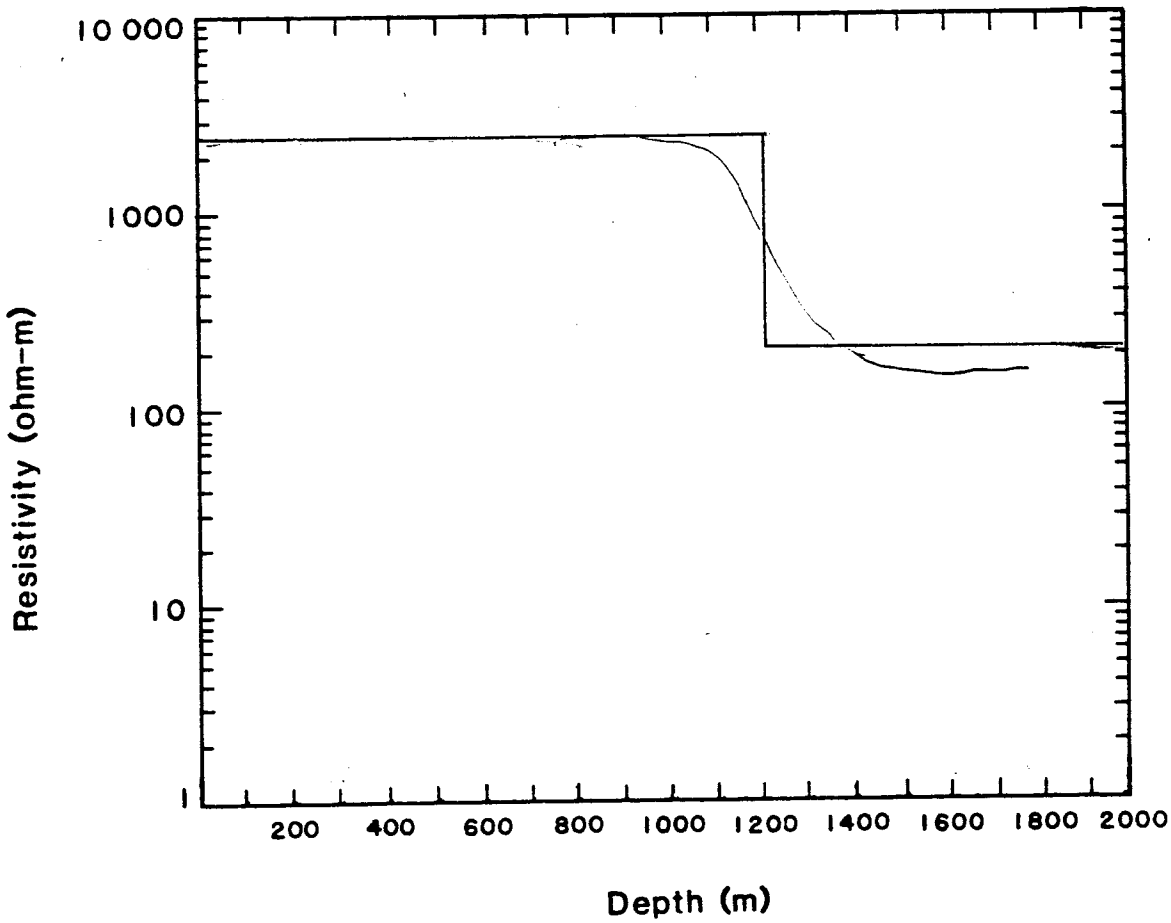
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.40596E-03 | 0.24633E+04 | |
| 2 | SIGMA( 2) = | 0.50791E-02 | 0.19689E+03 | |
| 3 | THICK( 1) = | 0.12102E+04 | | 0.12102E+04 |
| 4 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 87



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 89 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT | |
|---|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1264E+03 | 0.0124 | 0.0025 | 05E+01 | -0.5462E+01 | 0.6228E-02 | 126.4 |
| 2 | 0.1100E-03 | 0.8828E+02 | 0.0123 | 0.0025 | 29E+00 | 0.3899E+00 | 0.1238E-01 | 88.28 |
| 3 | 0.1400E-03 | 0.5782E+02 | 0.0122 | 0.0025 | 21E+01 | 0.3807E+01 | 0.2998E-01 | 57.82 |
| 4 | 0.1770E-03 | 0.3792E+02 | 0.0121 | 0.0025 | 64E+01 | 0.5757E-01 | 0.6938E-01 | 37.92 |
| 5 | 0.2200E-03 | 0.2487E+02 | 0.0119 | 0.0025 | 33E+00 | 0.2525E+01 | 0.1612E+00 | 24.87 |
| 6 | 0.2800E-03 | 0.1598E+02 | 0.0118 | 0.0024 | 98E+00 | 0.2303E+01 | 0.3922E+00 | 15.99 |
| 7 | 0.3550E-03 | 0.9100E+01 | 0.0115 | 0.0024 | 55E+00 | -0.8531E+01 | 0.1006E+01 | 9.11 |
| 8 | 0.4430E-03 | 0.6300E+01 | 0.0112 | 0.0024 | 45E+00 | -0.4465E+01 | 0.1000E+01 | 6.31 |
| 9 | 0.5540E-03 | 0.3940E+01 | 0.0109 | 0.0023 | 13E+00 | -0.7971E+01 | 0.4006E+01 | 3.95 |
| 10 | 0.7130E-03 | 0.2420E+01 | 0.0105 | 0.0023 | 60E+00 | -0.7103E+01 | 0.1112E+02 | 2.43 |
| 11 | 0.8010E-03 | 0.1620E+01 | 0.0100 | 0.0022 | 73E-01 | -0.5248E+01 | 0.1611E+02 | 1.63 |
| 12 | 0.1096E-02 | 0.1100E+01 | 0.0095 | 0.0022 | 12E-02 | 0.3660E+00 | 0.1112E+03 | 1.11 |
| 13 | 0.1411E-02 | 0.6900E+00 | 0.0088 | 0.0021 | 66E-01 | 0.6574E+01 | 0.1006E+03 | .7 |
| 14 | 0.1795E-02 | 0.4300E+00 | 0.0081 | 0.0020 | 85E-01 | 0.1050E+02 | 0.1001E+03 | .44 |
| 15 | 0.2224E-02 | 0.2800E+00 | 0.0073 | 0.0019 | 18E-01 | 0.1437E+02 | 0.1006E+03 | .29 |
| 16 | 0.2650E-02 | 0.1700E+00 | 0.0064 | 0.0018 | 17E-01 | 0.1986E+02 | 0.1000E+03 | .18 |
| 17 | 0.3600E-02 | 0.1000E+00 | 0.0055 | 0.0016 | 60E-01 | 0.1848E+02 | 0.1000E+03 | .11 |
| 18 | 0.4490E-02 | 0.6000E-01 | 0.0047 | 0.0015 | 43E-02 | 0.1706E+02 | 0.1001E+03 | .0 66 |
| 19 | 0.5700E-02 | 0.3000E-01 | 0.0038 | 0.0013 | 13E-04 | 0.2176E+00 | 0.1002E+03 | .035 |
| | | | 0.0030 | 0.0011 | | | | |

* %RMSERR= 9.49

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.5851E+00 | 0.1000E+01 | |
| 3 | -0.5233E+00 | 0.6719E+00 | 0.1000E+01 |

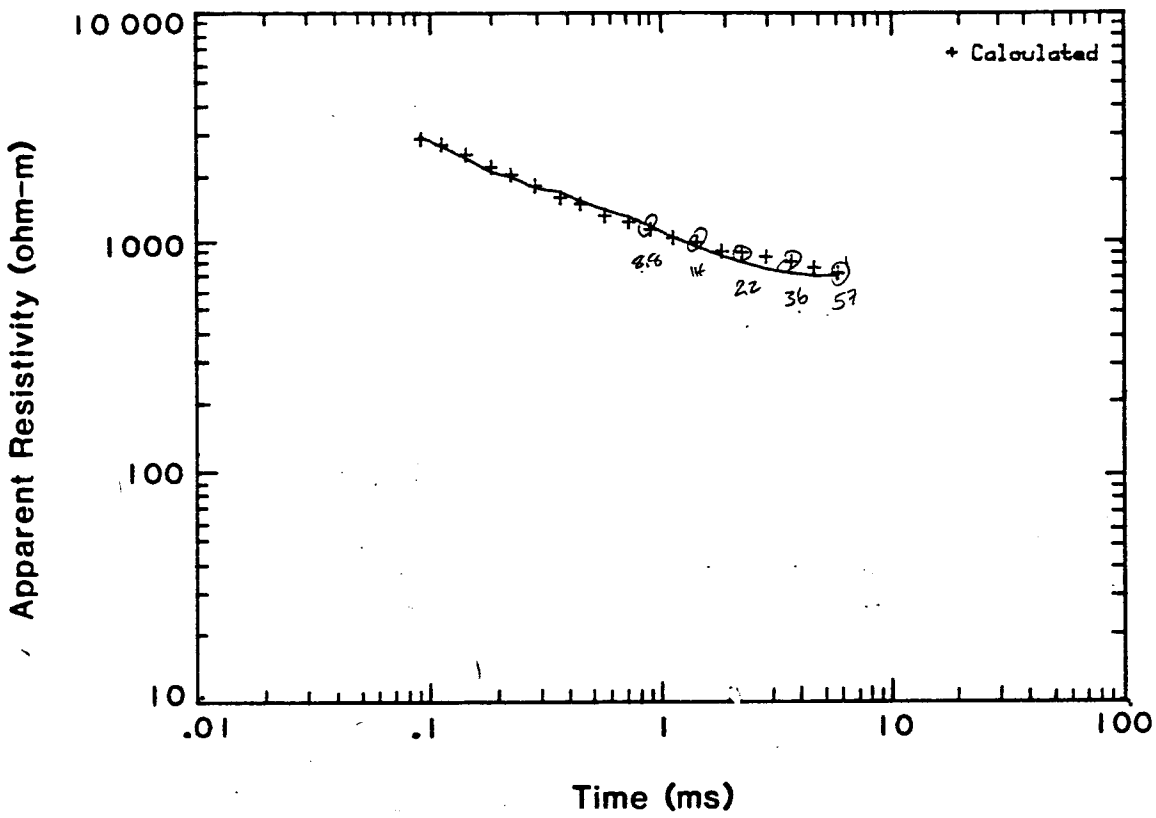
| ** PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.3755E-03 | 0.3827E-03 | 0.1019E+01 | 0.1019E+03 |
| 2 0.1674E-02 | 0.2341E-02 | 0.1249E+01 | 0.1249E+03 |
| 3 0.4102E+03 | 0.1625E-02 | 0.3969E-05 | 0.3969E-03 |

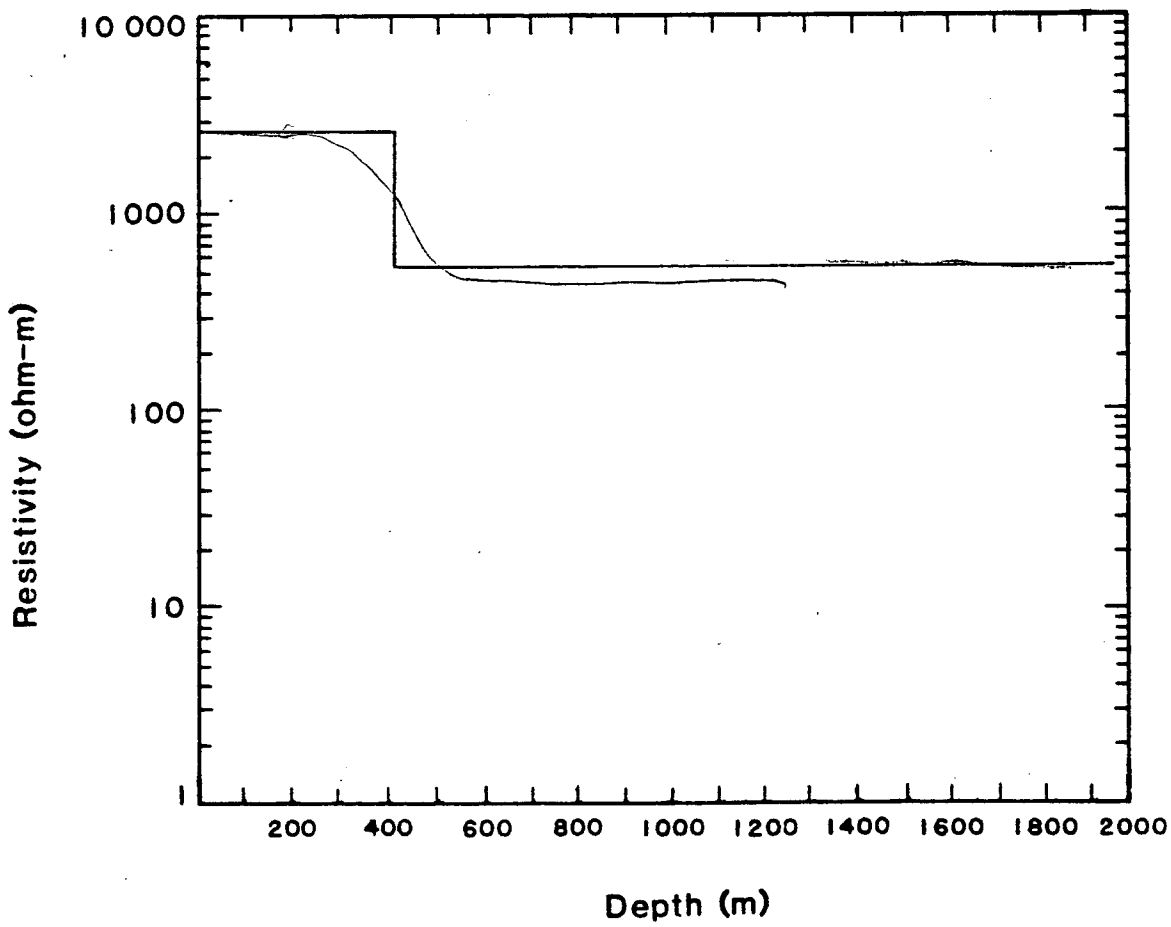
| PARAMETER NAME | FINAL SOLUTION | RESISTIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.37553E-03 | 0.26629E+04 | |
| 2 SIGMA( 2) = | 0.16742E-02 | 0.59755E+03 | |
| 3 THICK( 1) = | 0.41020E+03 | | 0.41020E+03 |
| 4 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 89



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 90 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.8883E+02 | 0.9404E+02 | -0.5209E+01 | -0.5539E+01 | 0.127E-01 |
| 2 | 0.1100E-03 | 0.5097E+02 | 0.5520E+02 | -0.4229E+01 | -0.7662E+01 | 0.385E-01 |
| 3 | 0.1400E-03 | 0.3117E+02 | 0.2963E+02 | 0.1544E+01 | 0.5213E+01 | 0.103E+00 |
| 4 | 0.1770E-03 | 0.1734E+02 | 0.1660E+02 | 0.7407E+00 | 0.4462E+01 | 0.333E+00 |
| 5 | 0.2200E-03 | 0.1107E+02 | 0.1003E+02 | 0.1037E+01 | 0.1033E+02 | 0.816E+00 |
| 6 | 0.2800E-03 | 0.6090E+01 | 0.5895E+01 | 0.1949E+00 | 0.3307E+01 | 0.100E+01 |
| 7 | 0.3550E-03 | 0.3660E+01 | 0.3644E+01 | 0.1561E-01 | 0.4282E+00 | 0.400E+01 |
| 8 | 0.4430E-03 | 0.2440E+01 | 0.2340E+01 | 0.9986E-01 | 0.4267E+01 | 0.111E+02 |
| 9 | 0.5540E-03 | 0.1490E+01 | 0.1527E+01 | -0.3704E-01 | -0.2425E+01 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.9500E+00 | 0.9571E+00 | -0.7059E-02 | -0.7375E+00 | 0.100E+03 |
| 11 | 0.8810E-03 | 0.6700E+00 | 0.6381E+00 | 0.3194E-01 | 0.5006E+01 | 0.100E+03 |
| 12 | 0.1096E-02 | 0.4700E+00 | 0.4232E+00 | 0.4682E-01 | 0.1106E+02 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.2900E+00 | 0.2585E+00 | 0.3149E-01 | 0.1218E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.1700E+00 | 0.1598E+00 | 0.1015E-01 | 0.6353E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.1100E+00 | 0.1041E+00 | 0.5868E-02 | 0.5635E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.6000E-01 | 0.6257E-01 | -0.2566E-02 | -0.4101E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.4000E-01 | 0.3827E-01 | 0.1733E-02 | 0.4529E+01 | 0.100E+03 |

* %RMSERR= 6.34

ORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | 0.1702E+00 | 0.1000E+01 | |
| 3 | -0.7058E-01 | -0.3464E-01 | 0.1000E+01 |

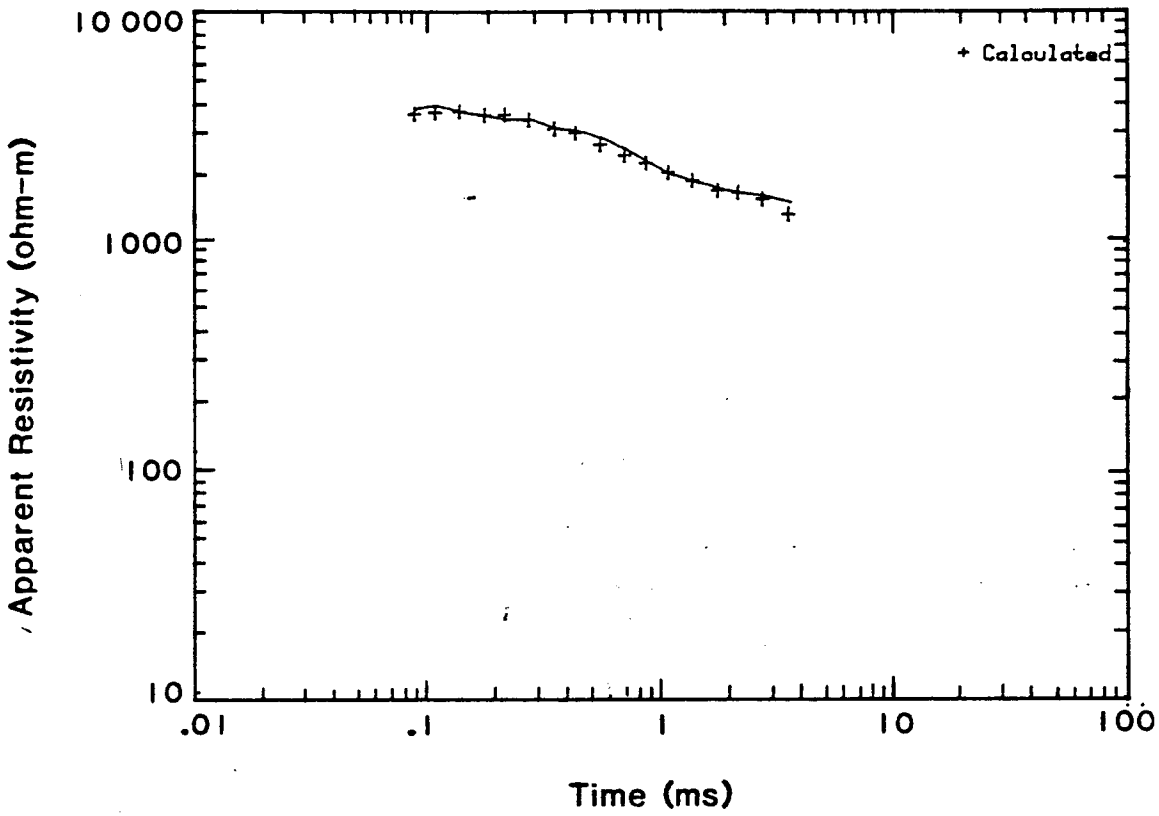
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3073E-03 | 0.9843E-04 | 0.3203E+00 | 0.3203E+02 |
| 2 | 0.1365E-02 | 0.1893E-02 | 0.1386E+01 | 0.1386E+03 |
| 3 | 0.8019E+03 | 0.3953E-02 | 0.4930E-05 | 0.4930E-03 |

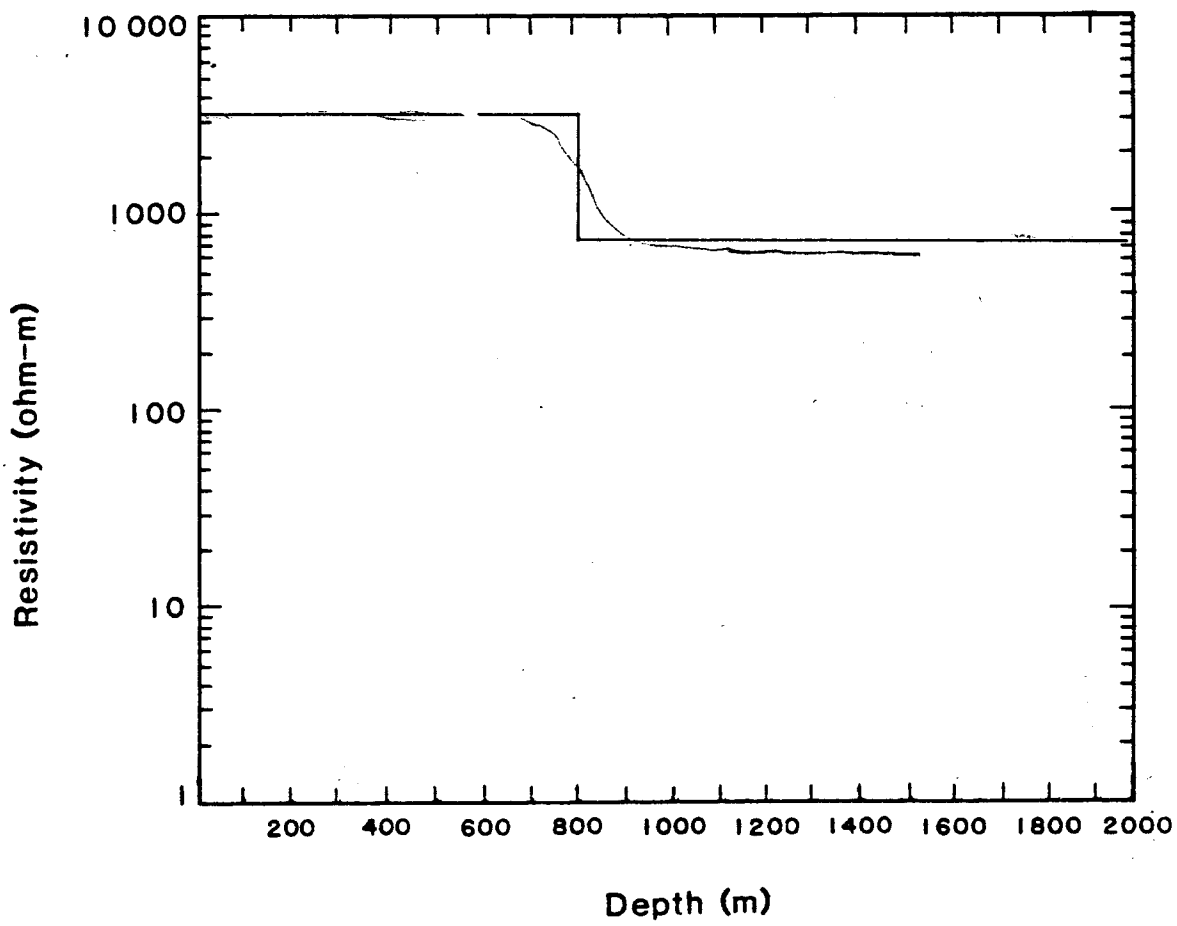
| | ARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.30733E-03 | 0.32538E+04 | |
| 2 | SIGMA( 2) | = | 0.13651E-02 | 0.73255E+03 | |
| 3 | THICK( 1) | = | 0.80187E+03 | | 0.80187E+03 |
| 4 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 90



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 92 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4983E+03 | 0.5317E+03 | -0.3341E+02 | -0.6283E+01 | 0.403E-03 |
| 2 | 0.1100E-03 | 0.4189E+03 | 0.4224E+03 | -0.3521E+01 | -0.8335E+00 | 0.570E-03 |
| 3 | 0.1400E-03 | 0.3119E+03 | 0.3203E+03 | -0.8367E+01 | -0.2612E+01 | 0.103E-02 |
| 4 | 0.1770E-03 | 0.2371E+03 | 0.2414E+03 | -0.4259E+01 | -0.1765E+01 | 0.178E-02 |
| 5 | 0.2200E-03 | 0.1792E+03 | 0.1828E+03 | -0.3665E+01 | -0.2005E+01 | 0.312E-02 |
| 6 | 0.2800E-03 | 0.1297E+03 | 0.1323E+03 | -0.2660E+01 | -0.2010E+01 | 0.595E-02 |
| 7 | 0.3550E-03 | 0.9421E+02 | 0.9459E+02 | -0.3818E+00 | -0.4036E+00 | 0.113E-01 |
| 8 | 0.4430E-03 | 0.6963E+02 | 0.6802E+02 | 0.1612E+01 | 0.2371E+01 | 0.206E-01 |
| 9 | 0.5540E-03 | 0.4905E+02 | 0.4809E+02 | 0.9633E+00 | 0.2003E+01 | 0.416E-01 |
| 10 | 0.7130E-03 | 0.3347E+02 | 0.3190E+02 | 0.1570E+01 | 0.4921E+01 | 0.893E-01 |
| 11 | 0.8810E-03 | 0.2335E+02 | 0.2228E+02 | 0.1066E+01 | 0.4784E+01 | 0.183E+00 |
| 12 | 0.1096E-02 | 0.1645E+02 | 0.1520E+02 | 0.1255E+01 | 0.8259E+01 | 0.370E+00 |
| 13 | 0.1411E-02 | 0.1092E+02 | 0.9595E+01 | 0.1325E+01 | 0.1381E+02 | 0.839E+00 |
| 14 | 0.1795E-02 | 0.6920E+01 | 0.6095E+01 | 0.8250E+00 | 0.1354E+02 | 0.100E+01 |
| 15 | 0.2224E-02 | 0.4470E+01 | 0.4031E+01 | 0.4394E+00 | 0.1090E+02 | 0.400E+01 |
| 16 | 0.2850E-02 | 0.2600E+01 | 0.2461E+01 | 0.1394E+00 | 0.5667E+01 | 0.111E+02 |
| 17 | 0.3600E-02 | 0.1450E+01 | 0.1531E+01 | -0.8072E-01 | -0.5273E+01 | 0.111E+02 |
| 18 | 0.4490E-02 | 0.8100E+00 | 0.9694E+00 | -0.1594E+00 | -0.1644E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.4500E+00 | 0.5852E+00 | -0.1352E+00 | -0.2311E+02 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.2700E+00 | 0.3575E+00 | -0.8750E-01 | -0.2448E+02 | 0.100E+03 |
| 21 | 0.8800E-02 | 0.1800E+00 | 0.2315E+00 | -0.5151E-01 | -0.2225E+02 | 0.100E+03 |
| 22 | 0.1100E-01 | 0.1100E+00 | 0.1430E+00 | -0.3302E-01 | -0.2309E+02 | 0.100E+03 |
| 23 | 0.1400E-01 | 0.7000E-01 | 0.8573E-01 | -0.1573E-01 | -0.1835E+02 | 0.100E+03 |
| 24 | 0.1800E-01 | 0.4000E-01 | 0.5084E-01 | -0.1084E-01 | -0.2131E+02 | 0.100E+03 |

** %RMSERR= 12.84

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | 0.6591E-02 | 0.1000E+01 | |
| 3 | 0.1924E+00 | 0.5331E+00 | 0.1000E+01 |

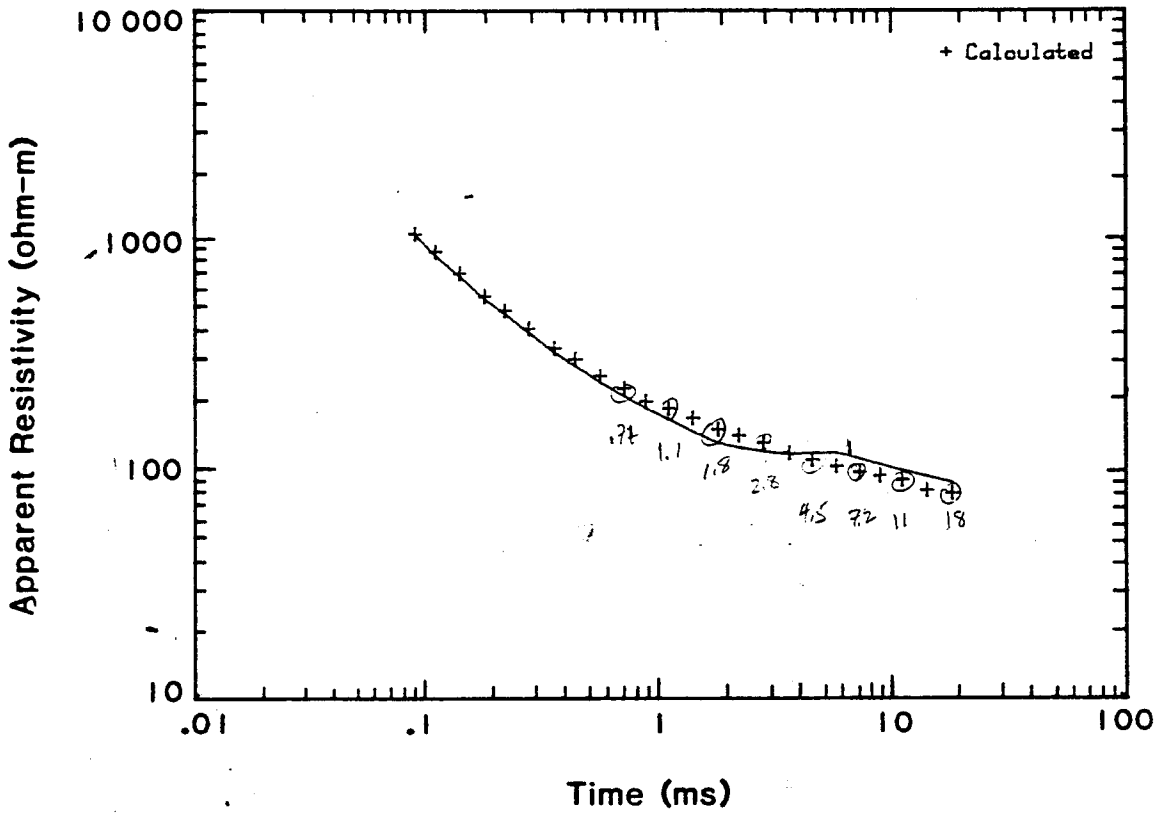
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1492E-03 | 0.7321E-03 | 0.4906E+01 | 0.4906E+03 |
| 2 | 0.1641E-01 | 0.1877E-02 | 0.1144E+00 | 0.1144E+02 |
| 3 | 0.1862E+03 | 0.1608E-02 | 0.8636E-05 | 0.8636E-03 |

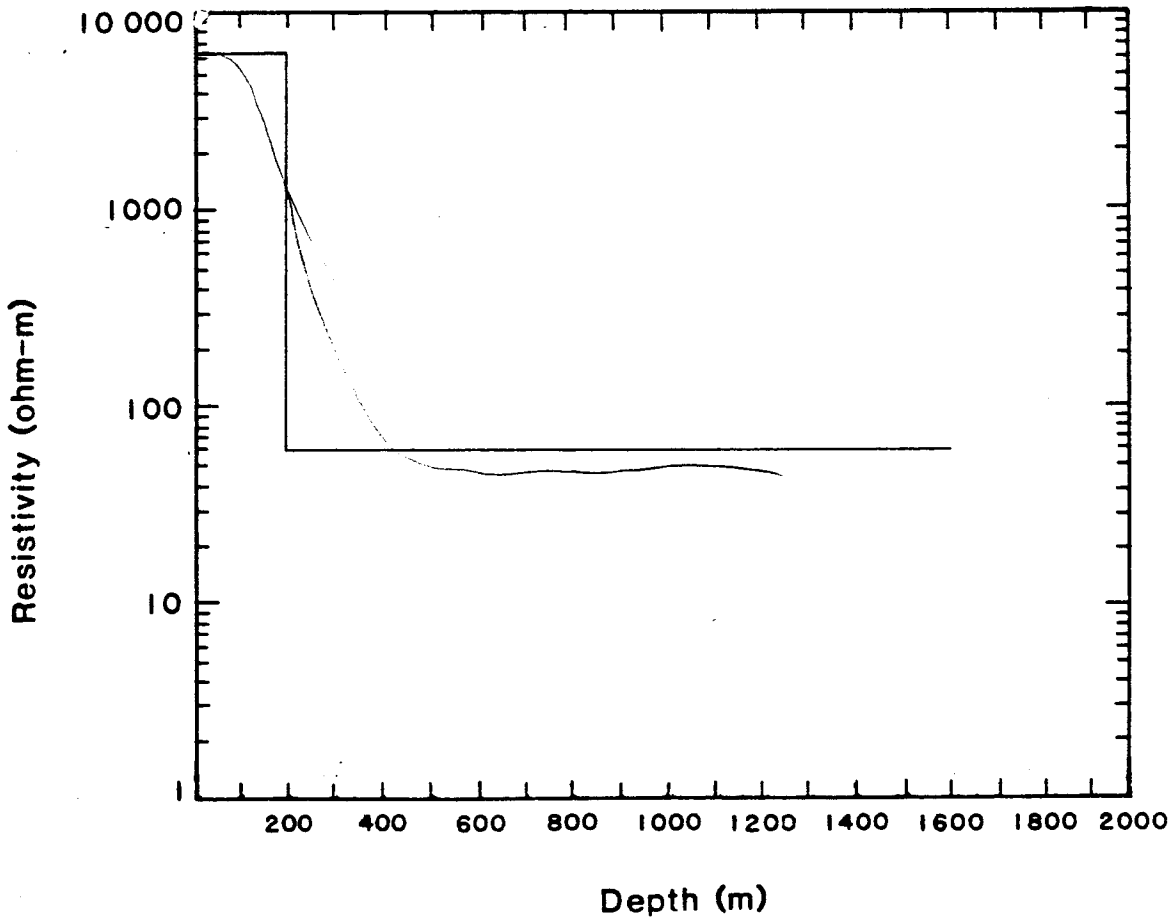
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.14924E-03 | 0.67005E+04 | |
| 2 | SIGMA( 2) | = | 0.16411E-01 | 0.60935E+02 | |
| 3 | THICK( 1) | = | 0.18624E+03 | | 0.18624E+03 |
| 4 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 92



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 93 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.8744E+02 | 0.9373E+02 | -0.6293E+01 | -0.6713E+01 | 0.131E-01 |
| 2 | 0.1100E-03 | 0.7054E+02 | 0.7014E+02 | 0.4016E+00 | 0.5726E+00 | 0.201E-01 |
| 3 | 0.1400E-03 | 0.5242E+02 | 0.4909E+02 | 0.3330E+01 | 0.6783E+01 | 0.3[illegible]E-01 |
| 4 | 0.1770E-03 | 0.3570E+02 | 0.3388E+02 | 0.1822E+01 | 0.5378E+01 | 0.7[illegible]E-01 |
| 5 | 0.2200E-03 | 0.2443E+02 | 0.2366E+02 | 0.7695E+00 | 0.3252E+01 | 0.1[illegible]E+00 |
| 6 | 0.2800E-03 | 0.1565E+02 | 0.1565E+02 | 0.2412E-02 | 0.1541E-01 | 0.4[illegible]E+01 |
| 7 | 0.3550E-03 | 0.1050E+02 | 0.1043E+02 | 0.7409E-01 | 0.7[illegible] | [illegible] |
| 8 | 0.4430E-03 | 0.6780E+01 | 0.7217E+01 | -0.4367E+00 | -0.6[illegible] | [illegible] |
| 9 | 0.5540E-03 | 0.4710E+01 | 0.5028E+01 | -0.3179E+00 | -0.6323E+01 | 0.4[illegible]E+01 |
| 10 | 0.7130E-03 | 0.3280E+01 | 0.3364E+01 | -0.1035E+00 | -0.3[illegible]E+01 | 0.4[illegible]E+01 |
| 11 | 0.8810E-03 | 0.2500E+01 | 0.2462E+01 | 0.3785E-01 | 0.1[illegible]E+01 | 0.1[illegible]E+02 |
| 12 | 0.1096E-02 | 0.1810E+01 | 0.1772E+01 | 0.3813E-01 | 0.2[illegible]E+01 | 0.1[illegible]E+02 |
| 13 | 0.1411E-02 | 0.1270E+01 | 0.1207E+01 | 0.6301E-01 | 0.5220E+01 | 0.1[illegible]E+02 |
| 14 | 0.1793E-02 | 0.8700E+00 | 0.8348E+00 | 0.3516E-01 | 0.4211E+01 | 0.1[illegible]E+03 |
| 15 | 0.2294E-02 | 0.6700E+00 | 0.5964E+00 | 0.3343E-01 | 0.5640E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.4300E+00 | 0.3997E+00 | 0.3028E-01 | 0.7577E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.2600E+00 | 0.2717E+00 | -0.1167E-01 | -0.4295E+01 | 0.100E+03 |
| 18 | 0.4470E-02 | 0.1700E+00 | 0.1870E+00 | -0.1703E-01 | -0.9108E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.1100E+00 | 0.1240E+00 | -0.1400E-01 | -0.1129E+02 | 0.100E+03 |

CHKSERR= 5.56

CORRELATION MATRIX

| | | | | |
|---|---|---|---|---|
| 1 | 0.1000E+01 | | | |
| 2 | -0.1624E+00 | 0.1000E+01 | | |
| 3 | 0.3224E+00 | -0.2350E+00 | 0.1000E+01 | |
| 4 | -0.3633E+00 | 0.6506E+00 | -0.4761E+00 | 0.1000E+01 |
| 5 | -0.9841E-02 | -0.7326E-02 | 0.6328E-01 | -0.9296E-01 0.1000E+01 |

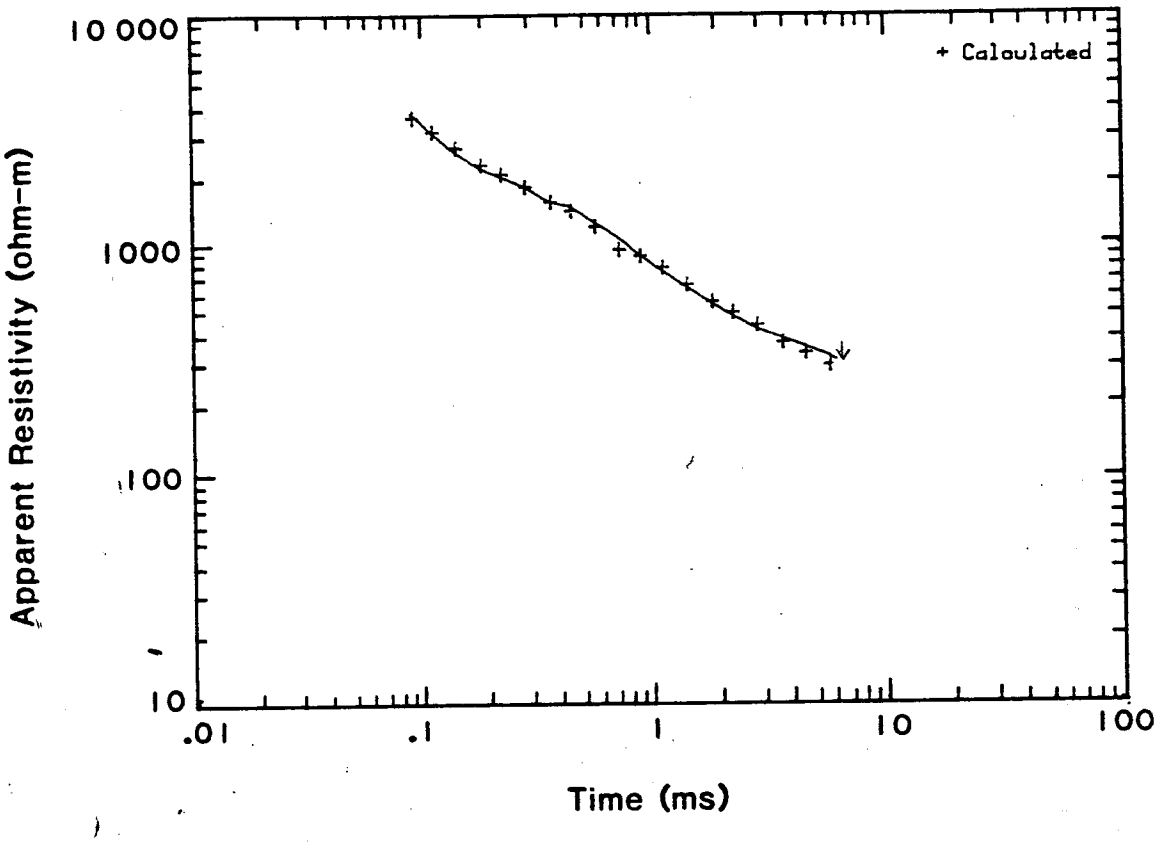
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR **A |
|---|---|---|---|
| 1 0.1012E-03 | 0.4389E-03 | 0.4336E+01 | 0.4336E+03 |
| 2 0.2986E-02 | 0.2341E-02 | 0.7838E+00 | 0.7838E+02 |
| 3 0.1034E-01 | 0.6957E-02 | 0.6728E+00 | 0.6728E+02 |
| 4 0.3533E+03 | 0.1730E-02 | 0.4929E-03 | 0.4929E+01 |
| 5 0.3079E+03 | 0.4209E-02 | 0.1367E-03 | 0.1367E+02 |

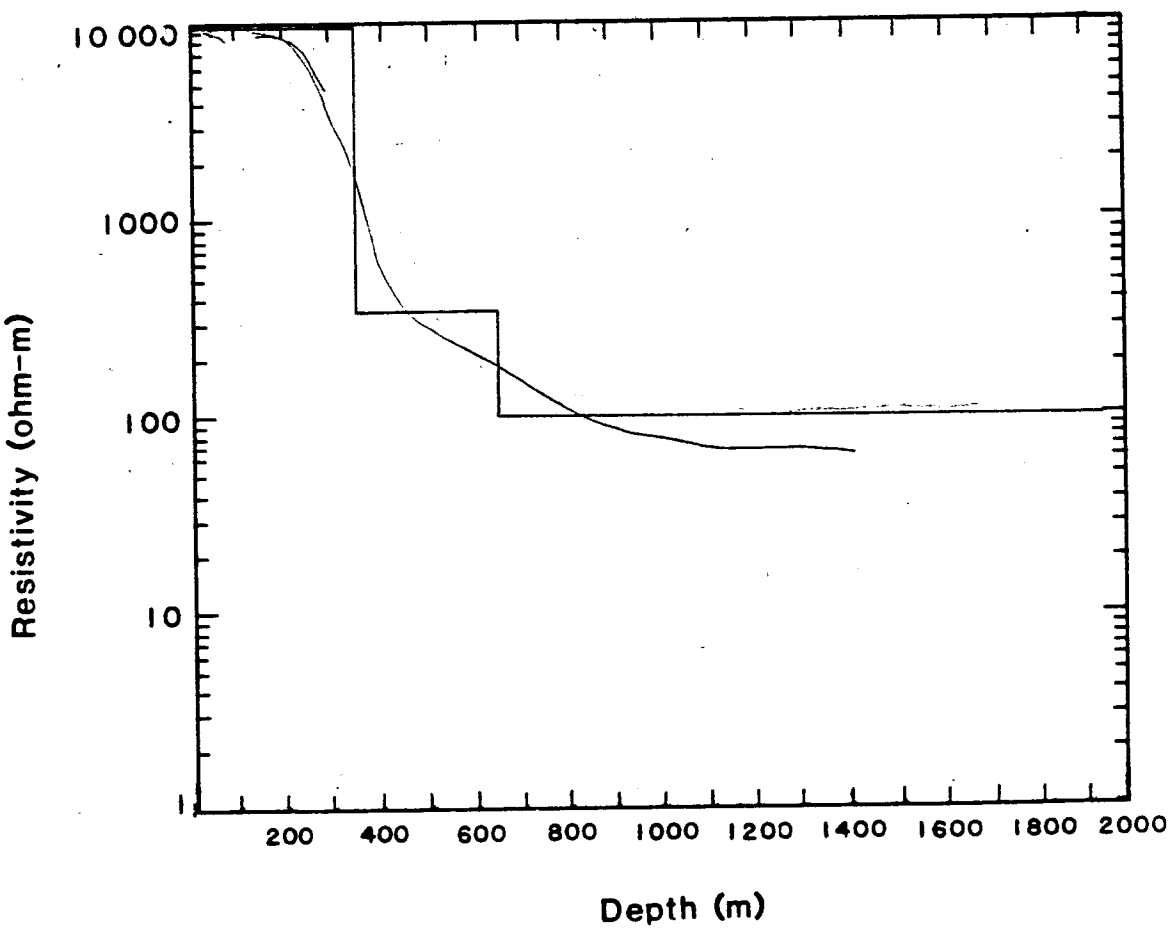
| PARAMETER NAME | FINAL SOLUTION | RESISTIVITY | [illegible] |
|---|---|---|---|
| 1 THICK( 1) = | 0.10121E-03 | 0.9886[illegible]E-04 | |
| 2 THICK( 2) = | 0.29862E-02 | 0.3348[illegible]E+03 | |
| 3 THICK( 3) = | 0.10339E-01 | 0.9671[illegible]E-02 | |
| 4 RESIST( 1) = | 0.35330E+03 | | [illegible] |
| 5 RESIST( 2) = | 0.30796E+03 | | [illegible] |
| 6 [illegible] = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 93



EMSURVEYS ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 94 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2012E+03 | 0.2132E+03 | -0.1205E+02 | -0.5649E+01 | 0.247E-02 |
| 2 | 0.1100E-03 | 0.1554E+03 | 0.1540E+03 | 0.1423E+01 | 0.9237E+00 | 0.414E-02 |
| 3 | 0.1400E-03 | 0.1095E+03 | 0.1034E+03 | 0.6117E+01 | 0.5915E+01 | 0.834E-02 |
| 4 | 0.1770E-03 | 0.7355E+02 | 0.7005E+02 | 0.3505E+01 | 0.5003E+01 | 0.185E-01 |
| 5 | 0.2200E-03 | 0.5069E+02 | 0.4815E+02 | 0.2541E+01 | 0.5277E+01 | 0.389E-01 |
| 6 | 0.2800E-03 | 0.3229E+02 | 0.3131E+02 | 0.9805E+00 | 0.3132E+01 | 0.959E-01 |
| 7 | 0.3550E-03 | 0.2050E+02 | 0.2027E+02 | 0.2340E+00 | 0.1155E+01 | 0.238E+00 |
| 8 | 0.4430E-03 | 0.1341E+02 | 0.1335E+02 | 0.6374E-01 | 0.4776E+00 | 0.556E+00 |
| 9 | 0.5540E-03 | 0.7640E+01 | 0.8643E+01 | -0.1003E+01 | -0.1161E+02 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.4880E+01 | 0.5241E+01 | -0.3609E+00 | -0.6886E+01 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.3270E+01 | 0.3409E+01 | -0.1393E+00 | -0.4087E+01 | 0.400E+01 |
| 12 | 0.1096E-02 | 0.2160E+01 | 0.2166E+01 | -0.5590E-02 | -0.2581E+00 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1320E+01 | 0.1274E+01 | 0.4587E-01 | 0.3600E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.8000E+00 | 0.7564E+00 | 0.4356E-01 | 0.5759E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.5100E+00 | 0.4739E+00 | 0.3613E-01 | 0.7624E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.3000E+00 | 0.2738E+00 | 0.2618E-01 | 0.9561E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1700E+00 | 0.1619E+00 | 0.8129E-02 | 0.5022E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.1000E+00 | 0.9843E-01 | 0.1571E-02 | 0.1596E+01 | 0.100E+03 |

** %RMSERR= 5.55

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.6012E+00 | 0.1000E+01 | |
| 3 | -0.4397E+00 | 0.4897E+00 | 0.1000E+01 |

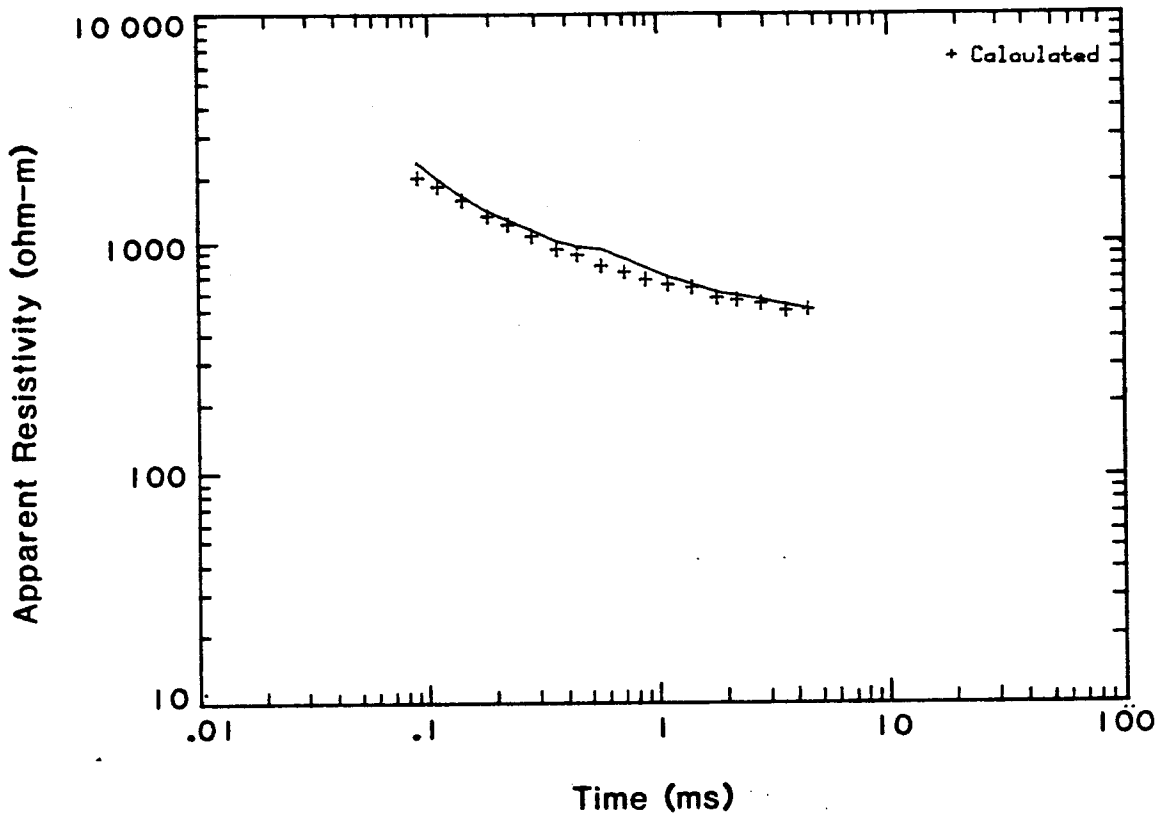
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.2789E-03 | 0.5426E-03 | 0.1946E+01 | 0.1946E+03 |
| 2 0.2766E-02 | 0.1687E-02 | 0.6099E+00 | 0.6099E+02 |
| 3 0.2628E+03 | 0.1591E-02 | 0.6055E-05 | 0.6055E-03 |

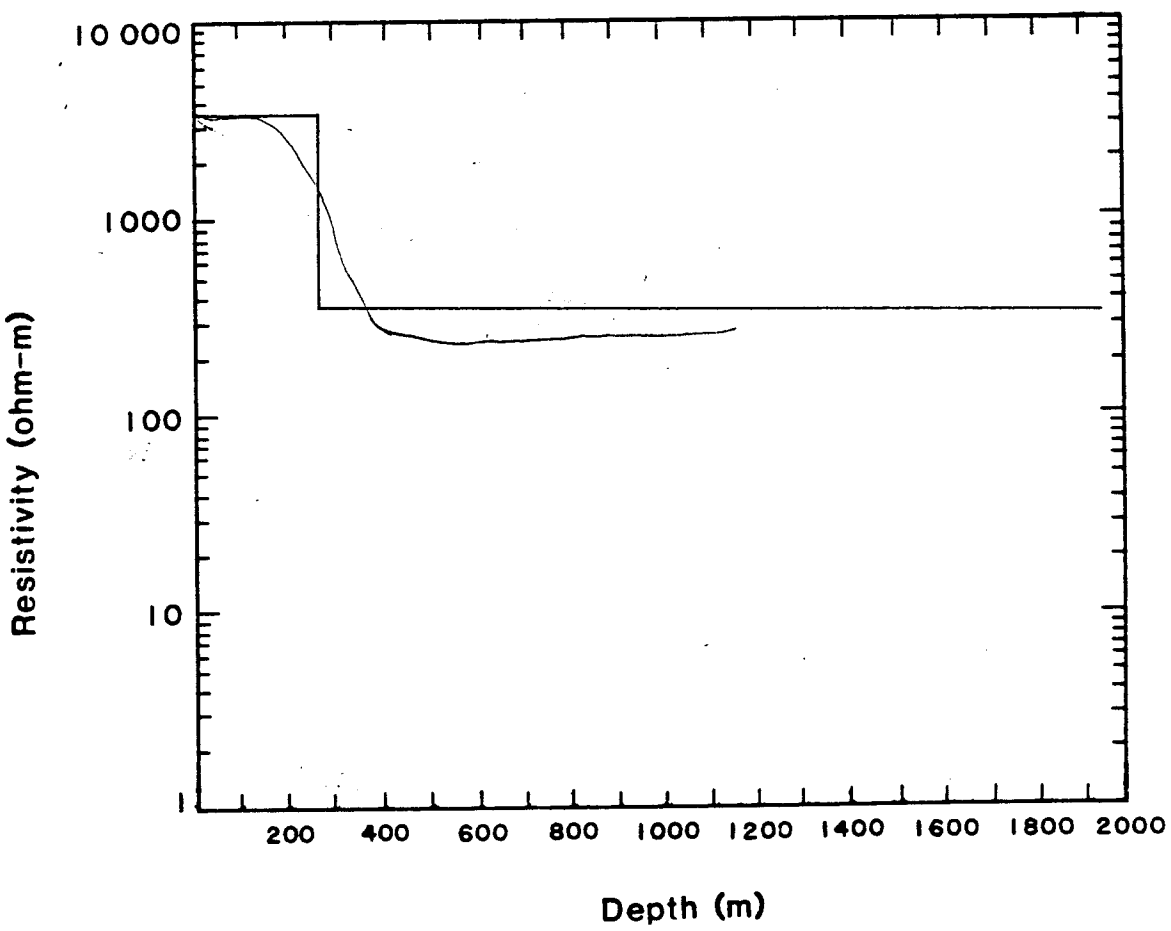
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 SIGMA( 1) | = | 0.27887E-03 | 0.35859E+04 | |
| 2 SIGMA( 2) | = | 0.27656E-02 | 0.36158E+03 | |
| 3 THICK( 1) | = | 0.26281E+03 | | 0.26281E+03 |
| 4 SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 94



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 95 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1644E+03 | 0.1871E+03 | -0.2266E+02 | -0.1211E+02 | 0.370E-02 |
| 2 | 0.1100E-03 | 0.1241E+03 | 0.1151E+03 | 0.8977E+01 | 0.7798E+01 | 0.649E-02 |
| 3 | 0.1400E-03 | 0.8581E+02 | 0.7224E+02 | 0.1357E+02 | 0.1878E+02 | 0.136E-01 |
| 4 | 0.1770E-03 | 0.6030E+02 | 0.5144E+02 | 0.8859E+01 | 0.1722E+02 | 0.275E-01 |
| 5 | 0.2200E-03 | 0.4517E+02 | 0.4053E+02 | 0.4639E+01 | 0.1145E+02 | 0.490E-01 |
| 6 | 0.2800E-03 | 0.3325E+02 | 0.3192E+02 | 0.1327E+01 | 0.4158E+01 | 0.905E-01 |
| 7 | 0.3550E-03 | 0.2481E+02 | 0.2490E+02 | -0.9395E-01 | -0.3773E+00 | 0.162E+00 |
| 8 | 0.4430E-03 | 0.1926E+02 | 0.2020E+02 | -0.9440E+00 | -0.4672E+01 | 0.270E+00 |
| 9 | 0.5540E-03 | 0.1496E+02 | 0.1615E+02 | -0.1190E+01 | -0.7366E+01 | 0.447E+00 |
| 10 | 0.7130E-03 | 0.1133E+02 | 0.1239E+02 | -0.1055E+01 | -0.8521E+01 | 0.779E+00 |
| 11 | 0.8810E-03 | 0.8960E+01 | 0.9882E+01 | -0.9215E+00 | -0.9326E+01 | 0.100E+01 |
| 12 | 0.1096E-02 | 0.7320E+01 | 0.7719E+01 | -0.3991E+00 | -0.5170E+01 | 0.100E+01 |
| 13 | 0.1411E-02 | 0.5430E+01 | 0.5739E+01 | -0.3094E+00 | -0.5391E+01 | 0.100E+01 |
| 14 | 0.1795E-02 | 0.4090E+01 | 0.4259E+01 | -0.1690E+00 | -0.3968E+01 | 0.400E+01 |
| 15 | 0.2224E-02 | 0.2990E+01 | 0.3225E+01 | -0.2348E+00 | -0.7282E+01 | 0.111E+02 |
| 16 | 0.2850E-02 | 0.2170E+01 | 0.2301E+01 | -0.1311E+00 | -0.5697E+01 | 0.111E+02 |
| 17 | 0.3600E-02 | 0.1610E+01 | 0.1646E+01 | -0.3629E-01 | -0.2204E+01 | 0.111E+02 |
| 18 | 0.4490E-02 | 0.1180E+01 | 0.1184E+01 | -0.3523E-02 | -0.2977E+00 | 0.111E+02 |
| 19 | 0.5700E-02 | 0.8500E+00 | 0.8150E+00 | 0.3499E-01 | 0.4293E+01 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.6400E+00 | 0.5579E+00 | 0.8210E-01 | 0.1472E+02 | 0.100E+03 |
| 21 | 0.8800E-02 | 0.5000E+00 | 0.3969E+00 | 0.1031E+00 | 0.2599E+02 | 0.100E+03 |
| 22 | 0.1100E-01 | 0.3800E+00 | 0.2688E+00 | 0.1112E+00 | 0.4137E+02 | 0.100E+03 |
| 23 | 0.1400E-01 | 0.2700E+00 | 0.1738E+00 | 0.9621E-01 | 0.5536E+02 | 0.100E+03 |
| 24 | 0.1800E-01 | 0.1900E+00 | 0.1090E+00 | 0.8104E-01 | 0.7438E+02 | 0.100E+03 |
| 25 | 0.2200E-01 | 0.1400E+00 | 0.7423E-01 | 0.6577E-01 | 0.8859E+02 | 0.100E+03 |
| 26 | 0.2800E-01 | 0.1000E+00 | 0.4632E-01 | 0.5368E-01 | 0.1159E+03 | 0.100E+03 |
| 27 | 0.3600E-01 | 0.7000E-01 | 0.2815E-01 | 0.4185E-01 | 0.1487E+03 | 0.100E+03 |
| 28 | 0.4500E-01 | 0.5000E-01 | 0.1790E-01 | 0.3210E-01 | 0.1794E+03 | 0.100E+03 |
| 29 | 0.5700E-01 | 0.3000E-01 | 0.1111E-01 | 0.1889E-01 | 0.1701E+03 | 0.100E+03 |

* %RMSERR= 63.55

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | 0.3903E+00 | 0.1000E+01 | |
| 3 | 0.3820E+00 | 0.1976E+00 | 0.1000E+01 |

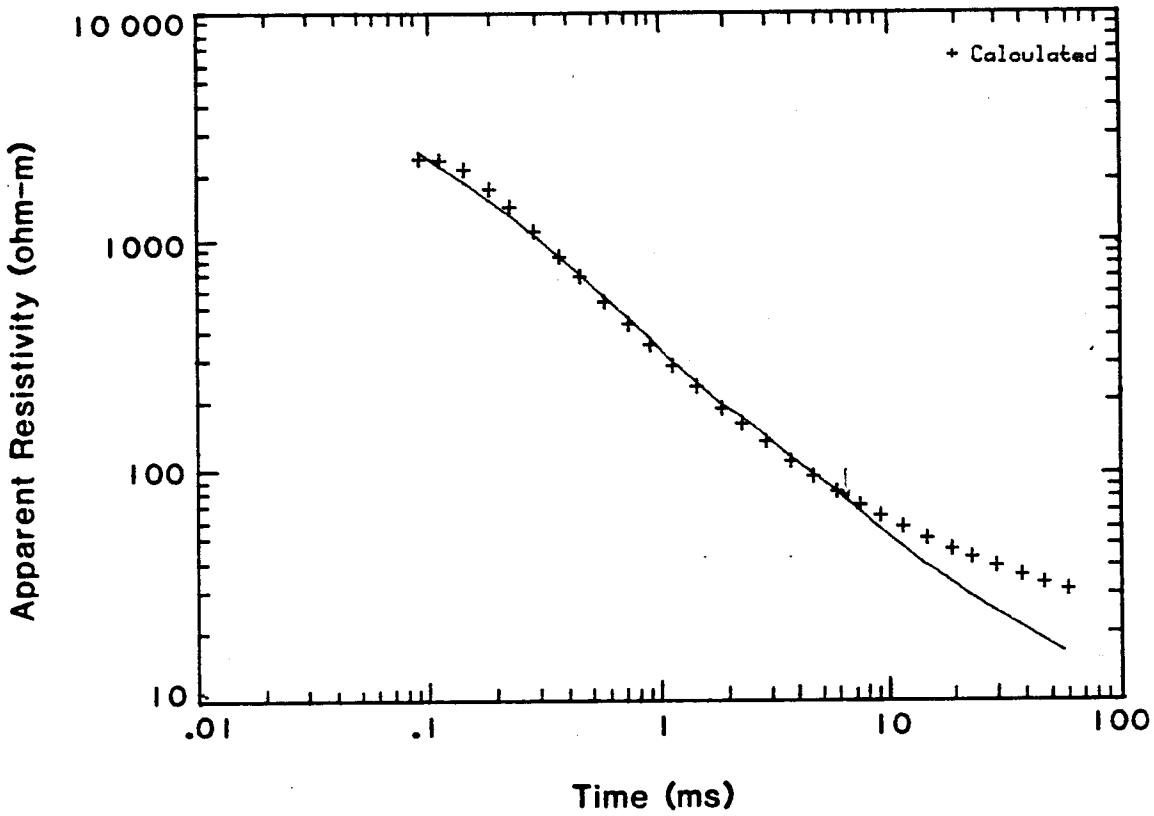
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.7052E-03 | 0.1214E-03 | 0.1721E+00 | 0.1721E+02 |
| 2 | 0.5421E-01 | 0.2235E-02 | 0.4123E-01 | 0.4123E+01 |
| 3 | 0.3509E+03 | 0.1844E-02 | 0.5255E-05 | 0.5255E-03 |

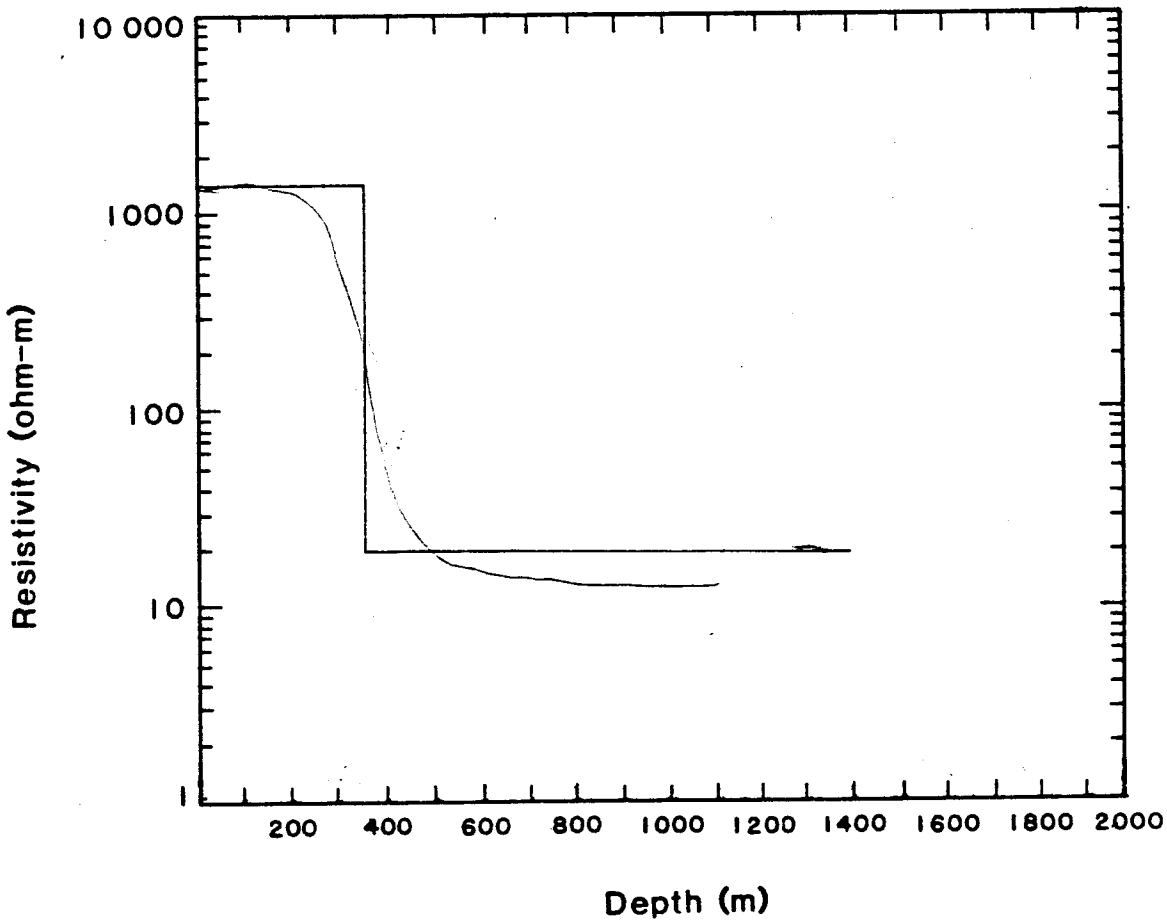
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.70516E-03 | 0.14181E+04 | |
| 2 | SIGMA( 2) | = | 0.54209E-01 | 0.18447E+02 | |
| 3 | THICK( 1) | = | 0.35092E+03 | | 0.35092E+03 |
| 4 | SHIFT | = | [illegible] | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 95



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 96 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.5184E+03 | 0.5300E+03 | -0.1165E+02 | -0.2199E+01 | 0.372E-03 |
| 2 | 0.1100E-03 | 0.4187E+03 | 0.4214E+03 | -0.2712E+01 | -0.6435E+00 | 0.571E-03 |
| 3 | 0.1400E-03 | 0.3283E+03 | 0.3226E+03 | 0.5667E+01 | 0.1757E+01 | 0.928E-03 |
| 4 | 0.1770E-03 | 0.2571E+03 | 0.2513E+03 | 0.5822E+01 | 0.2317E+01 | 0.151E-02 |
| 5 | 0.2200E-03 | 0.2022E+03 | 0.2018E+03 | 0.4250E+00 | 0.2106E+00 | 0.245E-02 |
| 6 | 0.2800E-03 | 0.1551E+03 | 0.1554E+03 | -0.3130E+00 | -0.2014E+00 | 0.416E-02 |
| 7 | 0.3550E-03 | 0.1187E+03 | 0.1193E+03 | -0.5831E+00 | -0.4887E+00 | 0.709E-02 |
| 8 | 0.4430E-03 | 0.9211E+02 | 0.9268E+02 | -0.5672E+00 | -0.6120E+00 | 0.118E-01 |
| 9 | 0.5740E-03 | 0.6972E+02 | 0.7058E+02 | -0.8564E+00 | -0.1213E+01 | 0.206E-01 |
| 10 | 0.7130E-03 | 0.5182E+02 | 0.5123E+02 | 0.5867E+00 | 0.1145E+01 | 0.372E-01 |
| 11 | 0.8810E-03 | 0.3716E+02 | 0.3853E+02 | -0.1368E+01 | -0.3550E+01 | 0.724E-01 |
| 12 | 0.1096E-02 | 0.2779E+02 | 0.2832E+02 | -0.5280E+00 | -0.1864E+01 | 0.129E+00 |
| 13 | 0.1411E-02 | 0.2010E+02 | 0.1948E+02 | 0.6173E+00 | 0.3169E+01 | 0.248E+00 |
| 14 | 0.1795E-02 | 0.1428E+02 | 0.1339E+02 | 0.8859E+00 | 0.6614E+01 | 0.470E+00 |
| 15 | 0.2224E-02 | 0.9900E+01 | 0.9428E+01 | 0.4116E+00 | 0.4338E+01 | 0.100E+01 |
| 16 | 0.2830E-02 | 0.6460E-01 | 0.6282E-01 | 0.1778E+00 | 0.2830E+01 | 0.100E+01 |
| 17 | 0.3600E-02 | 0.3960E+01 | 0.4205E+01 | -0.2450E+00 | -0.5826E+01 | 0.400E+01 |
| 18 | 0.4490E-02 | 0.2620E+01 | 0.2850E+01 | -0.2300E+00 | -0.8070E+01 | 0.111E+02 |
| 19 | 0.5700E-02 | 0.1770E+01 | 0.1854E+01 | -0.8360E-01 | -0.4510E+01 | 0.111E+02 |
| 20 | 0.7190E-02 | 0.1210E+01 | 0.1204E+01 | 0.5736E-02 | 0.4763E+00 | 0.111E+02 |
| 21 | 0.8800E-02 | 0.8400E+00 | 0.8222E+00 | 0.1783E-01 | 0.2168E+01 | 0.100E+03 |
| 22 | 0.1100E-01 | 0.5500E+00 | 0.5344E-00 | 0.1564E-01 | 0.2926E+01 | 0.100E+03 |
| 23 | 0.1400E-01 | 0.3600E+00 | 0.3316E+00 | 0.2842E-01 | 0.8571E+01 | 0.100E+03 |
| 24 | 0.1800E-01 | 0.2000E+00 | 0.1999E+00 | 0.8276E-04 | 0.4140E-01 | 0.100E+03 |
| 25 | 0.2200E-01 | 0.1300E+00 | 0.1321E+00 | -0.2081E-02 | -0.1576E+01 | 0.100E+03 |
| 26 | 0.2800E-01 | 0.8000E-01 | 0.7980E-01 | 0.2012E-03 | 0.2521E+00 | 0.100E+03 |
| 27 | 0.3600E-01 | 0.5000E-01 | 0.4676E-01 | 0.3243E-02 | 0.6935E+01 | 0.100E+03 |
| 28 | 0.4500E-01 | 0.3000E-01 | 0.2891E-01 | 0.1092E-02 | 0.3777E+01 | 0.100E+03 |

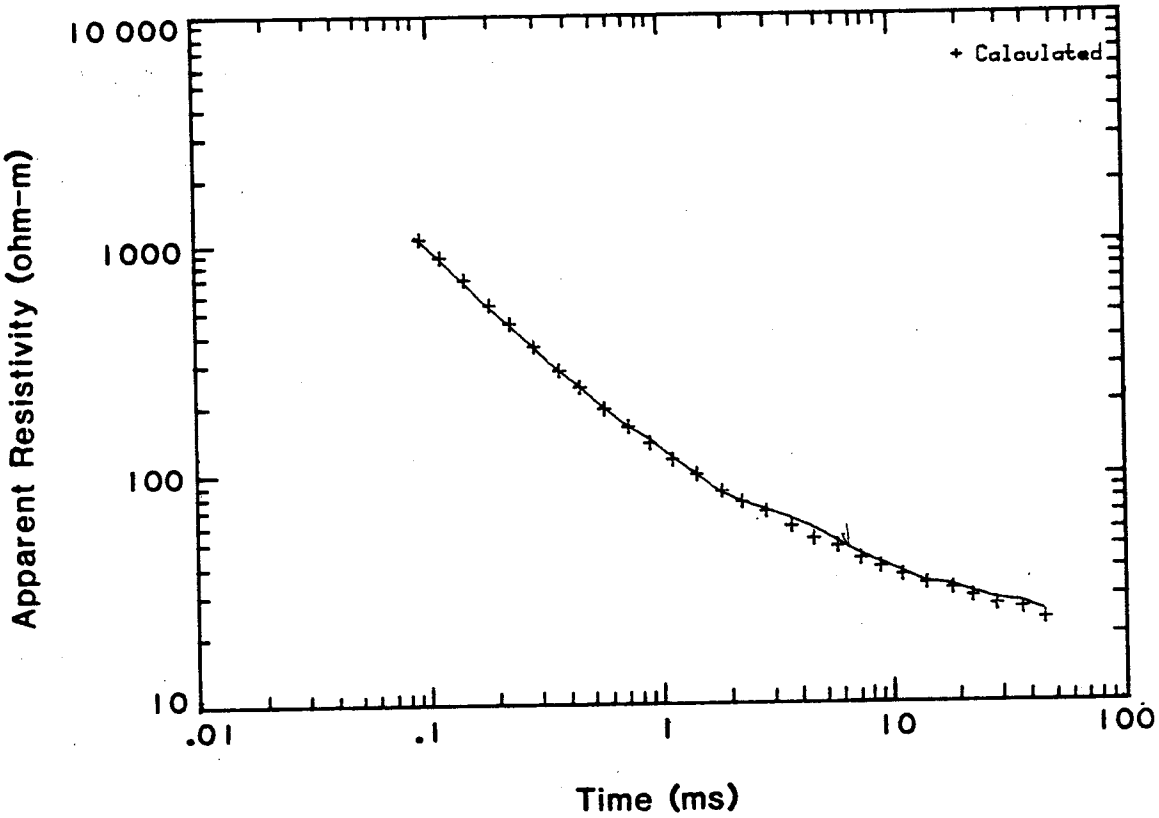
%RMSERR= 3.71

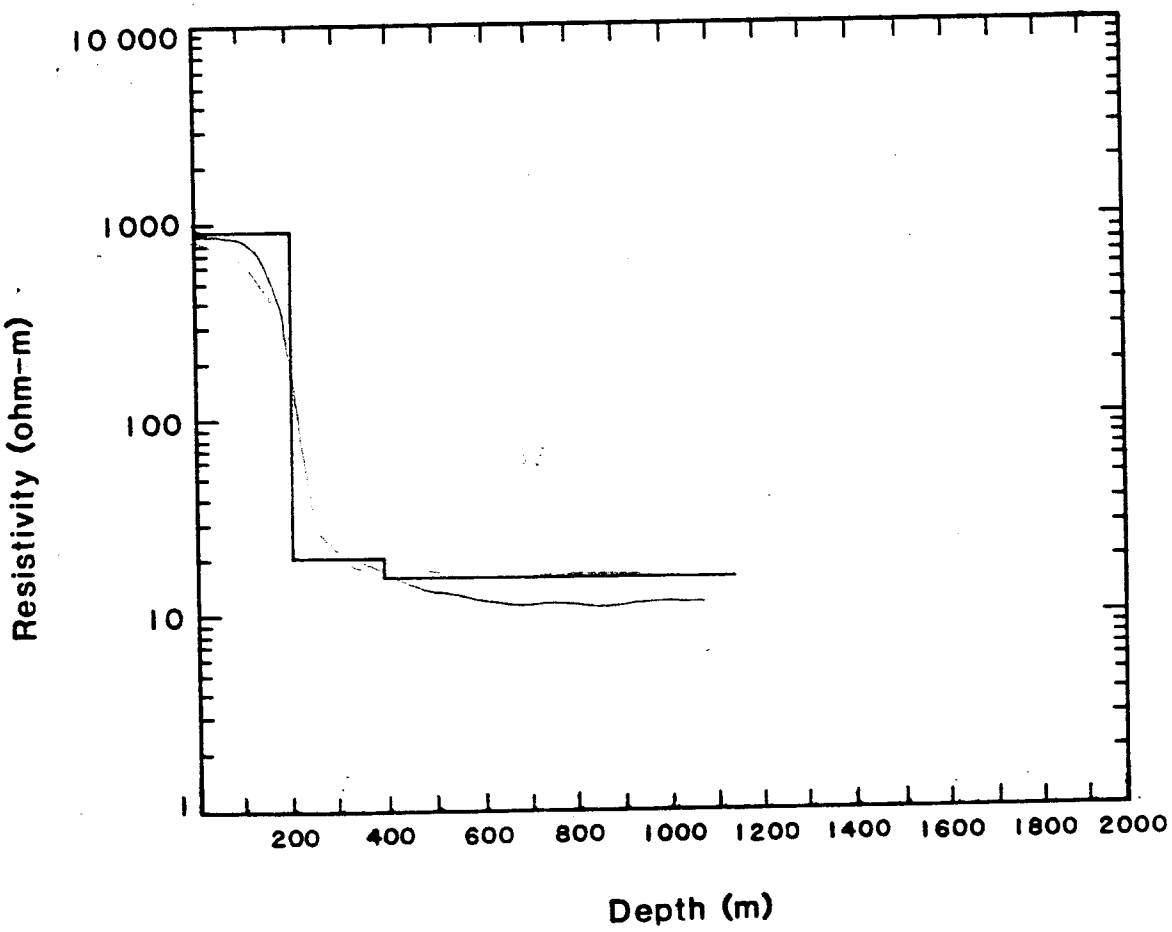
| PARAMETER | NAME | | FINAL SOLUTION | RESISTIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.10954E-01 | 0.91288E+03 | |
| 2 | SIGMA( 2) | = | 0.53163E-01 | 0.188.4E+02 | |
| 3 | SIGMA( 3) | = | 0.65271E-01 | 0.15321E+02 | |
| 4 | THICK( 1) | = | 0.19826E+03 | | 0.19826E+03 |
| 5 | THICK( 2) | = | 0.19580E+03 | | 0.37416E+03 |
| 6 | SHIFT | = | 0.20700E+02 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 96



ELECTROMAGNETIC SURVEYS INC.

EMSURVEYS

MOUNT SHASTA : STATION 97 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2608E+03 | 0.2859E+03 | -0.2509E+02 | -0.8774E+01 | 0.147E-02 |
| 2 | 0.1100E-03 | 0.2157E+03 | 0.2287E+03 | -0.1304E+02 | -0.5700E+01 | 0.215E-02 |
| 3 | 0.1400E-03 | 0.1696E+03 | 0.1750E+03 | -0.5365E+01 | -0.3067E+01 | 0.348E-02 |
| 4 | 0.1770E-03 | 0.1329E+03 | 0.1333E+03 | -0.3995E+00 | -0.2998E+00 | 0.567E-02 |
| 5 | 0.2200E-03 | 0.1038E+03 | 0.1021E+03 | 0.1771E+01 | 0.1735E+01 | 0.928E-02 |
| 6 | 0.2800E-03 | 0.7812E+02 | 0.7487E+02 | 0.3246E+01 | 0.4336E+01 | 0.164E-01 |
| 7 | 0.3550E-03 | 0.5777E+02 | 0.5426E+02 | 0.3513E+01 | 0.6475E+01 | 0.300E-01 |
| 8 | 0.4430E-03 | 0.4236E+02 | 0.3957E+02 | 0.2791E+01 | 0.7053E+01 | 0.557E-01 |
| 9 | 0.5540E-03 | 0.2997E+02 | 0.2838E+02 | 0.1592E+01 | 0.5609E+01 | 0.111E+00 |
| 10 | 0.7130E-03 | 0.2037E+02 | 0.1911E+02 | 0.1257E+01 | 0.6575E+01 | 0.241E+00 |
| 11 | 0.8810E-03 | 0.1330E+02 | 0.1350E+02 | -0.2036E+00 | -0.1507E+01 | 0.565E+00 |
| 12 | 0.1096E-02 | 0.9000E+01 | 0.9288E+01 | -0.2877E+00 | -0.3097E+01 | 0.100E+01 |
| 13 | 0.1411E-02 | 0.5690E+01 | 0.5902E+01 | -0.2120E+00 | -0.3592E+01 | 0.100E+01 |
| 14 | 0.1795E-02 | 0.3820E+01 | 0.3766E+01 | 0.5411E-01 | 0.1437E+01 | 0.400E+01 |
| 15 | 0.2224E-02 | 0.2420E+01 | 0.2497E+01 | -0.7706E-01 | -0.3086E+01 | 0.111E+02 |
| 16 | 0.2850E-02 | 0.1520E+01 | 0.1537E+01 | -0.1666E-01 | -0.1084E+01 | 0.111E+02 |
| 17 | 0.3600E-02 | 0.9400E+00 | 0.9735E+00 | -0.3349E-01 | -0.3440E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.5800E+00 | 0.6315E+00 | -0.5148E-01 | -0.8152E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.3500E+00 | 0.3955E+00 | -0.4552E-01 | -0.1151E+02 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.2400E+00 | 0.2533E+00 | -0.1334E-01 | -0.5267E+01 | 0.100E+03 |
| 21 | 0.8800E-02 | 0.1900E+00 | 0.1719E+00 | 0.1805E-01 | 0.1050E+02 | 0.100E+03 |
| 22 | 0.1100E-01 | 0.1300E+00 | 0.1125E+00 | 0.1752E-01 | 0.1557E+02 | 0.100E+03 |
| 23 | 0.1400E-01 | 0.9000E-01 | 0.7180E-01 | 0.1820E-01 | 0.2536E+02 | 0.100E+03 |
| 24 | 0.1800E-01 | 0.6000E-01 | 0.4545E-01 | 0.1455E-01 | 0.3200E+02 | 0.100E+03 |
| 25 | 0.2200E-01 | 0.4000E-01 | 0.3167E-01 | 0.8334E-02 | 0.2632E+02 | 0.100E+03 |

** %RMSERR= 11.48

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.1673E+00 | 0.1000E+01 | | | |
| 3 | -0.1937E+00 | 0.2306E-02 | 0.1000E+01 | | |
| 4 | 0.3057E+00 | 0.3783E+00 | -0.3369E+00 | 0.1000E+01 | |
| 5 | 0.3586E+00 | -0.4195E+00 | -0.6886E+00 | 0.2988E+00 | 0.1000E+01 |

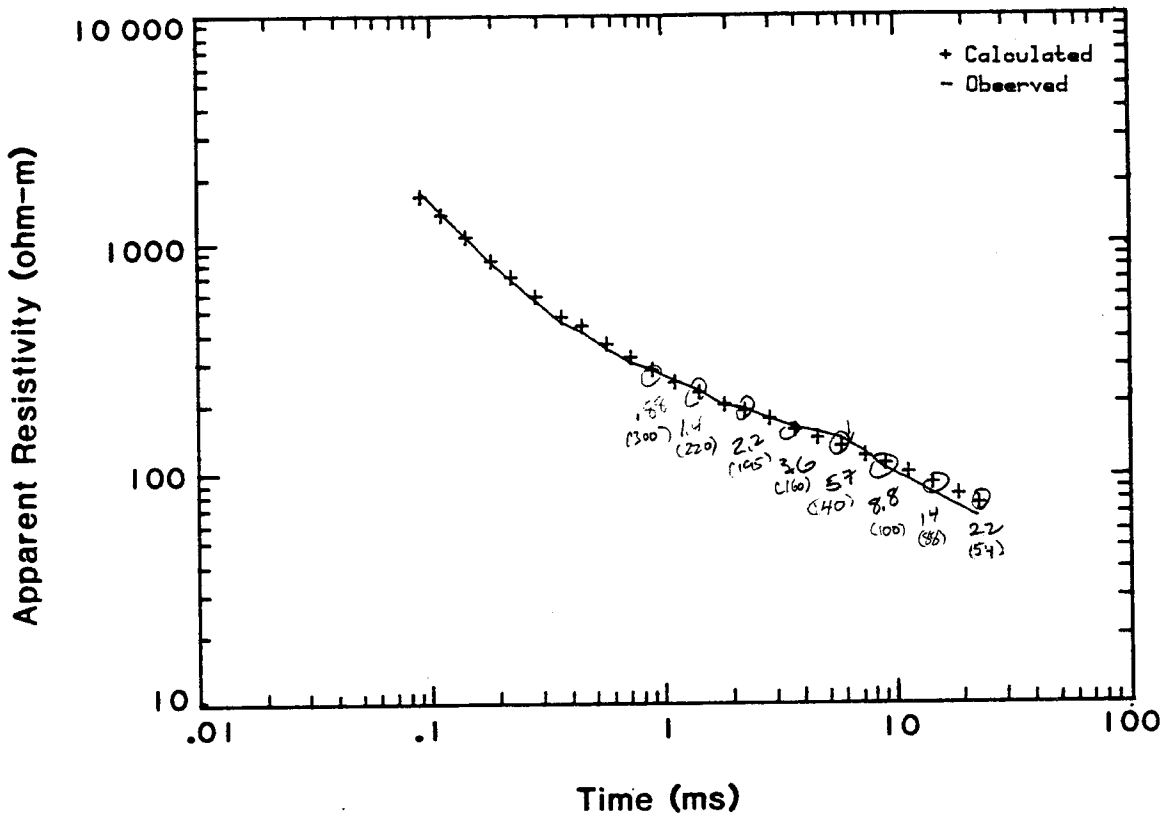
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1449E-03 | 0.1026E-02 | 0.7093E+01 | 0.7093E+03 |
| 2 0.1358E-01 | 0.5478E-02 | 0.4034E+00 | 0.4034E+02 |
| 3 0.2340E-01 | 0.2508E-01 | 0.1072E+01 | 0.1072E+03 |
| 4 0.2381E+03 | 0.1183E-02 | 0.4968E-05 | 0.4968E-03 |
| 5 0.4841E+03 | 0.2665E-01 | 0.5504E-04 | 0.5504E-02 |

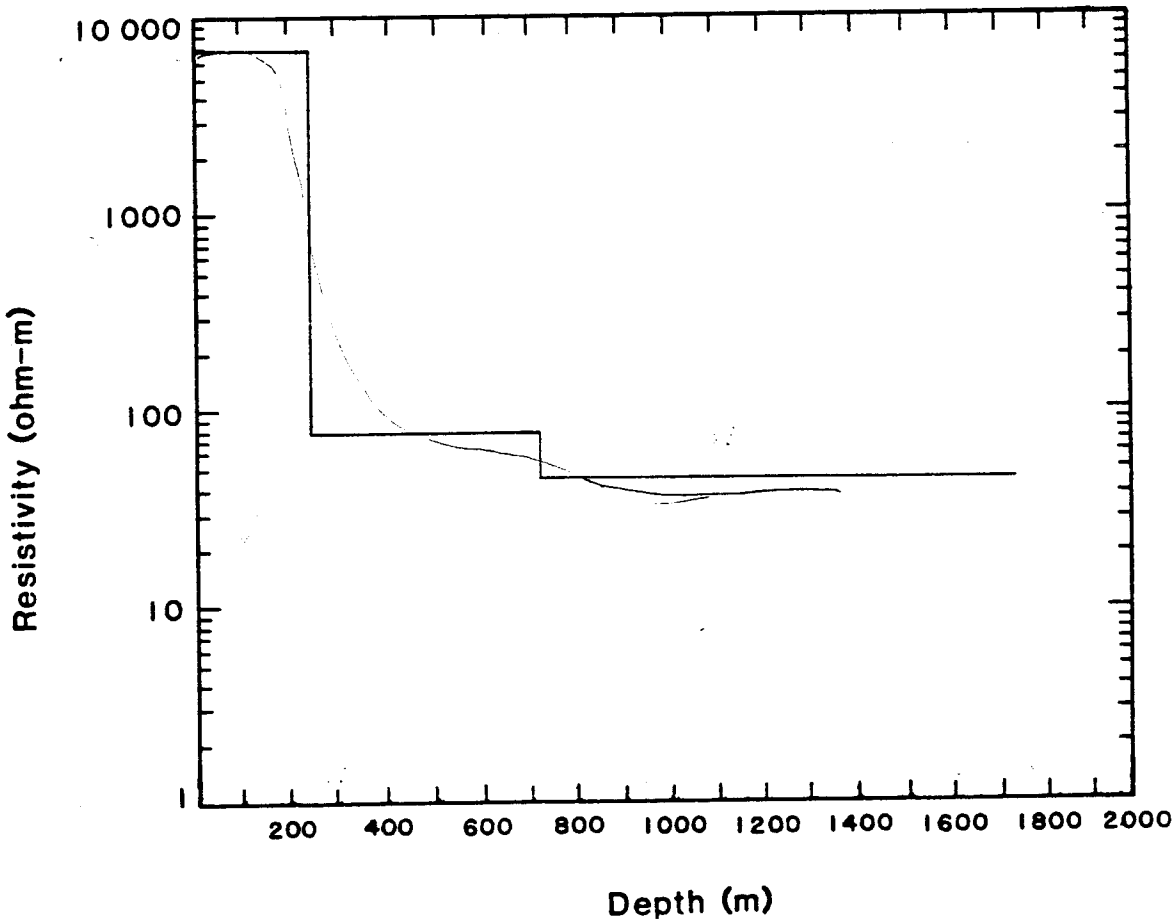
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.14487E-03 | 0.69028E+04 | |
| 2 SIGMA( 2) = | 0.13582E-01 | 0.73628E+02 | |
| 3 SIGMA( 3) = | 0.23397E-01 | 0.42740E+02 | |
| 4 THICK( 1) = | 0.23814E+03 | | 0.23814E+03 |
| 5 THICK( 2) = | 0.48411E+03 | | 0.72224E+03 |
| 6 THICK( 3) = | [illegible] | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 97



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 98 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1511E+03 | 0.1744E+03 | -0.2323E+02 | -0.1332E+02 | 0.438E-02 |
| 2 | 0.1100E-03 | 0.1204E+03 | 0.1222E+03 | -0.1788E+01 | -0.1463E+01 | 0.689E-02 |
| 3 | 0.1400E-03 | 0.8734E+02 | 0.8022E+02 | 0.7121E+01 | 0.8877E+01 | 0.131E-01 |
| 4 | 0.1770E-03 | 0.6038E+02 | 0.5241E+02 | 0.7971E+01 | 0.1521E+02 | 0.274E-01 |
| 5 | 0.2200E-03 | 0.4043E+02 | 0.3471E+02 | 0.5720E+01 | 0.1648E+02 | 0.612E-01 |
| 6 | 0.2800E-03 | 0.2478E+02 | 0.2160E+02 | 0.3185E+01 | 0.1475E+02 | 0.163E+00 |
| 7 | 0.3550E-03 | 0.1349E+02 | 0.1321E+02 | 0.2846E+00 | 0.2155E+01 | 0.550E+00 |
| 8 | 0.4430E-03 | 0.7550E+01 | 0.8196E+01 | -0.6457E+00 | -0.7879E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.4530E+01 | 0.5030E+01 | -0.4997E+00 | -0.9934E+01 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2830E+01 | 0.2925E+01 | -0.9478E-01 | -0.3240E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1940E+01 | 0.1926E+01 | 0.1423E-01 | 0.7389E+00 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1350E+01 | 0.1295E+01 | 0.5468E-01 | 0.4221E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.9200E+00 | 0.8781E+00 | 0.4188E-01 | 0.4770E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.6200E+00 | 0.6390E+00 | -0.1903E-01 | -0.2979E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.4500E+00 | 0.4882E+00 | -0.3816E-01 | -0.7818E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.3000E+00 | 0.3518E+00 | -0.5175E-01 | -0.1471E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1900E+00 | 0.2339E+00 | -0.4393E-01 | -0.1878E+02 | 0.100E+03 |

** %RMSERR= 10.39

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.6776E+00 | 0.1000E+01 | | | |
| 3 | 0.4509E+00 | -0.5060E+00 | 0.1000E+01 | | |
| 4 | -0.6853E+00 | 0.8722E+00 | -0.3928E+00 | 0.1000E+01 | |
| 5 | -0.4027E+00 | -0.8528E-01 | -0.2437E+00 | -0.7606E-01 | 0.1000E+01 |

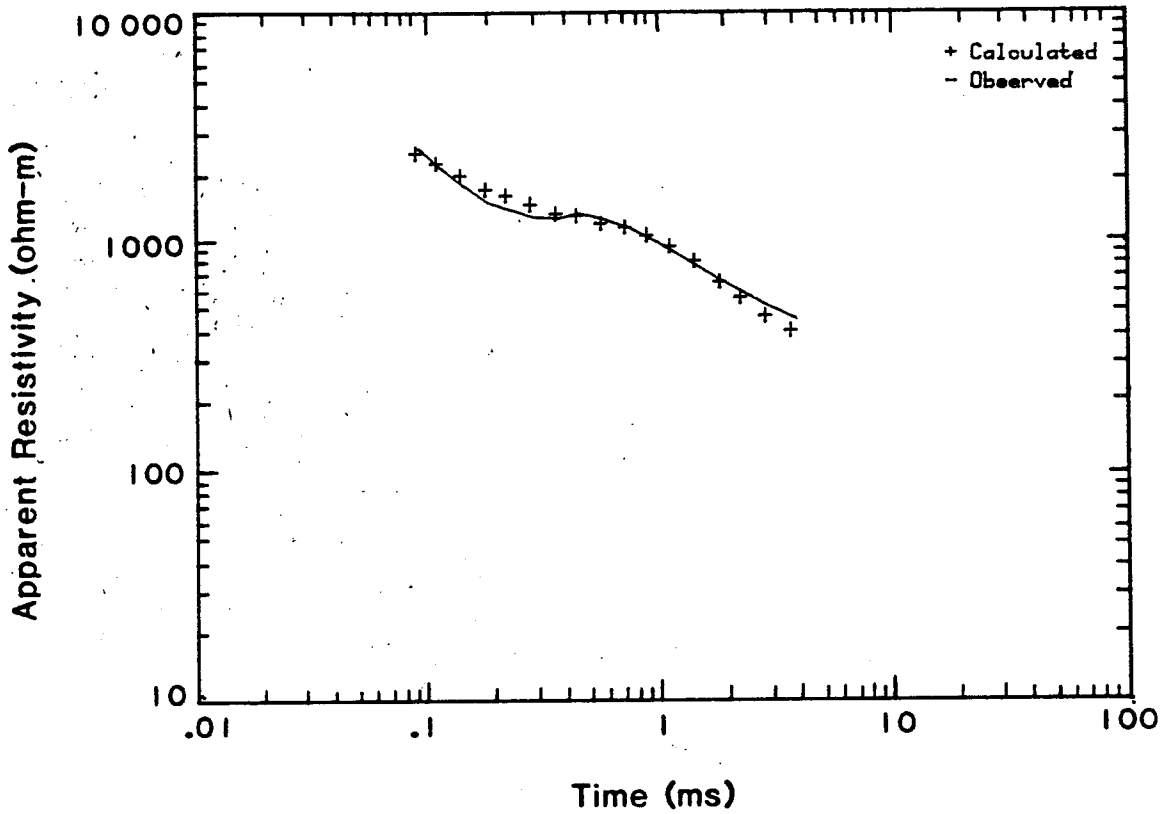
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1053E-04 | 0.1540E-04 | 0.1463E+01 | 0.1463E+03 |
| 2 0.1632E-02 | 0.3911E-03 | 0.2396E+00 | 0.2396E+02 |
| 3 0.1124E-01 | 0.1209E-01 | 0.1076E+01 | 0.1076E+03 |
| 4 0.2156E+03 | 0.7637E-02 | 0.3539E-04 | 0.3539E-02 |
| 5 0.7492E+03 | 0.1832E-01 | 0.2445E-04 | 0.2445E-02 |

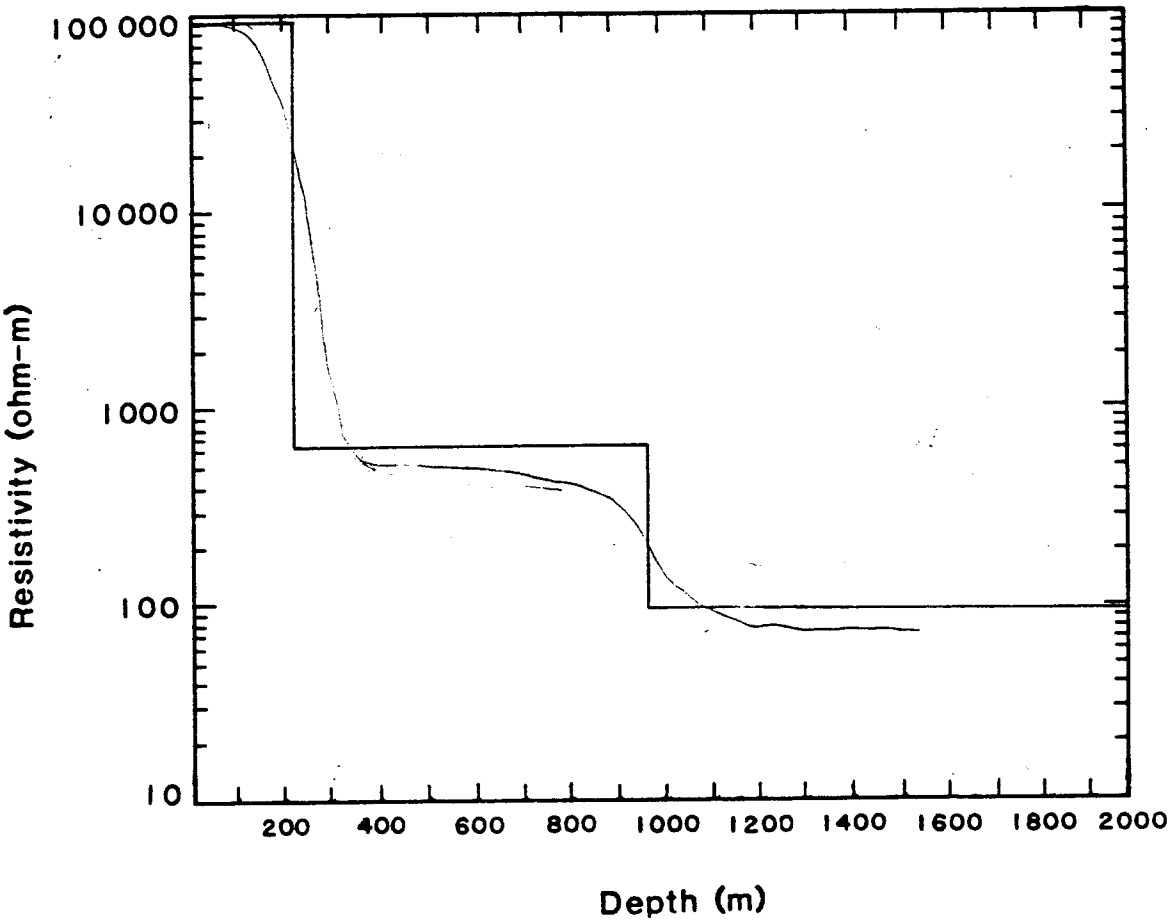
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.10532E-04 | 0.94951E+05 | |
| 2 SIGMA( 2) = | 0.16318E-02 | 0.61232E+03 | |
| 3 SIGMA( 3) = | 0.11238E-01 | 0.88932E+02 | |
| 4 THICK( 1) = | 0.21578E+03 | | 0.21578E+03 |
| 5 THICK( 2) = | 0.74919E+03 | | 0.96497E+03 |
| 6 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 98



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 99 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.6612E+02 | 0.7213E+02 | -0.6009E+01 | -0.8331E+01 | 0.225E-01 |
| 2 | 0.1100E-03 | 0.5186E+02 | 0.5135E+02 | 0.5145E+00 | 0.1002E+01 | 0.372E-01 |
| 3 | 0.1400E-03 | 0.3756E+02 | 0.3612E+02 | 0.1439E+01 | 0.3983E+01 | 0.709E-01 |
| 4 | 0.1770E-03 | 0.2737E+02 | 0.2664E+02 | 0.7329E+00 | 0.2752E+01 | 0.133E+00 |
| 5 | 0.2200E-03 | 0.2057E+02 | 0.1973E+02 | 0.8385E+00 | 0.4249E+01 | 0.236E+00 |
| 6 | 0.2800E-03 | 0.1501E+02 | 0.1425E+02 | 0.7559E+00 | 0.5303E+01 | 0.444E+00 |
| 7 | 0.3550E-03 | 0.1046E+02 | 0.1025E+02 | 0.2130E+00 | 0.2079E+01 | 0.914E+00 |
| 8 | 0.4430E-03 | 0.7460E+01 | 0.7347E+01 | 0.1134E+00 | 0.1544E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.5050E+01 | 0.5225E+01 | -0.1746E+00 | -0.3341E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.3340E+01 | 0.3474E+01 | -0.1345E+00 | -0.3871E+01 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2420E+01 | 0.2446E+01 | -0.2595E-01 | -0.1061E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1670E+01 | 0.1696E+01 | -0.2559E-01 | -0.1509E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1100E+01 | 0.1104E+01 | -0.3826E-02 | -0.3466E+00 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.7100E+00 | 0.7322E+00 | -0.2217E-01 | -0.3028E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.5000E+00 | 0.5093E+00 | -0.9346E-02 | -0.1835E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.3200E+00 | 0.3332E+00 | -0.1317E-01 | -0.3952E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.2100E+00 | 0.2222E+00 | -0.1216E-01 | -0.5472E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.1400E+00 | 0.1508E+00 | -0.1084E-01 | -0.7185E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.9000E-01 | 0.9858E-01 | -0.8584E-02 | -0.8707E+01 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.6000E-01 | 0.6463E-01 | -0.4628E-02 | -0.7161E+01 | 0.100E+03 |

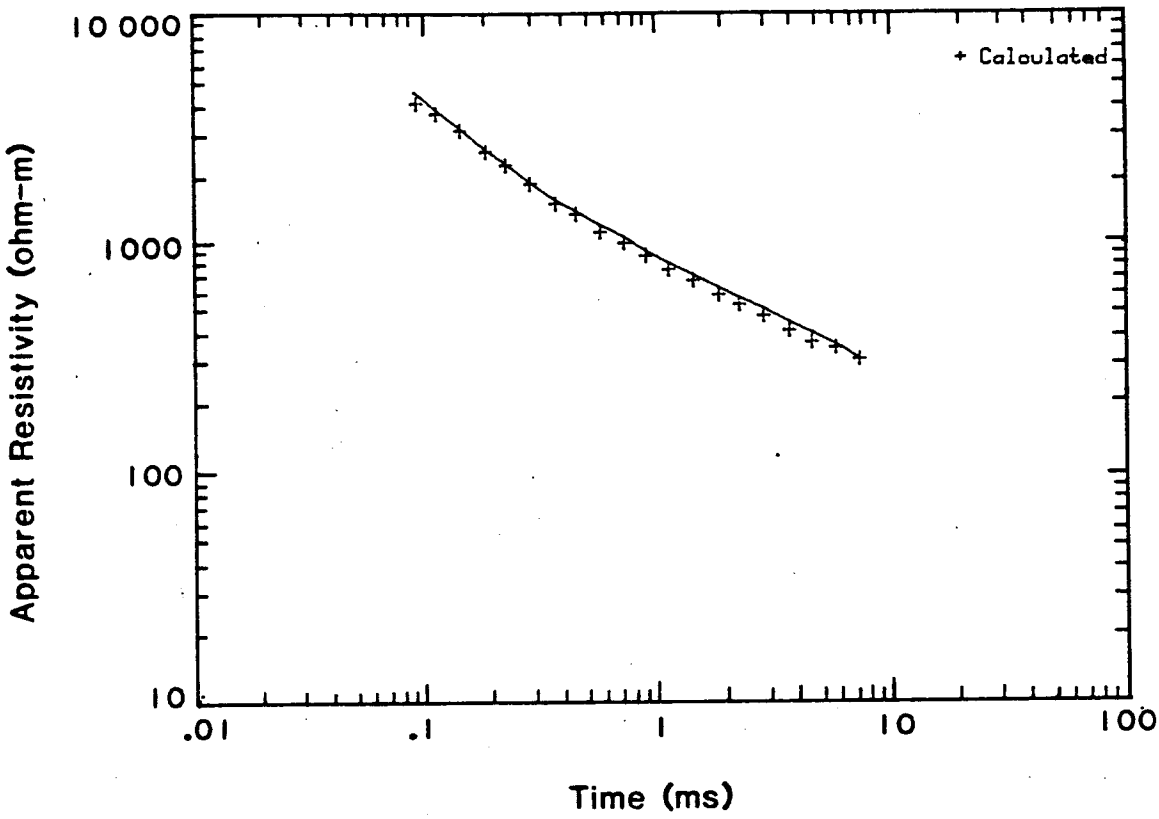
* %RMSERR= 4.55

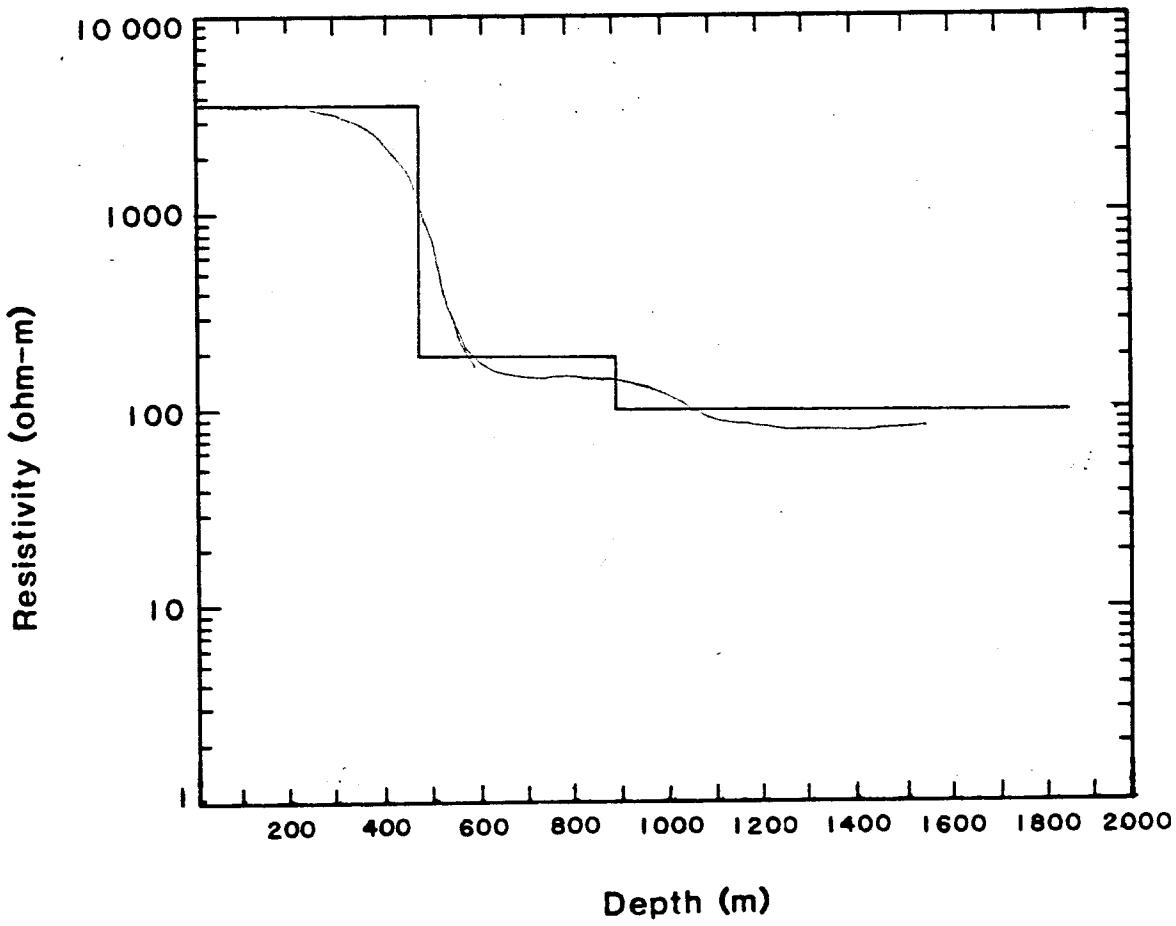
| PARAMETER | NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.26566E-03 | 0.37642E+04 | |
| 2 | SIGMA( 2) | = | 0.52363E-02 | 0.19097E+03 | |
| 3 | SIGMA( 3) | = | 0.97566E-02 | 0.10249E+03 | |
| 4 | THICK( 1) | = | 0.46662E+03 | | 0.4[illegible]E+03 |
| 5 | THICK( 2) | = | 0.41632E+03 | | 0.8[illegible]4E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 99



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 100 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4978E+03 | 0.4185E+03 | 0.7931E+02 | 0.1895E+02 | 0.404E-03 |
| 2 | 0.1100E-03 | 0.2501E+03 | 0.2548E+03 | -0.4667E+01 | -0.1832E+01 | 0.160E-02 |
| 3 | 0.1400E-03 | 0.1346E+03 | 0.1514E+03 | -0.1673E+02 | -0.1105E+02 | 0.552E-02 |
| 4 | 0.1770E-03 | 0.8751E+02 | 0.9575E+02 | -0.8241E+01 | -0.8607E+01 | 0.131E-01 |
| 5 | 0.2200E-03 | 0.6184E+02 | 0.6386E+02 | -0.2023E+01 | -0.3168E+01 | 0.261E-01 |
| 6 | 0.2800E-03 | 0.4354E+02 | 0.4192E+02 | 0.1622E+01 | 0.3870E+01 | 0.528E-01 |
| 7 | 0.3550E-03 | 0.3010E+02 | 0.2812E+02 | 0.1983E+01 | 0.7052E+01 | 0.110E+00 |
| 8 | 0.4430E-03 | 0.2075E+02 | 0.1904E+02 | 0.1712E+01 | 0.8993E+01 | 0.232E+00 |
| 9 | 0.5540E-03 | 0.1344E+02 | 0.1296E+02 | 0.4830E+00 | 0.3728E+01 | 0.554E+00 |
| 10 | 0.7130E-03 | 0.8550E+01 | 0.8277E+01 | 0.2726E+00 | 0.3293E+01 | 0.100E+01 |
| 11 | 0.8810E-03 | 0.5540E+01 | 0.5595E+01 | -0.5456E-01 | -0.9752E+00 | 0.100E+01 |
| 12 | 0.1096E-02 | 0.3520E+01 | 0.3716E+01 | -0.1959E+00 | -0.5271E+01 | 0.400E+01 |
| 13 | 0.1411E-02 | 0.2150E+01 | 0.2262E+01 | -0.1120E+00 | -0.4952E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.1290E+01 | 0.1384E+01 | -0.9438E-01 | -0.6818E+01 | 0.111E+02 |
| 15 | 0.2224E-02 | 0.8500E+00 | 0.8831E+00 | -0.3312E-01 | -0.3751E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.5600E+00 | 0.5208E+00 | 0.3920E-01 | 0.7528E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.3500E+00 | 0.3176E+00 | 0.3239E-01 | 0.1020E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.2300E+00 | 0.2020E+00 | 0.2798E-01 | 0.1385E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.1400E+00 | 0.1244E+00 | 0.1561E-01 | 0.1255E+02 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.9000E-01 | 0.7912E-01 | 0.1088E-01 | 0.1376E+02 | 0.100E+03 |

** %RMSERR= 8.81

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3793E-01 | 0.1000E+01 | | | |
| 3 | 0.1349E+00 | -0.3542E+00 | 0.1000E+01 | | |
| 4 | 0.1616E+00 | 0.6414E+00 | -0.2067E+00 | 0.1000E+01 | |
| 5 | -0.5197E+00 | 0.3606E+00 | -0.1606E+00 | 0.2152E+00 | 0.1000E+01 |

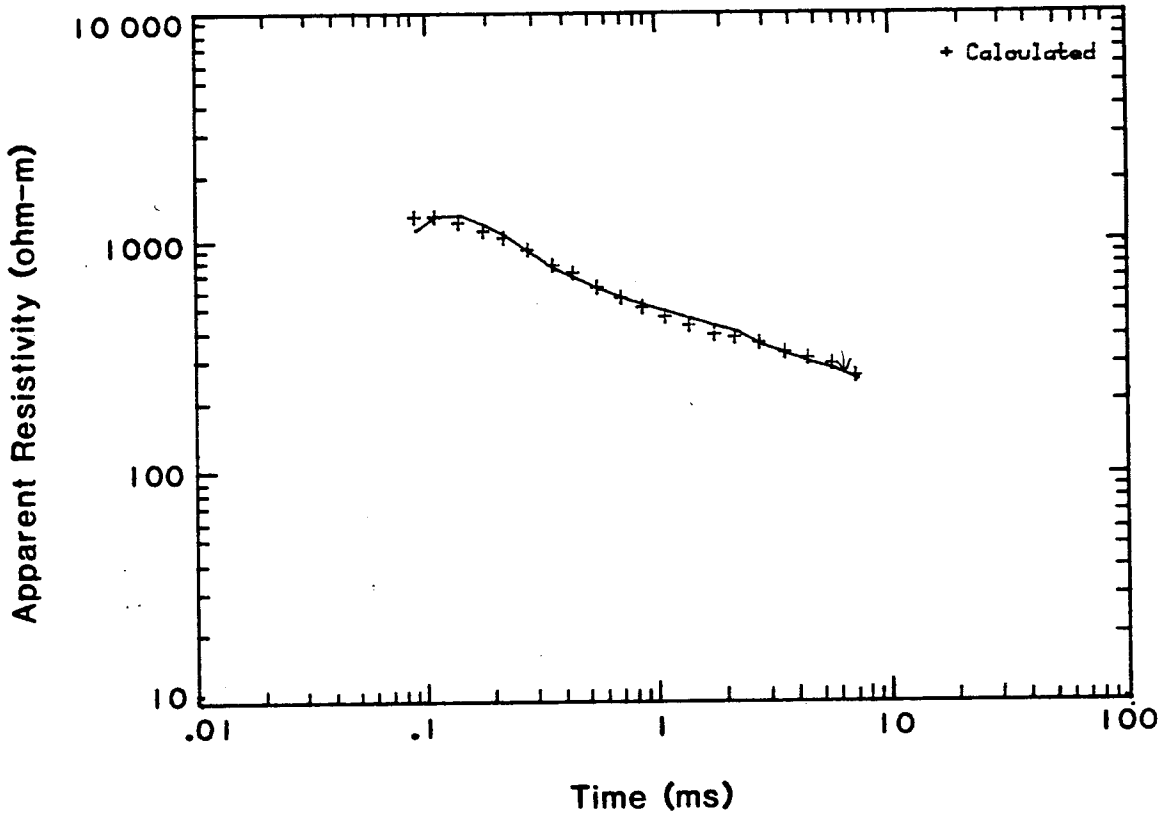
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.9043E-03 | 0.8474E-03 | 0.9371E+00 | 0.9371E+02 |
| 2 0.5868E-02 | 0.6196E-02 | 0.1056E+01 | 0.1056E+03 |
| 3 0.1689E-01 | 0.1948E-01 | 0.1154E+01 | 0.1154E+03 |
| 4 0.3422E+03 | 0.4286E-02 | 0.1253E-04 | 0.1253E-02 |
| 5 0.7593E+03 | 0.1334E-01 | 0.1756E-04 | 0.1756E-02 |

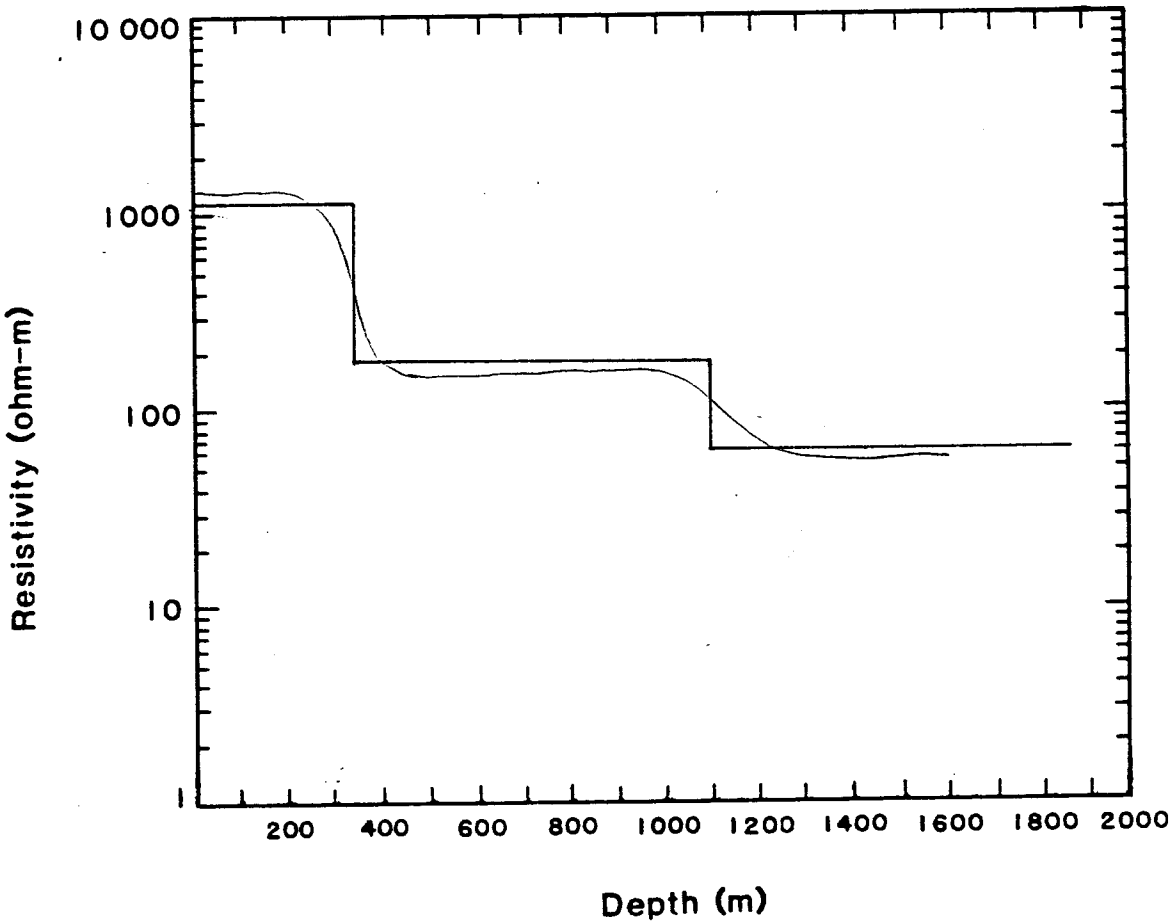
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.90433E-03 | 0.11058E+04 | |
| 2 SIGMA( 2) = | 0.58679E-02 | 0.17042E+03 | |
| 3 SIGMA( 3) = | 0.16886E-01 | 0.59222E+02 | |
| 4 THICK( 1) = | 0.34219E+03 | | 0.34219E+03 |
| 5 THICK( 2) = | 0.75927E+03 | | 0.11152E+04 |
| 6 WIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 100



ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 101 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2289E+03 | 0.2289E+03 | 0.3818E-01 | 0.1668E-01 | 0.191E-02 |
| 2 | 0.1100E-03 | 0.1594E+03 | 0.1680E+03 | -0.8623E+01 | -0.5131E+01 | 0.393E-02 |
| 3 | 0.1400E-03 | 0.1078E+03 | 0.1154E+03 | -0.7572E+01 | -0.6562E+01 | 0.860E-02 |
| 4 | 0.1770E-03 | 0.7629E+02 | 0.7858E+02 | -0.2292E+01 | -0.2916E+01 | 0.172E-01 |
| 5 | 0.2200E-03 | 0.5472E+02 | 0.5385E+02 | 0.8664E+00 | 0.1609E+01 | 0.334E-01 |
| 6 | 0.2800E-03 | 0.3742E+02 | 0.3531E+02 | 0.2106E+01 | 0.5964E+01 | 0.714E-01 |
| 7 | 0.3550E-03 | 0.2512E+02 | 0.2332E+02 | 0.1797E+01 | 0.7704E+01 | 0.158E+00 |
| 8 | 0.4430E-03 | 0.1699E+02 | 0.1593E+02 | 0.1063E+01 | 0.6677E+01 | 0.346E+00 |
| 9 | 0.5540E-03 | 0.1082E+02 | 0.1101E+02 | -0.1879E+00 | -0.1707E+01 | 0.854E+00 |
| 10 | 0.7130E-03 | 0.6800E+01 | 0.7393E+01 | -0.5932E+00 | -0.8024E+01 | 0.100E+01 |
| 11 | 0.8810E-03 | 0.4960E+01 | 0.5303E+01 | -0.3425E+00 | -0.6460E+01 | 0.400E+01 |
| 12 | 0.1096E-02 | 0.3470E+01 | 0.3785E+01 | -0.3154E+00 | -0.8333E+01 | 0.400E+01 |
| 13 | 0.1411E-02 | 0.2460E+01 | 0.2561E+01 | -0.1009E+00 | -0.3939E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.1630E+01 | 0.1749E+01 | -0.1195E+00 | -0.6829E+01 | 0.111E+02 |
| 15 | 0.2224E-02 | 0.1250E+01 | 0.1236E+01 | 0.1363E-01 | 0.1102E+01 | 0.111E+02 |
| 16 | 0.2850E-02 | 0.8600E+00 | 0.8200E+00 | 0.3999E-01 | 0.4877E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.5900E+00 | 0.5492E+00 | 0.4076E-01 | 0.7421E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.4100E+00 | 0.3723E+00 | 0.3766E-01 | 0.1012E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.2800E+00 | 0.2422E+00 | 0.3784E-01 | 0.1563E+02 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.1900E+00 | 0.1573E+00 | 0.3267E-01 | 0.2076E+02 | 0.100E+03 |

** %RMSERR= 8.12

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.3410E-01 | 0.1000E+01 | | | |
| 3 | 0.6406E-01 | 0.1630E-01 | 0.1000E+01 | | |
| 4 | 0.1397E+00 | 0.8546E+00 | 0.8198E-01 | 0.1000E+01 | |
| 5 | -0.3233E+00 | 0.1090E+00 | -0.7346E-01 | 0.3216E-01 | 0.1000E+01 |

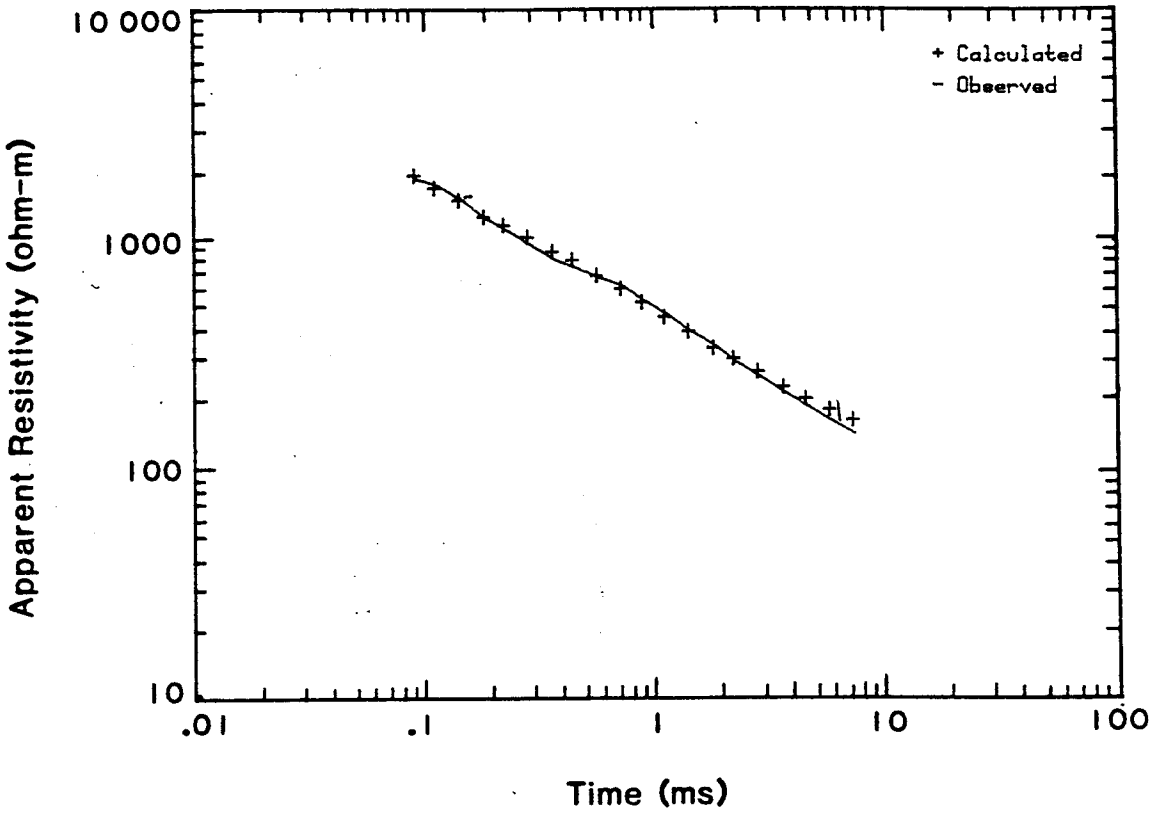
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.2413E-03 | 0.7272E-03 | 0.3014E+01 | 0.3014E+03 |
| 2 0.4481E-02 | 0.4486E-02 | 0.1001E+01 | 0.1001E+03 |
| 3 0.1545E-01 | 0.1223E-01 | 0.7915E+00 | 0.7915E+02 |
| 4 0.2603E+03 | 0.2808E-02 | 0.1079E-04 | 0.1079E-02 |
| 5 0.2465E+03 | 0.5692E-02 | 0.2309E-04 | 0.2309E-02 |

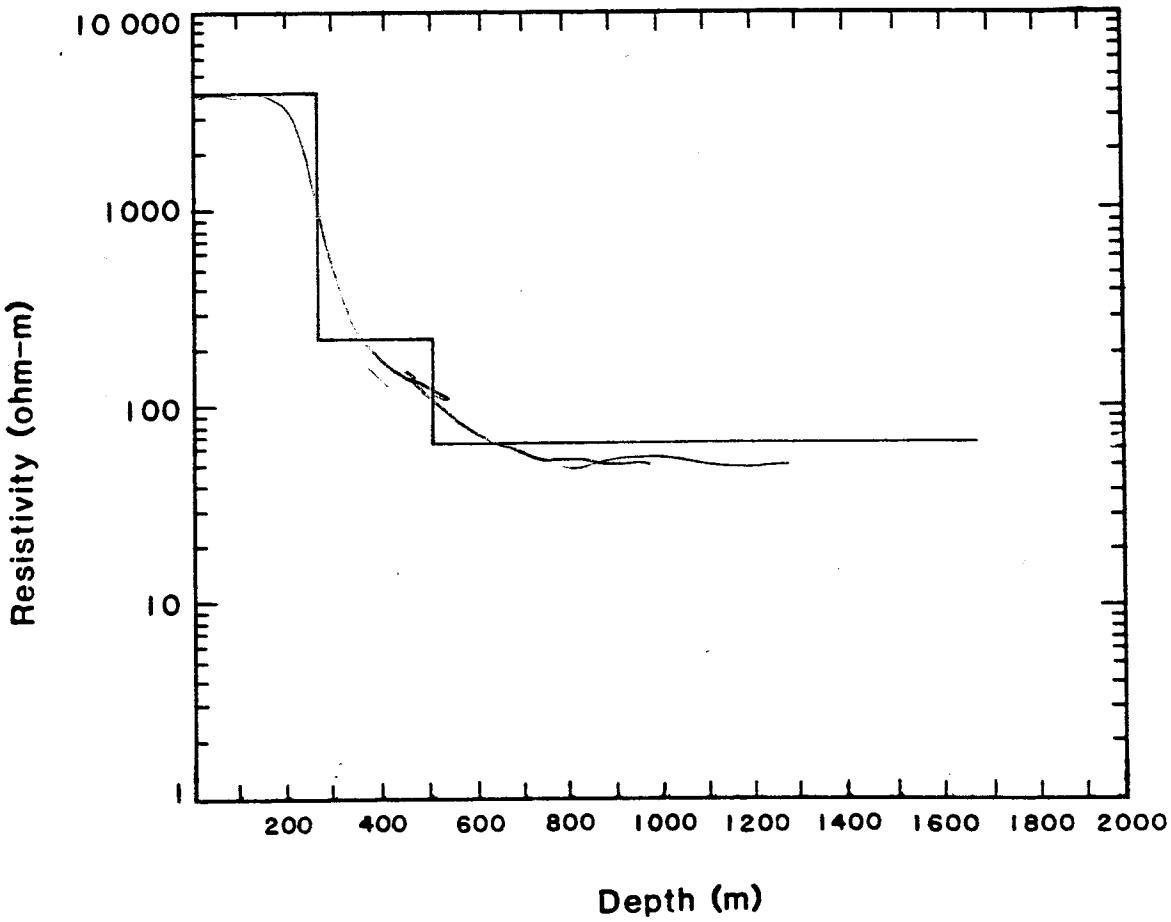
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.24131E-03 | 0.41441E+04 | |
| 2 | SIGMA( 2) = | 0.44812E-02 | 0.22315E+03 | |
| 3 | SIGMA( 3) = | 0.15447E-01 | 0.64736E+02 | |
| 4 | THICK( 1) = | 0.26028E+03 | | 0.26028E+03 |
| 5 | THICK( 2) = | 0.24650E+03 | | 0.50678E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 101



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 102 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1251E+03 | 0.1481E+03 | -0.2299E+02 | -0.1552E+02 | 0.639E-02 |
| 2 | 0.1100E-03 | 0.9389E+02 | 0.9286E+02 | 0.1026E+01 | 0.1105E+01 | 0.113E-01 |
| 3 | 0.1400E-03 | 0.6311E+02 | 0.5747E+02 | 0.5639E+01 | 0.9812E+01 | 0.251E-01 |
| 4 | 0.1770E-03 | 0.4288E+02 | 0.3823E+02 | 0.4655E+01 | 0.1218E+02 | 0.544E-01 |
| 5 | 0.2200E-03 | 0.3045E+02 | 0.2670E+02 | 0.3751E+01 | 0.1405E+02 | 0.108E+00 |
| 6 | 0.2800E-03 | 0.2100E+02 | 0.1853E+02 | 0.2468E+01 | 0.1332E+02 | 0.227E+00 |
| 7 | 0.3550E-03 | 0.1392E+02 | 0.1287E+02 | 0.1049E+01 | 0.8148E+01 | 0.516E+00 |
| 8 | 0.4430E-03 | 0.8130E+01 | 0.9055E+01 | -0.9245E+00 | -0.1021E+02 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.5280E+01 | 0.6414E+01 | -0.1134E+01 | -0.1767E+02 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.3680E+01 | 0.4239E+01 | -0.5588E+00 | -0.1318E+02 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2610E+01 | 0.2975E+01 | -0.3645E+00 | -0.1225E+02 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1790E+01 | 0.2044E+01 | -0.2535E+00 | -0.1241E+02 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1280E+01 | 0.1301E+01 | -0.2096E-01 | -0.1611E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.8600E+00 | 0.8362E+00 | 0.2376E-01 | 0.2841E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.6400E+00 | 0.5584E+00 | 0.8161E-01 | 0.1462E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.4500E+00 | 0.3447E+00 | 0.1053E+00 | 0.3055E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.3000E+00 | 0.2166E+00 | 0.8338E-01 | 0.3849E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.2100E+00 | 0.1386E+00 | 0.7143E-01 | 0.5154E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.1300E+00 | 0.8446E-01 | 0.4554E-01 | 0.5392E+02 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.8500E-01 | 0.5204E-01 | 0.3296E-01 | 0.6335E+02 | 0.100E+03 |

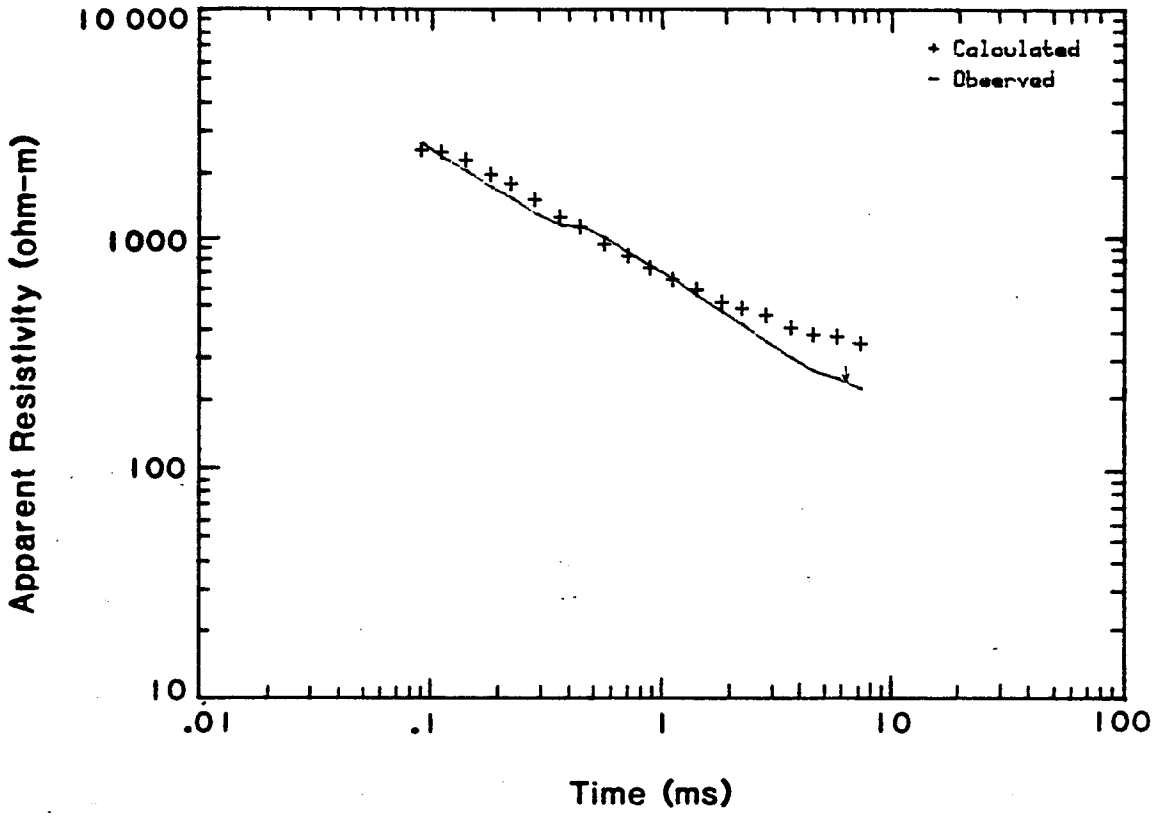
* %RMSERR= 26.49

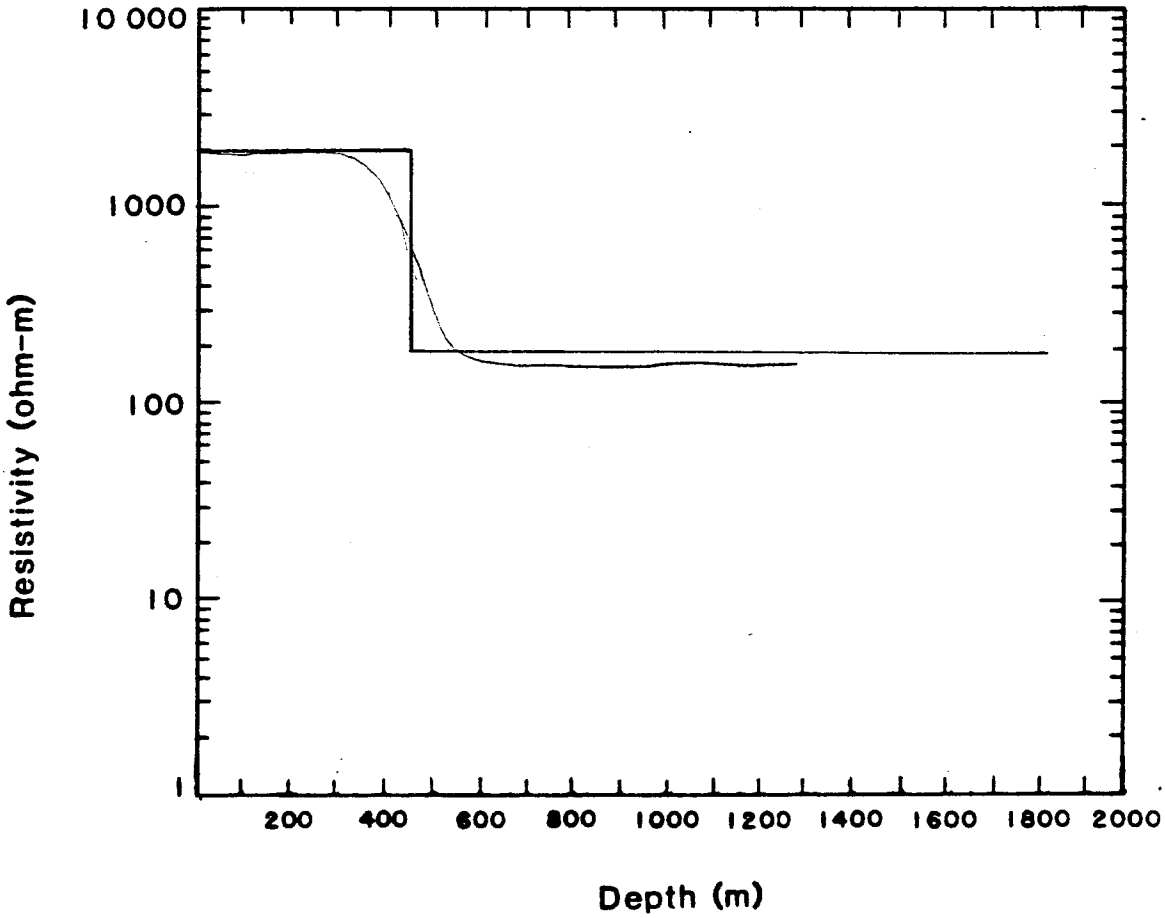
| ARAMETER | NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.46121E-03 | 0.21682E+04 | |
| 2 | SIGMA( 2) | = | 0.49666E-02 | 0.20135E+03 | |
| 3 | THICK( 1) | = | 0.44853E+03 | | 0.44853E+03 |
| 4 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 102



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 103 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1596E+03 | 0.1674E+03 | -0.7852E+01 | -0.4690E+01 | 0.3935E 02 |
| 2 | 0.1100E-03 | 0.1305E+03 | 0.1235E+03 | 0.6973E+01 | 0.5645E+01 | 0.507E-02 |
| 3 | 0.1400E-03 | 0.8568E+02 | 0.8560E+02 | 0.7738E-01 | 0.9040E-01 | 0.136E-01 |
| 4 | 0.1770E-03 | 0.5908E+02 | 0.5894E+02 | 0.1436E+00 | 0.2437E+00 | 0.286E-01 |
| 5 | 0.2200E-03 | 0.4134E+02 | 0.4131E+02 | 0.3137E-01 | 0.7594E-01 | 0.583E-01 |
| 6 | 0.2800E-03 | 0.2782E+02 | 0.2759E+02 | 0.2264E+00 | 0.8206E+00 | 0.129E+00 |
| 7 | 0.3550E-03 | 0.1897E+02 | 0.1844E+02 | 0.5282E+00 | 0.2864E+01 | 0.275E+00 |
| 8 | 0.4430E-03 | 0.1264E+02 | 0.1266E+02 | 0.1779E+00 | 0.1405E+01 | 0.607E+00 |
| 9 | 0.5540E-03 | 0.8250E+01 | 0.8647E+01 | -0.3970E+00 | -0.4592E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.5240E+01 | 0.5580E+01 | -0.3396E+00 | -0.6027E+01 | 0.100E+01 |
| 11 | 0.8810E-03 | 0.3860E+01 | 0.3858E+01 | 0.1984E-02 | 0.5142E-01 | 0.400E+01 |
| 12 | 0.1096E-02 | 0.2570E+01 | 0.2618E+01 | -0.4802E-01 | -0.1834E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1640E+01 | 0.1656E+01 | -0.1612E-01 | -0.9733E+00 | 0.111E+02 |
| 14 | 0.1775E-02 | 0.1060E+01 | 0.1062E+01 | -0.1724E-02 | -0.1624E+00 | 0.111E+02 |
| 15 | 0.2224E-02 | 0.7300E+00 | 0.7078E+00 | 0.2223E-01 | 0.3141E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.4900E+00 | 0.4389E+00 | 0.4114E-01 | 0.9375E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.3300E+00 | 0.2771E+00 | 0.5291E-01 | 0.1909E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.2200E+00 | 0.1782E+00 | 0.4180E-01 | 0.2346E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.1500E+00 | 0.1100E+00 | 0.4001E-01 | 0.3638E+02 | 0.100E+03 |

* %RMSERR= 11.39

ORRELATION MATRIX

| | | | | |
|---|---|---|---|---|
| 1 | 0.1000E+01 | | | |
| 2 | 0.3126E+00 | 0.1000E+01 | | |
| 3 | -0.2069E+00 | -0.2054E+00 | 0.1000E+01 | |
| 4 | 0.3439E+00 | 0.8516E+00 | -0.3897E+00 | 0.1000E+01 |
| 5 | -0.1610E+00 | -0.3678E+00 | 0.1018E+00 | -0.4080E+00 0.1000E+01 |

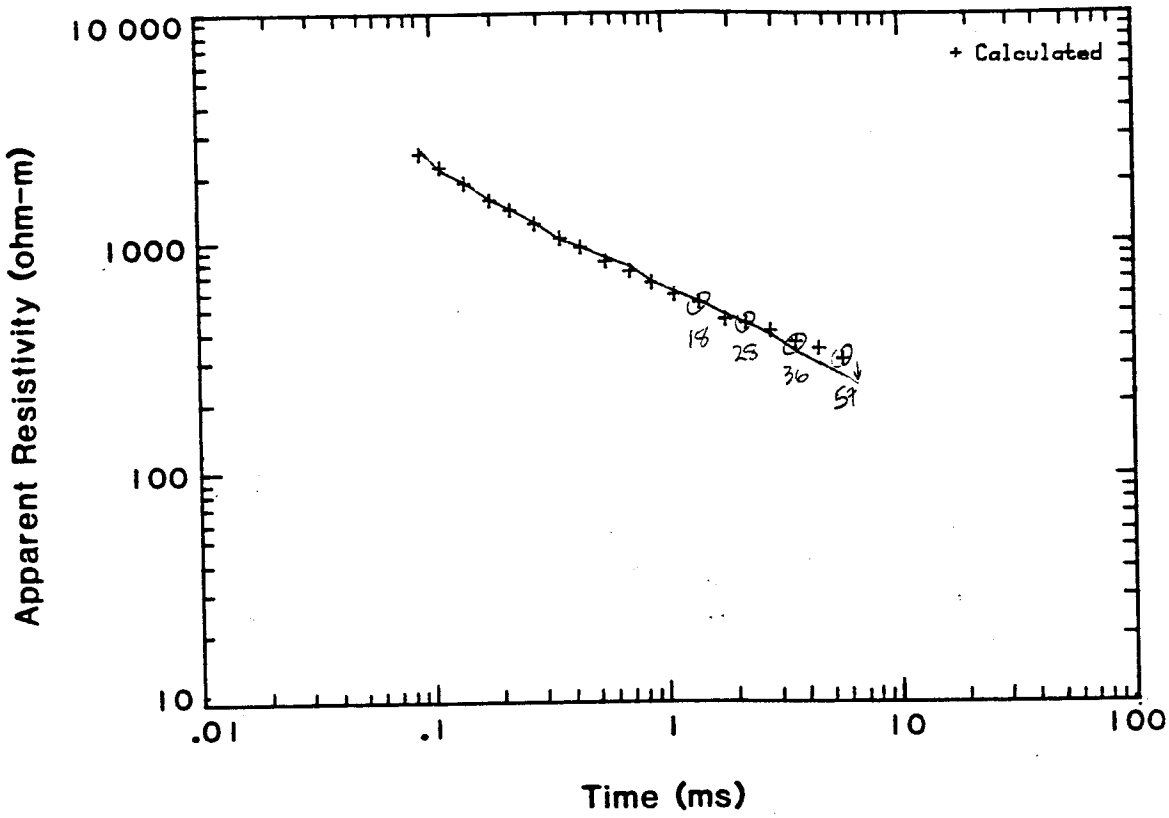
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1036E-03 | 0.3266E-03 | 0.3151E+01 | 0.3151E+03 |
| 2 0.3301E-02 | 0.2525E-02 | 0.7647E+00 | 0.7647E+02 |
| 3 0.5913E-02 | 0.9579E-02 | 0.1620E+01 | 0.1620E+03 |
| 4 0.2746E+03 | 0.2209E-02 | 0.8044E-05 | 0.8044E-03 |
| 5 0.2641E+03 | 0.4433E-02 | 0.1678E-04 | 0.1678E-02 |

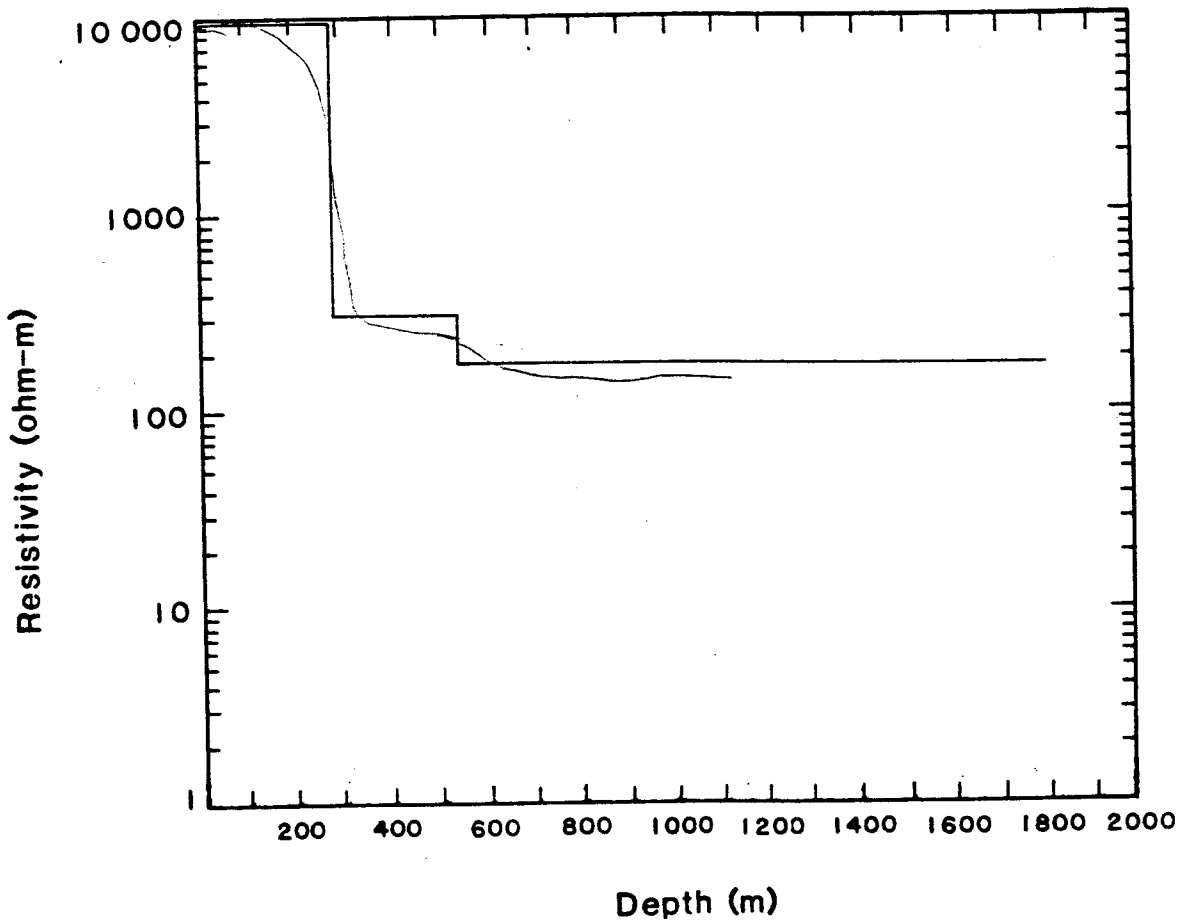
| ARAMETER NAME | | FINAL SOLUTION | RESISTIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 SIGMA( 1) | = | 0.10365E-03 | 0.96483E+04 | |
| 2 SIGMA( 2) | = | 0.33013E-02 | 0.30291E+03 | |
| 3 SIGMA( 3) | = | 0.59133E-02 | 0.16911E+03 | |
| 4 THICK( 1) | = | 0.27456E+03 | | 0.27451E+03 |
| 5 THICK( 2) | = | 0.26415E+03 | | 0.53871E+03 |
| [illegible] | = | 0.30700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 103



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 104 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1219E+03 | 0.1294E+03 | -0.7523E+01 | -0.5814E+01 | 0.673E-02 |
| 2 | 0.1100E-03 | 0.1010E+03 | 0.9422E+02 | 0.6759E+01 | 0.7173E+01 | 0.981E-02 |
| 3 | 0.1400E-03 | 0.6488E+02 | 0.6385E+02 | 0.1031E+01 | 0.1615E+01 | 0.238E-01 |
| 4 | 0.1770E-03 | 0.4267E+02 | 0.4254E+02 | 0.1269E+00 | 0.2982E+00 | 0.549E-01 |
| 5 | 0.2200E-03 | 0.2845E+02 | 0.2857E+02 | -0.1240E+00 | -0.4341E+00 | 0.124E+00 |
| 6 | 0.2800E-03 | 0.1797E+02 | 0.1812E+02 | -0.1455E+00 | -0.8034E+00 | 0.310E+00 |
| 7 | 0.3550E-03 | 0.1149E+02 | 0.1156E+02 | -0.7439E-01 | -0.6433E+00 | 0.757E+00 |
| 8 | 0.4430E-03 | 0.7720E+01 | 0.7672E+01 | 0.4766E-01 | 0.6212E+00 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.5050E+01 | 0.5180E+01 | -0.1301E+00 | -0.2512E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.3410E+01 | 0.3405E+01 | 0.5483E-02 | 0.1610E+00 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2430E+01 | 0.2437E+01 | -0.6552E-02 | -0.2689E+00 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1780E+01 | 0.1745E+01 | 0.3471E-01 | 0.1989E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1240E+01 | 0.1189E+01 | 0.5065E-01 | 0.4259E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.8400E+00 | 0.8288E+00 | 0.1118E-01 | 0.1349E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.5900E+00 | 0.5989E+00 | -0.8861E-02 | -0.1480E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.4000E+00 | 0.4114E+00 | -0.1138E-01 | -0.2767E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.2800E+00 | 0.2884E+00 | -0.8417E-02 | -0.2918E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.2000E+00 | 0.2073E+00 | -0.7253E-02 | -0.3500E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.1300E+00 | 0.1444E+00 | -0.1441E-01 | -0.9978E+01 | 0.100E+03 |

** %RMSERR= 3.63

ORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.5215E+00 | 0.1000E+01 | | | |
| 3 | -0.5375E+00 | 0.1931E+00 | 0.1000E+01 | | |
| 4 | -0.4834E+00 | 0.8244E+00 | 0.1387E-01 | 0.1000E+01 | |
| 5 | 0.1821E-01 | -0.3112E+00 | -0.2670E+00 | -0.2717E+00 | 0.1000E+01 |

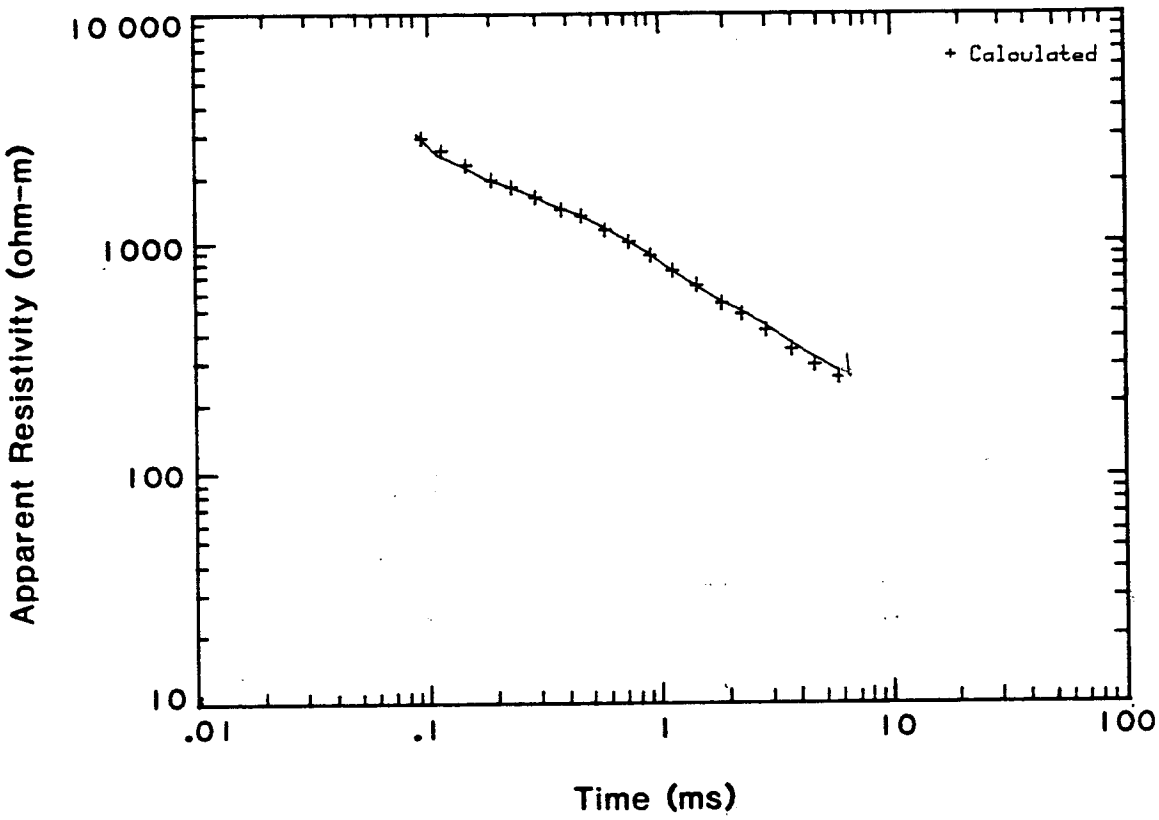
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.3694E-06 | 0.2691E-04 | 0.7283E+02 | 0.7283E+04 |
| 2 0.2284E-02 | 0.1423E-02 | 0.6229E+00 | 0.6229E+02 |
| 3 0.9993E-02 | 0.4058E-02 | 0.4061E+00 | 0.4061E+02 |
| 4 0.2780E+03 | 0.1513E-02 | 0.5445E-05 | 0.5445E-03 |
| 5 0.3943E+03 | 0.2641E-02 | 0.6698E-05 | 0.6698E-03 |

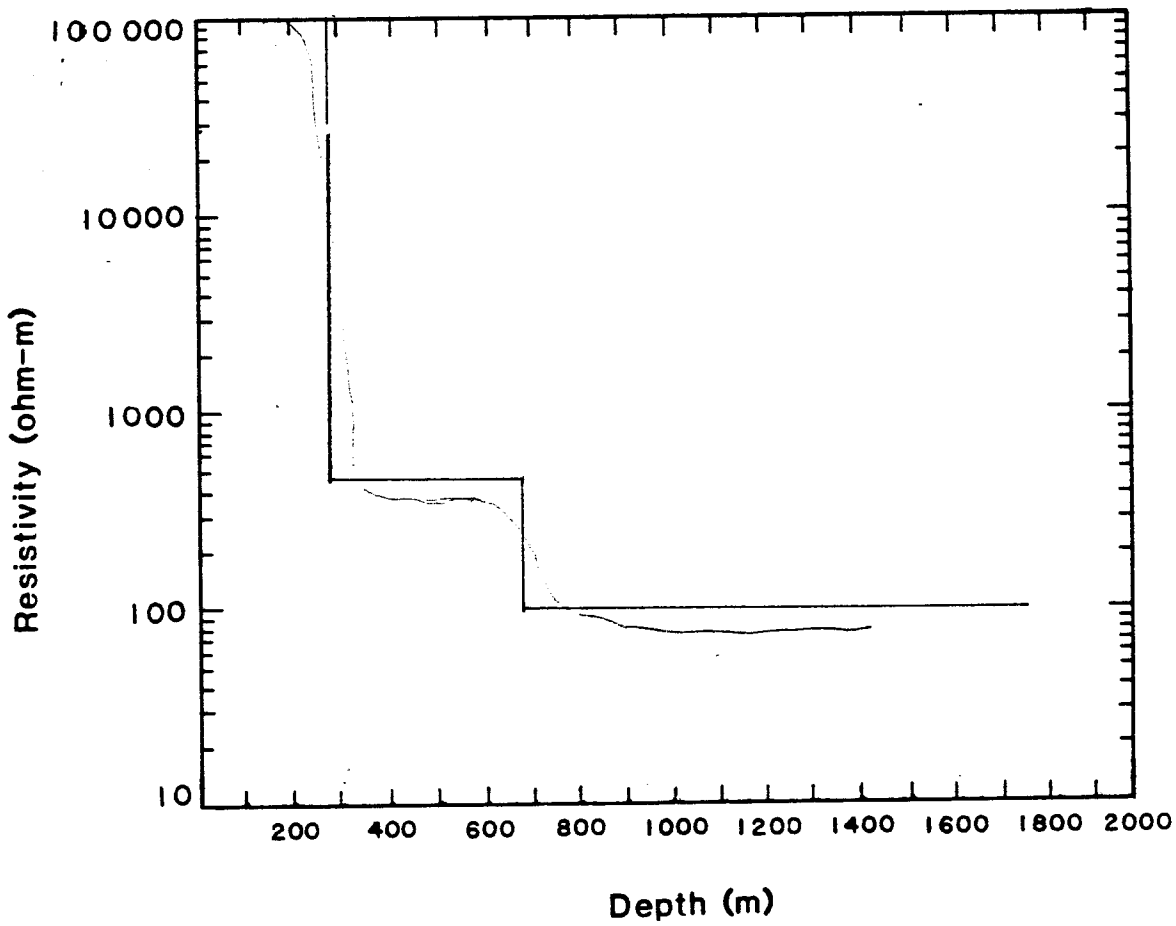
| ARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.36944E-06 | 0.27068E+07 | |
| 2 | SIGMA( 2) = | 0.22841E-02 | 0.43780E+03 | |
| 3 | SIGMA( 3) = | 0.99929E-02 | 0.10007E+03 | |
| 4 | THICK( 1) = | 0.27795E+03 | | 0.27795E+03 |
| 5 | THICK( 2) = | 0.39429E+03 | | 0.67225E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 104



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 105 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1490E+03 | 0.1505E+03 | -0.1497E+01 | -0.9950E+00 | 0.451E-02 |
| 2 | 0.1100E-03 | 0.9524E+02 | 0.9856E+02 | -0.3322E+01 | -0.3371E+01 | 0.110E-01 |
| 3 | 0.1400E-03 | 0.6435E+02 | 0.6339E+02 | 0.9551E+00 | 0.1507E+01 | 0.241E-01 |
| 4 | 0.1770E-03 | 0.4359E+02 | 0.4265E+02 | 0.9434E+00 | 0.2212E+01 | 0.526E-01 |
| 5 | 0.2200E-03 | 0.3004E+02 | 0.2961E+02 | 0.4339E+00 | 0.1466E+01 | 0.111E+00 |
| 6 | 0.2800E-03 | 0.2032E+02 | 0.2019E+02 | 0.1282E+00 | 0.6349E+00 | 0.242E+00 |
| 7 | 0.3550E-03 | 0.1353E+02 | 0.1362E+02 | -0.9425E-01 | -0.6918E+00 | 0.546E+00 |
| 8 | 0.4430E-03 | 0.9230E+01 | 0.9359E+01 | -0.1294E+00 | -0.1383E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.6180E+01 | 0.6423E+01 | -0.2431E+00 | -0.3784E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.3880E+01 | 0.4101E+01 | -0.2212E+00 | -0.5394E+01 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2770E+01 | 0.2799E+01 | -0.2857E-01 | -0.1021E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1860E+01 | 0.1869E+01 | -0.9205E-02 | -0.4924E+00 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1200E+01 | 0.1155E+01 | 0.4548E-01 | 0.3939E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.7500E+00 | 0.7214E+00 | 0.2860E-01 | 0.3965E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.5000E+00 | 0.4707E+00 | 0.2933E-01 | 0.6231E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.3200E+00 | 0.2825E+00 | 0.3750E-01 | 0.1328E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.2000E+00 | 0.1728E+00 | 0.2717E-01 | 0.1572E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.1300E+00 | 0.1079E+00 | 0.2207E-01 | 0.2045E+02 | 0.100E+03 |

** %RMSERR= 7.38

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | 0.8040E-02 | 0.1000E+01 | |
| 3 | 0.5364E+00 | 0.4120E+00 | 0.1000E+01 |

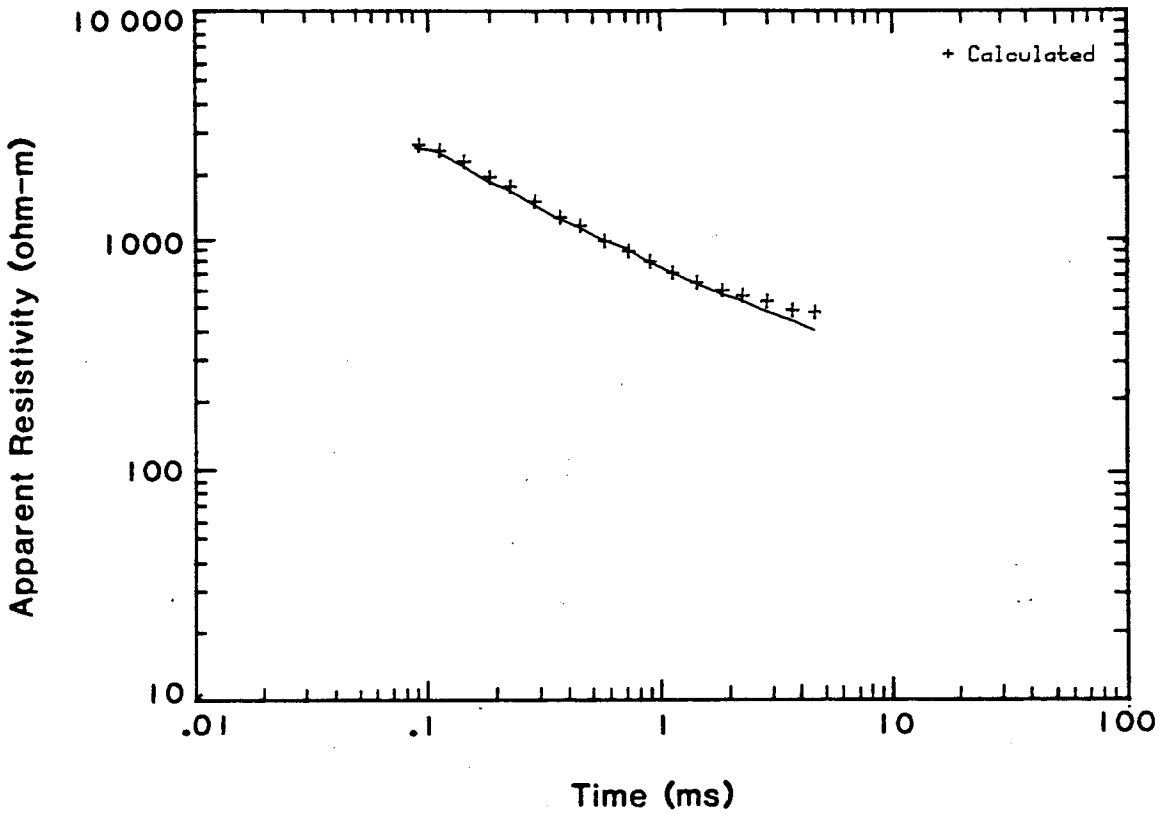
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4398E-03 | 0.2940E-03 | 0.6685E+00 | 0.6685E+02 |
| 2 | 0.3652E-02 | 0.1074E-02 | 0.2940E+00 | 0.2940E+02 |
| 3 | 0.4120E+03 | 0.1255E-02 | 0.3047E-05 | 0.3047E-03 |

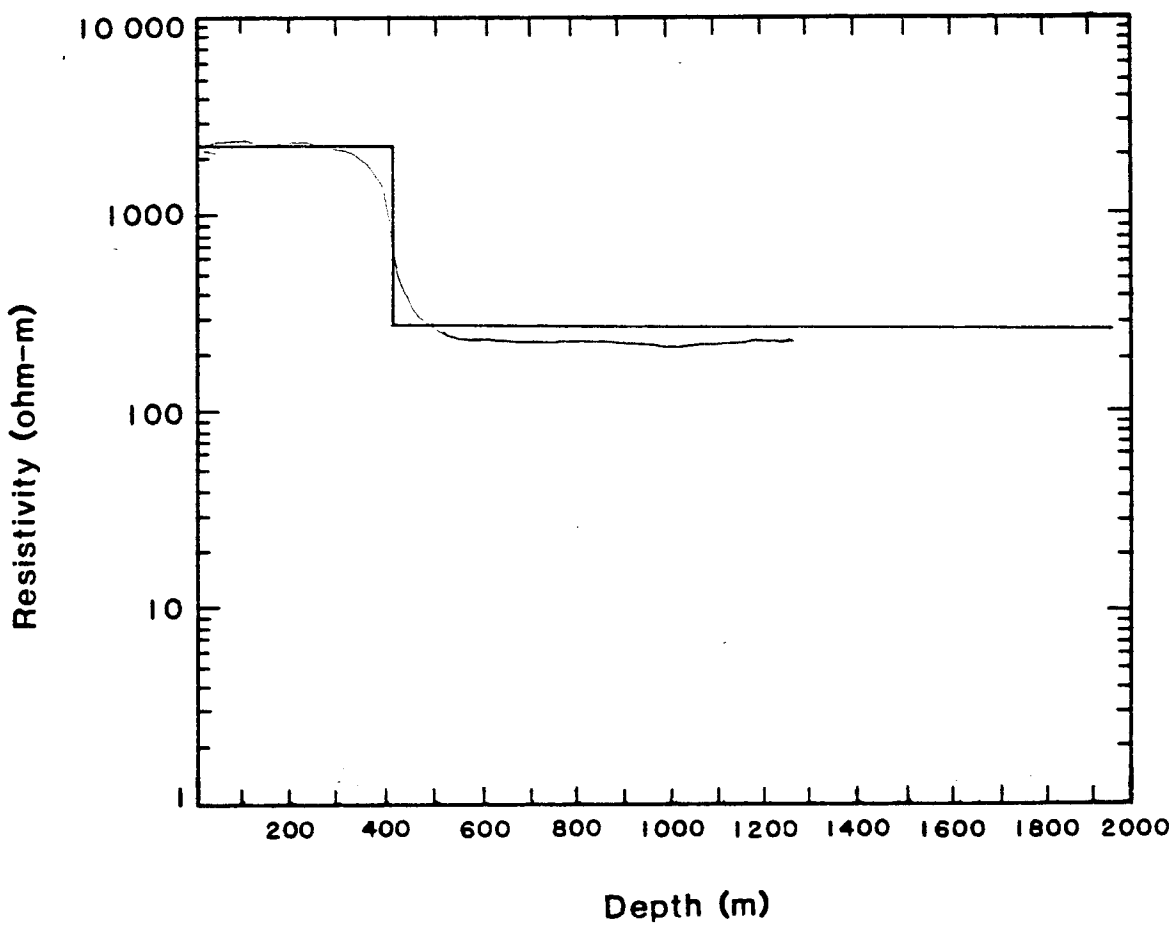
| PARAMETER | NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.43980E-03 | 0.22738E+04 | |
| 2 | SIGMA( 2) | = | 0.36518E-02 | 0.27383E+03 | |
| 3 | THICK( 1) | = | 0.41199E+03 | | 0.41199E+03 |
| 4 | SHIFT | = | 0.26700E+02 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 105



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

**MOUNT SHASTA** STATION 106 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.1100E-03 | 0.3850E+02 | 0.3774E+02 | 0.7630E+00 | 0.2022E+01 | 0.673E-01 |
| 2 | 0.1400E-03 | 0.2571E+02 | 0.2464E+02 | 0.1069E+01 | 0.4339E+01 | 0.151E-03 |
| 3 | 0.1770E-03 | 0.1629E+02 | 0.1593E+02 | 0.3632E+00 | 0.2229E+01 | 0.777E+00 |
| 4 | 0.2200E-03 | 0.1056E+02 | 0.1102E+02 | -0.1685E+00 | -0.1528E+01 | 0.848E+00 |
| 5 | 0.2800E-03 | 0.7290E+01 | 0.7444E+01 | -0.1538E+00 | -0.2066E+01 | 0.100E+01 |
| 6 | 0.3550E-03 | 0.4960E+01 | 0.5151E+01 | -0.1907E+00 | -0.3703E+01 | 0.400E+01 |
| 7 | 0.4430E-03 | 0.3520E+01 | 0.3761E+01 | -0.2409E+00 | -0.6406E+01 | 0.400E+01 |
| 8 | 0.5540E-03 | 0.2520E+01 | 0.2769E+01 | -0.2492E+00 | -0.8999E+01 | 0.111E+02 |
| 9 | 0.7130E-03 | 0.1780E+01 | 0.1969E+01 | -0.1392E+00 | -0.7610E+01 | 0.111E+02 |
| 10 | 0.8910E-03 | 0.1440E+01 | 0.1477E+01 | -0.3714E-01 | -0.2515E+01 | 0.111E+02 |
| 11 | 0.1096E-02 | 0.1130E+01 | 0.1096E+01 | 0.3384E-01 | 0.3087E+01 | 0.111E+02 |
| 12 | 0.1411E-02 | 0.8400E+00 | 0.7700E+00 | 0.6995E-01 | 0.9084E+01 | 0.100E+03 |
| 13 | 0.1795E-02 | 0.5900E+00 | 0.5431E+00 | 0.4693E-01 | 0.8642E+01 | 0.100E+03 |
| 14 | 0.2224E-02 | 0.4400E+00 | 0.3938E+00 | 0.4615E-01 | 0.1172E+02 | 0.100E+03 |
| 15 | 0.2800E-02 | 0.3000E+00 | 0.2677E+00 | 0.3234E-01 | 0.1208E+02 | 0.100E+03 |
| 16 | 0.3600E-02 | 0.2000E+00 | 0.1838E+00 | 0.1625E-01 | 0.8841E+01 | 0.100E+03 |
| 17 | 0.4490E-02 | 0.1300E+00 | 0.1275E+00 | 0.2479E-02 | 0.1943E+01 | 0.100E+03 |
| 18 | 0.5700E-02 | 0.8000E-01 | 0.8477E-01 | -0.4773E-02 | -0.5630E+01 | 0.100E+03 |

* %RMSERR= 6.80

ORRELATION MATRIX

| | | | | |
|---|---|---|---|---|
| 1 | 0.1000E+01 | | | |
| 2 | -0.6942E+00 | 0.1000E+01 | | |
| 3 | 0.1073E+00 | -0.4577E+00 | 0.1000E+01 | |
| 4 | -0.7093E+00 | 0.7300E+00 | -0.2675E+00 | 0.1000E+01 |
| 5 | -0.1187E+00 | -0.3175E+00 | -0.1241E-01 | -0.1987E+00 | 0.1000E+01 |

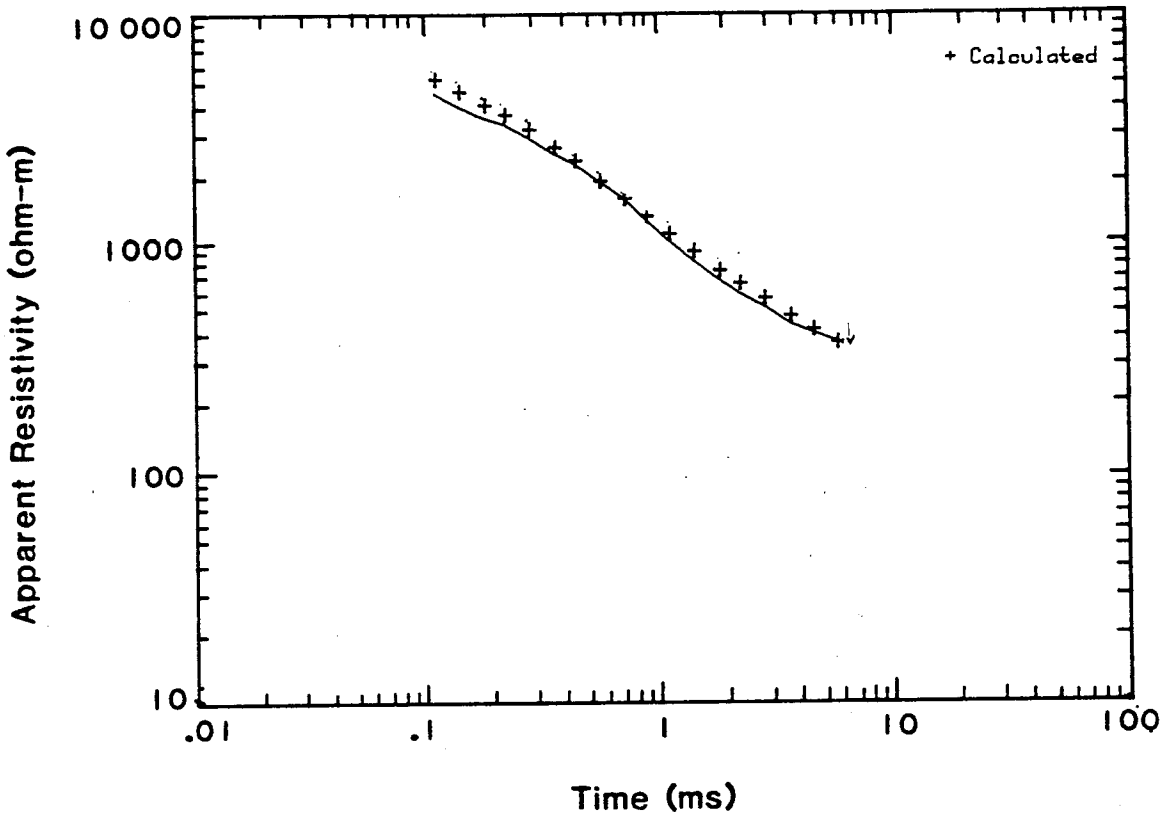
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1701E-03 | 0.4475E-03 | 0.2258E+01 | 0.2258E+03 |
| 2 0.2113E-02 | 0.3313E-02 | 0.1568E+01 | 0.1568E+03 |
| 3 0.8834E-02 | 0.5315E-02 | 0.6016E+00 | 0.6016E+02 |
| 4 0.4942E+03 | 0.2901E-02 | 0.5871E-05 | 0.5871E-03 |
| 5 0.2798E+03 | 0.4268E-02 | 0.1794E-04 | 0.1794E-02 |

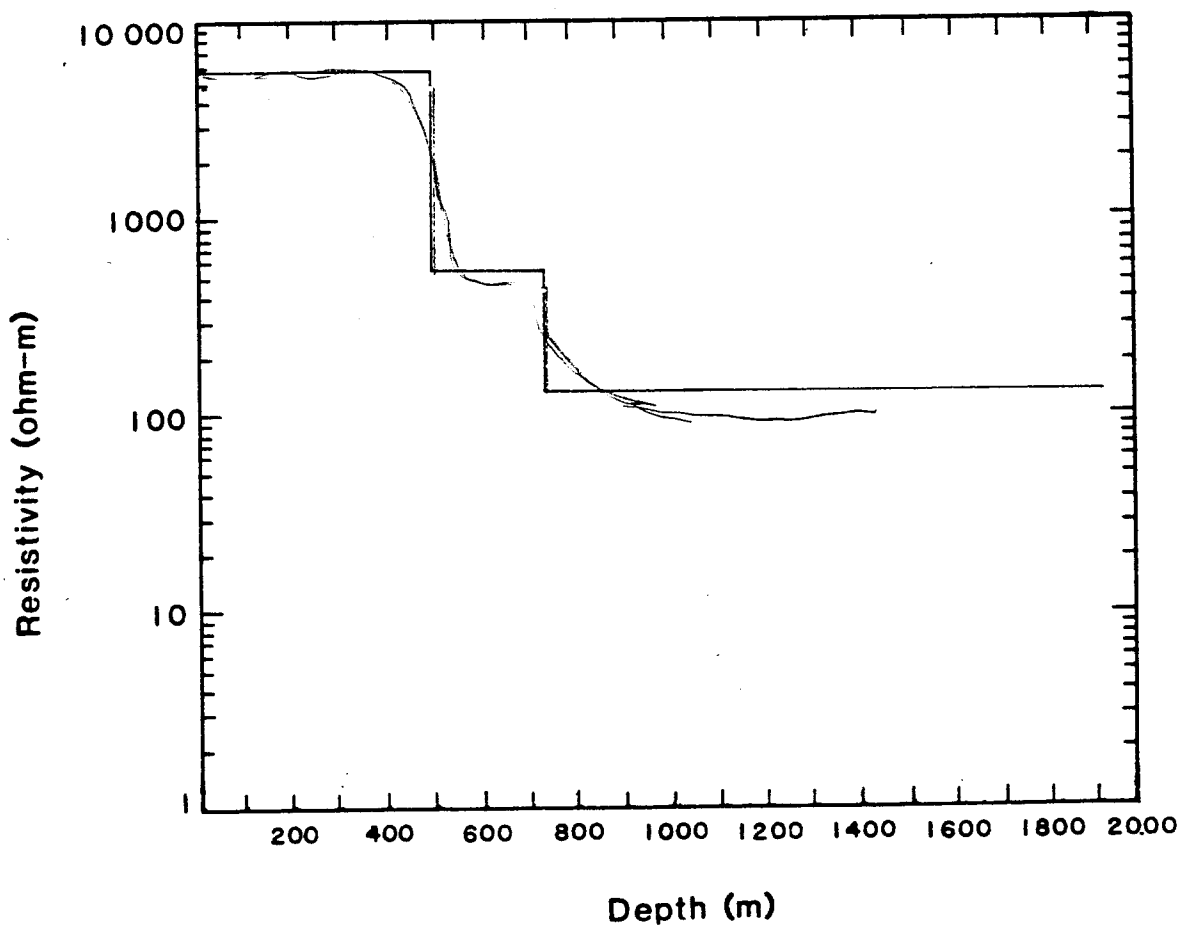
| PARAMETER NAME | FINAL SOLUTION | RESISTIVITY | LAYER DEPTH |
|---|---|---|---|
| RHO( 1) = | 0.17014E-03 | 0.30469E+04 | |
| RHO( 2) = | 0.21133E-02 | 0.47320E+02 | |
| RHO( 3) = | 0.88340E-02 | 0.11320E-03 | |
| H( 1) = | 0.49415E+03 | | 0.49415E+03 |
| H( 2) = | 0.23098E+03 | | 0.73513E+03 |
| H( 3) = | 0.20706E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 106



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 107 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.3900E-04 | 0.1153E+03 | 0.1153E+03 | 0.7500E-02 | 0.6505E-02 | 0.752E-02 |
| 2 | 0.1100E-03 | 0.7331E+02 | 0.7436E+02 | -0.1054E+01 | -0.1417E+01 | 0.186E-01 |
| 3 | 0.1400E-03 | 0.4626E+02 | 0.4568E+02 | 0.5820E+00 | 0.1274E+01 | 0.467E-01 |
| 4 | 0.1770E-03 | 0.2970E+02 | 0.2886E+02 | 0.8353E+00 | 0.2894E+01 | 0.113E+00 |
| 5 | 0.2200E-03 | 0.1952E+02 | 0.1924E+02 | 0.2834E+00 | 0.1473E+01 | 0.262E+00 |
| 6 | 0.2800E-03 | 0.1210E+02 | 0.1205E+02 | 0.5141E-01 | 0.4267E+00 | 0.683E+00 |
| 7 | 0.3550E-03 | 0.7500E+01 | 0.7544E+01 | -0.4351E-01 | -0.5768E+00 | 0.100E+01 |
| 8 | 0.4430E-03 | 0.4650E+01 | 0.4841E+01 | -0.1909E+00 | -0.3944E+01 | 0.400E+01 |
| 9 | 0.5540E-03 | 0.2770E+01 | 0.3004E+01 | -0.2340E+00 | -0.7791E+01 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.1690E+01 | 0.1752E+01 | -0.6181E-01 | -0.3528E+01 | 0.111E+02 |
| 11 | 0.8310E-03 | 0.1090E+01 | 0.1109E+01 | -0.1904E-01 | -0.1717E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.7400E+00 | 0.6923E+00 | 0.4769E-01 | 0.6889E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.4600E+00 | 0.4101E+00 | 0.4990E-01 | 0.1217E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.2900E+00 | 0.2572E+00 | 0.3284E-01 | 0.1277E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.2000E+00 | 0.1726E+00 | 0.2739E-01 | 0.1587E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1200E+00 | 0.1117E+00 | 0.8273E-02 | 0.7405E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.8000E-01 | 0.7527E-01 | 0.4726E-02 | 0.6278E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.5000E-01 | 0.5135E-01 | -0.1355E-02 | -0.2638E+01 | 0.100E+03 |

* %RMSERR= 6.74

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.1918E+00 | 0.1000E+01 | | | |
| 3 | -0.1985E+00 | 0.3319E+00 | 0.1000E+01 | | |
| 4 | 0.1414E+00 | 0.6291E+00 | 0.1901E+00 | 0.1000E+01 | |
| 5 | -0.7139E+00 | 0.9090E-02 | 0.5864E-01 | -0.9959E-01 | 0.1000E+01 |

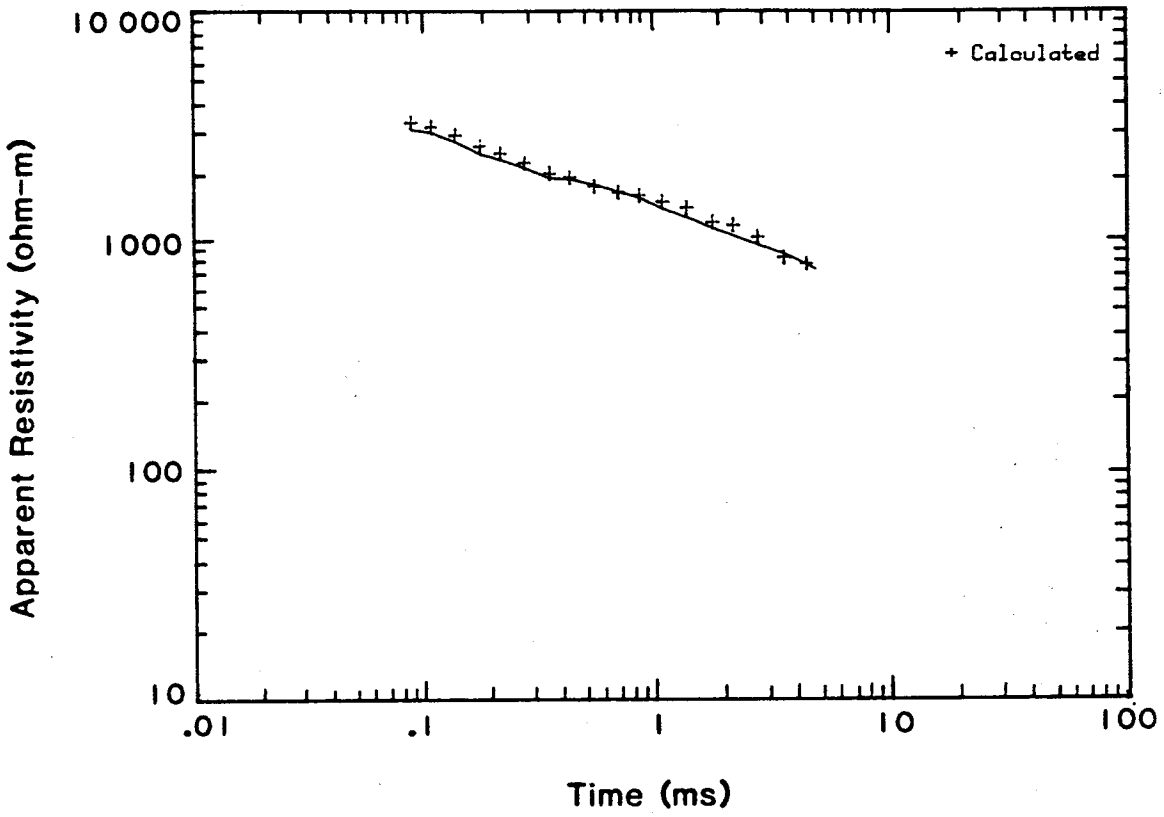
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.3444E-03 | 0.6975E-04 | 0.2025E+00 | 0.2025E+02 |
| 2 0.1439E-02 | 0.4055E-03 | 0.2818E+00 | 0.2818E+02 |
| 3 0.5930E-02 | 0.5609E-02 | 0.9456E+00 | 0.9456E+02 |
| 4 0.4490E+03 | 0.2476E-02 | 0.5505E-05 | 0.5505E-03 |
| 5 0.7930E+03 | 0.1444E-02 | 0.1819E-05 | 0.1819E-03 |

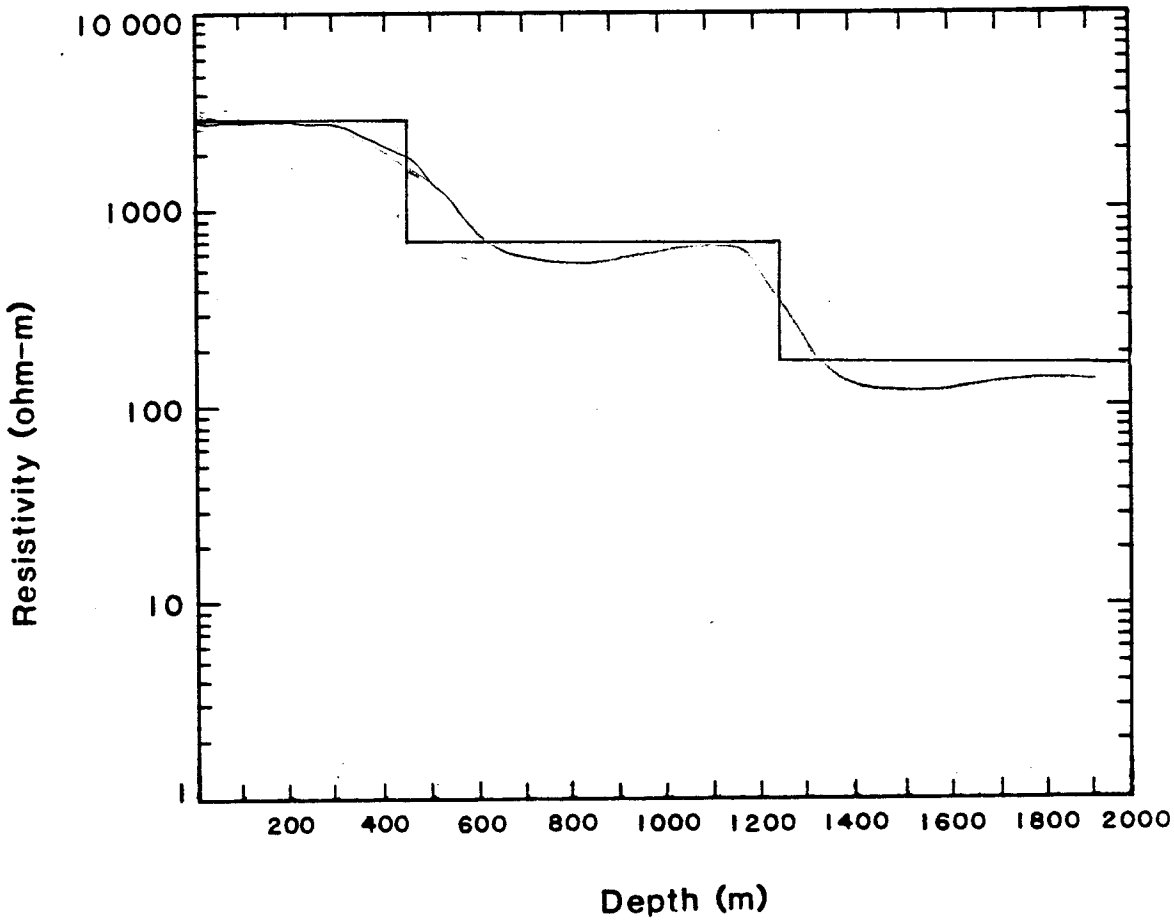
| PARAMETER NAME | FINAL SOLUTION | RESISTIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.34441E-03 | 0.29035E+04 | |
| 2 SIGMA( 2) = | 0.14390E-02 | 0.69493E+03 | |
| 3 SIGMA( 3) = | 0.59302E-02 | 0.16863E+03 | |
| 4 THICK( 1) = | 0.44977E+03 | | 0.44977E+03 |
| 5 THICK( 2) = | 0.79350E+03 | | 0.12433E+04 |
| 6 DEPT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 107



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA 108 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1354E+03 | 0.1813E+03 | -0.4595E+02 | -0.2535E+02 | 0.5466E-02 |
| 2 | 0.1100E-03 | 0.1048E+03 | 0.1187E+03 | -0.1390E+02 | -0.1171E+02 | 0.910E-02 |
| 3 | 0.1400E-03 | 0.7057E+02 | 0.7244E+02 | -0.1865E+01 | -0.2575E+01 | 0.201E-01 |
| 4 | 0.1770E-03 | 0.4792E+02 | 0.4426E+02 | 0.3658E+01 | 0.8265E+01 | 0.435E-01 |
| 5 | 0.2200E-03 | 0.3238E+02 | 0.2782E+02 | 0.4562E+01 | 0.1640E+02 | 0.954E-01 |
| 6 | 0.2800E-03 | 0.2060E+02 | 0.1649E+02 | 0.4107E+01 | 0.2490E+02 | 0.236E+00 |
| 7 | 0.3550E-03 | 0.1217E+02 | 0.9736E+01 | 0.2434E+01 | 0.2500E+02 | 0.675E+00 |
| 8 | 0.4430E-03 | 0.7040E+01 | 0.5940E+01 | 0.1100E+01 | 0.1851E+02 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.3750E+01 | 0.3579E+01 | 0.1711E+00 | 0.4780E+01 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2080E+01 | 0.2009E+01 | 0.7081E-01 | 0.3524E+01 | 0.111E+02 |
| 11 | 0.8310E-03 | 0.1270E+01 | 0.1235E+01 | 0.3346E-01 | 0.2672E+01 | 0.111E+02 |
| 12 | 0.1056E-02 | 0.7200E+00 | 0.7422E+00 | -0.2220E-01 | -0.2991E+01 | 0.100E+02 |
| 13 | 0.1411E-02 | 0.4300E+00 | 0.4101E+00 | 0.1998E-01 | 0.4863E+01 | 0.100E+02 |
| 14 | 0.1798E-02 | 0.2500E+00 | 0.2329E+00 | 0.1715E-01 | 0.7364E+01 | 0.100E+02 |
| 15 | 0.2234E-02 | 0.1500E+00 | 0.1406E+00 | 0.9447E-02 | 0.6721E+01 | 0.100E+02 |
| 16 | 0.2850E-02 | 0.8000E-01 | 0.7819E-01 | 0.1809E-02 | 0.2311E+01 | 0.100E+02 |
| 17 | 0.3600E-02 | 0.5000E-01 | 0.4567E-01 | 0.4926E-02 | 0.1093E+02 | 0.100E+02 |

** %RMSERR= 13.31

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.8115E+00 | 0.1000E+01 | |
| 3 | -0.6785E+00 | 0.7378E+00 | 0.1000E+01 |

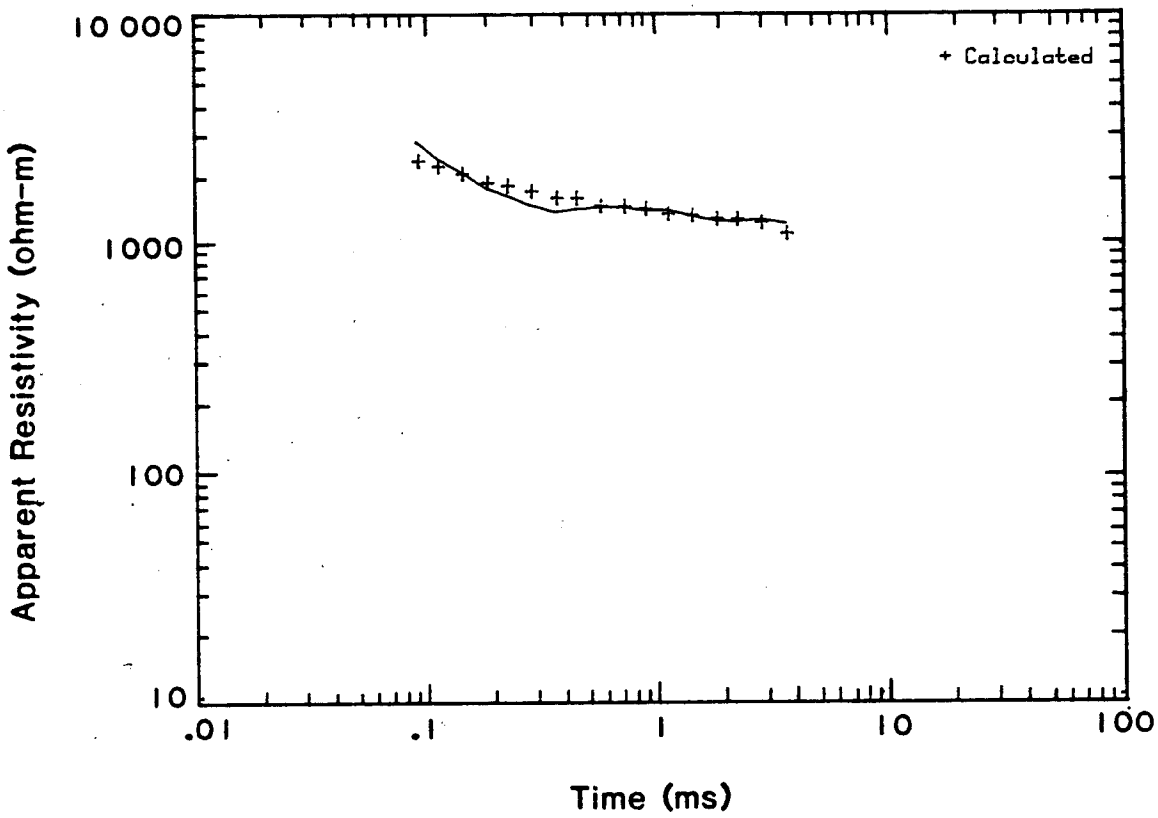
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.5122E+04 | 0.1237E-02 | 0.2415E+02 | 0.2415E+04 |
| 2 0.9362E-03 | 0.3277E-02 | 0.3501E+01 | 0.3501E+03 |
| 3 0.1516E+03 | 0.7534E-02 | 0.4962E-04 | 0.4962E-02 |

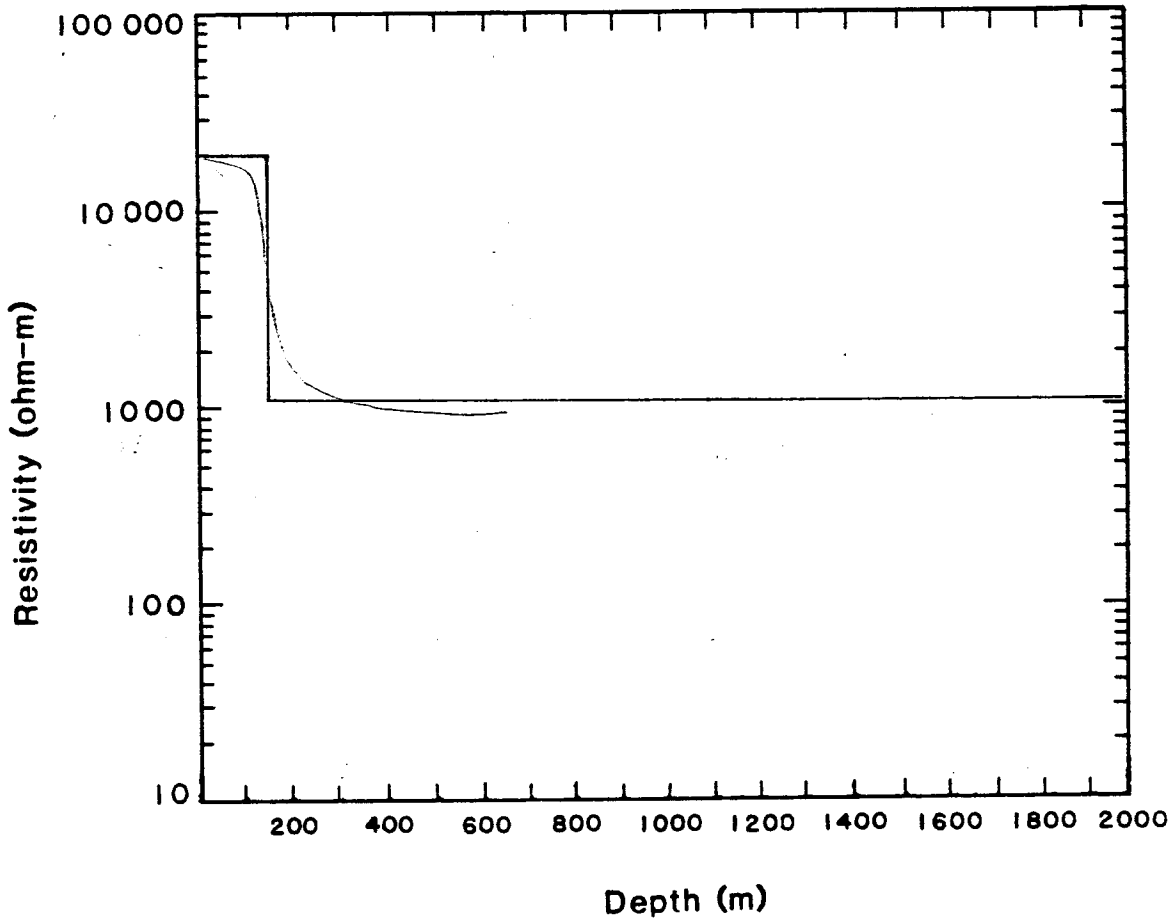
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 SIGMA( 1) | = | 0.51224E-04 | 0.19522E+05 | |
| 2 SIGMA( 2) | = | 0.93626E-03 | 0.10681E+04 | |
| 3 THICK( 1) | = | 0.15164E+03 | | 0.15164E+03 |
| 4 SLOPE | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 108



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 109 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4395E+02 | 0.5956E+02 | -0.1561E+02 | -0.2621E+02 | 0.518E-01 |
| 2 | 0.1100E-03 | 0.3720E+02 | 0.3592E+02 | 0.1282E+01 | 0.3571E+01 | 0.723E-01 |
| 3 | 0.1400E-03 | 0.2571E+02 | 0.2113E+02 | 0.4579E+01 | 0.2167E+02 | 0.151E+00 |
| 4 | 0.1770E-03 | 0.1754E+02 | 0.1365E+02 | 0.3891E+01 | 0.2851E+02 | 0.325E+00 |
| 5 | 0.2200E-03 | 0.1211E+02 | 0.9472E+01 | 0.2638E+01 | 0.2784E+02 | 0.682E+00 |
| 6 | 0.2800E-03 | 0.7730E+01 | 0.6623E+01 | 0.1107E+01 | 0.1672E+02 | 0.100E+01 |
| 7 | 0.3550E-03 | 0.4910E+01 | 0.4654E+01 | 0.2562E+00 | 0.5506E+01 | 0.400E+01 |
| 8 | 0.4430E-03 | 0.3410E+01 | 0.3346E+01 | 0.6387E-01 | 0.1909E+01 | 0.400E+01 |
| 9 | 0.5540E-03 | 0.2090E+01 | 0.2417E+01 | -0.3273E+00 | -0.1354E+02 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.1380E+01 | 0.1631E+01 | -0.2515E+00 | -0.1541E+02 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.9700E+00 | 0.1171E+01 | -0.2010E+00 | -0.1717E+02 | 0.100E+03 |
| 12 | 0.1096E-02 | 0.6500E+00 | 0.8236E+00 | -0.1736E+00 | -0.2108E+02 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.4100E+00 | 0.5393E+00 | -0.1293E+00 | -0.2398E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.2600E+00 | 0.3553E+00 | -0.9533E-01 | -0.2683E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.1700E+00 | 0.2420E+00 | -0.7196E-01 | -0.2974E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1100E+00 | 0.1530E+00 | -0.4298E-01 | -0.2810E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.7000E-01 | 0.9827E-01 | -0.2827E-01 | -0.2877E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.5000E-01 | 0.6393E-01 | -0.1393E-01 | -0.2179E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.3000E-01 | 0.3976E-01 | -0.9759E-02 | -0.2454E+02 | 0.100E+03 |

** %RMSERR= 21.89

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.1966E+00 | 0.1000E+01 | |
| 3 | 0.7147E-01 | 0.1870E+00 | 0.1000E+01 |

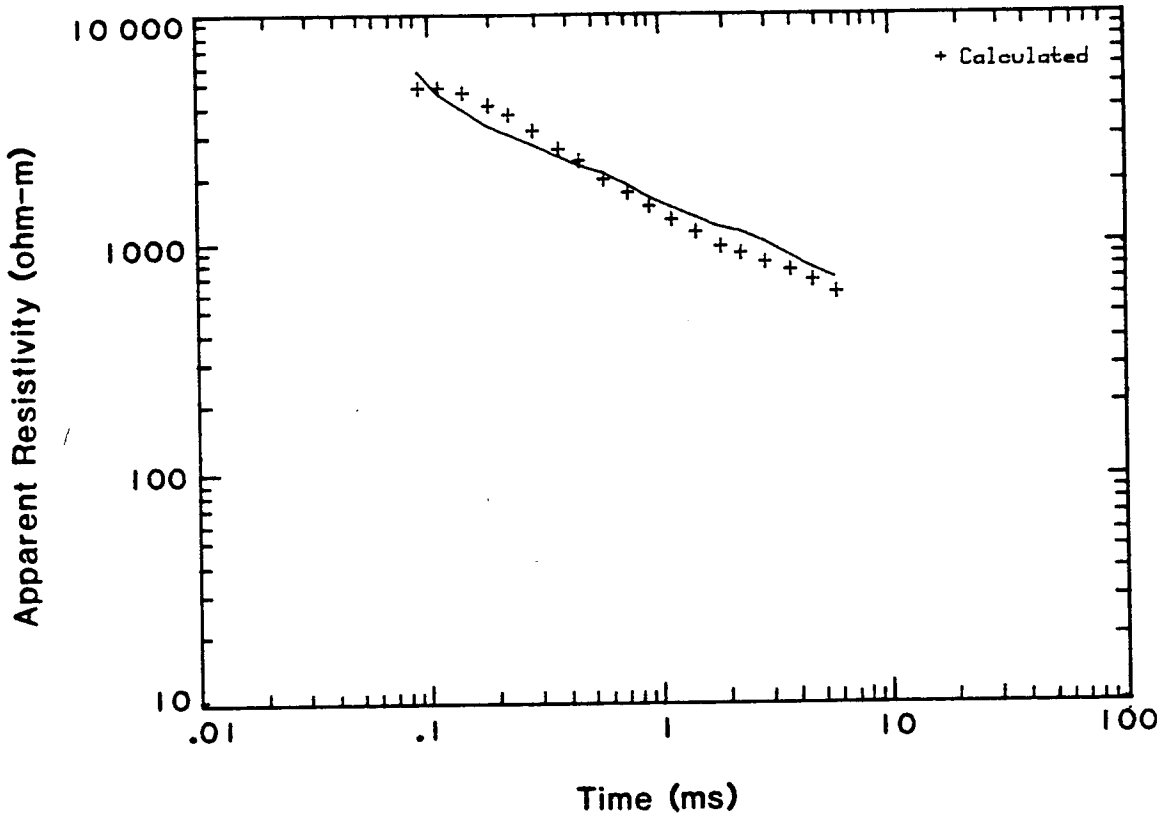
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.2535E-03 | 0.8973E-04 | 0.3540E+00 | 0.3540E+02 |
| 2 0.3390E-02 | 0.8282E-03 | 0.2443E+00 | 0.2443E+02 |
| 3 0.6564E+03 | 0.9319E-02 | 0.1420E-04 | 0.1420E-02 |

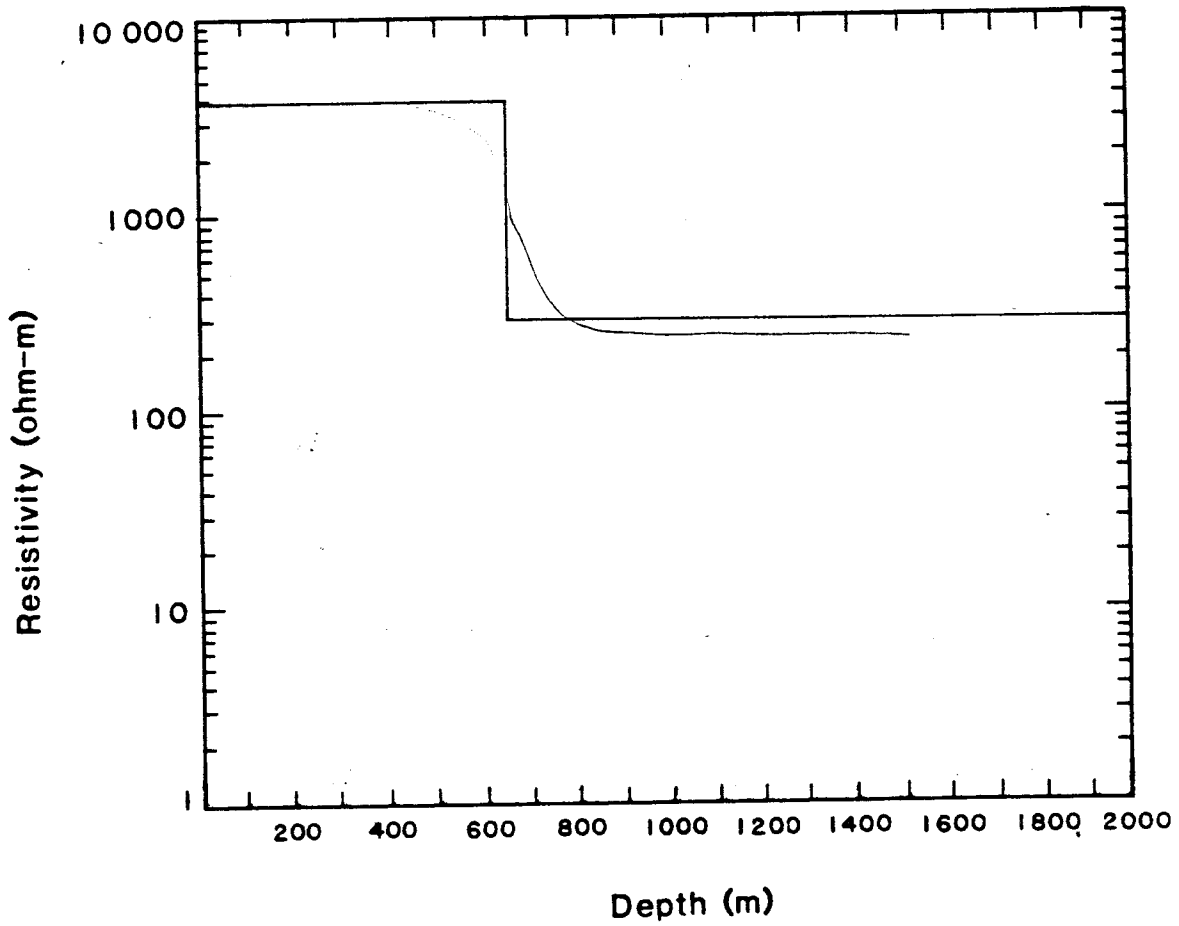
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.25345E-03 | 0.39455E+04 | |
| 2 SIGMA( 2) = | 0.33899E-02 | 0.29499E+03 | |
| 3 THICK( 1) = | 0.65639E+03 | | 0.65639E+03 |
| 4 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 109



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA 110 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1061E+03 | 0.1235E+03 | -0.1741E+02 | -0.1410E+02 | 0.886E-02 |
| 2 | 0.1100E-03 | 0.8279E+02 | 0.8644E+02 | -0.3651E+01 | -0.4224E+01 | 0.146E-01 |
| 3 | 0.1400E-03 | 0.5862E+02 | 0.5647E+02 | 0.2148E+01 | 0.3803E+01 | 0.291E-01 |
| 4 | 0.1770E-03 | 0.4019E+02 | 0.3674E+02 | 0.3447E+01 | 0.9382E+01 | 0.619E-01 |
| 5 | 0.2200E-03 | 0.2666E+02 | 0.2424E+02 | 0.2417E+01 | 0.9968E+01 | 0.141E+00 |
| 6 | 0.2800E-03 | 0.1641E+02 | 0.1503E+02 | 0.1379E+01 | 0.9172E+01 | 0.371E+00 |
| 7 | 0.3550E-03 | 0.1004E+02 | 0.9289E+01 | 0.7312E+00 | 0.8027E+01 | 0.972E+00 |
| 8 | 0.4430E-03 | 0.6140E+01 | 0.5884E+01 | 0.2563E+00 | 0.4357E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.3850E+01 | 0.3734E+01 | -0.1839E+00 | -0.4925E+01 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2090E+01 | 0.2253E+01 | -0.1630E+00 | -0.7234E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1340E+01 | 0.1487E+01 | -0.1494E+00 | -0.1005E+02 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.9100E+00 | 0.9944E+00 | -0.8439E-01 | -0.8487E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.6100E+00 | 0.6306E+00 | -0.2067E-01 | -0.3263E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.4100E+00 | 0.4177E+00 | -0.7701E-02 | -0.1844E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.2900E+00 | 0.2928E+00 | -0.2809E-02 | -0.9574E+00 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1800E+00 | 0.1939E+00 | -0.1385E-01 | -0.7146E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1200E+00 | 0.1299E+00 | -0.9725E-02 | -0.7637E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.8000E-01 | 0.7963E-01 | 0.3716E-02 | 0.4667E+00 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.5000E-01 | 0.3422E-01 | 0.1578E-01 | 0.4613E+02 | 0.100E+03 |

* %RMSERR= 12.75

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.9368E-01 | 0.1000E+01 | | | |
| 3 | 0.2869E+00 | -0.2855E+00 | 0.1000E+01 | | |
| 4 | -0.1706E+00 | 0.8000E+00 | -0.3476E+00 | 0.1000E+01 | |
| 5 | -0.4647E+00 | -0.4074E+00 | -0.3244E+00 | -0.3281E+00 | 0.1000E+01 |

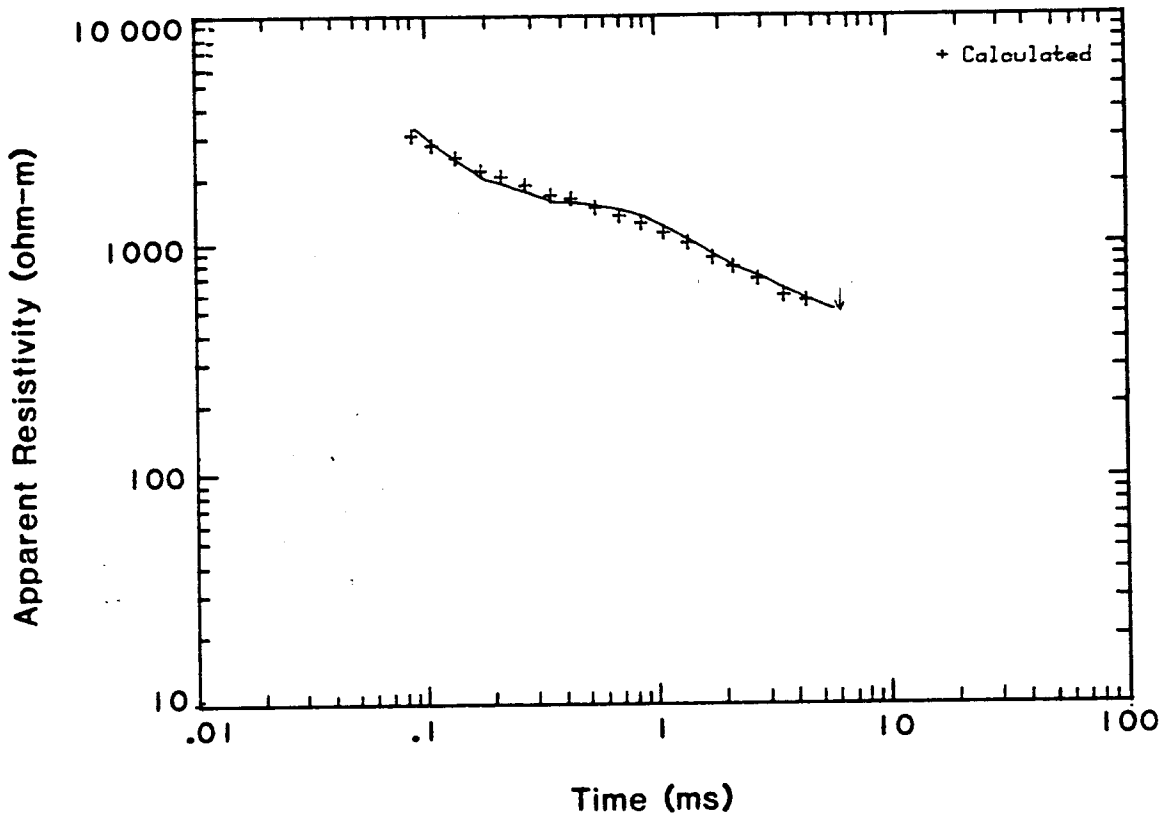
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 | 0.1211E-04 | 0.3120E-03 | 0.2534E+02 | 0.2534E+04 |
| 2 | 0.1303E-02 | 0.2379E-02 | 0.1826E+01 | 0.1826E+03 |
| 3 | 0.2807E-02 | 0.5863E-02 | 0.2089E+01 | 0.2089E+03 |
| 4 | 0.2422E-03 | 0.4846E-02 | 0.1976E-04 | 0.1976E-02 |
| 5 | 0.2412E+03 | 0.1849E-01 | 0.2784E-04 | 0.2784E-02 |

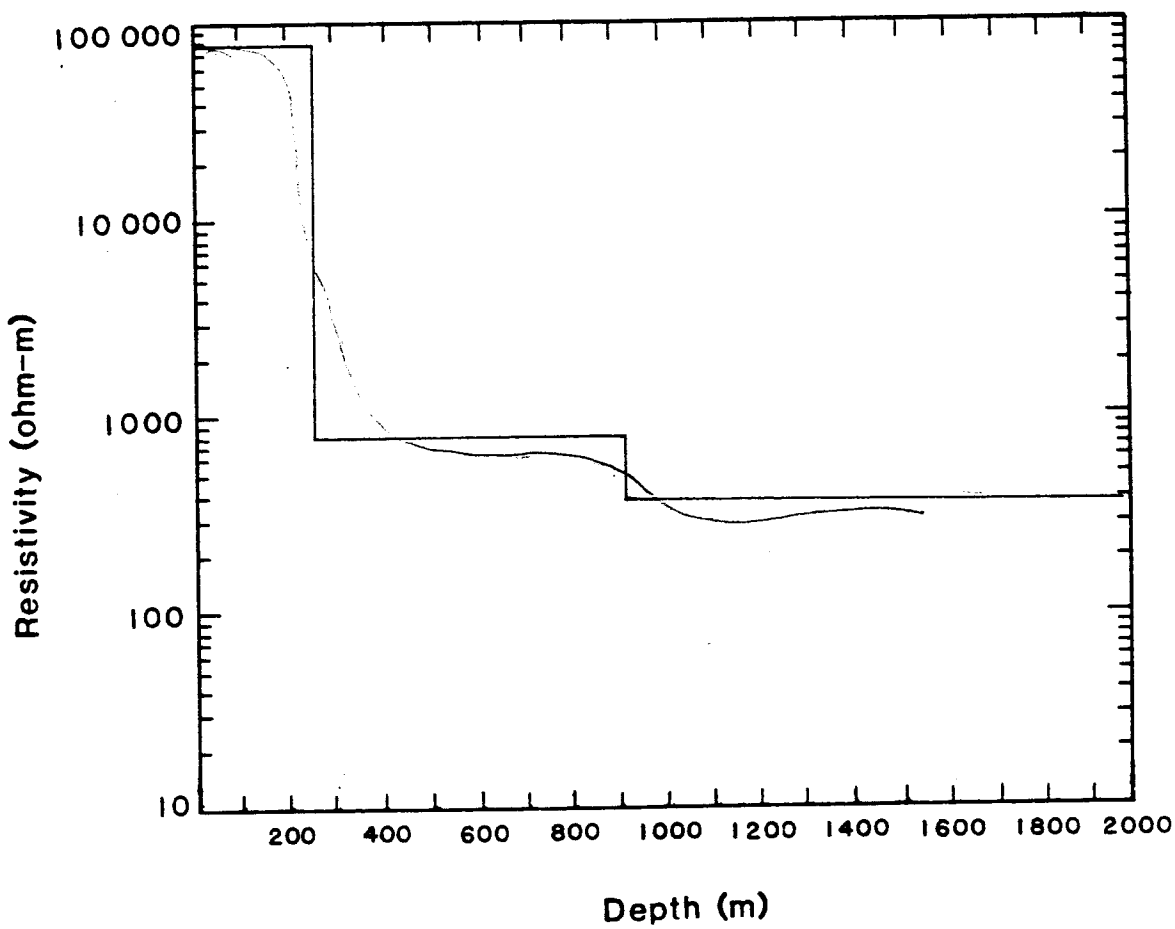
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.12312E-04 | 0.81220E+05 | |
| 2 SIGMA( 2) = | 0.13033E-02 | 0.76731E+03 | |
| 3 SIGMA( 3) = | 0.28067E-02 | 0.35619E+03 | |
| 4 THICK( 1) = | 0.24922E+03 | | 0.[illegible] |
| 5 THICK( 2) = | 0.[illegible]E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 110



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 111 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.6838E+02 | 0.7246E+02 | -0.4078E+01 | -0.5628E+01 | 0.214E-01 |
| 2 | 0.1100E-03 | 0.5651E+02 | 0.5447E+02 | 0.2042E+01 | 0.3750E+01 | 0.313E-01 |
| 3 | 0.1400E-03 | 0.3965E+02 | 0.3836E+02 | 0.1291E+01 | 0.3365E+01 | 0.636E-01 |
| 4 | 0.1770E-03 | 0.2742E+02 | 0.2655E+02 | 0.8716E+00 | 0.3283E+01 | 0.133E+00 |
| 5 | 0.2200E-03 | 0.1857E+02 | 0.1856E+02 | 0.9914E-02 | 0.5342E-01 | 0.290E+00 |
| 6 | 0.2800E-03 | 0.1266E+02 | 0.1243E+02 | 0.2292E+00 | 0.1844E+01 | 0.624E+00 |
| 7 | 0.3550E-03 | 0.7670E+01 | 0.8398E+01 | -0.7278E+00 | -0.8667E+01 | 0.100E+01 |
| 8 | 0.4430E-03 | 0.5830E+01 | 0.5884E+01 | -0.5390E-01 | -0.9160E+00 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.4150E+01 | 0.4193E+01 | -0.4261E-01 | -0.1016E+01 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.3070E+01 | 0.2912E+01 | 0.1578E+00 | 0.5417E+01 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2230E+01 | 0.2151E+01 | 0.7915E-01 | 0.3680E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1610E+01 | 0.1584E+01 | 0.2579E-01 | 0.1628E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1130E+01 | 0.1113E+01 | 0.1736E-01 | 0.1560E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.7800E+00 | 0.7908E+00 | -0.1077E-01 | -0.1362E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.5800E+00 | 0.5802E+00 | -0.2072E-03 | -0.3571E-01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.4000E+00 | 0.4041E+00 | -0.4092E-02 | -0.1013E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.2800E+00 | 0.2858E+00 | -0.5827E-02 | -0.2039E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.2100E+00 | 0.2056E+00 | 0.4372E-02 | 0.2126E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.1400E+00 | 0.1449E+00 | -0.4854E-02 | -0.3351E+01 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.1000E+00 | 0.1023E+00 | -0.2341E-02 | -0.2288E+01 | 0.100E+03 |

** %RMSERR= 3.35

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3656E+00 | 0.1000E+01 | | | |
| 3 | -0.2006E+00 | -0.1217E+00 | 0.1000E+01 | | |
| 4 | -0.3948E+00 | 0.7353E+00 | -0.3234E+00 | 0.1000E+01 | |
| 5 | -0.2595E+00 | -0.2339E+00 | 0.2245E+00 | -0.1974E+00 | 0.1000E+01 |

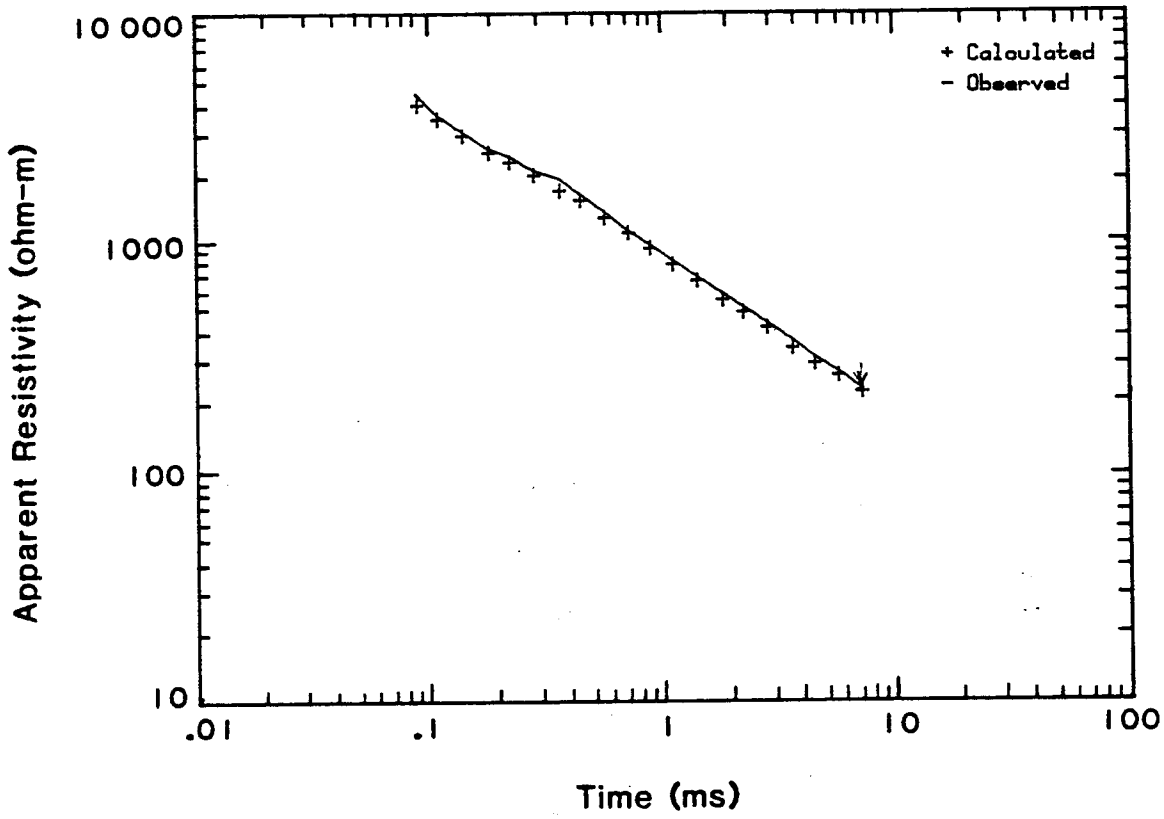
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.4148E-04 | 0.1877E-04 | 0.4526E+00 | 0.4526E+02 |
| 2 0.2862E-02 | 0.2063E-03 | 0.7208E-01 | 0.7208E+01 |
| 3 0.1165E-01 | 0.4911E-03 | 0.4217E-01 | 0.4217E+01 |
| 4 0.3771E+03 | 0.1349E-02 | 0.3577E-05 | 0.3577E-03 |
| 5 0.3037E+03 | 0.3668E-02 | 0.1208E-04 | 0.1208E-02 |

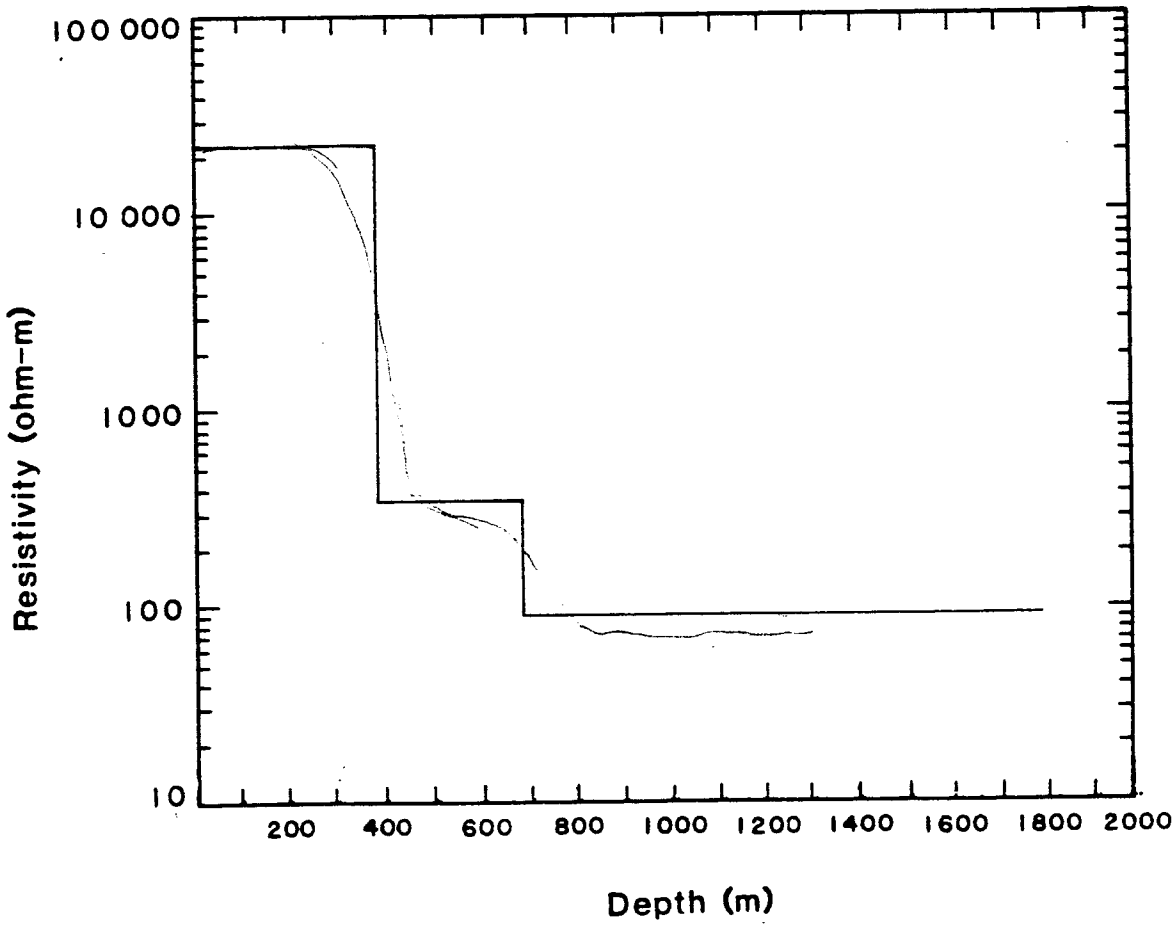
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.41478E-04 | 0.24109E+05 | |
| 2 SIGMA( 2) = | 0.28619E-02 | 0.34942E+03 | |
| 3 SIGMA( 3) = | 0.11647E-01 | 0.85859E+02 | |
| 4 THICK( 1) = | 0.37714E+03 | | 0.37714E+03 |
| 5 THICK( 2) = | 0.30374E+03 | | 0.68088E+03 |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 111



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 112 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4495E+02 | 0.5663E+02 | -0.1168E+02 | -0.2063E+02 | 0.495E-01 |
| 2 | 0.1100E-03 | 0.3486E+02 | 0.3743E+02 | -0.2575E+01 | -0.6878E+01 | 0.823E-01 |
| 3 | 0.1400E-03 | 0.2394E+02 | 0.2259E+02 | 0.1348E+01 | 0.5968E+01 | 0.174E+00 |
| 4 | 0.1770E-03 | 0.1624E+02 | 0.1366E+02 | 0.2582E+01 | 0.1890E+02 | 0.379E+00 |
| 5 | 0.2200E-03 | 0.1133E+02 | 0.8612E+01 | 0.2718E+01 | 0.3156E+02 | 0.779E+00 |
| 6 | 0.2800E-03 | 0.6380E+01 | 0.5386E+01 | 0.9937E+00 | 0.1845E+02 | 0.100E+01 |
| 7 | 0.3550E-03 | 0.3840E+01 | 0.3587E+01 | 0.2529E+00 | 0.7050E+01 | 0.400E+01 |
| 8 | 0.4430E-03 | 0.2620E+01 | 0.2569E+01 | 0.5117E-01 | 0.1992E+01 | 0.111E+02 |
| 9 | 0.5540E-03 | 0.1830E+01 | 0.1911E+01 | -0.8069E-01 | -0.4223E+01 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.1360E+01 | 0.1388E+01 | -0.2810E-01 | -0.2024E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1050E+01 | 0.1072E+01 | -0.2235E-01 | -0.2084E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.8200E+00 | 0.8186E+00 | 0.1353E-02 | 0.1653E+00 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.6200E+00 | 0.5955E+00 | 0.2454E-01 | 0.4121E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.4600E+00 | 0.4363E+00 | 0.2374E-01 | 0.5442E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.3500E+00 | 0.3263E+00 | 0.2366E-01 | 0.7249E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.2700E+00 | 0.2306E+00 | 0.3936E-01 | 0.1707E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.2000E+00 | 0.1639E+00 | 0.3606E-01 | 0.2200E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.1400E+00 | 0.1172E+00 | 0.2280E-01 | 0.1946E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.1100E+00 | 0.8044E-01 | 0.2956E-01 | 0.3675E+02 | 0.100E+03 |

* %RMSERR= 16.04

ORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3318E+00 | 0.1000E+01 | | | |
| 3 | 0.1655E+00 | -0.2093E+00 | 0.1000E+01 | | |
| 4 | 0.6237E-01 | 0.6284E+00 | -0.1175E+00 | 0.1000E+01 | |
| 5 | -0.2248E+00 | -0.1667E+00 | -0.2064E+00 | -0.1483E+00 | 0.1000E+01 |

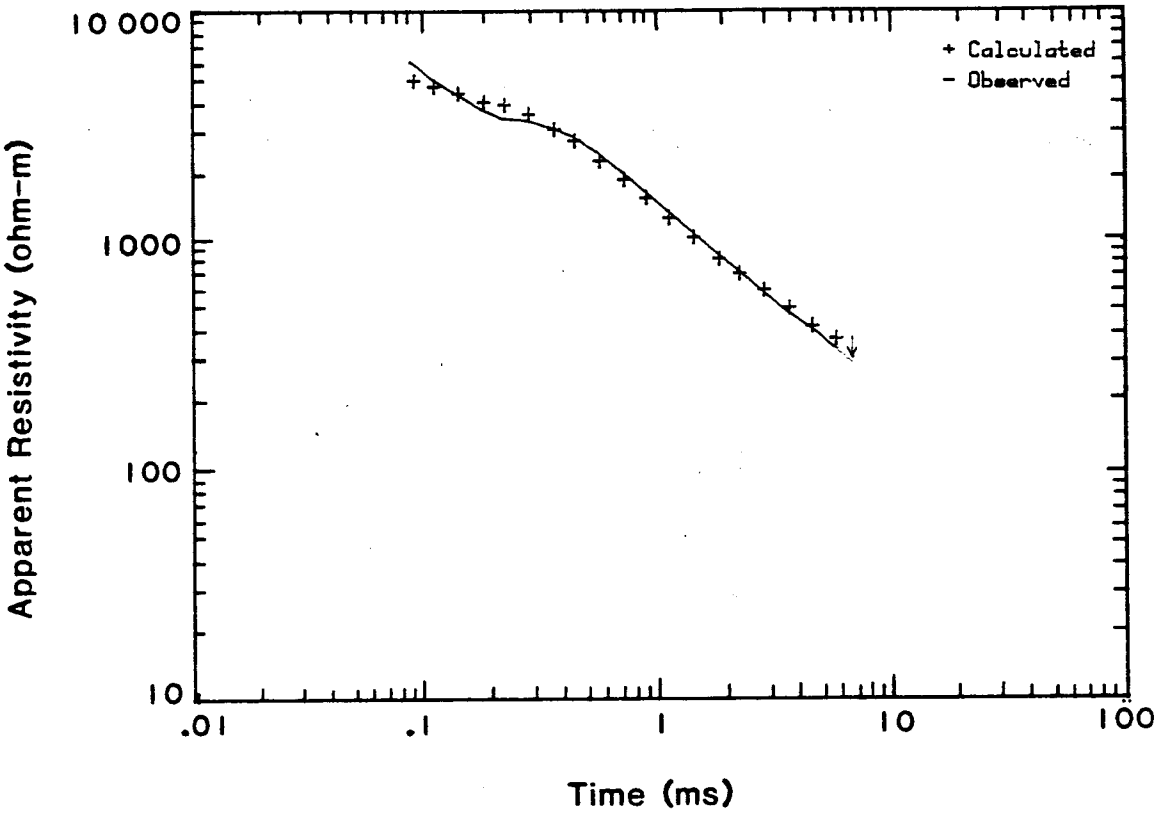
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.7845E-05 | 0.2420E-04 | 0.3084E+01 | 0.3084E+03 |
| 2 0.8802E-03 | 0.2662E-03 | 0.3024E+00 | 0.3024E+02 |
| 3 0.1161E-01 | 0.1086E-02 | 0.9347E-01 | 0.9347E+01 |
| 4 0.3192E+03 | 0.6451E-02 | 0.2021E-04 | 0.2021E-02 |
| 5 0.4802E+03 | 0.8125E-02 | 0.1692E-04 | 0.1692E-02 |

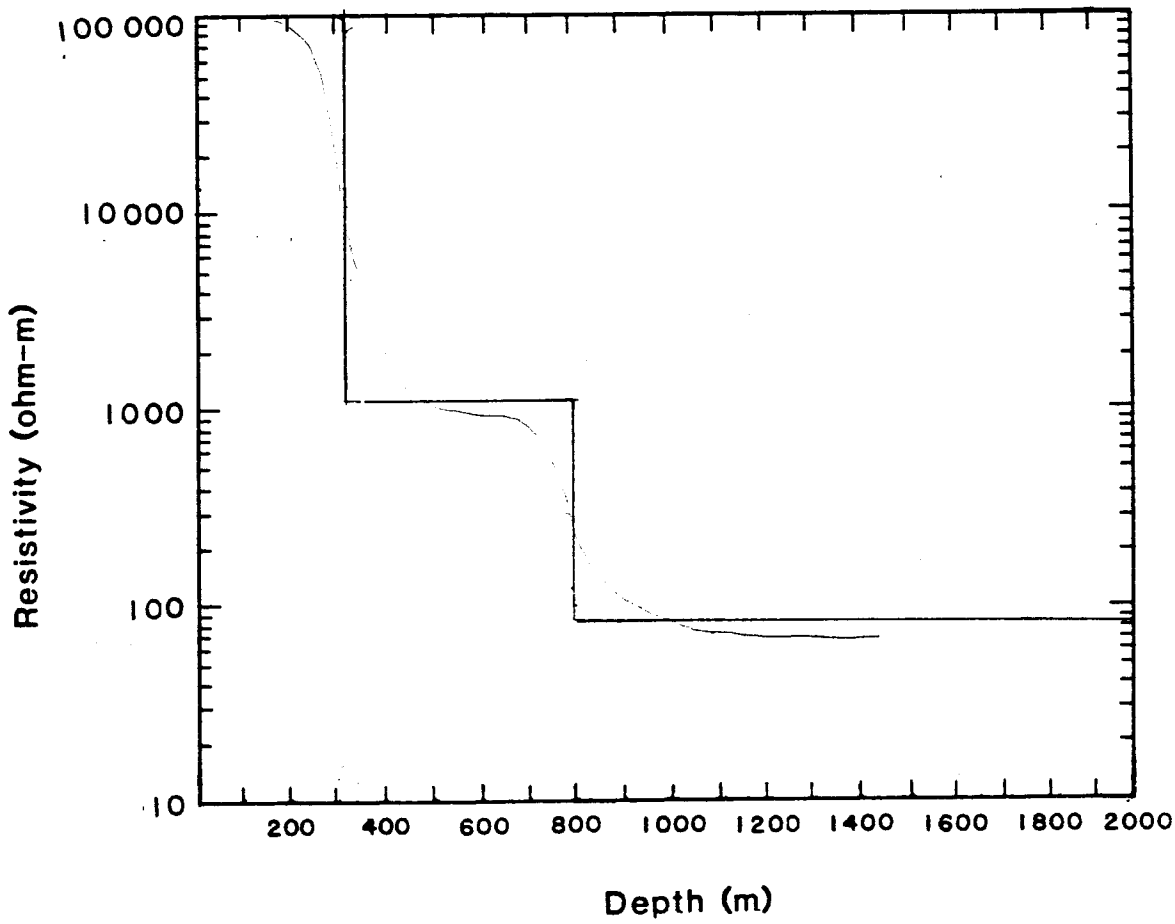
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.78452E-05 | 0.12747E+06 | |
| 2 SIGMA( 2) = | 0.88021E-03 | 0.11361E+04 | |
| 3 SIGMA( 3) = | 0.11614E-01 | 0.86106E+02 | |
| 4 THICK( 1) = | 0.31918E+03 | | 0.31918E+03 |
| 5 THICK( 2) = | 0.48017E+03 | | 0.79935E+03 |
| 6 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 112



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 113 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.1400E-03 | 0.2201E+02 | 0.2580E+02 | -0.3793E+01 | -0.1470E+02 | 0.206E+00 |
| 2 | 0.1770E-03 | 0.1995E+02 | 0.2004E+02 | -0.8779E-01 | -0.4381E+00 | 0.251E+00 |
| 3 | 0.2200E-03 | 0.1663E+02 | 0.1567E+02 | 0.9578E+00 | 0.6112E+01 | 0.362E+00 |
| 4 | 0.2800E-03 | 0.1312E+02 | 0.1177E+02 | 0.1346E+01 | 0.1143E+02 | 0.581E+00 |
| 5 | 0.3550E-03 | 0.1015E+02 | 0.8761E+01 | 0.1389E+01 | 0.1585E+02 | 0.971E+00 |
| 6 | 0.4430E-03 | 0.7430E+01 | 0.6549E+01 | 0.8814E+00 | 0.1346E+02 | 0.100E+01 |
| 7 | 0.5540E-03 | 0.5020E+01 | 0.4820E+01 | 0.2001E+00 | 0.4151E+01 | 0.100E+01 |
| 8 | 0.7130E-03 | 0.3380E+01 | 0.3351E+01 | 0.2866E-01 | 0.8553E+00 | 0.400E+01 |
| 9 | 0.8810E-03 | 0.2370E+01 | 0.2436E+01 | -0.6647E-01 | -0.2728E+01 | 0.111E+02 |
| 10 | 0.1096E-02 | 0.1640E+01 | 0.1732E+01 | -0.9241E-01 | -0.5334E+01 | 0.111E+02 |
| 11 | 0.1411E-02 | 0.1080E+01 | 0.1148E+01 | -0.6818E-01 | -0.5938E+01 | 0.111E+02 |
| 12 | 0.1795E-02 | 0.7200E+00 | 0.7644E+00 | -0.4437E-01 | -0.5805E+01 | 0.100E+03 |
| 13 | 0.2224E-02 | 0.4900E+00 | 0.5266E+00 | -0.3660E-01 | -0.6951E+01 | 0.100E+03 |
| 14 | 0.2850E-02 | 0.3400E+00 | 0.3376E+00 | 0.2421E-02 | 0.7172E+00 | 0.100E+03 |
| 15 | 0.3600E-02 | 0.2100E+00 | 0.2202E+00 | -0.1017E-01 | -0.4618E+01 | 0.100E+03 |
| 16 | 0.4490E-02 | 0.1300E+00 | 0.1468E+00 | -0.1684E-01 | -0.1147E+02 | 0.100E+03 |
| 17 | 0.5700E-02 | 0.8000E-01 | 0.9435E-01 | -0.1435E-01 | -0.1521E+02 | 0.100E+03 |
| 18 | 0.7190E-02 | 0.5000E-01 | 0.6193E-01 | -0.1193E-01 | -0.1926E+02 | 0.100E+03 |

** %RMSERR= 9.84

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.6101E+00 | 0.1000E+01 | |
| 3 | -0.9178E-01 | 0.3167E+00 | 0.1000E+01 |

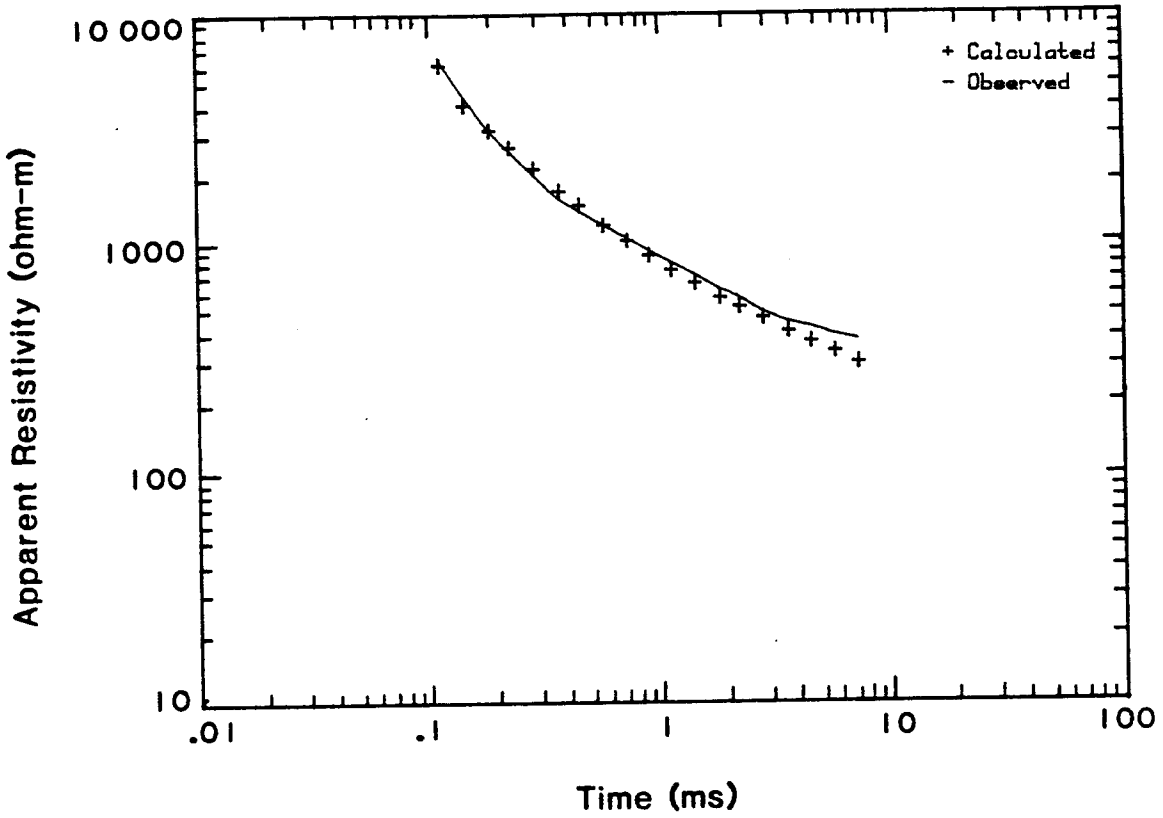
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.5292E-04 | 0.1899E-03 | 0.3589E+01 | 0.3589E+03 |
| 2 0.5692E-02 | 0.2167E-02 | 0.3807E+00 | 0.3807E+02 |
| 3 0.4740E+03 | 0.2287E-02 | 0.4824E-05 | 0.4824E-03 |

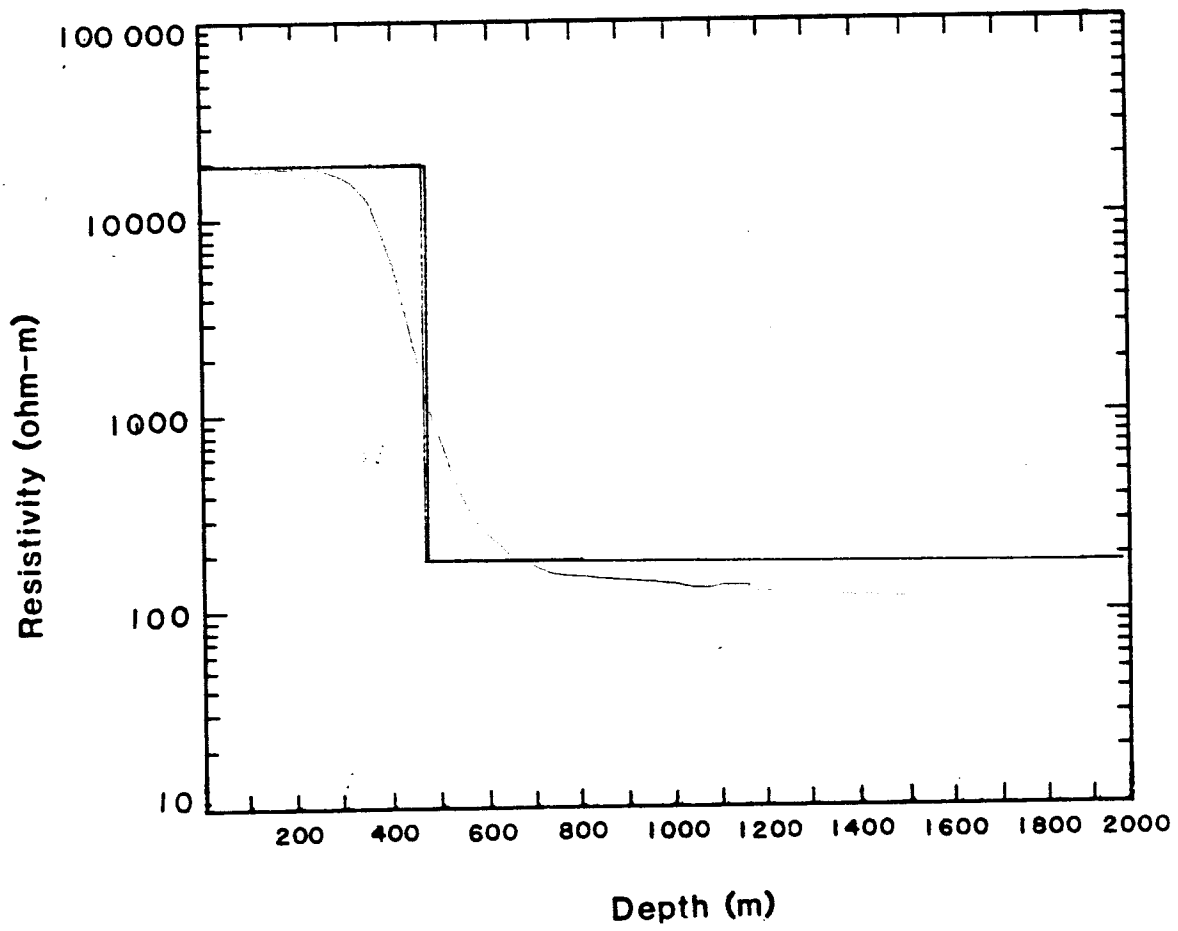
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.52915E-04 | 0.18898E+05 | |
| 2 SIGMA( 2) = | 0.56917E-02 | 0.17569E+03 | |
| 3 THICK( 1) = | 0.47403E+03 | | 0.47403E+03 |
| 4 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 113



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 114 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1589E+04 | 0.1837E+04 | -0.2476E+03 | -0.1348E+02 | 0.396E-04 |
| 2 | 0.1100E-03 | 0.1230E+04 | 0.1274E+04 | -0.4354E+02 | -0.3419E+01 | 0.661E-04 |
| 3 | 0.1400E-03 | 0.8946E+03 | 0.8209E+03 | 0.7375E+02 | 0.8984E+01 | 0.125E-03 |
| 4 | 0.1770E-03 | 0.6161E+03 | 0.5282E+03 | 0.8789E+02 | 0.1664E+02 | 0.263E-03 |
| 5 | 0.2200E-03 | 0.4151E+03 | 0.3466E+03 | 0.6844E+02 | 0.1975E+02 | 0.580E-03 |
| 6 | 0.2800E-03 | 0.2534E+03 | 0.2135E+03 | 0.3990E+02 | 0.1869E+02 | 0.156E-02 |
| 7 | 0.3550E-03 | 0.1390E+03 | 0.1303E+03 | 0.8722E+01 | 0.6694E+01 | 0.517E-02 |
| 8 | 0.4430E-03 | 0.8211E+02 | 0.8118E+02 | 0.9312E+00 | 0.1147E+01 | 0.148E-01 |
| 9 | 0.5540E-03 | 0.4560E+02 | 0.4926E+02 | -0.3663E+01 | -0.7436E+01 | 0.481E-01 |
| 10 | 0.7130E-03 | 0.2533E+02 | 0.2767E+02 | -0.2344E+01 | -0.8470E+01 | 0.156E+00 |
| 11 | 0.8810E-03 | 0.1522E+02 | 0.1690E+02 | -0.1682E+01 | -0.9951E+01 | 0.432E+00 |
| 12 | 0.1096E-02 | 0.1020E+02 | 0.1017E+02 | 0.2867E-01 | 0.2818E+00 | 0.961E+00 |
| 13 | 0.1411E-02 | 0.5800E+01 | 0.5762E+01 | 0.3802E-01 | 0.6599E+00 | 0.100E+01 |
| 14 | 0.1795E-02 | 0.3430E+01 | 0.3404E+01 | 0.2555E-01 | 0.7504E+00 | 0.400E+01 |
| 15 | 0.2224E-02 | 0.2280E+01 | 0.2195E+01 | 0.8459E-01 | 0.3853E+01 | 0.111E+02 |
| 16 | 0.2850E-02 | 0.1360E+01 | 0.1357E+01 | 0.3167E-02 | 0.2334E+00 | 0.111E+02 |
| 17 | 0.3600E-02 | 0.8300E+00 | 0.8691E+00 | -0.3912E-01 | -0.4502E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.5100E+00 | 0.5759E+00 | -0.6585E-01 | -0.1144E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.3200E+00 | 0.3718E+00 | -0.5178E-01 | -0.1393E+02 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.1800E+00 | 0.2400E+00 | -0.6003E-01 | -0.2501E+02 | 0.100E+03 |

* %RMSERR= 11.29

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.8410E+00 | 0.1000E+01 | | | |
| 3 | -0.7868E+00 | 0.7591E+00 | 0.1000E+01 | | |
| 4 | -0.5196E+00 | 0.6334E+00 | 0.2528E+00 | 0.1000E+01 | |
| 5 | -0.2605E+00 | -0.4542E-02 | -0.5749E-01 | -0.4898E-01 | 0.1000E+01 |

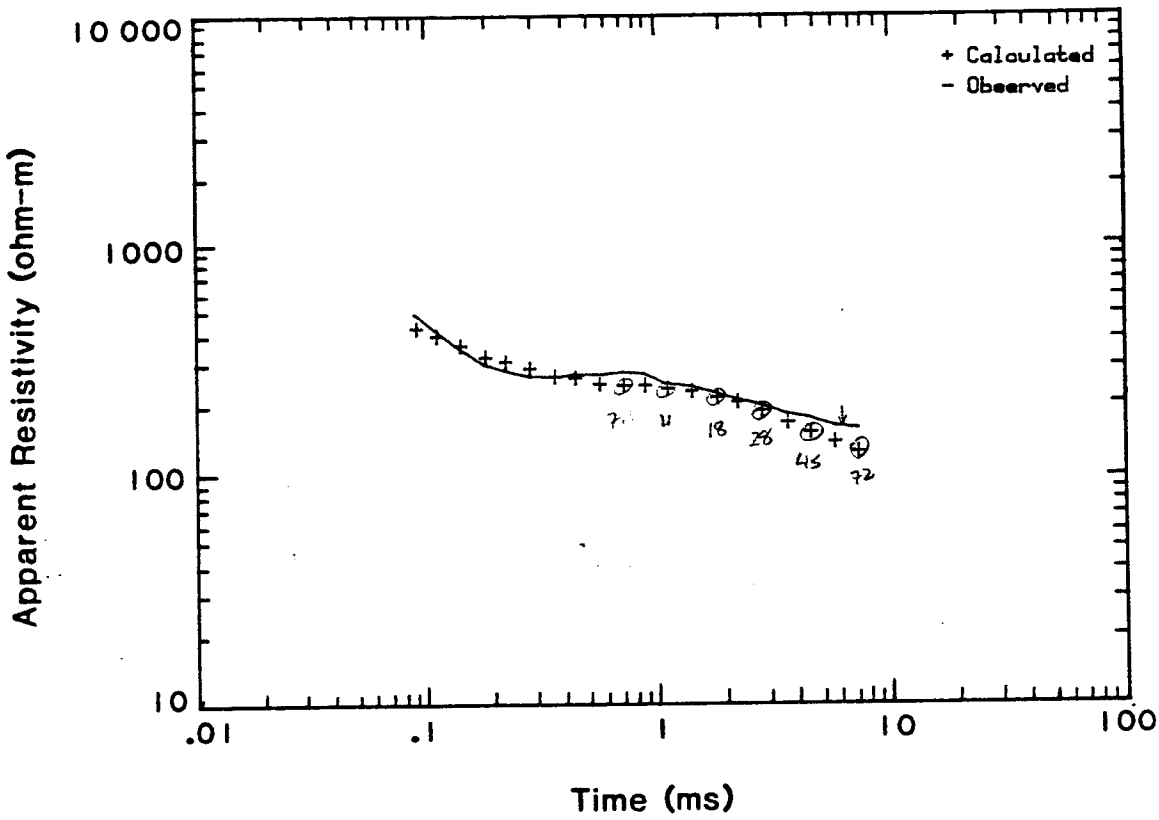
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.8646E-03 | 0.2024E-02 | 0.2341E+01 | 0.2341E+03 |
| 2 | 0.6312E-02 | 0.2396E-02 | 0.3796E+00 | 0.3796E+02 |
| 3 | 0.2376E-01 | 0.3408E-01 | 0.1434E+01 | 0.1434E+03 |
| 4 | 0.8736E+02 | 0.4254E-02 | 0.4869E-04 | 0.4869E-02 |
| 5 | 0.4652E+03 | 0.1601E-01 | 0.3442E-04 | 0.3442E-02 |

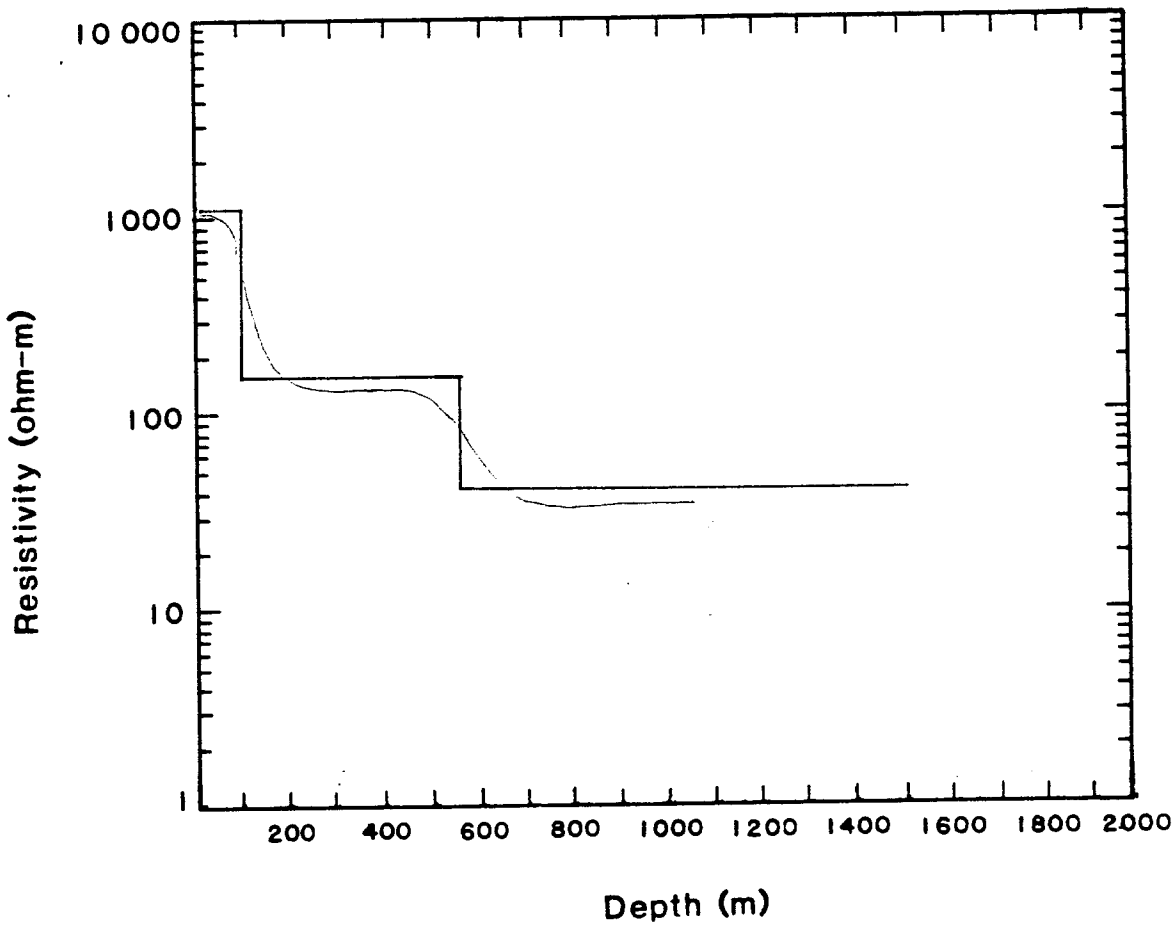
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.86460E-03 | 0.11566E+04 | |
| 2 | SIGMA( 2) | = | 0.63117E-02 | 0.15844E+03 | |
| 3 | SIGMA( 3) | = | 0.23759E-01 | 0.42089E+02 | |
| 4 | THICK( 1) | = | 0.87359E+02 | | 0.87359E+02 |
| 5 | THICK( 2) | = | 0.46522E+03 | | 0.55258E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 114



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 115 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | | %RES.ERR | WEIGHT | |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.1100E-03 | 0.1318E+03 | 0.0603 | 0.0137 | 0E+02 | -0.8598E+01 | 0.575E-02 | 131.8 |
| 2 | 0.1400E-03 | 0.8592E+02 | 0.0599 | 0.0137 | 5E+01 | 0.2512E+01 | 0.135E-01 | 85.92 |
| 3 | 0.1770E-03 | 0.5443E+02 | 0.0595 | 0.0137 | 1E+01 | 0.3836E+01 | 0.338E-01 | 54.44 |
| 4 | 0.2200E-03 | 0.3861E+02 | 0.0590 | 0.0136 | 4E+01 | 0.7201E+01 | 0.671E-01 | 38.62 |
| 5 | 0.2800E-03 | 0.2570E+02 | 0.0583 | 0.0135 | 5E+01 | 0.5651E+01 | 0.151E+00 | 25.77 |
| 6 | 0.3550E-03 | 0.1727E+02 | 0.0575 | 0.0134 | 1E+00 | 0.2305E+01 | 0.335E+00 | 17.34 |
| 7 | 0.4430E-03 | 0.1216E+02 | 0.0565 | 0.0133 | 5E-01 | -0.2121E+00 | 0.676E+00 | 12.23 |
| 8 | 0.5540E-03 | 0.8030E+01 | 0.0552 | 0.0131 | 0E+00 | -0.6454E+01 | 0.100E+01 | 8.1 |
| 9 | 0.7130E-03 | 0.5320E+01 | 0.0537 | 0.0129 | 4E+00 | -0.8315E+01 | 0.100E+01 | 5.39 |
| 10 | 0.8810E-03 | 0.3790E+01 | 0.0519 | 0.0127 | 1E+00 | -0.8500E+01 | 0.400E+01 | 3.85 |
| 11 | 0.1096E-02 | 0.2660E+01 | 0.0498 | 0.0124 | 1E+00 | -0.7641E+01 | 0.111E+02 | 2.72 |
| 12 | 0.1411E-02 | 0.1800E+01 | 0.0472 | 0.0121 | 0E-01 | -0.4103E+01 | 0.111E+02 | 1.86 |
| 13 | 0.1795E-02 | 0.1220E+01 | 0.0443 | 0.0116 | 1E-02 | -0.6354E+00 | 0.111E+02 | 1.27 |
| 14 | 0.2224E-02 | 0.8800E+00 | 0.0409 | 0.0111 | 4E-01 | 0.5749E+01 | 0.100E+03 | .93 |
| 15 | 0.2850E-02 | 0.5800E+00 | 0.0372 | 0.0105 | 2E-01 | 0.1065E+02 | 0.100E+03 | .63 |
| 16 | 0.3600E-02 | 0.3800E+00 | 0.0331 | 0.0098 | 7E-01 | 0.1346E+02 | 0.100E+03 | .42 |
| 17 | 0.4490E-02 | 0.2700E+00 | 0.0289 | 0.0091 | 3E-01 | 0.2490E+02 | 0.100E+03 | .31 |
| 18 | 0.5700E-02 | 0.1800E+00 | 0.0245 | 0.0082 | 9E-01 | 0.3462E+02 | 0.100E+03 | .21 |
| 19 | 0.7190E-02 | 0.1200E+00 | 0.0203 | 0.0073 | 7E-01 | 0.4488E+02 | 0.100E+03 | .15 |
| | | | 0.0163 | 0.0063 | | | | |

** %RMSERR= 15.56

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | 0.8371E-01 | 0.1000E+01 | |
| 3 | 0.3471E+00 | 0.5343E+00 | 0.1000E+01 |

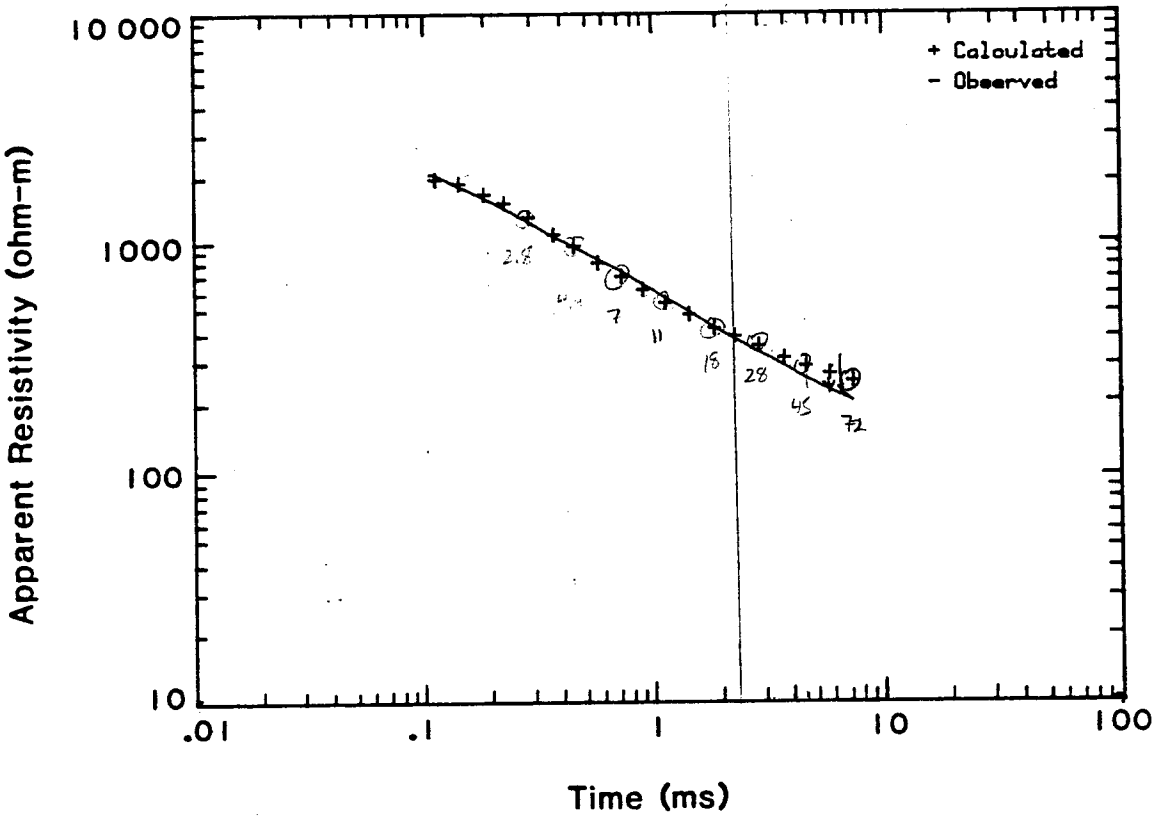
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.6511E-03 | 0.2132E-03 | 0.3275E+00 | 0.3275E+02 |
| 2 0.7389E-02 | 0.1849E-02 | 0.2502E+00 | 0.2502E+02 |
| 3 0.4276E+03 | 0.2656E-02 | 0.6211E-05 | 0.6211E-03 |

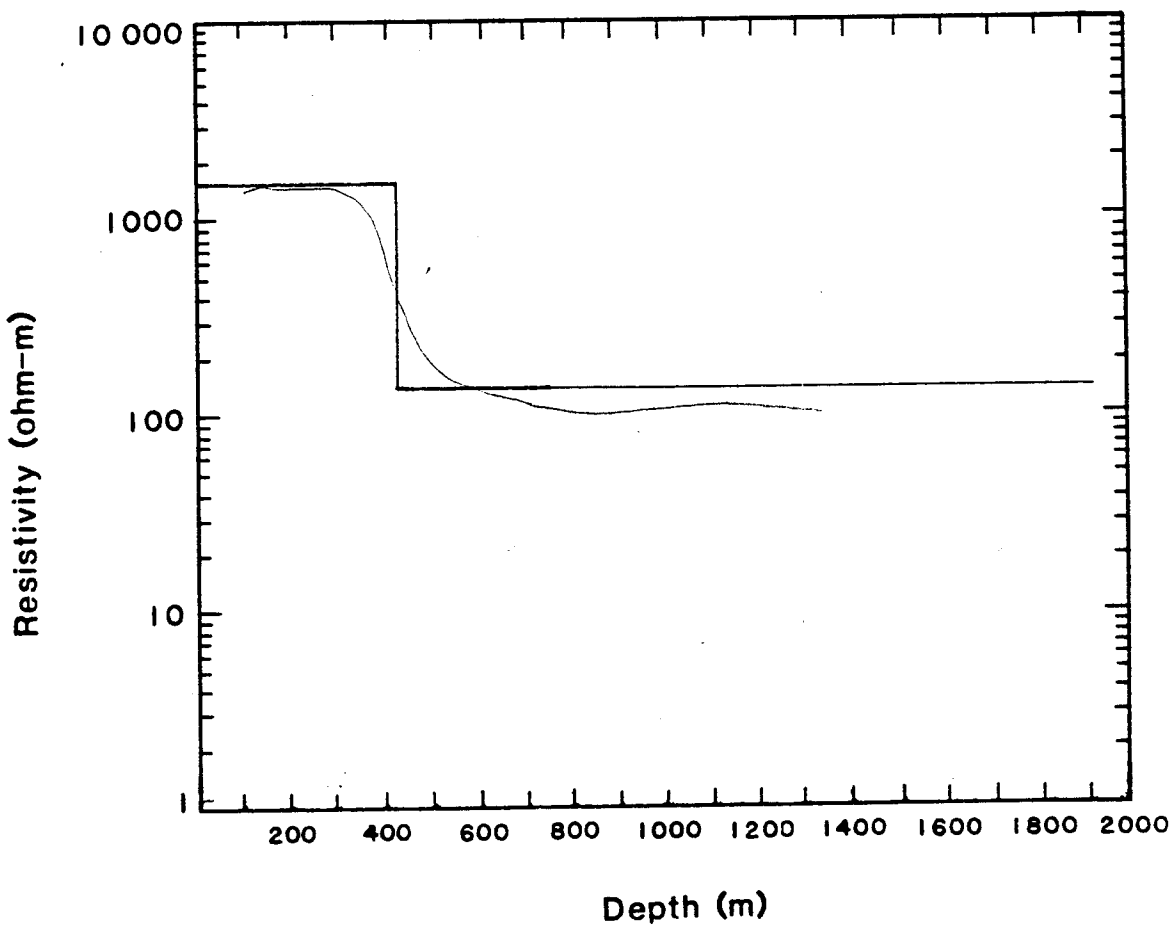
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.65107E-03 | 0.15359E+04 | |
| 2 SIGMA( 2) = | 0.73892E-02 | 0.13533E+03 | |
| 3 THICK( 1) = | 0.42764E+03 | | 0.42764E+03 |
| 4 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 115



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 116 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.8097E+02 | 0.9037E+02 | -0.9405E+01 | -0.1041E+02 | 0.153E-01 |
| 2 | 0.1100E-03 | 0.6482E+02 | 0.6500E+02 | -0.1794E+00 | -0.2759E+00 | 0.238E-01 |
| 3 | 0.1400E-03 | 0.4861E+02 | 0.4623E+02 | 0.2380E+01 | 0.5149E+01 | 0.423E-01 |
| 4 | 0.1770E-03 | 0.3709E+02 | 0.3437E+02 | 0.2721E+01 | 0.7917E+01 | 0.727E-01 |
| 5 | 0.2200E-03 | 0.2816E+02 | 0.2676E+02 | 0.1396E+01 | 0.5218E+01 | 0.126E+00 |
| 6 | 0.2800E-03 | 0.2048E+02 | 0.1987E+02 | 0.6099E+00 | 0.3070E+01 | 0.238E+00 |
| 7 | 0.3550E-03 | 0.1534E+02 | 0.1482E+02 | 0.5249E+00 | 0.3543E+01 | 0.425E+00 |
| 8 | 0.4430E-03 | 0.1107E+02 | 0.1123E+02 | -0.1576E+00 | -0.1404E+01 | 0.816E+00 |
| 9 | 0.5540E-03 | 0.7790E+01 | 0.8321E+01 | -0.5306E+00 | -0.6377E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.5500E+01 | 0.5897E+01 | -0.3969E+00 | -0.6730E+01 | 0.100E+01 |
| 11 | 0.8810E-03 | 0.4170E+01 | 0.4355E+01 | -0.1847E+00 | -0.4241E+01 | 0.400E+01 |
| 12 | 0.1096E-02 | 0.3050E+01 | 0.3145E+01 | -0.9500E-01 | -0.3021E+01 | 0.400E+01 |
| 13 | 0.1411E-02 | 0.2080E+01 | 0.2125E+01 | -0.4461E-01 | -0.2100E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.1360E+01 | 0.1437E+01 | -0.7727E-01 | -0.5376E+01 | 0.111E+02 |
| 15 | 0.2224E-02 | 0.9900E+00 | 0.1002E+01 | -0.1192E-01 | -0.1190E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.6500E+00 | 0.6504E+00 | -0.4200E-03 | -0.6458E-01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.4400E+00 | 0.4262E+00 | 0.1381E-01 | 0.3240E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.2800E+00 | 0.2829E+00 | -0.2864E-02 | -0.1013E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.1800E+00 | 0.1794E+00 | 0.5913E-03 | 0.3296E+00 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.1100E+00 | 0.1136E+00 | -0.3650E-02 | -0.3211E+01 | 0.100E+03 |

* %RMSERR= 4.57

ORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.5740E-01 | 0.1000E+01 | |
| 3 | -0.8660E-01 | -0.4682E-01 | 0.1000E+01 |

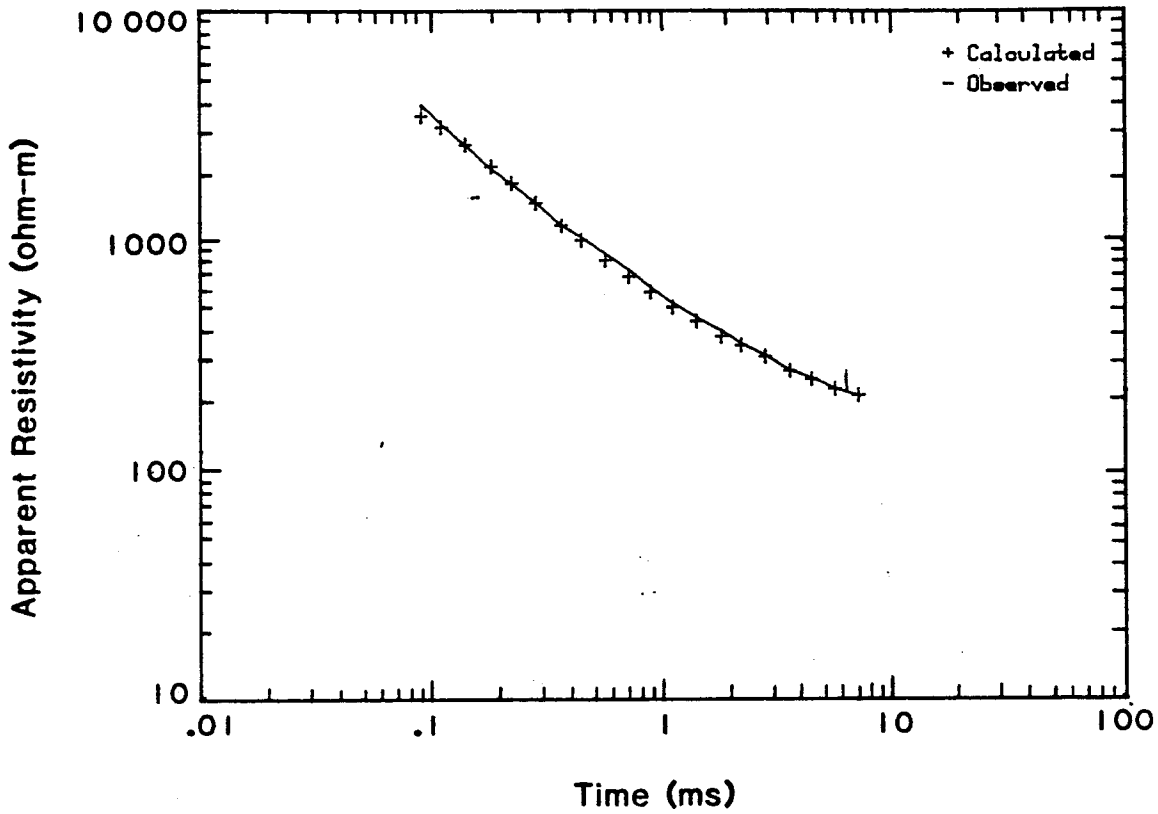
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.3422E-03 | 0.1293E-03 | 0.3779E+00 | 0.3779E+02 |
| 2 0.1046E-01 | 0.1413E-02 | 0.1351E+00 | 0.1351E+02 |
| 3 0.4240E+03 | 0.1167E-02 | 0.2752E-05 | 0.2752E-03 |

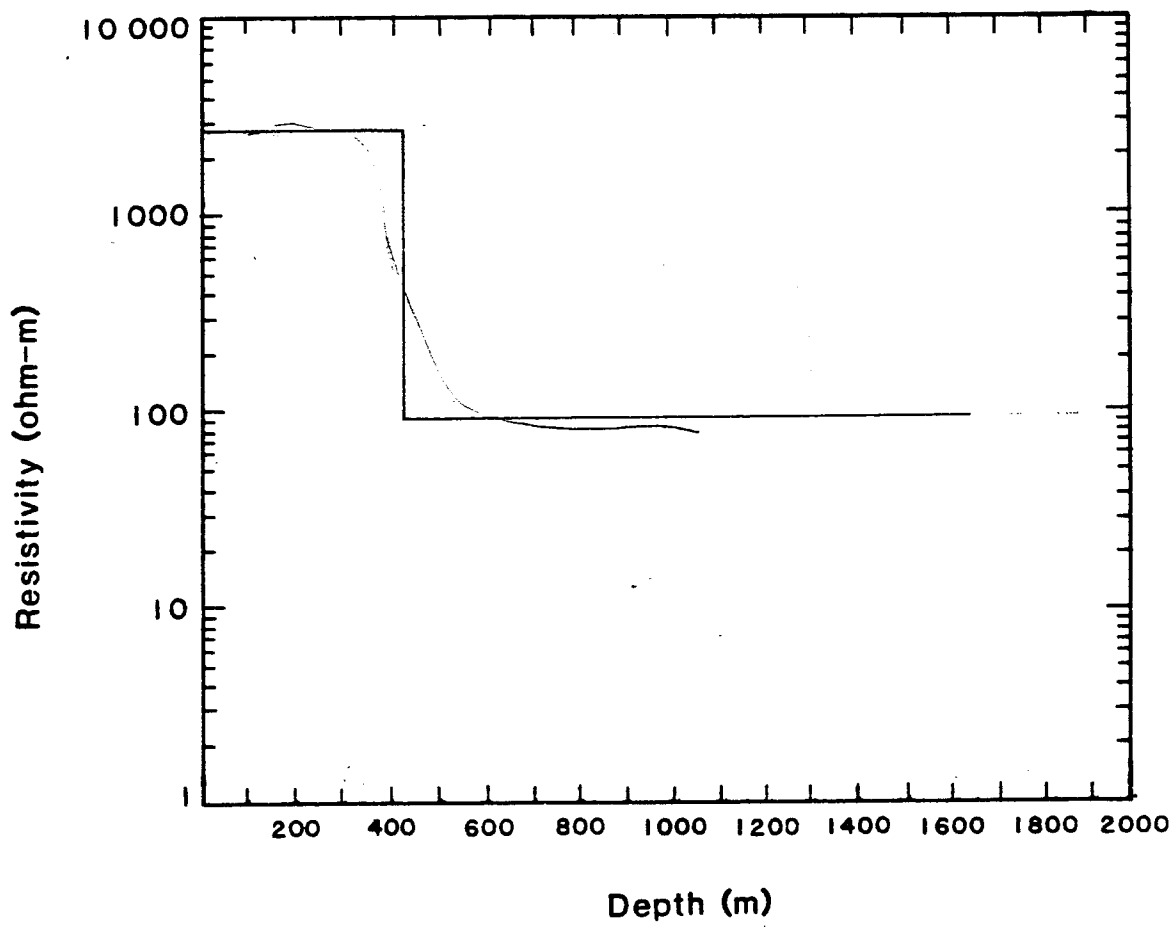
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.34222E-03 | 0.29221E+04 | |
| 2 SIGMA( 2) = | 0.10455E-01 | 0.95644E+02 | |
| 3 THICK( 1) = | 0.42402E+03 | | 0.42402E+03 |
| 4 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 116



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 117 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4616E+02 | 0.4776E+02 | -0.1597E+01 | -0.3345E+01 | 0.469E-01 |
| 2 | 0.1100E-03 | 0.3403E+02 | 0.3277E+02 | 0.1259E+01 | 0.3842E+01 | 0.864E-01 |
| 3 | 0.1400E-03 | 0.2436E+02 | 0.2230E+02 | 0.2060E+01 | 0.9239E+01 | 0.169E+00 |
| 4 | 0.1770E-03 | 0.1758E+02 | 0.1670E+02 | 0.8803E+00 | 0.5272E+01 | 0.324E+00 |
| 5 | 0.2200E-03 | 0.1391E+02 | 0.1307E+02 | 0.8401E+00 | 0.6428E+01 | 0.517E+00 |
| 6 | 0.2800E-03 | 0.9100E+01 | 0.9968E+01 | -0.8675E+00 | -0.8703E+01 | 0.100E+01 |
| 7 | 0.3550E-03 | 0.7140E+01 | 0.7669E+01 | -0.5288E+00 | -0.6896E+01 | 0.100E+01 |
| 8 | 0.4430E-03 | 0.5440E+01 | 0.6013E+01 | -0.5734E+00 | -0.9536E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.4270E+01 | 0.4636E+01 | -0.3660E+00 | -0.7895E+01 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.3220E+01 | 0.3434E+01 | -0.2143E+00 | -0.6239E+01 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2610E+01 | 0.2639E+01 | -0.2892E-01 | -0.1096E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1930E+01 | 0.1989E+01 | -0.5911E-01 | -0.2972E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1400E+01 | 0.1416E+01 | -0.1643E-01 | -0.1160E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.1060E+01 | 0.1008E+01 | 0.5158E-01 | 0.5115E+01 | 0.111E+02 |
| 15 | 0.2224E-02 | 0.7900E+00 | 0.7375E+00 | 0.5252E-01 | 0.7122E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.5800E+00 | 0.5063E+00 | 0.7367E-01 | 0.1455E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.4100E+00 | 0.3513E+00 | 0.5870E-01 | 0.1671E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.2800E+00 | 0.2468E+00 | 0.3320E-01 | 0.1345E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.2000E+00 | 0.1679E+00 | 0.3214E-01 | 0.1915E+02 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.1400E+00 | 0.1149E+00 | 0.2506E-01 | 0.2181E+02 | 0.100E+03 |

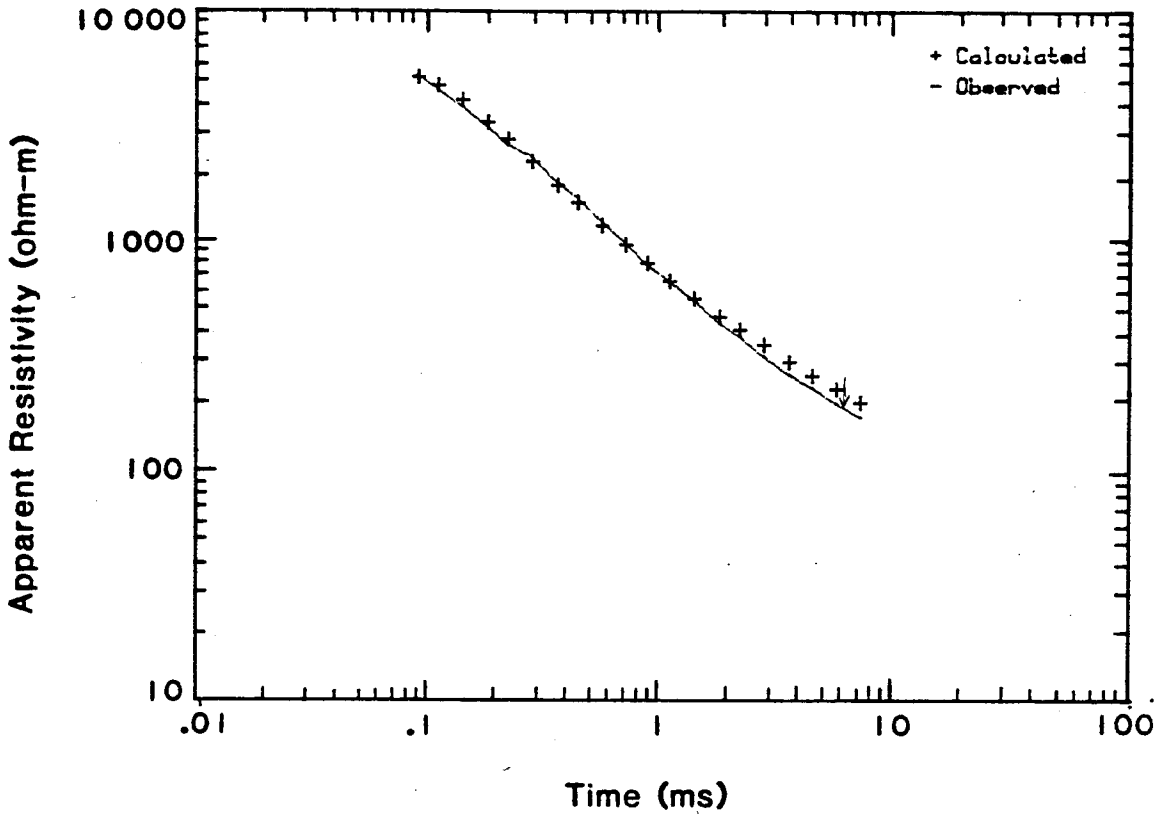
** %RMSERR= 10.24

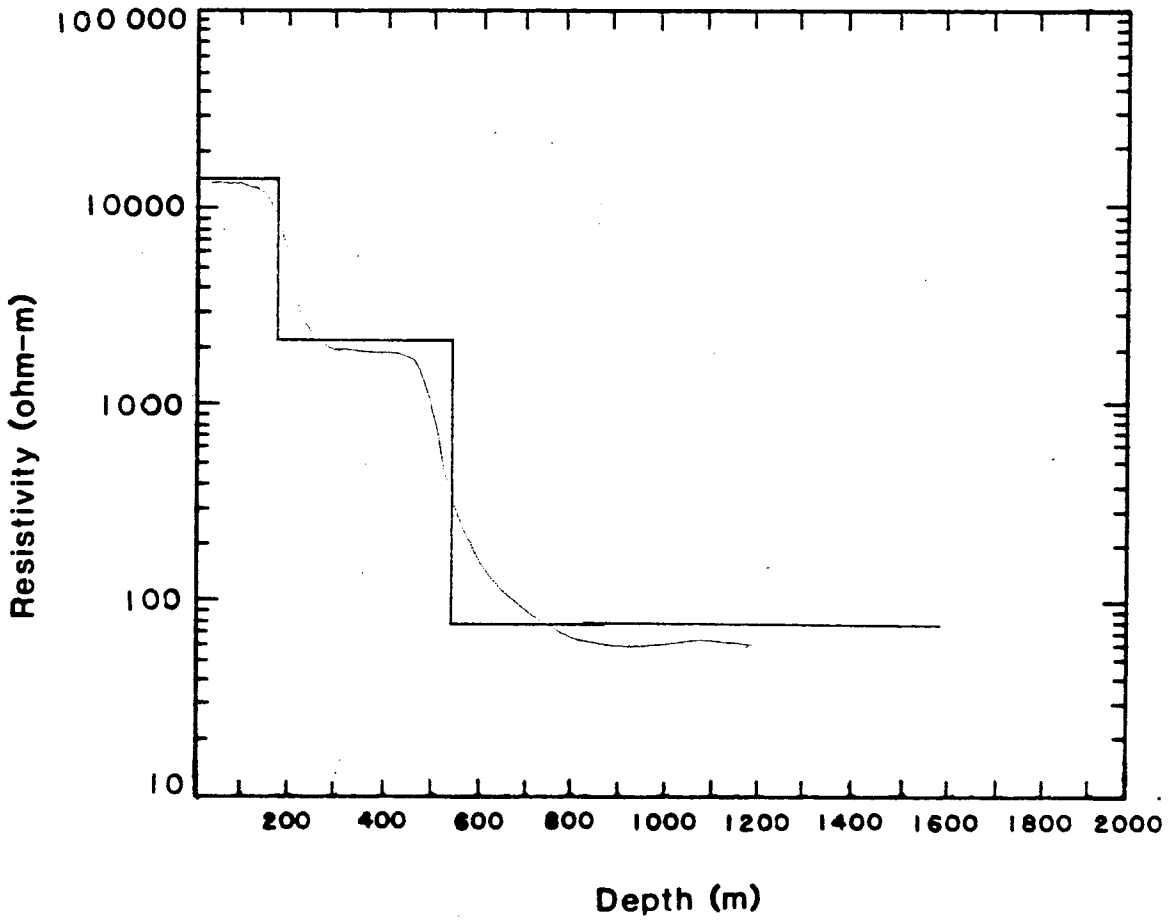
| PARAMETER | NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.64323E-04 | 0.15547E+05 | |
| 2 | SIGMA( 2) | = | 0.43489E-03 | 0.22994E+04 | |
| 3 | SIGMA( 3) | = | 0.12657E-01 | 0.79005E+02 | |
| 4 | THICK( 1) | = | 0.16976E+03 | | 0.16976E+03 |
| 5 | THICK( 2) | = | 0.37254E+03 | | 0.54230E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 117



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 118 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.1100E-03 | 0.2354E+02 | 0.2680E+02 | -0.3263E+01 | -0.1217E+02 | 0.180E+00 |
| 2 | 0.1400E-03 | 0.1610E+02 | 0.1560E+02 | 0.5029E+00 | 0.3224E+01 | 0.386E+00 |
| 3 | 0.1770E-03 | 0.1114E+02 | 0.9773E+01 | 0.1367E+01 | 0.1398E+02 | 0.806E+00 |
| 4 | 0.2200E-03 | 0.7480E+01 | 0.6803E+01 | 0.6766E+00 | 0.9945E+01 | 0.100E+01 |
| 5 | 0.2800E-03 | 0.4770E+01 | 0.4705E+01 | 0.6483E-01 | 0.1378E+01 | 0.400E+01 |
| 6 | 0.3550E-03 | 0.3110E+01 | 0.3319E+01 | -0.2086E+00 | -0.6286E+01 | 0.400E+01 |
| 7 | 0.4430E-03 | 0.2250E+01 | 0.2450E+01 | -0.2001E+00 | -0.8169E+01 | 0.111E+02 |
| 8 | 0.5540E-03 | 0.1610E+01 | 0.1769E+01 | -0.1593E+00 | -0.9004E+01 | 0.111E+02 |
| 9 | 0.7130E-03 | 0.1160E+01 | 0.1221E+01 | -0.6067E-01 | -0.4970E+01 | 0.111E+02 |
| 10 | 0.8810E-03 | 0.8700E+00 | 0.8886E+00 | -0.1856E-01 | -0.2089E+01 | 0.100E+03 |
| 11 | 0.1096E-02 | 0.6400E+00 | 0.6248E+00 | 0.1522E-01 | 0.2436E+01 | 0.100E+03 |
| 12 | 0.1411E-02 | 0.4600E+00 | 0.4051E+00 | 0.5493E-01 | 0.1356E+02 | 0.100E+03 |
| 13 | 0.1795E-02 | 0.3000E+00 | 0.2594E+00 | 0.4059E-01 | 0.1565E+02 | 0.100E+03 |
| 14 | 0.2224E-02 | 0.2100E+00 | 0.1716E+00 | 0.3842E-01 | 0.2239E+02 | 0.100E+03 |
| 15 | 0.2850E-02 | 0.1300E+00 | 0.1053E+00 | 0.2465E-01 | 0.2340E+02 | 0.100E+03 |
| 16 | 0.3600E-02 | 0.9000E-01 | 0.6684E-01 | 0.2316E-01 | 0.3465E+02 | 0.100E+03 |
| 17 | 0.4490E-02 | 0.6000E-01 | 0.4417E-01 | 0.1583E-01 | 0.3582E+02 | 0.100E+03 |

** %RMSERR= 16.52

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.1947E+00 | 0.1000E+01 | | | |
| 3 | 0.1541E+00 | -0.1904E+00 | 0.1000E+01 | | |
| 4 | 0.1721E+00 | 0.1054E+00 | 0.1801E+00 | 0.1000E+01 | |
| 5 | 0.2434E+00 | -0.9849E-01 | -0.2322E+00 | 0.4065E-02 | 0.1000E+01 |

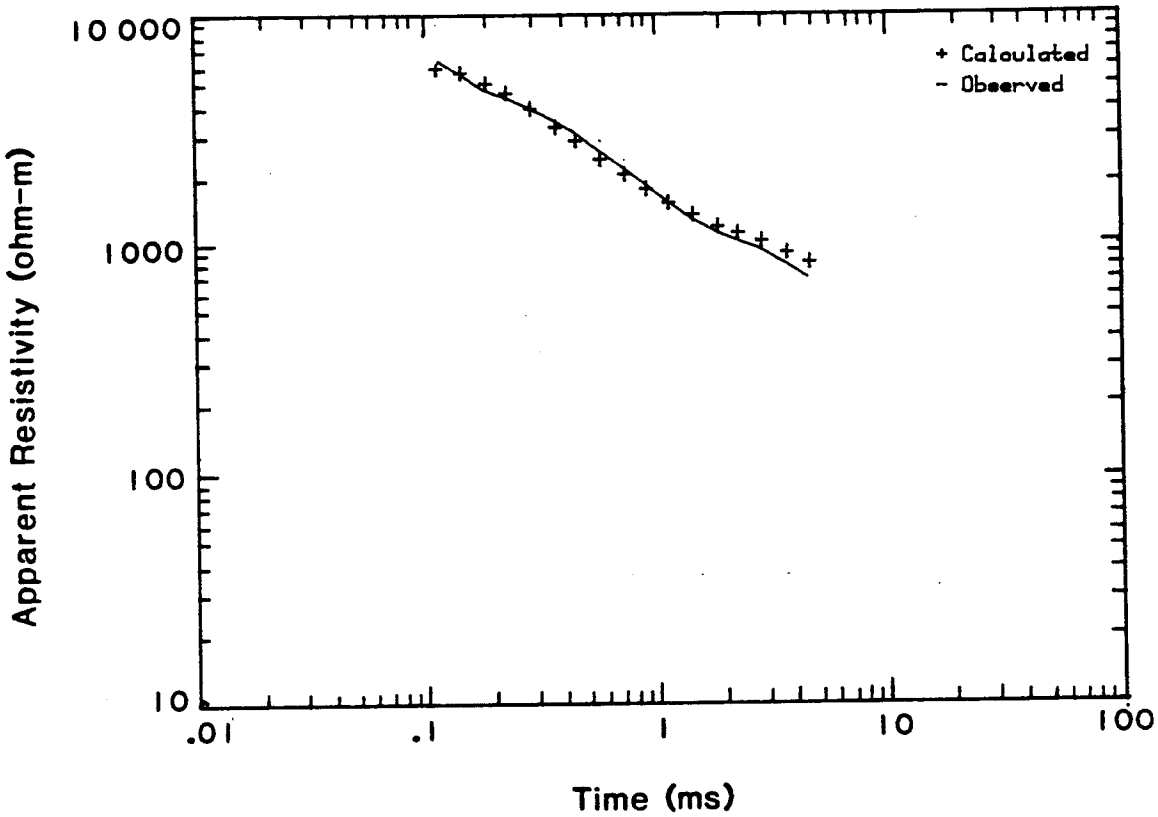
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2149E-03 | 0.1305E-04 | 0.6076E-01 | 0.6076E+01 |
| 2 | 0.3339E-02 | 0.3654E-03 | 0.1094E+00 | 0.1094E+02 |
| 3 | 0.1751E-01 | 0.1397E-02 | 0.7980E-01 | 0.7980E+01 |
| 4 | 0.7457E+03 | 0.3991E-02 | 0.5352E-05 | 0.5352E-03 |
| 5 | 0.9846E+03 | 0.5510E-02 | 0.5596E-05 | 0.5596E-03 |

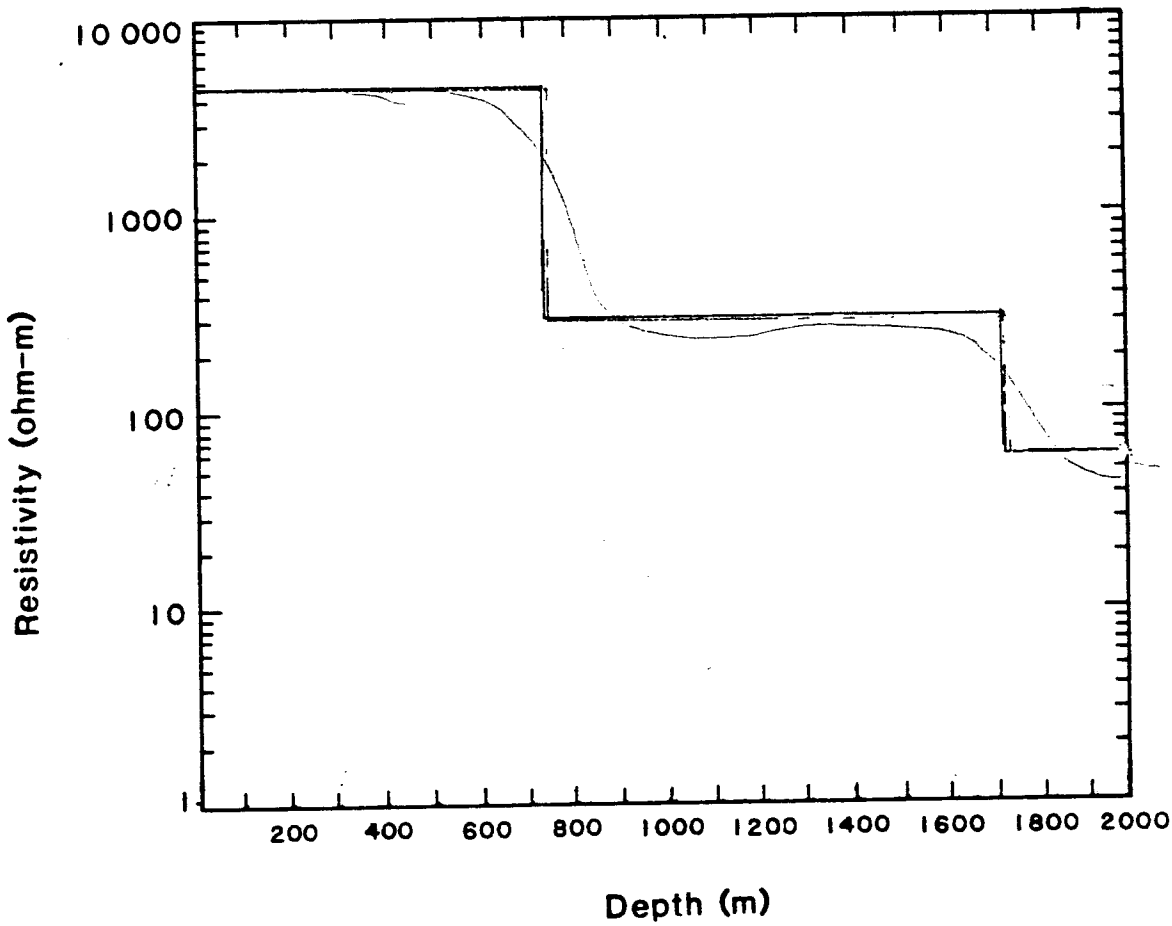
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.21487E-03 | 0.46540E+04 | |
| 2 | SIGMA( 2) | = | 0.33387E-02 | 0.29952E+03 | |
| 3 | SIGMA( 3) | = | 0.17507E-01 | 0.57120E+02 | |
| 4 | THICK( 1) | = | 0.74571E+03 | | 0.74571E+03 |
| 5 | THICK( 2) | = | 0.98458E+03 | | 0.17303E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 118



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 121 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1573E+03 | 0.1620E+03 | -0.4673E+01 | -0.2886E+01 | 0.404E-02 |
| 2 | 0.1100E-03 | 0.1158E+03 | 0.1124E+03 | 0.3350E+01 | 0.2980E+01 | 0.746E-02 |
| 3 | 0.1400E-03 | 0.7293E+02 | 0.7269E+02 | 0.2435E+00 | 0.3350E+00 | 0.188E-01 |
| 4 | 0.1770E-03 | 0.4412E+02 | 0.4657E+02 | -0.2451E+01 | -0.5262E+01 | 0.514E-01 |
| 5 | 0.2200E-03 | 0.3098E+02 | 0.3024E+02 | 0.7376E+00 | 0.2439E+01 | 0.104E+00 |
| 6 | 0.2800E-03 | 0.1893E+02 | 0.1827E+02 | 0.6567E+00 | 0.3594E+01 | 0.279E+00 |
| 7 | 0.3550E-03 | 0.1127E+02 | 0.1089E+02 | 0.3800E+00 | 0.3489E+01 | 0.787E+00 |
| 8 | 0.4430E-03 | 0.6380E+01 | 0.6652E+01 | -0.2717E+00 | -0.4084E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.3660E+01 | 0.4047E+01 | -0.3871E+00 | -0.9565E+01 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2290E+01 | 0.2383E+01 | -0.9276E-01 | -0.3893E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1620E+01 | 0.1562E+01 | 0.5820E-01 | 0.3726E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1140E+01 | 0.1041E+01 | 0.9862E-01 | 0.9470E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.7900E+00 | 0.6817E+00 | 0.1083E+00 | 0.1588E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.5100E+00 | 0.4613E+00 | 0.4866E-01 | 0.1055E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.3700E+00 | 0.3287E+00 | 0.4126E-01 | 0.1255E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.2500E+00 | 0.2247E+00 | 0.2529E-01 | 0.1125E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1600E+00 | 0.1576E+00 | 0.2409E-02 | 0.1529E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.1100E+00 | 0.1123E+00 | -0.2310E-02 | -0.2056E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.7000E-01 | 0.7917E-01 | -0.9172E-02 | -0.1158E+02 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.4000E-01 | 0.5593E-01 | -0.1593E-01 | -0.2848E+02 | 0.100E+03 |

* %RMSERR= 9.75

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.5655E-01 | 0.1000E+01 | | | |
| 3 | 0.2621E-01 | -0.6986E-02 | 0.1000E+01 | | |
| 4 | 0.1172E-01 | 0.8019E+00 | -0.1215E+00 | 0.1000E+01 | |
| 5 | -0.6540E+00 | -0.5082E+00 | -0.1695E+00 | -0.5098E+00 | 0.1000E+01 |

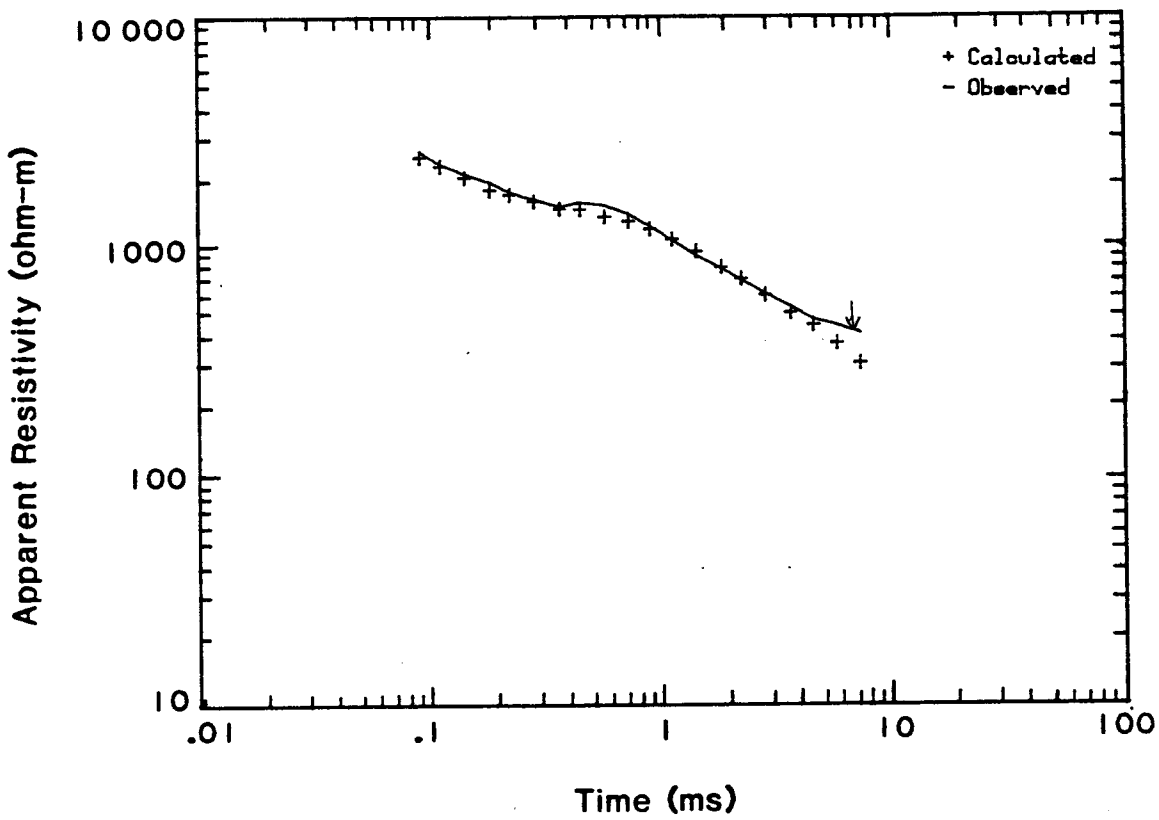
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4763E-04 | 0.3226E-03 | 0.6774E+01 | 0.6774E+03 |
| 2 | 0.1440E-02 | 0.1690E-02 | 0.1174E+01 | 0.1174E+03 |
| 3 | 0.7984E-02 | 0.1055E-01 | 0.1321E+01 | 0.1321E+03 |
| 4 | 0.2208E+03 | 0.3178E-02 | 0.1439E-04 | 0.1439E-02 |
| 5 | 0.6629E+03 | 0.6732E-02 | 0.1016E-04 | 0.1016E-02 |

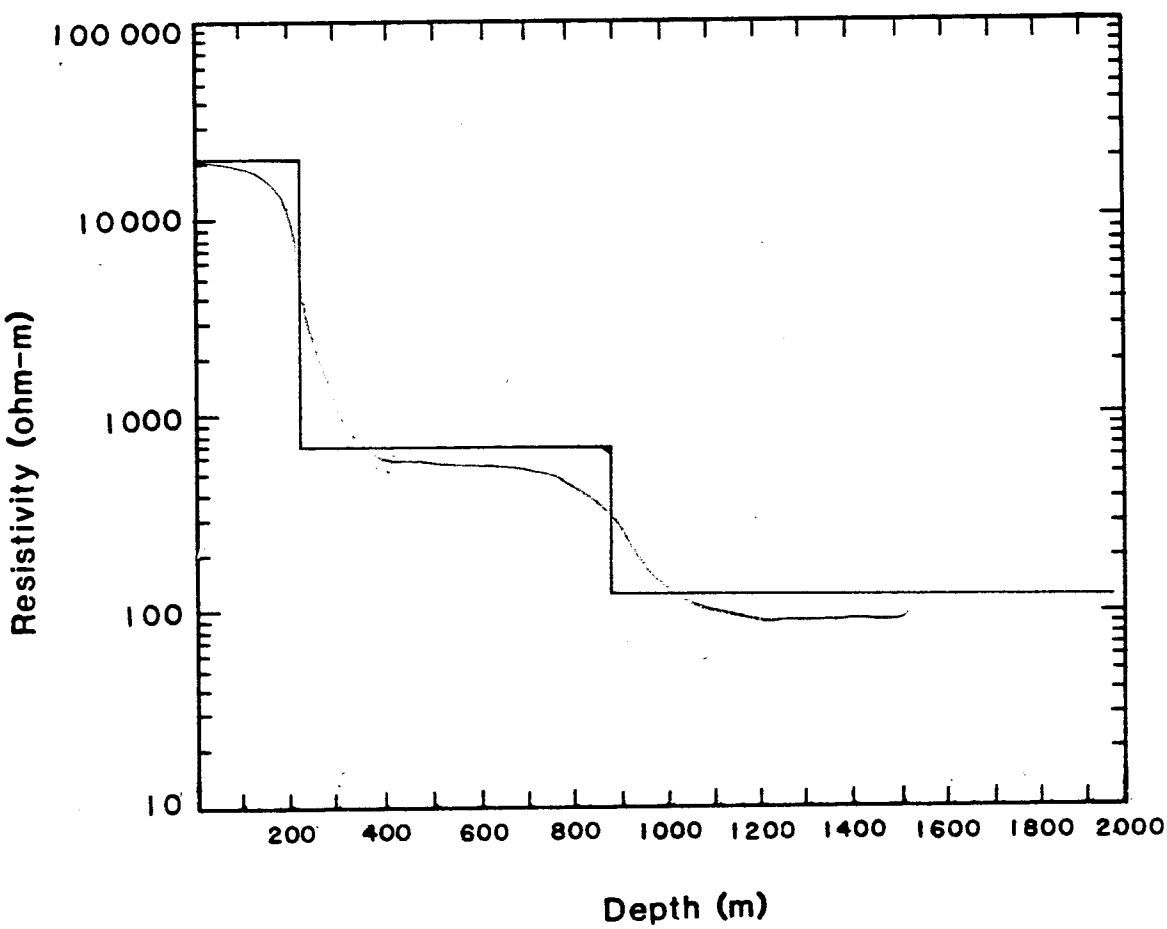
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.47625E-04 | 0.20997E+05 | |
| 2 | SIGMA( 2) | = | 0.14401E-02 | 0.69441E+03 | |
| 3 | SIGMA( 3) | = | 0.79843E-02 | 0.12525E+03 | |
| 4 | THICK( 1) | = | 0.22080E+03 | | 0.22080E+03 |
| 5 | THICK( 2) | = | 0.66286E+03 | | 0.88366E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 121



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 122 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3144E+02 | 0.3851E+02 | -0.7074E+01 | -0.1837E+02 | 0.101E+00 |
| 2 | 0.1100E-03 | 0.2826E+02 | 0.2996E+02 | -0.1703E+01 | -0.5685E+01 | 0.125E+00 |
| 3 | 0.1400E-03 | 0.2293E+02 | 0.2221E+02 | 0.7184E+00 | 0.3235E+01 | 0.190E+00 |
| 4 | 0.1770E-03 | 0.1753E+02 | 0.1637E+02 | 0.1163E+01 | 0.7103E+01 | 0.325E+00 |
| 5 | 0.2200E-03 | 0.1313E+02 | 0.1215E+02 | 0.9785E+00 | 0.8052E+01 | 0.580E+00 |
| 6 | 0.2800E-03 | 0.9280E+01 | 0.8611E+01 | 0.6688E+00 | 0.7767E+01 | 0.100E+01 |
| 7 | 0.3550E-03 | 0.6700E+01 | 0.6030E+01 | 0.6705E+00 | 0.1112E+02 | 0.100E+01 |
| 8 | 0.4430E-03 | 0.4920E+01 | 0.4265E+01 | 0.6554E+00 | 0.1537E+02 | 0.400E+01 |
| 9 | 0.5540E-03 | 0.3220E+01 | 0.2969E+01 | 0.2508E+00 | 0.8446E+01 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2050E+01 | 0.1941E+01 | 0.1093E+00 | 0.5630E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1390E+01 | 0.1343E+01 | 0.4671E-01 | 0.3477E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.9200E+00 | 0.9096E+00 | 0.1035E-01 | 0.1138E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.5300E+00 | 0.5739E+00 | -0.4392E-01 | -0.7653E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.3200E+00 | 0.3675E+00 | -0.4752E-01 | -0.1293E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.2000E+00 | 0.2473E+00 | -0.4733E-01 | -0.1914E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1200E+00 | 0.1566E+00 | -0.3656E-01 | -0.2335E+02 | 0.100E+03 |

** %RMSERR= 11.64

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | 0.1020E+00 | 0.1000E+01 | |
| 3 | -0.2728E+00 | 0.3840E+00 | 0.1000E+01 |

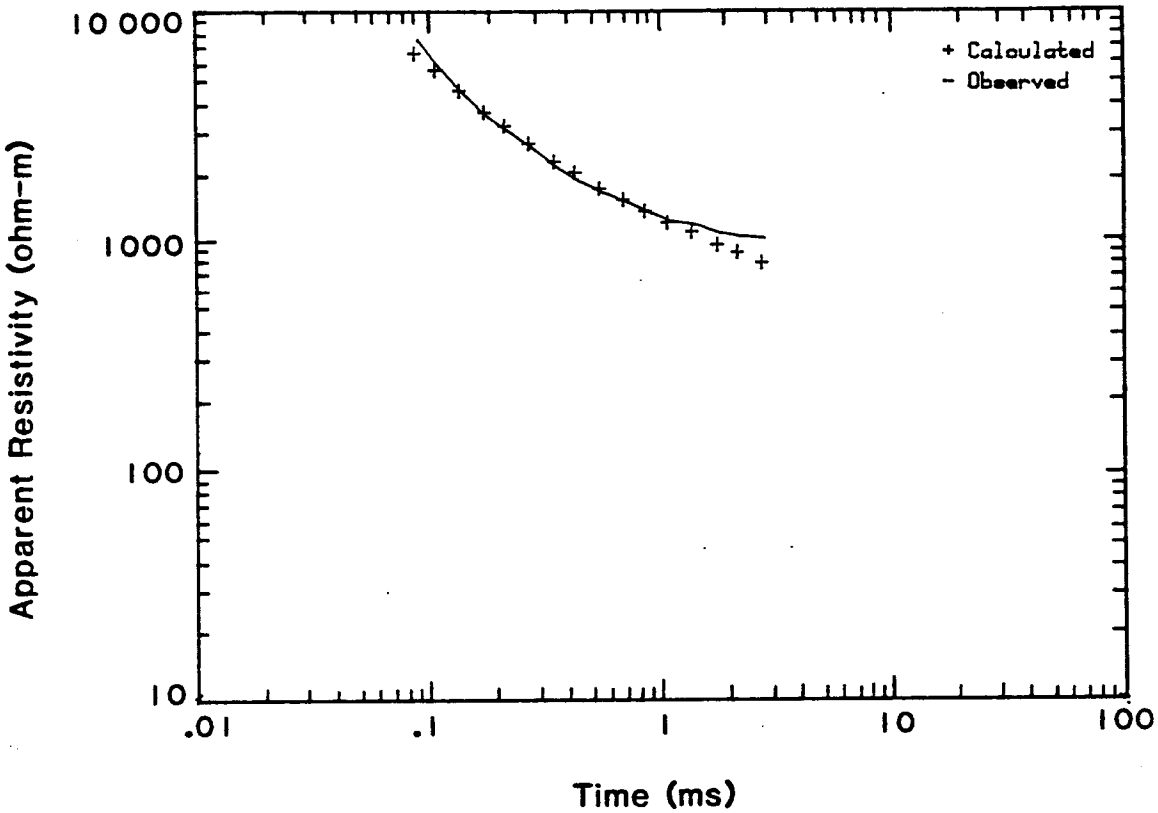
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.2409E-04 | 0.3861E-03 | 0.1603E+02 | 0.1603E+04 |
| 2 0.2307E-02 | 0.2747E-02 | 0.1191E+01 | 0.1191E+03 |
| 3 0.4762E+03 | 0.4106E-02 | 0.8623E-05 | 0.8623E-03 |

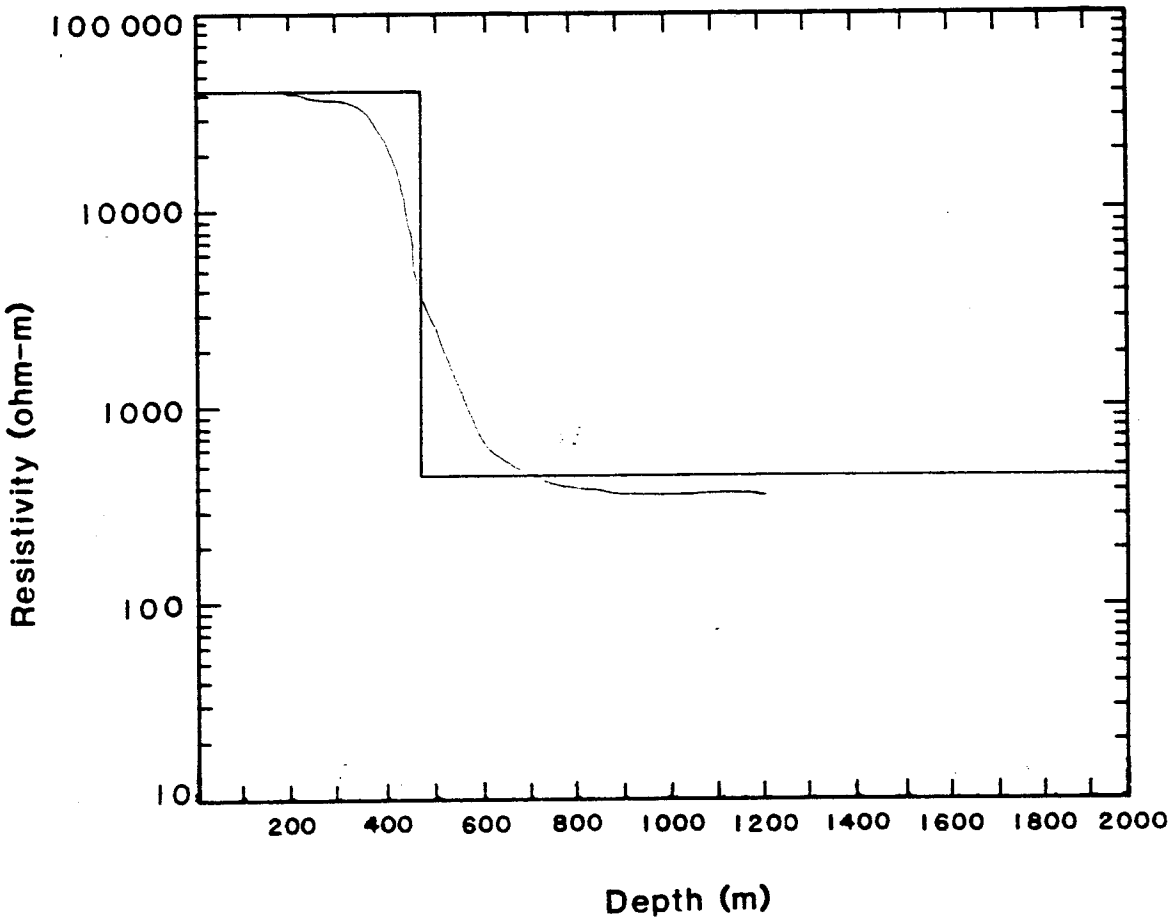
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.24093E-04 | 0.41506E+05 | |
| 2 SIGMA( 2) = | 0.23069E-02 | 0.43348E+03 | |
| 3 THICK( 1) = | 0.47619E+03 | | 0.47619E+03 |
| 4 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 122



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 123 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.6661E+02 | 0.7522E+02 | -0.8614E+01 | -0.1145E+02 | 0.225E-01 |
| 2 | 0.1100E-03 | 0.5726E+02 | 0.5621E+02 | 0.1051E+01 | 0.1870E+01 | 0.305E-01 |
| 3 | 0.1400E-03 | 0.4217E+02 | 0.3924E+02 | 0.2934E+01 | 0.7479E+01 | 0.562E-01 |
| 4 | 0.1770E-03 | 0.2942E+02 | 0.2684E+02 | 0.2576E+01 | 0.9597E+01 | 0.116E+00 |
| 5 | 0.2200E-03 | 0.2075E+02 | 0.1835E+02 | 0.2396E+01 | 0.1306E+02 | 0.232E+00 |
| 6 | 0.2800E-03 | 0.1129E+02 | 0.1173E+02 | -0.4366E+00 | -0.3723E+01 | 0.785E+00 |
| 7 | 0.3550E-03 | 0.6530E+01 | 0.7455E+01 | -0.9253E+00 | -0.1241E+02 | 0.100E+01 |
| 8 | 0.4430E-03 | 0.4620E+01 | 0.4905E+01 | -0.2847E+00 | -0.5805E+01 | 0.400E+01 |
| 9 | 0.5540E-03 | 0.3170E+01 | 0.3265E+01 | -0.9528E-01 | -0.2918E+01 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2230E+01 | 0.2141E+01 | 0.8917E-01 | 0.4165E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1630E+01 | 0.1536E+01 | 0.9394E-01 | 0.6116E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1200E+01 | 0.1115E+01 | 0.8480E-01 | 0.7604E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.8300E+00 | 0.7797E+00 | 0.5026E-01 | 0.6446E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.5200E+00 | 0.5554E+00 | -0.3535E-01 | -0.6366E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.3600E+00 | 0.4103E+00 | -0.5026E-01 | -0.1225E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.2300E+00 | 0.2861E+00 | -0.5608E-01 | -0.1960E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1500E+00 | 0.2019E+00 | -0.5194E-01 | -0.2572E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.1000E+00 | 0.1435E+00 | -0.4348E-01 | -0.3030E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.7000E-01 | 0.9812E-01 | -0.2812E-01 | -0.2866E+02 | 0.100E+03 |

** %RMSERR= 14.13

ORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.4855E-01 | 0.1000E+01 | | | |
| 3 | -0.3013E+00 | -0.8104E-01 | 0.1000E+01 | | |
| 4 | 0.1502E-01 | 0.7643E+00 | -0.3347E+00 | 0.1000E+01 | |
| 5 | -0.3374E+00 | -0.5787E+00 | 0.6370E-01 | -0.4802E+00 | 0.1000E+01 |

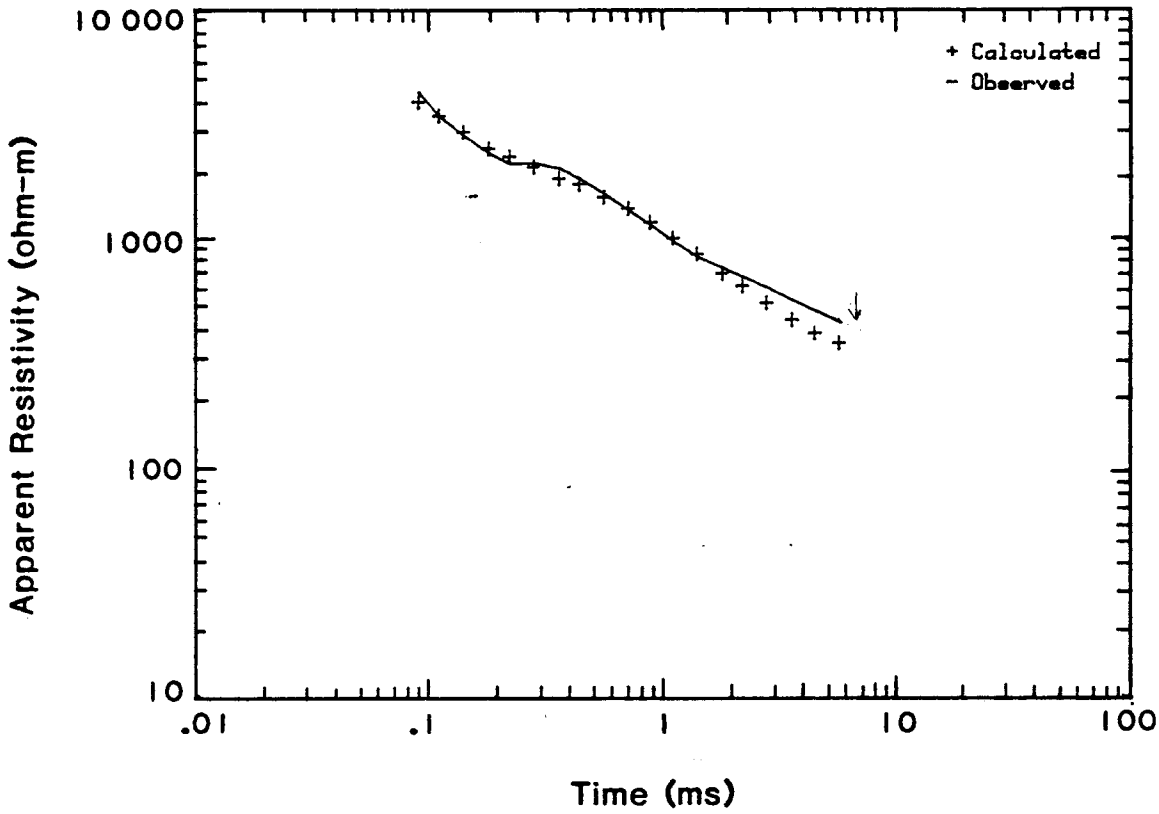
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.2818E-04 | 0.2431E-04 | 0.8626E+00 | 0.8626E+02 |
| 2 0.2170E-02 | 0.4652E-03 | 0.2144E+00 | 0.2144E+02 |
| 3 0.1338E-01 | 0.1639E-02 | 0.1225E+00 | 0.1225E+02 |
| 4 0.3611E+03 | 0.3991E-02 | 0.1105E-04 | 0.1105E-02 |
| 5 0.4306E+03 | 0.6794E-02 | 0.1578E-04 | 0.1578E-02 |

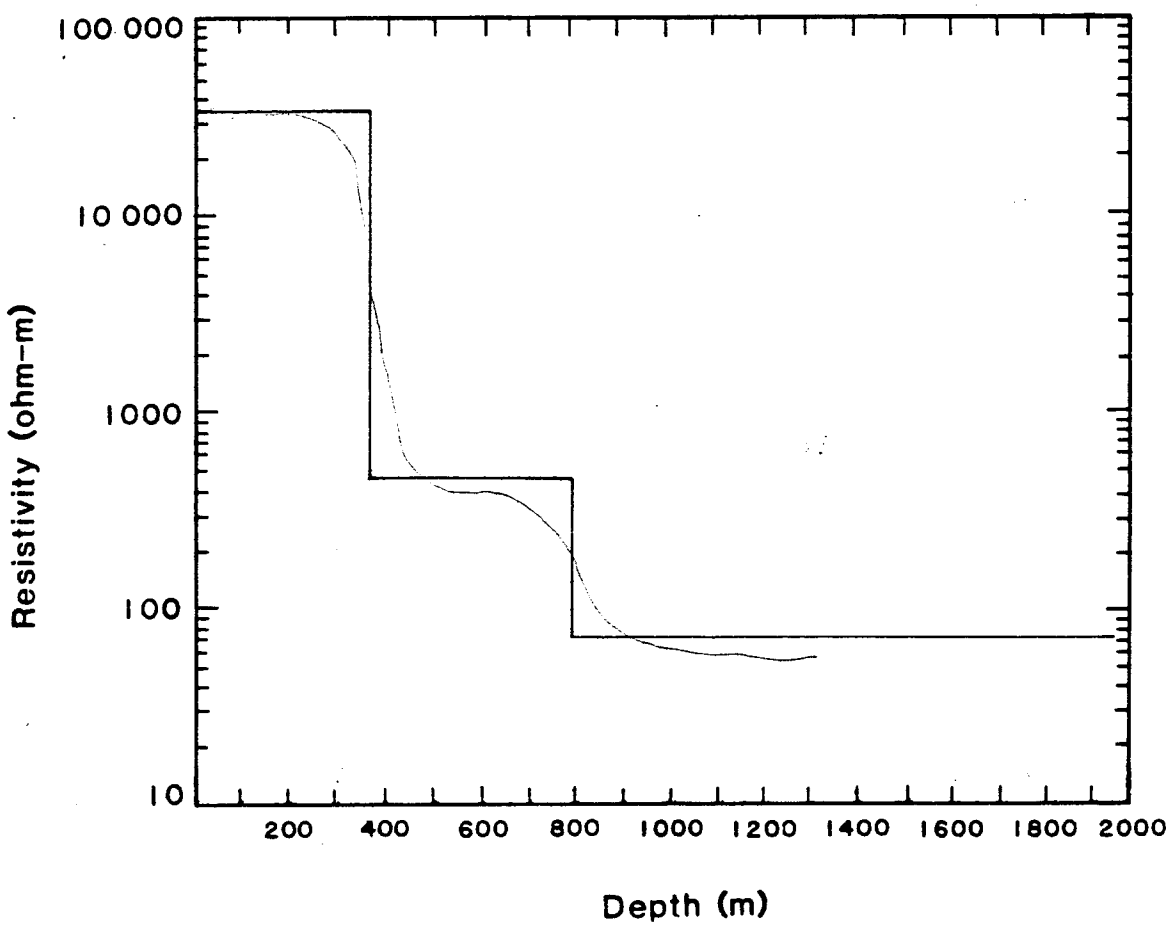
| ARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.28183E-04 | 0.35482E+05 | |
| 2 SIGMA( 2) = | 0.21696E-02 | 0.46091E+03 | |
| 3 SIGMA( 3) = | 0.13380E-01 | 0.74739E+02 | |
| 4 THICK( 1) = | 0.36105E+03 | | 0.36105E+03 |
| 5 THICK( 2) = | 0.43057E+03 | | 0.79162E+03 |
| 6 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 123



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 124 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.8585E+03 | 0.9208E+03 | -0.6231E+02 | -0.6766E+01 | 0.136E-03 |
| 2 | 0.1100E-03 | 0.4739E+03 | 0.4913E+03 | -0.1744E+02 | -0.3550E+01 | 0.445E-03 |
| 3 | 0.1400E-03 | 0.2359E+03 | 0.2368E+03 | -0.9253E+00 | -0.3907E+00 | 0.180E-02 |
| 4 | 0.1770E-03 | 0.1113E+03 | 0.1131E+03 | -0.1812E+01 | -0.1602E+01 | 0.808E-02 |
| 5 | 0.2200E-03 | 0.5949E+02 | 0.5487E+02 | 0.4621E+01 | 0.8421E+01 | 0.283E-01 |
| 6 | 0.2800E-03 | 0.2789E+02 | 0.2513E+02 | 0.2759E+01 | 0.1098E+02 | 0.129E+00 |
| 7 | 0.3550E-03 | 0.1243E+02 | 0.1157E+02 | 0.8643E+00 | 0.7473E+01 | 0.647E+00 |
| 8 | 0.4430E-03 | 0.5410E+01 | 0.5574E+01 | -0.1644E+00 | -0.2950E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.2400E+01 | 0.2982E+01 | -0.5825E+00 | -0.1953E+02 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.1400E+01 | 0.1572E+01 | -0.1717E+00 | -0.1092E+02 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.9500E+00 | 0.9391E+00 | 0.1091E-01 | 0.1162E+01 | 0.100E+03 |
| 12 | 0.1096E-02 | 0.6500E+00 | 0.6563E+00 | -0.6258E-02 | -0.9536E+00 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.4300E+00 | 0.3860E+00 | 0.4400E-01 | 0.1140E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.2800E+00 | 0.2551E+00 | 0.2493E-01 | 0.9776E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.2000E+00 | 0.1752E+00 | 0.2484E-01 | 0.1418E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1300E+00 | 0.1081E+00 | 0.2190E-01 | 0.2025E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.9000E-01 | 0.7179E-01 | 0.1821E-01 | 0.2537E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.6000E-01 | 0.4765E-01 | 0.1235E-01 | 0.2591E+02 | 0.100E+03 |

* %RMSERR= 12.85

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.9148E+00 | 0.1000E+01 | | | |
| 3 | 0.7496E+00 | -0.7530E+00 | 0.1000E+01 | | |
| 4 | -0.4937E+00 | 0.3748E+00 | -0.2889E+00 | 0.1000E+01 | |
| 5 | -0.8000E+00 | 0.8648E+00 | -0.5909E+00 | 0.3672E+00 | 0.1000E+01 |

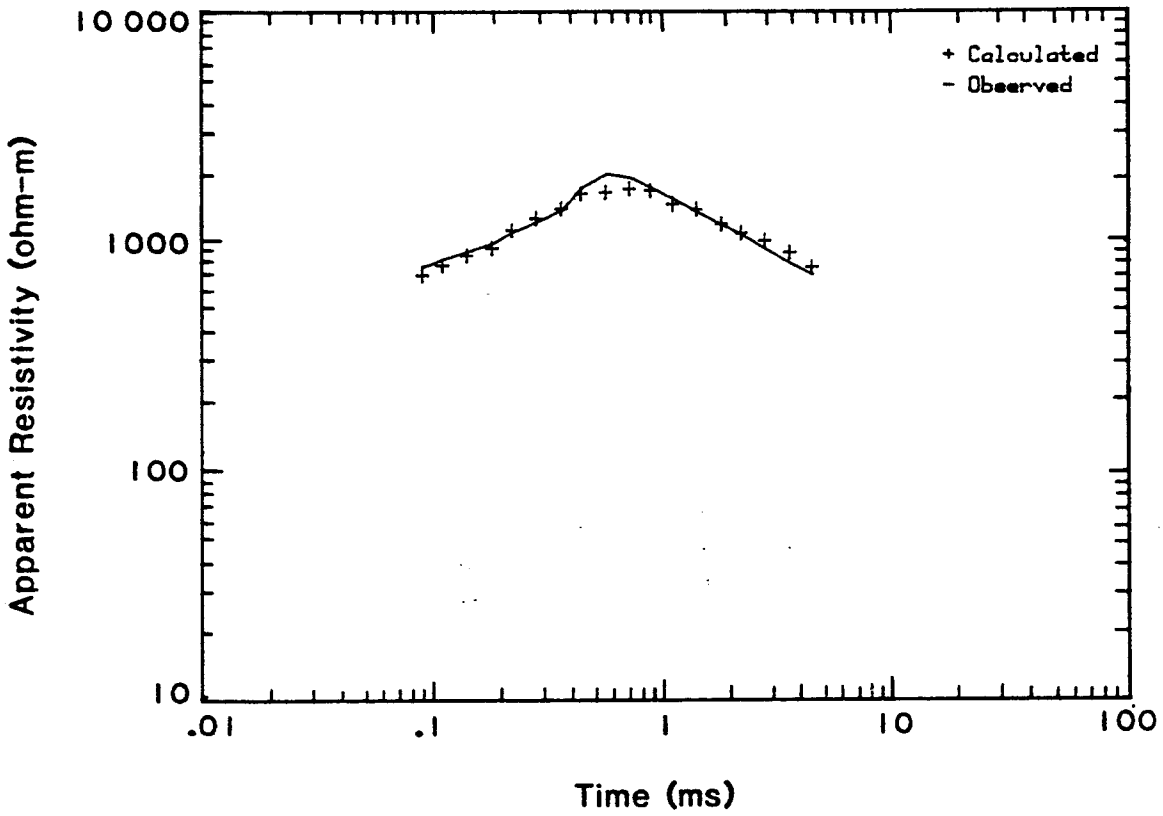
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1644E-02 | 0.1089E-02 | 0.6623E+00 | 0.6623E+02 |
| 2 0.1047E-03 | 0.1564E-02 | 0.1493E+02 | 0.1493E+04 |
| 3 0.3166E-02 | 0.1081E-01 | 0.3415E+01 | 0.3415E+03 |
| 4 0.1641E+03 | 0.2750E-02 | 0.1676E-04 | 0.1676E-02 |
| 5 0.7117E+03 | 0.3304E-02 | 0.4642E-05 | 0.4642E-03 |

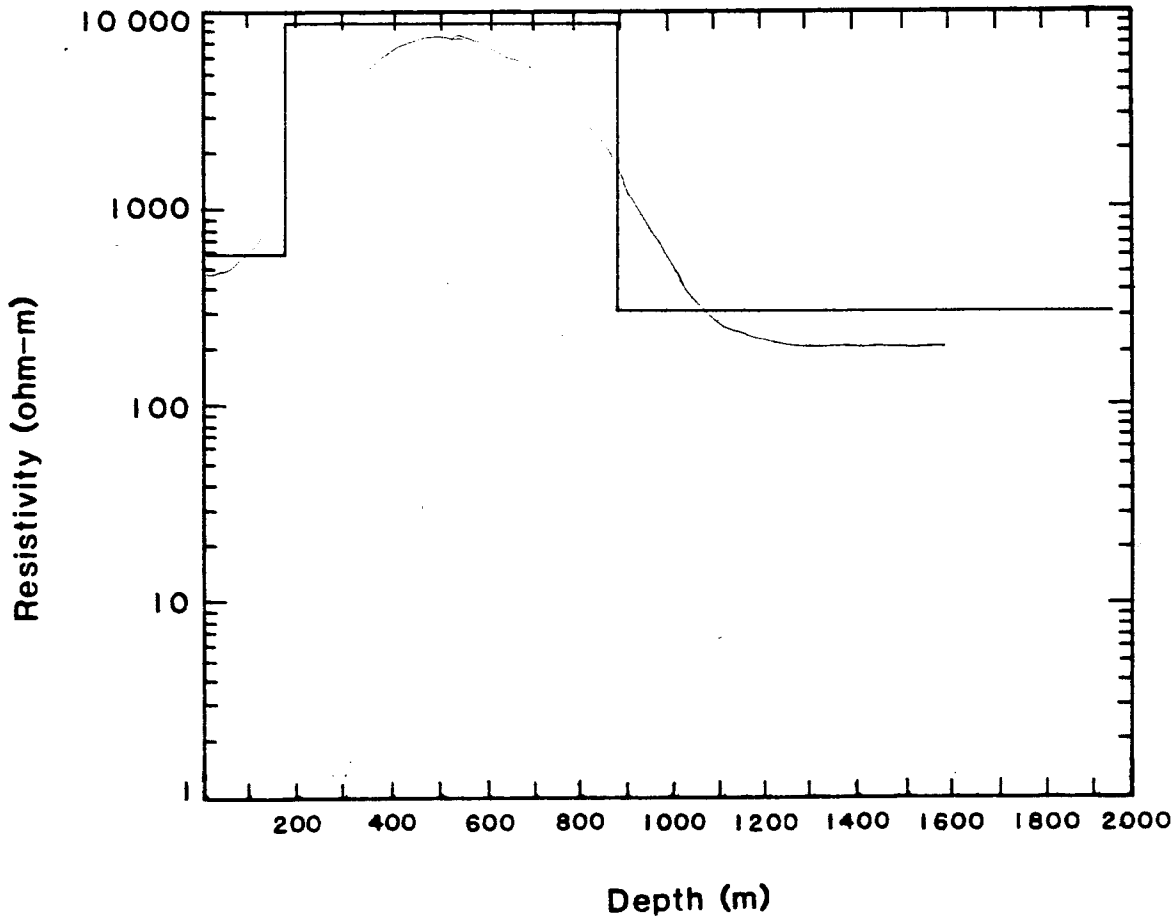
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.16435E-02 | 0.60846E+03 | |
| 2 | SIGMA( 2) = | 0.10473E-03 | 0.95481E+04 | |
| 3 | SIGMA( 3) = | 0.31657E-02 | 0.31588E+03 | |
| 4 | THICK( 1) = | 0.16410E+03 | | 0.16410E+03 |
| 5 | THICK( 2) = | 0.71172E+03 | | 0.87582E+03 |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 124



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 125 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1859E+03 | 0.1933E+03 | -0.7354E+01 | -0.3805E+01 | 0.289E-02 |
| 2 | 0.1100E-03 | 0.1352E+03 | 0.1361E+03 | -0.9897E+00 | -0.7269E+00 | 0.547E-02 |
| 3 | 0.1400E-03 | 0.8907E+02 | 0.8967E+02 | -0.5991E+00 | -0.6681E+00 | 0.126E-01 |
| 4 | 0.1770E-03 | 0.5884E+02 | 0.5841E+02 | 0.4312E+00 | 0.7382E+00 | 0.289E-01 |
| 5 | 0.2200E-03 | 0.4043E+02 | 0.3904E+02 | 0.1392E+01 | 0.3565E+01 | 0.612E-01 |
| 6 | 0.2800E-03 | 0.2509E+02 | 0.2494E+02 | 0.1535E+00 | 0.6156E+00 | 0.159E+00 |
| 7 | 0.3550E-03 | 0.1627E+02 | 0.1608E+02 | 0.1948E+00 | 0.1212E+01 | 0.378E+00 |
| 8 | 0.4430E-03 | 0.1070E+02 | 0.1081E+02 | -0.1101E+00 | -0.1018E+01 | 0.873E+00 |
| 9 | 0.5540E-03 | 0.6550E+01 | 0.7351E+01 | -0.8006E+00 | -0.1089E+02 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.4560E+01 | 0.4755E+01 | -0.1948E+00 | -0.4098E+01 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.3280E+01 | 0.3322E+01 | -0.4161E-01 | -0.1253E+01 | 0.400E+01 |
| 12 | 0.1096E-02 | 0.2320E+01 | 0.2293E+01 | 0.2686E-01 | 0.1171E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1550E+01 | 0.1483E+01 | 0.6651E-01 | 0.4484E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.1060E+01 | 0.9712E+00 | 0.8884E-01 | 0.9148E+01 | 0.111E+02 |
| 15 | 0.2224E-02 | 0.7200E+00 | 0.6623E+00 | 0.5772E-01 | 0.8715E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.4700E+00 | 0.4195E+00 | 0.5053E-01 | 0.1204E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.3100E+00 | 0.2702E+00 | 0.3975E-01 | 0.1471E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.2000E+00 | 0.1767E+00 | 0.2327E-01 | 0.1316E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.1300E+00 | 0.1106E+00 | 0.1938E-01 | 0.1752E+02 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.9000E-01 | 0.6934E-01 | 0.2066E-01 | 0.2979E+02 | 0.100E+03 |

(* %RMSERR= 10.19

ORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3495E+00 | 0.1000E+01 | | | |
| 3 | -0.6524E+00 | -0.1249E+00 | 0.1000E+01 | | |
| 4 | -0.4421E-02 | 0.7856E+00 | -0.4159E+00 | 0.1000E+01 | |
| 5 | -0.3835E+00 | -0.4007E+00 | 0.2704E+00 | -0.5340E+00 | 0.1000E+01 |

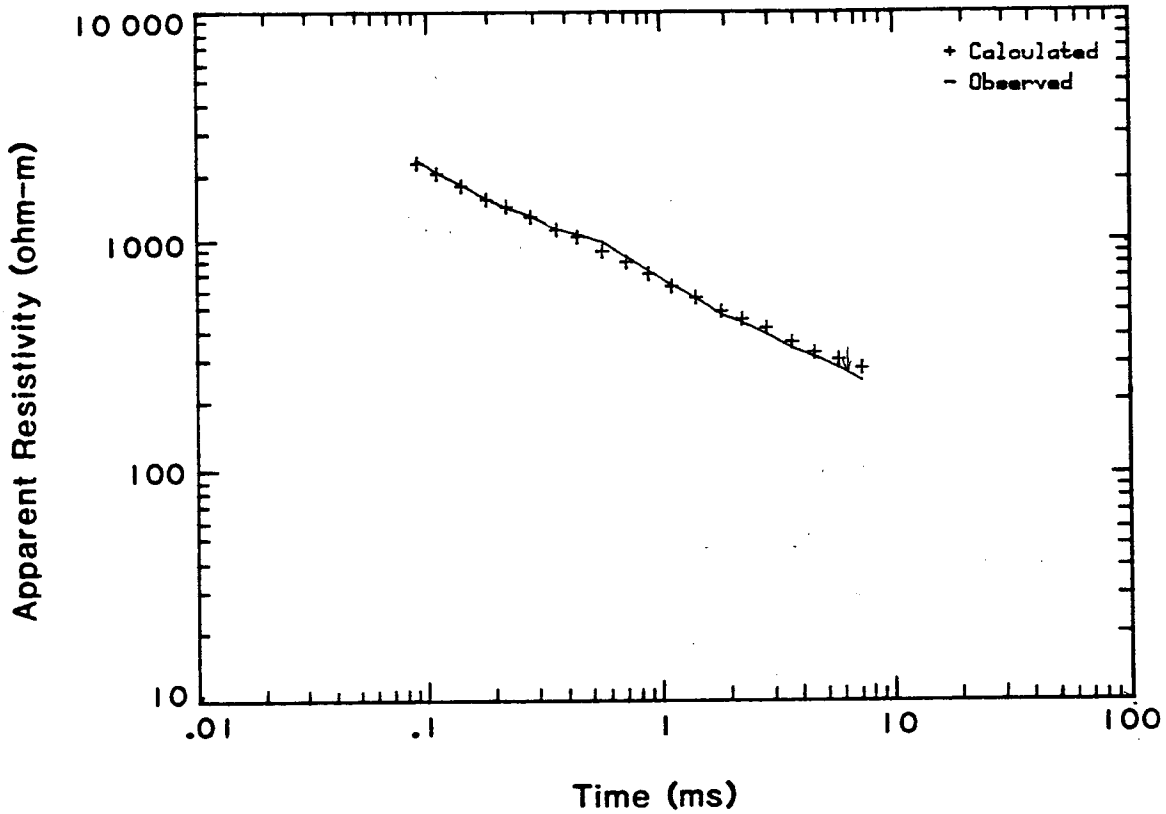
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1912E-03 | 0.2068E-03 | 0.1081E+01 | 0.1081E+03 |
| 2 0.2423E-02 | 0.6900E-03 | 0.2847E+00 | 0.2847E+02 |
| 3 0.6967E-02 | 0.2137E-02 | 0.3068E+00 | 0.3068E+02 |
| 4 0.2550E+03 | 0.2376E-02 | 0.9315E-05 | 0.9315E-03 |
| 5 0.3148E+03 | 0.3953E-02 | 0.1256E-04 | 0.1256E-02 |

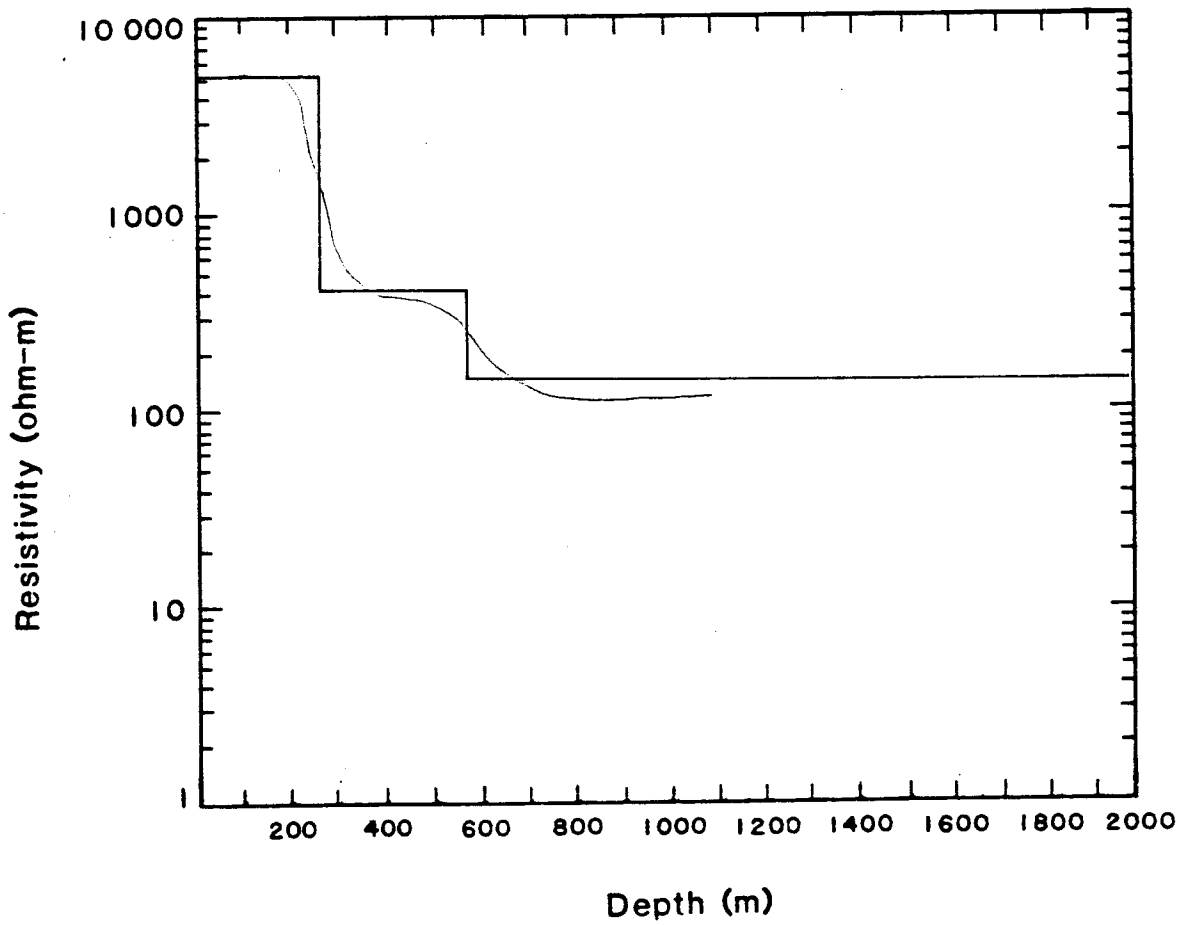
| ARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.19123E-03 | 0.52294E+04 | |
| 2 | SIGMA( 2) = | 0.24234E-02 | 0.41265E+03 | |
| 3 | SIGMA( 3) = | 0.69673E-02 | 0.14353E+03 | |
| 4 | THICK( 1) = | 0.25504E+03 | | 0.25504E+03 |
| 5 | THICK( 2) = | 0.31480E+03 | | 0.56984E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 125



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 126 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3297E+03 | 0.3610E+03 | -0.3123E+02 | -0.8651E+01 | 0.920E-03 |
| 2 | 0.1100E-03 | 0.2079E+03 | 0.2156E+03 | -0.7778E+01 | -0.3607E+01 | 0.231E-02 |
| 3 | 0.1400E-03 | 0.1173E+03 | 0.1182E+03 | -0.9162E+00 | -0.7750E+00 | 0.727E-02 |
| 4 | 0.1770E-03 | 0.6768E+02 | 0.6565E+02 | 0.2029E+01 | 0.3090E+01 | 0.218E-01 |
| 5 | 0.2200E-03 | 0.3987E+02 | 0.3751E+02 | 0.2356E+01 | 0.6279E+01 | 0.629E-01 |
| 6 | 0.2800E-03 | 0.2193E+02 | 0.2007E+02 | 0.1856E+01 | 0.9248E+01 | 0.208E+00 |
| 7 | 0.3550E-03 | 0.1197E+02 | 0.1048E+02 | 0.1492E+01 | 0.1423E+02 | 0.698E+00 |
| 8 | 0.4430E-03 | 0.5620E+01 | 0.5718E+01 | -0.9830E-01 | -0.1719E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.2660E+01 | 0.3109E+01 | -0.4489E+00 | -0.1444E+02 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.1430E+01 | 0.1580E+01 | -0.1501E+00 | -0.9500E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.9300E+00 | 0.9529E+00 | -0.2294E-01 | -0.2408E+01 | 0.100E+03 |
| 12 | 0.1096E-02 | 0.6300E+00 | 0.5958E+00 | 0.3417E-01 | 0.5735E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.4200E+00 | 0.3747E+00 | 0.4534E-01 | 0.1210E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.2800E+00 | 0.2503E+00 | 0.2975E-01 | 0.1189E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.2100E+00 | 0.1790E+00 | 0.3097E-01 | 0.1730E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1400E+00 | 0.1243E+00 | 0.1573E-01 | 0.1266E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1000E+00 | 0.8655E-01 | 0.1345E-01 | 0.1554E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.7000E-01 | 0.6170E-01 | 0.8305E-02 | 0.1346E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.4000E-01 | 0.4259E-01 | -0.2588E-02 | -0.6076E+01 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.3000E-01 | 0.2901E-01 | 0.9853E-03 | 0.3396E+01 | 0.100E+03 |

** %RMSERR= 9.96

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.4286E+00 | 0.1000E+01 | | | |
| 3 | 0.8250E-01 | -0.1482E+00 | 0.1000E+01 | | |
| 4 | 0.1305E+00 | -0.4842E+00 | -0.4213E+00 | 0.1000E+01 | |
| 5 | -0.2218E+00 | -0.1635E+00 | -0.3227E+00 | -0.1526E+00 | 0.1000E+01 |

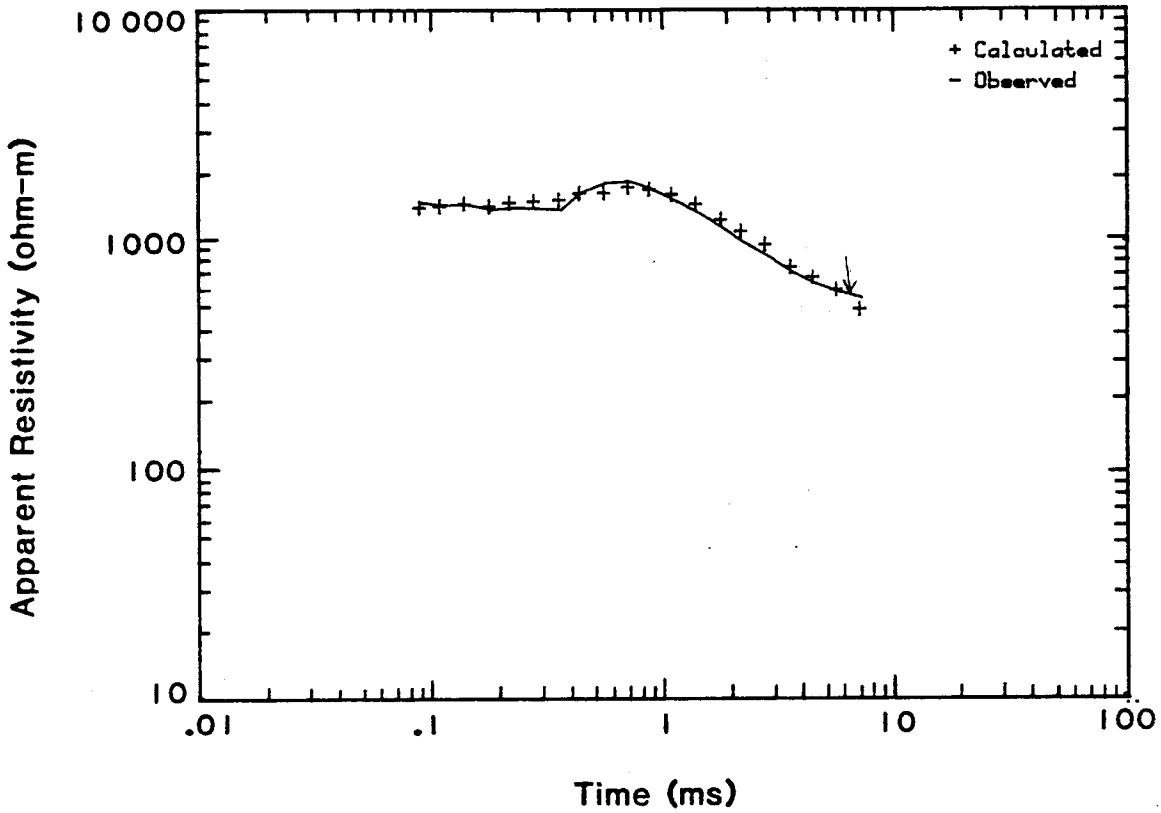
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.7370E-03 | 0.2378E-03 | 0.3226E+00 | 0.3226E+02 |
| 2 | 0.6696E-03 | 0.7243E-03 | 0.1082E+01 | 0.1082E+03 |
| 3 | 0.8514E-02 | 0.2243E-02 | 0.2635E+00 | 0.2635E+02 |
| 4 | 0.3721E+03 | 0.7332E-02 | 0.1971E-04 | 0.1971E-02 |
| 5 | 0.7162E+03 | 0.5078E-02 | 0.7090E-05 | 0.7090E-03 |

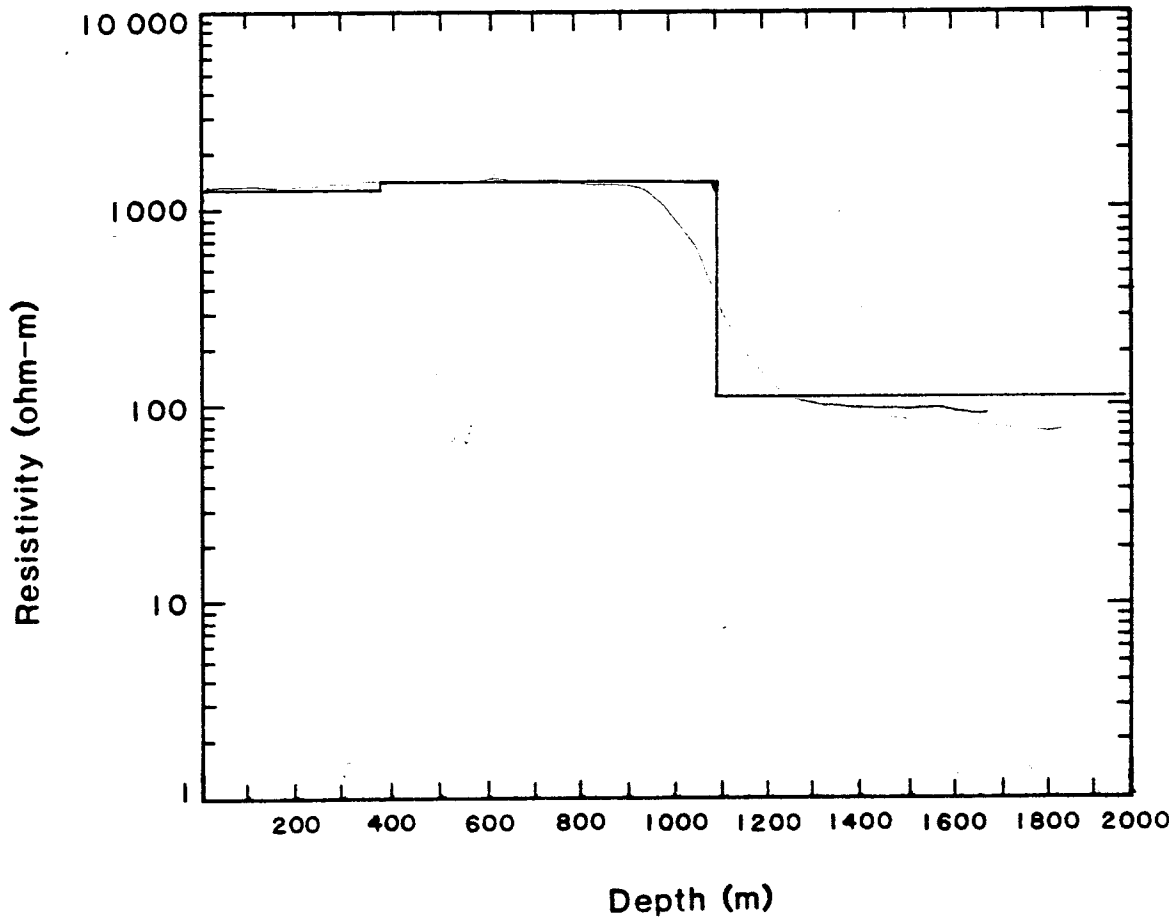
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.73699E-03 | 0.13569E+04 | |
| 2 | SIGMA( 2) | = | 0.66962E-03 | 0.14934E+04 | |
| 3 | SIGMA( 3) | = | 0.85136E-02 | 0.11746E+03 | |
| 4 | THICK( 1) | = | 0.37210E+03 | | 0.37210E+03 |
| 5 | THICK( 2) | = | 0.71624E+03 | | 0.10883E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 126



ELECTROMAGNETIC SURVEYS INC.

EMSURVEYS

MOUNT SHASTA STATION 127 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4734E+03 | 0.5670E+03 | -0.9361E+02 | -0.1651E+02 | 0.446E-03 |
| 2 | 0.1100E-03 | 0.3169E+03 | 0.3481E+03 | -0.3117E+02 | -0.8954E+01 | 0.996E-03 |
| 3 | 0.1400E-03 | 0.1950E+03 | 0.1960E+03 | -0.1037E+01 | -0.5291E+00 | 0.263E-02 |
| 4 | 0.1770E-03 | 0.1204E+03 | 0.1117E+03 | 0.8699E+01 | 0.7787E+01 | 0.690E-02 |
| 5 | 0.2200E-03 | 0.7800E+02 | 0.6598E+02 | 0.1202E+02 | 0.1822E+02 | 0.164E-01 |
| 6 | 0.2800E-03 | 0.4303E+02 | 0.3649E+02 | 0.6541E+01 | 0.1792E+02 | 0.540E-01 |
| 7 | 0.3550E-03 | 0.2427E+02 | 0.2022E+02 | 0.4050E+01 | 0.2003E+02 | 0.170E+00 |
| 8 | 0.4430E-03 | 0.1340E+02 | 0.1160E+02 | 0.1800E+01 | 0.1552E+02 | 0.557E+00 |
| 9 | 0.5540E-03 | 0.5700E+01 | 0.6562E+01 | -0.8624E+00 | -0.1314E+02 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.2920E+01 | 0.3425E+01 | -0.5049E+00 | -0.1474E+02 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1750E+01 | 0.2015E+01 | -0.2646E+00 | -0.1314E+02 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1070E+01 | 0.1172E+01 | -0.1024E+00 | -0.8735E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.6100E+00 | 0.6427E+00 | -0.3273E-01 | -0.5093E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.3600E+00 | 0.3712E+00 | -0.1119E-01 | -0.3015E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.2200E+00 | 0.2305E+00 | -0.1045E-01 | -0.4536E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1400E+00 | 0.1371E+00 | 0.2934E-02 | 0.2141E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.8000E-01 | 0.8358E-01 | -0.3578E-02 | -0.4282E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.5000E-01 | 0.5317E-01 | -0.3174E-02 | -0.5970E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.3000E-01 | 0.3265E-01 | -0.2654E-02 | -0.8127E+01 | 0.100E+03 |

* %RMSERR= 11.53

CORRELATION MATRIX

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | |
| 2 | 0.3171E+00 | 0.1000E+01 | | | | |
| 3 | -0.7822E+00 | -0.5997E+00 | 0.1000E+01 | | | |
| 4 | 0.6211E+00 | 0.5795E+00 | -0.7889E+00 | 0.1000E+01 | | |
| 5 | 0.4275E+00 | 0.7303E+00 | -0.5229E+00 | 0.6571E+00 | 0.1000E+01 | |
| 6 | -0.3833E+00 | -0.4260E+00 | 0.1685E+00 | -0.2611E+00 | -0.3579E+00 | 0.1000E+01 |
| 7 | -0.9251E+00 | -0.4538E+00 | 0.7936E+00 | -0.6501E+00 | -0.6047E+00 | 0.3620E+00 0.1000E+01 |

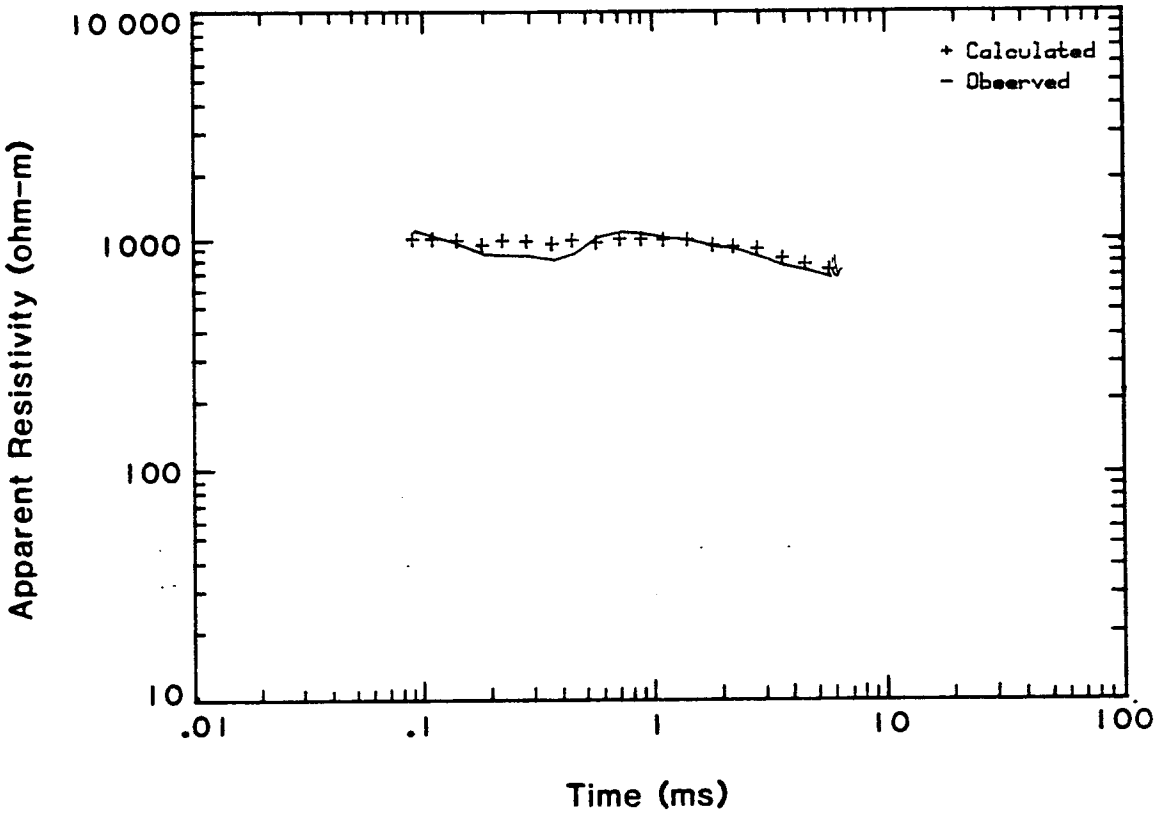
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.7623E-03 | 0.2542E-02 | 0.3335E+01 | 0.3335E+03 |
| 2 | 0.1306E-02 | 0.6746E-02 | 0.5164E+01 | 0.5164E+03 |
| 3 | 0.1062E-02 | 0.7319E-02 | 0.6893E+01 | 0.6893E+03 |
| 4 | 0.3095E-02 | 0.2531E-01 | 0.8177E+01 | 0.8177E+03 |
| 5 | 0.9707E+02 | 0.1876E-01 | 0.1933E-03 | 0.1933E-01 |
| 6 | 0.1357E+03 | 0.1297E-01 | 0.9558E-04 | 0.9558E-02 |
| 7 | 0.8651E+03 | 0.6673E-01 | 0.7713E-04 | 0.7713E-02 |

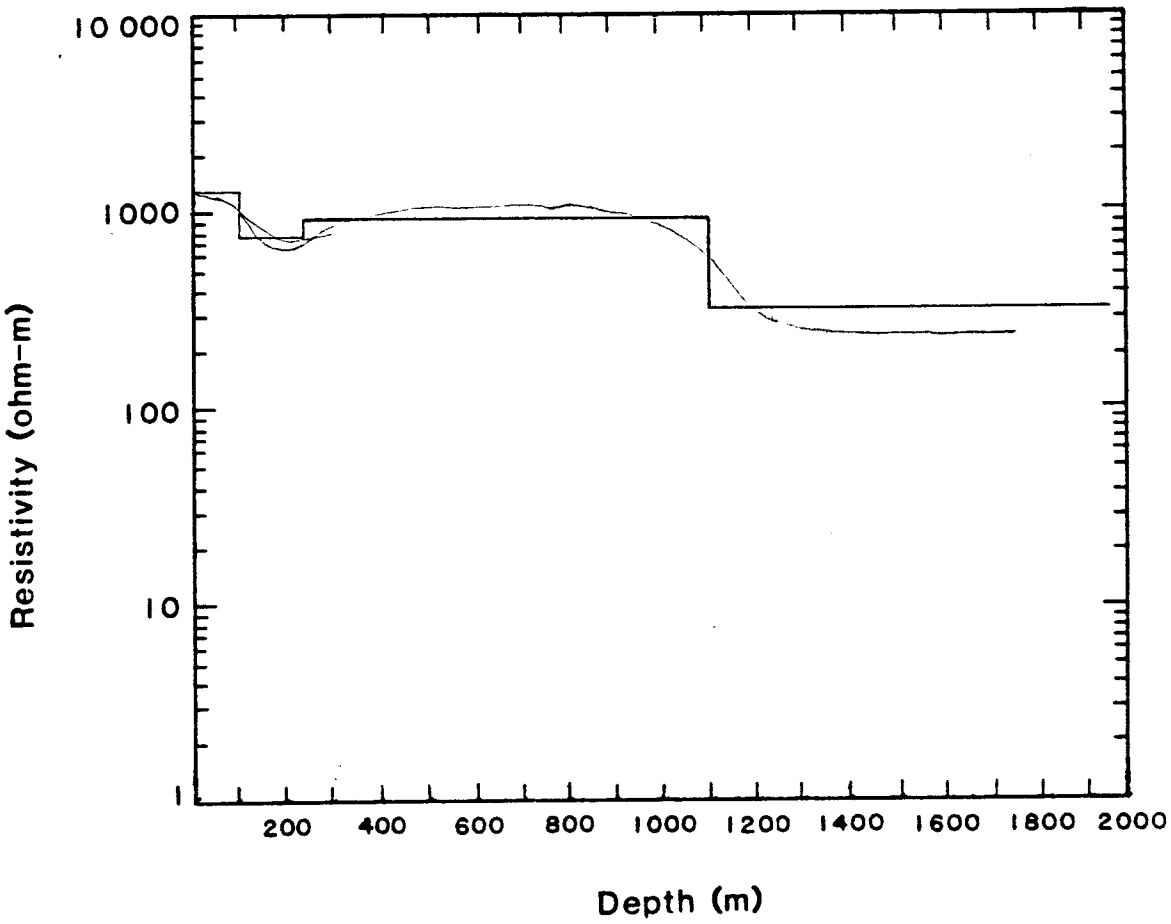
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.76228E-03 | 0.13118E+04 | |
| 2 | SIGMA( 2) | = | 0.13063E-02 | 0.76552E+03 | |
| 3 | SIGMA( 3) | = | 0.10617E-02 | 0.94185E+03 | |
| 4 | SIGMA( 4) | = | 0.30953E-02 | 0.32307E+03 | |
| 5 | THICK( 1) | = | 0.97072E+02 | | 0.97072E+02 |
| 6 | THICK( 2) | = | 0.13567E+03 | | 0.23274E+03 |
| 7 | THICK( 3) | = | 0.86515E+03 | | 0.10979E+04 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 127



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 128 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.7140E+03 | 0.6779E+03 | 0.3616E+02 | 0.5335E+01 | 0.196E-03 |
| 2 | 0.1100E-03 | 0.3466E+03 | 0.3670E+03 | -0.2047E+02 | -0.5578E+01 | 0.833E-03 |
| 3 | 0.1400E-03 | 0.1722E+03 | 0.1886E+03 | -0.1640E+02 | -0.8696E+01 | 0.337E-02 |
| 4 | 0.1770E-03 | 0.9164E+02 | 0.1005E+03 | -0.8847E+01 | -0.8804E+01 | 0.119E-01 |
| 5 | 0.2200E-03 | 0.5349E+02 | 0.5410E+02 | -0.6100E+00 | -0.1128E+01 | 0.350E-01 |
| 6 | 0.2800E-03 | 0.2994E+02 | 0.2820E+02 | 0.1737E+01 | 0.6160E+01 | 0.112E+00 |
| 7 | 0.3550E-03 | 0.1603E+02 | 0.1497E+02 | 0.1059E+01 | 0.7072E+01 | 0.389E+00 |
| 8 | 0.4430E-03 | 0.8260E+01 | 0.7614E+01 | 0.6465E+00 | 0.8491E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.3980E+01 | 0.4196E+01 | -0.2156E+00 | -0.5139E+01 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2090E+01 | 0.1938E+01 | 0.1520E+00 | 0.7843E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1170E+01 | 0.1018E+01 | 0.1524E+00 | 0.1497E+02 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.6100E+00 | 0.5315E+00 | 0.7846E-01 | 0.1476E+02 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.2800E+00 | 0.2325E+00 | 0.4750E-01 | 0.2043E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.1400E+00 | 0.1074E+00 | 0.3263E-01 | 0.3039E+02 | 0.100E+03 |

** %RMSERR= 12.66

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.6383E+00 | 0.1000E+01 | | | |
| 3 | 0.2624E+00 | 0.1226E+00 | 0.1000E+01 | | |
| 4 | -0.8453E+00 | -0.6559E+00 | -0.1858E+00 | 0.1000E+01 | |
| 5 | -0.5894E+00 | -0.1690E+00 | -0.1022E+00 | 0.3232E+00 | 0.1000E+01 |

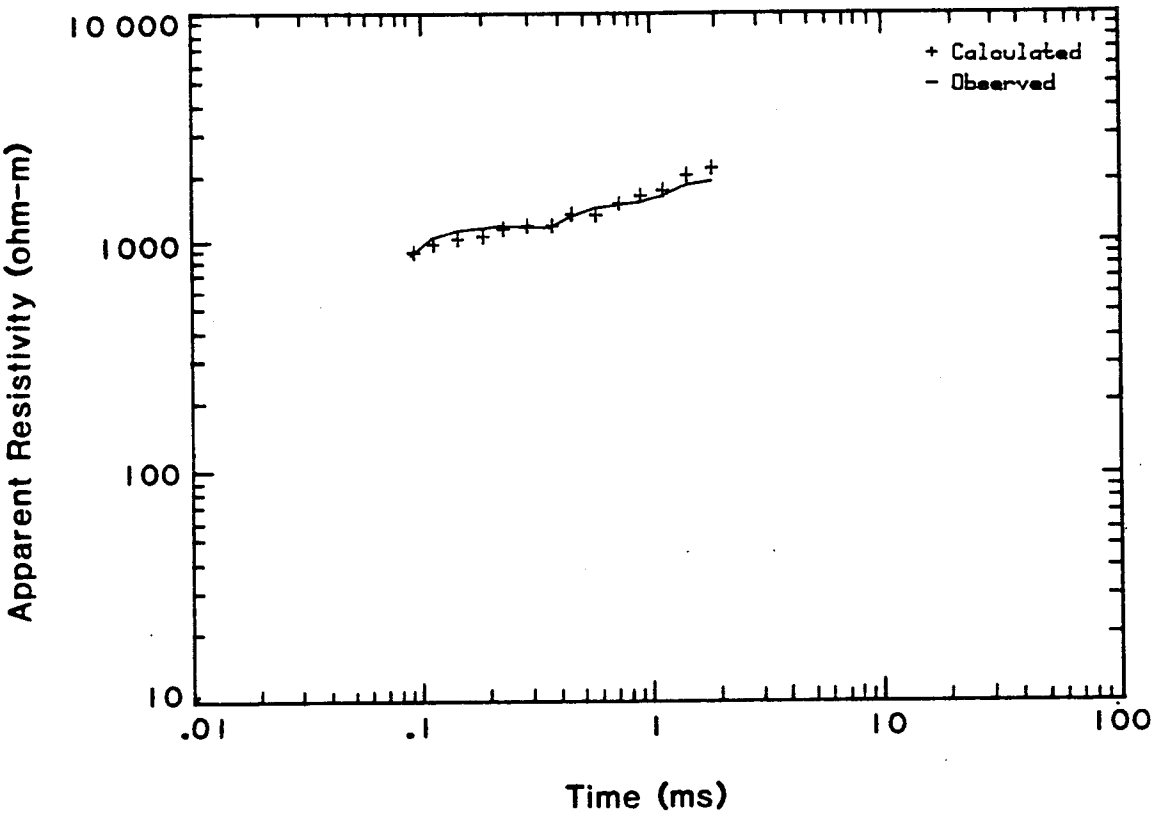
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.2672E-02 | 0.2144E-02 | 0.8021E+00 | 0.8021E+02 |
| 2 0.6239E-03 | 0.1109E-02 | 0.1777E+01 | 0.1777E+03 |
| 3 0.4244E-04 | 0.2426E-01 | 0.5716E+03 | 0.5716E+05 |
| 4 0.3885E+02 | 0.3298E-02 | 0.8489E-04 | 0.8489E-02 |
| 5 0.7273E+03 | 0.1365E-01 | 0.1877E-04 | 0.1877E-02 |

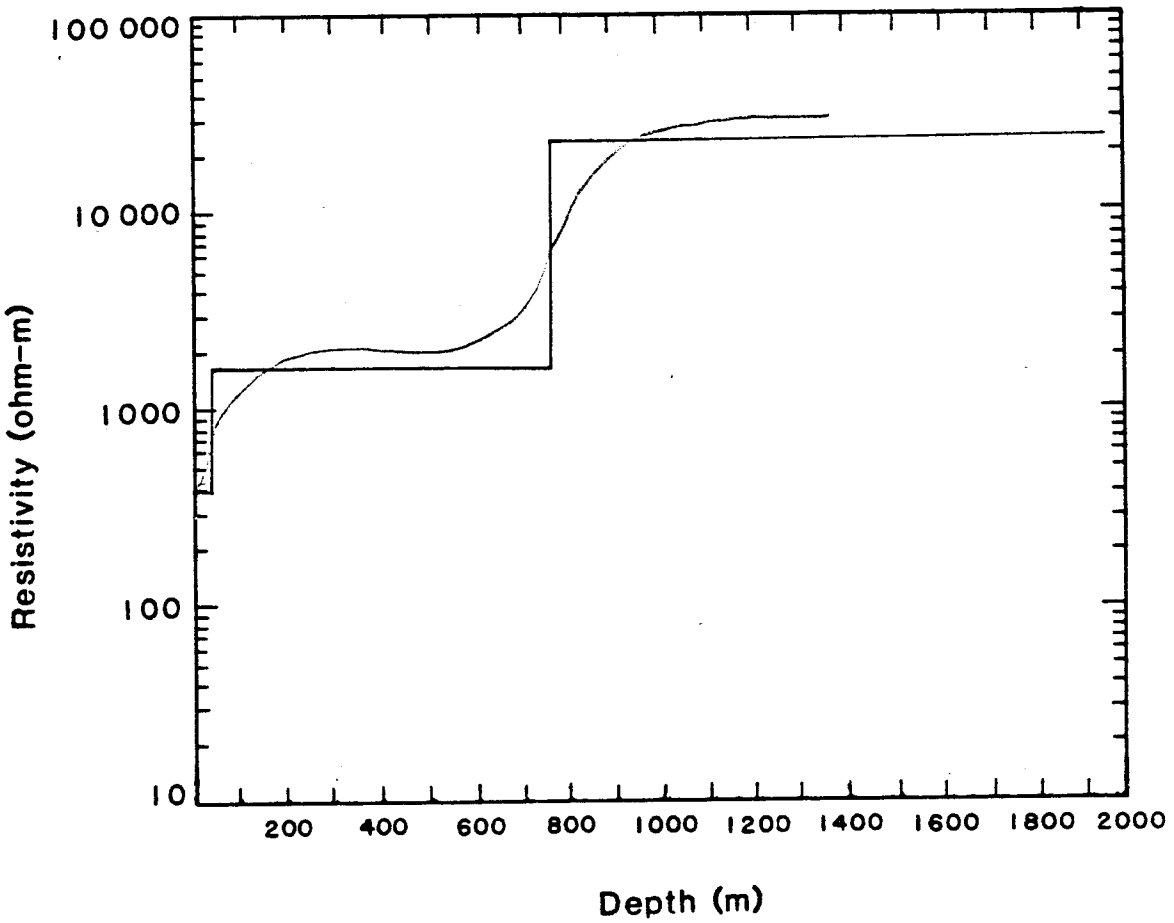
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.26723E-02 | 0.37420E+03 | |
| 2 | SIGMA( 2) = | 0.62391E-03 | 0.16028E+04 | |
| 3 | SIGMA( 3) = | 0.42436E-04 | 0.23565E+05 | |
| 4 | THICK( 1) = | 0.38848E+02 | | 0.38848E+02 |
| 5 | THICK( 2) = | 0.72731E+03 | | 0.76616E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 128



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 129 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1408E+04 | 0.1527E+04 | -0.1189E+03 | -0.7787E+01 | 0.504E-04 |
| 2 | 0.1100E-03 | 0.7787E+03 | 0.8221E+03 | -0.4336E+02 | -0.5274E+01 | 0.165E-03 |
| 3 | 0.1400E-03 | 0.3883E+03 | 0.3713E+03 | 0.1699E+02 | 0.4576E+01 | 0.663E-03 |
| 4 | 0.1770E-03 | 0.1951E+03 | 0.1852E+03 | 0.9893E+01 | 0.5342E+01 | 0.263E-02 |
| 5 | 0.2200E-03 | 0.9923E+02 | 0.9339E+02 | 0.5838E+01 | 0.6251E+01 | 0.102E-01 |
| 6 | 0.2800E-03 | 0.4753E+02 | 0.4298E+02 | 0.4552E+01 | 0.1059E+02 | 0.443E-01 |
| 7 | 0.3550E-03 | 0.2151E+02 | 0.2083E+02 | 0.6792E+00 | 0.3261E+01 | 0.216E+00 |
| 8 | 0.4430E-03 | 0.1081E+02 | 0.1099E+02 | -0.1798E+00 | -0.1636E+01 | 0.856E+00 |
| 9 | 0.5540E-03 | 0.4420E+01 | 0.5098E+01 | -0.6775E+00 | -0.1329E+02 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2280E+01 | 0.2619E+01 | -0.3391E+00 | -0.1295E+02 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1390E+01 | 0.1314E+01 | 0.7646E-01 | 0.5821E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.7600E+00 | 0.6481E+00 | 0.1119E+00 | 0.1727E+02 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.3500E+00 | 0.3289E+00 | 0.2108E-01 | 0.6408E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.1600E+00 | 0.1362E+00 | 0.2379E-01 | 0.1747E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.8000E-01 | 0.7573E-01 | 0.4270E-02 | 0.5639E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.3000E-01 | 0.3363E-01 | -0.3634E-02 | -0.1081E+02 | 0.100E+03 |

** %RMSERR= 9.60

ORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.5981E+00 | 0.1000E+01 | | | |
| 3 | -0.2875E-01 | -0.2636E+00 | 0.1000E+01 | | |
| 4 | -0.7838E+00 | -0.8897E+00 | 0.2094E+00 | 0.1000E+01 | |
| 5 | -0.5443E+00 | -0.3861E+00 | 0.3152E+00 | 0.5345E+00 | 0.1000E+01 |

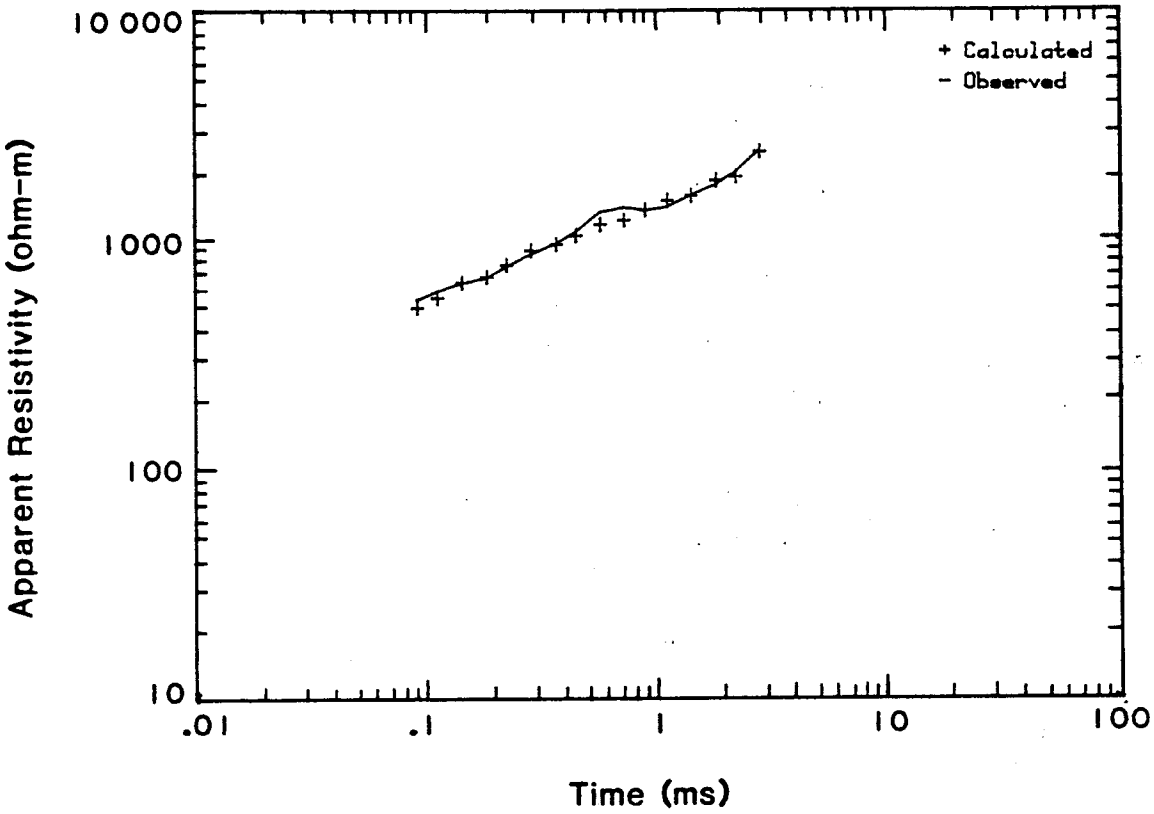
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 0.3443E-02 | 0.2422E-02 | 0.7034E+00 | 0.7034E+02 |
| 0.4300E-03 | 0.3325E-02 | 0.7734E+01 | 0.7734E+03 |
| 0.7380E-04 | 0.1400E-01 | 0.1897E+03 | 0.1897E+05 |
| 0.6713E+02 | 0.4618E-02 | 0.6879E-04 | 0.6879E-02 |
| 0.1095E+04 | 0.7561E-02 | 0.6904E-05 | 0.6904E-03 |

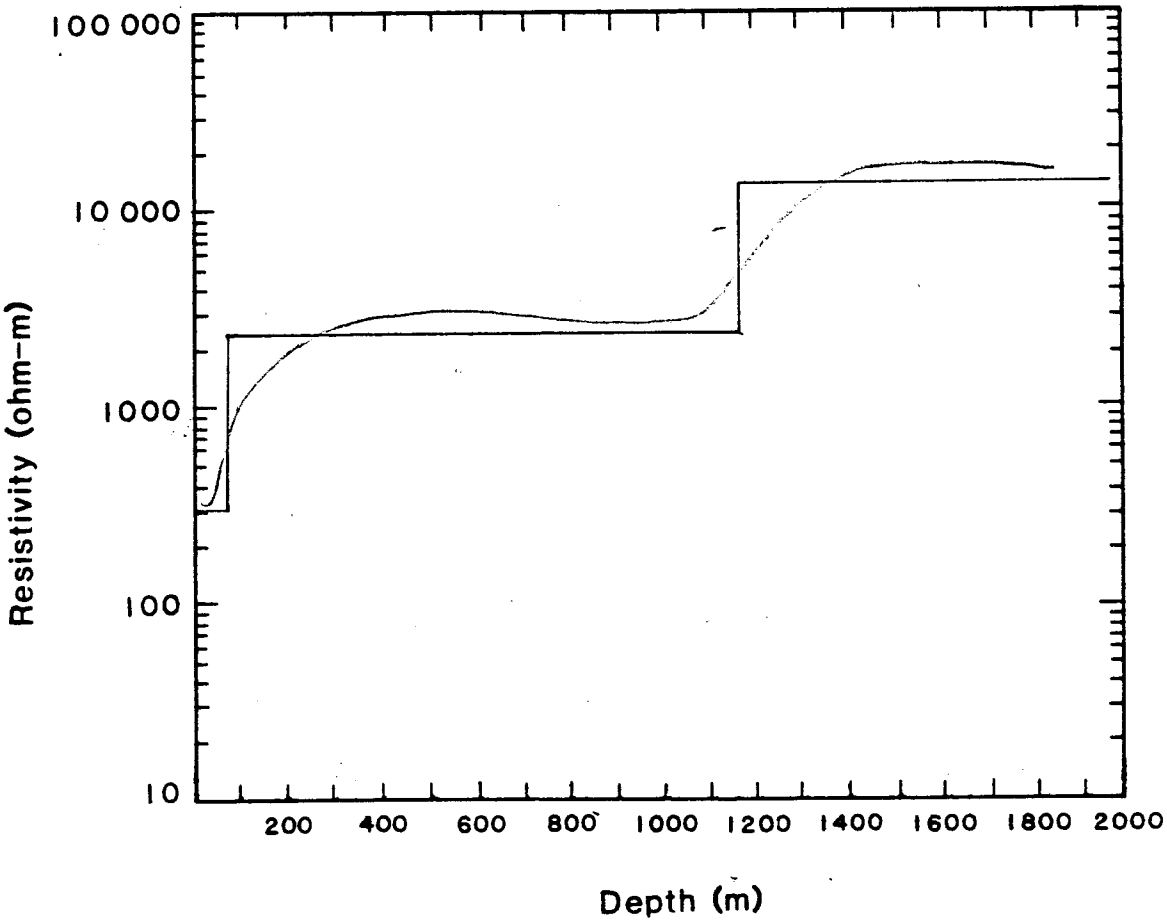
| ARAMETER | NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.34434E-02 | 0.29041E+03 | |
| 2 | SIGMA( 2) | = | 0.42998E-03 | 0.23257E+04 | |
| 3 | SIGMA( 3) | = | 0.73800E-04 | 0.13550E+05 | |
| 4 | THICK( 1) | = | 0.67130E+02 | | 0.67130E+02 |
| 5 | THICK( 2) | = | 0.10952E+04 | | 0.11623E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 129



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 130 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.5383E+03 | 0.6412E+03 | -0.1028E+03 | -0.1604E+02 | 0.345E-03 |
| 2 | 0.1100E-03 | 0.3429E+03 | 0.3886E+03 | -0.4570E+02 | -0.1176E+02 | 0.850E-03 |
| 3 | 0.1400E-03 | 0.2046E+03 | 0.2139E+03 | -0.9280E+01 | -0.4338E+01 | 0.239E-02 |
| 4 | 0.1770E-03 | 0.1240E+03 | 0.1192E+03 | 0.4782E+01 | 0.4013E+01 | 0.651E-02 |
| 5 | 0.2200E-03 | 0.7555E+02 | 0.6877E+02 | 0.6783E+01 | 0.9864E+01 | 0.175E-01 |
| 6 | 0.2800E-03 | 0.4283E+02 | 0.3661E+02 | 0.6222E+01 | 0.1700E+02 | 0.545E-01 |
| 7 | 0.3550E-03 | 0.2283E+02 | 0.1950E+02 | 0.3332E+01 | 0.1709E+02 | 0.192E+00 |
| 8 | 0.4430E-03 | 0.1183E+02 | 0.1081E+02 | 0.1019E+01 | 0.9428E+01 | 0.715E+00 |
| 9 | 0.5540E-03 | 0.6110E+01 | 0.5852E+01 | 0.2583E+00 | 0.4414E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.3140E+01 | 0.2950E+01 | 0.1897E+00 | 0.6431E+01 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.1630E+01 | 0.1635E+01 | -0.5065E-02 | -0.3098E+00 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.7900E+00 | 0.8950E+00 | -0.1050E+00 | -0.1174E+02 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.3100E+00 | 0.4495E+00 | -0.1395E+00 | -0.3104E+02 | 0.100E+03 |

** %RMSERR= 13.47

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | 0.2461E+00 | 0.1000E+01 | |
| 3 | -0.2483E+00 | -0.8525E+00 | 0.1000E+01 |

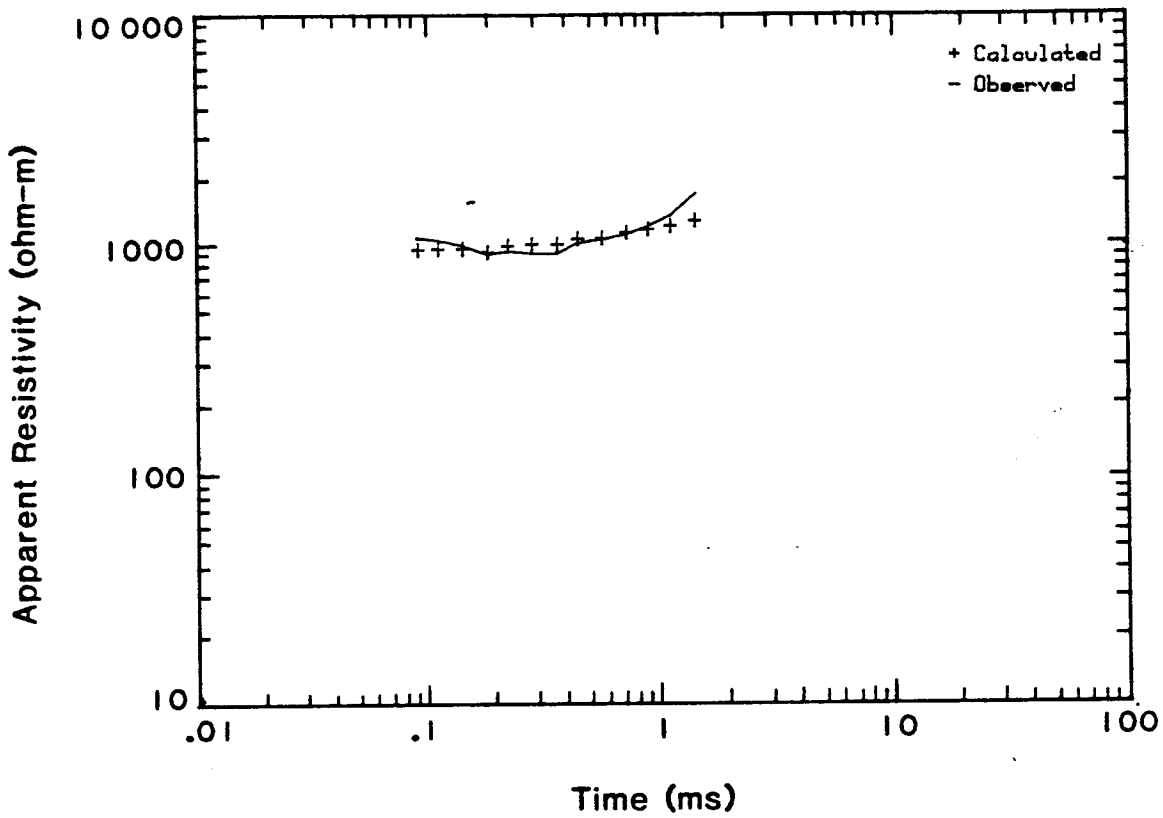
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1088E-02 | 0.3097E-03 | 0.2846E+00 | 0.2846E+02 |
| 2 | 0.5419E-03 | 0.1900E-02 | 0.3506E+01 | 0.3506E+03 |
| 3 | 0.4141E+03 | 0.1193E-01 | 0.2882E-04 | 0.2882E-02 |

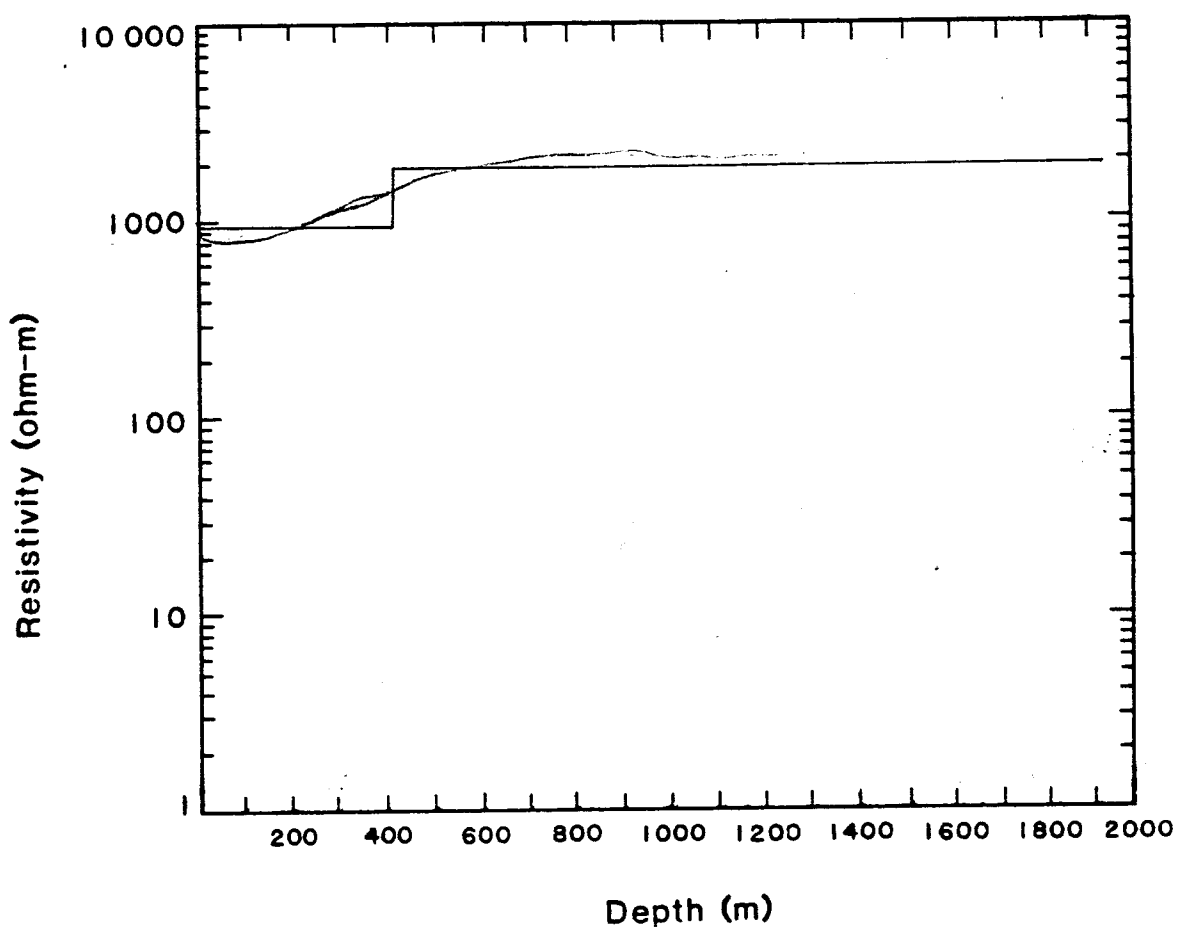
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.10882E-02 | 0.91897E+03 | |
| 2 | SIGMA( 2) | = | 0.54187E-03 | 0.18455E+04 | |
| 3 | THICK( 1) | = | 0.41405E+03 | | 0.41405E+03 |
| 4 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 130



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 131 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3095E+03 | 0.3159E+03 | -0.6398E+01 | -0.2025E+01 | 0.104E-02 |
| 2 | 0.1100E-03 | 0.2066E+03 | 0.2089E+03 | -0.2310E+01 | -0.1106E+01 | 0.234E-02 |
| 3 | 0.1400E-03 | 0.1284E+03 | 0.1299E+03 | -0.1505E+01 | -0.1159E+01 | 0.607E-02 |
| 4 | 0.1770E-03 | 0.8108E+02 | 0.8080E+02 | 0.2768E+00 | 0.3426E+00 | 0.152E-01 |
| 5 | 0.2200E-03 | 0.5242E+02 | 0.5153E+02 | 0.8924E+00 | 0.1732E+01 | 0.364E-01 |
| 6 | 0.2800E-03 | 0.3214E+02 | 0.3100E+02 | 0.1137E+01 | 0.3668E+01 | 0.968E-01 |
| 7 | 0.3550E-03 | 0.1923E+02 | 0.1861E+02 | 0.6205E+00 | 0.3334E+01 | 0.270E+00 |
| 8 | 0.4430E-03 | 0.1188E+02 | 0.1140E+02 | 0.4811E+00 | 0.4221E+01 | 0.709E+00 |
| 9 | 0.5540E-03 | 0.6620E+01 | 0.6907E+01 | -0.2868E+00 | -0.4153E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.3870E+01 | 0.3885E+01 | -0.1522E-01 | -0.3916E+00 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2300E+01 | 0.2392E+01 | -0.9236E-01 | -0.3861E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1360E+01 | 0.1454E+01 | -0.9415E-01 | -0.6475E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.8000E+00 | 0.8184E+00 | -0.1837E-01 | -0.2245E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.4700E+00 | 0.4796E+00 | -0.9582E-02 | -0.1998E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.3100E+00 | 0.3004E+00 | 0.9601E-02 | 0.3196E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1900E+00 | 0.1760E+00 | 0.1402E-01 | 0.7967E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1200E+00 | 0.1070E+00 | 0.1304E-01 | 0.1220E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.7000E-01 | 0.6681E-01 | 0.3187E-02 | 0.4769E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.5000E-01 | 0.3962E-01 | 0.1038E-01 | 0.2619E+02 | 0.100E+03 |

** %RMSERR= 7.49

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.2863E+00 | 0.1000E+01 | | | |
| 3 | 0.1963E+00 | -0.4669E-01 | 0.1000E+01 | | |
| 4 | -0.2894E+00 | 0.8576E+00 | -0.8021E-01 | 0.1000E+01 | |
| 5 | 0.2644E+00 | -0.7074E+00 | 0.1115E+00 | -0.6910E+00 | 0.1000E+01 |

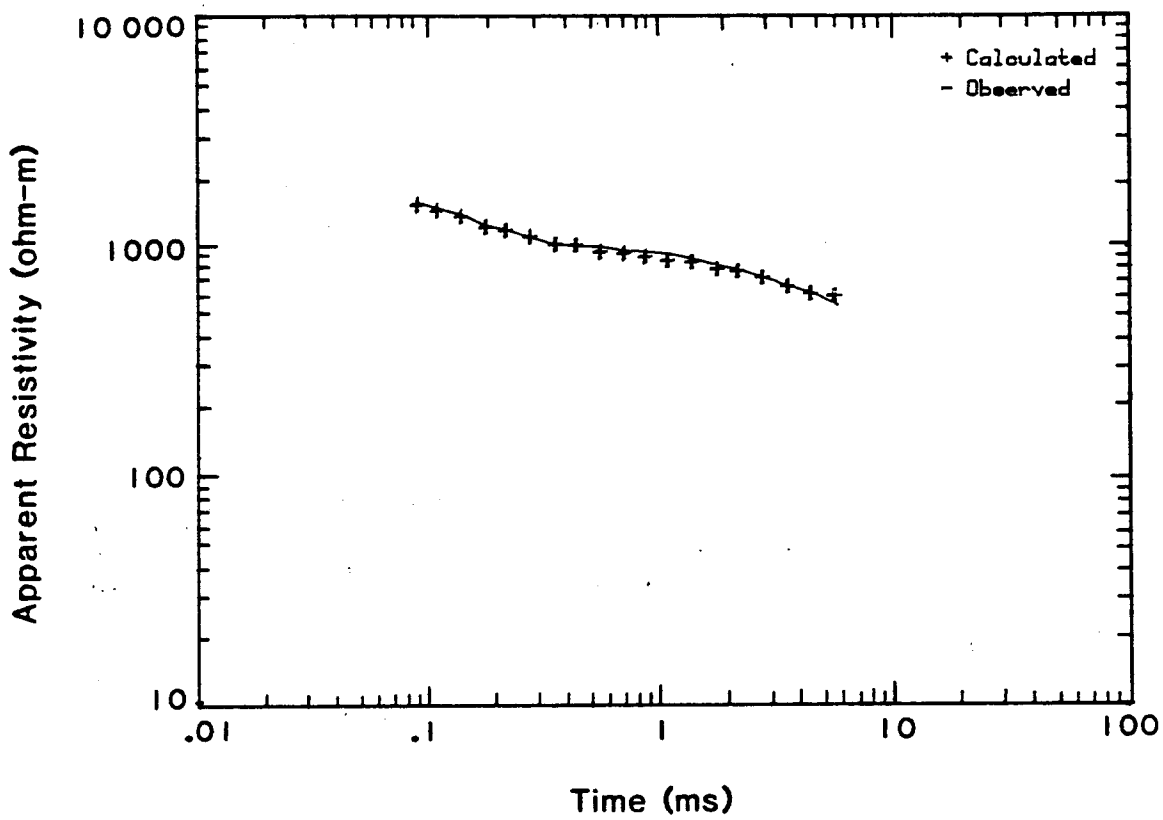
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3705E-03 | 0.2818E-03 | 0.7605E+00 | 0.7605E+02 |
| 2 | 0.1598E-02 | 0.1075E-02 | 0.6726E+00 | 0.6726E+02 |
| 3 | 0.3034E-02 | 0.1342E-01 | 0.4423E+01 | 0.4423E+03 |
| 4 | 0.1830E+03 | 0.2581E-02 | 0.1411E-04 | 0.1411E-02 |
| 5 | 0.8504E+03 | 0.1099E-01 | 0.1293E-04 | 0.1293E-02 |

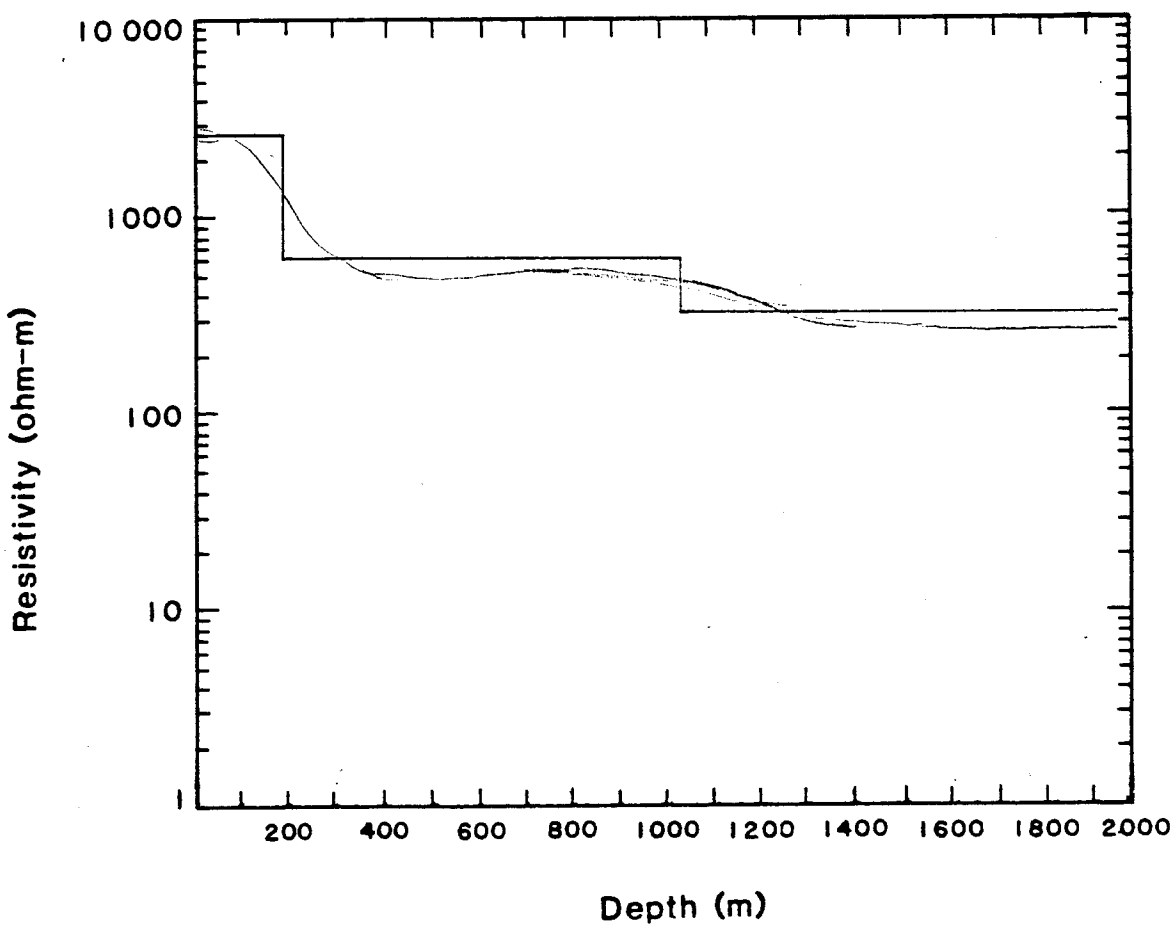
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.37054E-03 | 0.26988E+04 | |
| 2 | SIGMA( 2) | = | 0.15983E-02 | 0.62566E+03 | |
| 3 | SIGMA( 3) | = | 0.30343E-02 | 0.32956E+03 | |
| 4 | THICK( 1) | = | 0.18296E+03 | | 0.18296E+03 |
| 5 | THICK( 2) | = | 0.85037E+03 | | 0.10333E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 131



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 132 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1237E+03 | 0.1393E+03 | -0.1560E+02 | -0.1120E+02 | 0.654E-02 |
| 2 | 0.1100E-03 | 0.8461E+02 | 0.8838E+02 | -0.3768E+01 | -0.4264E+01 | 0.140E-01 |
| 3 | 0.1400E-03 | 0.5277E+02 | 0.5208E+02 | 0.6885E+00 | 0.1322E+01 | 0.359E-01 |
| 4 | 0.1770E-03 | 0.3267E+02 | 0.3114E+02 | 0.1531E+01 | 0.4917E+01 | 0.937E-01 |
| 5 | 0.2200E-03 | 0.2048E+02 | 0.1927E+02 | 0.1207E+01 | 0.6261E+01 | 0.238E+00 |
| 6 | 0.2800E-03 | 0.1222E+02 | 0.1142E+02 | 0.8032E+00 | 0.7035E+01 | 0.670E+00 |
| 7 | 0.3550E-03 | 0.6540E+01 | 0.6801E+01 | -0.2612E+00 | -0.3841E+01 | 0.100E+01 |
| 8 | 0.4430E-03 | 0.3900E+01 | 0.4201E+01 | -0.3011E+00 | -0.7168E+01 | 0.400E+01 |
| 9 | 0.5540E-03 | 0.2240E+01 | 0.2592E+01 | -0.3520E+00 | -0.1358E+02 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.1390E+01 | 0.1499E+01 | -0.1095E+00 | -0.7302E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.9500E+00 | 0.9442E+00 | 0.5767E-02 | 0.6108E+00 | 0.100E+03 |
| 12 | 0.1096E-02 | 0.6200E+00 | 0.5850E+00 | 0.3505E-01 | 0.5991E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.3800E+00 | 0.3335E+00 | 0.4647E-01 | 0.1393E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.2200E+00 | 0.1937E+00 | 0.2629E-01 | 0.1357E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.1300E+00 | 0.1195E+00 | 0.1046E-01 | 0.8753E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.7000E-01 | 0.6796E-01 | 0.2038E-02 | 0.2999E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.4000E-01 | 0.3981E-01 | 0.1855E-03 | 0.4658E+00 | 0.100E+03 |

** %RMSERR= 7.91

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.6304E+00 | 0.1000E+01 | | | |
| 3 | -0.2270E+00 | -0.2964E+00 | 0.1000E+01 | | |
| 4 | -0.7327E+00 | 0.8278E+00 | -0.2461E+00 | 0.1000E+01 | |
| 5 | -0.7630E+00 | 0.8251E+00 | -0.1763E+00 | 0.8018E+00 | 0.1000E+01 |

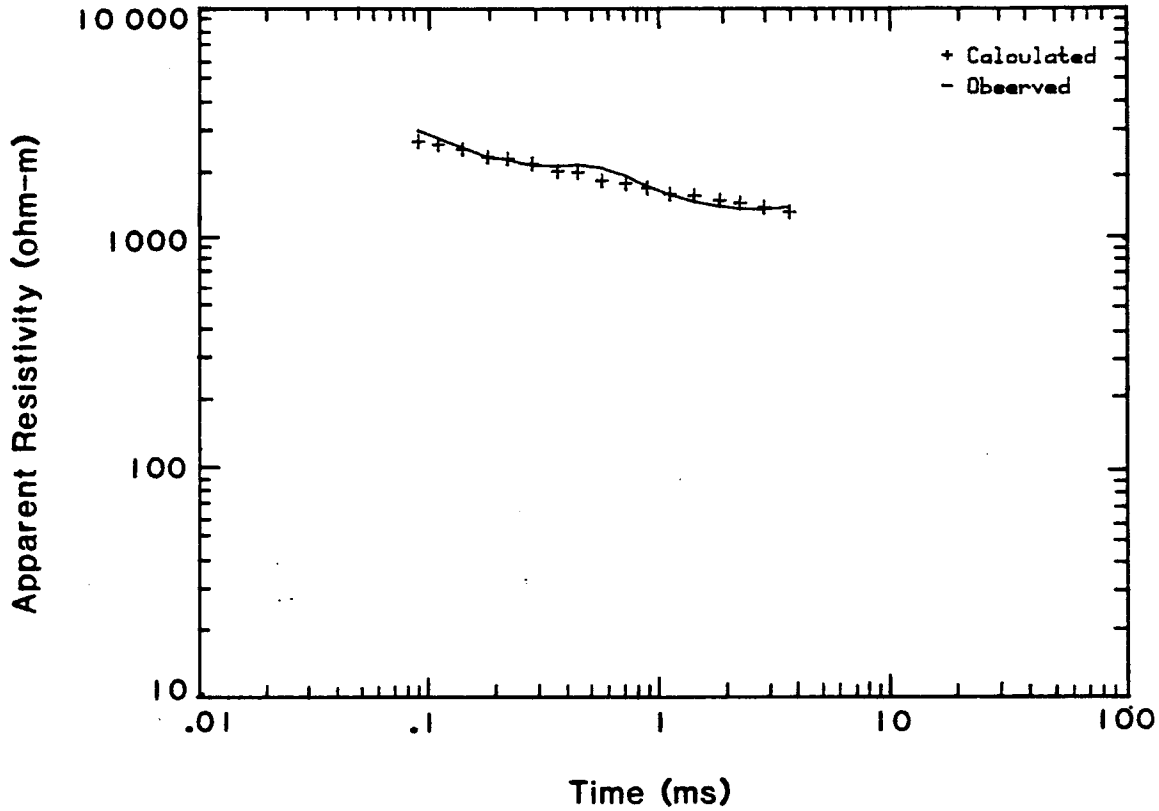
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1782E-03 | 0.2969E-03 | 0.1666E+01 | 0.1666E+03 |
| 2 0.6561E-03 | 0.1560E-02 | 0.2377E+01 | 0.2377E+03 |
| 3 0.1016E-02 | 0.2582E-02 | 0.2540E+01 | 0.2540E+03 |
| 4 0.1708E+03 | 0.6144E-02 | 0.3597E-04 | 0.3597E-02 |
| 5 0.4937E+03 | 0.8178E-02 | 0.1656E-04 | 0.1656E-02 |

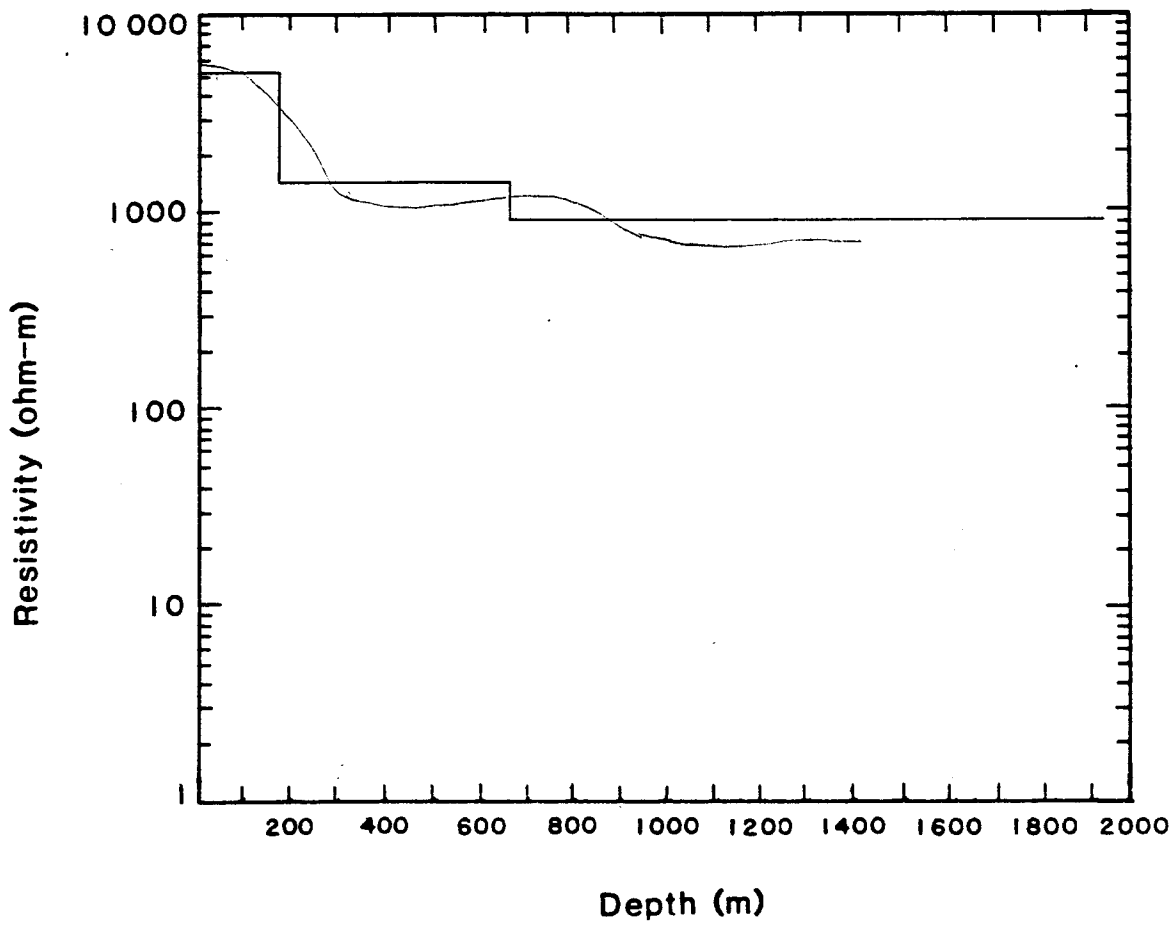
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.17824E-03 | 0.56103E+04 | |
| 2 | SIGMA( 2) = | 0.65609E-03 | 0.15242E+04 | |
| 3 | SIGMA( 3) = | 0.10165E-02 | 0.98382E+03 | |
| 4 | THICK( 1) = | 0.17080E+03 | | 0.17080E+03 |
| 5 | THICK( 2) = | 0.49372E+03 | | 0.66452E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 132



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 133 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.5559E+03 | 0.6002E+03 | -0.4430E+02 | -0.7381E+01 | 0.324E-03 |
| 2 | 0.1100E-03 | 0.3020E+03 | 0.3160E+03 | -0.1399E+02 | -0.4429E+01 | 0.110E-02 |
| 3 | 0.1400E-03 | 0.1465E+03 | 0.1496E+03 | -0.3099E+01 | -0.2072E+01 | 0.466E-02 |
| 4 | 0.1770E-03 | 0.7239E+02 | 0.6807E+02 | 0.4315E+01 | 0.6339E+01 | 0.191E-01 |
| 5 | 0.2200E-03 | 0.3595E+02 | 0.3254E+02 | 0.3414E+01 | 0.1049E+02 | 0.774E-01 |
| 6 | 0.2800E-03 | 0.1697E+02 | 0.1671E+02 | 0.2593E+00 | 0.1552E+01 | 0.347E+00 |
| 7 | 0.3550E-03 | 0.5830E+01 | 0.6777E+01 | -0.9474E+00 | -0.1398E+02 | 0.100E+01 |
| 8 | 0.4430E-03 | 0.3090E+01 | 0.3726E+01 | -0.6359E+00 | -0.1707E+02 | 0.400E+01 |
| 9 | 0.5540E-03 | 0.1650E+01 | 0.2158E+01 | -0.5078E+00 | -0.2353E+02 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.1030E+01 | 0.1089E+01 | -0.5926E-01 | -0.5440E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.7400E+00 | 0.7951E+00 | -0.5511E-01 | -0.6931E+01 | 0.100E+03 |
| 12 | 0.1096E-02 | 0.5100E+00 | 0.5229E+00 | -0.1286E-01 | -0.2460E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.3400E+00 | 0.3653E+00 | -0.2528E-01 | -0.6920E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.2300E+00 | 0.2559E+00 | -0.2585E-01 | -0.1010E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.1600E+00 | 0.1846E+00 | -0.2462E-01 | -0.1333E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1100E+00 | 0.1267E+00 | -0.1672E-01 | -0.1320E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.7000E-01 | 0.8674E-01 | -0.1674E-01 | -0.1930E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.5000E-01 | 0.6029E-01 | -0.1029E-01 | -0.1707E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.3000E-01 | 0.4019E-01 | -0.1019E-01 | -0.2536E+02 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.2000E-01 | 0.2705E-01 | -0.7053E-02 | -0.2607E+02 | 0.100E+03 |

* %RMSERR= 13.86

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.8392E+00 | 0.1000E+01 | | | |
| 3 | 0.7335E+00 | -0.7493E+00 | 0.1000E+01 | | |
| 4 | -0.5897E+00 | 0.2579E+00 | -0.2006E+00 | 0.1000E+01 | |
| 5 | -0.8132E+00 | 0.7955E+00 | -0.6112E+00 | 0.2340E+00 | 0.1000E+01 |

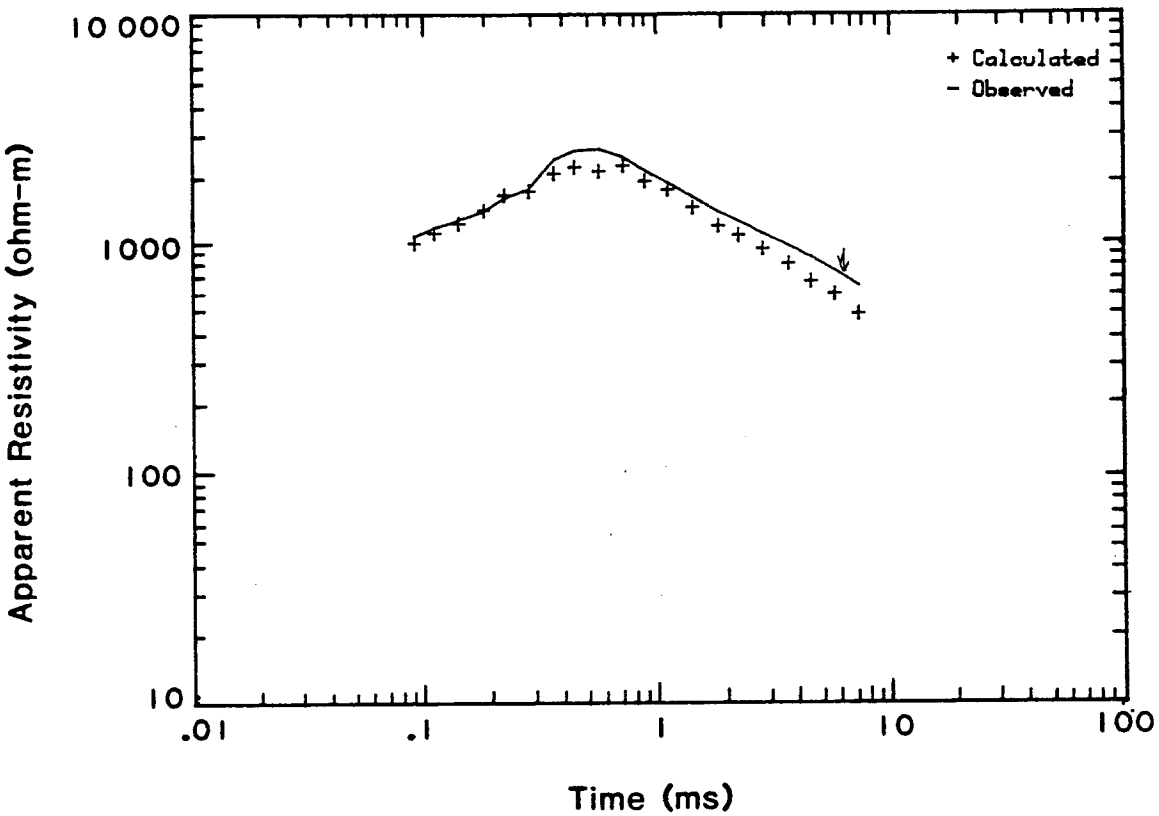
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.4093E-02 | 0.2142E-02 | 0.5234E+00 | 0.5234E+02 |
| 2 0.3139E-03 | 0.1467E-02 | 0.4672E+01 | 0.4672E+03 |
| 3 0.6474E-02 | 0.1074E-01 | 0.1659E+01 | 0.1659E+03 |
| 4 0.3100E+02 | 0.8323E-03 | 0.2685E-04 | 0.2685E-02 |
| 5 0.9527E+03 | 0.4586E-02 | 0.4813E-05 | 0.4813E-03 |

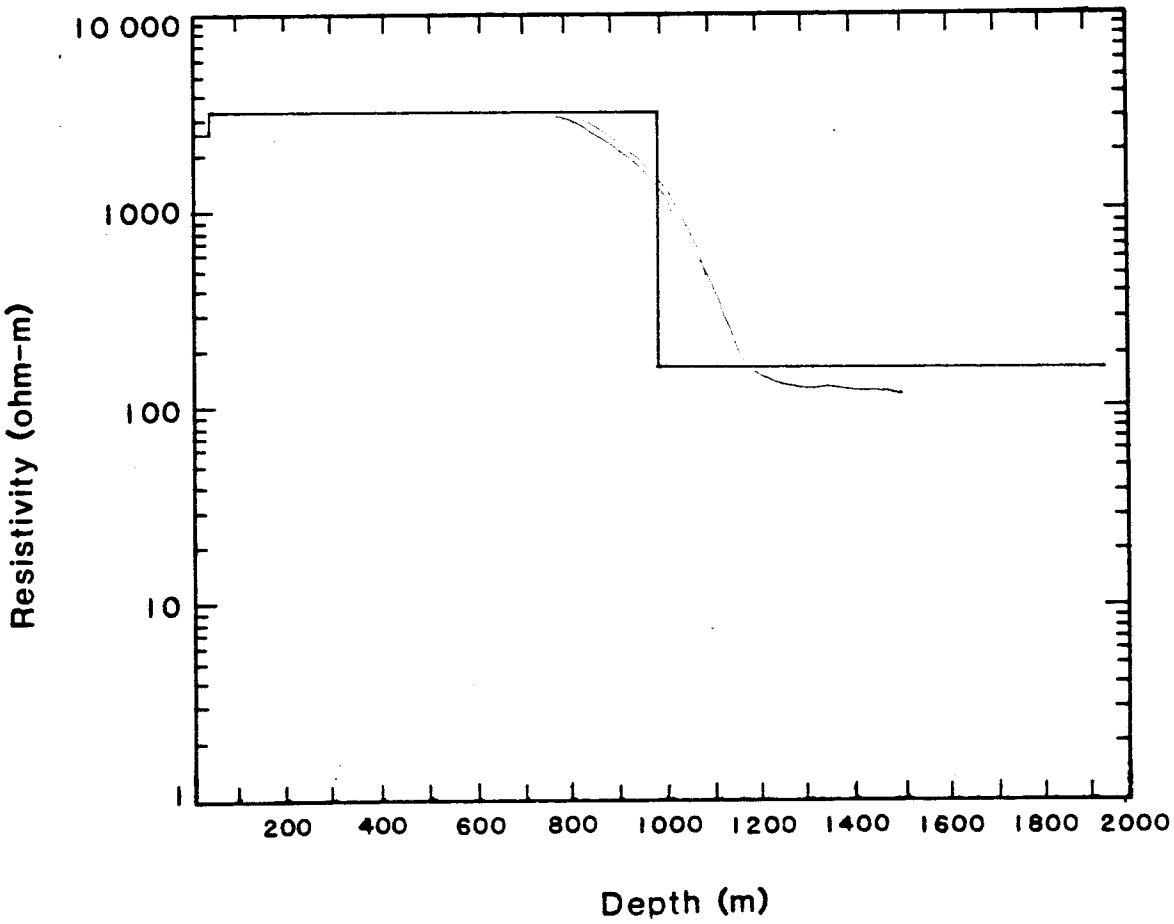
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.40930E-02 | 0.24432E+03 | |
| 2 | SIGMA( 2) = | 0.31389E-03 | 0.31858E+04 | |
| 3 | SIGMA( 3) = | 0.64742E-02 | 0.15446E+03 | |
| 4 | THICK( 1) = | 0.31003E+02 | | 0.31003E+02 |
| 5 | THICK( 2) = | 0.95270E+03 | | 0.98370E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 133



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 134 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.9244E+03 | 0.1000E+04 | -0.7587E+02 | -0.7585E+01 | 0.117E-03 |
| 2 | 0.1100E-03 | 0.6089E+03 | 0.6051E+03 | 0.3775E+01 | 0.6239E+00 | 0.270E-03 |
| 3 | 0.1400E-03 | 0.3586E+03 | 0.3413E+03 | 0.1737E+02 | 0.5090E+01 | 0.777E-03 |
| 4 | 0.1770E-03 | 0.2099E+03 | 0.1939E+03 | 0.1602E+02 | 0.8262E+01 | 0.227E-02 |
| 5 | 0.2200E-03 | 0.1217E+03 | 0.1137E+03 | 0.7940E+01 | 0.6981E+01 | 0.675E-02 |
| 6 | 0.2800E-03 | 0.6577E+02 | 0.6248E+02 | 0.3293E+01 | 0.5270E+01 | 0.231E-01 |
| 7 | 0.3550E-03 | 0.3464E+02 | 0.3409E+02 | 0.5463E+00 | 0.1602E+01 | 0.833E-01 |
| 8 | 0.4430E-03 | 0.1889E+02 | 0.1890E+02 | -0.8810E-02 | -0.4662E-01 | 0.280E+00 |
| 9 | 0.5540E-03 | 0.8740E+01 | 0.1044E+02 | -0.1697E+01 | -0.1626E+02 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.4480E+01 | 0.5200E+01 | -0.7205E+00 | -0.1385E+02 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2670E+01 | 0.2879E+01 | -0.2095E+00 | -0.7274E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1540E+01 | 0.1557E+01 | -0.1665E-01 | -0.1069E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.8200E+00 | 0.7524E+00 | 0.6763E-01 | 0.8990E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.4100E+00 | 0.3786E+00 | 0.3138E-01 | 0.8288E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.2400E+00 | 0.2009E+00 | 0.3905E-01 | 0.1944E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1400E+00 | 0.9925E-01 | 0.4075E-01 | 0.4106E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.6000E-01 | 0.5131E-01 | 0.8687E-02 | 0.1693E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.3000E-01 | 0.2710E-01 | 0.2899E-02 | 0.1070E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.2000E-01 | 0.1403E-01 | 0.5967E-02 | 0.4252E+02 | 0.100E+03 |

* %RMSERR= 16.48

ORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | 0.7818E+00 | 0.1000E+01 | |
| 3 | -0.8632E+00 | -0.9054E+00 | 0.1000E+01 |

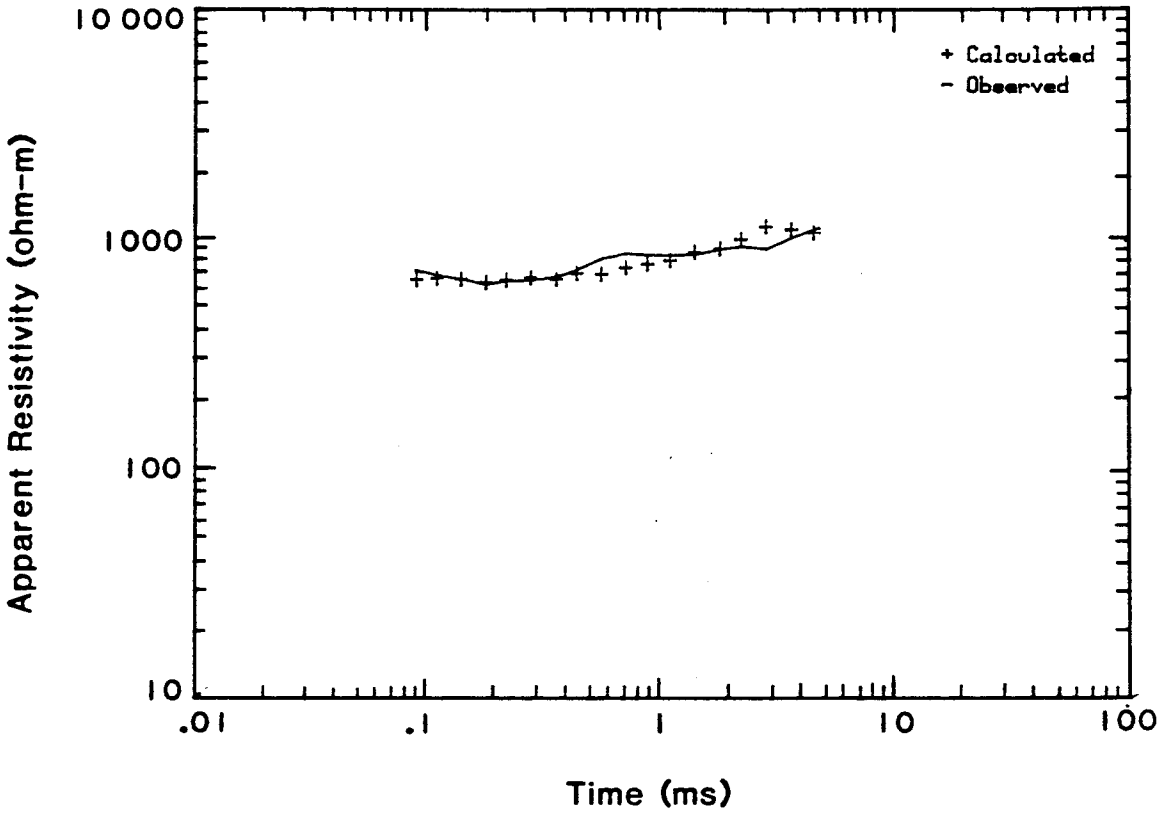
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1502E-02 | 0.6022E-03 | 0.4010E+00 | 0.4010E+02 |
| 2 | 0.5257E-03 | 0.5781E-02 | 0.1100E+02 | 0.1100E+04 |
| 3 | 0.4697E+03 | 0.1919E-01 | 0.4085E-04 | 0.4085E-02 |

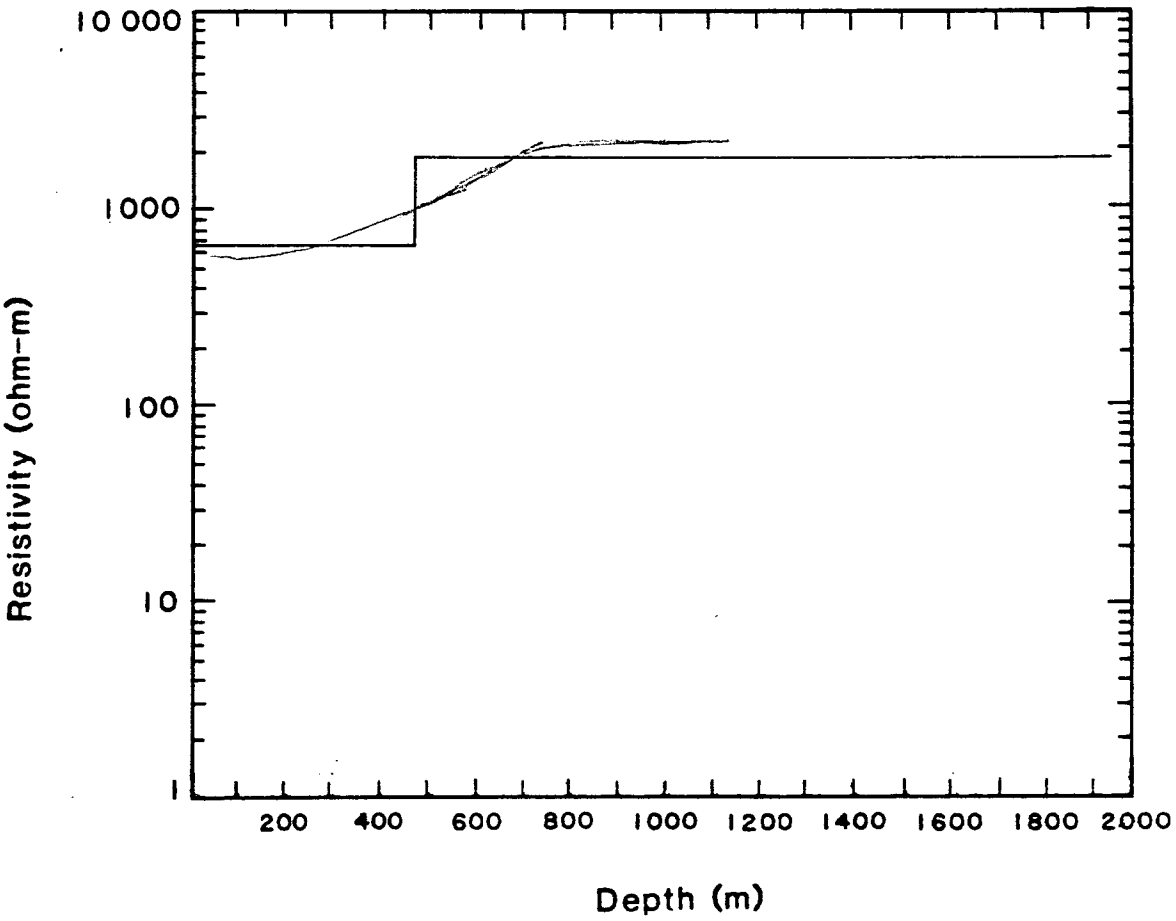
| ARAMETER NAME | | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.15018E-02 | 0.66588E+03 | |
| 2 | SIGMA( 2) | = | 0.52572E-03 | 0.19022E+04 | |
| 3 | THICK( 1) | = | 0.46970E+03 | | 0.46970E+03 |
| 4 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 134



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 135 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3285E+03 | 0.3877E+03 | -0.5919E+02 | -0.1527E+02 | 0.927E-03 |
| 2 | 0.1100E-03 | 0.2056E+03 | 0.2327E+03 | -0.2711E+02 | -0.1165E+02 | 0.237E-02 |
| 3 | 0.1400E-03 | 0.1240E+03 | 0.1279E+03 | -0.3924E+01 | -0.3068E+01 | 0.651E-02 |
| 4 | 0.1770E-03 | 0.7550E+02 | 0.7105E+02 | 0.4453E+01 | 0.6268E+01 | 0.175E-01 |
| 5 | 0.2200E-03 | 0.4621E+02 | 0.4037E+02 | 0.5837E+01 | 0.1446E+02 | 0.468E-01 |
| 6 | 0.2800E-03 | 0.2566E+02 | 0.2162E+02 | 0.4043E+01 | 0.1870E+02 | 0.152E+00 |
| 7 | 0.3550E-03 | 0.1382E+02 | 0.1144E+02 | 0.2378E+01 | 0.2078E+02 | 0.524E+00 |
| 8 | 0.4430E-03 | 0.6640E+01 | 0.6278E+01 | 0.3624E+00 | 0.5773E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.2940E+01 | 0.3425E+01 | -0.4848E+00 | -0.1415E+02 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.1600E+01 | 0.1700E+01 | -0.9969E-01 | -0.5865E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.9900E+00 | 0.9576E+00 | 0.3239E-01 | 0.3382E+01 | 0.100E+03 |
| 12 | 0.1096E-02 | 0.5600E+00 | 0.5240E+00 | 0.3602E-01 | 0.6875E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.3000E+00 | 0.2630E+00 | 0.3696E-01 | 0.1405E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.1600E+00 | 0.1364E+00 | 0.2356E-01 | 0.1727E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.1000E+00 | 0.7465E-01 | 0.2535E-01 | 0.3395E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.5000E-01 | 0.3925E-01 | 0.1075E-01 | 0.2738E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.3000E-01 | 0.2132E-01 | 0.8680E-02 | 0.4071E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.2000E-01 | 0.1176E-01 | 0.8236E-02 | 0.7001E+02 | 0.100E+03 |

** %RMSERR= 24.37

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.3036E+00 | 0.1000E+01 | |
| 3 | -0.6882E+00 | 0.2245E+00 | 0.1000E+01 |

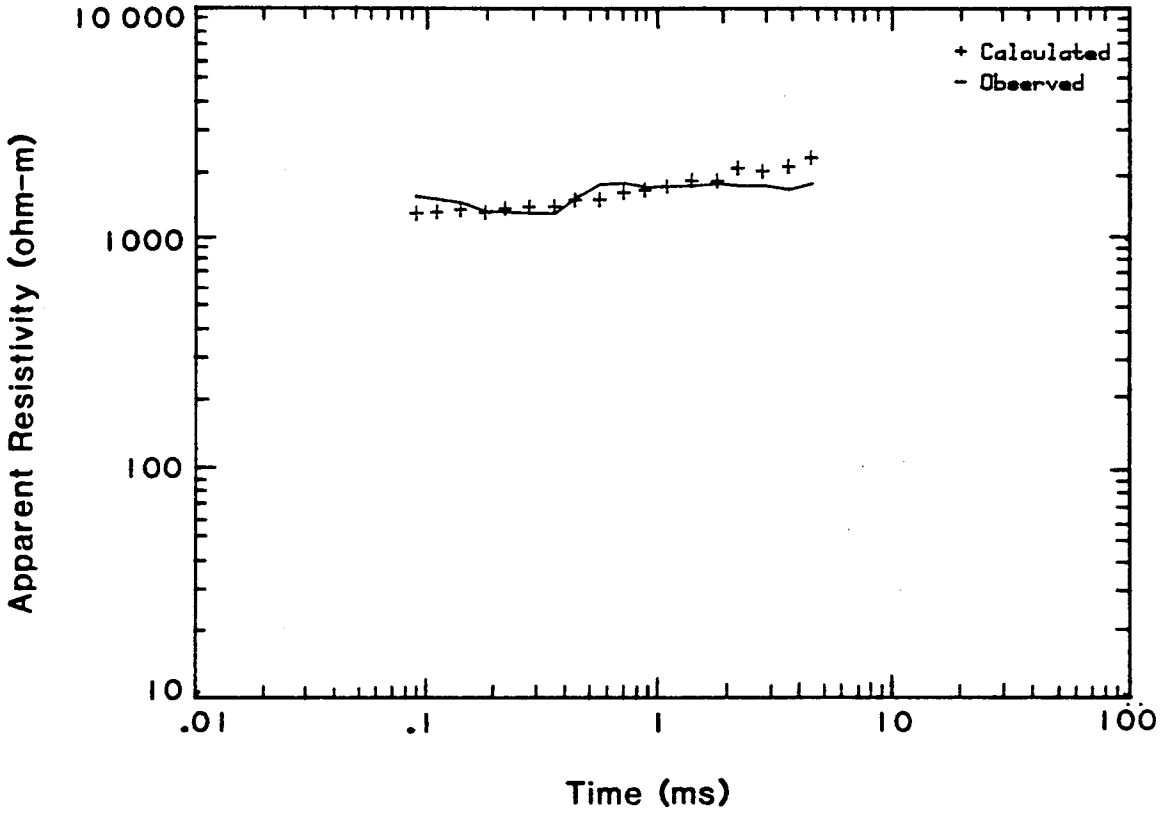
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.7654E-03 | 0.5467E-03 | 0.7142E+00 | 0.7142E+02 |
| 2 | 0.3854E-03 | 0.1686E-02 | 0.4374E+01 | 0.4374E+03 |
| 3 | 0.4771E+03 | 0.4445E-02 | 0.9318E-05 | 0.9318E-03 |

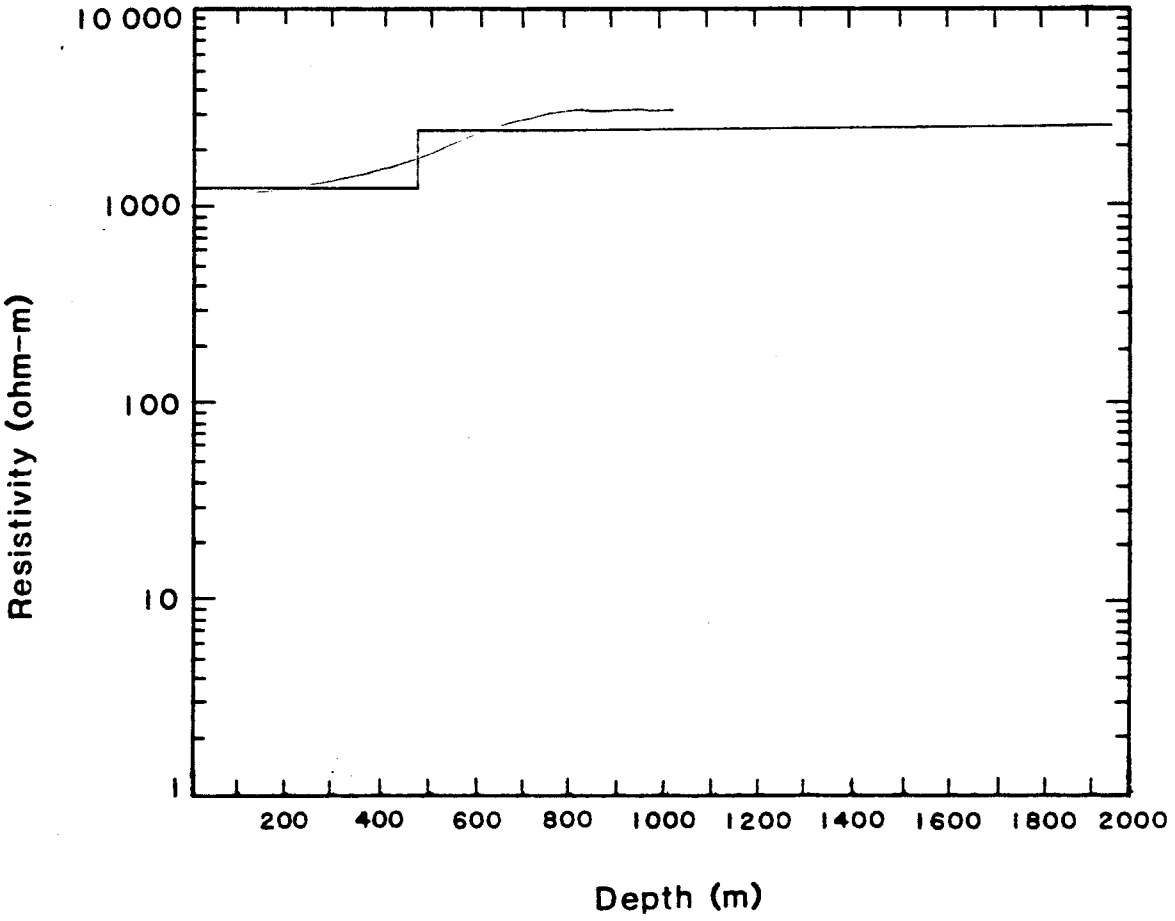
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.76545E-03 | 0.13064E+04 | |
| 2 | SIGMA( 2) | = | 0.38539E-03 | 0.25948E+04 | |
| 3 | THICK( 1) | = | 0.47708E+03 | | 0.47708E+03 |
| 4 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 135



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 136 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1453E+04 | 0.1497E+04 | -0.4424E+02 | -0.2955E+01 | 0.474E-04 |
| 2 | 0.1100E-03 | 0.7807E+03 | 0.8154E+03 | -0.3475E+02 | -0.4262E+01 | 0.164E-03 |
| 3 | 0.1400E-03 | 0.3870E+03 | 0.3678E+03 | 0.1918E+02 | 0.5214E+01 | 0.668E-03 |
| 4 | 0.1770E-03 | 0.1971E+03 | 0.1831E+03 | 0.1401E+02 | 0.7656E+01 | 0.257E-02 |
| 5 | 0.2200E-03 | 0.1015E+03 | 0.9326E+02 | 0.8241E+01 | 0.8837E+01 | 0.971E-02 |
| 6 | 0.2800E-03 | 0.4857E+02 | 0.4296E+02 | 0.5608E+01 | 0.1305E+02 | 0.424E-01 |
| 7 | 0.3550E-03 | 0.2204E+02 | 0.2052E+02 | 0.1520E+01 | 0.7409E+01 | 0.206E+00 |
| 8 | 0.4430E-03 | 0.1078E+02 | 0.1090E+02 | -0.1193E+00 | -0.1095E+01 | 0.861E+00 |
| 9 | 0.5540E-03 | 0.4840E+01 | 0.5053E+01 | -0.2134E+00 | -0.4223E+01 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2330E+01 | 0.2549E+01 | -0.2189E+00 | -0.8586E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1240E+01 | 0.1345E+01 | -0.1050E+00 | -0.7806E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.6600E+00 | 0.6855E+00 | -0.2555E-01 | -0.3726E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.3400E+00 | 0.3856E+00 | -0.4561E-01 | -0.1183E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.1600E+00 | 0.1920E+00 | -0.3204E-01 | -0.1669E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.1000E+00 | 0.1227E+00 | -0.2265E-01 | -0.1847E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.6000E-01 | 0.7003E-01 | -0.1003E-01 | -0.1433E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.4000E-01 | 0.4156E-01 | -0.1563E-02 | -0.3760E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.3000E-01 | 0.2551E-01 | 0.4493E-02 | 0.1762E+02 | 0.100E+03 |

** %RMSERR= 10.20

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.7154E+00 | 0.1000E+01 | | | |
| 3 | -0.9114E+00 | -0.5977E+00 | 0.1000E+01 | | |
| 4 | -0.9828E+00 | -0.7834E+00 | 0.8852E+00 | 0.1000E+01 | |
| 5 | 0.4159E+00 | 0.4735E+00 | -0.3534E+00 | -0.4059E+00 | 0.1000E+01 |

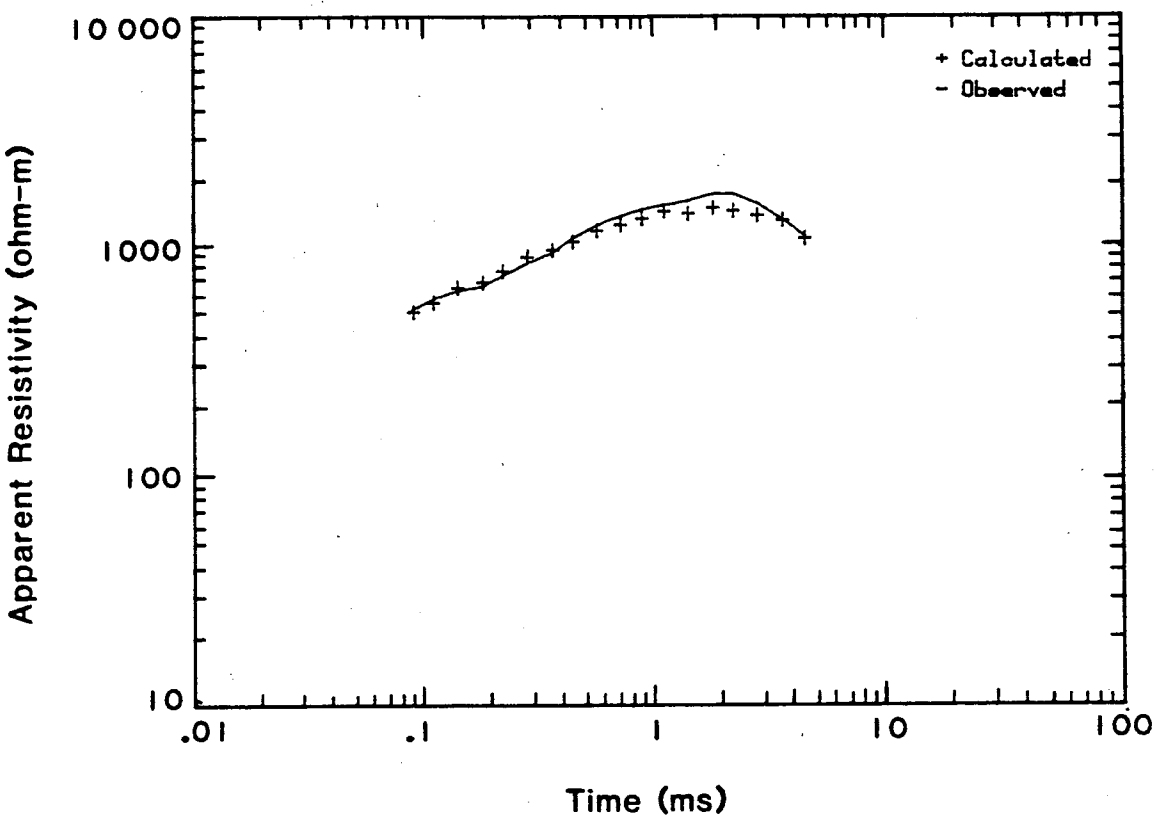
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.3524E-02 | 0.1290E-02 | 0.3662E+00 | 0.3662E+02 |
| 2 0.4631E-03 | 0.3604E-03 | 0.7783E+00 | 0.7783E+02 |
| 3 0.1580E-02 | 0.3497E-02 | 0.2213E+01 | 0.2213E+03 |
| 4 0.6345E+02 | 0.5664E-02 | 0.8926E-04 | 0.8926E-02 |
| 5 0.1206E+04 | 0.5112E-02 | 0.4238E-05 | 0.4238E-03 |

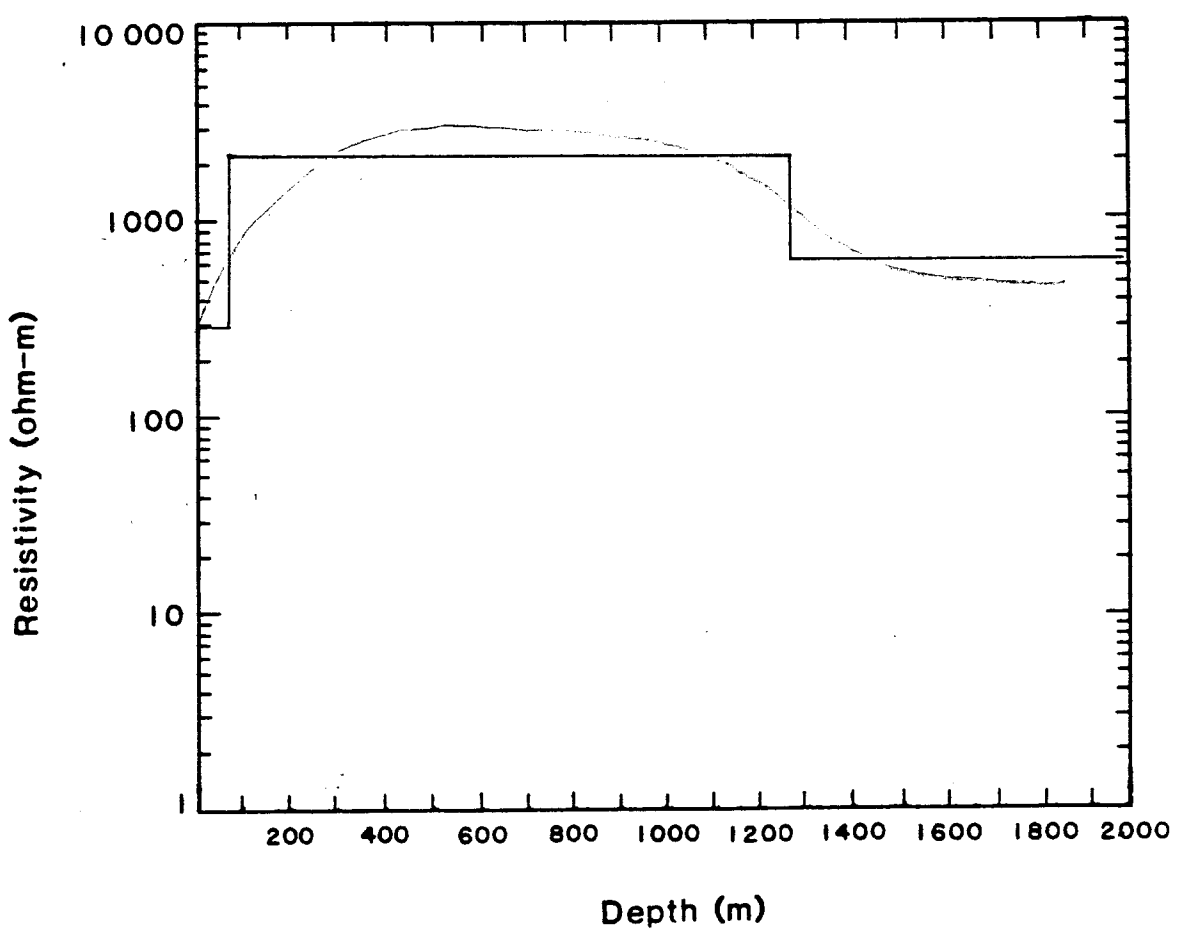
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.35239E-02 | 0.28378E+03 | |
| 2 SIGMA( 2) = | 0.46307E-03 | 0.21595E+04 | |
| 3 SIGMA( 3) = | 0.15801E-02 | 0.63286E+03 | |
| 4 THICK( 1) = | 0.63447E+02 | | 0.63447E+02 |
| 5 THICK( 2) = | 0.12063E+04 | | 0.12697E+04 |
| 6 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 136



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 137 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4126E+03 | 0.4489E+03 | -0.3622E+02 | -0.8070E+01 | 0.587E-03 |
| 2 | 0.1100E-03 | 0.2633E+03 | 0.2705E+03 | -0.7179E+01 | -0.2654E+01 | 0.144E-02 |
| 3 | 0.1400E-03 | 0.1480E+03 | 0.1490E+03 | -0.1011E+01 | -0.6787E+00 | 0.457E-02 |
| 4 | 0.1770E-03 | 0.8386E+02 | 0.8238E+02 | 0.1479E+01 | 0.1795E+01 | 0.142E-01 |
| 5 | 0.2200E-03 | 0.4764E+02 | 0.4580E+02 | 0.1839E+01 | 0.4016E+01 | 0.441E-01 |
| 6 | 0.2800E-03 | 0.2448E+02 | 0.2334E+02 | 0.1142E+01 | 0.4894E+01 | 0.167E+00 |
| 7 | 0.3550E-03 | 0.1190E+02 | 0.1173E+02 | 0.1694E+00 | 0.1445E+01 | 0.706E+00 |
| 8 | 0.4430E-03 | 0.5910E+01 | 0.5906E+01 | 0.3764E-02 | 0.6373E-01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.2680E+01 | 0.2954E+01 | -0.2736E+00 | -0.9264E+01 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.1200E+01 | 0.1341E+01 | -0.1407E+00 | -0.1050E+02 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.7100E+00 | 0.7138E+00 | -0.3838E-02 | -0.5377E+00 | 0.100E+03 |
| 12 | 0.1096E-02 | 0.4200E+00 | 0.3878E+00 | 0.3223E-01 | 0.8313E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.2400E+00 | 0.2118E+00 | 0.2819E-01 | 0.1331E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.1400E+00 | 0.1353E+00 | 0.4740E-02 | 0.3505E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.9000E-01 | 0.9239E-01 | -0.2390E-02 | -0.2587E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.6000E-01 | 0.6402E-01 | -0.4021E-02 | -0.6280E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.5000E-01 | 0.4555E-01 | 0.4445E-02 | 0.9758E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.3000E-01 | 0.3249E-01 | -0.2494E-02 | -0.7674E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.2000E-01 | 0.2263E-01 | -0.2627E-02 | -0.1161E+02 | 0.100E+03 |

** %RMSERR= 6.91

ORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.5216E+00 | 0.1000E+01 | | | |
| 3 | 0.1837E+00 | -0.6966E+00 | 0.1000E+01 | | |
| 4 | -0.2603E+00 | -0.4503E+00 | 0.5899E+00 | 0.1000E+01 | |
| 5 | -0.8555E-01 | 0.7096E-01 | 0.5455E-01 | -0.6476E-01 | 0.1000E+01 |

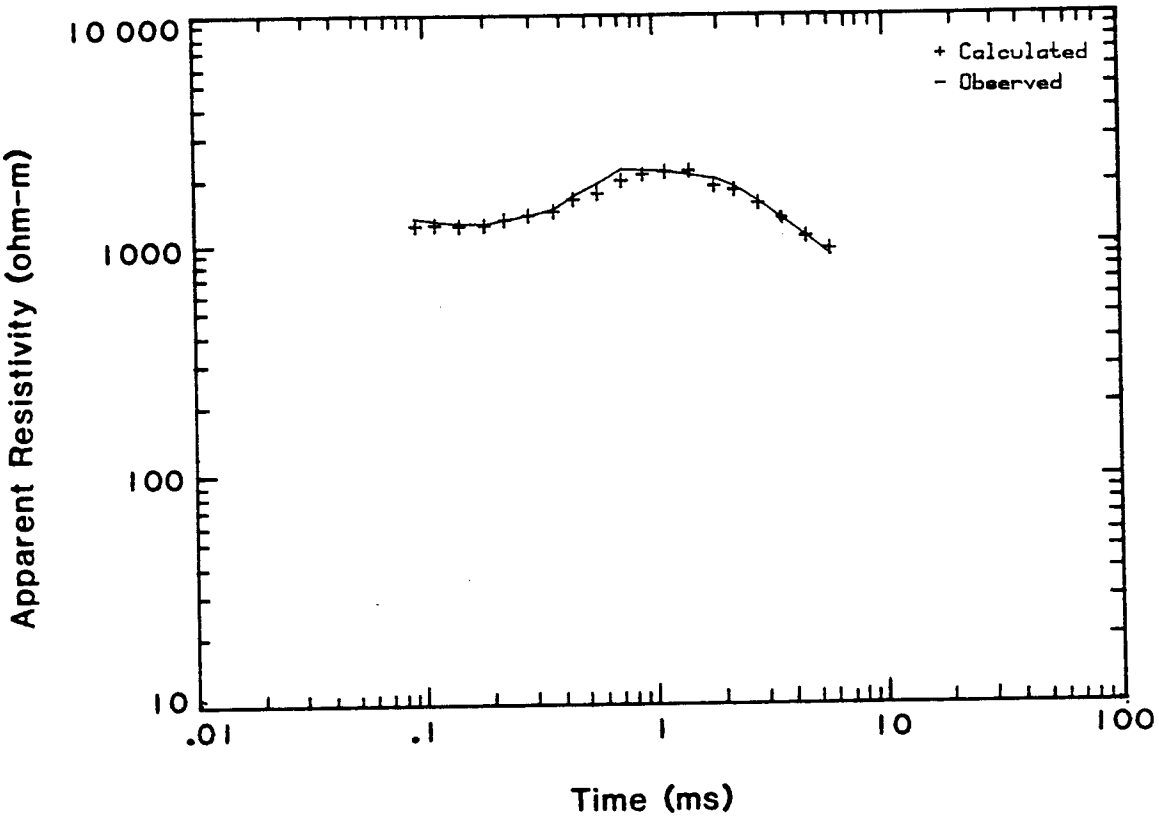
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.8375E-03 | 0.3183E-03 | 0.3800E+00 | 0.3800E+02 |
| 2 | 0.3596E-04 | 0.1198E-02 | 0.3331E+02 | 0.3331E+04 |
| 3 | 0.6177E-02 | 0.7574E-02 | 0.1226E+01 | 0.1226E+03 |
| 4 | 0.5074E+03 | 0.5556E-02 | 0.1095E-04 | 0.1095E-02 |
| 5 | 0.8415E+03 | 0.4643E-02 | 0.5518E-05 | 0.5518E-03 |

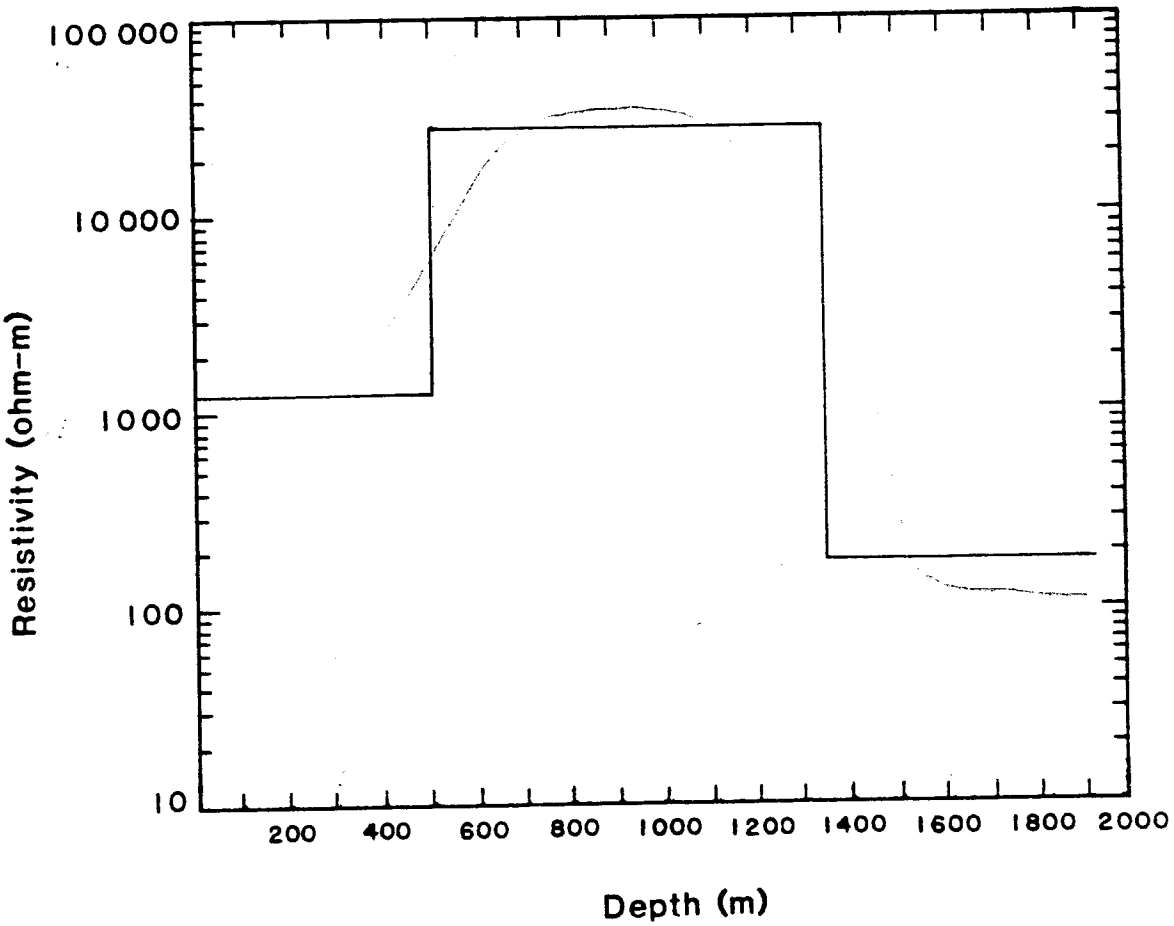
| | ARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.83746E-03 | 0.11941E+04 | |
| 2 | SIGMA( 2) | = | 0.35959E-04 | 0.27809E+05 | |
| 3 | SIGMA( 3) | = | 0.61772E-02 | 0.16188E+03 | |
| 4 | THICK( 1) | = | 0.50740E+03 | | 0.50740E+03 |
| 5 | THICK( 2) | = | 0.84152E+03 | | 0.13489E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 137



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 138 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2334E+03 | 0.2543E+03 | -0.2088E+02 | -0.8209E+01 | 0.184E-02 |
| 2 | 0.1100E-03 | 0.1479E+03 | 0.1539E+03 | -0.5997E+01 | -0.3896E+01 | 0.457E-02 |
| 3 | 0.1400E-03 | 0.8721E+02 | 0.8716E+02 | 0.5349E-01 | 0.6137E-01 | 0.131E-01 |
| 4 | 0.1770E-03 | 0.5294E+02 | 0.5124E+02 | 0.1705E+01 | 0.3327E+01 | 0.357E-01 |
| 5 | 0.2200E-03 | 0.3368E+02 | 0.3189E+02 | 0.1790E+01 | 0.5612E+01 | 0.882E-01 |
| 6 | 0.2800E-03 | 0.2036E+02 | 0.1876E+02 | 0.1597E+01 | 0.8514E+01 | 0.241E+00 |
| 7 | 0.3550E-03 | 0.1180E+02 | 0.1131E+02 | 0.4909E+00 | 0.4341E+01 | 0.718E+00 |
| 8 | 0.4430E-03 | 0.7230E+01 | 0.7069E+01 | 0.1612E+00 | 0.2280E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.4240E+01 | 0.4326E+01 | -0.8612E-01 | -0.1991E+01 | 0.400E+01 |
| 10 | 0.7130E-03 | 0.2490E+01 | 0.2530E+01 | -0.4033E-01 | -0.1594E+01 | 0.111E+02 |
| 11 | 0.8810E-03 | 0.1540E+01 | 0.1593E+01 | -0.5278E-01 | -0.3313E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.9400E+00 | 0.9854E+00 | -0.4544E-01 | -0.4611E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.5800E+00 | 0.5623E+00 | 0.1770E-01 | 0.3147E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.3000E+00 | 0.3263E+00 | -0.2626E-01 | -0.8047E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.1800E+00 | 0.2007E+00 | -0.2070E-01 | -0.1031E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1000E+00 | 0.1137E+00 | -0.1369E-01 | -0.1204E+02 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.5000E-01 | 0.6623E-01 | -0.1623E-01 | -0.2451E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.3000E-01 | 0.3948E-01 | -0.9475E-02 | -0.2400E+02 | 0.100E+03 |

** %RMSERR= 9.90

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.4891E+00 | 0.1000E+01 | |
| 3 | -0.5985E+00 | 0.6294E+00 | 0.1000E+01 |

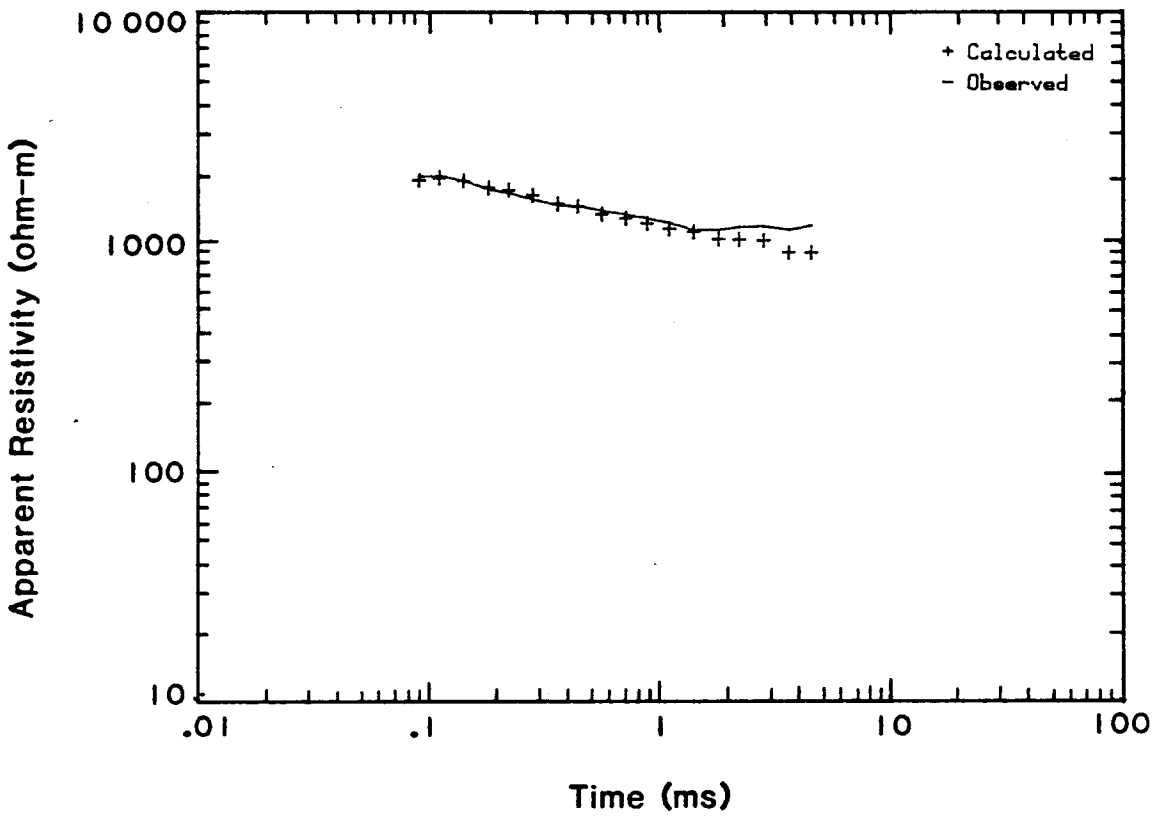
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.5994E-03 | 0.7558E-04 | 0.1261E+00 | 0.1261E+02 |
| 2 0.1408E-02 | 0.7665E-03 | 0.5444E+00 | 0.5444E+02 |
| 3 0.4331E+03 | 0.2072E-02 | 0.4785E-05 | 0.4785E-03 |

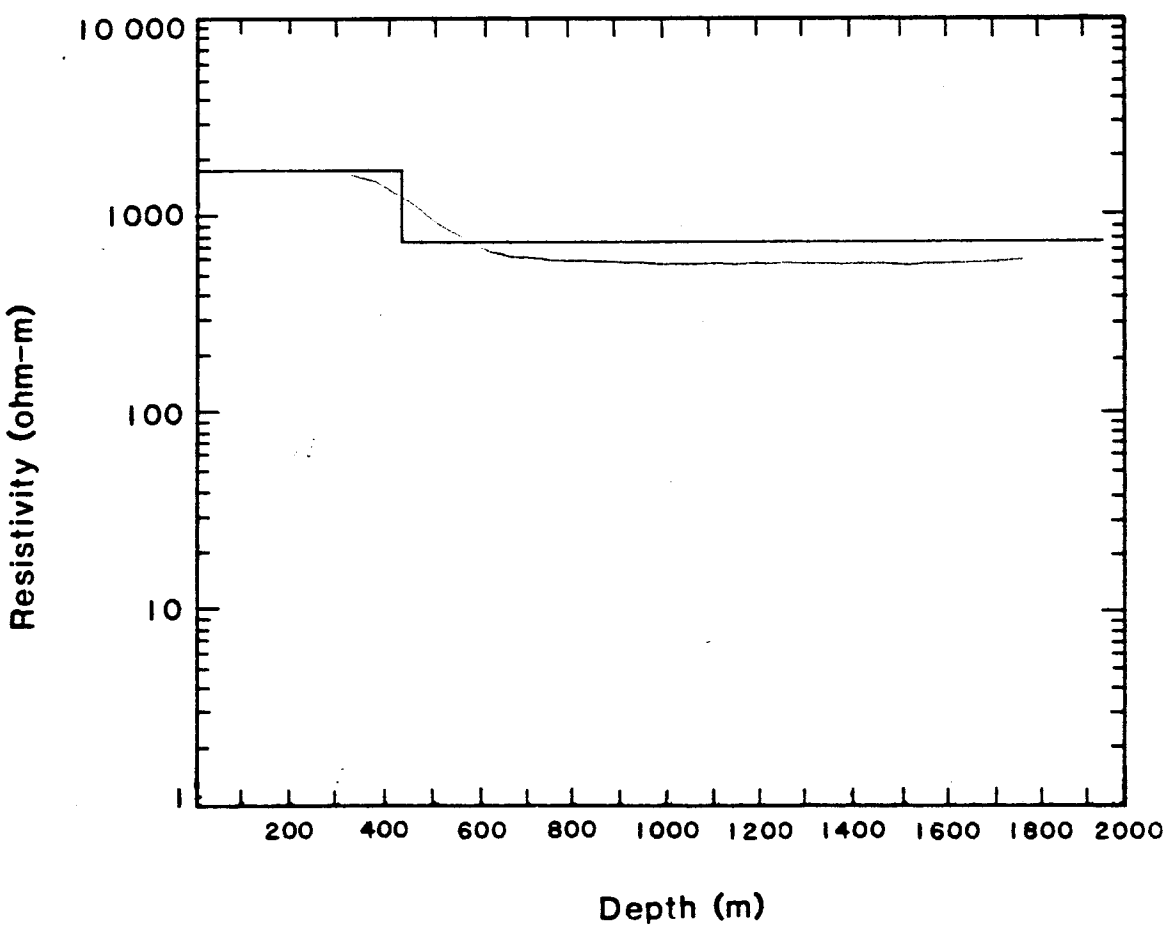
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 SIGMA( 1) | = | 0.59935E-03 | 0.16685E+04 | |
| 2 SIGMA( 2) | = | 0.14078E-02 | 0.71031E+03 | |
| 3 THICK( 1) | = | 0.43308E+03 | | 0.43308E+03 |
| 4 SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 138



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 139 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2616E+03 | 0.2586E+03 | 0.2972E+01 | 0.1149E+01 | 0.146E-02 |
| 2 | 0.1100E-03 | 0.1725E+03 | 0.1704E+03 | 0.2113E+01 | 0.1240E+01 | 0.336E-02 |
| 3 | 0.1400E-03 | 0.1023E+03 | 0.1035E+03 | -0.1252E+01 | -0.1209E+01 | 0.956E-02 |
| 4 | 0.1770E-03 | 0.6214E+02 | 0.6285E+02 | -0.7126E+00 | -0.1134E+01 | 0.259E-01 |
| 5 | 0.2200E-03 | 0.3989E+02 | 0.3931E+02 | 0.5783E+00 | 0.1471E+01 | 0.628E-01 |
| 6 | 0.2800E-03 | 0.2368E+02 | 0.2332E+02 | 0.3586E+00 | 0.1538E+01 | 0.178E+00 |
| 7 | 0.3550E-03 | 0.1414E+02 | 0.1425E+02 | -0.1140E+00 | -0.7996E+00 | 0.500E+00 |
| 8 | 0.4430E-03 | 0.8430E+01 | 0.9122E+01 | -0.6923E+00 | -0.7589E+01 | 0.100E+01 |
| 9 | 0.5540E-03 | 0.5700E+01 | 0.5889E+01 | -0.1891E+00 | -0.3211E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.3790E+01 | 0.3692E+01 | 0.9768E-01 | 0.2645E+01 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2620E+01 | 0.2502E+01 | 0.1180E+00 | 0.4718E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1750E+01 | 0.1672E+01 | 0.7756E-01 | 0.4638E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.1130E+01 | 0.1052E+01 | 0.7800E-01 | 0.7414E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.7400E+00 | 0.6732E+00 | 0.6675E-01 | 0.9915E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.4800E+00 | 0.4470E+00 | 0.3301E-01 | 0.7386E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.2700E+00 | 0.2780E+00 | -0.7991E-02 | -0.2875E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.1400E+00 | 0.1755E+00 | -0.3547E-01 | -0.2021E+02 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.8000E-01 | 0.1128E+00 | -0.3285E-01 | -0.2911E+02 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.4000E-01 | 0.6949E-01 | -0.2949E-01 | -0.4244E+02 | 0.100E+03 |

** %RMSERR= 13.38

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.7756E+00 | 0.1000E+01 | | | |
| 3 | 0.4957E+00 | -0.7665E+00 | 0.1000E+01 | | |
| 4 | -0.7583E+00 | 0.9705E+00 | -0.8042E+00 | 0.1000E+01 | |
| 5 | 0.2333E+00 | -0.6493E+00 | 0.6442E+00 | -0.6546E+00 | 0.1000E+01 |

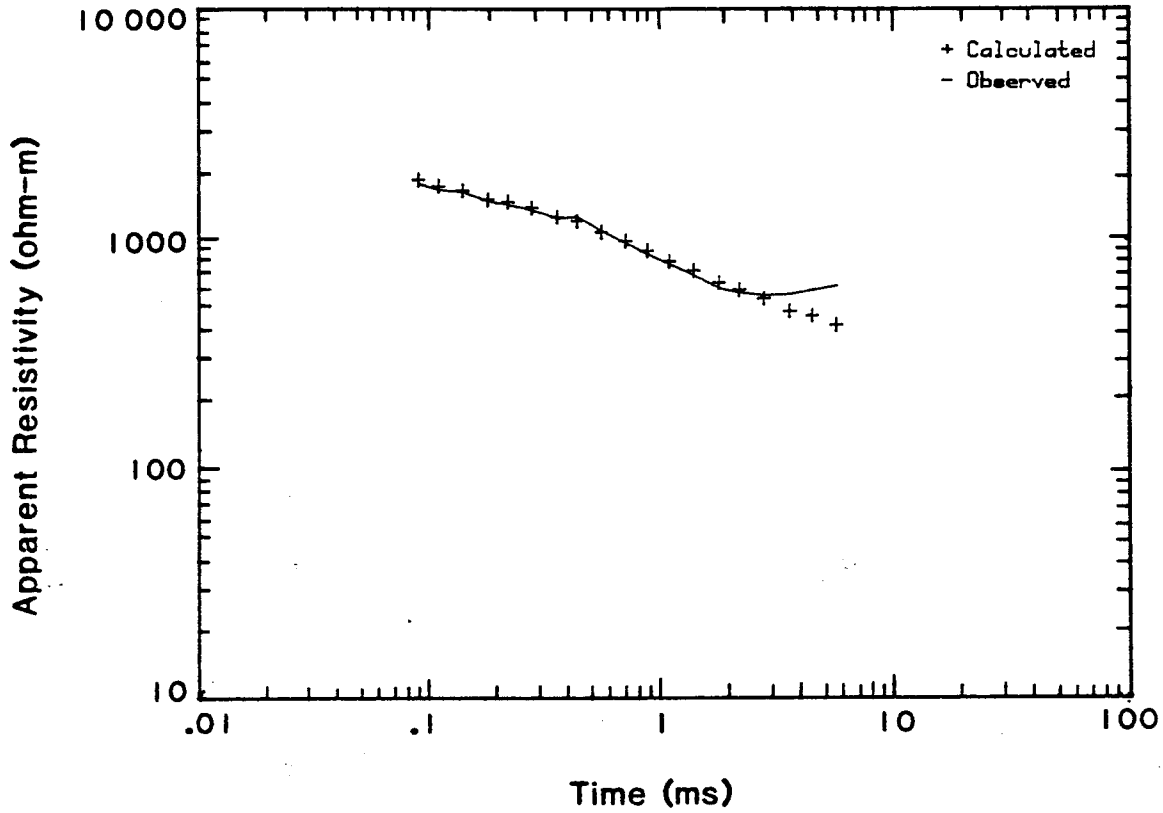
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1369E-03 | 0.7312E-03 | 0.5341E+01 | 0.5341E+03 |
| 2 | 0.1395E-02 | 0.3038E-02 | 0.2178E+01 | 0.2178E+03 |
| 3 | 0.4560E-02 | 0.7358E-02 | 0.1613E+01 | 0.1613E+03 |
| 4 | 0.1607E+03 | 0.6907E-02 | 0.4299E-04 | 0.4299E-02 |
| 5 | 0.4531E+03 | 0.4213E-02 | 0.9298E-05 | 0.9298E-03 |

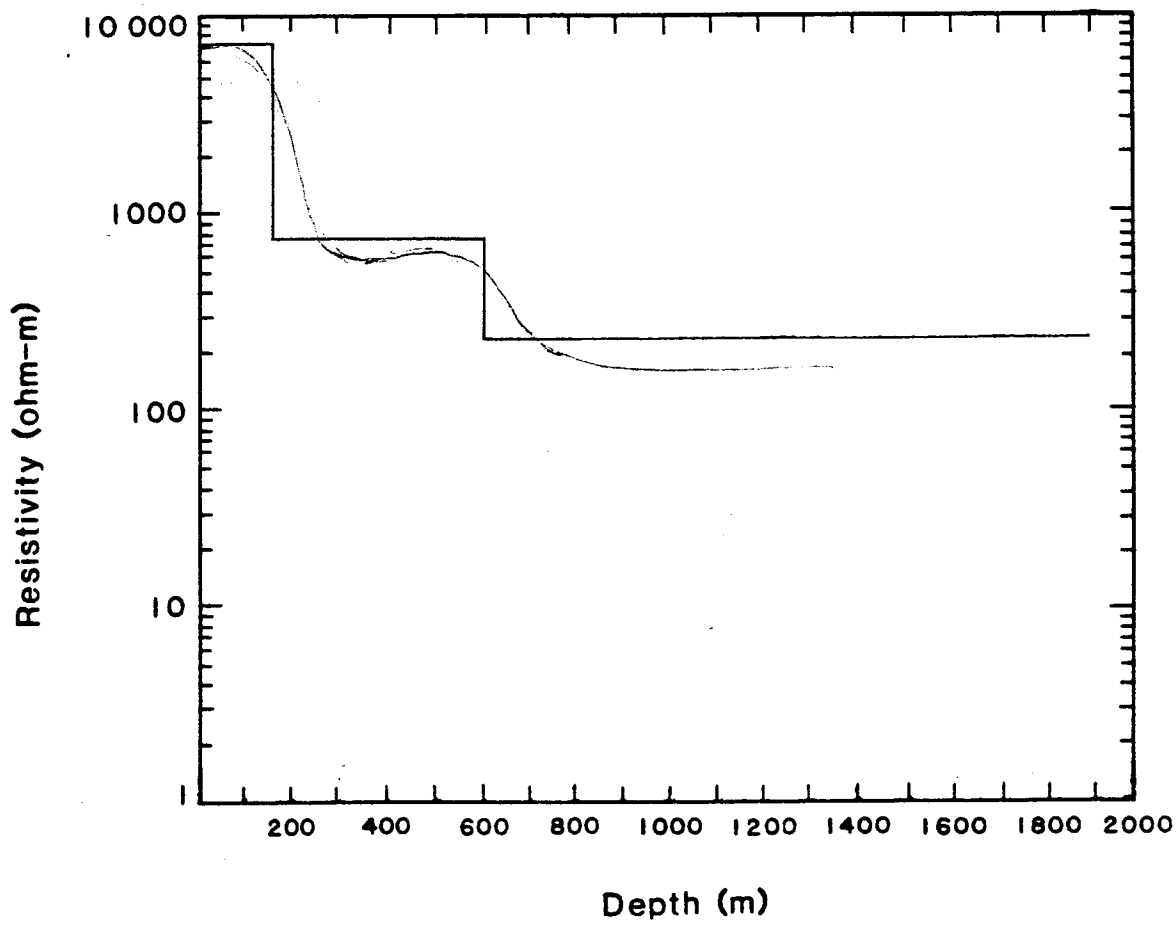
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.13690E-03 | 0.73044E+04 | |
| 2 | SIGMA( 2) | = | 0.13947E-02 | 0.71699E+03 | |
| 3 | SIGMA( 3) | = | 0.45602E-02 | 0.21929E+03 | |
| 4 | THICK( 1) | = | 0.16067E+03 | | 0.16067E+03 |
| 5 | THICK( 2) | = | 0.45312E+03 | | 0.61378E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 139



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 141 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3638E+03 | 0.3163E+03 | 0.4749E+02 | 0.1502E+02 | 0.756E-03 |
| 2 | 0.1100E-03 | 0.2377E+03 | 0.2226E+03 | 0.1516E+02 | 0.6814E+01 | 0.177E-02 |
| 3 | 0.1400E-03 | 0.1449E+03 | 0.1494E+03 | -0.4537E+01 | -0.3036E+01 | 0.476E-02 |
| 4 | 0.1770E-03 | 0.9230E+02 | 0.9938E+02 | -0.7081E+01 | -0.7125E+01 | 0.117E-01 |
| 5 | 0.2200E-03 | 0.6116E+02 | 0.6749E+02 | -0.6330E+01 | -0.9379E+01 | 0.267E-01 |
| 6 | 0.2800E-03 | 0.4052E+02 | 0.4345E+02 | -0.2926E+01 | -0.6734E+01 | 0.609E-01 |
| 7 | 0.3550E-03 | 0.2642E+02 | 0.2775E+02 | -0.1325E+01 | -0.4776E+01 | 0.143E+00 |
| 8 | 0.4430E-03 | 0.1786E+02 | 0.1806E+02 | -0.1990E+00 | -0.1102E+01 | 0.313E+00 |
| 9 | 0.5540E-03 | 0.1161E+02 | 0.1160E+02 | 0.5164E-02 | 0.4450E-01 | 0.742E+00 |
| 10 | 0.7130E-03 | 0.7230E+01 | 0.6947E+01 | 0.2828E+00 | 0.4071E+01 | 0.100E+01 |
| 11 | 0.8810E-03 | 0.4880E+01 | 0.4483E+01 | 0.3967E+00 | 0.8848E+01 | 0.400E+01 |
| 12 | 0.1096E-02 | 0.3100E+01 | 0.2833E+01 | 0.2669E+00 | 0.9422E+01 | 0.400E+01 |
| 13 | 0.1411E-02 | 0.1780E+01 | 0.1642E+01 | 0.1384E+00 | 0.8429E+01 | 0.111E+02 |
| 14 | 0.1795E-02 | 0.1040E+01 | 0.9721E+00 | 0.6794E-01 | 0.6989E+01 | 0.111E+02 |
| 15 | 0.2224E-02 | 0.6500E+00 | 0.6039E+00 | 0.4606E-01 | 0.7627E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.3700E+00 | 0.3458E+00 | 0.2422E-01 | 0.7003E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.2100E+00 | 0.2037E+00 | 0.6322E-02 | 0.3104E+01 | 0.100E+03 |
| 18 | 0.4490E-02 | 0.1300E+00 | 0.1224E+00 | 0.7572E-02 | 0.6185E+01 | 0.100E+03 |
| 19 | 0.5700E-02 | 0.7000E-01 | 0.7058E-01 | -0.5783E-03 | -0.8194E+00 | 0.100E+03 |
| 20 | 0.7190E-02 | 0.4000E-01 | 0.4107E-01 | -0.1074E-02 | -0.2614E+01 | 0.100E+03 |

* %RMSERR= 6.91

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.5799E+00 | 0.1000E+01 | |
| 3 | -0.5422E+00 | 0.7793E+00 | 0.1000E+01 |

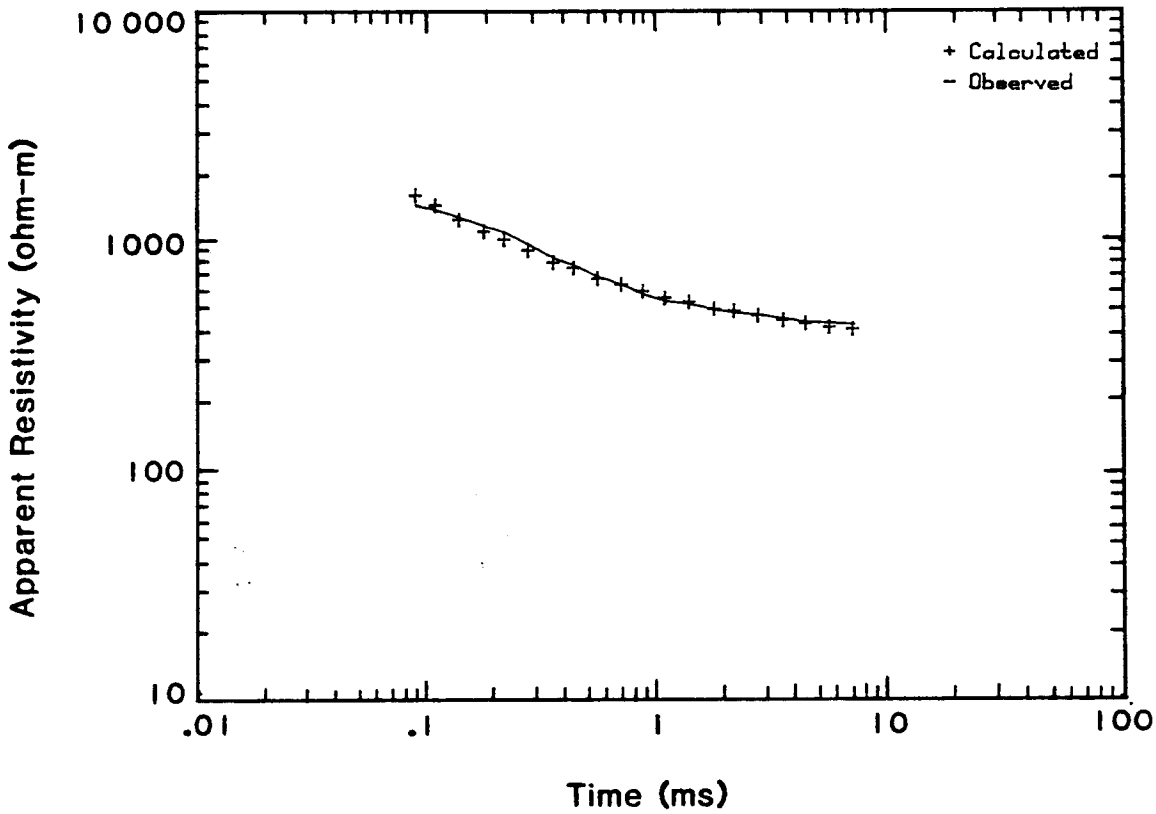
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.3691E-03 | 0.2280E-03 | 0.6179E+00 | 0.6179E+02 |
| 2 0.3109E-02 | 0.9950E-03 | 0.3201E+00 | 0.3201E+02 |
| 3 0.2241E+03 | 0.3317E-02 | 0.1480E-04 | 0.1480E-02 |

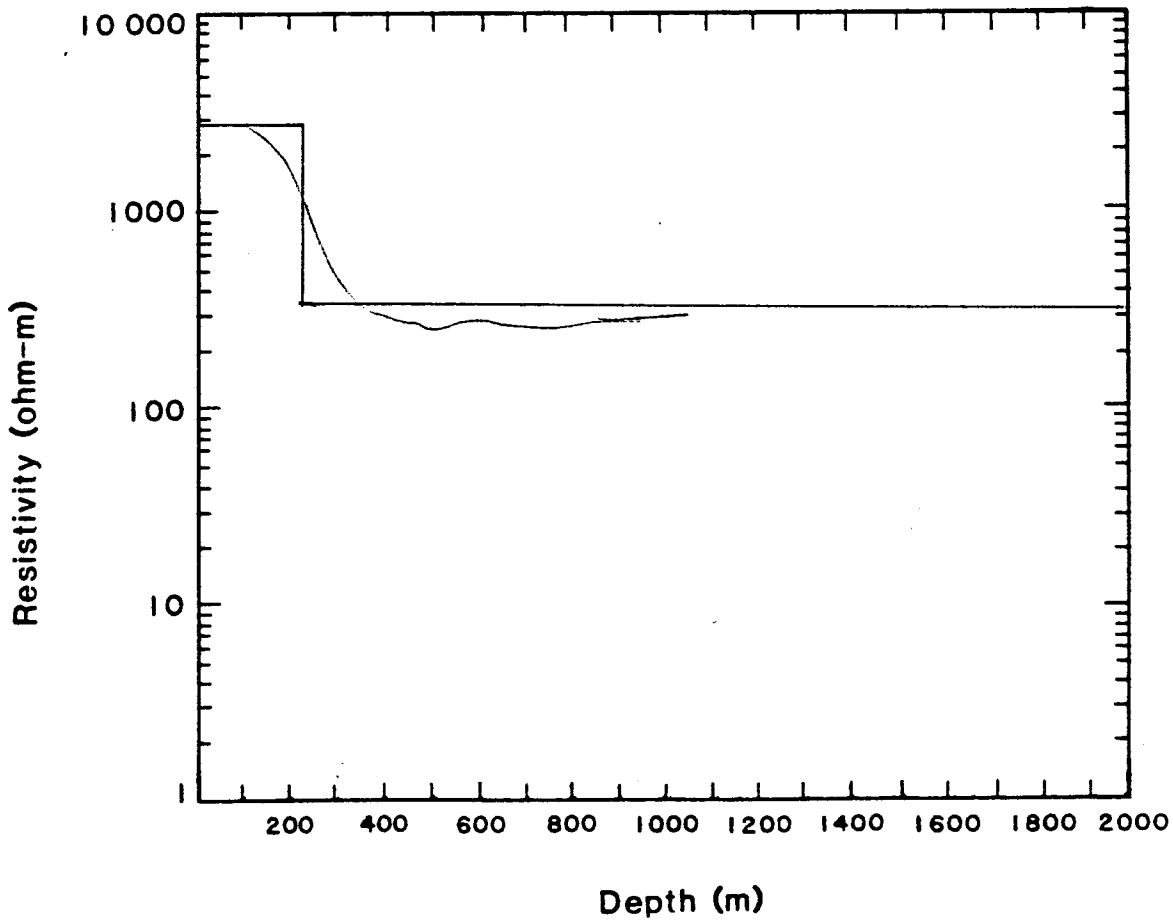
| ARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.36907E-03 | 0.27095E+04 | |
| 2 SIGMA( 2) = | 0.31090E-02 | 0.32165E+03 | |
| 3 THICK( 1) = | 0.22414E+03 | | 0.22414E+03 |
| 4 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 141



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 142 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.1100E-03 | 0.7992E+03 | 0.8613E+03 | -0.6208E+02 | -0.7208E+01 | 0.157E-03 |
| 2 | 0.1400E-03 | 0.5026E+03 | 0.5109E+03 | -0.8221E+01 | -0.1609E+01 | 0.396E-03 |
| 3 | 0.1770E-03 | 0.3192E+03 | 0.3065E+03 | 0.1265E+02 | 0.4128E+01 | 0.982E-03 |
| 4 | 0.2200E-03 | 0.2000E+03 | 0.1877E+03 | 0.1234E+02 | 0.6578E+01 | 0.250E-02 |
| 5 | 0.2800E-03 | 0.1156E+03 | 0.1069E+03 | 0.8660E+01 | 0.8101E+01 | 0.749E-02 |
| 6 | 0.3550E-03 | 0.6490E+02 | 0.6010E+02 | 0.4796E+01 | 0.7979E+01 | 0.237E-01 |
| 7 | 0.4430E-03 | 0.3561E+02 | 0.3417E+02 | 0.1443E+01 | 0.4222E+01 | 0.789E-01 |
| 8 | 0.5540E-03 | 0.1867E+02 | 0.1875E+02 | -0.7766E-01 | -0.4143E+00 | 0.287E+00 |
| 9 | 0.7130E-03 | 0.8180E+01 | 0.9247E+01 | -0.1067E+01 | -0.1154E+02 | 0.100E+01 |
| 10 | 0.8810E-03 | 0.4900E+01 | 0.5008E+01 | -0.1077E+00 | -0.2150E+01 | 0.400E+01 |
| 11 | 0.1096E-02 | 0.2590E+01 | 0.2595E+01 | -0.4790E-02 | -0.1846E+00 | 0.111E+02 |
| 12 | 0.1411E-02 | 0.1210E+01 | 0.1170E+01 | 0.4030E-01 | 0.3445E+01 | 0.111E+02 |
| 13 | 0.1795E-02 | 0.5600E+00 | 0.5400E+00 | 0.2004E-01 | 0.3711E+01 | 0.100E+03 |
| 14 | 0.2224E-02 | 0.2800E+00 | 0.2663E+00 | 0.1371E-01 | 0.5147E+01 | 0.100E+03 |
| 15 | 0.2850E-02 | 0.1000E+00 | 0.1121E+00 | -0.1210E-01 | -0.1080E+02 | 0.100E+03 |

** %RMSERR= 6.16

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.2382E-01 | 0.1000E+01 | | | |
| 3 | 0.1652E+00 | 0.4548E+00 | 0.1000E+01 | | |
| 4 | -0.6187E+00 | 0.5634E+00 | 0.1806E+00 | 0.1000E+01 | |
| 5 | 0.2140E+00 | -0.7772E+00 | -0.4936E+00 | -0.7296E+00 | 0.1000E+01 |

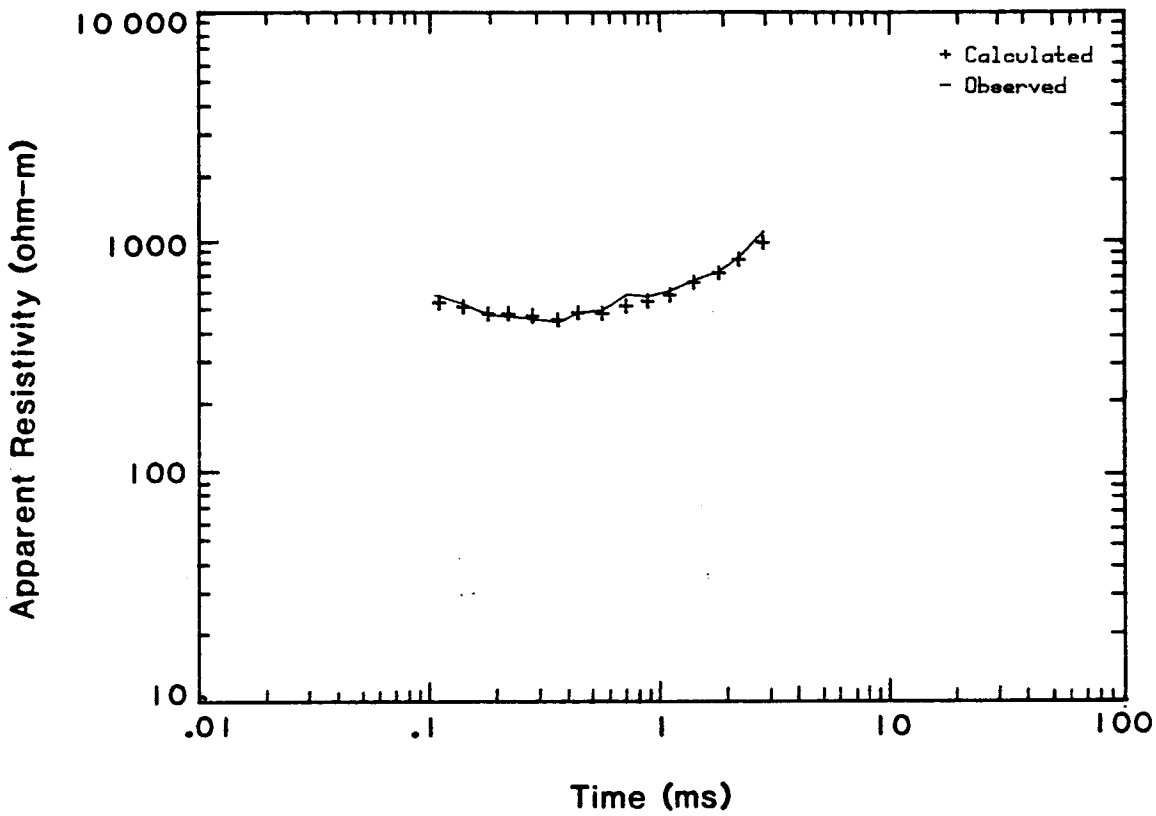
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1976E-03 | 0.1025E-02 | 0.5189E+01 | 0.5189E+03 |
| 2 | 0.2485E-02 | 0.1680E-02 | 0.6762E+00 | 0.6762E+02 |
| 3 | 0.3932E-04 | 0.2241E-01 | 0.5699E+03 | 0.5699E+05 |
| 4 | 0.3454E+02 | 0.1128E-02 | 0.3267E-04 | 0.3267E-02 |
| 5 | 0.3979E+03 | 0.1070E-01 | 0.2689E-04 | 0.2689E-02 |

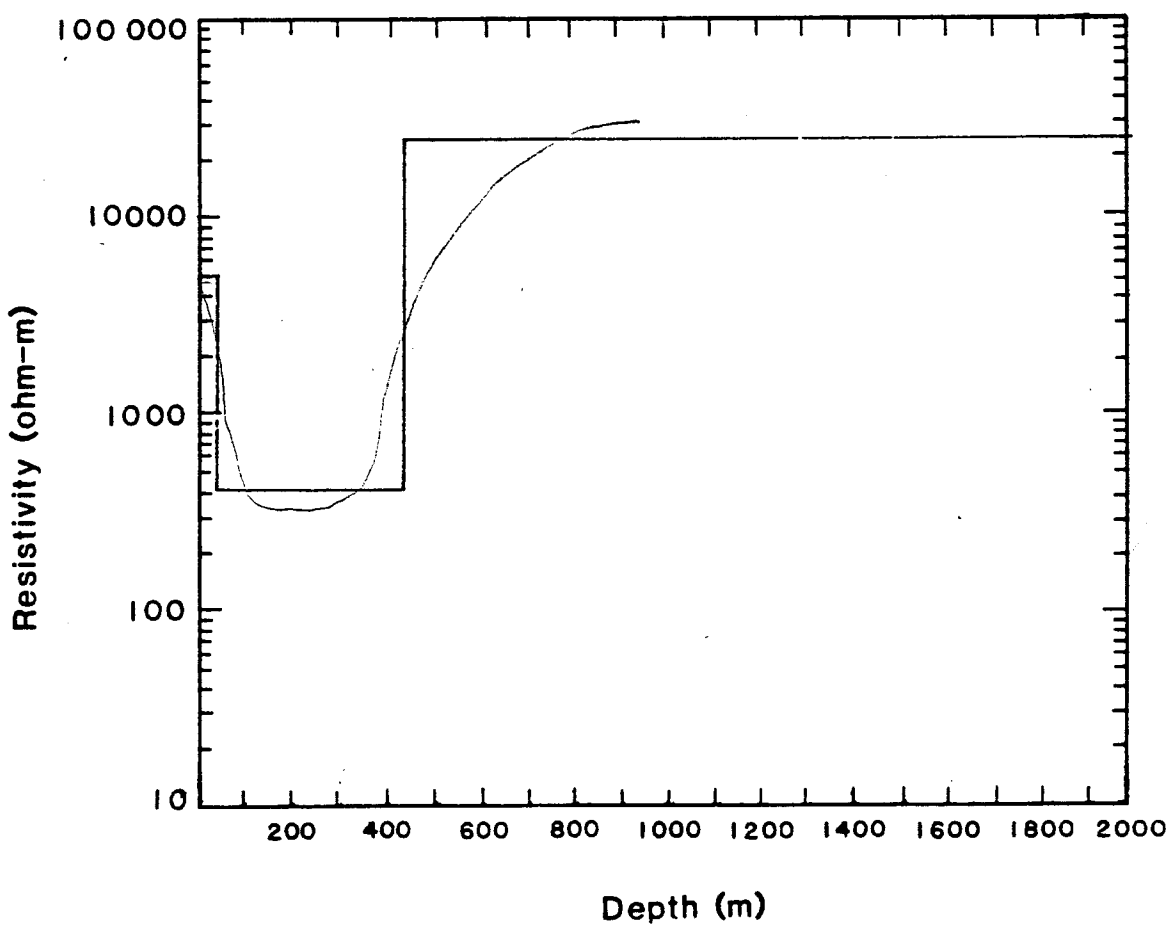
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.19758E-03 | 0.50612E+04 | |
| 2 | SIGMA( 2) | = | 0.24851E-02 | 0.40240E+03 | |
| 3 | SIGMA( 3) | = | 0.39321E-04 | 0.25432E+05 | |
| 4 | THICK( 1) | = | 0.34540E+02 | | 0.34540E+02 |
| 5 | THICK( 2) | = | 0.39791E+03 | | 0.43245E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 142



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 144 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1944E+03 | 0.2049E+03 | -0.1044E+02 | -0.5094E+01 | 0.265E-02 |
| 2 | 0.1100E-03 | 0.1453E+03 | 0.1462E+03 | -0.8970E+00 | -0.6137E+00 | 0.474E-02 |
| 3 | 0.1400E-03 | 0.9886E+02 | 0.9855E+02 | 0.3057E+00 | 0.3102E+00 | 0.102E-01 |
| 4 | 0.1770E-03 | 0.6827E+02 | 0.6652E+02 | 0.1745E+01 | 0.2624E+01 | 0.215E-01 |
| 5 | 0.2200E-03 | 0.4686E+02 | 0.4571E+02 | 0.1152E+01 | 0.2521E+01 | 0.452E-01 |
| 6 | 0.2800E-03 | 0.3066E+02 | 0.2977E+02 | 0.8891E+00 | 0.2987E+01 | 0.106E+00 |
| 7 | 0.3550E-03 | 0.1972E+02 | 0.1918E+02 | 0.5429E+00 | 0.2831E+01 | 0.257E+00 |
| 8 | 0.4430E-03 | 0.1249E+02 | 0.1241E+02 | 0.8294E-01 | 0.6685E+00 | 0.641E+00 |
| 9 | 0.5540E-03 | 0.7480E+01 | 0.7809E+01 | -0.3287E+00 | -0.4209E+01 | 0.130E+01 |
| 10 | 0.7130E-03 | 0.4300E+01 | 0.4495E+01 | -0.1949E+00 | -0.4336E+01 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.2760E+01 | 0.2764E+01 | -0.3850E-02 | -0.1393E+00 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1660E+01 | 0.1635E+01 | 0.2538E-01 | 0.1553E+01 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.8800E+00 | 0.8652E+00 | 0.1477E-01 | 0.1707E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.5000E+00 | 0.4670E+00 | 0.3302E-01 | 0.7070E+01 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.2800E+00 | 0.2632E+00 | 0.1683E-01 | 0.6397E+01 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.1400E+00 | 0.1339E+00 | 0.6116E-02 | 0.4566E+01 | 0.100E+03 |
| 17 | 0.3600E-02 | 0.6000E-01 | 0.7090E-01 | -0.1090E-01 | -0.1538E+02 | 0.100E+03 |
| 18 | 0.4500E-02 | 0.3000E-01 | 0.3787E-01 | -0.7874E-02 | -0.2079E+02 | 0.100E+03 |

* %RMSERR= 6.99

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.2103E+00 | 0.1000E+01 | | | |
| 3 | -0.2239E+00 | -0.1802E+00 | 0.1000E+01 | | |
| 4 | 0.3069E+00 | 0.6902E+00 | -0.2519E+00 | 0.1000E+01 | |
| 5 | -0.2020E+00 | -0.5447E+00 | -0.3413E+00 | -0.3726E+00 | 0.1000E+01 |

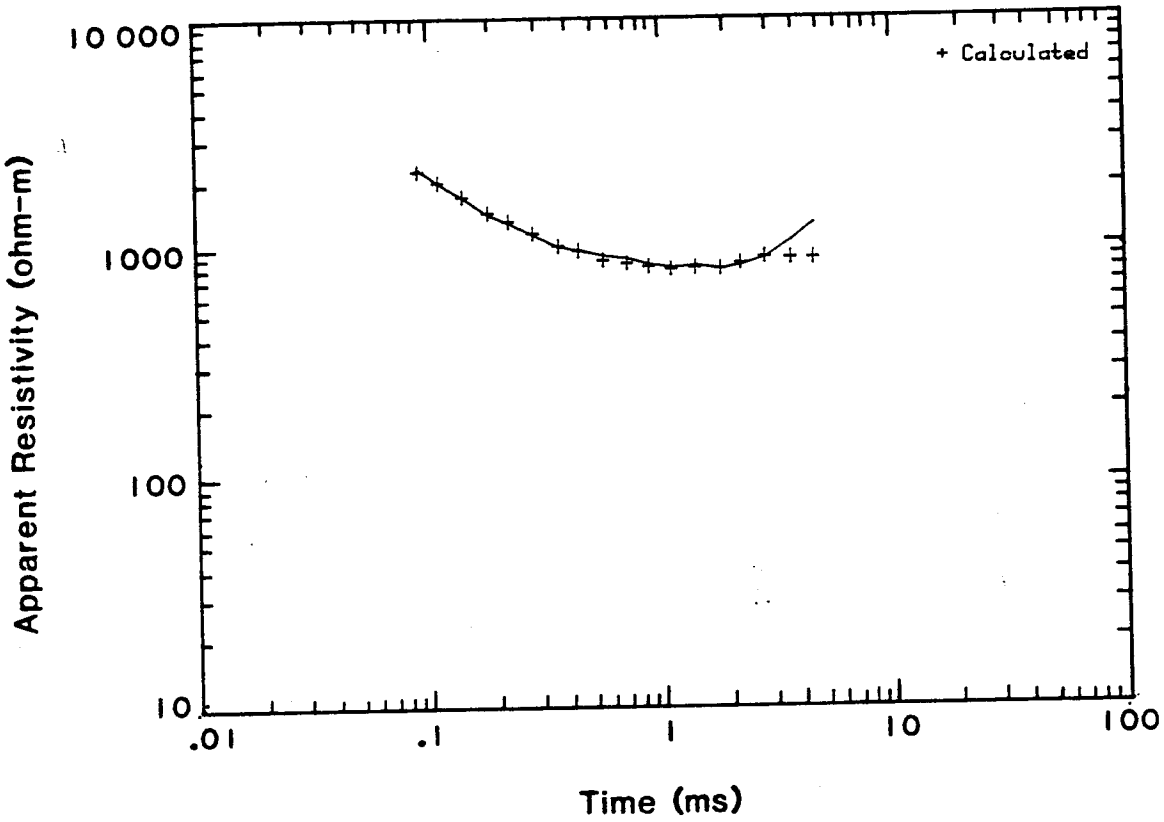
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 | 0.1171E-03 | 0.1728E-03 | 0.1476E+01 | 0.1476E+03 |
| 2 | 0.2231E-02 | 0.9516E-03 | 0.4264E+00 | 0.4264E+02 |
| 3 | 0.6101E-03 | 0.8282E-03 | 0.1358E+01 | 0.1358E+03 |
| 4 | 0.2330E+03 | 0.1444E-02 | 0.6199E-05 | 0.6199E-03 |
| 5 | 0.4561E-03 | 0.2643E-02 | 0.5795E-05 | 0.5795E-03 |

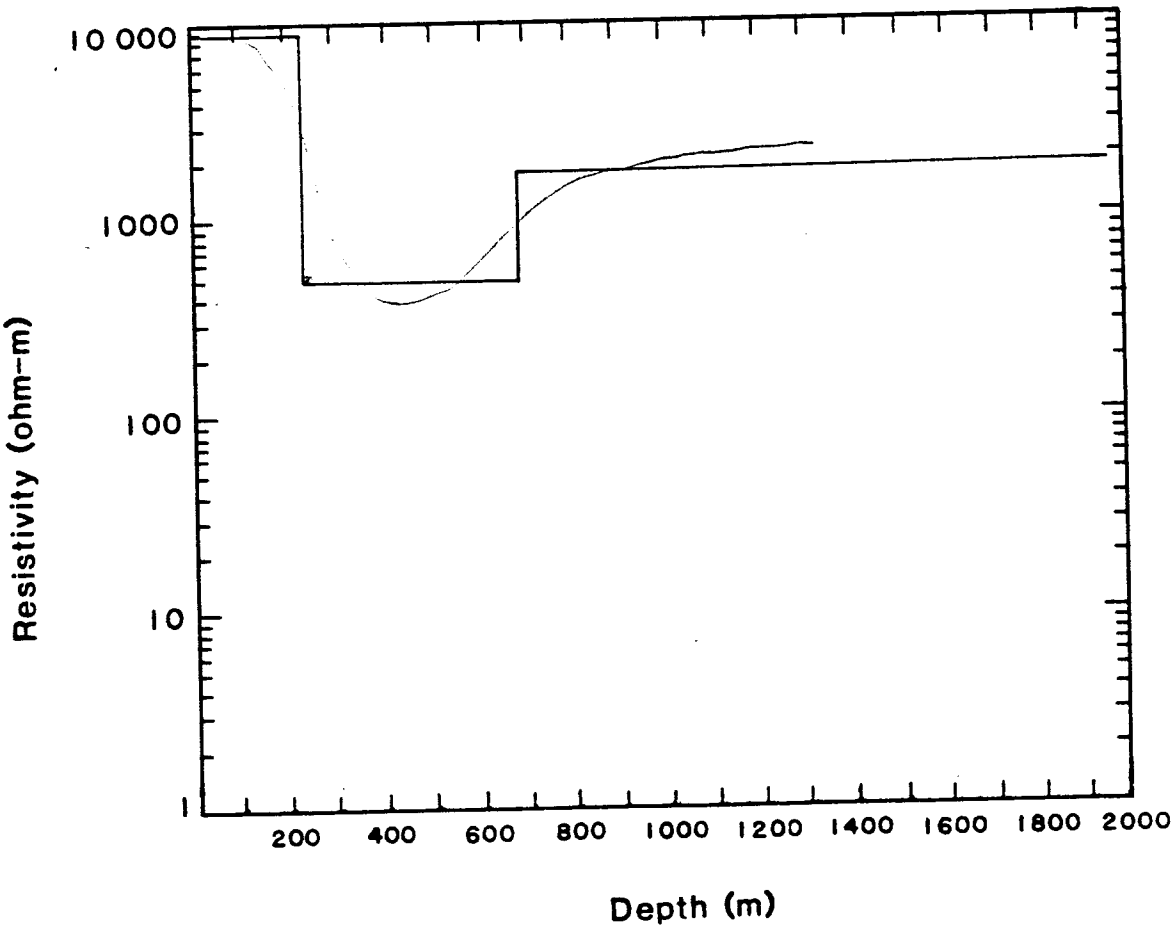
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.11713E-03 | 0.85378E+04 | |
| 2 SIGMA( 2) = | 0.22316E-02 | 0.44811E+03 | |
| 3 SIGMA( 3) = | 0.61009E-03 | 0.16391E+04 | |
| 4 THICK( 1) = | 0.23296E+03 | | 0.2125[illegible]E+0[illegible] |
| 5 THICK( 2) = | 0.45607E+03 | | 0.6890[illegible]E+[illegible] |
| 6 [illegible] = | 0.30700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 144



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 145 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3432E+03 | 0.3465E+03 | -0.3318E+01 | -0.9576E+00 | 0.849E-03 |
| 2 | 0.1100E-03 | 0.2256E+03 | 0.2315E+03 | -0.5826E+01 | -0.2517E+01 | 0.196E-02 |
| 3 | 0.1400E-03 | 0.1397E+03 | 0.1439E+03 | -0.4151E+01 | -0.2885E+01 | 0.512E-02 |
| 4 | 0.1770E-03 | 0.8889E+02 | 0.9016E+02 | -0.1273E+01 | -0.1412E+01 | 0.127E-01 |
| 5 | 0.2200E-03 | 0.5732E+02 | 0.5746E+02 | -0.1411E+00 | -0.2455E+00 | 0.304E-01 |
| 6 | 0.2800E-03 | 0.3480E+02 | 0.3398E+02 | 0.8242E+00 | 0.2426E+01 | 0.826E-01 |
| 7 | 0.3550E-03 | 0.2047E+02 | 0.1980E+02 | 0.6750E+00 | 0.3410E+01 | 0.237E+00 |
| 8 | 0.4430E-03 | 0.1208E+02 | 0.1164E+02 | 0.4411E+00 | 0.3790E+01 | 0.685E+00 |
| 9 | 0.5540E-03 | 0.6080E+01 | 0.6657E+01 | -0.5772E+00 | -0.8671E+01 | 0.100E+01 |
| 10 | 0.7130E-03 | 0.3260E+01 | 0.3432E+01 | -0.1722E+00 | -0.5018E+01 | 0.400E+01 |
| 11 | 0.8810E-03 | 0.1800E+01 | 0.1934E+01 | -0.1337E+00 | -0.6917E+01 | 0.111E+02 |
| 12 | 0.1096E-02 | 0.1050E+01 | 0.1058E+01 | -0.8383E-02 | -0.7920E+00 | 0.111E+02 |
| 13 | 0.1411E-02 | 0.5700E+00 | 0.5090E+00 | 0.6101E-01 | 0.1199E+02 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.3000E+00 | 0.2513E+00 | 0.4865E-01 | 0.1936E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.1700E+00 | 0.1338E+00 | 0.3624E-01 | 0.2710E+02 | 0.100E+03 |
| 16 | 0.2850E-02 | 0.9000E-01 | 0.6322E-01 | 0.2678E-01 | 0.4235E+02 | 0.100E+03 |

** %RMSERR= 14.24

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.1507E+00 | 0.1000E+01 | | | |
| 3 | -0.2966E+00 | -0.5318E+00 | 0.1000E+01 | | |
| 4 | 0.1758E+00 | 0.6674E+00 | -0.7107E+00 | 0.1000E+01 | |
| 5 | -0.5504E+00 | -0.4140E+00 | 0.4840E+00 | -0.3440E+00 | 0.1000E+01 |

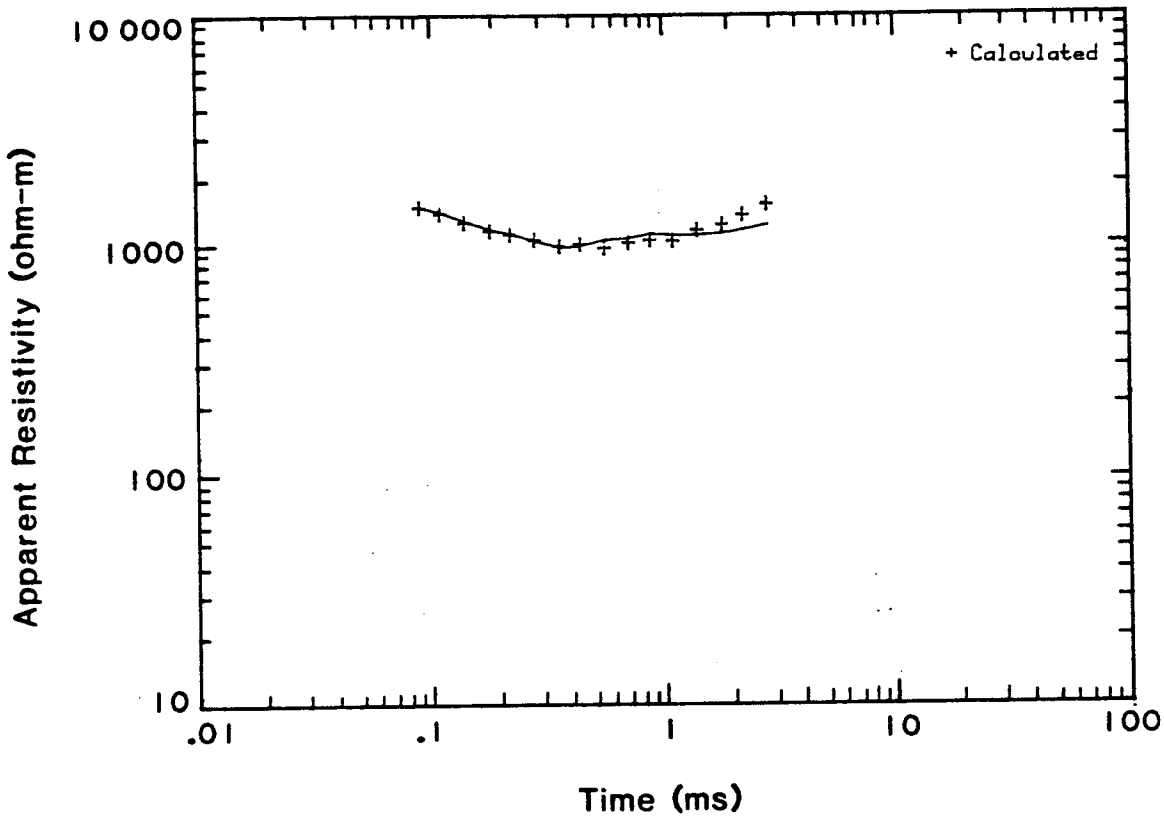
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1210E-03 | 0.7170E-03 | 0.5925E+01 | 0.5925E+03 |
| 2 0.1504E-02 | 0.1112E-02 | 0.7391E+00 | 0.7391E+02 |
| 3 0.2659E-03 | 0.1546E-02 | 0.5815E+01 | 0.5815E+03 |
| 4 0.1293E+03 | 0.2856E-02 | 0.2209E-04 | 0.2209E-02 |
| 5 0.4584E+03 | 0.6471E-02 | 0.1411E-04 | 0.1411E-02 |

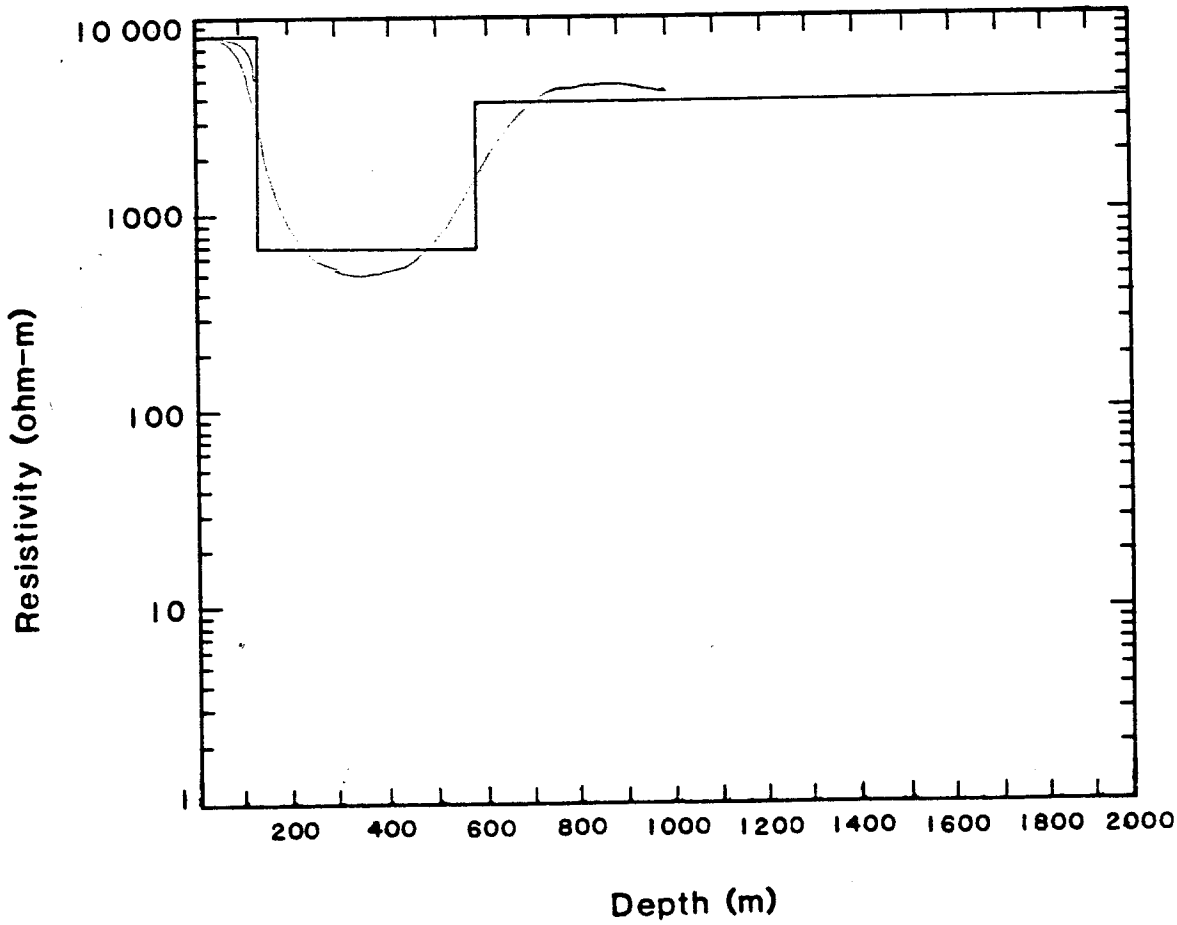
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.12101E-03 | 0.82637E+04 | |
| 2 SIGMA( 2) = | 0.15044E-02 | 0.66473E+03 | |
| 3 SIGMA( 3) = | 0.26591E-03 | 0.37606E+04 | |
| 4 THICK( 1) = | 0.12934E+03 | | 0.12934E+03 |
| 5 THICK( 2) = | 0.45844E+03 | | 0.58778E+03 |
| 6 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 145



EMSURVEYS

ELECTROMAGNETIC SURVEYS INC.

MOUNT SHASTA STATION 146 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am**2) | CALC.VOLT | RESIDUAL | %RES.ERR | WEIGHT |
|---|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1308E+03 | 0.1344E+03 | -0.3608E+01 | -0.2685E+01 | 0.505E+02 |
| 2 | 0.1100E-03 | 0.8858E+02 | 0.8948E+02 | -0.8980E+00 | -0.1004E+01 | 0.127E+01 |
| 3 | 0.1400E-03 | 0.5657E+02 | 0.5568E+02 | 0.8886E+00 | 0.1596E+01 | 0.312E+01 |
| 4 | 0.1770E-03 | 0.3568E+02 | 0.3492E+02 | 0.7565E+00 | 0.2166E+01 | 0.786E+01 |
| 5 | 0.2200E-03 | 0.2278E+02 | 0.2236E+02 | 0.6166E+00 | 0.2757E+01 | 0.189E+02 |
| 6 | 0.2800E-03 | 0.1353E+02 | 0.1341E+02 | 0.1164E+00 | 0.8680E+00 | 0.546E+02 |
| 7 | 0.3550E-03 | 0.7740E+01 | 0.7912E+01 | -0.1717E+00 | -0.2170E+01 | 0.100E+03 |
| 8 | 0.4430E-03 | 0.4660E+01 | 0.4707E+01 | -0.4738E-01 | -0.1007E+01 | 0.400E+03 |
| 9 | 0.5540E-03 | 0.2630E+01 | 0.2724E+01 | -0.9434E-01 | -0.3463E+01 | 0.111E+02 |
| 10 | 0.7130E-03 | 0.1520E+01 | 0.1424E+01 | 0.9609E-01 | 0.6748E+01 | 0.111E+02 |
| 11 | 0.8910E-03 | 0.8600E+00 | 0.8078E+00 | 0.5221E-01 | 0.6463E+01 | 0.100E+03 |
| 12 | 0.1096E-02 | 0.4300E+00 | 0.4419E+00 | -0.1187E-01 | -0.2636E+01 | 0.100E+03 |
| 13 | 0.1411E-02 | 0.2100E+00 | 0.2134E+00 | -0.3388E-02 | -0.1588E+01 | 0.100E+03 |
| 14 | 0.1795E-02 | 0.8000E-01 | 0.1048E+00 | -0.2475E-01 | -0.2363E+02 | 0.100E+03 |
| 15 | 0.2224E-02 | 0.4000E-01 | 0.5485E-01 | -0.1485E-01 | -0.2708E+02 | 0.100E+03 |

** %RMSERR= 9.76

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.5610E+00 | 0.1000E+01 | | | |
| 3 | -0.7178E-01 | -0.5157E+00 | 0.1000E+01 | | |
| 4 | 0.6120E+00 | 0.8201E+00 | -0.2160E+00 | 0.1000E+01 | |
| 5 | -0.6261E+00 | -0.8314E+00 | 0.2474E+00 | -0.9218E+00 | 0.1000E+01 |

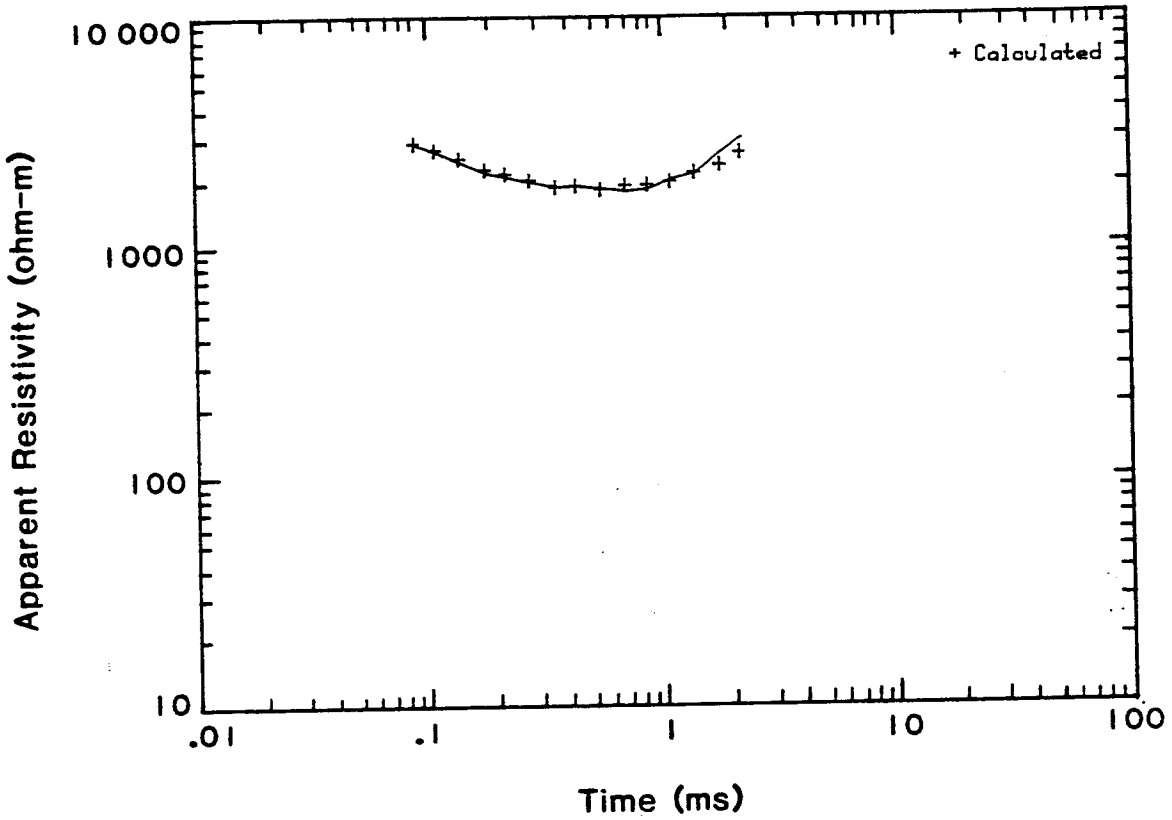
| **PARM_SOL. | | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2716E-05 | 0.5360E-04 | 0.1973E+02 | 0.1973E+04 |
| 2 | 0.3177E-03 | 0.7326E-03 | 0.8960E+00 | 0.8960E+02 |
| 3 | 0.1101E-03 | 0.3938E-02 | 0.3576E+02 | 0.3576E+04 |
| 4 | 0.1713E+03 | 0.2909E-02 | 0.1698E-04 | 0.1698E-02 |
| 5 | 0.6957E+03 | 0.8992E-02 | 0.1293E-04 | 0.1293E-02 |

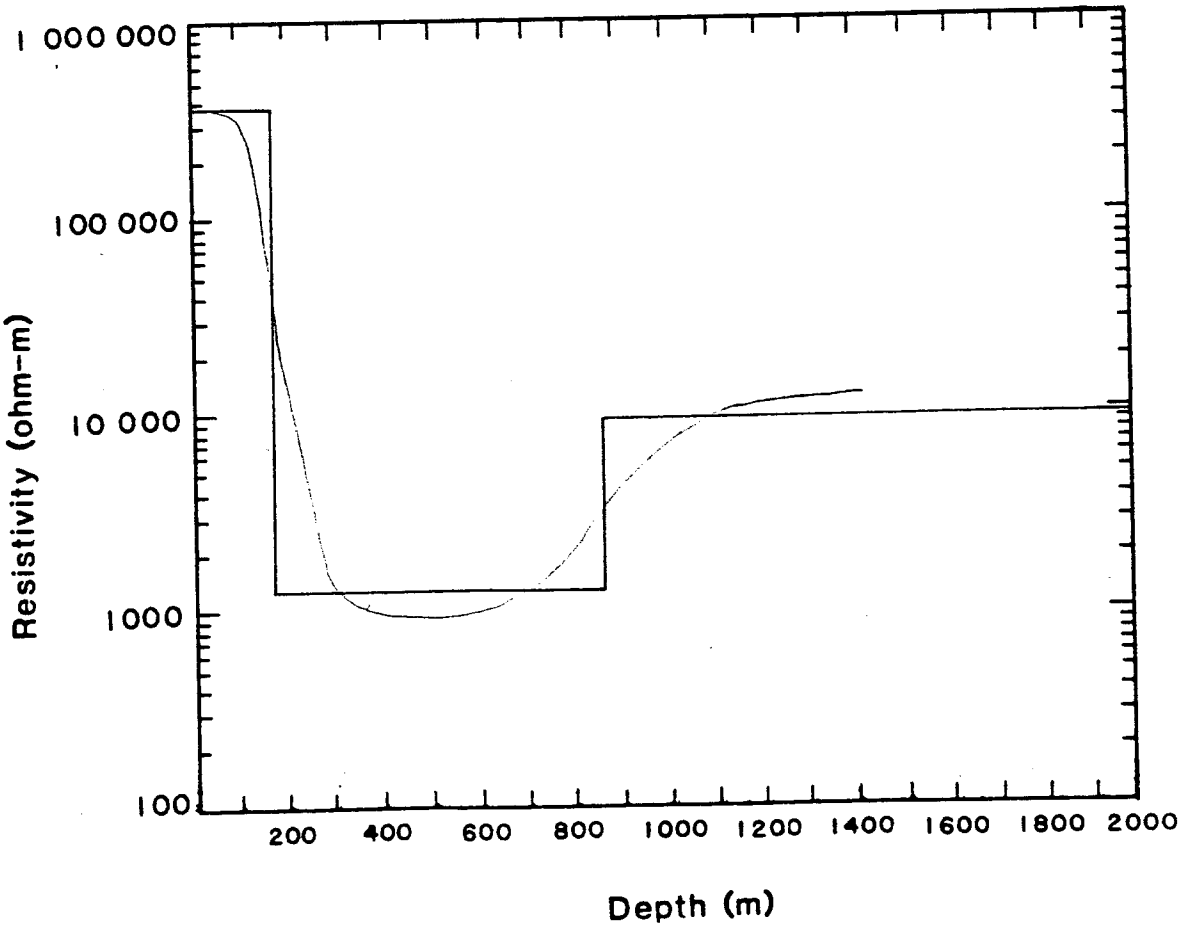
| | PARAMETER NAME | | FINAL SOLUTION | RESISTIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.27162E-05 | 0.36826E+06 | |
| 2 | SIGMA( 2) | = | 0.31767E-03 | 0.12230E+04 | |
| 3 | SIGMA( 3) | = | 0.11010E-03 | 0.90825E+04 | |
| 4 | THICK( 1) | = | 0.17133E+03 | | 0.17133E+03 |
| 5 | THICK( 2) | = | 0.69567E+03 | | 0.86700E+03 |
| 6 | DEPT | = | 0.20700E+03 | | |

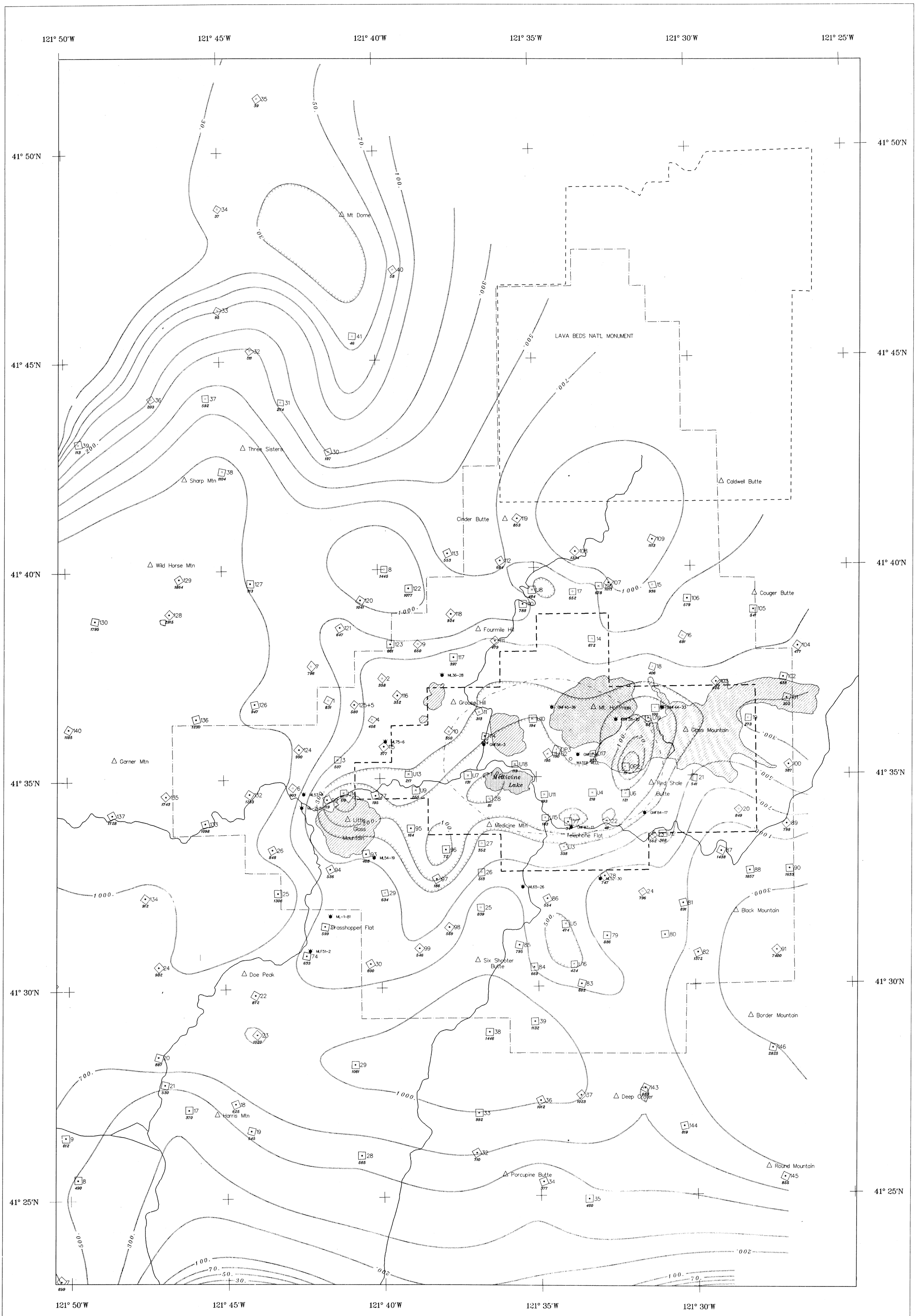
EMSURVEYS

# TEM INVERSION

MT. SHASTA
Station 146






union 76

0 1 2 3 4 5

SCALE IN KILOMETERS

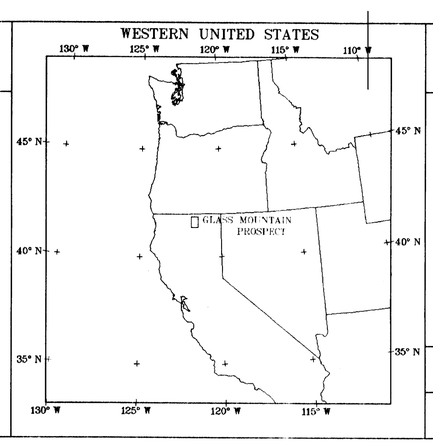
0 1 2 3 4 5

SCALE IN MILES

## Legend

- TDEM SITE (EMS-1983)
- TDEM SITE (EMS-1984)
- TDEM SITE (USGS)
- TDEM SITE (OXY-PET)
- MOUNTAIN
- GEOTHERMAL WELL
- RHYOLITE DOME
- GLASS FLOW
- LAKE
- MAJOR ROAD
- KGRA BOUNDARY
- UNIT AREA
- LAVA BEDS NAT'L MONUMENT
- ASSUMED CALDERA RING FRACTURE

WESTERN UNITED STATES




Union Oil Company of California
Geothermal Division

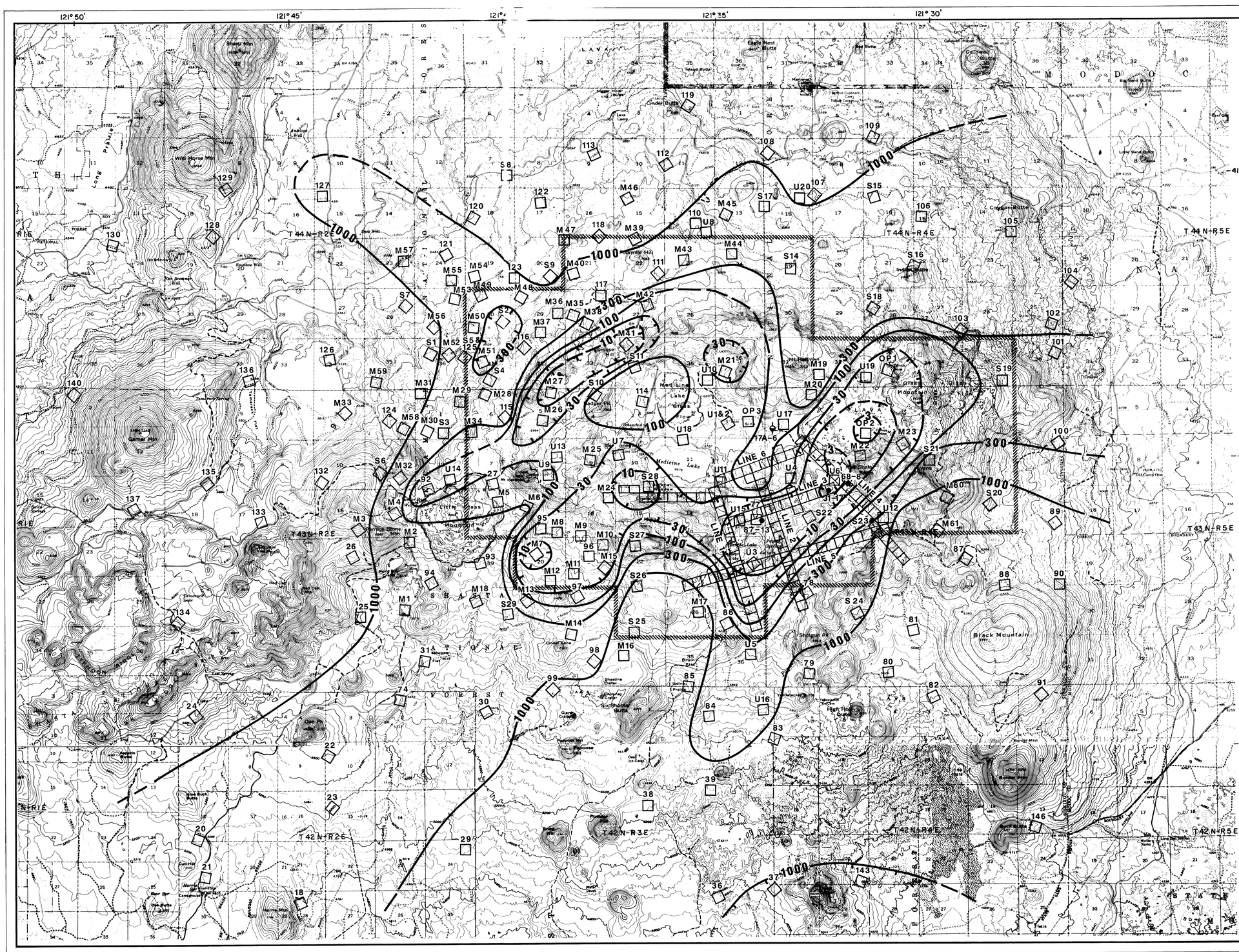
# GLASS MOUNTAIN

## TDEM APPARENT RESISTIVITY AT 2.22 MILLISEC

| PREPARED BY | DATE | SCALE | GRID SIZE |
|---|---|---|---|
| D.A. WHEELER | MAY 20, 1985 | 1:62,500 | .5 INCH |
| CONTOUR INTERVAL | DATA TYPE | | |
| LOGARITHMIC | TIME-DOMAIN EM | | |

EXPRESS > 12:14 MAY 20, 1985

UCA GM 38M 1:62500




1 1/2 0 1 2 MILES

SCALE 1:62,500

| REVISED | UNOCAL |
|---|---|
| CONTOURS ADDED 12/89 | UNOCAL CORPORATION–GEOTHERMAL DIVISION |

# GLASS MOUNTAIN PROSPECT

## TIME-DOMAIN ELECTOMAGNETIC STATION LOCATIONS
## BOSTICK RESISTIVITIES AT A DEPTH OF 1500 FEET
## (CONTOURS IN OHM-M)

TDEM STN.

| | |
|---|---|
| OP1 | EM SURVEYS, 1982 |
| U2 | USGS, 1983 |
| 2 | EM SURVEYS, 1983 |
| S2 | EM SURVEYS, 1984 |
| LINE 2 | EARTH TECH., 1985 |
| M2 | EARTH TECH., 1986 |

Plate 1
UCA07.3308 6/90

SISKIYOU & MODOC COUNTIES, CALIFORNIA

SCALE 1:62,500 G.A.N. OCTOBER, 1989

# APPENDIX K:
# TEM central induction sounding, Glass Mountain Prospect, California; Report #841201 Prepared for: Union Oil Company of California, Geothermal Division

# Attachment X

## CEC-500-2007-XXX-ATX

## TEM central induction sounding, Glass Mountain Prospect, California; Report #841201 Prepared for: Union Oil Company of California, Geothermal Division

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GM 38-04
23 July - 10 August 1984

3

1984 Data

# TEM CENTRAL INDUCTION SOUNDING

# GLASS MOUNTAIN PROSPECT, CALIFORNIA

Report #841201

Prepared for:

Union Oil Company of California
Geothermal Division
Santa Rosa, California

15 January 1985

ELECTROMAGNETIC SURVEYS, INC.
2161 Shattuck Avenue, Suite 303
Berkeley, California 94704
(415) 845-8745

G. A. ROBOOK
JAN 29 1985

# TEM CENTRAL INDUCTION SOUNDING

# GLASS MOUNTAIN PROSPECT, CALIFORNIA

Report #841201

Prepared for:

Union Oil Company of California
Geothermal Division
Santa Rosa, California

15 January 1985

ELECTROMAGNETIC SURVEYS, INC.
2161 Shattuck Avenue, Suite 303
Berkeley, California 94704
(415) 845-8745

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APPENDIX I. Geonics EM-37 Specifications

APPENDIX II. TEM Sounding Data and Inversion Results

## SUMMARY

A transient electromagnetic survey was carried out by ElectroMagnetic Surveys, Inc. for Union Oil Company, Geothermal Division, in the Glass Mountain area of northeastern California during the period from 23 July to 10 August 1984. The objective of the survey was to locate deep conductors attributable to geothermal sources. A total of 39 stations were occupied using transmitter loops 1000 x 1000 feet in size.

Two, three, and four layer computer inversions of the data were performed and generally yielded RMS errors of less than 8%. A conductor located at a depth of several hundred meters was detected at approximately two thirds of the sounding locations.

## INTRODUCTION

A transient electromagnetic (TEM) survey was carried out by Electromagnetic Surveys, Inc. (EMSurveys) for Union Oil Company, Geothermal Division near Glass Mountain in northeastern California during the summer of 1984. The objective of the survey was to locate deep conductors attributable to geothermal sources. This work was done as a follow-up to EMSurveys Report #838101. The in-loop configuration was used to provide a relatively focused electromagnetic sounding to a depth of several kilometers. The Glass Mountain survey is part of a larger survey encompassing numerous areas in California, Oregon, and Washington. A separate report has been written for each area.

The survey was carried out between 23 July and 10 August 1984. Road access to most station locations and good weather expedited completion of the survey, but equipment and vehicle problems slowed production of data. There is no data from station locations #12 and #13 as they could not be reached on access roads. A total of 39 stations were occupied.

The EMSurveys field crew consisted of H. A. Patsch (Crew Chief), Dimitri Bevc, Lars Holbek, Paul Rio, and Robert Stettler (Field Operators). Client representative G. Nordquist was present during part of the survey.

## EQUIPMENT AND FIELD PROCEDURES

A Geonics EM-37 system was used for the survey. Detailed specifications of this system can be found in Appendix I.

The transmitter loops were 1000 x 1000 feet square with at least one corner located on a road. Loop orientation was determined by logistical considerations unless a specific orientation was requested by the client. Synchronization of the receiver (Rx) and the transmitter (Tx) was achieved by use of a reference cable link.

After discussions with the Client and EMSurveys' principals, a custom survey design was approved. The vertical component of the secondary magnetic field was measured at each sounding location using three combinations of frequency, Tx current, and Rx moment. Initial measurements were made at a Tx repetition rate of 30 Hz with a voltage setting of 110 V. The Tx current was in the range of 26 to 28 amps and the turnoff ramp time was in the range of 255 to 265 $\mu$s.

The measurement procedure was then repeated with a voltage setting of 20 V. This reduced the turnoff ramp time to the range of 75 to 85 $\mu$s and reduced the current to the range of 5.5 to 6.5 amps which enabled more accurate readings to be made at early times.

Measurements were then taken at a repetition rate of 3 Hz and a voltage setting of 110 V for further definition of the decay curve at later times. A large loop Rx coil measuring 6 meters on a side and containing 48 turns of wire was used for gathering the 3 Hz data. Use of this large loop increased the Rx moment by a factor of 17 which enhanced detection of low amplitude-late time signals. Tx current and turnoff ramp time were within the ranges of

variability seen during the 30 Hz high voltage measurements.

Several sets of readings were taken at each station to improve data statistics. Operator inspection of these data sets assured that noisy readings due to sferics or other spurious sources would be excluded from the summed and averaged data.

## DATA PROCESSING AND PRESENTATION

Field data were gathered and stored by a proprietary EMSurveys data acquisition system designed and built for use with the Geonics EM-37 system. Initial processing of data was completed in the field, and decisions on survey planning were made on a daily basis. Voltages were normalized for transmitter current and receiver moment, and are given in units of $nV/Am^2$. After manual smoothing the transient decay voltages were inverted using a non-linear least squares algorithm developed by Dennis et al(1979) and adapted by Anderson (1982) for use in interpreting one dimensional TEM sounding data.

### Description of Inversion

All data points were weighted in the inversion process with a factor set equal to $1/(\text{standard deviation})^2$. The standard deviation was set equal to ten percent of the measured voltage. This weighting scheme places more importance on the later sample times which carry information from greater depths and are of primary interest in geothermal exploration.

The inversion results are presented in Appendix II. Each data set includes a summary computer output; a plot of voltage and apparent resistivity versus time for both observed and calculated

data and a schematic diagram of the interpreted layered model.

The computer output includes a description of the layered model, parameter statistics, and a table containing values of the smoothed, normalized field voltages, the normalized voltages calculated from the layered model, the residual (or difference between the field and calculated values), and the percent residual error (the residual/voltage *100) for each sample time. The root mean square of the percent residual error (%RMSERR) has been calculated and is used as a measure of the "goodness of fit".

The statistics are given in table form using a parameter number and not the parameter name. The inversion routine assigns numbers to the parameters for an N layered model as follows: 1 through N indicates the layer conductivity, N+1 to 2N-1 indicates the layer thickness and parameter number 2N indicates the shift factor. The shift factor is equal to the reciprocal of the loop radius cubed ($1/a^3$) and is used within the inversion routine for normalizing the calculated voltages. The shift factor was fixed at a value of 207 for this field survey. In several cases the covariance matrix was not positive definite and thus the statistics could not be calculated (see Anderson, 1982).

An absolute value of .9 or larger between any two parameters in the correlation matrix indicates that these parameters are highly correlated i.e., their combination is well defined, but the individual parameters are not. A common example is a thin conductive layer where the conductivity - thickness product is well defined but the individual parameters cannot be resolved.

An estimate of the standard error and percent error are

included in the parameter statistics. These parameters are not the same as those used in other error analyses. A percent error of 200 does not mean that this parameter can be varied by 200 percent and not change the calculated voltages within given error bounds. This error tends to be overestimated and will increase with increased correlation between parameters. These values should be used only in a relative manner to compare parameters within a given inversion.

EM sounding methods are more sensitive to conductive layers than to resistive layers, and in general, conductive layers will have a smaller percent error and will have the parameters of conductivity and thickness better defined than resistive units.

## RESULTS

The inversions indicate that variations are present in the geoelectric section in the geothermal prospect area. The data were inverted to a two, three, or four layer section which, in general, fit the data to less than 8 % RMS error. A conductor, located at a depth of between 500 and 800 meters, was detected at approximately two thirds of the sounding locations. A resistive surficial unit is present throughout most of the survey area.

## REFERENCES

Anderson, W. L., 1982, " Nonlinear Least Squares Inversion of Transient Soundings for a Central Induction Loop System ", USGS open File Report. 82-1129

Dennis, J.E., Gay, D.M., and Welsch R.E., 1979," An adaptive nonlinear least-squares algorithm ", Univ. of Wisconsin MRC Tech. Sum. Rept. 2010
(also avaliable as NTIS Rept. AD-A079-716), 40 p.

# APPENDIX I. GEONICS EM-37 SPECIFICATIONS

## Receiver

| | | |
|---|---|---|
| Measured quantity | - | time rate of decay of magnetic flux along 3 axes. |
| Sensor | - | air-cored coil of bandwidth 40 kHz; 100cm dia. by 7x5cm cross-section. Coil holder supplied to facilitate measurement along 3 axes. |
| Time channels | - | 20 time channels with locations and widths as shown in Fig. 2. Successive operation at 30Hz, then 3Hz, effectively gives 30 channels covering range from 80 μsec. to 80 msec. |
| Output display | - | 4 digit plus sign LED display; display also shows channel number and gain. |
| Integration time | - | $2^n$ cycles at 30Hz; n=4,6,8,10,12,14 (switch selectable); similar integration times at other base frequencies. |
| Receiver output noise referred to input | - | typically $1.5 \times 10^{-10}$ volt/$m^2$ at last gate at 30Hz with integration time of 34 seconds. Noise will be higher during intense local spherics activity. |
| Output connector | - | all 20 channels in analogue format and house-keeping functions in digital format available from output connector. |
| Synchronization to Tx | - | any of the following (switch selectable)<br>(1) reference cable<br>(2) primary pulse<br>(3) 27 MHz radio link (40 channels)<br>(4) high stability (oven controlled) quartz crystals. |
| Noise rejection circuitry | - | Selective clipping of atmospheric noise pulses at all times. Audio output of Rx coil (transmitter pulse blanked out) is available on built-in loud speaker for ready identification of interference. |
| Receiver batteries | - | 12 volt rechargeable Gel-cell; 9 hours continuous operating time at 17°C. Two batteries and a battery charger supplied to permit charging of second battery from transmitter motor-generator during survey. |

## Component Dimensions

| | |
|---|---|
| Transmitter console | 25x42x36 cm |
| GPU | 35x74x48 cm |
| Wirewinder | 42x38x35 cm each (2 off) |
| Wire reels (20 amp) | 33x31(dia.)cm each (6 off) |
| Receiver console | 38x37x27 cm |
| Receiver coil | 100 cm dia. 7x5 cm cross-section |

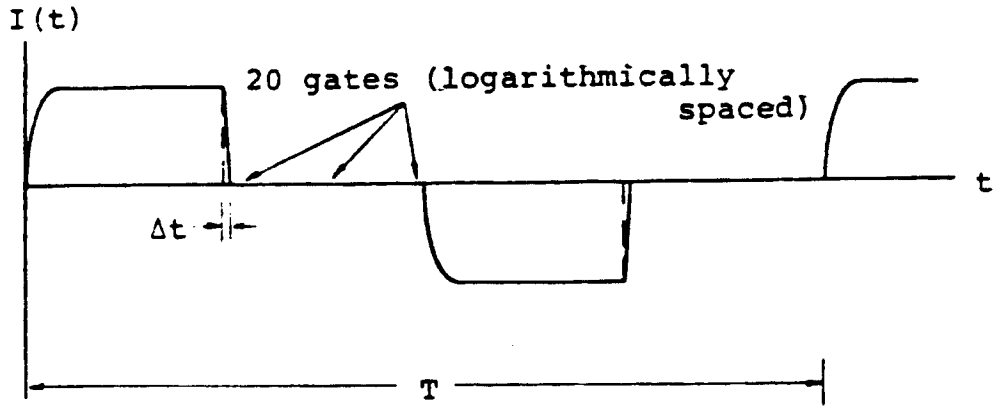
## Component Weights

| | |
|---|---|
| Transmitter console | 20 kg |
| GPU | 60 kg |
| Wirewinders and loaded reels (20 amp) | 120 kg (total) |
| Receiver console (incl.20 amp-hour battery) | 21.8 kg |
| Receiver coil | 8.0 kg |

## Shipping Information

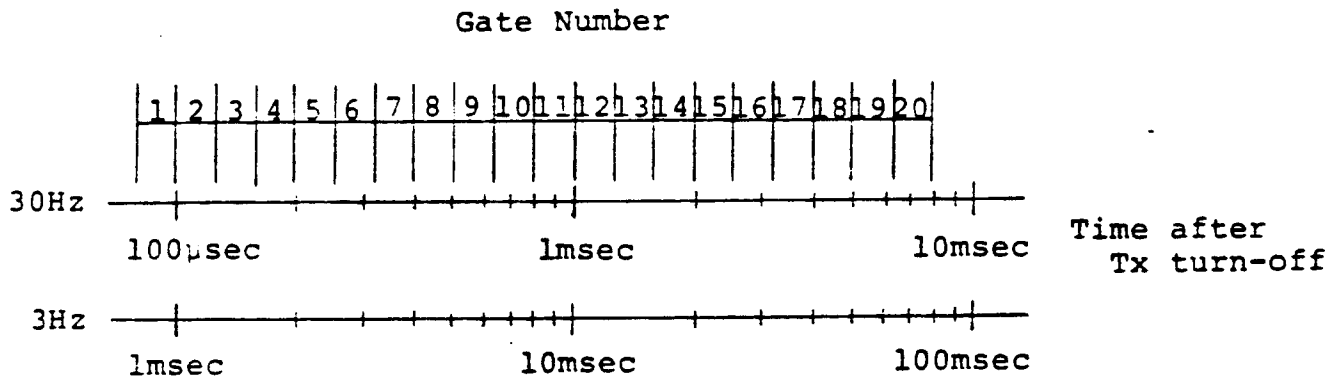
Shipment consists of 5 boxes

| | |
|---|---|
| Two wire boxes | 116x62x48 cm @ 186 kg (total) |
| GPU box | 96x61x73 cm @ 90 kg |
| Receiver/transmitter box | 96x75x73 cm @ 86 kg |
| Receiver coil/coil-holder box | 110x110x20 cm @ 34 kg |
| Total shipping volume | 1.90 cubic metres |
| Total shipping weight | 390 kg |



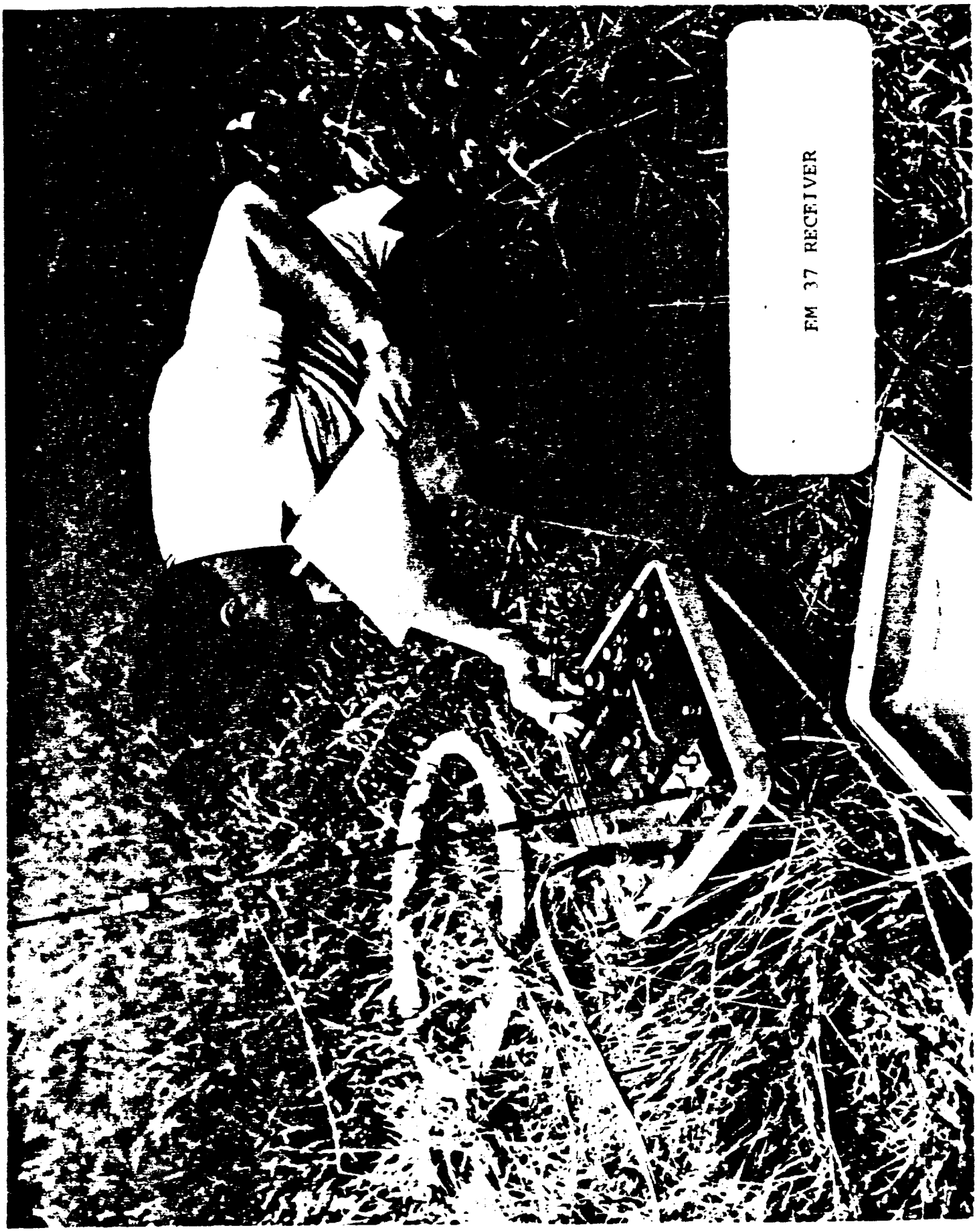

Transmitter Current Waveform

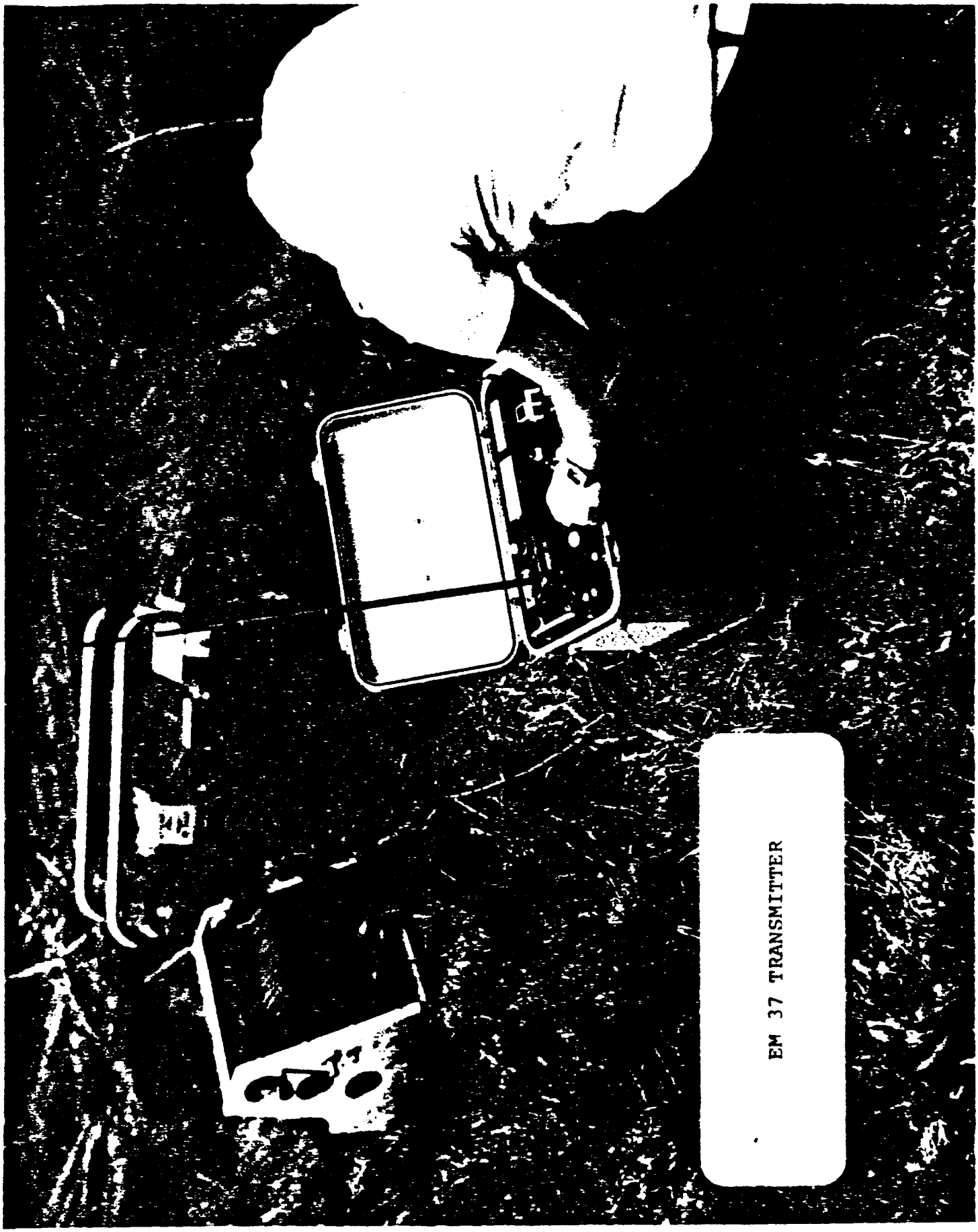
FIG. I-1



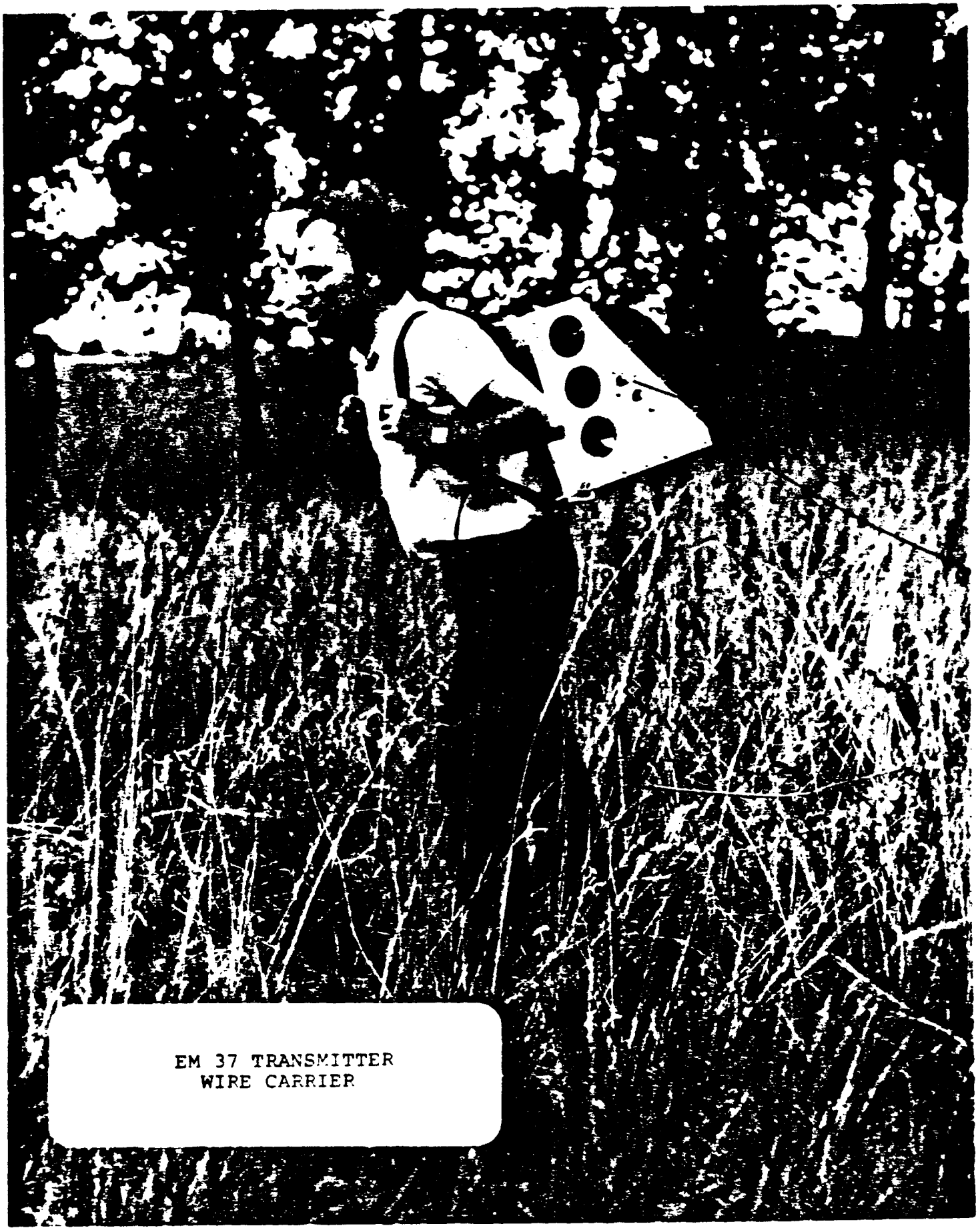

Gate Location and Widths (30 and 3Hz)

FIG. I-2

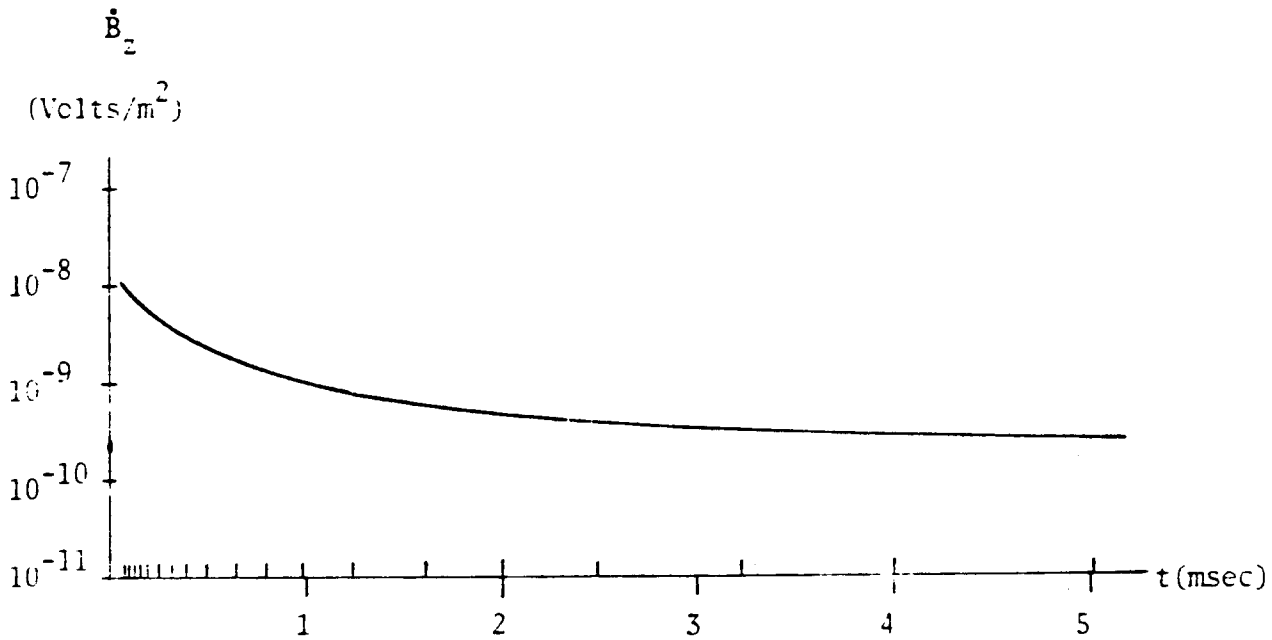

FM 37 RECEIVER



EM 37 TRANSMITTER



EM 37 TRANSMITTER
WIRE CARRIER




Average System Noise
(30Hz)

EM37 System Noise Graph for 300 m x 600 m Transmitter Loop

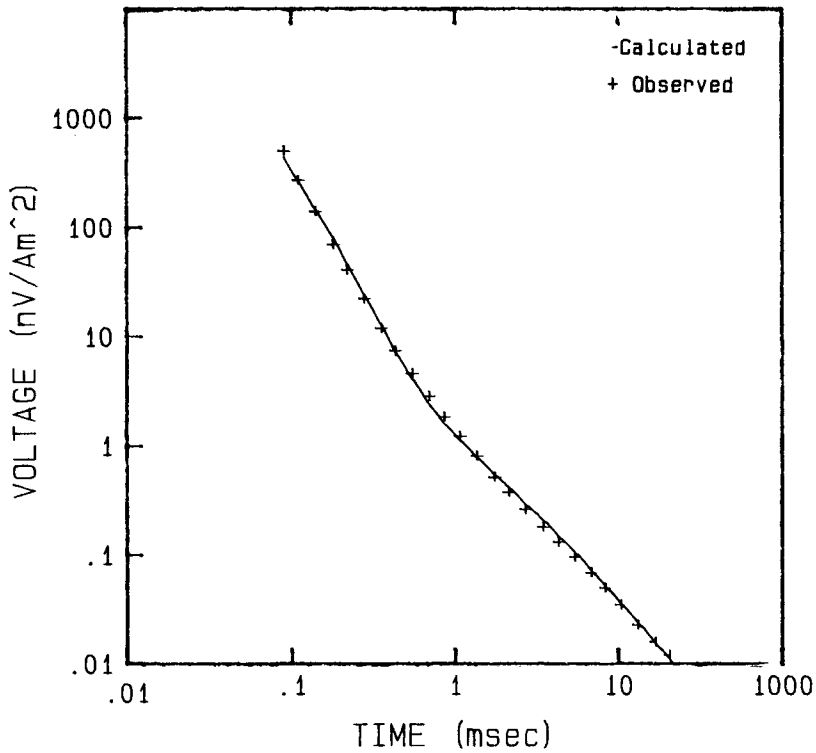
FIG. I-3

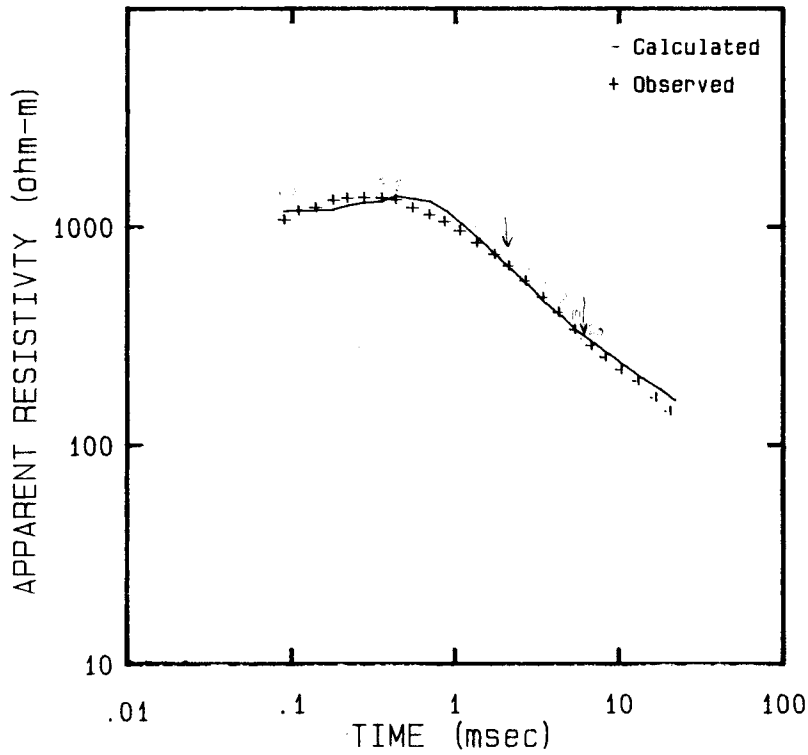
# APPENDIX II. TEM SOUNDING DATA and INVERSION RESULTS

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM01




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 5170 | 15 |
| 1102 | 776 |
| 72.4 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 1 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.5054E+03 | 0.4434E+03 | 0.6202E+02 | 0.1399E+02 |
| 2 | 0.1100E-03 | 0.2698E+03 | 0.2680E+03 | 0.1769E+01 | 0.6601E+00 |
| 3 | 0.1400E-03 | 0.1402E+03 | 0.1469E+03 | -0.6724E+01 | -0.4577E+01 |
| 4 | 0.1770E-03 | 0.7955E+02 | 0.8115E+02 | -0.1603E+01 | -0.1975E+01 |
| 5 | 0.2200E-03 | 0.4694E+02 | 0.4609E+02 | 0.8497E+00 | 0.1844E+01 |
| 6 | 0.2800E-03 | 0.2217E+02 | 0.2396E+02 | -0.1786E+01 | -0.7453E+01 |
| 7 | 0.3550E-03 | 0.1191E+02 | 0.1252E+02 | -0.6143E+00 | -0.4906E+01 |
| 8 | 0.4430E-03 | 0.7103E+01 | 0.6992E+01 | 0.1112E+00 | 0.1591E+01 |
| 9 | 0.5540E-03 | 0.4020E+01 | 0.4003E+01 | 0.1672E-01 | 0.4176E+00 |
| 10 | 0.7130E-03 | 0.2449E+01 | 0.2318E+01 | 0.1305E+00 | 0.5630E+01 |
| 11 | 0.8810E-03 | 0.1558E+01 | 0.1564E+01 | -0.6398E-02 | -0.4090E+00 |
| 12 | 0.1096E-02 | 0.1232E+01 | 0.1103E+01 | 0.1294E+00 | 0.1173E+02 |
| 13 | 0.1411E-02 | 0.8130E+00 | 0.7576E+00 | 0.5537E-01 | 0.7309E+01 |
| 14 | 0.1795E-02 | 0.5210E+00 | 0.5326E+00 | -0.1158E-01 | -0.2175E+01 |
| 15 | 0.2224E-02 | 0.3790E+00 | 0.3971E+00 | -0.1810E-01 | -0.4558E+01 |
| 16 | 0.2850E-02 | 0.2630E+00 | 0.2773E+00 | -0.1427E-01 | -0.5147E+01 |
| 17 | 0.3600E-02 | 0.1820E+00 | 0.1965E+00 | -0.1452E-01 | -0.7386E+01 |
| 18 | 0.4490E-02 | 0.1320E+00 | 0.1415E+00 | -0.9503E-02 | -0.6716E+01 |
| 19 | 0.5700E-02 | 0.9600E-01 | 0.9735E-01 | -0.1348E-02 | -0.1385E+01 |
| 20 | 0.7190E-02 | 0.6900E-01 | 0.6731E-01 | 0.1689E-02 | 0.2509E+01 |
| 21 | 0.8800E-02 | 0.4900E-01 | 0.4827E-01 | 0.7307E-03 | 0.1514E+01 |
| 22 | 0.1100E-01 | 0.3500E-01 | 0.3322E-01 | 0.1780E-02 | 0.5358E+01 |
| 23 | 0.1400E-01 | 0.2300E-01 | 0.2210E-01 | 0.9031E-03 | 0.4087E+01 |
| 24 | 0.1800E-01 | 0.1600E-01 | 0.1441E-01 | 0.1585E-02 | 0.1100E+02 |
| 25 | 0.2200E-01 | 0.1200E-01 | 0.1028E-01 | 0.1724E-02 | 0.1678E+02 |

** %RMSERR= 6.75

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.2189E+00 | 0.1000E+01 | | | |
| 3 | 0.2358E+00 | -0.3998E+00 | 0.1000E+01 | | |
| 4 | -0.6718E+00 | -0.1448E+00 | 0.3666E-01 | 0.1000E+01 | |
| 5 | -0.1594E+00 | 0.1131E+00 | -0.4674E+00 | -0.3079E+00 | 0.1000E+01 |

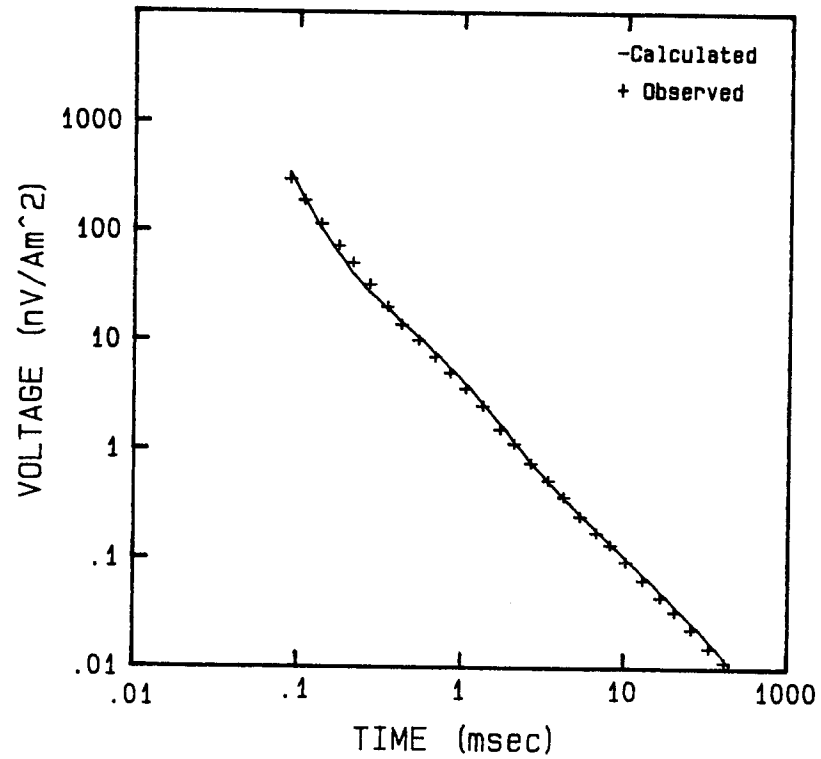
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1934E-03 | 0.3931E-04 | 0.2032E+00 | 0.2032E+02 |
| 2 | 0.9077E-03 | 0.1238E-03 | 0.1364E+00 | 0.1364E+02 |
| 3 | 0.1382E-01 | 0.7798E-03 | 0.5643E-01 | 0.5643E+01 |
| 4 | 0.1497E+02 | 0.2933E-03 | 0.1959E-04 | 0.1959E-02 |
| 5 | 0.7765E+03 | 0.1835E-02 | 0.2363E-05 | 0.2363E-03 |

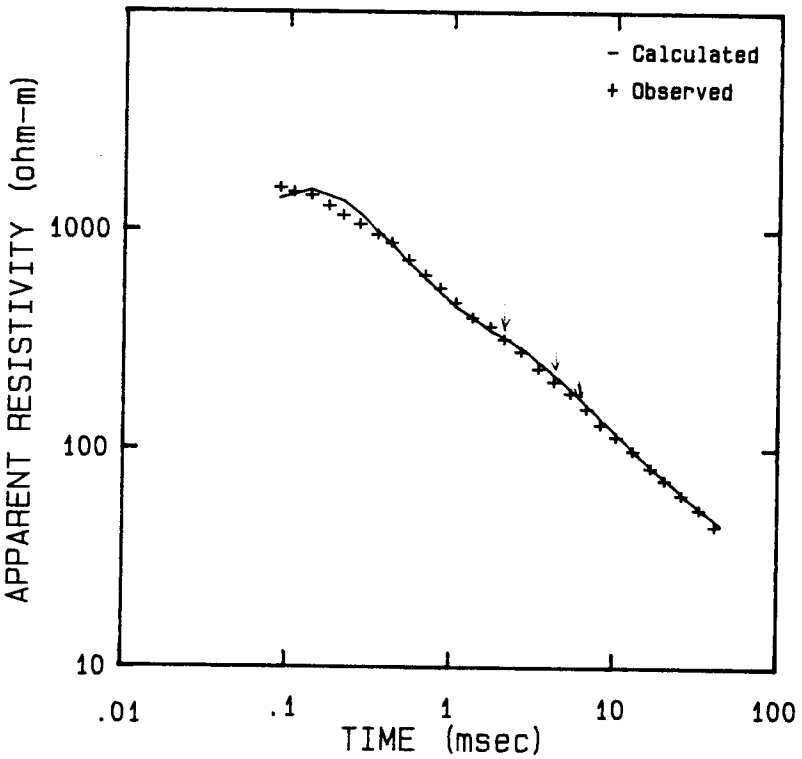
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.19343E-03 | 0.51699E+04 | |
| 2 | SIGMA( 2) | = | 0.90771E-03 | 0.11017E+04 | |
| 3 | SIGMA( 3) | = | 0.13820E-01 | 0.72360E+02 | |
| 4 | THICK( 1) | = | 0.14968E+02 | | 0.14968E+02 |
| 5 | THICK( 2) | = | 0.77650E+03 | | 0.79146E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM02




## MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1199 | 420 |
| 62 | 360 |
| 12 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 2 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2961E+03 | 0.3469E+03 | -0.5079E+02 | -0.1464E+02 |
| 2 | 0.1100E-03 | 0.1902E+03 | 0.1972E+03 | -0.7032E+01 | -0.3565E+01 |
| 3 | 0.1400E-03 | 0.1152E+03 | 0.1051E+03 | 0.1009E+02 | 0.9604E+01 |
| 4 | 0.1770E-03 | 0.7255E+02 | 0.6166E+02 | 0.1089E+02 | 0.1766E+02 |
| 5 | 0.2200E-03 | 0.5098E+02 | 0.4063E+02 | 0.1035E+02 | 0.2548E+02 |
| 6 | 0.2800E-03 | 0.3223E+02 | 0.2726E+02 | 0.4973E+01 | 0.1824E+02 |
| 7 | 0.3550E-03 | 0.2025E+02 | 0.1940E+02 | 0.8569E+00 | 0.4418E+01 |
| 8 | 0.4430E-03 | 0.1389E+02 | 0.1437E+02 | -0.4830E+00 | -0.3362E+01 |
| 9 | 0.5540E-03 | 0.9975E+01 | 0.1062E+02 | -0.6407E+00 | -0.6036E+01 |
| 10 | 0.7130E-03 | 0.7043E+01 | 0.7506E+01 | -0.4628E+00 | -0.6166E+01 |
| 11 | 0.8810E-03 | 0.5060E+01 | 0.5489E+01 | -0.4291E+00 | -0.7817E+01 |
| 12 | 0.1096E-02 | 0.3621E+01 | 0.3905E+01 | -0.2838E+00 | -0.7267E+01 |
| 13 | 0.1411E-02 | 0.2509E+01 | 0.2549E+01 | -0.3981E-01 | -0.1562E+01 |
| 14 | 0.1795E-02 | 0.1539E+01 | 0.1662E+01 | -0.1234E+00 | -0.7423E+01 |
| 15 | 0.2224E-02 | 0.1141E+01 | 0.1128E+01 | 0.1322E-01 | 0.1172E+01 |
| 16 | 0.2850E-02 | 0.7560E+00 | 0.7284E+00 | 0.2757E-01 | 0.3785E+01 |
| 17 | 0.3600E-02 | 0.5280E+00 | 0.4915E+00 | 0.3651E-01 | 0.7428E+01 |
| 18 | 0.4490E-02 | 0.3730E+00 | 0.3458E+00 | 0.2720E-01 | 0.7867E+01 |
| 19 | 0.5700E-02 | 0.2470E+00 | 0.2425E+00 | 0.4508E-02 | 0.1859E+01 |
| 20 | 0.7190E-02 | 0.1760E+00 | 0.1737E+00 | 0.2299E-02 | 0.1323E+01 |
| 21 | 0.8800E-02 | 0.1370E+00 | 0.1308E+00 | 0.6187E-02 | 0.4729E+01 |
| 22 | 0.1100E-01 | 0.9500E-01 | 0.9546E-01 | -0.4612E-03 | -0.4831E+00 |
| 23 | 0.1400E-01 | 0.6500E-01 | 0.6746E-01 | -0.2463E-02 | -0.3651E+01 |
| 24 | 0.1800E-01 | 0.4500E-01 | 0.4667E-01 | -0.1666E-02 | -0.3570E+01 |
| 25 | 0.2200E-01 | 0.3300E-01 | 0.3443E-01 | -0.1433E-02 | -0.4161E+01 |
| 26 | 0.2800E-01 | 0.2300E-01 | 0.2364E-01 | -0.6372E-03 | -0.2696E+01 |
| 27 | 0.3600E-01 | 0.1500E-01 | 0.1574E-01 | -0.7442E-03 | -0.4727E+01 |
| 28 | 0.4500E-01 | 0.1100E-01 | 0.1081E-01 | 0.1905E-03 | 0.1763E+01 |

** %RMSERR= 8.71

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3199E+00 | 0.1000E+01 | | | |
| 3 | -0.9985E-01 | -0.2396E-01 | 0.1000E+01 | | |
| 4 | 0.5688E-01 | 0.1856E+00 | 0.1605E+00 | 0.1000E+01 | |
| 5 | -0.6594E-01 | -0.4321E+00 | -0.5001E+00 | -0.5261E+00 | 0.1000E+01 |

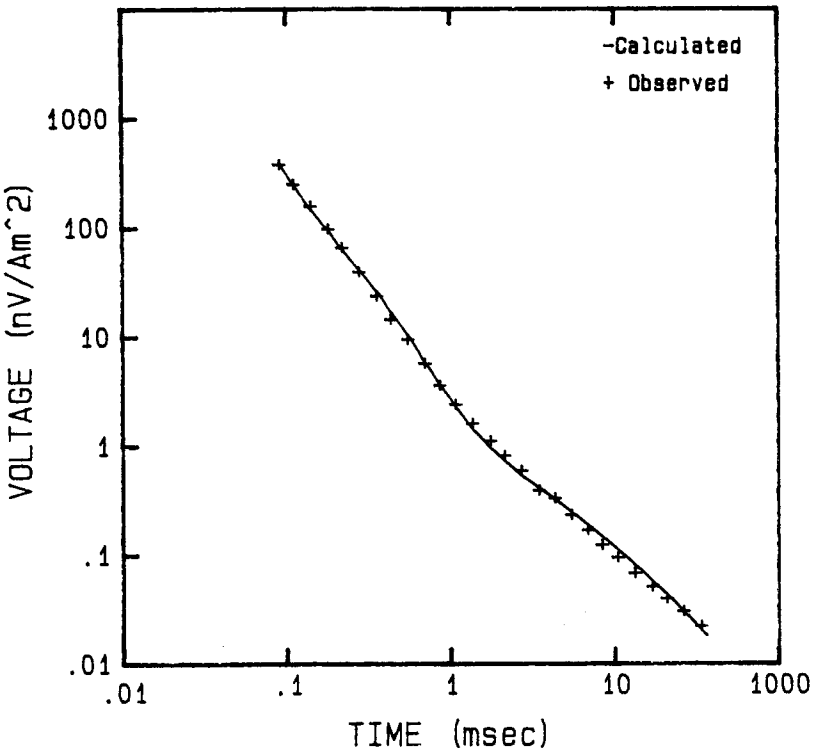
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.8338E-03 | 0.7579E-04 | 0.9090E-01 | 0.9090E+01 |
| 2 | 0.1621E-01 | 0.4691E-03 | 0.2893E-01 | 0.2893E+01 |
| 3 | 0.8021E-01 | 0.9439E-03 | 0.1177E-01 | 0.1177E+01 |
| 4 | 0.4210E+03 | 0.1736E-02 | 0.4124E-05 | 0.4124E-03 |
| 5 | 0.3581E+03 | 0.3816E-02 | 0.1066E-04 | 0.1066E-02 |

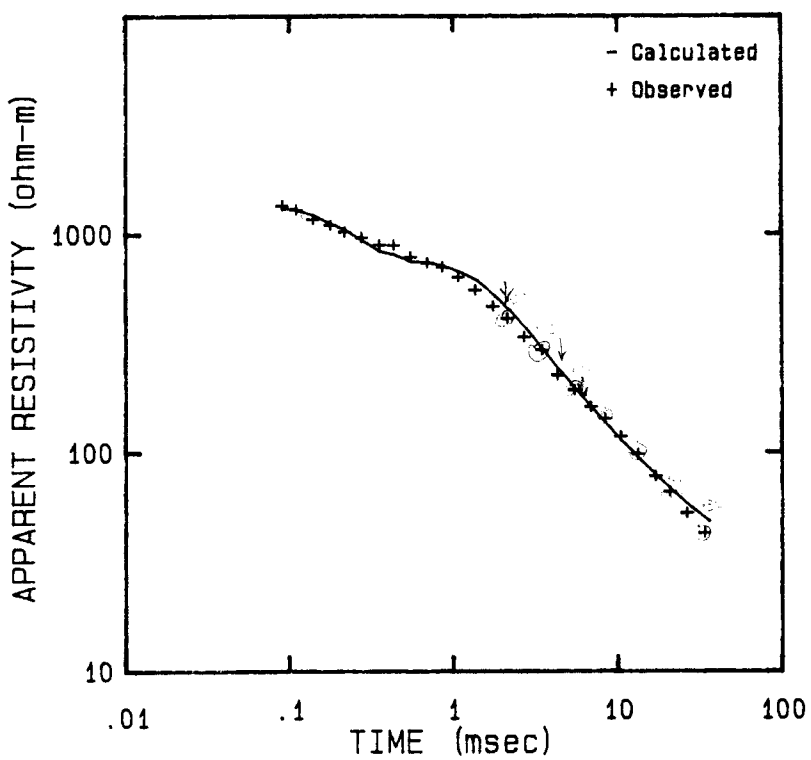
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.83383E-03 | 0.11993E+04 | |
| 2 | SIGMA( 2) = | 0.16214E-01 | 0.61675E+02 | |
| 3 | SIGMA( 3) = | 0.80207E-01 | 0.12468E+02 | |
| 4 | THICK( 1) = | 0.42099E+03 | | 0.42099E+03 |
| 5 | THICK( 2) = | 0.35806E+03 | | 0.77906E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM03




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1171 | 340 |
| 189 | 356 |
| 11 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 3 : TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3722E+03 | 0.3866E+03 | -0.1438E+02 | -0.3719E+01 |
| 2 | 0.1100E-03 | 0.2425E+03 | 0.2407E+03 | 0.1859E+01 | 0.7725E+00 |
| 3 | 0.1400E-03 | 0.1540E+03 | 0.1440E+03 | 0.1003E+02 | 0.6965E+01 |
| 4 | 0.1770E-03 | 0.9483E+02 | 0.9170E+02 | 0.3126E+01 | 0.3409E+01 |
| 5 | 0.2200E-03 | 0.6399E+02 | 0.6142E+02 | 0.2574E+01 | 0.4192E+01 |
| 6 | 0.2800E-03 | 0.3812E+02 | 0.3959E+02 | -0.1471E+01 | -0.3715E+01 |
| 7 | 0.3550E-03 | 0.2291E+02 | 0.2516E+02 | -0.2249E+01 | -0.8939E+01 |
| 8 | 0.4430E-03 | 0.1397E+02 | 0.1605E+02 | -0.2076E+01 | -0.1294E+02 |
| 9 | 0.5540E-03 | 0.9183E+01 | 0.9851E+01 | -0.6678E+00 | -0.6779E+01 |
| 10 | 0.7130E-03 | 0.5578E+01 | 0.5548E+01 | 0.3001E-01 | 0.5410E+00 |
| 11 | 0.8810E-03 | 0.3478E+01 | 0.3414E+01 | 0.6367E-01 | 0.1865E+01 |
| 12 | 0.1096E-02 | 0.2329E+01 | 0.2139E+01 | 0.1896E+00 | 0.8861E+01 |
| 13 | 0.1411E-02 | 0.1563E+01 | 0.1340E+01 | 0.2233E+00 | 0.1666E+02 |
| 14 | 0.1795E-02 | 0.1078E+01 | 0.9141E+00 | 0.1639E+00 | 0.1794E+02 |
| 15 | 0.2224E-02 | 0.7910E+00 | 0.6881E+00 | 0.1029E+00 | 0.1496E+02 |
| 16 | 0.2850E-02 | 0.5810E+00 | 0.5079E+00 | 0.7305E-01 | 0.1438E+02 |
| 17 | 0.3600E-02 | 0.3800E+00 | 0.3884E+00 | -0.8426E-02 | -0.2169E+01 |
| 18 | 0.4490E-02 | 0.3230E+00 | 0.3029E+00 | 0.2012E-01 | 0.6643E+01 |
| 19 | 0.5700E-02 | 0.2270E+00 | 0.2295E+00 | -0.2504E-02 | -0.1091E+01 |
| 20 | 0.7190E-02 | 0.1650E+00 | 0.1742E+00 | -0.9205E-02 | -0.5284E+01 |
| 21 | 0.8800E-02 | 0.1200E+00 | 0.1357E+00 | -0.1565E-01 | -0.1154E+02 |
| 22 | 0.1100E-01 | 0.9200E-01 | 0.1022E+00 | -0.1019E-01 | -0.9976E+01 |
| 23 | 0.1400E-01 | 0.6600E-01 | 0.7429E-01 | -0.8291E-02 | -0.1116E+02 |
| 24 | 0.1800E-01 | 0.5000E-01 | 0.5243E-01 | -0.2428E-02 | -0.4630E+01 |
| 25 | 0.2200E-01 | 0.3900E-01 | 0.3923E-01 | -0.2265E-03 | -0.5775E+00 |
| 26 | 0.2800E-01 | 0.3000E-01 | 0.2729E-01 | 0.2713E-02 | 0.9943E+01 |
| 27 | 0.3600E-01 | 0.2200E-01 | 0.1837E-01 | 0.3632E-02 | 0.1977E+02 |

** %RMSERR= 9.54

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.4634E+00 | 0.1000E+01 | | | |
| 3 | 0.4426E+00 | -0.8084E+00 | 0.1000E+01 | | |
| 4 | 0.3720E-01 | 0.2525E+00 | -0.3298E+00 | 0.1000E+01 | |
| 5 | 0.3233E+00 | -0.3039E+00 | 0.2525E+00 | -0.4002E+00 | 0.1000E+01 |

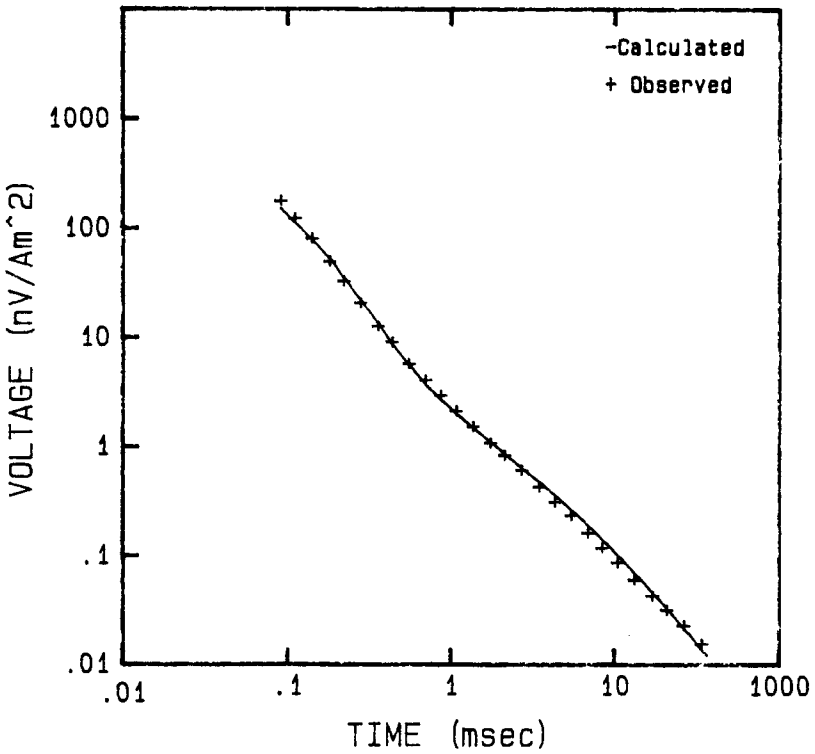
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.8537E-03 | 0.6716E-04 | 0.7868E-01 | 0.7868E+01 |
| 2 0.5284E-02 | 0.3784E-03 | 0.7161E-01 | 0.7161E+01 |
| 3 0.9349E-01 | 0.1992E-02 | 0.2130E-01 | 0.2130E+01 |
| 4 0.3394E+03 | 0.3131E-02 | 0.9224E-05 | 0.9224E-03 |
| 5 0.3567E+03 | 0.1515E-02 | 0.4248E-05 | 0.4248E-03 |

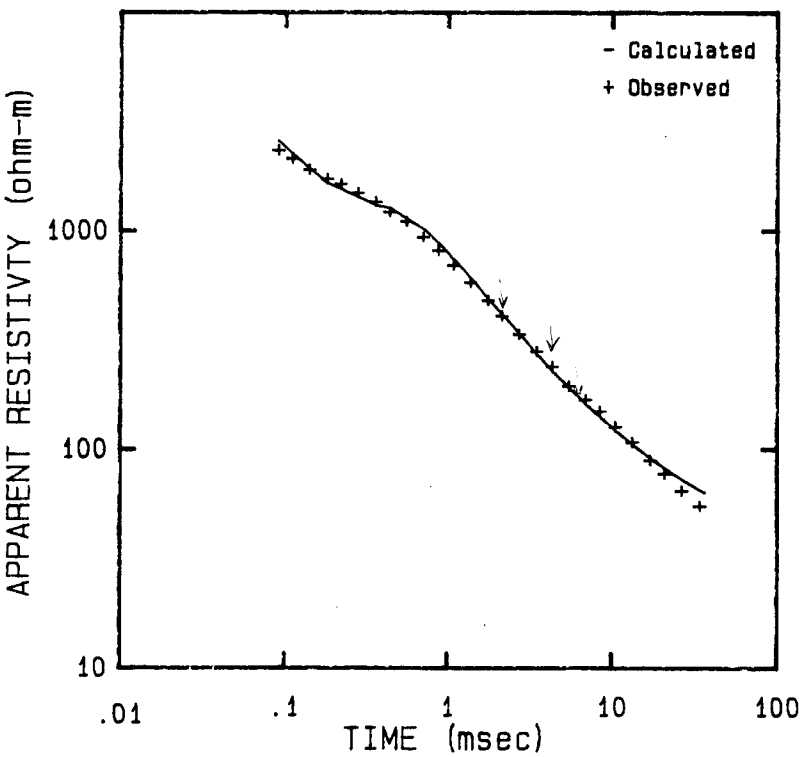
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.85368E-03 | 0.11714E+04 | |
| 2 SIGMA( 2) = | 0.52836E-02 | 0.18926E+03 | |
| 3 SIGMA( 3) = | 0.93488E-01 | 0.10697E+02 | |
| 4 THICK( 1) = | 0.33940E+03 | | 0.33940E+03 |
| 5 THICK( 2) = | 0.35667E+03 | | 0.69607E+03 |
| 6 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM04




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 50000 | 280 |
| 308 | 354 |
| 23.5 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 4 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1726E+03 | 0.1482E+03 | 0.2450E+02 | 0.1653E+02 |
| 2 | 0.1100E-03 | 0.1194E+03 | 0.1103E+03 | 0.9093E+01 | 0.8246E+01 |
| 3 | 0.1400E-03 | 0.7776E+02 | 0.7624E+02 | 0.1524E+01 | 0.1999E+01 |
| 4 | 0.1770E-03 | 0.4804E+02 | 0.5129E+02 | -0.3247E+01 | -0.6331E+01 |
| 5 | 0.2200E-03 | 0.3162E+02 | 0.3429E+02 | -0.2672E+01 | -0.7793E+01 |
| 6 | 0.2800E-03 | 0.1986E+02 | 0.2121E+02 | -0.1344E+01 | -0.6336E+01 |
| 7 | 0.3550E-03 | 0.1220E+02 | 0.1293E+02 | -0.7308E+00 | -0.5650E+01 |
| 8 | 0.4430E-03 | 0.8742E+01 | 0.8221E+01 | 0.5213E+00 | 0.6341E+01 |
| 9 | 0.5540E-03 | 0.5553E+01 | 0.5341E+01 | 0.2118E+00 | 0.3966E+01 |
| 10 | 0.7130E-03 | 0.3924E+01 | 0.3477E+01 | 0.4466E+00 | 0.1284E+02 |
| 11 | 0.8810E-03 | 0.2829E+01 | 0.2546E+01 | 0.2832E+00 | 0.1112E+02 |
| 12 | 0.1096E-02 | 0.2051E+01 | 0.1898E+01 | 0.1530E+00 | 0.8064E+01 |
| 13 | 0.1411E-02 | 0.1470E+01 | 0.1395E+01 | 0.7500E-01 | 0.5376E+01 |
| 14 | 0.1795E-02 | 0.1041E+01 | 0.1044E+01 | -0.3287E-02 | -0.3148E+00 |
| 15 | 0.2224E-02 | 0.8060E+00 | 0.8080E+00 | -0.1953E-02 | -0.2417E+00 |
| 16 | 0.2850E-02 | 0.5890E+00 | 0.5969E+00 | -0.7917E-02 | -0.1326E+01 |
| 17 | 0.3600E-02 | 0.4120E+00 | 0.4445E+00 | -0.3252E-01 | -0.7316E+01 |
| 18 | 0.4490E-02 | 0.3010E+00 | 0.3334E+00 | -0.3242E-01 | -0.9723E+01 |
| 19 | 0.5700E-02 | 0.2260E+00 | 0.2410E+00 | -0.1501E-01 | -0.6227E+01 |
| 20 | 0.7190E-02 | 0.1570E+00 | 0.1735E+00 | -0.1653E-01 | -0.9525E+01 |
| 21 | 0.8800E-02 | 0.1140E+00 | 0.1288E+00 | -0.1484E-01 | -0.1152E+02 |
| 22 | 0.1100E-01 | 0.8400E-01 | 0.9163E-01 | -0.7633E-02 | -0.8330E+01 |
| 23 | 0.1400E-01 | 0.5800E-01 | 0.6247E-01 | -0.4475E-02 | -0.7163E+01 |
| 24 | 0.1800E-01 | 0.4100E-01 | 0.4124E-01 | -0.2360E-03 | -0.5723E+00 |
| 25 | 0.2200E-01 | 0.3100E-01 | 0.2919E-01 | 0.1808E-02 | 0.6195E+01 |
| 26 | 0.2800E-01 | 0.2200E-01 | 0.1906E-01 | 0.2938E-02 | 0.1541E+02 |
| 27 | 0.3600E-01 | 0.1500E-01 | 0.1201E-01 | 0.2985E-02 | 0.2485E+02 |

** %RMSERR= 9.40

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.2851E+00 | 0.1000E+01 | | | |
| 3 | -0.5241E+00 | -0.2518E+00 | 0.1000E+01 | | |
| 4 | -0.1054E+00 | 0.7342E+00 | -0.4184E+00 | 0.1000E+01 | |
| 5 | 0.2005E+00 | -0.2296E+00 | -0.4361E+00 | -0.2632E+00 | 0.1000E+01 |

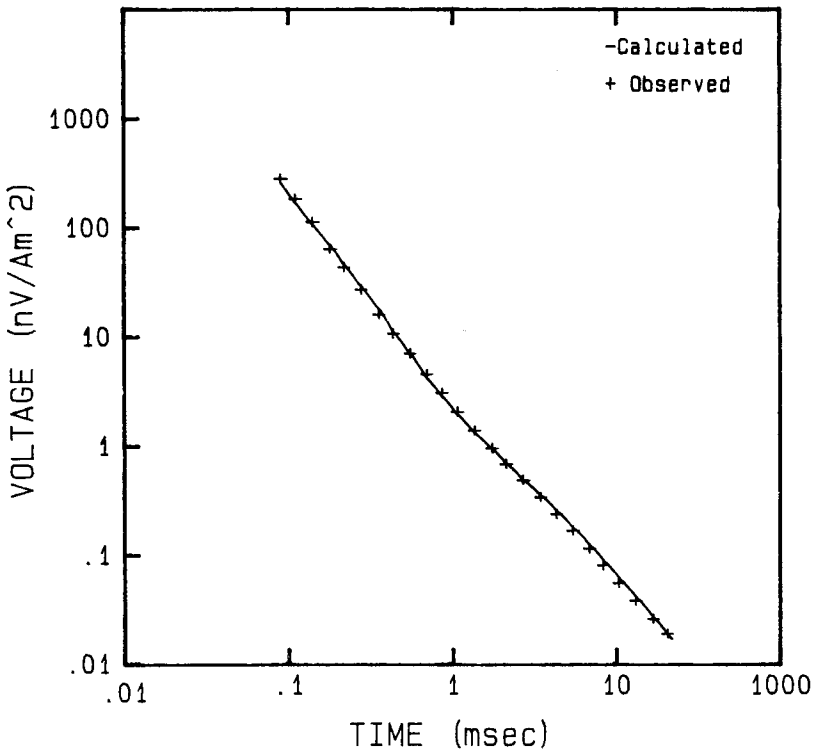
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1999E-04 | 0.1990E-04 | 0.9954E+00 | 0.9954E+02 |
| 2 | 0.3244E-02 | 0.3665E-03 | 0.1130E+00 | 0.1130E+02 |
| 3 | 0.4250E-01 | 0.1463E-02 | 0.3442E-01 | 0.3442E+01 |
| 4 | 0.2796E+03 | 0.3219E-02 | 0.1152E-04 | 0.1152E-02 |
| 5 | 0.3542E+03 | 0.3444E-02 | 0.9722E-05 | 0.9722E-03 |

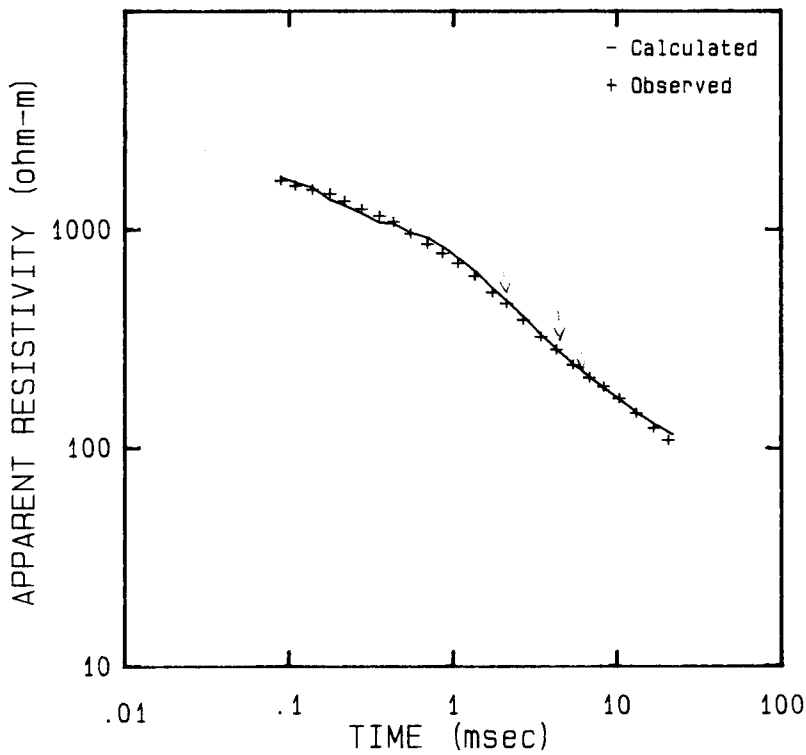
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.19993E-04 | 0.50018E+05 | |
| 2 | SIGMA( 2) | = | 0.32443E-02 | 0.30823E+03 | |
| 3 | SIGMA( 3) | = | 0.42499E-01 | 0.23530E+02 | |
| 4 | THICK( 1) | = | 0.27958E+03 | | 0.27958E+03 |
| 5 | THICK( 2) | = | 0.35422E+03 | | 0.63380E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM05




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1629 | 341 |
| 300 | 365 |
| 42 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 5 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2747E+03 | 0.2594E+03 | 0.1528E+02 | 0.5890E+01 |
| 2 | 0.1100E-03 | 0.1799E+03 | 0.1695E+03 | 0.1040E+02 | 0.6135E+01 |
| 3 | 0.1400E-03 | 0.1098E+03 | 0.1057E+03 | 0.4129E+01 | 0.3906E+01 |
| 4 | 0.1770E-03 | 0.6237E+02 | 0.6831E+02 | -0.5933E+01 | -0.8686E+01 |
| 5 | 0.2200E-03 | 0.4239E+02 | 0.4530E+02 | -0.2914E+01 | -0.6433E+01 |
| 6 | 0.2800E-03 | 0.2633E+02 | 0.2818E+02 | -0.1846E+01 | -0.6552E+01 |
| 7 | 0.3550E-03 | 0.1563E+02 | 0.1737E+02 | -0.1742E+01 | -0.1003E+02 |
| 8 | 0.4430E-03 | 0.1040E+02 | 0.1082E+02 | -0.4164E+00 | -0.3849E+01 |
| 9 | 0.5540E-03 | 0.6868E+01 | 0.6775E+01 | 0.9257E-01 | 0.1366E+01 |
| 10 | 0.7130E-03 | 0.4464E+01 | 0.4044E+01 | 0.4198E+00 | 0.1038E+02 |
| 11 | 0.8810E-03 | 0.3007E+01 | 0.2735E+01 | 0.2723E+00 | 0.9958E+01 |
| 12 | 0.1096E-02 | 0.2018E+01 | 0.1883E+01 | 0.1352E+00 | 0.7183E+01 |
| 13 | 0.1411E-02 | 0.1358E+01 | 0.1271E+01 | 0.8706E-01 | 0.6850E+01 |
| 14 | 0.1795E-02 | 0.9360E+00 | 0.8975E+00 | 0.3851E-01 | 0.4291E+01 |
| 15 | 0.2224E-02 | 0.6730E+00 | 0.6612E+00 | 0.1178E-01 | 0.1781E+01 |
| 16 | 0.2850E-02 | 0.4780E+00 | 0.4665E+00 | 0.1148E-01 | 0.2461E+01 |
| 17 | 0.3600E-02 | 0.3330E+00 | 0.3337E+00 | -0.6834E-03 | -0.2048E+00 |
| 18 | 0.4490E-02 | 0.2330E+00 | 0.2410E+00 | -0.8007E-02 | -0.3322E+01 |
| 19 | 0.5700E-02 | 0.1640E+00 | 0.1677E+00 | -0.3668E-02 | -0.2187E+01 |
| 20 | 0.7190E-02 | 0.1120E+00 | 0.1164E+00 | -0.4367E-02 | -0.3753E+01 |
| 21 | 0.8800E-02 | 0.7900E-01 | 0.8396E-01 | -0.4963E-02 | -0.5911E+01 |
| 22 | 0.1100E-01 | 0.5400E-01 | 0.5787E-01 | -0.3868E-02 | -0.6684E+01 |
| 23 | 0.1400E-01 | 0.3700E-01 | 0.3826E-01 | -0.1262E-02 | -0.3298E+01 |
| 24 | 0.1800E-01 | 0.2500E-01 | 0.2442E-01 | 0.5756E-03 | 0.2357E+01 |
| 25 | 0.2200E-01 | 0.1900E-01 | 0.1691E-01 | 0.2088E-02 | 0.1235E+02 |

** %RMSERR= 6.25

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.4766E+00 | 0.1000E+01 | | | |
| 3 | 0.1749E+00 | -0.7831E+00 | 0.1000E+01 | | |
| 4 | -0.2198E+00 | 0.2853E+00 | -0.2965E+00 | 0.1000E+01 | |
| 5 | -0.1298E+00 | -0.2870E+00 | 0.2206E+00 | -0.3526E-01 | 0.1000E+01 |

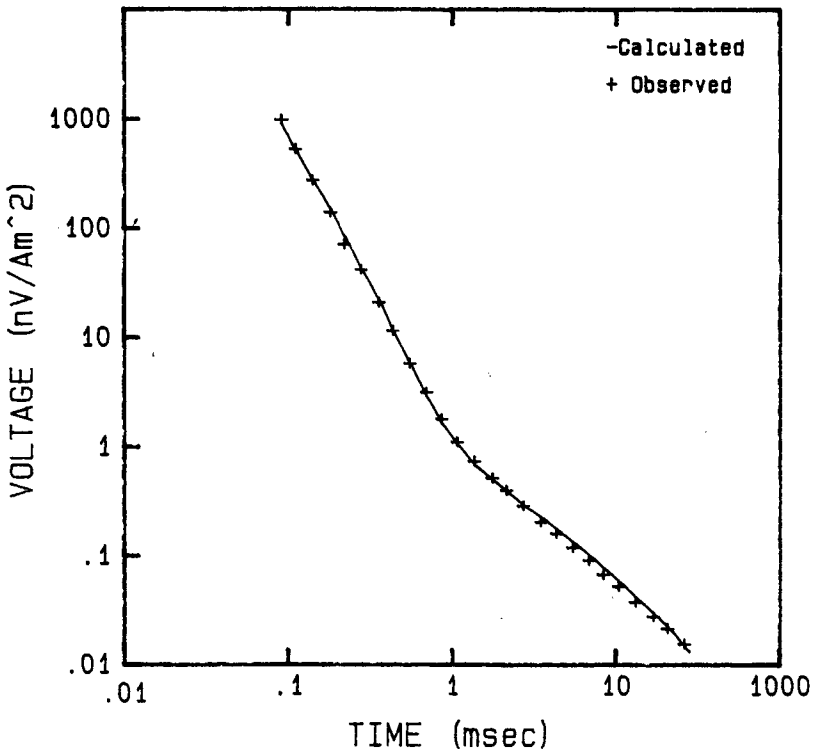
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.6137E-03 | 0.3988E-04 | 0.6497E-01 | 0.6497E+01 |
| 2 | 0.3322E-02 | 0.2168E-03 | 0.6524E-01 | 0.6524E+01 |
| 3 | 0.2385E-01 | 0.5135E-03 | 0.2153E-01 | 0.2153E+01 |
| 4 | 0.3411E+03 | 0.1639E-02 | 0.4803E-05 | 0.4803E-03 |
| 5 | 0.3652E+03 | 0.1528E-02 | 0.4183E-05 | 0.4183E-03 |

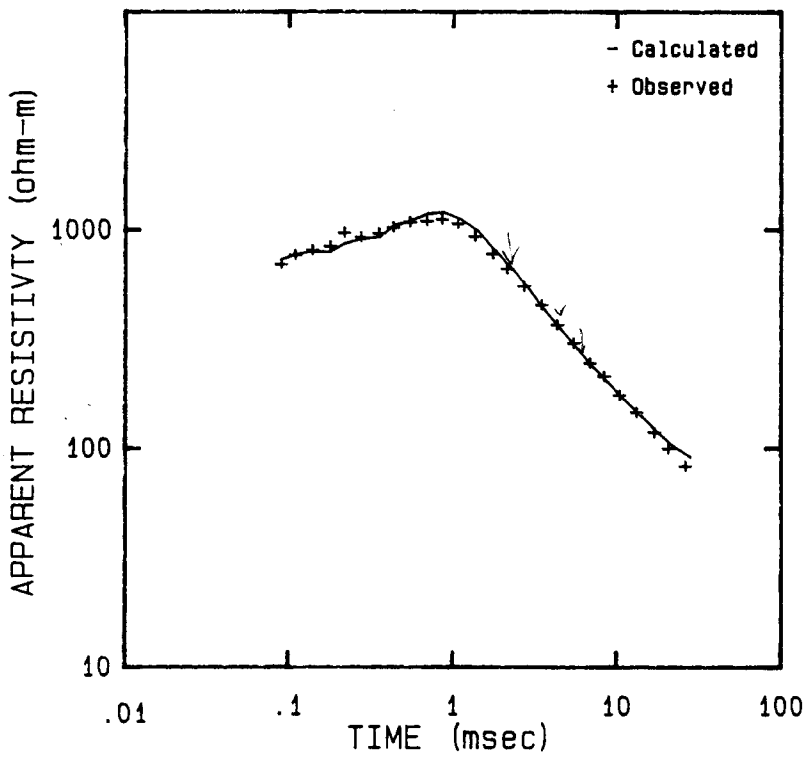
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.61372E-03 | 0.16294E+04 | |
| 2 | SIGMA( 2) | = | 0.33224E-02 | 0.30099E+03 | |
| 3 | SIGMA( 3) | = | 0.23852E-01 | 0.41925E+02 | |
| 4 | THICK( 1) | = | 0.34113E+03 | | 0.34113E+03 |
| 5 | THICK( 2) | = | 0.36522E+03 | | 0.70634E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM06




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 334 | 24.5 |
| 952 | 804.5 |
| 20.2 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 6 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.9588E+03 | 0.8962E+03 | 0.6255E+02 | 0.6980E+01 |
| 2 | 0.1100E-03 | 0.5168E+03 | 0.5125E+03 | 0.4276E+01 | 0.8344E+00 |
| 3 | 0.1400E-03 | 0.2657E+03 | 0.2713E+03 | -0.5519E+01 | -0.2035E+01 |
| 4 | 0.1770E-03 | 0.1356E+03 | 0.1471E+03 | -0.1146E+02 | -0.7791E+01 |
| 5 | 0.2200E-03 | 0.6503E+02 | 0.8208E+02 | -0.1705E+02 | -0.2077E+02 |
| 6 | 0.2800E-03 | 0.4061E+02 | 0.4141E+02 | -0.7976E+00 | -0.1926E+01 |
| 7 | 0.3550E-03 | 0.2038E+02 | 0.2139E+02 | -0.1012E+01 | -0.4730E+01 |
| 8 | 0.4430E-03 | 0.1125E+02 | 0.1089E+02 | 0.3610E+00 | 0.3314E+01 |
| 9 | 0.5540E-03 | 0.5660E+01 | 0.5504E+01 | 0.1562E+00 | 0.2839E+01 |
| 10 | 0.7130E-03 | 0.3068E+01 | 0.2712E+01 | 0.3556E+00 | 0.1311E+02 |
| 11 | 0.8810E-03 | 0.1749E+01 | 0.1552E+01 | 0.1970E+00 | 0.1270E+02 |
| 12 | 0.1096E-02 | 0.1073E+01 | 0.9870E+00 | 0.8604E-01 | 0.8718E+01 |
| 13 | 0.1411E-02 | 0.7200E+00 | 0.6449E+00 | 0.7512E-01 | 0.1165E+02 |
| 14 | 0.1795E-02 | 0.5050E+00 | 0.4742E+00 | 0.3078E-01 | 0.6490E+01 |
| 15 | 0.2224E-02 | 0.3890E+00 | 0.3672E+00 | 0.2184E-01 | 0.5950E+01 |
| 16 | 0.2850E-02 | 0.2800E+00 | 0.2746E+00 | 0.5447E-02 | 0.1984E+01 |
| 17 | 0.3600E-02 | 0.2010E+00 | 0.2137E+00 | -0.1268E-01 | -0.5934E+01 |
| 18 | 0.4490E-02 | 0.1580E+00 | 0.1654E+00 | -0.7384E-02 | -0.4465E+01 |
| 19 | 0.5700E-02 | 0.1160E+00 | 0.1249E+00 | -0.8864E-02 | -0.7099E+01 |
| 20 | 0.7190E-02 | 0.8900E-01 | 0.9390E-01 | -0.4903E-02 | -0.5222E+01 |
| 21 | 0.8800E-02 | 0.6600E-01 | 0.7225E-01 | -0.6250E-02 | -0.8651E+01 |
| 22 | 0.1100E-01 | 0.5200E-01 | 0.5380E-01 | -0.1798E-02 | -0.3342E+01 |
| 23 | 0.1400E-01 | 0.3700E-01 | 0.3849E-01 | -0.1486E-02 | -0.3860E+01 |
| 24 | 0.1800E-01 | 0.2700E-01 | 0.2671E-01 | 0.2929E-03 | 0.1097E+01 |
| 25 | 0.2200E-01 | 0.2100E-01 | 0.1970E-01 | 0.1301E-02 | 0.6603E+01 |
| 26 | 0.2800E-01 | 0.1500E-01 | 0.1343E-01 | 0.1567E-02 | 0.1166E+02 |

** %RMSERR= 7.92

CORRELATION MATRIX

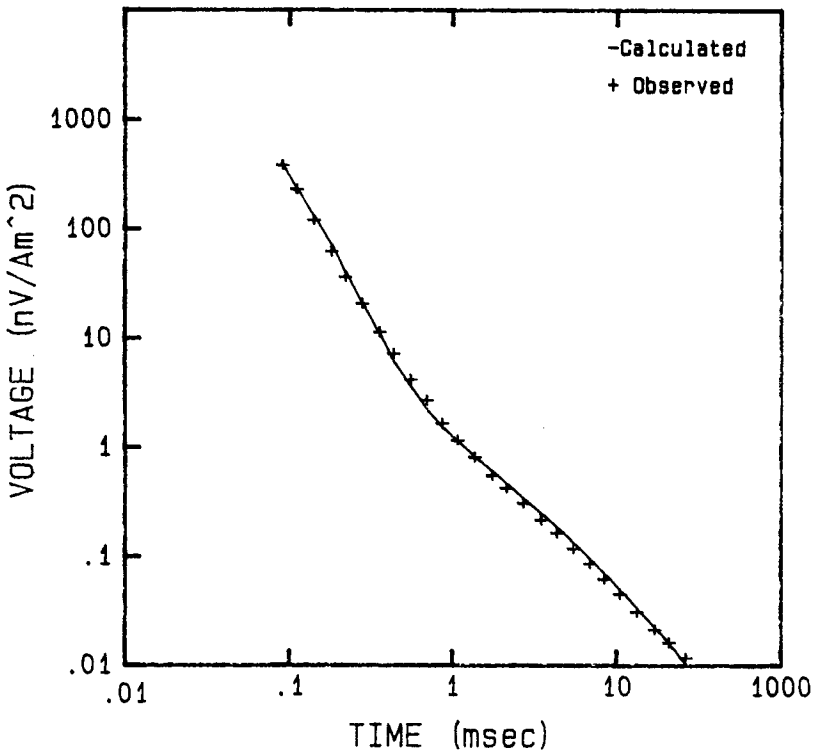
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.5970E+00 | 0.1000E+01 | | | |
| 3 | -0.3717E-01 | -0.7318E-01 | 0.1000E+01 | | |
| 4 | -0.6287E+00 | 0.1971E+00 | 0.1958E+00 | 0.1000E+01 | |
| 5 | -0.7799E+00 | 0.4944E+00 | 0.1243E+00 | 0.4348E+00 | 0.1000E+01 |

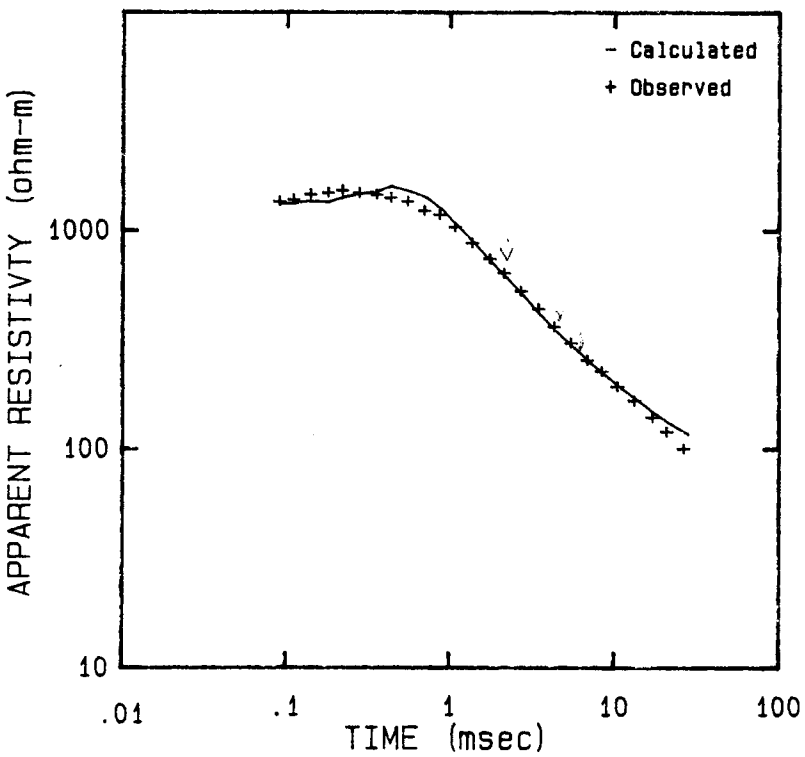
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2998E-02 | 0.1504E-03 | 0.5015E-01 | 0.5015E+01 |
| 2 | 0.1050E-02 | 0.8117E-04 | 0.7728E-01 | 0.7728E+01 |
| 3 | 0.4950E-01 | 0.6385E-03 | 0.1290E-01 | 0.1290E+01 |
| 4 | 0.2449E+02 | 0.2138E-03 | 0.8731E-05 | 0.8731E-03 |
| 5 | 0.8044E+03 | 0.2213E-02 | 0.2751E-05 | 0.2751E-03 |

| PARAMETER | NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.29981E-02 | 0.33354E+03 | |
| 2 | SIGMA( 2) = | 0.10503E-02 | 0.95208E+03 | |
| 3 | SIGMA( 3) = | 0.49495E-01 | 0.20204E+02 | |
| 4 | THICK( 1) = | 0.24487E+02 | | 0.24487E+02 |
| 5 | THICK( 2) = | 0.80436E+03 | | 0.82885E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM07




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 2723 | 48.1 |
| 1122 | 718.9 |
| 45.1 | |

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ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 7 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3702E+03 | 0.3807E+03 | -0.1051E+02 | -0.2761E+01 |
| 2 | 0.1100E-03 | 0.2223E+03 | 0.2320E+03 | -0.9729E+01 | -0.4194E+01 |
| 3 | 0.1400E-03 | 0.1160E+03 | 0.1275E+03 | -0.1152E+02 | -0.9037E+01 |
| 4 | 0.1770E-03 | 0.6028E+02 | 0.6998E+02 | -0.9706E+01 | -0.1387E+02 |
| 5 | 0.2200E-03 | 0.3515E+02 | 0.3927E+02 | -0.4111E+01 | -0.1047E+02 |
| 6 | 0.2800E-03 | 0.2006E+02 | 0.2022E+02 | -0.1601E+00 | -0.7917E+00 |
| 7 | 0.3550E-03 | 0.1097E+02 | 0.1041E+02 | 0.5560E+00 | 0.5341E+01 |
| 8 | 0.4430E-03 | 0.6980E+01 | 0.5806E+01 | 0.1174E+01 | 0.2022E+02 |
| 9 | 0.5540E-03 | 0.4051E+01 | 0.3426E+01 | 0.6252E+00 | 0.1825E+02 |
| 10 | 0.7130E-03 | 0.2600E+01 | 0.2076E+01 | 0.5238E+00 | 0.2523E+02 |
| 11 | 0.8810E-03 | 0.1617E+01 | 0.1459E+01 | 0.1576E+00 | 0.1080E+02 |
| 12 | 0.1096E-02 | 0.1126E+01 | 0.1075E+01 | 0.5091E-01 | 0.4735E+01 |
| 13 | 0.1411E-02 | 0.7900E+00 | 0.7804E+00 | 0.9589E-02 | 0.1229E+01 |
| 14 | 0.1795E-02 | 0.5400E+00 | 0.5713E+00 | -0.3129E-01 | -0.5478E+01 |
| 15 | 0.2224E-02 | 0.4120E+00 | 0.4383E+00 | -0.2626E-01 | -0.5992E+01 |
| 16 | 0.2850E-02 | 0.3000E+00 | 0.3189E+00 | -0.1894E-01 | -0.5939E+01 |
| 17 | 0.3600E-02 | 0.2110E+00 | 0.2330E+00 | -0.2199E-01 | -0.9440E+01 |
| 18 | 0.4490E-02 | 0.1610E+00 | 0.1728E+00 | -0.1179E-01 | -0.6822E+01 |
| 19 | 0.5700E-02 | 0.1150E+00 | 0.1228E+00 | -0.7760E-02 | -0.6321E+01 |
| 20 | 0.7190E-02 | 0.8400E-01 | 0.8709E-01 | -0.3087E-02 | -0.3544E+01 |
| 21 | 0.8800E-02 | 0.6100E-01 | 0.6381E-01 | -0.2810E-02 | -0.4404E+01 |
| 22 | 0.1100E-01 | 0.4400E-01 | 0.4476E-01 | -0.7592E-03 | -0.1696E+01 |
| 23 | 0.1400E-01 | 0.3000E-01 | 0.3021E-01 | -0.2103E-03 | -0.6962E+00 |
| 24 | 0.1800E-01 | 0.2100E-01 | 0.1984E-01 | 0.1161E-02 | 0.5852E+01 |
| 25 | 0.2200E-01 | 0.1600E-01 | 0.1406E-01 | 0.1943E-02 | 0.1382E+02 |
| 26 | 0.2800E-01 | 0.1100E-01 | 0.9283E-02 | 0.1717E-02 | 0.1849E+02 |

** %RMSERR= 10.44

CORRELATION MATRIX

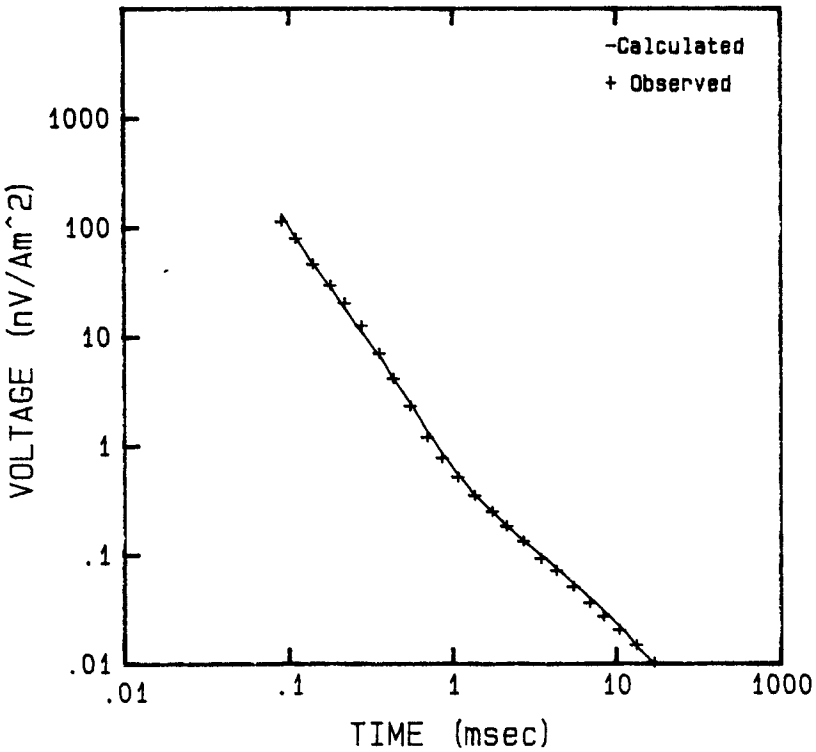
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.5270E-01 | 0.1000E+01 | | | |
| 3 | 0.1108E+00 | -0.5298E+00 | 0.1000E+01 | | |
| 4 | 0.5068E+00 | -0.2241E+00 | 0.1846E+00 | 0.1000E+01 | |
| 5 | 0.2064E+00 | 0.1199E+00 | -0.2806E+00 | 0.7359E-01 | 0.1000E+01 |

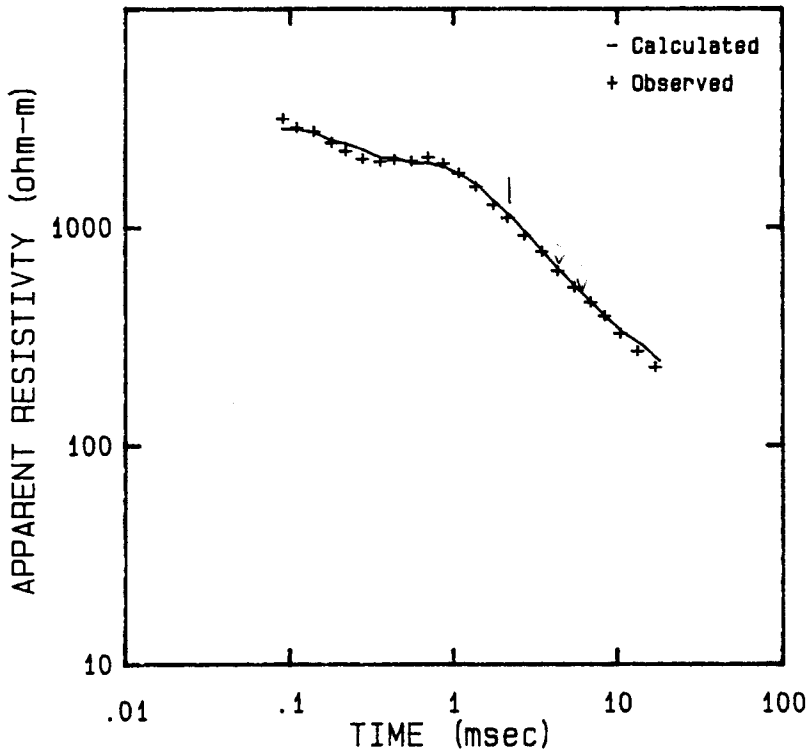
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3673E-03 | 0.5064E-04 | 0.1379E+00 | 0.1379E+02 |
| 2 | 0.8914E-03 | 0.7459E-04 | 0.8368E-01 | 0.8368E+01 |
| 3 | 0.2218E-01 | 0.5965E-03 | 0.2690E-01 | 0.2690E+01 |
| 4 | 0.4811E+02 | 0.7802E-03 | 0.1621E-04 | 0.1621E-02 |
| 5 | 0.7185E+03 | 0.2636E-02 | 0.3669E-05 | 0.3669E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.36731E-03 | 0.27225E+04 | |
| 2 | SIGMA( 2) | = | 0.89141E-03 | 0.11218E+04 | |
| 3 | SIGMA( 3) | = | 0.22178E-01 | 0.45090E+02 | |
| 4 | THICK( 1) | = | 0.48114E+02 | | 0.48114E+02 |
| 5 | THICK( 2) | = | 0.71847E+03 | | 0.76658E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM08




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 2578 | 526 |
| 682 | 599 |
| 54.2 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 8 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1159E+03 | 0.1296E+03 | -0.1361E+02 | -0.1051E+02 |
| 2 | 0.1100E-03 | 0.7167E+02 | 0.7892E+02 | -0.7253E+01 | -0.9190E+01 |
| 3 | 0.1400E-03 | 0.4515E+02 | 0.4557E+02 | -0.4165E+00 | -0.9140E+00 |
| 4 | 0.1770E-03 | 0.2868E+02 | 0.2763E+02 | 0.1055E+01 | 0.3819E+01 |
| 5 | 0.2200E-03 | 0.1983E+02 | 0.1763E+02 | 0.2203E+01 | 0.1250E+02 |
| 6 | 0.2800E-03 | 0.1234E+02 | 0.1064E+02 | 0.1699E+01 | 0.1596E+02 |
| 7 | 0.3550E-03 | 0.6856E+01 | 0.6416E+01 | 0.4404E+00 | 0.6864E+01 |
| 8 | 0.4430E-03 | 0.4031E+01 | 0.3876E+01 | 0.1546E+00 | 0.3987E+01 |
| 9 | 0.5540E-03 | 0.2253E+01 | 0.2317E+01 | -0.6394E-01 | -0.2760E+01 |
| 10 | 0.7130E-03 | 0.1170E+01 | 0.1275E+01 | -0.1050E+00 | -0.8235E+01 |
| 11 | 0.8810E-03 | 0.7540E+00 | 0.7997E+00 | -0.4565E-01 | -0.5709E+01 |
| 12 | 0.1096E-02 | 0.5050E+00 | 0.5139E+00 | -0.8905E-02 | -0.1733E+01 |
| 13 | 0.1411E-02 | 0.3410E+00 | 0.3336E+00 | 0.7380E-02 | 0.2212E+01 |
| 14 | 0.1795E-02 | 0.2430E+00 | 0.2326E+00 | 0.1043E-01 | 0.4487E+01 |
| 15 | 0.2224E-02 | 0.1800E+00 | 0.1726E+00 | 0.7368E-02 | 0.4268E+01 |
| 16 | 0.2850E-02 | 0.1310E+00 | 0.1256E+00 | 0.5449E-02 | 0.4340E+01 |
| 17 | 0.3600E-02 | 0.9000E-01 | 0.9303E-01 | -0.3028E-02 | -0.3255E+01 |
| 18 | 0.4490E-02 | 0.7000E-01 | 0.7010E-01 | -0.1048E-03 | -0.1496E+00 |
| 19 | 0.5700E-02 | 0.5000E-01 | 0.5094E-01 | -0.9390E-03 | -0.1843E+01 |
| 20 | 0.7190E-02 | 0.3500E-01 | 0.3695E-01 | -0.1951E-02 | -0.5280E+01 |
| 21 | 0.8800E-02 | 0.2700E-01 | 0.2773E-01 | -0.7339E-03 | -0.2646E+01 |
| 22 | 0.1100E-01 | 0.2000E-01 | 0.2002E-01 | -0.2136E-04 | -0.1067E+00 |
| 23 | 0.1400E-01 | 0.1500E-01 | 0.1388E-01 | 0.1120E-02 | 0.8072E+01 |
| 24 | 0.1800E-01 | 0.1000E-01 | 0.9299E-02 | 0.7011E-03 | 0.7540E+01 |

** %RMSERR= 6.55

CORRELATION MATRIX

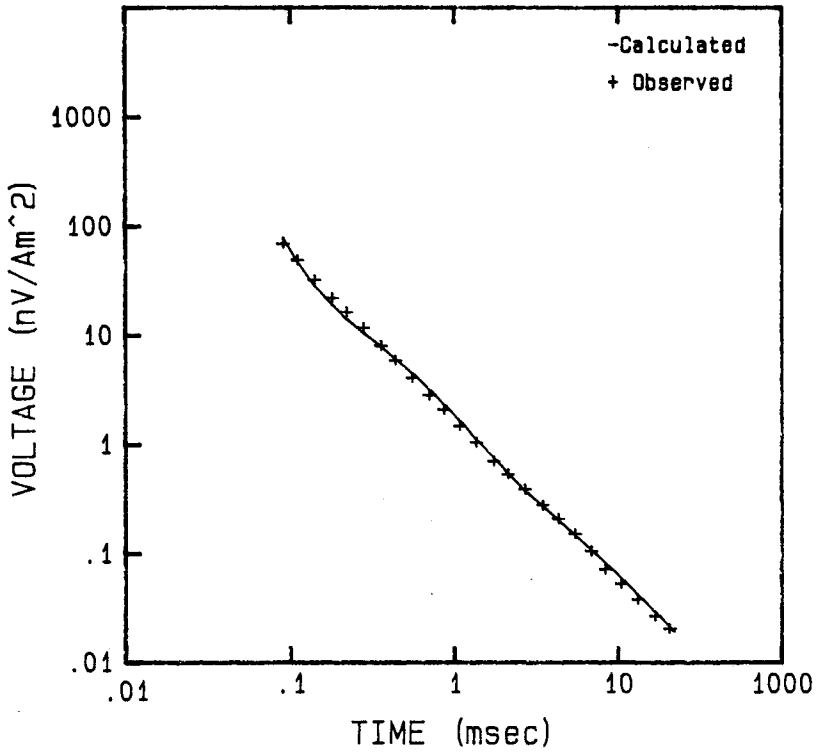
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.2498E+00 | 0.1000E+01 | | | |
| 3 | -0.7334E-02 | 0.2437E+00 | 0.1000E+01 | | |
| 4 | -0.9190E-01 | 0.5863E-01 | 0.2214E+00 | 0.1000E+01 | |
| 5 | -0.4568E+00 | -0.7424E+00 | -0.2974E+00 | -0.2316E+00 | 0.1000E+01 |

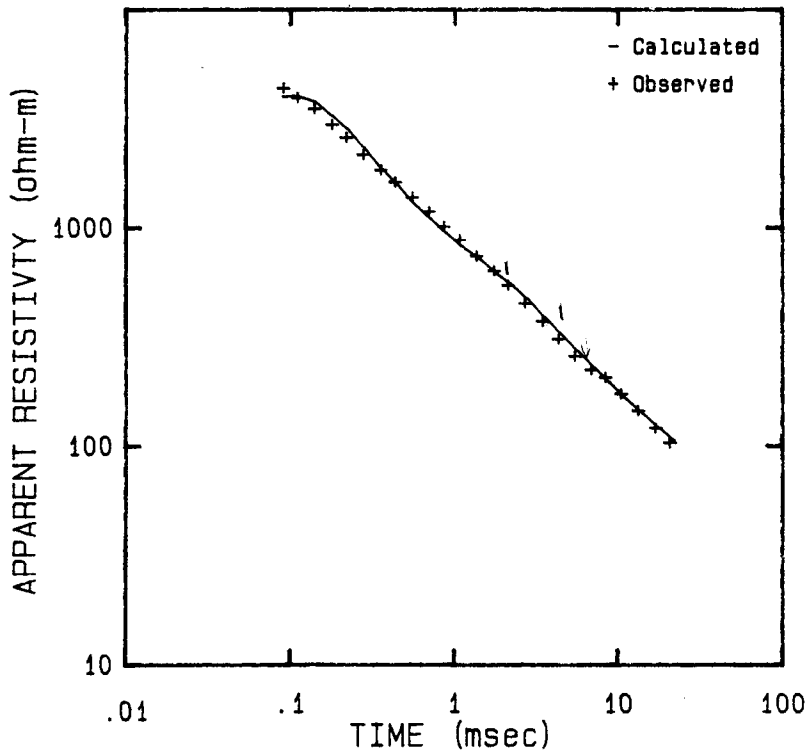
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3879E-03 | 0.1516E-04 | 0.3908E-01 | 0.3908E+01 |
| 2 | 0.1466E-02 | 0.5325E-04 | 0.3632E-01 | 0.3632E+01 |
| 3 | 0.1845E-01 | 0.7032E-03 | 0.3812E-01 | 0.3812E+01 |
| 4 | 0.5258E+03 | 0.1793E-02 | 0.3410E-05 | 0.3410E-03 |
| 5 | 0.5987E+03 | 0.3268E-02 | 0.5457E-05 | 0.5457E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.38792E-03 | 0.25778E+04 | |
| 2 | SIGMA( 2) | = | 0.14664E-02 | 0.68194E+03 | |
| 3 | SIGMA( 3) | = | 0.18446E-01 | 0.54213E+02 | |
| 4 | THICK( 1) | = | 0.52583E+03 | | 0.52583E+03 |
| 5 | THICK( 2) | = | 0.59874E+03 | | 0.11246E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM09




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 3002 | 552 |
| 91.9 | 342 |
| 21.7 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 9 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.6741E+02 | 0.7695E+02 | -0.9541E+01 | -0.1240E+02 |
| 2 | 0.1100E-03 | 0.4769E+02 | 0.4581E+02 | 0.1887E+01 | 0.4119E+01 |
| 3 | 0.1400E-03 | 0.3119E+02 | 0.2754E+02 | 0.3649E+01 | 0.1325E+02 |
| 4 | 0.1770E-03 | 0.2143E+02 | 0.1860E+02 | 0.2832E+01 | 0.1523E+02 |
| 5 | 0.2200E-03 | 0.1590E+02 | 0.1371E+02 | 0.2189E+01 | 0.1596E+02 |
| 6 | 0.2800E-03 | 0.1143E+02 | 0.1017E+02 | 0.1262E+01 | 0.1241E+02 |
| 7 | 0.3550E-03 | 0.7784E+01 | 0.7598E+01 | 0.1863E+00 | 0.2452E+01 |
| 8 | 0.4430E-03 | 0.5706E+01 | 0.5805E+01 | -0.9941E-01 | -0.1712E+01 |
| 9 | 0.5540E-03 | 0.3963E+01 | 0.4331E+01 | -0.3682E+00 | -0.8500E+01 |
| 10 | 0.7130E-03 | 0.2746E+01 | 0.3046E+01 | -0.2997E+00 | -0.9841E+01 |
| 11 | 0.8810E-03 | 0.2032E+01 | 0.2216E+01 | -0.1844E+00 | -0.8321E+01 |
| 12 | 0.1096E-02 | 0.1432E+01 | 0.1572E+01 | -0.1402E+00 | -0.8917E+01 |
| 13 | 0.1411E-02 | 0.1014E+01 | 0.1043E+01 | -0.2860E-01 | -0.2743E+01 |
| 14 | 0.1795E-02 | 0.6850E+00 | 0.7068E+00 | -0.2176E-01 | -0.3079E+01 |
| 15 | 0.2224E-02 | 0.5220E+00 | 0.5061E+00 | 0.1591E-01 | 0.3143E+01 |
| 16 | 0.2850E-02 | 0.3780E+00 | 0.3511E+00 | 0.2689E-01 | 0.7657E+01 |
| 17 | 0.3600E-02 | 0.2690E+00 | 0.2532E+00 | 0.1579E-01 | 0.6234E+01 |
| 18 | 0.4490E-02 | 0.2040E+00 | 0.1869E+00 | 0.1714E-01 | 0.9171E+01 |
| 19 | 0.5700E-02 | 0.1480E+00 | 0.1355E+00 | 0.1253E-01 | 0.9248E+01 |
| 20 | 0.7190E-02 | 0.1020E+00 | 0.9890E-01 | 0.3103E-02 | 0.3138E+01 |
| 21 | 0.8800E-02 | 0.7000E-01 | 0.7482E-01 | -0.4820E-02 | -0.6442E+01 |
| 22 | 0.1100E-01 | 0.5200E-01 | 0.5460E-01 | -0.2603E-02 | -0.4767E+01 |
| 23 | 0.1400E-01 | 0.3700E-01 | 0.3838E-01 | -0.1376E-02 | -0.3586E+01 |
| 24 | 0.1800E-01 | 0.2600E-01 | 0.2629E-01 | -0.2928E-03 | -0.1114E+01 |
| 25 | 0.2200E-01 | 0.2000E-01 | 0.1920E-01 | 0.7952E-03 | 0.4141E+01 |

** %RMSERR= 8.28

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.1754E+00 | 0.1000E+01 | | | |
| 3 | 0.2268E+00 | 0.1972E+00 | 0.1000E+01 | | |
| 4 | -0.3139E+00 | -0.1507E-01 | -0.5146E+00 | 0.1000E+01 | |
| 5 | 0.1495E-01 | -0.4980E-01 | -0.7634E+00 | 0.4216E+00 | 0.1000E+01 |

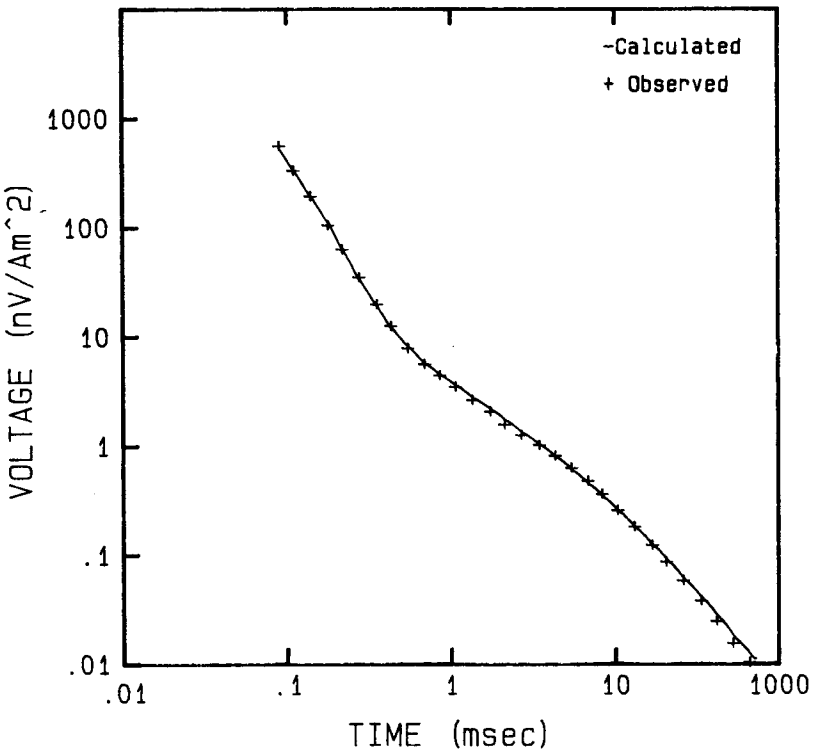
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3332E-03 | 0.3392E-04 | 0.1018E+00 | 0.1018E+02 |
| 2 | 0.1088E-01 | 0.4318E-03 | 0.3970E-01 | 0.3970E+01 |
| 3 | 0.4573E-01 | 0.2771E-02 | 0.6059E-01 | 0.6059E+01 |
| 4 | 0.5517E+03 | 0.2049E-02 | 0.3715E-05 | 0.3715E-03 |
| 5 | 0.3419E+03 | 0.7615E-02 | 0.2227E-04 | 0.2227E-02 |

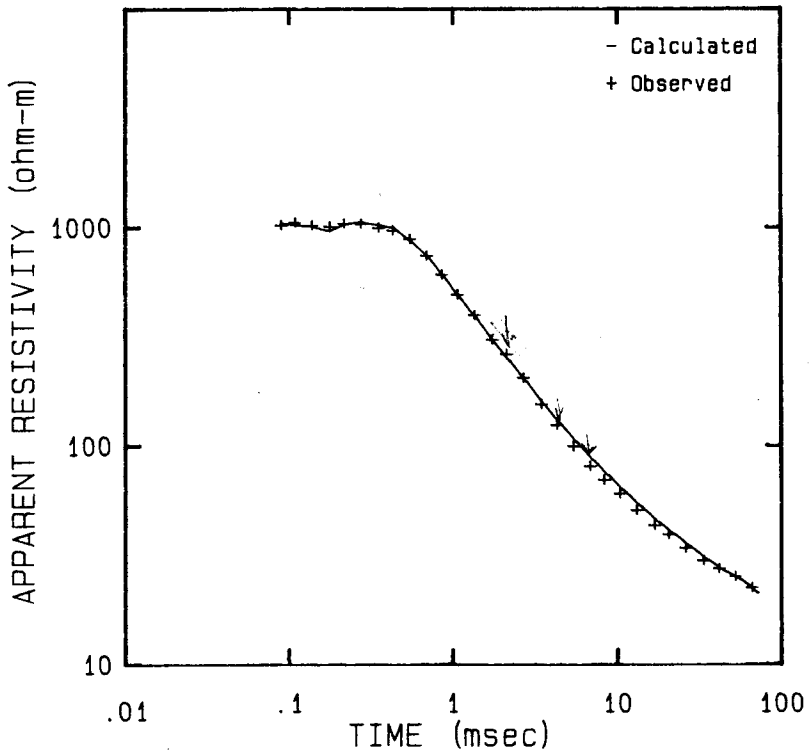
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.33315E-03 | 0.30016E+04 | |
| 2 | SIGMA( 2) | = | 0.10876E-01 | 0.91943E+02 | |
| 3 | SIGMA( 3) | = | 0.45731E-01 | 0.21867E+02 | |
| 4 | THICK( 1) | = | 0.55169E+03 | | 0.55169E+03 |
| 5 | THICK( 2) | = | 0.34191E+03 | | 0.89360E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM10




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1076 | 230 |
| 342 | 248 |
| 9.4 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 10 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.5546E+03 | 0.5374E+03 | 0.1716E+02 | 0.3193E+01 |
| 2 | 0.1100E-03 | 0.3265E+03 | 0.3381E+03 | -0.1165E+02 | -0.3447E+01 |
| 3 | 0.1400E-03 | 0.1891E+03 | 0.1928E+03 | -0.3607E+01 | -0.1871E+01 |
| 4 | 0.1770E-03 | 0.1024E+03 | 0.1097E+03 | -0.7226E+01 | -0.6589E+01 |
| 5 | 0.2200E-03 | 0.6180E+02 | 0.6289E+02 | -0.1089E+01 | -0.1732E+01 |
| 6 | 0.2800E-03 | 0.3401E+02 | 0.3285E+02 | 0.1163E+01 | 0.3539E+01 |
| 7 | 0.3550E-03 | 0.1930E+02 | 0.1851E+02 | 0.7908E+00 | 0.4273E+01 |
| 8 | 0.4430E-03 | 0.1218E+02 | 0.1165E+02 | 0.5346E+00 | 0.4590E+01 |
| 9 | 0.5540E-03 | 0.7635E+01 | 0.7883E+01 | -0.2478E+00 | -0.3144E+01 |
| 10 | 0.7130E-03 | 0.5481E+01 | 0.5562E+01 | -0.8140E-01 | -0.1463E+01 |
| 11 | 0.8810E-03 | 0.4314E+01 | 0.4406E+01 | -0.9168E-01 | -0.2081E+01 |
| 12 | 0.1096E-02 | 0.3388E+01 | 0.3507E+01 | -0.1187E+00 | -0.3385E+01 |
| 13 | 0.1411E-02 | 0.2555E+01 | 0.2693E+01 | -0.1381E+00 | -0.5129E+01 |
| 14 | 0.1795E-02 | 0.2011E+01 | 0.2113E+01 | -0.1017E+00 | -0.4816E+01 |
| 15 | 0.2224E-02 | 0.1530E+01 | 0.1691E+01 | -0.1614E+00 | -0.9541E+01 |
| 16 | 0.2850E-02 | 0.1222E+01 | 0.1291E+01 | -0.6882E-01 | -0.5331E+01 |
| 17 | 0.3600E-02 | 0.9890E+00 | 0.9959E+00 | -0.6910E-02 | -0.6938E+00 |
| 18 | 0.4490E-02 | 0.7870E+00 | 0.7682E+00 | 0.1882E-01 | 0.2450E+01 |
| 19 | 0.5700E-02 | 0.6120E+00 | 0.5747E+00 | 0.3731E-01 | 0.6491E+01 |
| 20 | 0.7190E-02 | 0.4650E+00 | 0.4269E+00 | 0.3814E-01 | 0.8934E+01 |
| 21 | 0.8800E-02 | 0.3510E+00 | 0.3258E+00 | 0.2516E-01 | 0.7722E+01 |
| 22 | 0.1100E-01 | 0.2500E+00 | 0.2389E+00 | 0.1107E-01 | 0.4635E+01 |
| 23 | 0.1400E-01 | 0.1770E+00 | 0.1681E+00 | 0.8950E-02 | 0.5326E+01 |
| 24 | 0.1800E-01 | 0.1200E+00 | 0.1146E+00 | 0.5384E-02 | 0.4697E+01 |
| 25 | 0.2200E-01 | 0.8400E-01 | 0.8339E-01 | 0.6062E-03 | 0.7269E+00 |
| 26 | 0.2800E-01 | 0.5700E-01 | 0.5615E-01 | 0.8515E-03 | 0.1516E+01 |
| 27 | 0.3600E-01 | 0.3700E-01 | 0.3665E-01 | 0.3473E-03 | 0.9476E+00 |
| 28 | 0.4500E-01 | 0.2400E-01 | 0.2484E-01 | -0.8410E-03 | -0.3386E+01 |
| 29 | 0.5700E-01 | 0.1500E-01 | 0.1629E-01 | -0.1294E-02 | -0.7940E+01 |
| 30 | 0.7200E-01 | 0.1000E-01 | 0.1071E-01 | -0.7075E-03 | -0.6608E+01 |

** %RMSERR= 4.84

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.2691E-01 | 0.1000E+01 | | | |
| 3 | -0.5579E+00 | -0.2966E+00 | 0.1000E+01 | | |
| 4 | 0.4895E+00 | 0.4869E+00 | -0.6050E+00 | 0.1000E+01 | |
| 5 | -0.5113E+00 | -0.3519E+00 | 0.5249E+00 | -0.8292E+00 | 0.1000E+01 |

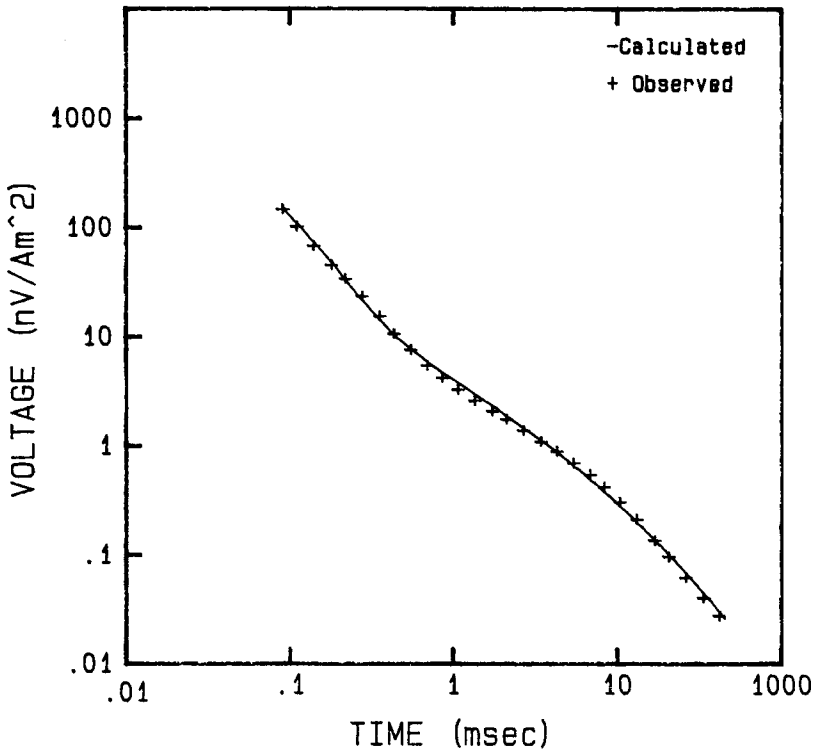
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.9293E-03 | 0.1946E-03 | 0.2094E+00 | 0.2094E+02 |
| 2 | 0.2927E-02 | 0.6988E-03 | 0.2388E+00 | 0.2388E+02 |
| 3 | 0.1069E+00 | 0.2634E-02 | 0.2463E-01 | 0.2463E+01 |
| 4 | 0.2298E+03 | 0.2770E-02 | 0.1205E-04 | 0.1205E-02 |
| 5 | 0.2483E+03 | 0.2674E-02 | 0.1077E-04 | 0.1077E-02 |

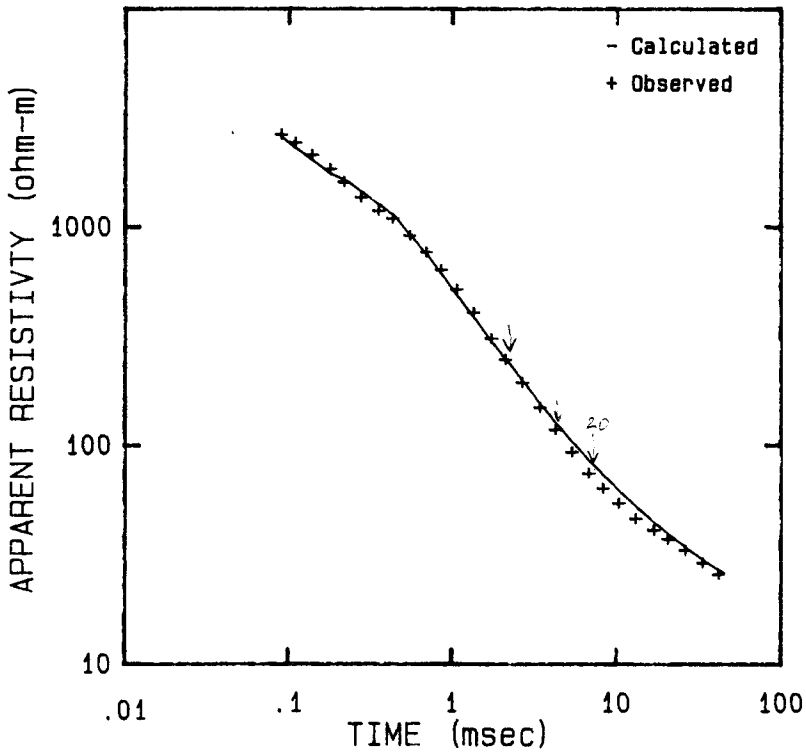
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.92928E-03 | 0.10761E+04 | |
| 2 | SIGMA( 2) | = | 0.29269E-02 | 0.34165E+03 | |
| 3 | SIGMA( 3) | = | 0.10695E+00 | 0.93503E+01 | |
| 4 | THICK( 1) | = | 0.22982E+03 | | 0.22982E+03 |
| 5 | THICK( 2) | = | 0.24832E+03 | | 0.47814E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM11




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 2670 | 332 |
| 114 | 141 |
| 8.74 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 11 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1429E+03 | 0.1483E+03 | -0.5472E+01 | -0.3689E+01 |
| 2 | 0.1100E-03 | 0.9849E+02 | 0.1073E+03 | -0.8851E+01 | -0.8246E+01 |
| 3 | 0.1400E-03 | 0.6560E+02 | 0.7144E+02 | -0.5843E+01 | -0.8180E+01 |
| 4 | 0.1770E-03 | 0.4374E+02 | 0.4710E+02 | -0.3359E+01 | -0.7131E+01 |
| 5 | 0.2200E-03 | 0.3258E+02 | 0.3152E+02 | 0.1060E+01 | 0.3363E+01 |
| 6 | 0.2800E-03 | 0.2263E+02 | 0.2016E+02 | 0.2462E+01 | 0.1221E+02 |
| 7 | 0.3550E-03 | 0.1494E+02 | 0.1364E+02 | 0.1304E+01 | 0.9563E+01 |
| 8 | 0.4430E-03 | 0.1023E+02 | 0.9761E+01 | 0.4719E+00 | 0.4834E+01 |
| 9 | 0.5540E-03 | 0.7344E+01 | 0.7377E+01 | -0.3276E-01 | -0.4441E+00 |
| 10 | 0.7130E-03 | 0.5258E+01 | 0.5560E+01 | -0.3024E+00 | -0.5438E+01 |
| 11 | 0.8810E-03 | 0.4062E+01 | 0.4469E+01 | -0.4066E+00 | -0.9098E+01 |
| 12 | 0.1096E-02 | 0.3173E+01 | 0.3600E+01 | -0.4266E+00 | -0.1185E+02 |
| 13 | 0.1411E-02 | 0.2500E+01 | 0.2799E+01 | -0.2993E+00 | -0.1069E+02 |
| 14 | 0.1795E-02 | 0.2019E+01 | 0.2200E+01 | -0.1806E+00 | -0.8213E+01 |
| 15 | 0.2224E-02 | 0.1701E+01 | 0.1764E+01 | -0.6319E-01 | -0.3582E+01 |
| 16 | 0.2850E-02 | 0.1342E+01 | 0.1355E+01 | -0.1312E-01 | -0.9678E+00 |
| 17 | 0.3600E-02 | 0.1058E+01 | 0.1046E+01 | 0.1158E-01 | 0.1107E+01 |
| 18 | 0.4490E-02 | 0.8630E+00 | 0.8107E+00 | 0.5228E-01 | 0.6448E+01 |
| 19 | 0.5700E-02 | 0.6790E+00 | 0.6075E+00 | 0.7150E-01 | 0.1177E+02 |
| 20 | 0.7190E-02 | 0.5300E+00 | 0.4524E+00 | 0.7759E-01 | 0.1715E+02 |
| 21 | 0.8800E-02 | 0.4080E+00 | 0.3462E+00 | 0.6178E-01 | 0.1784E+02 |
| 22 | 0.1100E-01 | 0.2950E+00 | 0.2540E+00 | 0.4097E-01 | 0.1613E+02 |
| 23 | 0.1400E-01 | 0.2050E+00 | 0.1791E+00 | 0.2593E-01 | 0.1448E+02 |
| 24 | 0.1800E-01 | 0.1320E+00 | 0.1221E+00 | 0.9878E-02 | 0.8088E+01 |
| 25 | 0.2200E-01 | 0.9200E-01 | 0.8886E-01 | 0.3144E-02 | 0.3539E+01 |
| 26 | 0.2800E-01 | 0.6000E-01 | 0.5970E-01 | 0.2995E-03 | 0.5016E+00 |
| 27 | 0.3600E-01 | 0.3200E-01 | 0.3879E-01 | -0.6785E-02 | -0.1749E+02 |
| 28 | 0.4500E-01 | 0.2700E-01 | 0.2607E-01 | 0.9319E-03 | 0.3575E+01 |

** %RMSERR= 9.61

CORRELATION MATRIX

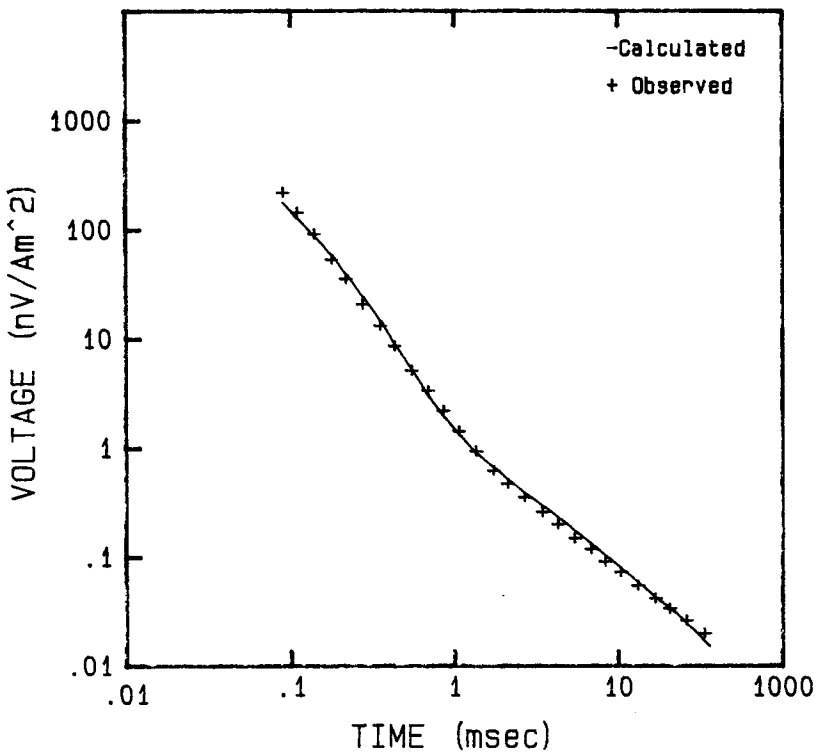
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3688E+00 | 0.1000E+01 | | | |
| 3 | 0.5283E-01 | -0.1681E+00 | 0.1000E+01 | | |
| 4 | -0.7864E-01 | 0.6417E+00 | -0.1591E+00 | 0.1000E+01 | |
| 5 | -0.6931E-01 | -0.2684E+00 | 0.8739E-01 | -0.4185E+00 | 0.1000E+01 |

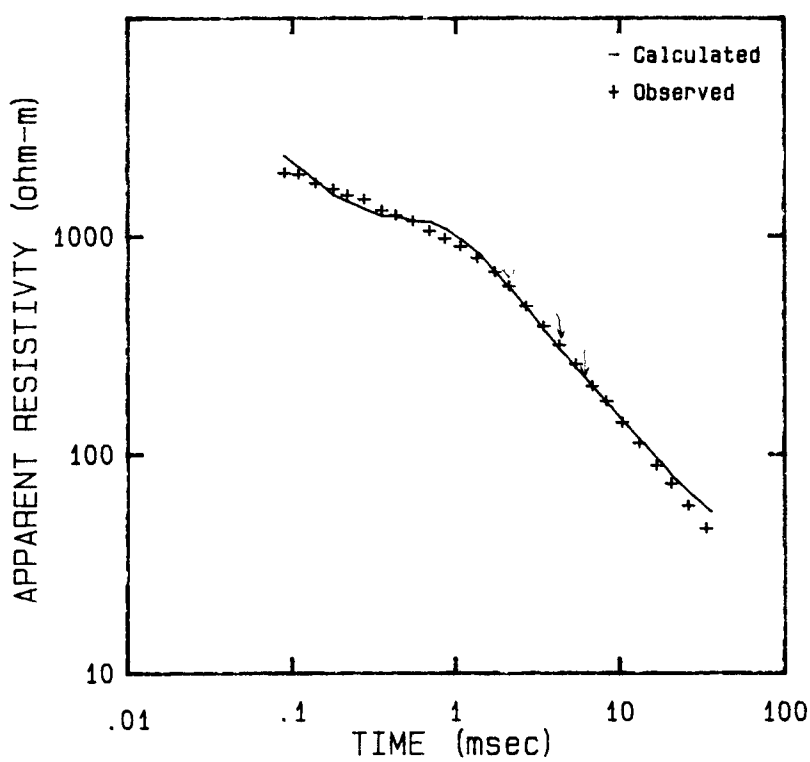
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3739E-03 | 0.9226E-04 | 0.2468E+00 | 0.2468E+02 |
| 2 | 0.8746E-02 | 0.1136E-02 | 0.1298E+00 | 0.1298E+02 |
| 3 | 0.1144E+00 | 0.2307E-02 | 0.2018E-01 | 0.2018E+01 |
| 4 | 0.3320E+03 | 0.2499E-02 | 0.7528E-05 | 0.7528E-03 |
| 5 | 0.1406E+03 | 0.3582E-02 | 0.2548E-04 | 0.2548E-02 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.37394E-03 | 0.26742E+04 | |
| 2 | SIGMA( 2) | = | 0.87463E-02 | 0.11433E+03 | |
| 3 | SIGMA( 3) | = | 0.11436E+00 | 0.87444E+01 | |
| 4 | THICK( 1) | = | 0.33200E+03 | | 0.33200E+03 |
| 5 | THICK( 2) | = | 0.14060E+03 | | 0.47260E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM14




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 8765 | 260 |
| 418 | 515 |
| 22.6 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 14 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2138E+03 | 0.1733E+03 | 0.4055E+02 | 0.2340E+02 |
| 2 | 0.1100E-03 | 0.1409E+03 | 0.1251E+03 | 0.1578E+02 | 0.1261E+02 |
| 3 | 0.1400E-03 | 0.8896E+02 | 0.8503E+02 | 0.3937E+01 | 0.4631E+01 |
| 4 | 0.1770E-03 | 0.5205E+02 | 0.5696E+02 | -0.4903E+01 | -0.8609E+01 |
| 5 | 0.2200E-03 | 0.3464E+02 | 0.3814E+02 | -0.3502E+01 | -0.9182E+01 |
| 6 | 0.2800E-03 | 0.2017E+02 | 0.2354E+02 | -0.3366E+01 | -0.1430E+02 |
| 7 | 0.3550E-03 | 0.1283E+02 | 0.1409E+02 | -0.1266E+01 | -0.8981E+01 |
| 8 | 0.4430E-03 | 0.8338E+01 | 0.8508E+01 | -0.1701E+00 | -0.2000E+01 |
| 9 | 0.5540E-03 | 0.5031E+01 | 0.5043E+01 | -0.1187E-01 | -0.2354E+00 |
| 10 | 0.7130E-03 | 0.3258E+01 | 0.2828E+01 | 0.4296E+00 | 0.1519E+02 |
| 11 | 0.8810E-03 | 0.2149E+01 | 0.1845E+01 | 0.3038E+00 | 0.1647E+02 |
| 12 | 0.1096E-02 | 0.1392E+01 | 0.1258E+01 | 0.1339E+00 | 0.1064E+02 |
| 13 | 0.1411E-02 | 0.9110E+00 | 0.8509E+00 | 0.6008E-01 | 0.7061E+01 |
| 14 | 0.1795E-02 | 0.6080E+00 | 0.6290E+00 | -0.2103E-01 | -0.3343E+01 |
| 15 | 0.2224E-02 | 0.4590E+00 | 0.4884E+00 | -0.2939E-01 | -0.6017E+01 |
| 16 | 0.2850E-02 | 0.3440E+00 | 0.3650E+00 | -0.2105E-01 | -0.5766E+01 |
| 17 | 0.3600E-02 | 0.2520E+00 | 0.2790E+00 | -0.2702E-01 | -0.9684E+01 |
| 18 | 0.4490E-02 | 0.1950E+00 | 0.2167E+00 | -0.2166E-01 | -0.9998E+01 |
| 19 | 0.5700E-02 | 0.1450E+00 | 0.1626E+00 | -0.1755E-01 | -0.1080E+02 |
| 20 | 0.7190E-02 | 0.1150E+00 | 0.1232E+00 | -0.8151E-02 | -0.6619E+01 |
| 21 | 0.8800E-02 | 0.8800E-01 | 0.9617E-01 | -0.8170E-02 | -0.8495E+01 |
| 22 | 0.1100E-01 | 0.7100E-01 | 0.7292E-01 | -0.1916E-02 | -0.2628E+01 |
| 23 | 0.1400E-01 | 0.5400E-01 | 0.5408E-01 | -0.7910E-04 | -0.1463E+00 |
| 24 | 0.1800E-01 | 0.4100E-01 | 0.3933E-01 | 0.1671E-02 | 0.4248E+01 |
| 25 | 0.2200E-01 | 0.3300E-01 | 0.3055E-01 | 0.2452E-02 | 0.8026E+01 |
| 26 | 0.2800E-01 | 0.2500E-01 | 0.2179E-01 | 0.3206E-02 | 0.1471E+02 |
| 27 | 0.3600E-01 | 0.1900E-01 | 0.1454E-01 | 0.4463E-02 | 0.3070E+02 |

** %RMSERR= 11.54

CORRELATION MATRIX

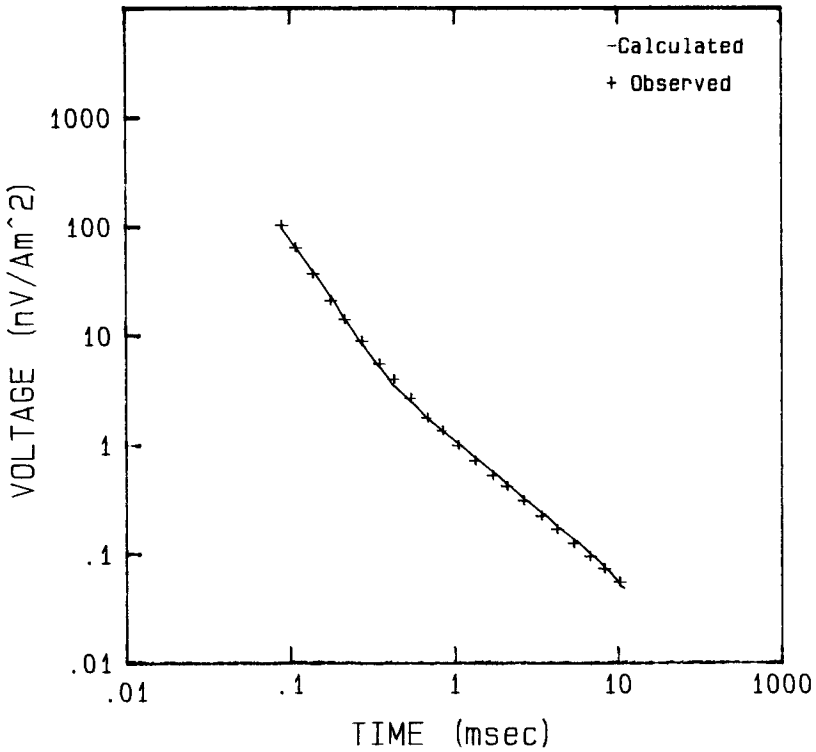
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.2755E+00 | 0.1000E+01 | | | |
| 3 | -0.3699E+00 | -0.1670E+00 | 0.1000E+01 | | |
| 4 | -0.4481E+00 | 0.4934E+00 | -0.1456E+00 | 0.1000E+01 | |
| 5 | 0.3628E+00 | -0.3195E+00 | -0.3874E+00 | -0.4439E+00 | 0.1000E+01 |

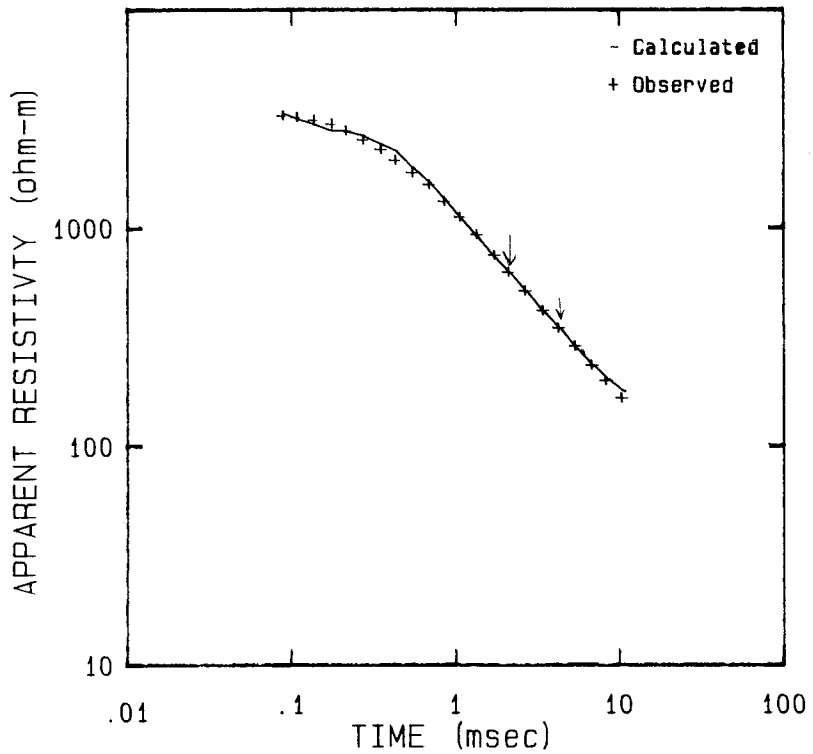
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1141E-03 | 0.3859E-04 | 0.3382E+00 | 0.3382E+02 |
| 2 | 0.2395E-02 | 0.2400E-03 | 0.1002E+00 | 0.1002E+02 |
| 3 | 0.4429E-01 | 0.1196E-02 | 0.2700E-01 | 0.2700E+01 |
| 4 | 0.2596E+03 | 0.3155E-02 | 0.1216E-04 | 0.1216E-02 |
| 5 | 0.5151E+03 | 0.4092E-02 | 0.7944E-05 | 0.7944E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.11409E-03 | 0.87652E+04 | |
| 2 | SIGMA( 2) | = | 0.23946E-02 | 0.41760E+03 | |
| 3 | SIGMA( 3) | = | 0.44291E-01 | 0.22578E+02 | |
| 4 | THICK( 1) | = | 0.25958E+03 | | 0.25958E+03 |
| 5 | THICK( 2) | = | 0.51514E+03 | | 0.77471E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM15




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 29832 | 251 |
| 1018 | 522 |
| 73.7 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 15 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1028E+03 | 0.9807E+02 | 0.4747E+01 | 0.4841E+01 |
| 2 | 0.1100E-03 | 0.6373E+02 | 0.6496E+02 | -0.1233E+01 | -0.1898E+01 |
| 3 | 0.1400E-03 | 0.3656E+02 | 0.3906E+02 | -0.2496E+01 | -0.6390E+01 |
| 4 | 0.1770E-03 | 0.2075E+02 | 0.2313E+02 | -0.2382E+01 | -0.1030E+02 |
| 5 | 0.2200E-03 | 0.1392E+02 | 0.1409E+02 | -0.1707E+00 | -0.1211E+01 |
| 6 | 0.2800E-03 | 0.8790E+01 | 0.8289E+01 | 0.5012E+00 | 0.6046E+01 |
| 7 | 0.3550E-03 | 0.5474E+01 | 0.5061E+01 | 0.4125E+00 | 0.8151E+01 |
| 8 | 0.4430E-03 | 0.3939E+01 | 0.3394E+01 | 0.5453E+00 | 0.1607E+02 |
| 9 | 0.5540E-03 | 0.2627E+01 | 0.2425E+01 | 0.2021E+00 | 0.8334E+01 |
| 10 | 0.7130E-03 | 0.1750E+01 | 0.1703E+01 | 0.4750E-01 | 0.2790E+01 |
| 11 | 0.8810E-03 | 0.1335E+01 | 0.1302E+01 | 0.3283E-01 | 0.2521E+01 |
| 12 | 0.1096E-02 | 0.9770E+00 | 0.9996E+00 | -0.2257E-01 | -0.2258E+01 |
| 13 | 0.1411E-02 | 0.7080E+00 | 0.7353E+00 | -0.2732E-01 | -0.3715E+01 |
| 14 | 0.1795E-02 | 0.5220E+00 | 0.5451E+00 | -0.2314E-01 | -0.4245E+01 |
| 15 | 0.2224E-02 | 0.4150E+00 | 0.4195E+00 | -0.4503E-02 | -0.1073E+01 |
| 16 | 0.2850E-02 | 0.3040E+00 | 0.3075E+00 | -0.3510E-02 | -0.1141E+01 |
| 17 | 0.3600E-02 | 0.2200E+00 | 0.2289E+00 | -0.8938E-02 | -0.3904E+01 |
| 18 | 0.4490E-02 | 0.1670E+00 | 0.1738E+00 | -0.6758E-02 | -0.3890E+01 |
| 19 | 0.5700E-02 | 0.1230E+00 | 0.1278E+00 | -0.4833E-02 | -0.3781E+01 |
| 20 | 0.7190E-02 | 0.9300E-01 | 0.9466E-01 | -0.1657E-02 | -0.1750E+01 |
| 21 | 0.8800E-02 | 0.7200E-01 | 0.7075E-01 | 0.1254E-02 | 0.1773E+01 |
| 22 | 0.1100E-01 | 0.5400E-01 | 0.4866E-01 | 0.5342E-02 | 0.1098E+02 |

** %RMSERR= 6.15

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.1561E+00 | 0.1000E+01 | | | |
| 3 | -0.5454E+00 | -0.3969E+00 | 0.1000E+01 | | |
| 4 | -0.7276E-01 | 0.5524E+00 | -0.4400E+00 | 0.1000E+01 | |
| 5 | -0.7750E-01 | -0.5168E+00 | 0.4401E+00 | -0.7003E+00 | 0.1000E+01 |

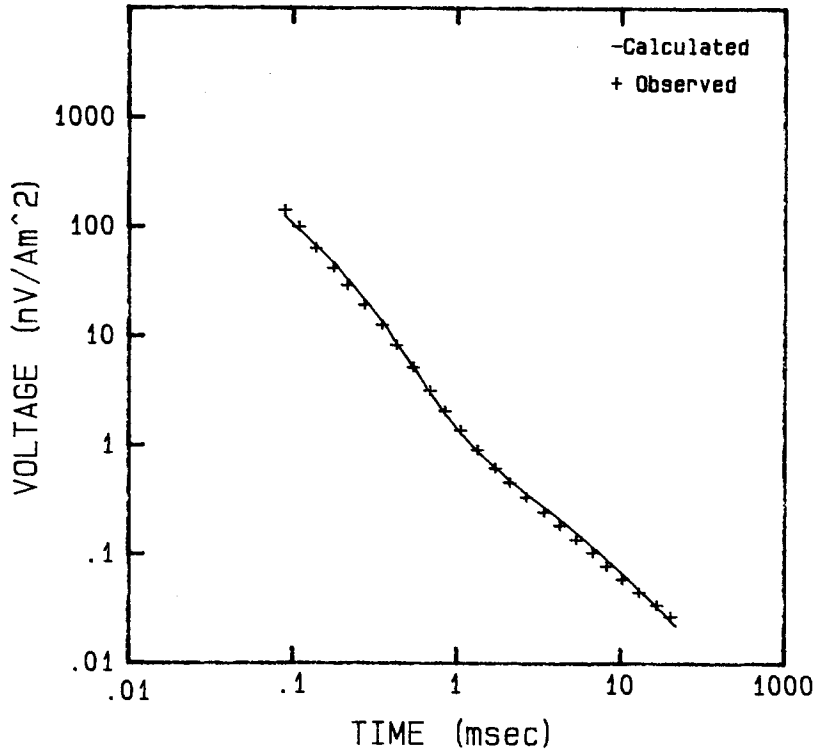
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3352E-04 | 0.8876E-04 | 0.2648E+01 | 0.2648E+03 |
| 2 | 0.9821E-03 | 0.2317E-03 | 0.2359E+00 | 0.2359E+02 |
| 3 | 0.1357E-01 | 0.1762E-02 | 0.1299E+00 | 0.1299E+02 |
| 4 | 0.2512E+03 | 0.2745E-02 | 0.1093E-04 | 0.1093E-02 |
| 5 | 0.5214E+03 | 0.3722E-02 | 0.7139E-05 | 0.7139E-03 |

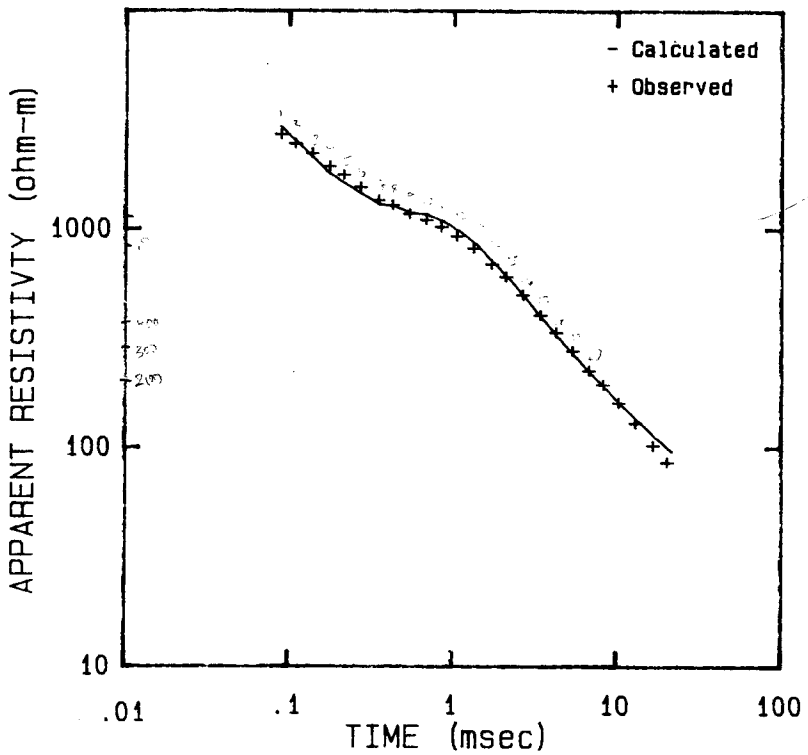
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.33521E-04 | 0.29832E+05 | |
| 2 | SIGMA( 2) | = | 0.98207E-03 | 0.10183E+04 | |
| 3 | SIGMA( 3) | = | 0.13570E-01 | 0.73692E+02 | |
| 4 | THICK( 1) | = | 0.25122E+03 | | 0.25122E+03 |
| 5 | THICK( 2) | = | 0.52140E+03 | | 0.77262E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM16




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 179490 | 299 |
| 348 | 497 |
| 21X | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 16 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1380E+03 | 0.1221E+03 | 0.1588E+02 | 0.1301E+02 |
| 2 | 0.1100E-03 | 0.9705E+02 | 0.9193E+02 | 0.5125E+01 | 0.5575E+01 |
| 3 | 0.1400E-03 | 0.6203E+02 | 0.6523E+02 | -0.3197E+01 | -0.4902E+01 |
| 4 | 0.1770E-03 | 0.4078E+02 | 0.4566E+02 | -0.4888E+01 | -0.1070E+02 |
| 5 | 0.2200E-03 | 0.2829E+02 | 0.3195E+02 | -0.3654E+01 | -0.1144E+02 |
| 6 | 0.2800E-03 | 0.1873E+02 | 0.2070E+02 | -0.1973E+01 | -0.9532E+01 |
| 7 | 0.3550E-03 | 0.1229E+02 | 0.1297E+02 | -0.6763E+00 | -0.5217E+01 |
| 8 | 0.4430E-03 | 0.8028E+01 | 0.8108E+01 | -0.7973E-01 | -0.9834E+00 |
| 9 | 0.5540E-03 | 0.5049E+01 | 0.4935E+01 | 0.1139E+00 | 0.2308E+01 |
| 10 | 0.7130E-03 | 0.3069E+01 | 0.2824E+01 | 0.2447E+00 | 0.8665E+01 |
| 11 | 0.8810E-03 | 0.2005E+01 | 0.1823E+01 | 0.1820E+00 | 0.9985E+01 |
| 12 | 0.1096E-02 | 0.1331E+01 | 0.1212E+01 | 0.1188E+00 | 0.9799E+01 |
| 13 | 0.1411E-02 | 0.8760E+00 | 0.8153E+00 | 0.6074E-01 | 0.7450E+01 |
| 14 | 0.1795E-02 | 0.6010E+00 | 0.5866E+00 | 0.1437E-01 | 0.2449E+01 |
| 15 | 0.2224E-02 | 0.4440E+00 | 0.4489E+00 | -0.4909E-02 | -0.1094E+01 |
| 16 | 0.2850E-02 | 0.3230E+00 | 0.3349E+00 | -0.1190E-01 | -0.3553E+01 |
| 17 | 0.3600E-02 | 0.2370E+00 | 0.2534E+00 | -0.1637E-01 | -0.6460E+01 |
| 18 | 0.4490E-02 | 0.1790E+00 | 0.1947E+00 | -0.1570E-01 | -0.8062E+01 |
| 19 | 0.5700E-02 | 0.1320E+00 | 0.1447E+00 | -0.1273E-01 | -0.8794E+01 |
| 20 | 0.7190E-02 | 0.1010E+00 | 0.1076E+00 | -0.6559E-02 | -0.6098E+01 |
| 21 | 0.8800E-02 | 0.7600E-01 | 0.8225E-01 | -0.6249E-02 | -0.7598E+01 |
| 22 | 0.1100E-01 | 0.5800E-01 | 0.6056E-01 | -0.2560E-02 | -0.4226E+01 |
| 23 | 0.1400E-01 | 0.4400E-01 | 0.4293E-01 | 0.1070E-02 | 0.2493E+01 |
| 24 | 0.1800E-01 | 0.3300E-01 | 0.2956E-01 | 0.3435E-02 | 0.1162E+02 |
| 25 | 0.2200E-01 | 0.2600E-01 | 0.2170E-01 | 0.4299E-02 | 0.1981E+02 |

** %RMSERR= 8.42

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.2247E+00 | 0.1000E+01 | | | |
| 3 | 0.3828E+00 | -0.3550E-01 | 0.1000E+01 | | |
| 4 | -0.6575E-01 | 0.5941E+00 | -0.1550E+00 | 0.1000E+01 | |
| 5 | -0.5440E+00 | -0.5923E+00 | -0.3736E+00 | -0.4375E+00 | 0.1000E+01 |

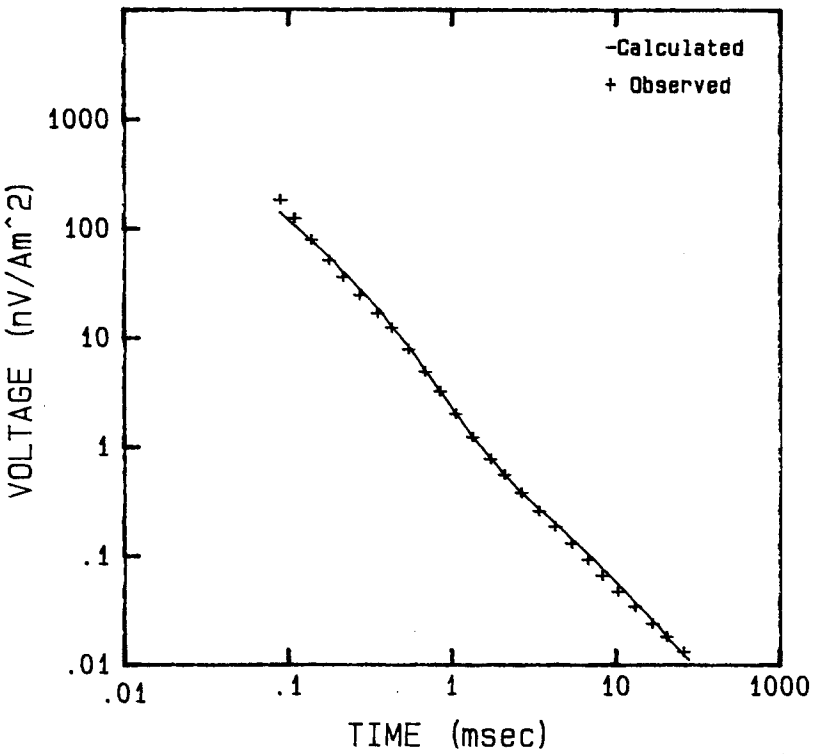
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.5571E-05 | 0.9028E-05 | 0.1620E+01 | 0.1620E+03 |
| 2 | 0.2874E-02 | 0.2297E-03 | 0.7991E-01 | 0.7991E+01 |
| 3 | 0.4688E-01 | 0.9208E-03 | 0.1964E-01 | 0.1964E+01 |
| 4 | 0.2985E+03 | 0.2472E-02 | 0.8280E-05 | 0.8280E-03 |
| 5 | 0.4977E+03 | 0.5121E-02 | 0.1029E-04 | 0.1029E-02 |

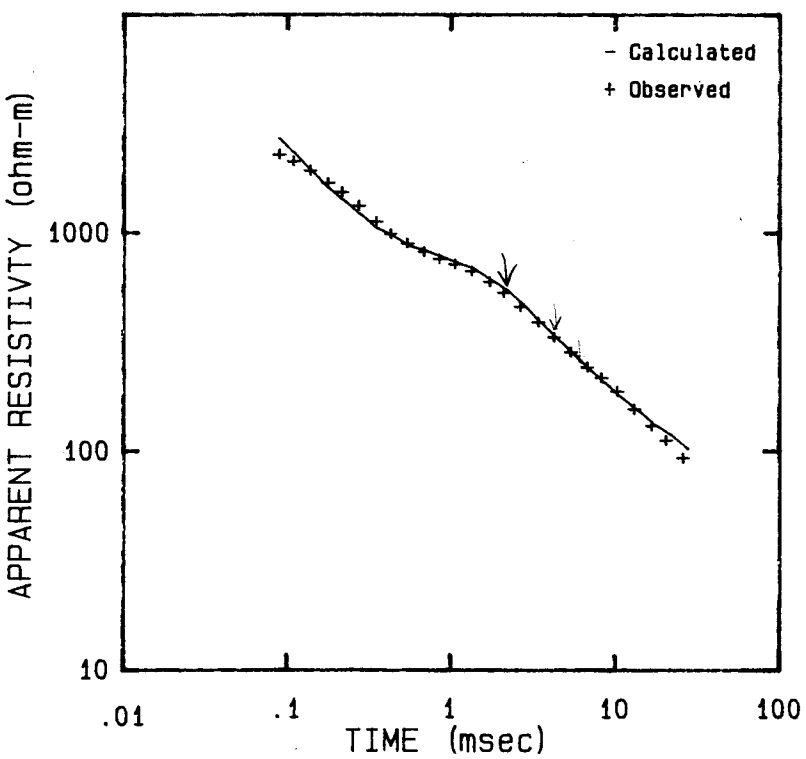
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.55714E-05 | 0.17949E+06 | |
| 2 | SIGMA( 2) | = | 0.28743E-02 | 0.34791E+03 | |
| 3 | SIGMA( 3) | = | 0.46877E-01 | 0.21333E+02 | |
| 4 | THICK( 1) | = | 0.29851E+03 | | 0.29851E+03 |
| 5 | THICK( 2) | = | 0.49767E+03 | | 0.79618E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM17




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 6202 | 316 |
| 252 | 530 |
| 31 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 17 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1786E+03 | 0.1378E+03 | 0.4070E+02 | 0.2953E+02 |
| 2 | 0.1100E-03 | 0.1209E+03 | 0.1042E+03 | 0.1667E+02 | 0.1600E+02 |
| 3 | 0.1400E-03 | 0.7669E+02 | 0.7504E+02 | 0.1646E+01 | 0.2194E+01 |
| 4 | 0.1770E-03 | 0.4986E+02 | 0.5374E+02 | -0.3874E+01 | -0.7209E+01 |
| 5 | 0.2200E-03 | 0.3481E+02 | 0.3894E+02 | -0.4133E+01 | -0.1061E+02 |
| 6 | 0.2800E-03 | 0.2368E+02 | 0.2668E+02 | -0.2997E+01 | -0.1123E+02 |
| 7 | 0.3550E-03 | 0.1621E+02 | 0.1797E+02 | -0.1753E+01 | -0.9755E+01 |
| 8 | 0.4430E-03 | 0.1193E+02 | 0.1207E+02 | -0.1427E+00 | -0.1181E+01 |
| 9 | 0.5540E-03 | 0.7570E+01 | 0.7850E+01 | -0.2802E+00 | -0.3570E+01 |
| 10 | 0.7130E-03 | 0.4766E+01 | 0.4686E+01 | 0.7972E-01 | 0.1701E+01 |
| 11 | 0.8810E-03 | 0.3129E+01 | 0.2999E+01 | 0.1297E+00 | 0.4324E+01 |
| 12 | 0.1096E-02 | 0.1949E+01 | 0.1892E+01 | 0.5748E-01 | 0.3039E+01 |
| 13 | 0.1411E-02 | 0.1191E+01 | 0.1138E+01 | 0.5280E-01 | 0.4638E+01 |
| 14 | 0.1795E-02 | 0.7530E+00 | 0.7325E+00 | 0.2047E-01 | 0.2794E+01 |
| 15 | 0.2224E-02 | 0.5410E+00 | 0.5116E+00 | 0.2939E-01 | 0.5745E+01 |
| 16 | 0.2850E-02 | 0.3680E+00 | 0.3521E+00 | 0.1593E-01 | 0.4526E+01 |
| 17 | 0.3600E-02 | 0.2510E+00 | 0.2510E+00 | 0.2977E-04 | 0.1186E-01 |
| 18 | 0.4490E-02 | 0.1820E+00 | 0.1845E+00 | -0.2475E-02 | -0.1342E+01 |
| 19 | 0.5700E-02 | 0.1270E+00 | 0.1319E+00 | -0.4885E-02 | -0.3704E+01 |
| 20 | 0.7190E-02 | 0.9000E-01 | 0.9450E-01 | -0.4500E-02 | -0.4762E+01 |
| 21 | 0.8800E-02 | 0.6500E-01 | 0.7025E-01 | -0.5246E-02 | -0.7468E+01 |
| 22 | 0.1100E-01 | 0.4600E-01 | 0.5009E-01 | -0.4090E-02 | -0.8165E+01 |
| 23 | 0.1400E-01 | 0.3300E-01 | 0.3441E-01 | -0.1405E-02 | -0.4085E+01 |
| 24 | 0.1800E-01 | 0.2300E-01 | 0.2286E-01 | 0.1373E-03 | 0.6004E+00 |
| 25 | 0.2200E-01 | 0.1800E-01 | 0.1638E-01 | 0.1623E-02 | 0.9911E+01 |
| 26 | 0.2800E-01 | 0.1300E-01 | 0.1078E-01 | 0.2219E-02 | 0.2058E+02 |

** %RMSERR= 9.50

CORRELATION MATRIX

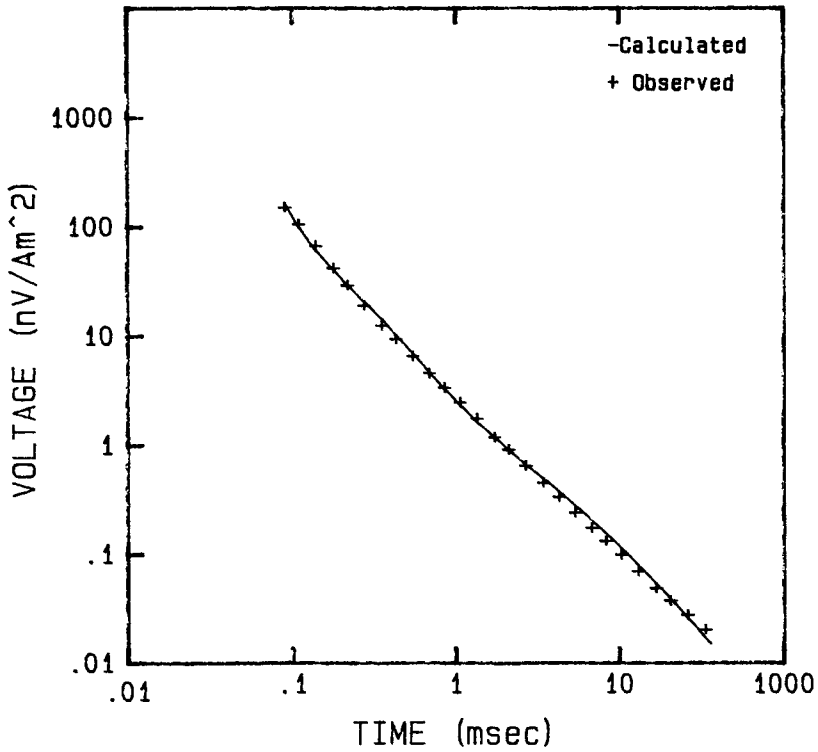
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3805E+00 | 0.1000E+01 | | | |
| 3 | -0.2048E+00 | -0.4149E+00 | 0.1000E+01 | | |
| 4 | 0.4333E-01 | 0.2293E+00 | -0.4794E+00 | 0.1000E+01 | |
| 5 | -0.1256E+00 | -0.3480E+00 | 0.1576E+00 | -0.6680E+00 | 0.1000E+01 |

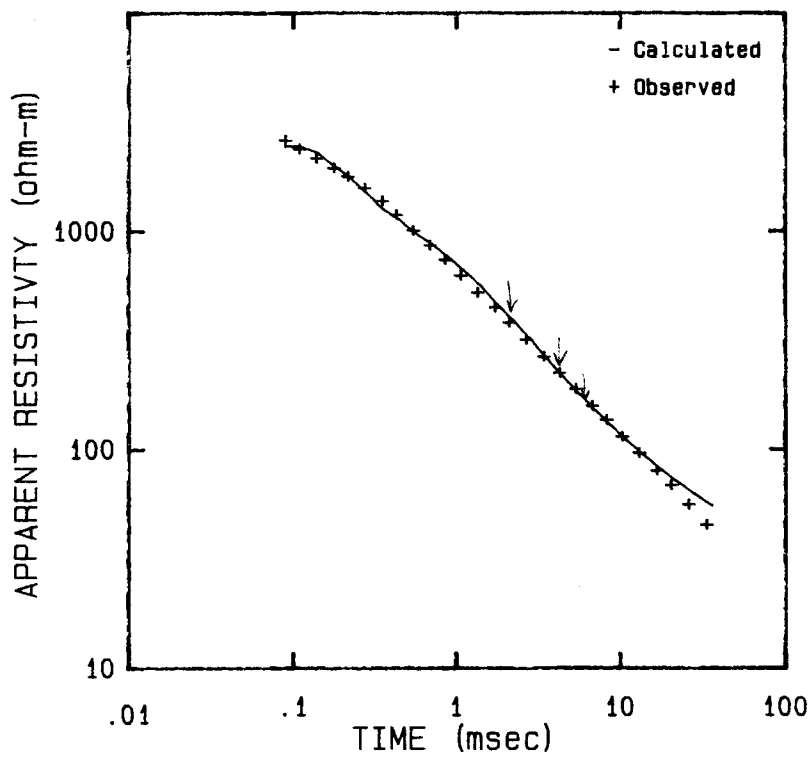
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1612E-03 | 0.3647E-04 | 0.2262E+00 | 0.2262E+02 |
| 2 | 0.3974E-02 | 0.1807E-03 | 0.4547E-01 | 0.4547E+01 |
| 3 | 0.3225E-01 | 0.6873E-03 | 0.2131E-01 | 0.2131E+01 |
| 4 | 0.3155E+03 | 0.2261E-02 | 0.7168E-05 | 0.7168E-03 |
| 5 | 0.5309E+03 | 0.3473E-02 | 0.6543E-05 | 0.6543E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.16123E-03 | 0.62023E+04 | |
| 2 | SIGMA( 2) | = | 0.39742E-02 | 0.25162E+03 | |
| 3 | SIGMA( 3) | = | 0.32246E-01 | 0.31012E+02 | |
| 4 | THICK( 1) | = | 0.31550E+03 | | 0.31550E+03 |
| 5 | THICK( 2) | = | 0.53086E+03 | | 0.84636E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM18




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1915 | 442 |
| 95.2 | 226 |
| 17.6 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 18 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1468E+03 | 0.1605E+03 | -0.1375E+02 | -0.8567E+01 |
| 2 | 0.1100E-03 | 0.1021E+03 | 0.9744E+02 | 0.4666E+01 | 0.4789E+01 |
| 3 | 0.1400E-03 | 0.6494E+02 | 0.5878E+02 | 0.6156E+01 | 0.1047E+02 |
| 4 | 0.1770E-03 | 0.4054E+02 | 0.3908E+02 | 0.1460E+01 | 0.3737E+01 |
| 5 | 0.2200E-03 | 0.2803E+02 | 0.2796E+02 | 0.6969E-01 | 0.2492E+00 |
| 6 | 0.2800E-03 | 0.1841E+02 | 0.1963E+02 | -0.1221E+01 | -0.6223E+01 |
| 7 | 0.3550E-03 | 0.1201E+02 | 0.1365E+02 | -0.1639E+01 | -0.1201E+02 |
| 8 | 0.4430E-03 | 0.9074E+01 | 0.9600E+01 | -0.5255E+00 | -0.5474E+01 |
| 9 | 0.5540E-03 | 0.6383E+01 | 0.6600E+01 | -0.2167E+00 | -0.3284E+01 |
| 10 | 0.7130E-03 | 0.4451E+01 | 0.4342E+01 | 0.1085E+00 | 0.2499E+01 |
| 11 | 0.8810E-03 | 0.3272E+01 | 0.3063E+01 | 0.2086E+00 | 0.6809E+01 |
| 12 | 0.1096E-02 | 0.2405E+01 | 0.2181E+01 | 0.2238E+00 | 0.1026E+02 |
| 13 | 0.1411E-02 | 0.1719E+01 | 0.1516E+01 | 0.2026E+00 | 0.1336E+02 |
| 14 | 0.1795E-02 | 0.1157E+01 | 0.1101E+01 | 0.5603E-01 | 0.5089E+01 |
| 15 | 0.2224E-02 | 0.8900E+00 | 0.8404E+00 | 0.4959E-01 | 0.5900E+01 |
| 16 | 0.2850E-02 | 0.6380E+00 | 0.6156E+00 | 0.2244E-01 | 0.3645E+01 |
| 17 | 0.3600E-02 | 0.4460E+00 | 0.4602E+00 | -0.1425E-01 | -0.3096E+01 |
| 18 | 0.4490E-02 | 0.3300E+00 | 0.3482E+00 | -0.1818E-01 | -0.5220E+01 |
| 19 | 0.5700E-02 | 0.2360E+00 | 0.2551E+00 | -0.1911E-01 | -0.7490E+01 |
| 20 | 0.7190E-02 | 0.1720E+00 | 0.1864E+00 | -0.1444E-01 | -0.7745E+01 |
| 21 | 0.8800E-02 | 0.1300E+00 | 0.1405E+00 | -0.1051E-01 | -0.7477E+01 |
| 22 | 0.1100E-01 | 0.9700E-01 | 0.1018E+00 | -0.4761E-02 | -0.4678E+01 |
| 23 | 0.1400E-01 | 0.6900E-01 | 0.7077E-01 | -0.1769E-02 | -0.2499E+01 |
| 24 | 0.1800E-01 | 0.4800E-01 | 0.4768E-01 | 0.3226E-03 | 0.6767E+00 |
| 25 | 0.2200E-01 | 0.3700E-01 | 0.3439E-01 | 0.2607E-02 | 0.7581E+01 |
| 26 | 0.2800E-01 | 0.2700E-01 | 0.2289E-01 | 0.4111E-02 | 0.1796E+02 |
| 27 | 0.3600E-01 | 0.2000E-01 | 0.1475E-01 | 0.5250E-02 | 0.3559E+02 |

** %RMSERR= 10.07

CORRELATION MATRIX

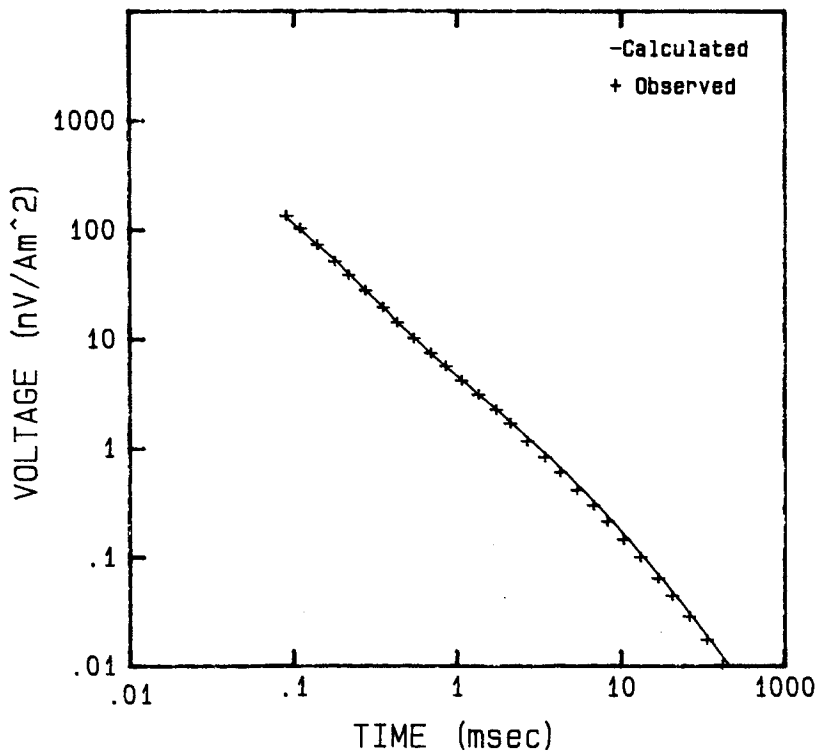
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.9729E-01 | 0.1000E+01 | | | |
| 3 | -0.1690E+00 | -0.2426E+00 | 0.1000E+01 | | |
| 4 | 0.9757E-02 | 0.1434E+00 | -0.1535E+00 | 0.1000E+01 | |
| 5 | -0.1264E+00 | -0.1676E+00 | -0.2689E+00 | -0.2212E+00 | 0.1000E+01 |

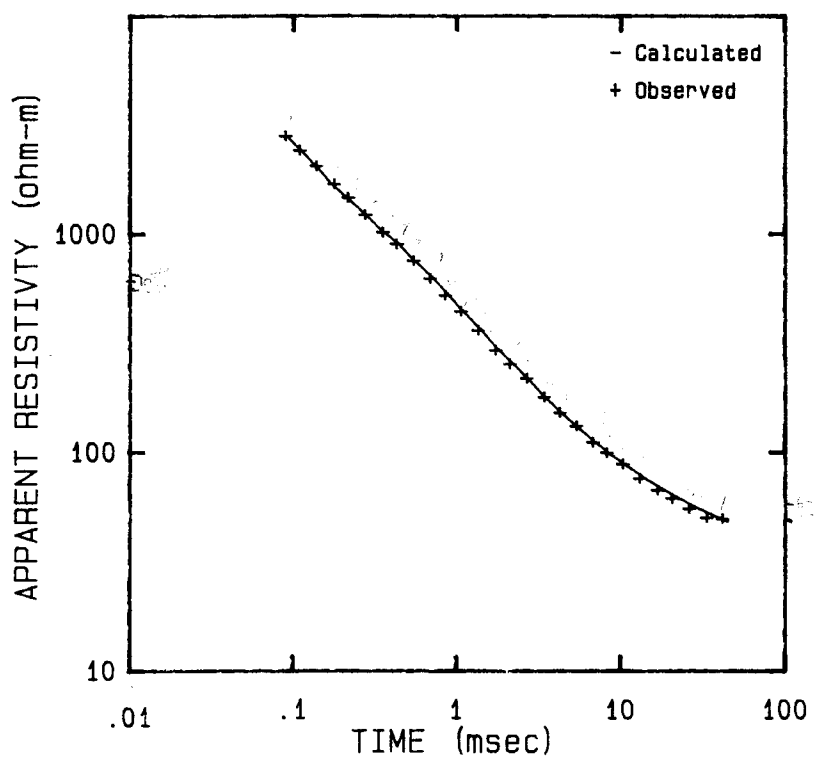
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.5222E-03 | 0.6570E-04 | 0.1258E+00 | 0.1258E+02 |
| 2 | 0.1050E-01 | 0.5509E-03 | 0.5246E-01 | 0.5246E+01 |
| 3 | 0.5687E-01 | 0.1007E-02 | 0.1771E-01 | 0.1771E+01 |
| 4 | 0.4415E+03 | 0.1885E-02 | 0.4270E-05 | 0.4270E-03 |
| 5 | 0.2267E+03 | 0.3057E-02 | 0.1348E-04 | 0.1348E-02 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.52222E-03 | 0.19149E+04 | |
| 2 | SIGMA( 2) | = | 0.10501E-01 | 0.95229E+02 | |
| 3 | SIGMA( 3) | = | 0.56866E-01 | 0.17585E+02 | |
| 4 | THICK( 1) | = | 0.44153E+03 | | 0.44153E+03 |
| 5 | THICK( 2) | = | 0.22672E+03 | | 0.66825E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM19




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 2760 | 351 |
| 88.6 | 156 |
| 23.5 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 19 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1308E+03 | 0.1284E+03 | 0.2477E+01 | 0.1930E+01 |
| 2 | 0.1100E-03 | 0.9972E+02 | 0.9774E+02 | 0.1974E+01 | 0.2020E+01 |
| 3 | 0.1400E-03 | 0.7039E+02 | 0.7091E+02 | -0.5244E+00 | -0.7395E+00 |
| 4 | 0.1770E-03 | 0.4992E+02 | 0.5190E+02 | -0.1980E+01 | -0.3814E+01 |
| 5 | 0.2200E-03 | 0.3731E+02 | 0.3816E+02 | -0.8440E+00 | -0.2212E+01 |
| 6 | 0.2800E-03 | 0.2682E+02 | 0.2673E+02 | 0.9131E-01 | 0.3416E+00 |
| 7 | 0.3550E-03 | 0.1886E+02 | 0.1878E+02 | 0.8137E-01 | 0.4332E+00 |
| 8 | 0.4430E-03 | 0.1374E+02 | 0.1349E+02 | 0.2534E+00 | 0.1878E+01 |
| 9 | 0.5540E-03 | 0.9807E+01 | 0.9828E+01 | -0.2100E-01 | -0.2137E+00 |
| 10 | 0.7130E-03 | 0.7196E+01 | 0.6948E+01 | 0.2482E+00 | 0.3572E+01 |
| 11 | 0.8810E-03 | 0.5489E+01 | 0.5276E+01 | 0.2126E+00 | 0.4030E+01 |
| 12 | 0.1096E-02 | 0.4033E+01 | 0.3993E+01 | 0.3974E-01 | 0.9952E+00 |
| 13 | 0.1411E-02 | 0.2981E+01 | 0.2902E+01 | 0.7866E-01 | 0.2710E+01 |
| 14 | 0.1795E-02 | 0.2180E+01 | 0.2134E+01 | 0.4617E-01 | 0.2164E+01 |
| 15 | 0.2224E-02 | 0.1641E+01 | 0.1611E+01 | 0.2971E-01 | 0.1844E+01 |
| 16 | 0.2850E-02 | 0.1126E+01 | 0.1155E+01 | -0.2907E-01 | -0.2517E+01 |
| 17 | 0.3600E-02 | 0.8080E+00 | 0.8340E+00 | -0.2600E-01 | -0.3117E+01 |
| 18 | 0.4490E-02 | 0.5910E+00 | 0.6065E+00 | -0.1553E-01 | -0.2561E+01 |
| 19 | 0.5700E-02 | 0.4030E+00 | 0.4238E+00 | -0.2077E-01 | -0.4901E+01 |
| 20 | 0.7190E-02 | 0.2920E+00 | 0.2948E+00 | -0.2768E-02 | -0.9391E+00 |
| 21 | 0.8800E-02 | 0.2090E+00 | 0.2125E+00 | -0.3526E-02 | -0.1659E+01 |
| 22 | 0.1100E-01 | 0.1420E+00 | 0.1462E+00 | -0.4185E-02 | -0.2863E+01 |
| 23 | 0.1400E-01 | 0.9800E-01 | 0.9623E-01 | 0.1765E-02 | 0.1834E+01 |
| 24 | 0.1800E-01 | 0.6300E-01 | 0.6127E-01 | 0.1735E-02 | 0.2832E+01 |
| 25 | 0.2200E-01 | 0.4300E-01 | 0.4223E-01 | 0.7740E-03 | 0.1833E+01 |
| 26 | 0.2800E-01 | 0.2800E-01 | 0.2669E-01 | 0.1313E-02 | 0.4918E+01 |
| 27 | 0.3600E-01 | 0.1700E-01 | 0.1629E-01 | 0.7130E-03 | 0.4377E+01 |
| 28 | 0.4500E-01 | 0.1000E-01 | 0.1040E-01 | -0.3999E-03 | -0.3846E+01 |

** %RMSERR= 2.73

CORRELATION MATRIX

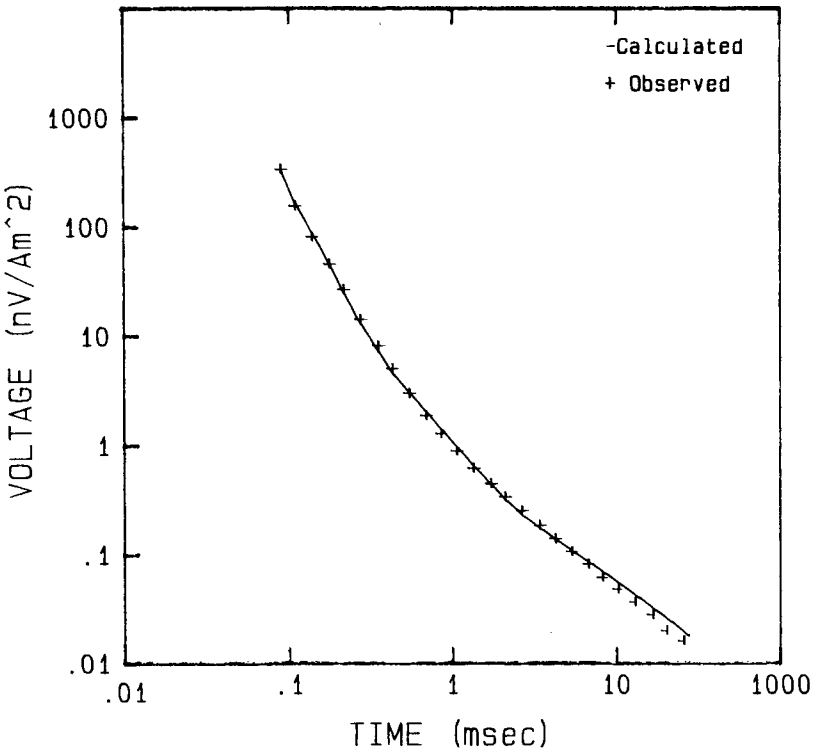
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3423E+00 | 0.1000E+01 | | | |
| 3 | -0.6327E+00 | 0.4918E+00 | 0.1000E+01 | | |
| 4 | -0.1914E-01 | 0.4229E+00 | 0.7984E-01 | 0.1000E+01 | |
| 5 | -0.8202E-01 | -0.2423E+00 | -0.3127E+00 | -0.3141E+00 | 0.1000E+01 |

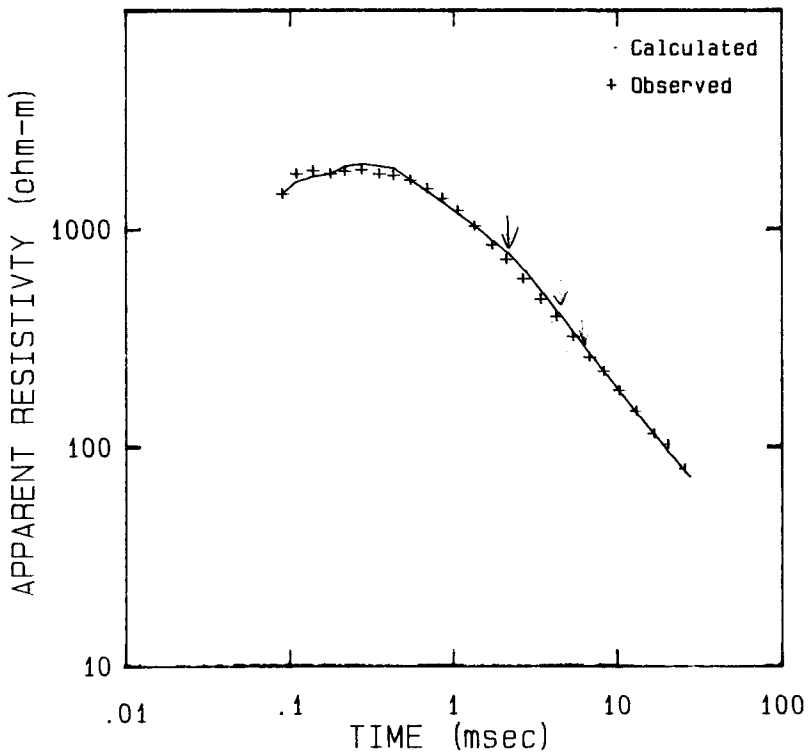
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.3623E-03 | 0.1790E-04 | 0.4939E-01 | 0.4939E+01 |
| 2 0.1129E-01 | 0.1685E-03 | 0.1492E-01 | 0.1492E+01 |
| 3 0.4253E-01 | 0.2732E-03 | 0.6424E-02 | 0.6424E+00 |
| 4 0.3514E+03 | 0.6269E-03 | 0.1784E-05 | 0.1784E-03 |
| 5 0.1558E+03 | 0.1183E-02 | 0.7591E-05 | 0.7591E-03 |

| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.36234E-03 | 0.27598E+04 | |
| 2 SIGMA( 2) = | 0.11291E-01 | 0.88570E+02 | |
| 3 SIGMA( 3) = | 0.42528E-01 | 0.23514E+02 | |
| 4 THICK( 1) = | 0.35144E+03 | | 0.35144E+03 |
| 5 THICK( 2) = | 0.15583E+03 | | 0.50727E+03 |
| 6 SHIFT = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM20




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1528 | 699 |
| 56.27 | 229 |
| 7.29 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 20 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.1100E-03 | 0.1523E+03 | 0.1687E+03 | -0.1635E+02 | -0.9696E+01 |
| 2 | 0.1400E-03 | 0.8077E+02 | 0.8855E+02 | -0.7775E+01 | -0.8780E+01 |
| 3 | 0.1770E-03 | 0.4337E+02 | 0.4530E+02 | -0.1932E+01 | -0.4264E+01 |
| 4 | 0.2200E-03 | 0.2632E+02 | 0.2448E+02 | 0.1836E+01 | 0.7497E+01 |
| 5 | 0.2800E-03 | 0.1408E+02 | 0.1278E+02 | 0.1303E+01 | 0.1020E+02 |
| 6 | 0.3550E-03 | 0.8056E+01 | 0.7097E+01 | 0.9589E+00 | 0.1351E+02 |
| 7 | 0.4430E-03 | 0.4999E+01 | 0.4457E+01 | 0.5418E+00 | 0.1216E+02 |
| 8 | 0.5540E-03 | 0.2957E+01 | 0.2951E+01 | 0.6206E-02 | 0.2103E+00 |
| 9 | 0.7130E-03 | 0.1862E+01 | 0.1955E+01 | -0.9251E-01 | -0.4733E+01 |
| 10 | 0.8810E-03 | 0.1271E+01 | 0.1363E+01 | -0.9214E-01 | -0.6759E+01 |
| 11 | 0.1096E-02 | 0.8810E+00 | 0.9368E+00 | -0.5575E-01 | -0.5952E+01 |
| 12 | 0.1411E-02 | 0.6160E+00 | 0.6257E+00 | -0.9688E-02 | -0.1548E+01 |
| 13 | 0.1795E-02 | 0.4440E+00 | 0.4198E+00 | 0.2420E-01 | 0.5766E+01 |
| 14 | 0.2224E-02 | 0.3370E+00 | 0.3054E+00 | 0.3163E-01 | 0.1036E+02 |
| 15 | 0.2850E-02 | 0.2510E+00 | 0.2214E+00 | 0.2962E-01 | 0.1338E+02 |
| 16 | 0.3600E-02 | 0.1850E+00 | 0.1678E+00 | 0.1716E-01 | 0.1022E+02 |
| 17 | 0.4490E-02 | 0.1390E+00 | 0.1316E+00 | 0.7395E-02 | 0.5619E+01 |
| 18 | 0.5700E-02 | 0.1060E+00 | 0.1032E+00 | 0.2840E-02 | 0.2753E+01 |
| 19 | 0.7190E-02 | 0.8200E-01 | 0.8126E-01 | 0.7381E-03 | 0.9083E+00 |
| 20 | 0.8800E-02 | 0.6200E-01 | 0.6595E-01 | -0.3953E-02 | -0.5994E+01 |
| 21 | 0.1100E-01 | 0.4800E-01 | 0.5211E-01 | -0.4114E-02 | -0.7894E+01 |
| 22 | 0.1400E-01 | 0.3700E-01 | 0.4019E-01 | -0.3192E-02 | -0.7942E+01 |
| 23 | 0.1800E-01 | 0.2800E-01 | 0.3038E-01 | -0.2381E-02 | -0.7838E+01 |
| 24 | 0.2200E-01 | 0.2200E-01 | 0.2418E-01 | -0.2181E-02 | -0.9021E+01 |
| 25 | 0.2800E-01 | 0.1600E-01 | 0.1818E-01 | -0.2181E-02 | -0.1200E+02 |

** %RMSERR= 8.24

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3496E+00 | 0.1000E+01 | | | |
| 3 | -0.1232E+00 | -0.5165E+00 | 0.1000E+01 | | |
| 4 | 0.2784E+00 | -0.1303E+00 | -0.7405E-01 | 0.1000E+01 | |
| 5 | -0.1392E+00 | -0.7898E-01 | -0.1400E+00 | -0.2658E+00 | 0.1000E+01 |

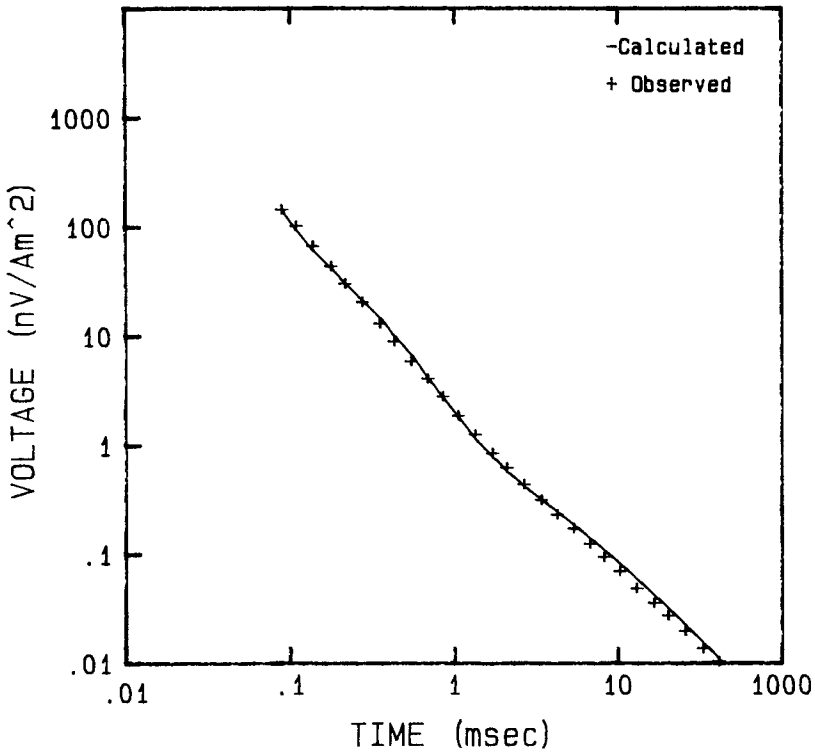
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.6543E-03 | 0.1029E-03 | 0.1573E+00 | 0.1573E+02 |
| 2 | 0.1777E-01 | 0.1825E-02 | 0.1027E+00 | 0.1027E+02 |
| 3 | 0.1371E+00 | 0.4254E-02 | 0.3103E-01 | 0.3103E+01 |
| 4 | 0.6988E+03 | 0.2773E-02 | 0.3969E-05 | 0.3969E-03 |
| 5 | 0.2290E+03 | 0.2713E-02 | 0.1185E-04 | 0.1185E-02 |

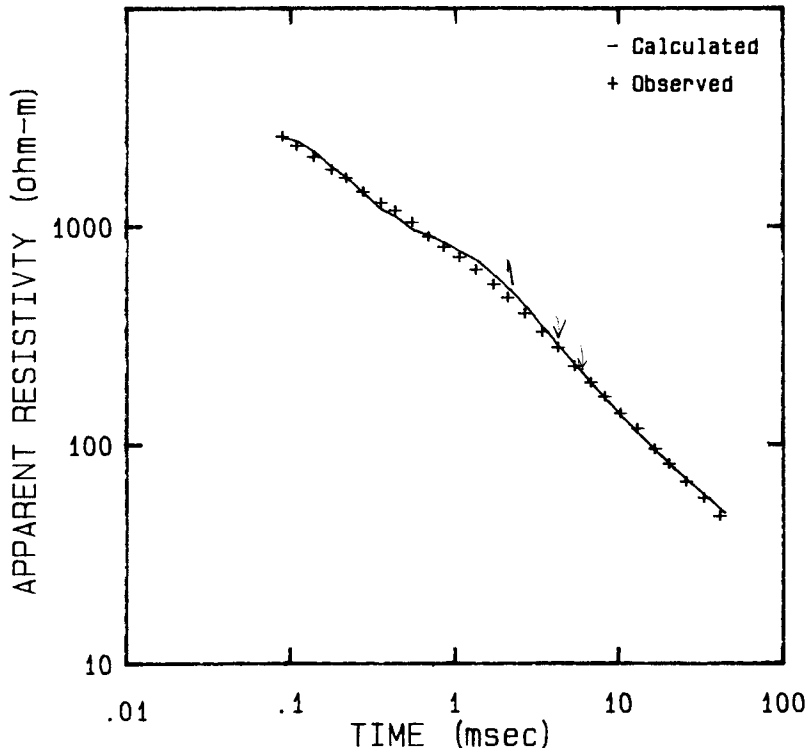
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.65427E-03 | 0.15284E+04 | |
| 2 | SIGMA( 2) | = | 0.17773E-01 | 0.56265E+02 | |
| 3 | SIGMA( 3) | = | 0.13710E+00 | 0.72939E+01 | |
| 4 | THICK( 1) | = | 0.69879E+03 | | 0.69879E+03 |
| 5 | THICK( 2) | = | 0.22899E+03 | | 0.92778E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM21




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 2138 | 423 |
| 153.7 | 349 |
| 14.6 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 21 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1455E+03 | 0.1473E+03 | -0.1799E+01 | -0.1222E+01 |
| 2 | 0.1100E-03 | 0.1024E+03 | 0.9469E+02 | 0.7742E+01 | 0.8176E+01 |
| 3 | 0.1400E-03 | 0.6709E+02 | 0.6092E+02 | 0.6175E+01 | 0.1014E+02 |
| 4 | 0.1770E-03 | 0.4378E+02 | 0.4200E+02 | 0.1782E+01 | 0.4242E+01 |
| 5 | 0.2200E-03 | 0.3031E+02 | 0.2999E+02 | 0.3105E+00 | 0.1035E+01 |
| 6 | 0.2800E-03 | 0.2062E+02 | 0.2102E+02 | -0.4035E+00 | -0.1920E+01 |
| 7 | 0.3550E-03 | 0.1306E+02 | 0.1452E+02 | -0.1456E+01 | -0.1003E+02 |
| 8 | 0.4430E-03 | 0.8940E+01 | 0.9897E+01 | -0.9568E+00 | -0.9668E+01 |
| 9 | 0.5540E-03 | 0.5904E+01 | 0.6637E+01 | -0.7328E+00 | -0.1104E+02 |
| 10 | 0.7130E-03 | 0.4106E+01 | 0.4030E+01 | 0.7587E-01 | 0.1883E+01 |
| 11 | 0.8810E-03 | 0.2810E+01 | 0.2642E+01 | 0.1677E+00 | 0.6346E+01 |
| 12 | 0.1096E-02 | 0.1891E+01 | 0.1741E+01 | 0.1497E+00 | 0.8596E+01 |
| 13 | 0.1411E-02 | 0.1266E+01 | 0.1103E+01 | 0.1628E+00 | 0.1476E+02 |
| 14 | 0.1795E-02 | 0.8510E+00 | 0.7489E+00 | 0.1021E+00 | 0.1363E+02 |
| 15 | 0.2224E-02 | 0.6320E+00 | 0.5582E+00 | 0.7377E-01 | 0.1322E+02 |
| 16 | 0.2850E-02 | 0.4440E+00 | 0.4063E+00 | 0.3766E-01 | 0.9268E+01 |
| 17 | 0.3600E-02 | 0.3170E+00 | 0.3051E+00 | 0.1194E-01 | 0.3914E+01 |
| 18 | 0.4490E-02 | 0.2330E+00 | 0.2350E+00 | -0.2015E-02 | -0.8573E+00 |
| 19 | 0.5700E-02 | 0.1740E+00 | 0.1767E+00 | -0.2729E-02 | -0.1544E+01 |
| 20 | 0.7190E-02 | 0.1260E+00 | 0.1327E+00 | -0.6740E-02 | -0.5078E+01 |
| 21 | 0.8800E-02 | 0.9500E-01 | 0.1030E+00 | -0.7957E-02 | -0.7729E+01 |
| 22 | 0.1100E-01 | 0.7100E-01 | 0.7712E-01 | -0.6117E-02 | -0.7932E+01 |
| 23 | 0.1400E-01 | 0.5000E-01 | 0.5563E-01 | -0.5627E-02 | -0.1012E+02 |
| 24 | 0.1800E-01 | 0.3600E-01 | 0.3923E-01 | -0.3230E-02 | -0.8233E+01 |
| 25 | 0.2200E-01 | 0.2800E-01 | 0.2935E-01 | -0.1352E-02 | -0.4605E+01 |
| 26 | 0.2800E-01 | 0.2000E-01 | 0.2056E-01 | -0.5625E-03 | -0.2735E+01 |
| 27 | 0.3600E-01 | 0.1400E-01 | 0.1406E-01 | -0.6247E-04 | -0.4442E+00 |
| 28 | 0.4500E-01 | 0.1100E-01 | 0.1000E-01 | 0.9998E-03 | 0.9997E+01 |

** %RMSERR= 7.92

CORRELATION MATRIX

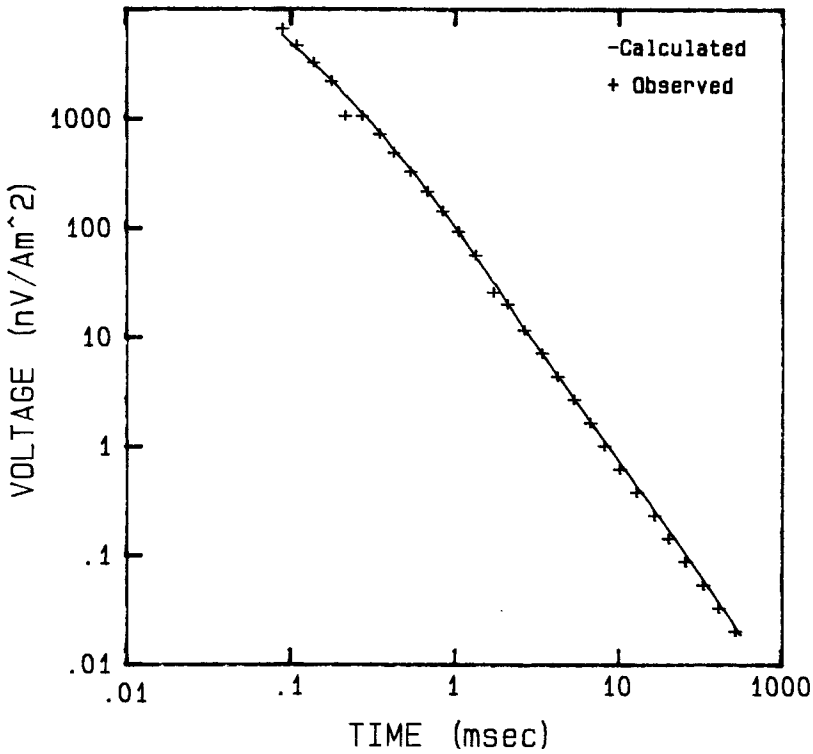
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.5828E+00 | 0.1000E+01 | | | |
| 3 | 0.2549E+00 | -0.3566E+00 | 0.1000E+01 | | |
| 4 | -0.4534E-01 | 0.1711E+00 | -0.2930E+00 | 0.1000E+01 | |
| 5 | -0.1662E+00 | -0.4214E+00 | -0.1364E+00 | -0.3909E+00 | 0.1000E+01 |

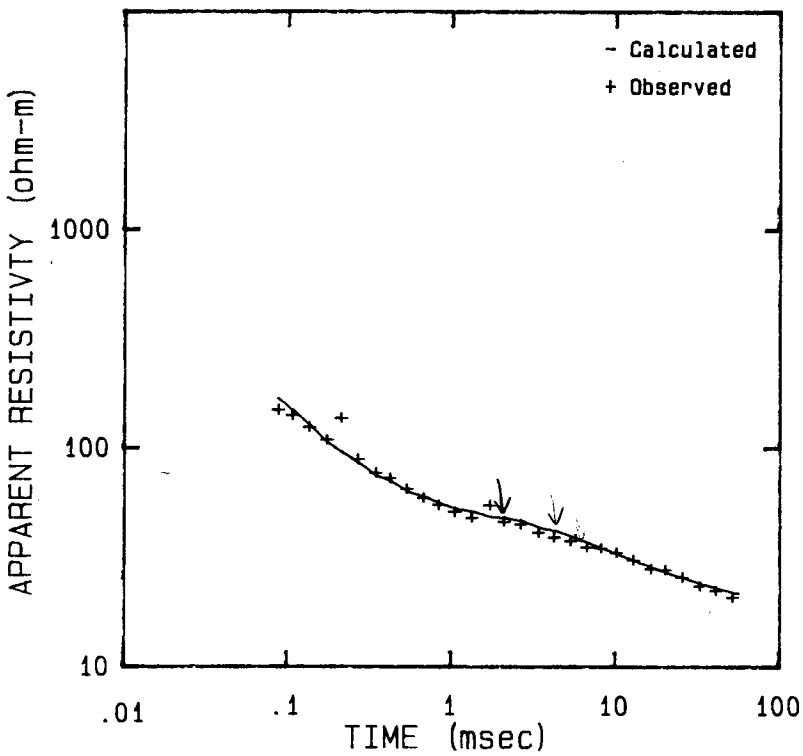
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4677E-03 | 0.6103E-04 | 0.1305E+00 | 0.1305E+02 |
| 2 | 0.6507E-02 | 0.3018E-03 | 0.4638E-01 | 0.4638E+01 |
| 3 | 0.6847E-01 | 0.8361E-03 | 0.1221E-01 | 0.1221E+01 |
| 4 | 0.4227E+03 | 0.1532E-02 | 0.3625E-05 | 0.3625E-03 |
| 5 | 0.3490E+03 | 0.3470E-02 | 0.9942E-05 | 0.9942E-03 |

| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.46766E-03 | 0.21383E+04 | |
| 2 | SIGMA( 2) = | 0.65066E-02 | 0.15369E+03 | |
| 3 | SIGMA( 3) = | 0.68473E-01 | 0.14604E+02 | |
| 4 | THICK( 1) = | 0.42273E+03 | | 0.42273E+03 |
| 5 | THICK( 2) = | 0.34901E+03 | | 0.77174E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM22




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 173 | 68.8 |
| 30.7 | 296.2 |
| 14.2 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 22 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.6569E+04 | 0.5771E+04 | 0.7983E+03 | 0.1383E+02 |
| 2 | 0.1100E-03 | 0.4610E+04 | 0.4349E+04 | 0.2610E+03 | 0.6001E+01 |
| 3 | 0.1400E-03 | 0.3204E+04 | 0.3106E+04 | 0.9783E+02 | 0.3150E+01 |
| 4 | 0.1770E-03 | 0.2160E+04 | 0.2223E+04 | -0.6315E+02 | -0.2841E+01 |
| 5 | 0.2200E-03 | 0.1510E+04 | 0.1605E+04 | -0.9492E+02 | -0.5914E+01 |
| 6 | 0.2800E-03 | 0.1045E+04 | 0.1094E+04 | -0.4908E+02 | -0.4486E+01 |
| 7 | 0.3550E-03 | 0.7106E+03 | 0.7380E+03 | -0.2744E+02 | -0.3718E+01 |
| 8 | 0.4430E-03 | 0.4836E+03 | 0.5024E+03 | -0.1886E+02 | -0.3753E+01 |
| 9 | 0.5540E-03 | 0.3220E+03 | 0.3341E+03 | -0.1215E+02 | -0.3636E+01 |
| 10 | 0.7130E-03 | 0.2103E+03 | 0.2072E+03 | 0.3029E+01 | 0.1462E+01 |
| 11 | 0.8810E-03 | 0.1400E+03 | 0.1366E+03 | 0.3442E+01 | 0.2520E+01 |
| 12 | 0.1096E-02 | 0.9099E+02 | 0.8721E+02 | 0.3778E+01 | 0.4332E+01 |
| 13 | 0.1411E-02 | 0.5549E+02 | 0.5101E+02 | 0.4479E+01 | 0.8780E+01 |
| 14 | 0.1795E-02 | 0.2515E+02 | 0.3020E+02 | -0.5054E+01 | -0.1674E+02 |
| 15 | 0.2224E-02 | 0.1970E+02 | 0.1877E+02 | 0.9324E+00 | 0.4968E+01 |
| 16 | 0.2850E-02 | 0.1139E+02 | 0.1090E+02 | 0.4820E+00 | 0.4420E+01 |
| 17 | 0.3600E-02 | 0.6994E+01 | 0.6533E+01 | 0.4611E+00 | 0.7059E+01 |
| 18 | 0.4490E-02 | 0.4297E+01 | 0.4074E+01 | 0.2235E+00 | 0.5486E+01 |
| 19 | 0.5700E-02 | 0.2639E+01 | 0.2478E+01 | 0.1610E+00 | 0.6498E+01 |
| 20 | 0.7190E-02 | 0.1621E+01 | 0.1527E+01 | 0.9443E-01 | 0.6186E+01 |
| 21 | 0.8800E-02 | 0.9960E+00 | 0.1007E+01 | -0.1133E-01 | -0.1125E+01 |
| 22 | 0.1100E-01 | 0.6120E+00 | 0.6386E+00 | -0.2659E-01 | -0.4164E+01 |
| 23 | 0.1400E-01 | 0.3760E+00 | 0.3882E+00 | -0.1219E-01 | -0.3141E+01 |
| 24 | 0.1800E-01 | 0.2310E+00 | 0.2295E+00 | 0.1460E-02 | 0.6361E+00 |
| 25 | 0.2200E-01 | 0.1420E+00 | 0.1510E+00 | -0.8977E-02 | -0.5946E+01 |
| 26 | 0.2800E-01 | 0.8700E-01 | 0.9001E-01 | -0.3013E-02 | -0.3347E+01 |
| 27 | 0.3600E-01 | 0.5400E-01 | 0.5237E-01 | 0.1631E-02 | 0.3114E+01 |
| 28 | 0.4500E-01 | 0.3300E-01 | 0.3218E-01 | 0.8179E-03 | 0.2541E+01 |
| 29 | 0.5700E-01 | 0.2000E-01 | 0.1906E-01 | 0.9439E-03 | 0.4953E+01 |

** %RMSERR= 6.01

CORRELATION MATRIX

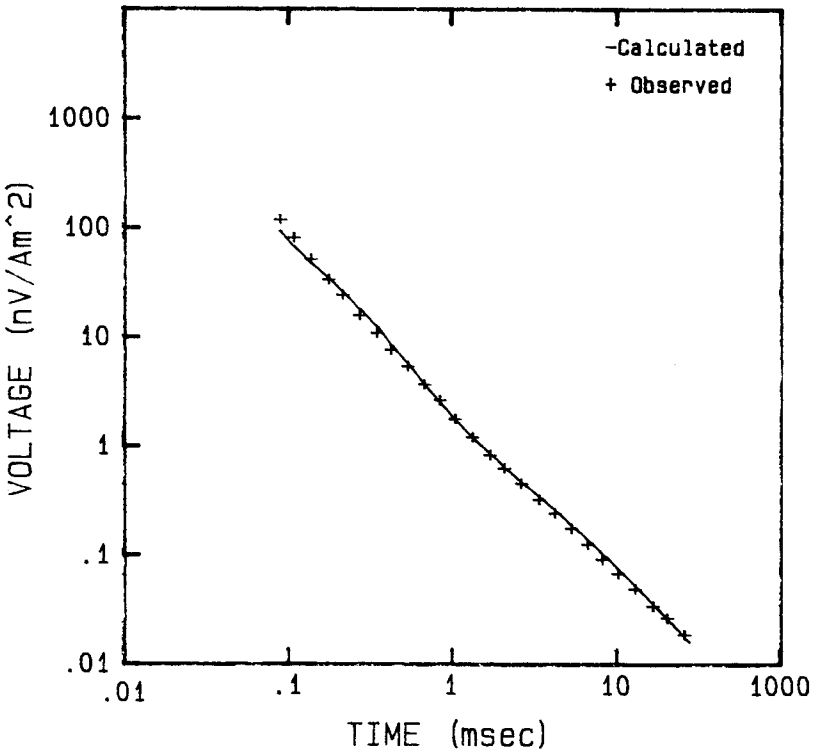
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3015E+00 | 0.1000E+01 | | | |
| 3 | -0.2471E+00 | -0.3029E+00 | 0.1000E+01 | | |
| 4 | -0.2146E+00 | 0.4927E+00 | -0.2970E+00 | 0.1000E+01 | |
| 5 | -0.5528E-01 | -0.3780E+00 | 0.4000E+00 | -0.5283E+00 | 0.1000E+01 |

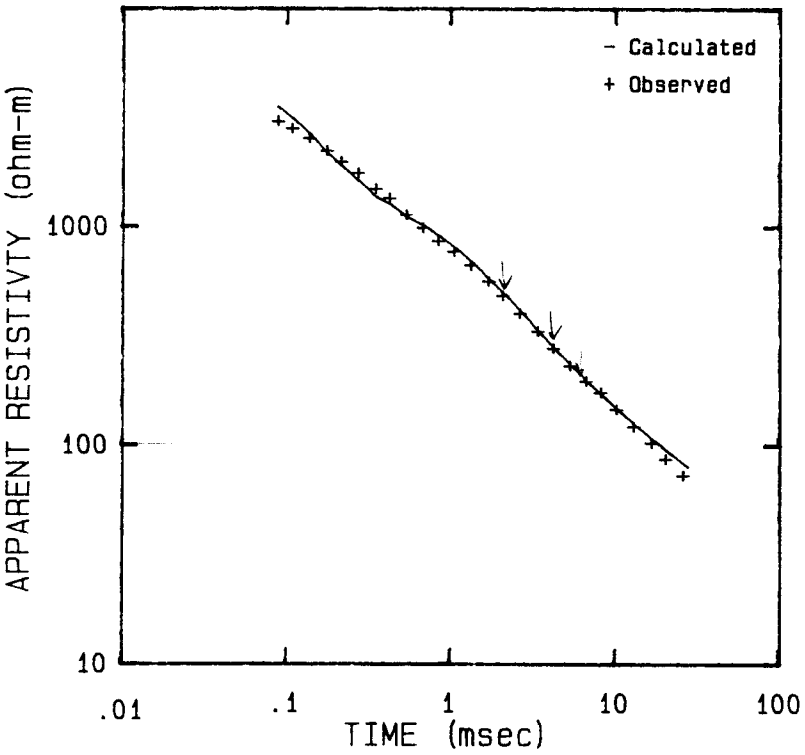
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.5791E-02 | 0.3907E-02 | 0.6746E+00 | 0.6746E+02 |
| 2 | 0.3258E-01 | 0.6648E-02 | 0.2040E+00 | 0.2040E+02 |
| 3 | 0.7023E-01 | 0.2062E-01 | 0.2936E+00 | 0.2936E+02 |
| 4 | 0.6878E+02 | 0.1657E-02 | 0.2410E-04 | 0.2410E-02 |
| 5 | 0.2964E+03 | 0.2748E-02 | 0.9269E-05 | 0.9269E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.57914E-02 | 0.17267E+03 | |
| 2 | SIGMA( 2) | = | 0.32582E-01 | 0.30692E+02 | |
| 3 | SIGMA( 3) | = | 0.70232E-01 | 0.14239E+02 | |
| 4 | THICK( 1) | = | 0.68777E+02 | | 0.68777E+02 |
| 5 | THICK( 2) | = | 0.29643E+03 | | 0.36521E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM23




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 3240 | 427 |
| 170 | 321 |
| 26.1 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 23 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1158E+03 | 0.9168E+02 | 0.2414E+02 | 0.2633E+02 |
| 2 | 0.1100E-03 | 0.7884E+02 | 0.6623E+02 | 0.1261E+02 | 0.1904E+02 |
| 3 | 0.1400E-03 | 0.5030E+02 | 0.4636E+02 | 0.3944E+01 | 0.8509E+01 |
| 4 | 0.1770E-03 | 0.3265E+02 | 0.3374E+02 | -0.1087E+01 | -0.3223E+01 |
| 5 | 0.2200E-03 | 0.2354E+02 | 0.2506E+02 | -0.1526E+01 | -0.6090E+01 |
| 6 | 0.2800E-03 | 0.1544E+02 | 0.1737E+02 | -0.1921E+01 | -0.1106E+02 |
| 7 | 0.3550E-03 | 0.1056E+02 | 0.1198E+02 | -0.1411E+01 | -0.1178E+02 |
| 8 | 0.4430E-03 | 0.7404E+01 | 0.8170E+01 | -0.7658E+00 | -0.9374E+01 |
| 9 | 0.5540E-03 | 0.5273E+01 | 0.5455E+01 | -0.1824E+00 | -0.3343E+01 |
| 10 | 0.7130E-03 | 0.3593E+01 | 0.3471E+01 | 0.1219E+00 | 0.3512E+01 |
| 11 | 0.8810E-03 | 0.2578E+01 | 0.2382E+01 | 0.1962E+00 | 0.8236E+01 |
| 12 | 0.1096E-02 | 0.1744E+01 | 0.1651E+01 | 0.9263E-01 | 0.5609E+01 |
| 13 | 0.1411E-02 | 0.1189E+01 | 0.1129E+01 | 0.6011E-01 | 0.5325E+01 |
| 14 | 0.1795E-02 | 0.8160E+00 | 0.8056E+00 | 0.1042E-01 | 0.1294E+01 |
| 15 | 0.2224E-02 | 0.6180E+00 | 0.6035E+00 | 0.1447E-01 | 0.2397E+01 |
| 16 | 0.2850E-02 | 0.4480E+00 | 0.4397E+00 | 0.8257E-02 | 0.1878E+01 |
| 17 | 0.3600E-02 | 0.3170E+00 | 0.3252E+00 | -0.8161E-02 | -0.2510E+01 |
| 18 | 0.4490E-02 | 0.2380E+00 | 0.2429E+00 | -0.4934E-02 | -0.2031E+01 |
| 19 | 0.5700E-02 | 0.1730E+00 | 0.1762E+00 | -0.3240E-02 | -0.1838E+01 |
| 20 | 0.7190E-02 | 0.1230E+00 | 0.1278E+00 | -0.4832E-02 | -0.3780E+01 |
| 21 | 0.8800E-02 | 0.8900E-01 | 0.9558E-01 | -0.6585E-02 | -0.6889E+01 |
| 22 | 0.1100E-01 | 0.6700E-01 | 0.6884E-01 | -0.1838E-02 | -0.2671E+01 |
| 23 | 0.1400E-01 | 0.4800E-01 | 0.4778E-01 | 0.2235E-03 | 0.4677E+00 |
| 24 | 0.1800E-01 | 0.3300E-01 | 0.3227E-01 | 0.7273E-03 | 0.2253E+01 |
| 25 | 0.2200E-01 | 0.2600E-01 | 0.2345E-01 | 0.2553E-02 | 0.1089E+02 |
| 26 | 0.2800E-01 | 0.1800E-01 | 0.1590E-01 | 0.2100E-02 | 0.1321E+02 |

** %RMSERR= 8.92

CORRELATION MATRIX

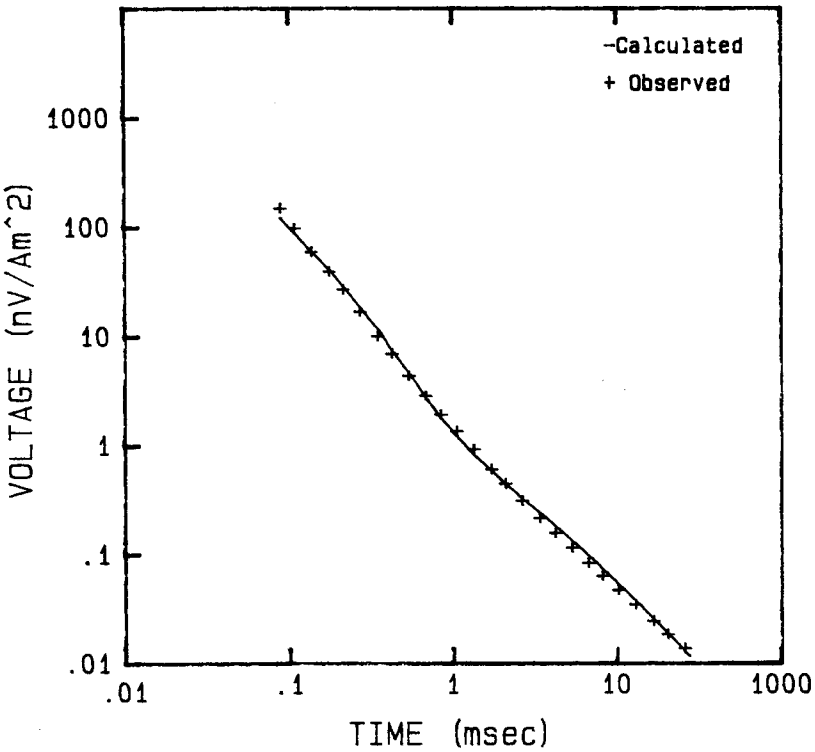
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3240E+00 | 0.1000E+01 | | | |
| 3 | -0.2674E+00 | -0.5337E-01 | 0.1000E+01 | | |
| 4 | 0.8904E-01 | -0.5989E-01 | -0.7480E-01 | 0.1000E+01 | |
| 5 | -0.5243E+00 | -0.4844E-01 | 0.2220E+00 | -0.4189E+00 | 0.1000E+01 |

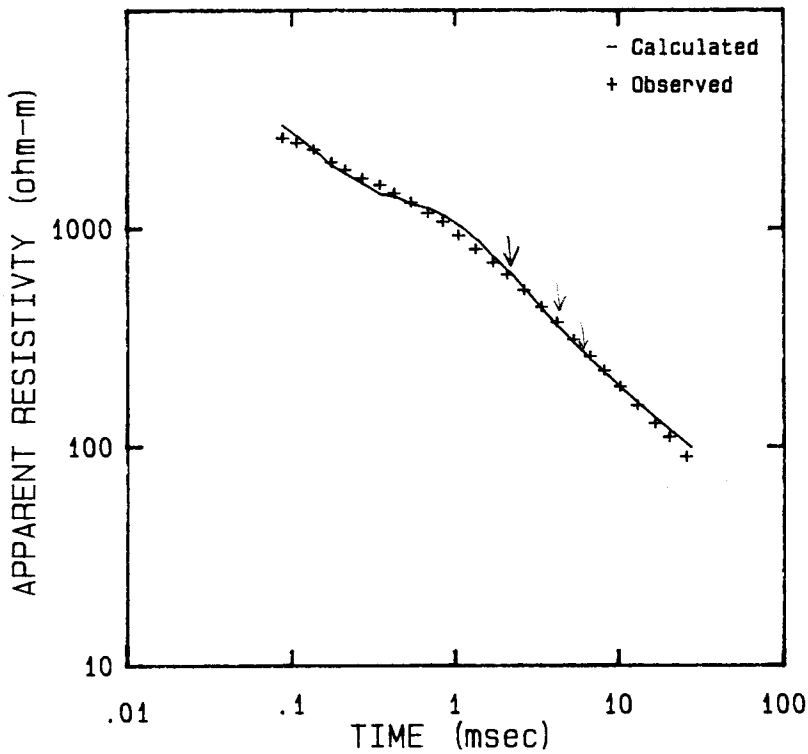
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3084E-03 | 0.4770E-03 | 0.1546E+01 | 0.1546E+03 |
| 2 | 0.5876E-02 | 0.2138E-02 | 0.3639E+00 | 0.3639E+02 |
| 3 | 0.3830E-01 | 0.6945E-02 | 0.1813E+00 | 0.1813E+02 |
| 4 | 0.4272E+03 | 0.1840E-02 | 0.4308E-05 | 0.4308E-03 |
| 5 | 0.3206E+03 | 0.2851E-02 | 0.8893E-05 | 0.8893E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.30843E-03 | 0.32423E+04 | |
| 2 | SIGMA( 2) | = | 0.58763E-02 | 0.17017E+03 | |
| 3 | SIGMA( 3) | = | 0.38298E-01 | 0.26111E+02 | |
| 4 | THICK( 1) | = | 0.42722E+03 | | 0.42722E+03 |
| 5 | THICK( 2) | = | 0.32061E+03 | | 0.74783E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM24




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 3480 | 369 |
| 364 | 461 |
| 33.4 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 24 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1466E+03 | 0.1195E+03 | 0.2708E+02 | 0.2266E+02 |
| 2 | 0.1100E-03 | 0.9601E+02 | 0.8615E+02 | 0.9856E+01 | 0.1144E+02 |
| 3 | 0.1400E-03 | 0.5851E+02 | 0.5826E+02 | 0.2519E+00 | 0.4324E+00 |
| 4 | 0.1770E-03 | 0.3838E+02 | 0.4012E+02 | -0.1739E+01 | -0.4334E+01 |
| 5 | 0.2200E-03 | 0.2621E+02 | 0.2775E+02 | -0.1548E+01 | -0.5576E+01 |
| 6 | 0.2800E-03 | 0.1644E+02 | 0.1781E+02 | -0.1371E+01 | -0.7694E+01 |
| 7 | 0.3550E-03 | 0.9742E+01 | 0.1124E+02 | -0.1502E+01 | -0.1336E+02 |
| 8 | 0.4430E-03 | 0.6728E+01 | 0.7047E+01 | -0.3194E+00 | -0.4532E+01 |
| 9 | 0.5540E-03 | 0.4243E+01 | 0.4362E+01 | -0.1190E+00 | -0.2727E+01 |
| 10 | 0.7130E-03 | 0.2779E+01 | 0.2573E+01 | 0.2055E+00 | 0.7987E+01 |
| 11 | 0.8810E-03 | 0.1870E+01 | 0.1688E+01 | 0.1824E+00 | 0.1081E+02 |
| 12 | 0.1096E-02 | 0.1326E+01 | 0.1137E+01 | 0.1895E+00 | 0.1667E+02 |
| 13 | 0.1411E-02 | 0.9010E+00 | 0.7754E+00 | 0.1256E+00 | 0.1620E+02 |
| 14 | 0.1795E-02 | 0.5940E+00 | 0.5529E+00 | 0.4111E-01 | 0.7436E+01 |
| 15 | 0.2224E-02 | 0.4360E+00 | 0.4161E+00 | 0.1992E-01 | 0.4788E+01 |
| 16 | 0.2850E-02 | 0.3040E+00 | 0.3043E+00 | -0.2747E-03 | -0.9027E-01 |
| 17 | 0.3600E-02 | 0.2110E+00 | 0.2257E+00 | -0.1468E-01 | -0.6505E+01 |
| 18 | 0.4490E-02 | 0.1540E+00 | 0.1687E+00 | -0.1470E-01 | -0.8711E+01 |
| 19 | 0.5700E-02 | 0.1130E+00 | 0.1230E+00 | -0.9962E-02 | -0.8102E+01 |
| 20 | 0.7190E-02 | 0.8200E-01 | 0.8942E-01 | -0.7424E-02 | -0.8302E+01 |
| 21 | 0.8800E-02 | 0.6200E-01 | 0.6701E-01 | -0.5011E-02 | -0.7478E+01 |
| 22 | 0.1100E-01 | 0.4600E-01 | 0.4849E-01 | -0.2491E-02 | -0.5137E+01 |
| 23 | 0.1400E-01 | 0.3400E-01 | 0.3373E-01 | 0.2673E-03 | 0.7923E+00 |
| 24 | 0.1800E-01 | 0.2400E-01 | 0.2293E-01 | 0.1075E-02 | 0.4688E+01 |
| 25 | 0.2200E-01 | 0.1800E-01 | 0.1681E-01 | 0.1191E-02 | 0.7083E+01 |
| 26 | 0.2800E-01 | 0.1300E-01 | 0.1151E-01 | 0.1486E-02 | 0.1290E+02 |

** %RMSERR= 9.47

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.8763E-01 | 0.1000E+01 | | | |
| 3 | -0.5519E+00 | -0.5307E+00 | 0.1000E+01 | | |
| 4 | 0.2613E+00 | 0.4249E+00 | -0.4815E+00 | 0.1000E+01 | |
| 5 | -0.7188E+00 | -0.3552E+00 | 0.5870E+00 | -0.7268E+00 | 0.1000E+01 |

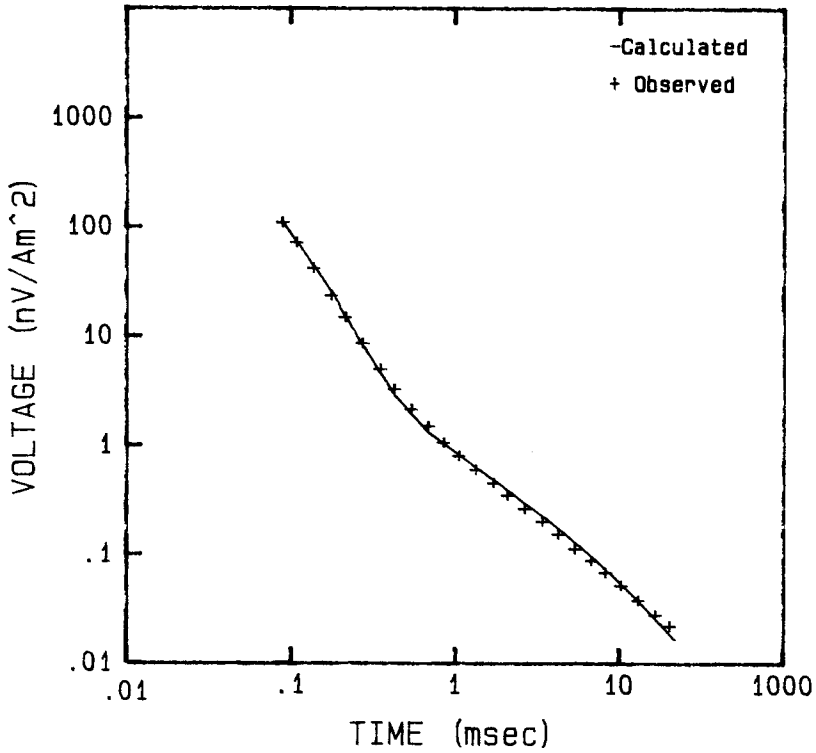
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2873E-03 | 0.3466E-04 | 0.1207E+00 | 0.1207E+02 |
| 2 | 0.2747E-02 | 0.1568E-03 | 0.5709E-01 | 0.5709E+01 |
| 3 | 0.2994E-01 | 0.1089E-02 | 0.3639E-01 | 0.3639E+01 |
| 4 | 0.3692E+03 | 0.3009E-02 | 0.8150E-05 | 0.8150E-03 |
| 5 | 0.4605E+03 | 0.3906E-02 | 0.8482E-05 | 0.8482E-03 |

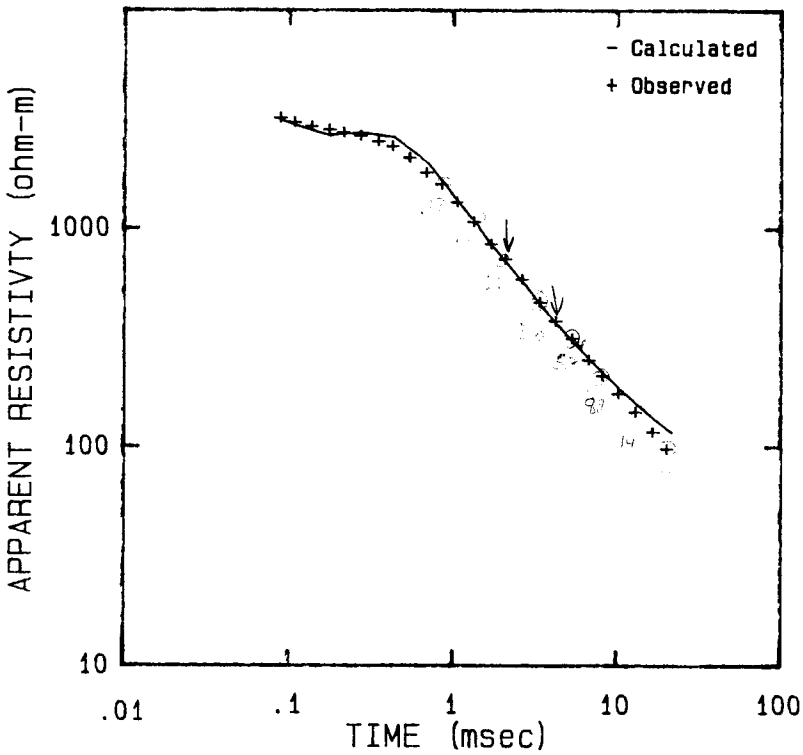
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.28727E-03 | 0.34810E+04 | |
| 2 | SIGMA( 2) | = | 0.27470E-02 | 0.36403E+03 | |
| 3 | SIGMA( 3) | = | 0.29942E-01 | 0.33398E+02 | |
| 4 | THICK( 1) | = | 0.36920E+03 | | 0.36920E+03 |
| 5 | THICK( 2) | = | 0.46049E+03 | | 0.82969E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM25




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 32564 | 232 |
| 1025 | 574 |
| 29.1 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 25 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1072E+03 | 0.1099E+03 | -0.2712E+01 | -0.2467E+01 |
| 2 | 0.1100E-03 | 0.6983E+02 | 0.7255E+02 | -0.2719E+01 | -0.3748E+01 |
| 3 | 0.1400E-03 | 0.4077E+02 | 0.4325E+02 | -0.2474E+01 | -0.5722E+01 |
| 4 | 0.1770E-03 | 0.2286E+02 | 0.2511E+02 | -0.2250E+01 | -0.8961E+01 |
| 5 | 0.2200E-03 | 0.1446E+02 | 0.1470E+02 | -0.2411E+00 | -0.1640E+01 |
| 6 | 0.2800E-03 | 0.8346E+01 | 0.7953E+01 | 0.3931E+00 | 0.4943E+01 |
| 7 | 0.3550E-03 | 0.4855E+01 | 0.4407E+01 | 0.4477E+00 | 0.1016E+02 |
| 8 | 0.4430E-03 | 0.3177E+01 | 0.2752E+01 | 0.4254E+00 | 0.1546E+02 |
| 9 | 0.5540E-03 | 0.2090E+01 | 0.1842E+01 | 0.2479E+00 | 0.1346E+02 |
| 10 | 0.7130E-03 | 0.1463E+01 | 0.1262E+01 | 0.2013E+00 | 0.1595E+02 |
| 11 | 0.8810E-03 | 0.1031E+01 | 0.9882E+00 | 0.4280E-01 | 0.4332E+01 |
| 12 | 0.1096E-02 | 0.7780E+00 | 0.7800E+00 | -0.1970E-02 | -0.2525E+00 |
| 13 | 0.1411E-02 | 0.5810E+00 | 0.5935E+00 | -0.1248E-01 | -0.2103E+01 |
| 14 | 0.1795E-02 | 0.4390E+00 | 0.4610E+00 | -0.2203E-01 | -0.4779E+01 |
| 15 | 0.2224E-02 | 0.3390E+00 | 0.3669E+00 | -0.2786E-01 | -0.7594E+01 |
| 16 | 0.2850E-02 | 0.2550E+00 | 0.2772E+00 | -0.2223E-01 | -0.8018E+01 |
| 17 | 0.3600E-02 | 0.1950E+00 | 0.2121E+00 | -0.1711E-01 | -0.8065E+01 |
| 18 | 0.4490E-02 | 0.1500E+00 | 0.1622E+00 | -0.1224E-01 | -0.7547E+01 |
| 19 | 0.5700E-02 | 0.1100E+00 | 0.1203E+00 | -0.1032E-01 | -0.8576E+01 |
| 20 | 0.7190E-02 | 0.8600E-01 | 0.8861E-01 | -0.2611E-02 | -0.2947E+01 |
| 21 | 0.8800E-02 | 0.6700E-01 | 0.6711E-01 | -0.1089E-03 | -0.1622E+00 |
| 22 | 0.1100E-01 | 0.5100E-01 | 0.4876E-01 | 0.2235E-02 | 0.4584E+01 |
| 23 | 0.1400E-01 | 0.3700E-01 | 0.3394E-01 | 0.3060E-02 | 0.9016E+01 |
| 24 | 0.1800E-01 | 0.2700E-01 | 0.2292E-01 | 0.4079E-02 | 0.1779E+02 |
| 25 | 0.2200E-01 | 0.2200E-01 | 0.1652E-01 | 0.5475E-02 | 0.3313E+02 |

** %RMSERR= 10.63

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.2883E+00 | 0.1000E+01 | | | |
| 3 | -0.4441E+00 | -0.2346E+00 | 0.1000E+01 | | |
| 4 | 0.1464E+00 | 0.2112E+00 | -0.2491E+00 | 0.1000E+01 | |
| 5 | -0.5667E+00 | -0.4527E+00 | 0.2493E+00 | -0.5690E+00 | 0.1000E+01 |

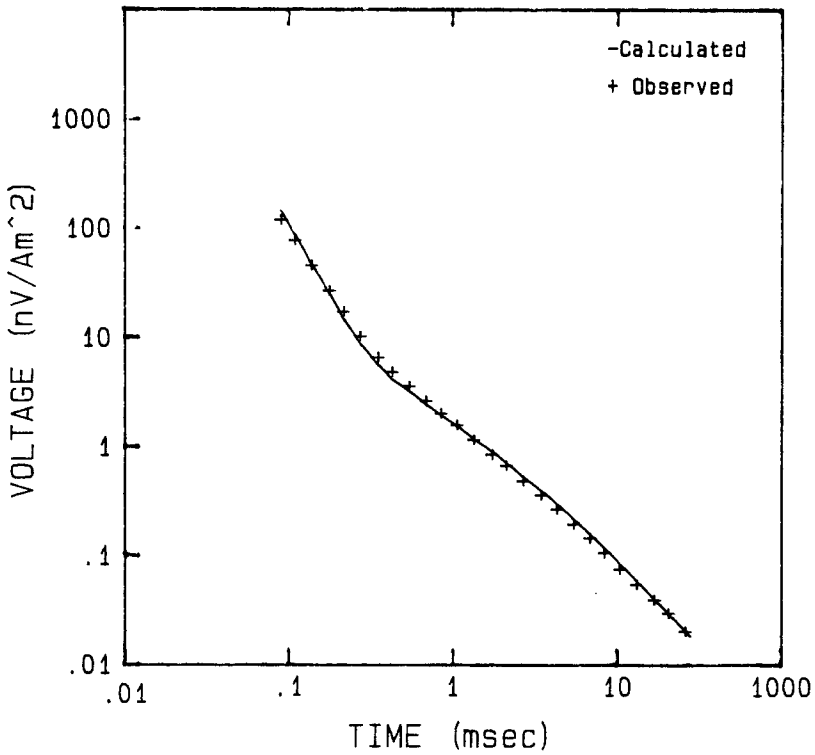
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3071E-04 | 0.2654E-04 | 0.8642E+00 | 0.8642E+02 |
| 2 | 0.9756E-03 | 0.9410E-04 | 0.9646E-01 | 0.9646E+01 |
| 3 | 0.3436E-01 | 0.5385E-03 | 0.1567E-01 | 0.1567E+01 |
| 4 | 0.2324E+03 | 0.2741E-02 | 0.1180E-04 | 0.1180E-02 |
| 5 | 0.5733E+03 | 0.3452E-02 | 0.6022E-05 | 0.6022E-03 |

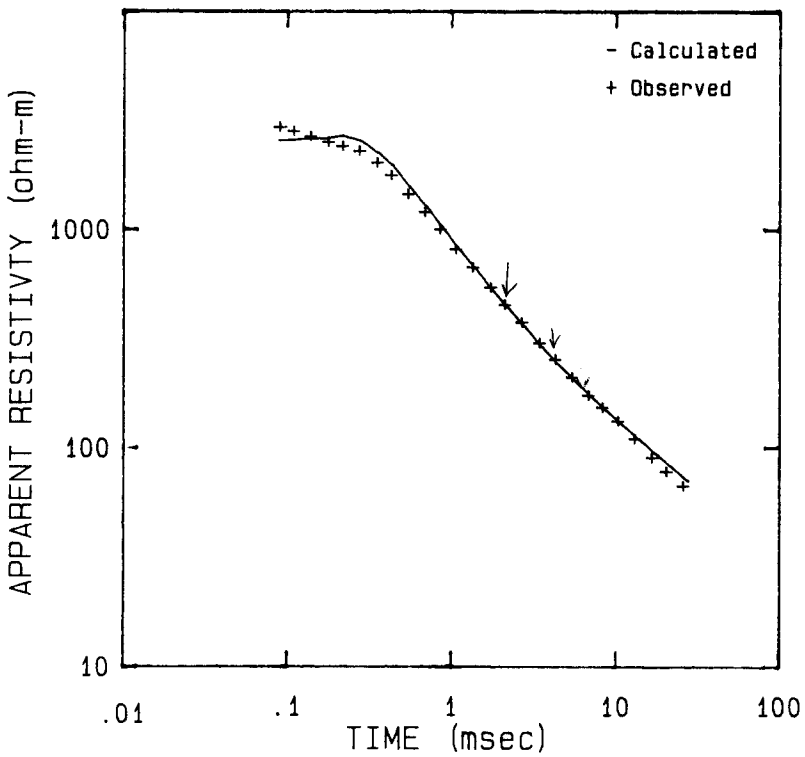
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.30708E-04 | 0.32564E+05 | |
| 2 | SIGMA( 2) | = | 0.97558E-03 | 0.10250E+04 | |
| 3 | SIGMA( 3) | = | 0.34365E-01 | 0.29100E+02 | |
| 4 | THICK( 1) | = | 0.23236E+03 | | 0.23236E+03 |
| 5 | THICK( 2) | = | 0.57325E+03 | | 0.80561E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM26




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 6046 | 175 |
| 1187 | 462 |
| 30.5 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 26 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1194E+03 | 0.1474E+03 | -0.2803E+02 | -0.1901E+02 |
| 2 | 0.1100E-03 | 0.7726E+02 | 0.8811E+02 | -0.1085E+02 | -0.1232E+02 |
| 3 | 0.1400E-03 | 0.4576E+02 | 0.4695E+02 | -0.1192E+01 | -0.2538E+01 |
| 4 | 0.1770E-03 | 0.2671E+02 | 0.2511E+02 | 0.1602E+01 | 0.6378E+01 |
| 5 | 0.2200E-03 | 0.1725E+02 | 0.1459E+02 | 0.2665E+01 | 0.1826E+02 |
| 6 | 0.2800E-03 | 0.1020E+02 | 0.8634E+01 | 0.1565E+01 | 0.1813E+02 |
| 7 | 0.3550E-03 | 0.6573E+01 | 0.5561E+01 | 0.1012E+01 | 0.1820E+02 |
| 8 | 0.4430E-03 | 0.4854E+01 | 0.4106E+01 | 0.7484E+00 | 0.1823E+02 |
| 9 | 0.5540E-03 | 0.3576E+01 | 0.3168E+01 | 0.4075E+00 | 0.1286E+02 |
| 10 | 0.7130E-03 | 0.2619E+01 | 0.2388E+01 | 0.2309E+00 | 0.9667E+01 |
| 11 | 0.8810E-03 | 0.2021E+01 | 0.1908E+01 | 0.1127E+00 | 0.5903E+01 |
| 12 | 0.1096E-02 | 0.1577E+01 | 0.1524E+01 | 0.5296E-01 | 0.3475E+01 |
| 13 | 0.1411E-02 | 0.1151E+01 | 0.1154E+01 | -0.2978E-02 | -0.2581E+00 |
| 14 | 0.1795E-02 | 0.8460E+00 | 0.8832E+00 | -0.3724E-01 | -0.4216E+01 |
| 15 | 0.2224E-02 | 0.6710E+00 | 0.6905E+00 | -0.1952E-01 | -0.2827E+01 |
| 16 | 0.2850E-02 | 0.4840E+00 | 0.5117E+00 | -0.2768E-01 | -0.5409E+01 |
| 17 | 0.3600E-02 | 0.3580E+00 | 0.3817E+00 | -0.2374E-01 | -0.6220E+01 |
| 18 | 0.4490E-02 | 0.2650E+00 | 0.2857E+00 | -0.2071E-01 | -0.7250E+01 |
| 19 | 0.5700E-02 | 0.1950E+00 | 0.2065E+00 | -0.1148E-01 | -0.5562E+01 |
| 20 | 0.7190E-02 | 0.1450E+00 | 0.1486E+00 | -0.3610E-02 | -0.2429E+01 |
| 21 | 0.8800E-02 | 0.1060E+00 | 0.1105E+00 | -0.4529E-02 | -0.4098E+01 |
| 22 | 0.1100E-01 | 0.7500E-01 | 0.7919E-01 | -0.4191E-02 | -0.5292E+01 |
| 23 | 0.1400E-01 | 0.5500E-01 | 0.5476E-01 | 0.2444E-03 | 0.4464E+00 |
| 24 | 0.1800E-01 | 0.3900E-01 | 0.3707E-01 | 0.1927E-02 | 0.5197E+01 |
| 25 | 0.2200E-01 | 0.2900E-01 | 0.2723E-01 | 0.1772E-02 | 0.6507E+01 |
| 26 | 0.2800E-01 | 0.2000E-01 | 0.1866E-01 | 0.1338E-02 | 0.7169E+01 |

** %RMSERR= 9.89

CORRELATION MATRIX

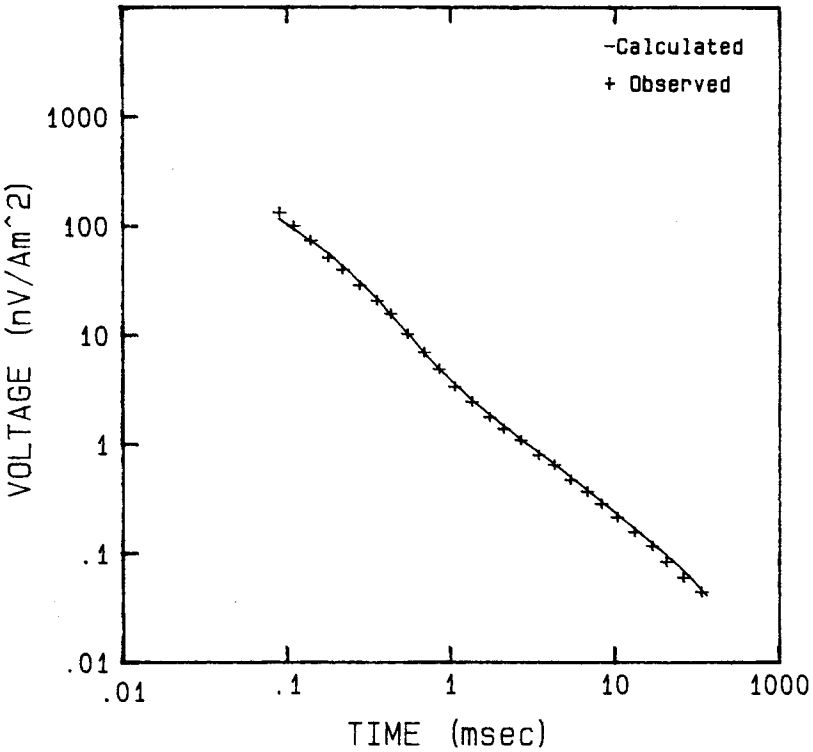
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.1011E+00 | 0.1000E+01 | | | |
| 3 | -0.2694E+00 | -0.3204E+00 | 0.1000E+01 | | |
| 4 | 0.1115E+00 | 0.1304E+00 | -0.6911E+00 | 0.1000E+01 | |
| 5 | -0.1568E+00 | -0.2283E+00 | 0.4848E+00 | -0.5935E+00 | 0.1000E+01 |

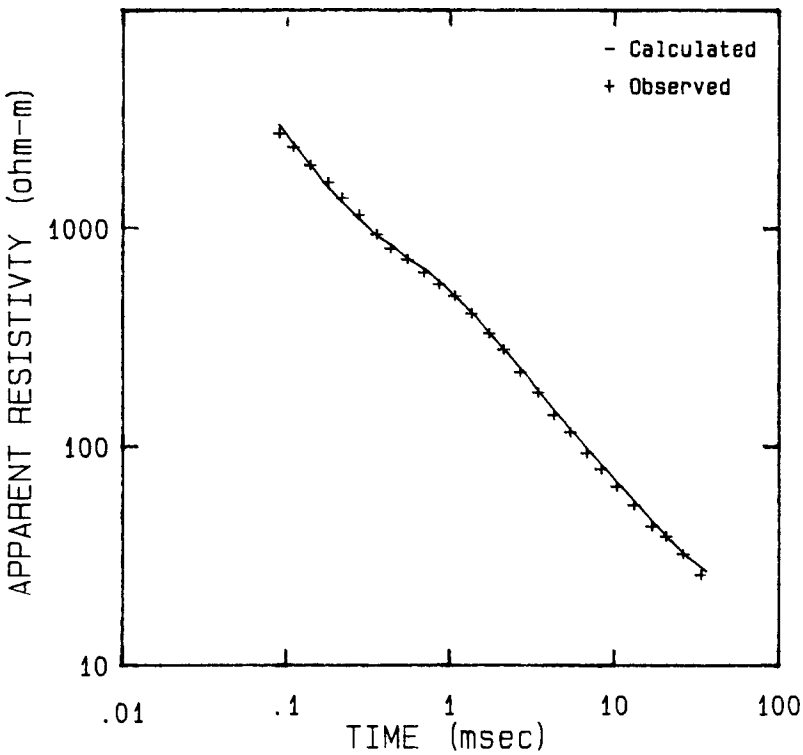
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1654E-03 | 0.3478E-03 | 0.2102E+01 | 0.2102E+03 |
| 2 | 0.8425E-03 | 0.1154E-02 | 0.1370E+01 | 0.1370E+03 |
| 3 | 0.3283E-01 | 0.1071E-01 | 0.3262E+00 | 0.3262E+02 |
| 4 | 0.1748E+03 | 0.2583E-02 | 0.1477E-04 | 0.1477E-02 |
| 5 | 0.4619E+03 | 0.3043E-02 | 0.6587E-05 | 0.6587E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.16541E-03 | 0.60455E+04 | |
| 2 | SIGMA( 2) | = | 0.84252E-03 | 0.11869E+04 | |
| 3 | SIGMA( 3) | = | 0.32829E-01 | 0.30461E+02 | |
| 4 | THICK( 1) | = | 0.17485E+03 | | 0.17485E+03 |
| 5 | THICK( 2) | = | 0.46192E+03 | | 0.63676E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM27




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 8117 | 330 |
| 85.2 | 216 |
| 11 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 27 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1343E+03 | 0.1174E+03 | 0.1694E+02 | 0.1443E+02 |
| 2 | 0.1100E-03 | 0.1011E+03 | 0.9457E+02 | 0.6487E+01 | 0.6859E+01 |
| 3 | 0.1400E-03 | 0.7376E+02 | 0.7360E+02 | 0.1590E+00 | 0.2160E+00 |
| 4 | 0.1770E-03 | 0.5170E+02 | 0.5642E+02 | -0.4712E+01 | -0.8352E+01 |
| 5 | 0.2200E-03 | 0.4002E+02 | 0.4302E+02 | -0.2995E+01 | -0.6961E+01 |
| 6 | 0.2800E-03 | 0.2861E+02 | 0.3080E+02 | -0.2192E+01 | -0.7117E+01 |
| 7 | 0.3550E-03 | 0.2083E+02 | 0.2143E+02 | -0.6006E+00 | -0.2803E+01 |
| 8 | 0.4430E-03 | 0.1579E+02 | 0.1495E+02 | 0.8424E+00 | 0.5635E+01 |
| 9 | 0.5540E-03 | 0.1029E+02 | 0.1021E+02 | 0.7614E-01 | 0.7458E+00 |
| 10 | 0.7130E-03 | 0.7001E+01 | 0.6654E+01 | 0.3467E+00 | 0.5210E+01 |
| 11 | 0.8810E-03 | 0.4932E+01 | 0.4763E+01 | 0.1692E+00 | 0.3553E+01 |
| 12 | 0.1096E-02 | 0.3390E+01 | 0.3460E+01 | -0.7046E-01 | -0.2036E+01 |
| 13 | 0.1411E-02 | 0.2444E+01 | 0.2456E+01 | -0.1225E-01 | -0.4986E+00 |
| 14 | 0.1795E-02 | 0.1781E+01 | 0.1831E+01 | -0.5039E-01 | -0.2751E+01 |
| 15 | 0.2224E-02 | 0.1392E+01 | 0.1428E+01 | -0.3647E-01 | -0.2553E+01 |
| 16 | 0.2850E-02 | 0.1091E+01 | 0.1072E+01 | 0.1886E-01 | 0.1759E+01 |
| 17 | 0.3600E-02 | 0.8020E+00 | 0.8202E+00 | -0.1823E-01 | -0.2223E+01 |
| 18 | 0.4490E-02 | 0.6550E+00 | 0.6353E+00 | 0.1968E-01 | 0.3097E+01 |
| 19 | 0.5700E-02 | 0.4760E+00 | 0.4782E+00 | -0.2243E-02 | -0.4690E+00 |
| 20 | 0.7190E-02 | 0.3710E+00 | 0.3618E+00 | 0.9185E-02 | 0.2538E+01 |
| 21 | 0.8800E-02 | 0.2860E+00 | 0.2828E+00 | 0.3187E-02 | 0.1127E+01 |
| 22 | 0.1100E-01 | 0.2170E+00 | 0.2145E+00 | 0.2460E-02 | 0.1147E+01 |
| 23 | 0.1400E-01 | 0.1590E+00 | 0.1591E+00 | -0.1496E-03 | -0.9402E-01 |
| 24 | 0.1800E-01 | 0.1180E+00 | 0.1157E+00 | 0.2273E-02 | 0.1964E+01 |
| 25 | 0.2200E-01 | 0.8400E-01 | 0.8980E-01 | -0.5800E-02 | -0.6459E+01 |
| 26 | 0.2800E-01 | 0.6100E-01 | 0.6410E-01 | -0.3099E-02 | -0.4834E+01 |
| 27 | 0.3600E-01 | 0.4500E-01 | 0.4267E-01 | 0.2328E-02 | 0.5454E+01 |

** %RMSERR= 4.90

CORRELATION MATRIX

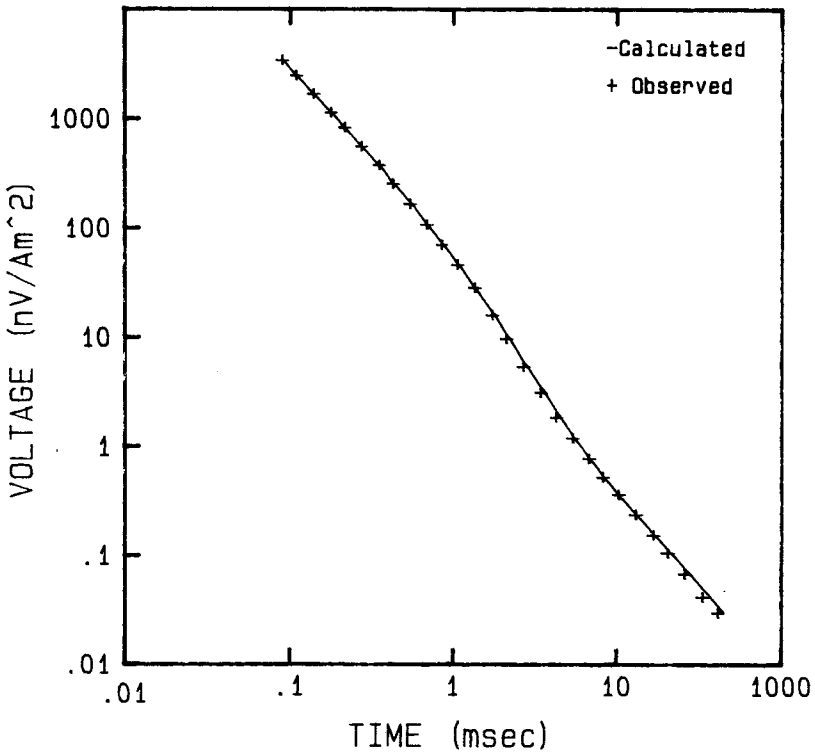
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.4545E+00 | 0.1000E+01 | | | |
| 3 | -0.4560E+00 | -0.2698E-01 | 0.1000E+01 | | |
| 4 | -0.1787E+00 | 0.5852E+00 | -0.1317E+00 | 0.1000E+01 | |
| 5 | -0.1150E+00 | -0.3795E+00 | 0.1091E+00 | -0.4300E+00 | 0.1000E+01 |

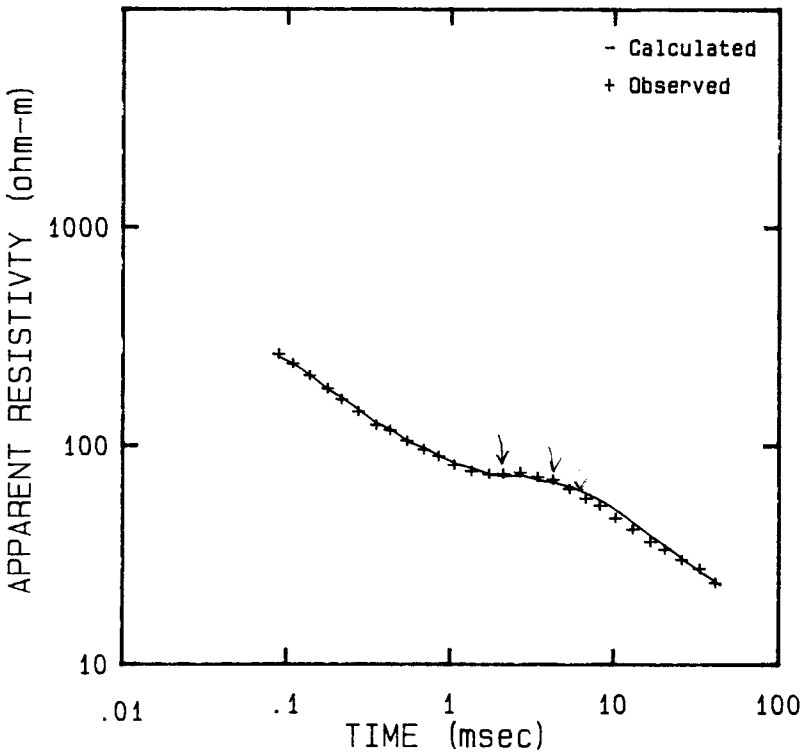
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1232E-03 | 0.6093E-04 | 0.4946E+00 | 0.4946E+02 |
| 2 | 0.1174E-01 | 0.4688E-03 | 0.3993E-01 | 0.3993E+01 |
| 3 | 0.9053E-01 | 0.9713E-03 | 0.1073E-01 | 0.1073E+01 |
| 4 | 0.3298E+03 | 0.1166E-02 | 0.3535E-05 | 0.3535E-03 |
| 5 | 0.2165E+03 | 0.2503E-02 | 0.1156E-04 | 0.1156E-02 |

| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.12320E-03 | 0.81168E+04 | |
| 2 | SIGMA( 2) = | 0.11738E-01 | 0.85191E+02 | |
| 3 | SIGMA( 3) = | 0.90533E-01 | 0.11046E+02 | |
| 4 | THICK( 1) = | 0.32975E+03 | | 0.32975E+03 |
| 5 | THICK( 2) = | 0.21651E+03 | | 0.54626E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM28




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 231 | 112 |
| 41.4 | 443 |
| 6.92 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 28 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3411E+04 | 0.3524E+04 | -0.1132E+03 | -0.3211E+01 |
| 2 | 0.1100E-03 | 0.2472E+04 | 0.2472E+04 | -0.4009E+00 | -0.1621E-01 |
| 3 | 0.1400E-03 | 0.1677E+04 | 0.1678E+04 | -0.8992E+00 | -0.5359E-01 |
| 4 | 0.1770E-03 | 0.1132E+04 | 0.1144E+04 | -0.1243E+02 | -0.1086E+01 |
| 5 | 0.2200E-03 | 0.8275E+03 | 0.8100E+03 | 0.1751E+02 | 0.2161E+01 |
| 6 | 0.2800E-03 | 0.5572E+03 | 0.5476E+03 | 0.9639E+01 | 0.1760E+01 |
| 7 | 0.3550E-03 | 0.3744E+03 | 0.3668E+03 | 0.7582E+01 | 0.2067E+01 |
| 8 | 0.4430E-03 | 0.2521E+03 | 0.2495E+03 | 0.2522E+01 | 0.1011E+01 |
| 9 | 0.5540E-03 | 0.1661E+03 | 0.1678E+03 | -0.1760E+01 | -0.1049E+01 |
| 10 | 0.7130E-03 | 0.1069E+03 | 0.1050E+03 | 0.1862E+01 | 0.1772E+01 |
| 11 | 0.8810E-03 | 0.7000E+02 | 0.7019E+02 | -0.1896E+00 | -0.2702E+00 |
| 12 | 0.1096E-02 | 0.4635E+02 | 0.4571E+02 | 0.6385E+00 | 0.1397E+01 |
| 13 | 0.1411E-02 | 0.2803E+02 | 0.2720E+02 | 0.8336E+00 | 0.3065E+01 |
| 14 | 0.1795E-02 | 0.1598E+02 | 0.1619E+02 | -0.2095E+00 | -0.1294E+01 |
| 15 | 0.2224E-02 | 0.9623E+01 | 0.1003E+02 | -0.4071E+00 | -0.4059E+01 |
| 16 | 0.2850E-02 | 0.5380E+01 | 0.5640E+01 | -0.2599E+00 | -0.4609E+01 |
| 17 | 0.3600E-02 | 0.3100E+01 | 0.3266E+01 | -0.1663E+00 | -0.5092E+01 |
| 18 | 0.4490E-02 | 0.1850E+01 | 0.1954E+01 | -0.1039E+00 | -0.5316E+01 |
| 19 | 0.5700E-02 | 0.1190E+01 | 0.1155E+01 | 0.3542E-01 | 0.3067E+01 |
| 20 | 0.7190E-02 | 0.7740E+00 | 0.7247E+00 | 0.4932E-01 | 0.6806E+01 |
| 21 | 0.8800E-02 | 0.5240E+00 | 0.4923E+00 | 0.3171E-01 | 0.6442E+01 |
| 22 | 0.1100E-01 | 0.3630E+00 | 0.3314E+00 | 0.3165E-01 | 0.9552E+01 |
| 23 | 0.1400E-01 | 0.2380E+00 | 0.2219E+00 | 0.1610E-01 | 0.7257E+01 |
| 24 | 0.1800E-01 | 0.1540E+00 | 0.1461E+00 | 0.7880E-02 | 0.5393E+01 |
| 25 | 0.2200E-01 | 0.1060E+00 | 0.1044E+00 | 0.1634E-02 | 0.1566E+01 |
| 26 | 0.2800E-01 | 0.6800E-01 | 0.7008E-01 | -0.2082E-02 | -0.2971E+01 |
| 27 | 0.3600E-01 | 0.4200E-01 | 0.4550E-01 | -0.3499E-02 | -0.7691E+01 |
| 28 | 0.4500E-01 | 0.3000E-01 | 0.3070E-01 | -0.6993E-03 | -0.2278E+01 |

** %RMSERR= 4.14

CORRELATION MATRIX

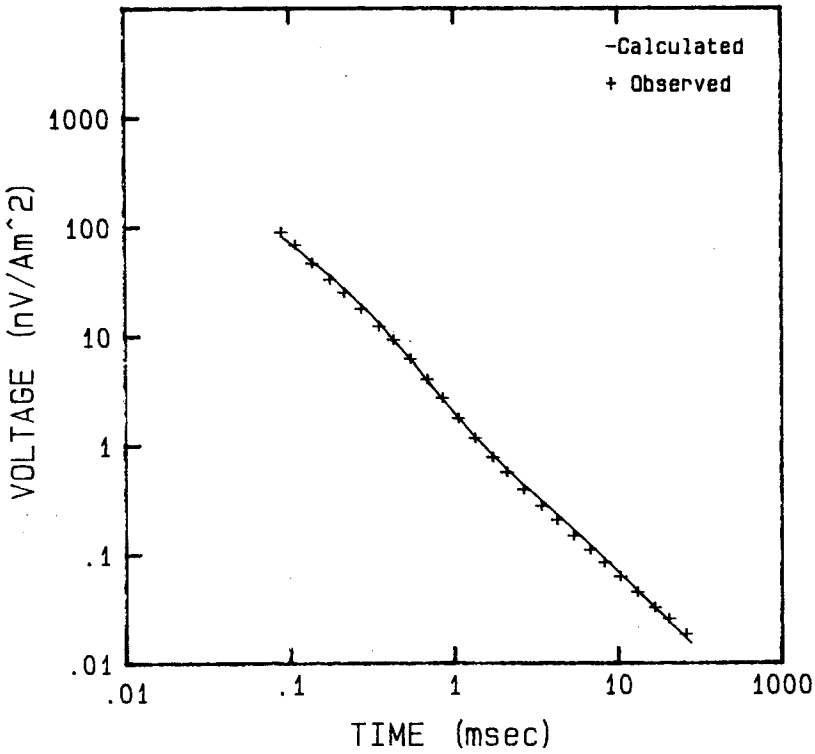
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.5332E+00 | 0.1000E+01 | | | |
| 3 | -0.8306E+00 | 0.3864E+00 | 0.1000E+01 | | |
| 4 | 0.1025E+00 | 0.3567E+00 | -0.3359E+00 | 0.1000E+01 | |
| 5 | -0.2462E+00 | -0.1265E+00 | 0.3420E+00 | -0.4529E+00 | 0.1000E+01 |

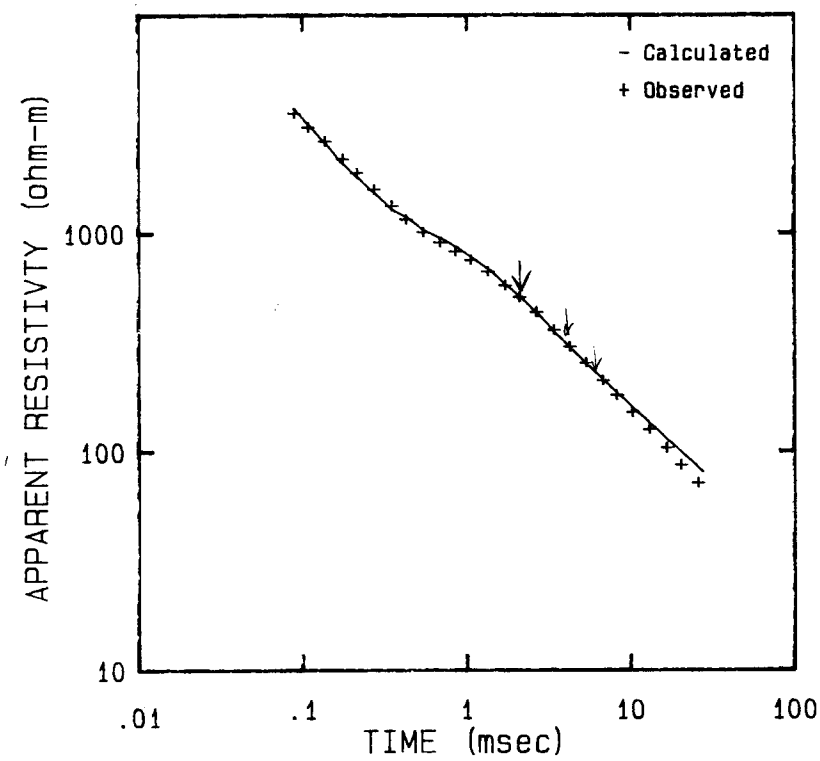
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4322E-02 | 0.1812E-03 | 0.4192E-01 | 0.4192E+01 |
| 2 | 0.2413E-01 | 0.3515E-03 | 0.1456E-01 | 0.1456E+01 |
| 3 | 0.1445E+00 | 0.6470E-02 | 0.4478E-01 | 0.4478E+01 |
| 4 | 0.1119E+03 | 0.1307E-02 | 0.1168E-04 | 0.1168E-02 |
| 5 | 0.4430E+03 | 0.1823E-02 | 0.4116E-05 | 0.4116E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.43221E-02 | 0.23137E+03 | |
| 2 | SIGMA( 2) | = | 0.24135E-01 | 0.41434E+02 | |
| 3 | SIGMA( 3) | = | 0.14449E+00 | 0.69210E+01 | |
| 4 | THICK( 1) | = | 0.11186E+03 | | 0.11186E+03 |
| 5 | THICK( 2) | = | 0.44299E+03 | | 0.55485E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM29




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 6482 | 388 |
| 201 | 395 |
| 34.4 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 29 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.9022E+02 | 0.8336E+02 | 0.6861E+01 | 0.8231E+01 |
| 2 | 0.1100E-03 | 0.6866E+02 | 0.6530E+02 | 0.3361E+01 | 0.5147E+01 |
| 3 | 0.1400E-03 | 0.4674E+02 | 0.4822E+02 | -0.1484E+01 | -0.3077E+01 |
| 4 | 0.1770E-03 | 0.3313E+02 | 0.3596E+02 | -0.2831E+01 | -0.7872E+01 |
| 5 | 0.2200E-03 | 0.2509E+02 | 0.2685E+02 | -0.1759E+01 | -0.6553E+01 |
| 6 | 0.2800E-03 | 0.1714E+02 | 0.1896E+02 | -0.1820E+01 | -0.9602E+01 |
| 7 | 0.3550E-03 | 0.1232E+02 | 0.1307E+02 | -0.7478E+00 | -0.5723E+01 |
| 8 | 0.4430E-03 | 0.9233E+01 | 0.8978E+01 | 0.2554E+00 | 0.2845E+01 |
| 9 | 0.5540E-03 | 0.6201E+01 | 0.6025E+01 | 0.1758E+00 | 0.2918E+01 |
| 10 | 0.7130E-03 | 0.4028E+01 | 0.3771E+01 | 0.2568E+00 | 0.6809E+01 |
| 11 | 0.8810E-03 | 0.2708E+01 | 0.2543E+01 | 0.1646E+00 | 0.6470E+01 |
| 12 | 0.1096E-02 | 0.1779E+01 | 0.1728E+01 | 0.5117E-01 | 0.2962E+01 |
| 13 | 0.1411E-02 | 0.1166E+01 | 0.1139E+01 | 0.2698E-01 | 0.2369E+01 |
| 14 | 0.1795E-02 | 0.7770E+00 | 0.7827E+00 | -0.5707E-02 | -0.7291E+00 |
| 15 | 0.2224E-02 | 0.5660E+00 | 0.5750E+00 | -0.9005E-02 | -0.1566E+01 |
| 16 | 0.2850E-02 | 0.3910E+00 | 0.4088E+00 | -0.1780E-01 | -0.4355E+01 |
| 17 | 0.3600E-02 | 0.2770E+00 | 0.2959E+00 | -0.1893E-01 | -0.6398E+01 |
| 18 | 0.4490E-02 | 0.2060E+00 | 0.2184E+00 | -0.1243E-01 | -0.5690E+01 |
| 19 | 0.5700E-02 | 0.1470E+00 | 0.1571E+00 | -0.1007E-01 | -0.6413E+01 |
| 20 | 0.7190E-02 | 0.1090E+00 | 0.1128E+00 | -0.3814E-02 | -0.3381E+01 |
| 21 | 0.8800E-02 | 0.8300E-01 | 0.8440E-01 | -0.1396E-02 | -0.1654E+01 |
| 22 | 0.1100E-01 | 0.6200E-01 | 0.6106E-01 | 0.9422E-03 | 0.1543E+01 |
| 23 | 0.1400E-01 | 0.4500E-01 | 0.4276E-01 | 0.2241E-02 | 0.5242E+01 |
| 24 | 0.1800E-01 | 0.3200E-01 | 0.2965E-01 | 0.2348E-02 | 0.7920E+01 |
| 25 | 0.2200E-01 | 0.2500E-01 | 0.2202E-01 | 0.2984E-02 | 0.1356E+02 |
| 26 | 0.2800E-01 | 0.1900E-01 | 0.1544E-01 | 0.3555E-02 | 0.2302E+02 |

** %RMSERR= 7.36

CORRELATION MATRIX

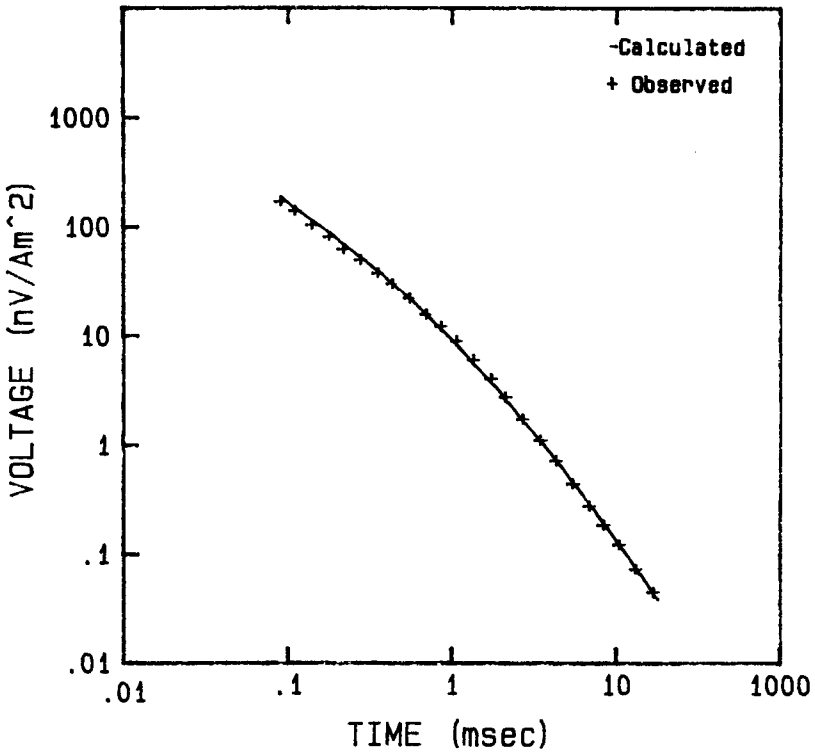
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3791E+00 | 0.1000E+01 | | | |
| 3 | 0.6024E-01 | -0.6324E+00 | 0.1000E+01 | | |
| 4 | 0.8158E-01 | 0.3685E+00 | -0.5005E+00 | 0.1000E+01 | |
| 5 | -0.2085E+00 | -0.1565E+00 | 0.5246E-01 | -0.3323E+00 | 0.1000E+01 |

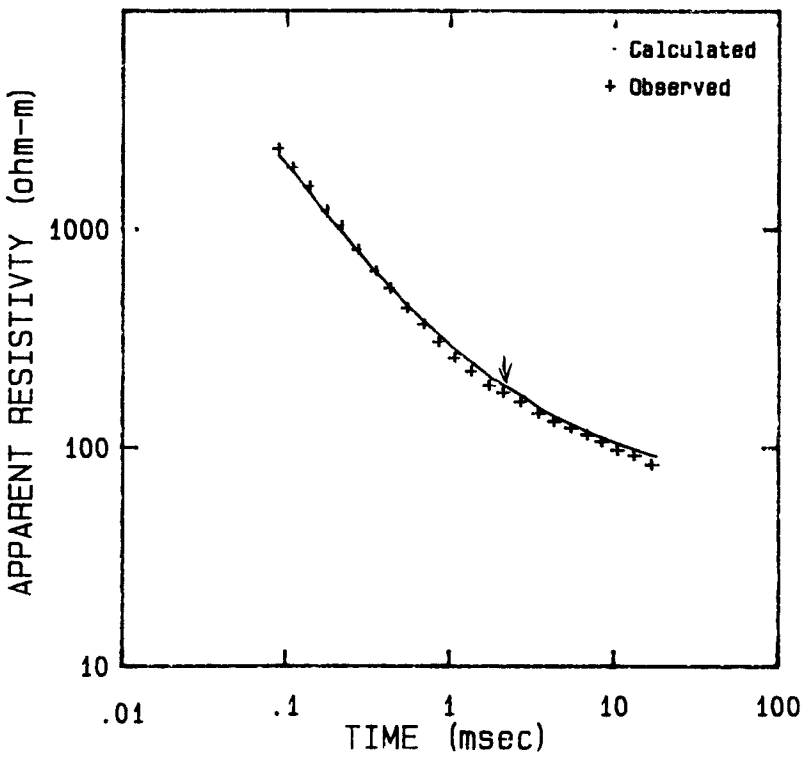
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1543E-03 | 0.2814E-04 | 0.1824E+00 | 0.1824E+02 |
| 2 | 0.4985E-02 | 0.2334E-03 | 0.4682E-01 | 0.4682E+01 |
| 3 | 0.2906E-01 | 0.6336E-03 | 0.2180E-01 | 0.2180E+01 |
| 4 | 0.3881E+03 | 0.1828E-02 | 0.4709E-05 | 0.4709E-03 |
| 5 | 0.3954E+03 | 0.2541E-02 | 0.6428E-05 | 0.6428E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.15427E-03 | 0.64823E+04 | |
| 2 | SIGMA( 2) | = | 0.49848E-02 | 0.20061E+03 | |
| 3 | SIGMA( 3) | = | 0.29060E-01 | 0.34411E+02 | |
| 4 | THICK( 1) | = | 0.38809E+03 | | 0.38809E+03 |
| 5 | THICK( 2) | = | 0.39536E+03 | | 0.78345E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM30




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 2450 | 294 |
| 57.8 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 30 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1897E+03 | 0.1890E+03 | 0.7215E+00 | 0.3818E+00 |
| 2 | 0.1100E-03 | 0.1493E+03 | 0.1479E+03 | 0.1421E+01 | 0.9606E+00 |
| 3 | 0.1400E-03 | 0.1130E+03 | 0.1142E+03 | -0.1122E+01 | -0.9831E+00 |
| 4 | 0.1770E-03 | 0.8419E+02 | 0.8803E+02 | -0.3838E+01 | -0.4360E+01 |
| 5 | 0.2200E-03 | 0.6196E+02 | 0.6840E+02 | -0.6436E+01 | -0.9410E+01 |
| 6 | 0.2800E-03 | 0.4941E+02 | 0.5178E+02 | -0.2364E+01 | -0.4567E+01 |
| 7 | 0.3550E-03 | 0.3708E+02 | 0.3856E+02 | -0.1481E+01 | -0.3842E+01 |
| 8 | 0.4430E-03 | 0.2942E+02 | 0.2908E+02 | 0.3488E+00 | 0.1200E+01 |
| 9 | 0.5540E-03 | 0.2195E+02 | 0.2157E+02 | 0.3740E+00 | 0.1734E+01 |
| 10 | 0.7130E-03 | 0.1565E+02 | 0.1515E+02 | 0.5019E+00 | 0.3314E+01 |
| 11 | 0.8810E-03 | 0.1109E+02 | 0.1112E+02 | -0.2531E-01 | -0.2277E+00 |
| 12 | 0.1096E-02 | 0.8497E+01 | 0.7961E+01 | 0.5360E+00 | 0.6732E+01 |
| 13 | 0.1411E-02 | 0.5420E+01 | 0.5322E+01 | 0.9778E-01 | 0.1837E+01 |
| 14 | 0.1795E-02 | 0.3533E+01 | 0.3567E+01 | -0.3371E-01 | -0.9452E+00 |
| 15 | 0.2224E-02 | 0.2526E+01 | 0.2463E+01 | 0.6277E-01 | 0.2548E+01 |
| 16 | 0.2850E-02 | 0.1681E+01 | 0.1582E+01 | 0.9884E-01 | 0.6247E+01 |
| 17 | 0.3600E-02 | 0.1004E+01 | 0.1029E+01 | -0.2462E-01 | -0.2394E+01 |
| 18 | 0.4490E-02 | 0.6860E+00 | 0.6752E+00 | 0.1075E-01 | 0.1592E+01 |
| 19 | 0.5700E-02 | 0.4200E+00 | 0.4239E+00 | -0.3901E-02 | -0.9203E+00 |
| 20 | 0.7190E-02 | 0.2540E+00 | 0.2664E+00 | -0.1235E-01 | -0.4638E+01 |
| 21 | 0.8800E-02 | 0.1750E+00 | 0.1760E+00 | -0.9728E-03 | -0.5528E+00 |
| 22 | 0.1100E-01 | 0.1110E+00 | 0.1110E+00 | 0.3316E-04 | 0.2989E-01 |
| 23 | 0.1400E-01 | 0.6600E-01 | 0.6660E-01 | -0.5975E-03 | -0.8972E+00 |
| 24 | 0.1800E-01 | 0.4400E-01 | 0.3890E-01 | 0.5103E-02 | 0.1312E+02 |

** %RMSERR= 4.38

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.5521E+00 | 0.1000E+01 | |
| 3 | 0.3591E+00 | -0.2275E-01 | 0.1000E+01 |

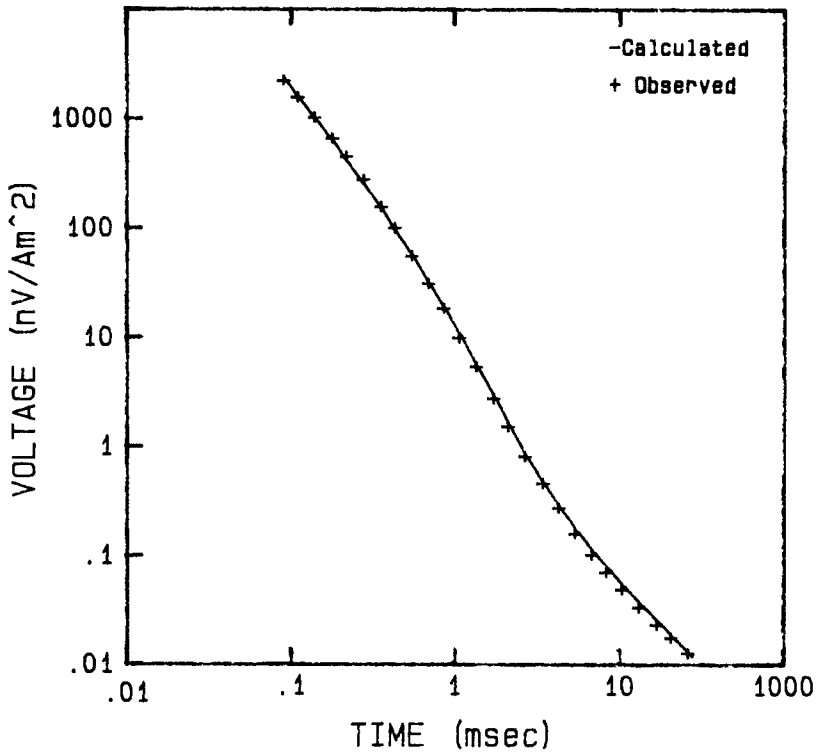
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4081E-03 | 0.8171E-04 | 0.2002E+00 | 0.2002E+02 |
| 2 | 0.1730E-01 | 0.2155E-03 | 0.1246E-01 | 0.1246E+01 |
| 3 | 0.2939E+03 | 0.9017E-03 | 0.3068E-05 | 0.3068E-03 |

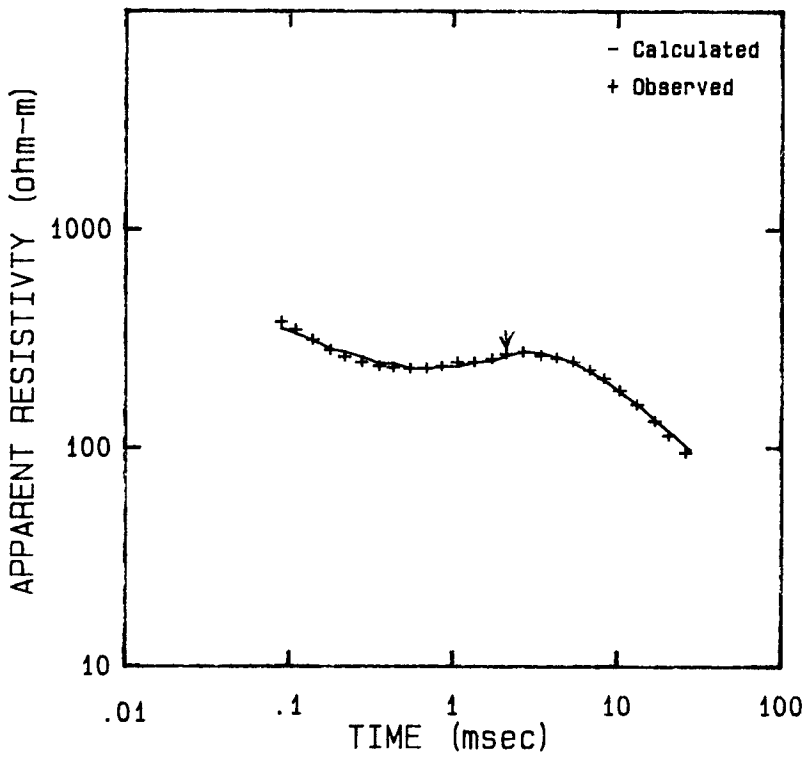
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.40810E-03 | 0.24504E+04 | |
| 2 | SIGMA( 2) = | 0.17301E-01 | 0.57801E+02 | |
| 3 | THICK( 1) = | 0.29388E+03 | | 0.29388E+03 |
| 4 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM31




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 6561 | 53.1 |
| 175 | 308.9 |
| 363 | 561 |
| 43.5 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 31 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2176E+04 | 0.2372E+04 | -0.1959E+03 | -0.8259E+01 |
| 2 | 0.1100E-03 | 0.1532E+04 | 0.1606E+04 | -0.7364E+02 | -0.4586E+01 |
| 3 | 0.1400E-03 | 0.1002E+04 | 0.1010E+04 | -0.7753E+01 | -0.7678E+00 |
| 4 | 0.1770E-03 | 0.6437E+03 | 0.6340E+03 | 0.9656E+01 | 0.1523E+01 |
| 5 | 0.2200E-03 | 0.4399E+03 | 0.4091E+03 | 0.3078E+02 | 0.7523E+01 |
| 6 | 0.2800E-03 | 0.2674E+03 | 0.2477E+03 | 0.1974E+02 | 0.7969E+01 |
| 7 | 0.3550E-03 | 0.1523E+03 | 0.1488E+03 | 0.3484E+01 | 0.2341E+01 |
| 8 | 0.4430E-03 | 0.9734E+02 | 0.9170E+02 | 0.5643E+01 | 0.6154E+01 |
| 9 | 0.5540E-03 | 0.5409E+02 | 0.5492E+02 | -0.8294E+00 | -0.1510E+01 |
| 10 | 0.7130E-03 | 0.3105E+02 | 0.3021E+02 | 0.8435E+00 | 0.2792E+01 |
| 11 | 0.8810E-03 | 0.1783E+02 | 0.1791E+02 | -0.7291E-01 | -0.4072E+00 |
| 12 | 0.1096E-02 | 0.9531E+01 | 0.1022E+02 | -0.6918E+00 | -0.6767E+01 |
| 13 | 0.1411E-02 | 0.5238E+01 | 0.5232E+01 | 0.6280E-02 | 0.1200E+00 |
| 14 | 0.1795E-02 | 0.2659E+01 | 0.2707E+01 | -0.4782E-01 | -0.1767E+01 |
| 15 | 0.2224E-02 | 0.1484E+01 | 0.1510E+01 | -0.2635E-01 | -0.1744E+01 |
| 16 | 0.2850E-02 | 0.7890E+00 | 0.7814E+00 | 0.7622E-02 | 0.9754E+00 |
| 17 | 0.3600E-02 | 0.4460E+00 | 0.4342E+00 | 0.1178E-01 | 0.2713E+01 |
| 18 | 0.4490E-02 | 0.2650E+00 | 0.2634E+00 | 0.1596E-02 | 0.6060E+00 |
| 19 | 0.5700E-02 | 0.1550E+00 | 0.1616E+00 | -0.6625E-02 | -0.4099E+01 |
| 20 | 0.7190E-02 | 0.9900E-01 | 0.1035E+00 | -0.4509E-02 | -0.4356E+01 |
| 21 | 0.8800E-02 | 0.6800E-01 | 0.7299E-01 | -0.4994E-02 | -0.6842E+01 |
| 22 | 0.1100E-01 | 0.4800E-01 | 0.5050E-01 | -0.2498E-02 | -0.4946E+01 |
| 23 | 0.1400E-01 | 0.3200E-01 | 0.3376E-01 | -0.1755E-02 | -0.5200E+01 |
| 24 | 0.1800E-01 | 0.2300E-01 | 0.2315E-01 | -0.1541E-03 | -0.6654E+00 |
| 25 | 0.2200E-01 | 0.1700E-01 | 0.1692E-01 | 0.8429E-04 | 0.4983E+00 |
| 26 | 0.2800E-01 | 0.1200E-01 | 0.1175E-01 | 0.2520E-03 | 0.2145E+01 |

** %RMSERR= 4.23

CORRELATION MATRIX

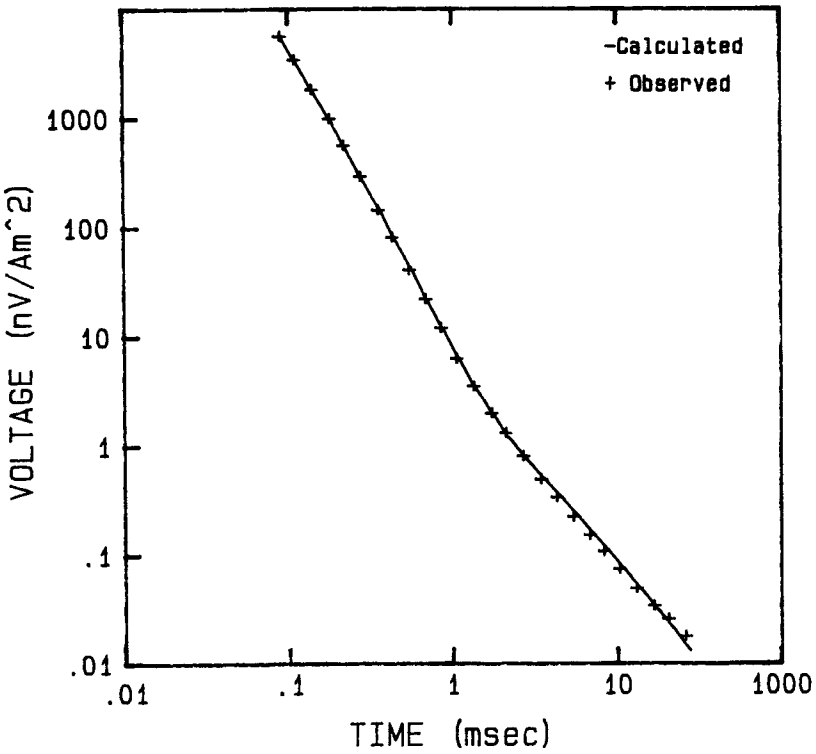
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.1596E+00 | 0.1000E+01 | | | | | |
| 3 | -0.5916E+00 | 0.1439E+00 | 0.1000E+01 | | | | |
| 4 | 0.5737E+00 | -0.4713E+00 | -0.6455E+00 | 0.1000E+01 | | | |
| 5 | -0.8396E+00 | 0.4221E+00 | 0.5263E+00 | -0.6625E+00 | 0.1000E+01 | | |
| 6 | 0.1624E+00 | -0.4631E+00 | -0.4171E+00 | 0.7917E-01 | -0.4011E+00 | 0.1000E+01 | |
| 7 | -0.7395E-01 | 0.2451E+00 | 0.1397E+00 | -0.4100E+00 | 0.3774E+00 | -0.2997E+00 | 0.1000E |

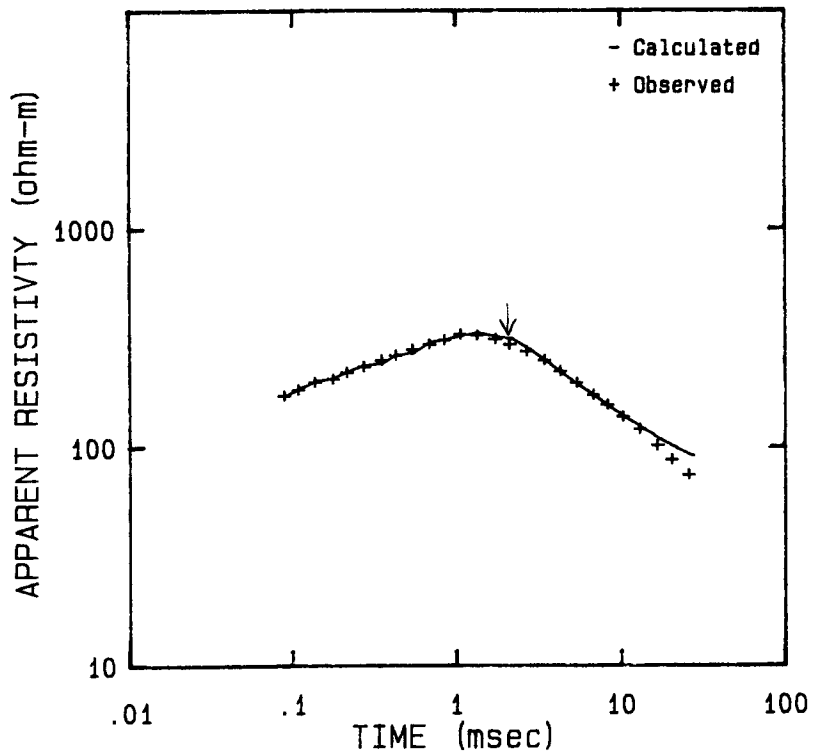
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1524E-03 | 0.2622E-04 | 0.1720E+00 | 0.1720E+02 |
| 2 | 0.5706E-02 | 0.1151E-03 | 0.2017E-01 | 0.2017E+01 |
| 3 | 0.2753E-02 | 0.1527E-03 | 0.5547E-01 | 0.5547E+01 |
| 4 | 0.2301E-01 | 0.5582E-03 | 0.2426E-01 | 0.2426E+01 |
| 5 | 0.5312E+02 | 0.8167E-03 | 0.1537E-04 | 0.1537E-02 |
| 6 | 0.3094E+03 | 0.3044E-02 | 0.9840E-05 | 0.9840E-03 |
| 7 | 0.5604E+03 | 0.4850E-02 | 0.8654E-05 | 0.8654E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.15242E-03 | 0.65607E+04 | |
| 2 | SIGMA( 2) | = | 0.57060E-02 | 0.17525E+03 | |
| 3 | SIGMA( 3) | = | 0.27529E-02 | 0.36325E+03 | |
| 4 | SIGMA( 4) | = | 0.23005E-01 | 0.43468E+02 | |
| 5 | THICK( 1) | = | 0.53125E+02 | | 0.53125E+02 |
| 6 | THICK( 2) | = | 0.30936E+03 | | 0.36248E+03 |
| 7 | THICK( 3) | = | 0.56043E+03 | | 0.92292E+03 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM32




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 136 | 49.3 |
| 352 | 610.7 |
| 39.4 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 32 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.5605E+04 | 0.5664E+04 | -0.5885E+02 | -0.1039E+01 |
| 2 | 0.1100E-03 | 0.3390E+04 | 0.3383E+04 | 0.6707E+01 | 0.1982E+00 |
| 3 | 0.1400E-03 | 0.1831E+04 | 0.1794E+04 | 0.3703E+02 | 0.2064E+01 |
| 4 | 0.1770E-03 | 0.9773E+03 | 0.9672E+03 | 0.1014E+02 | 0.1049E+01 |
| 5 | 0.2200E-03 | 0.5580E+03 | 0.5511E+03 | 0.6813E+01 | 0.1236E+01 |
| 6 | 0.2800E-03 | 0.2891E+03 | 0.2807E+03 | 0.8408E+01 | 0.2996E+01 |
| 7 | 0.3550E-03 | 0.1431E+03 | 0.1490E+03 | -0.5868E+01 | -0.3938E+01 |
| 8 | 0.4430E-03 | 0.8053E+02 | 0.8124E+02 | -0.7128E+00 | -0.8774E+00 |
| 9 | 0.5540E-03 | 0.4047E+02 | 0.4311E+02 | -0.2640E+01 | -0.6125E+01 |
| 10 | 0.7130E-03 | 0.2176E+02 | 0.2104E+02 | 0.7111E+00 | 0.3379E+01 |
| 11 | 0.8810E-03 | 0.1187E+02 | 0.1181E+02 | 0.5707E-01 | 0.4831E+00 |
| 12 | 0.1096E-02 | 0.6204E+01 | 0.6332E+01 | -0.1277E+00 | -0.2018E+01 |
| 13 | 0.1411E-02 | 0.3447E+01 | 0.3309E+01 | 0.1382E+00 | 0.4178E+01 |
| 14 | 0.1795E-02 | 0.1951E+01 | 0.1889E+01 | 0.6152E-01 | 0.3256E+01 |
| 15 | 0.2224E-02 | 0.1292E+01 | 0.1182E+01 | 0.1103E+00 | 0.9336E+01 |
| 16 | 0.2850E-02 | 0.7900E+00 | 0.7585E+00 | 0.3151E-01 | 0.4155E+01 |
| 17 | 0.3600E-02 | 0.4830E+00 | 0.4956E+00 | -0.1259E-01 | -0.2540E+01 |
| 18 | 0.4490E-02 | 0.3300E+00 | 0.3454E+00 | -0.1541E-01 | -0.4462E+01 |
| 19 | 0.5700E-02 | 0.2200E+00 | 0.2313E+00 | -0.1131E-01 | -0.4890E+01 |
| 20 | 0.7190E-02 | 0.1490E+00 | 0.1544E+00 | -0.5428E-02 | -0.3515E+01 |
| 21 | 0.8800E-02 | 0.1050E+00 | 0.1101E+00 | -0.5076E-02 | -0.4612E+01 |
| 22 | 0.1100E-01 | 0.7300E-01 | 0.7413E-01 | -0.1135E-02 | -0.1531E+01 |
| 23 | 0.1400E-01 | 0.4800E-01 | 0.4813E-01 | -0.1262E-03 | -0.2623E+00 |
| 24 | 0.1800E-01 | 0.3300E-01 | 0.3055E-01 | 0.2452E-02 | 0.8028E+01 |
| 25 | 0.2200E-01 | 0.2100E-01 | 0.2096E-01 | 0.3736E-04 | 0.1782E+00 |
| 26 | 0.2800E-01 | 0.1400E-01 | 0.1309E-01 | 0.9056E-03 | 0.6916E+01 |

** %RMSERR= 4.01

CORRELATION MATRIX

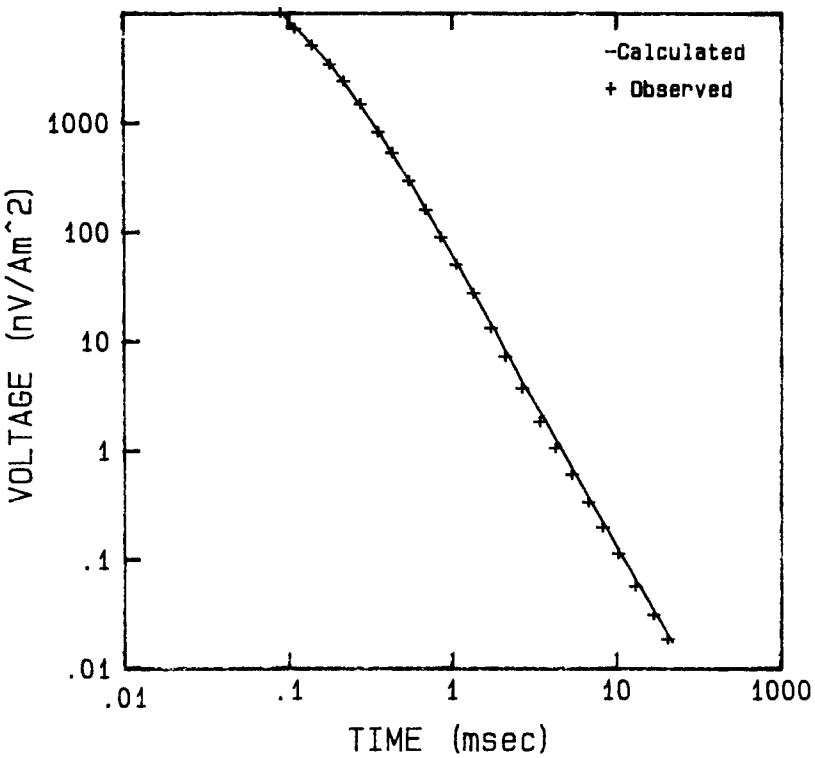
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.1333E+00 | 0.1000E+01 | | | |
| 3 | 0.4710E+00 | -0.4486E-01 | 0.1000E+01 | | |
| 4 | -0.2400E+00 | -0.8490E-01 | -0.6126E+00 | 0.1000E+01 | |
| 5 | -0.8810E+00 | -0.1158E+00 | -0.3223E+00 | 0.1156E+00 | 0.1000E+01 |

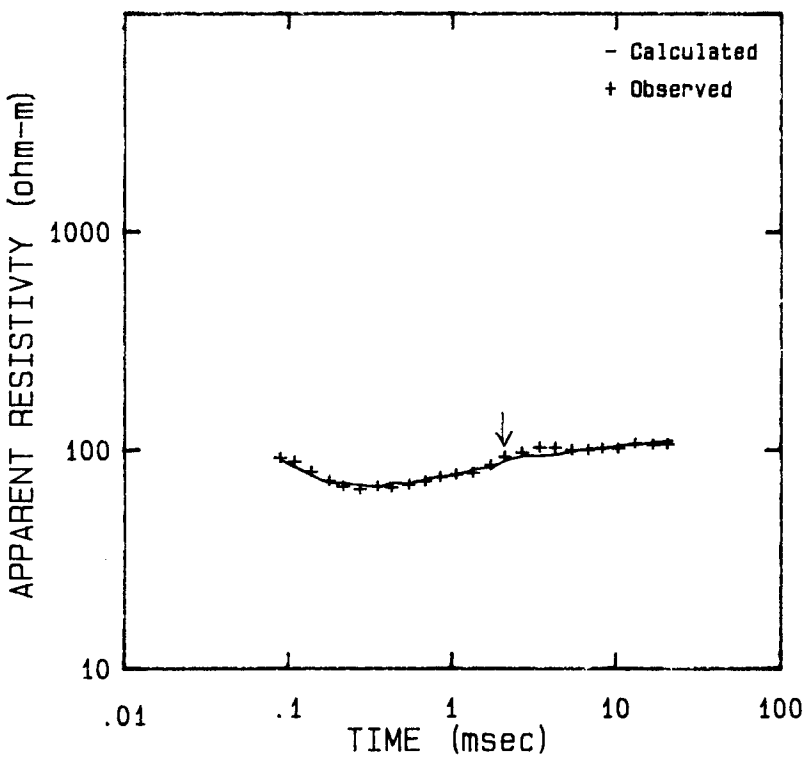
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.7329E-02 | 0.5244E-04 | 0.7155E-02 | 0.7155E+00 |
| 2 | 0.2843E-02 | 0.8050E-04 | 0.2831E-01 | 0.2831E+01 |
| 3 | 0.2537E-01 | 0.4569E-03 | 0.1801E-01 | 0.1801E+01 |
| 4 | 0.4935E+02 | 0.5305E-03 | 0.1075E-04 | 0.1075E-02 |
| 5 | 0.6102E+03 | 0.6458E-03 | 0.1058E-05 | 0.1058E-03 |

| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.73286E-02 | 0.13645E+03 | |
| 2 | SIGMA( 2) = | 0.28430E-02 | 0.35174E+03 | |
| 3 | SIGMA( 3) = | 0.25370E-01 | 0.39417E+02 | |
| 4 | THICK( 1) = | 0.49348E+02 | | 0.49348E+02 |
| 5 | THICK( 2) = | 0.61020E+03 | | 0.65955E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM33




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 252 | 19.3 |
| 55.3 | 103.7 |
| 121 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 33 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1208E+05 | 0.1026E+05 | 0.1821E+04 | 0.1774E+02 |
| 2 | 0.1100E-03 | 0.7257E+04 | 0.7594E+04 | -0.3368E+03 | -0.4435E+01 |
| 3 | 0.1400E-03 | 0.5084E+04 | 0.5210E+04 | -0.1255E+03 | -0.2410E+01 |
| 4 | 0.1770E-03 | 0.3383E+04 | 0.3465E+04 | -0.8183E+02 | -0.2362E+01 |
| 5 | 0.2200E-03 | 0.2378E+04 | 0.2292E+04 | 0.8586E+02 | 0.3746E+01 |
| 6 | 0.2800E-03 | 0.1476E+04 | 0.1401E+04 | 0.7473E+02 | 0.5333E+01 |
| 7 | 0.3550E-03 | 0.8180E+03 | 0.8307E+03 | -0.1277E+02 | -0.1537E+01 |
| 8 | 0.4430E-03 | 0.5305E+03 | 0.4950E+03 | 0.3555E+02 | 0.7181E+01 |
| 9 | 0.5540E-03 | 0.2912E+03 | 0.2891E+03 | 0.2073E+01 | 0.7172E+00 |
| 10 | 0.7130E-03 | 0.1591E+03 | 0.1536E+03 | 0.5488E+01 | 0.3573E+01 |
| 11 | 0.8810E-03 | 0.8916E+02 | 0.8827E+02 | 0.8905E+00 | 0.1009E+01 |
| 12 | 0.1096E-02 | 0.5040E+02 | 0.5043E+02 | -0.2512E-01 | -0.4981E-01 |
| 13 | 0.1411E-02 | 0.2730E+02 | 0.2558E+02 | 0.1718E+01 | 0.6714E+01 |
| 14 | 0.1795E-02 | 0.1314E+02 | 0.1339E+02 | -0.2474E+00 | -0.1848E+01 |
| 15 | 0.2224E-02 | 0.7197E+01 | 0.7601E+01 | -0.4043E+00 | -0.5318E+01 |
| 16 | 0.2850E-02 | 0.3688E+01 | 0.3882E+01 | -0.1937E+00 | -0.4991E+01 |
| 17 | 0.3600E-02 | 0.1820E+01 | 0.2064E+01 | -0.2444E+00 | -0.1184E+02 |
| 18 | 0.4490E-02 | 0.1044E+01 | 0.1158E+01 | -0.1138E+00 | -0.9831E+01 |
| 19 | 0.5700E-02 | 0.6010E+00 | 0.6075E+00 | -0.6508E-02 | -0.1071E+01 |
| 20 | 0.7190E-02 | 0.3340E+00 | 0.3272E+00 | 0.6773E-02 | 0.2070E+01 |
| 21 | 0.8800E-02 | 0.1970E+00 | 0.1960E+00 | 0.1014E-02 | 0.5176E+00 |
| 22 | 0.1100E-01 | 0.1130E+00 | 0.1066E+00 | 0.6406E-02 | 0.6009E+01 |
| 23 | 0.1400E-01 | 0.5700E-01 | 0.5759E-01 | -0.5941E-03 | -0.1032E+01 |
| 24 | 0.1800E-01 | 0.3600E-01 | 0.2978E-01 | 0.6221E-02 | 0.2089E+02 |
| 25 | 0.2200E-01 | 0.2200E-01 | 0.1756E-01 | 0.4440E-02 | 0.2529E+02 |

** %RMSERR= 8.75

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.4975E+00 | 0.1000E+01 | | | |
| 3 | 0.2941E+00 | -0.2145E+00 | 0.1000E+01 | | |
| 4 | 0.7821E+00 | -0.3799E+00 | 0.3884E+00 | 0.1000E+01 | |
| 5 | 0.3311E+00 | -0.7745E+00 | -0.2060E-01 | 0.1440E+00 | 0.1000E+01 |

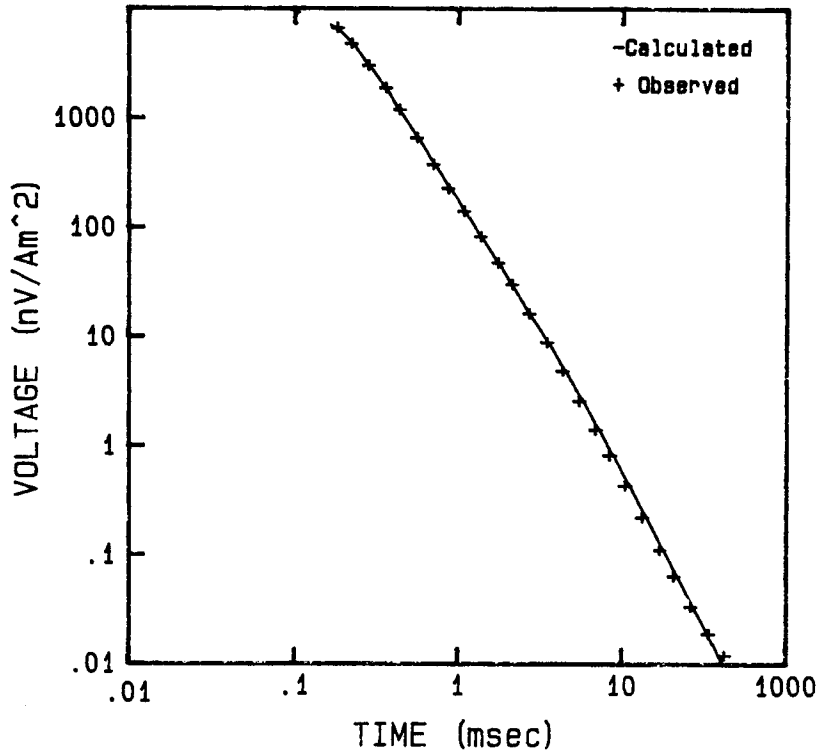
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3961E-02 | 0.3117E-02 | 0.7869E+00 | 0.7869E+02 |
| 2 | 0.1810E-01 | 0.6879E-02 | 0.3802E+00 | 0.3802E+02 |
| 3 | 0.8246E-02 | 0.3385E-02 | 0.4105E+00 | 0.4105E+02 |
| 4 | 0.1929E+02 | 0.7289E-03 | 0.3778E-04 | 0.3778E-02 |
| 5 | 0.1034E+03 | 0.4979E-02 | 0.4815E-04 | 0.4815E-02 |

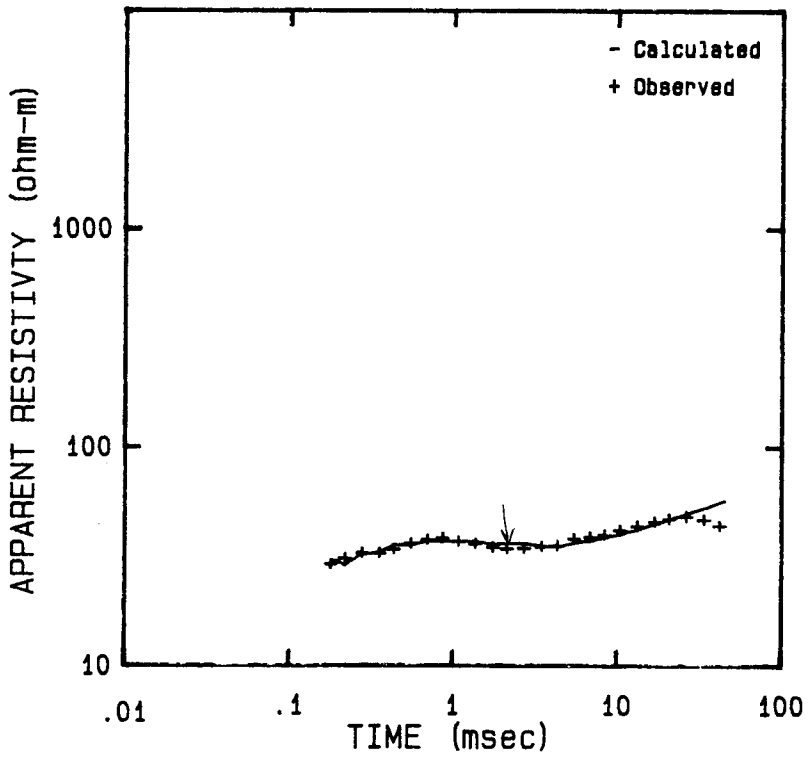
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.39610E-02 | 0.25246E+03 | |
| 2 | SIGMA( 2) | = | 0.18096E-01 | 0.55262E+02 | |
| 3 | SIGMA( 3) | = | 0.82459E-02 | 0.12127E+03 | |
| 4 | THICK( 1) | = | 0.19294E+02 | | 0.19294E+02 |
| 5 | THICK( 2) | = | 0.10341E+03 | | 0.12270E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM34




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 20 | 15.7 |
| 44.1 | 113.3 |
| 31 | 240 |
| 98.1 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 34 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.1770E-03 | 0.6637E+04 | 0.7359E+04 | -0.7218E+03 | -0.9809E+01 |
| 2 | 0.2200E-03 | 0.4743E+04 | 0.4960E+04 | -0.2166E+03 | -0.4367E+01 |
| 3 | 0.2800E-03 | 0.2998E+04 | 0.3039E+04 | -0.4115E+02 | -0.1354E+01 |
| 4 | 0.3550E-03 | 0.1872E+04 | 0.1850E+04 | 0.2230E+02 | 0.1206E+01 |
| 5 | 0.4430E-03 | 0.1185E+04 | 0.1131E+04 | 0.5394E+02 | 0.4769E+01 |
| 6 | 0.5540E-03 | 0.6550E+03 | 0.6738E+03 | -0.1885E+02 | -0.2798E+01 |
| 7 | 0.7130E-03 | 0.3707E+03 | 0.3785E+03 | -0.7738E+01 | -0.2045E+01 |
| 8 | 0.8810E-03 | 0.2223E+03 | 0.2342E+03 | -0.1189E+02 | -0.5079E+01 |
| 9 | 0.1096E-02 | 0.1391E+03 | 0.1396E+03 | -0.4447E+00 | -0.3186E+00 |
| 10 | 0.1411E-02 | 0.8141E+02 | 0.7892E+02 | 0.2487E+01 | 0.3152E+01 |
| 11 | 0.1795E-02 | 0.4705E+02 | 0.4529E+02 | 0.1763E+01 | 0.3893E+01 |
| 12 | 0.2224E-02 | 0.2970E+02 | 0.2751E+02 | 0.2196E+01 | 0.7985E+01 |
| 13 | 0.2850E-02 | 0.1615E+02 | 0.1534E+02 | 0.8049E+00 | 0.5246E+01 |
| 14 | 0.3600E-02 | 0.8764E+01 | 0.8719E+01 | 0.4457E-01 | 0.5112E+00 |
| 15 | 0.4490E-02 | 0.4834E+01 | 0.4978E+01 | -0.1440E+00 | -0.2892E+01 |
| 16 | 0.5700E-02 | 0.2551E+01 | 0.2705E+01 | -0.1538E+00 | -0.5686E+01 |
| 17 | 0.7190E-02 | 0.1388E+01 | 0.1459E+01 | -0.7050E-01 | -0.4834E+01 |
| 18 | 0.8800E-02 | 0.8090E+00 | 0.8390E+00 | -0.3005E-01 | -0.3581E+01 |
| 19 | 0.1100E-01 | 0.4300E+00 | 0.4536E+00 | -0.2364E-01 | -0.5211E+01 |
| 20 | 0.1400E-01 | 0.2200E+00 | 0.2294E+00 | -0.9357E-02 | -0.4080E+01 |
| 21 | 0.1800E-01 | 0.1100E+00 | 0.1124E+00 | -0.2374E-02 | -0.2112E+01 |
| 22 | 0.2200E-01 | 0.6400E-01 | 0.6287E-01 | 0.1129E-02 | 0.1796E+01 |
| 23 | 0.2800E-01 | 0.3300E-01 | 0.3144E-01 | 0.1559E-02 | 0.4960E+01 |
| 24 | 0.3600E-01 | 0.1800E-01 | 0.1540E-01 | 0.2595E-02 | 0.1685E+02 |
| 25 | 0.4500E-01 | 0.1000E-01 | 0.7945E-02 | 0.2055E-02 | 0.2586E+02 |

** %RMSERR= 7.49

CORRELATION MATRIX

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.6622E+00 | 0.1000E+01 | | | | | |
| 3 | 0.5628E+00 | -0.7083E+00 | 0.1000E+01 | | | | |
| 4 | -0.2995E+00 | 0.4482E-01 | -0.3688E+00 | 0.1000E+01 | | | |
| 5 | 0.3105E+00 | -0.3542E-01 | 0.2530E+00 | -0.7605E+00 | 0.1000E+01 | | |
| 6 | -0.4666E+00 | 0.2866E+00 | -0.2398E+00 | -0.5192E+00 | 0.4731E+00 | 0.1000E+01 | |
| 7 | -0.2563E+00 | 0.1872E+00 | -0.4395E+00 | 0.7052E+00 | -0.8472E+00 | -0.4799E+00 | 0.1000E |

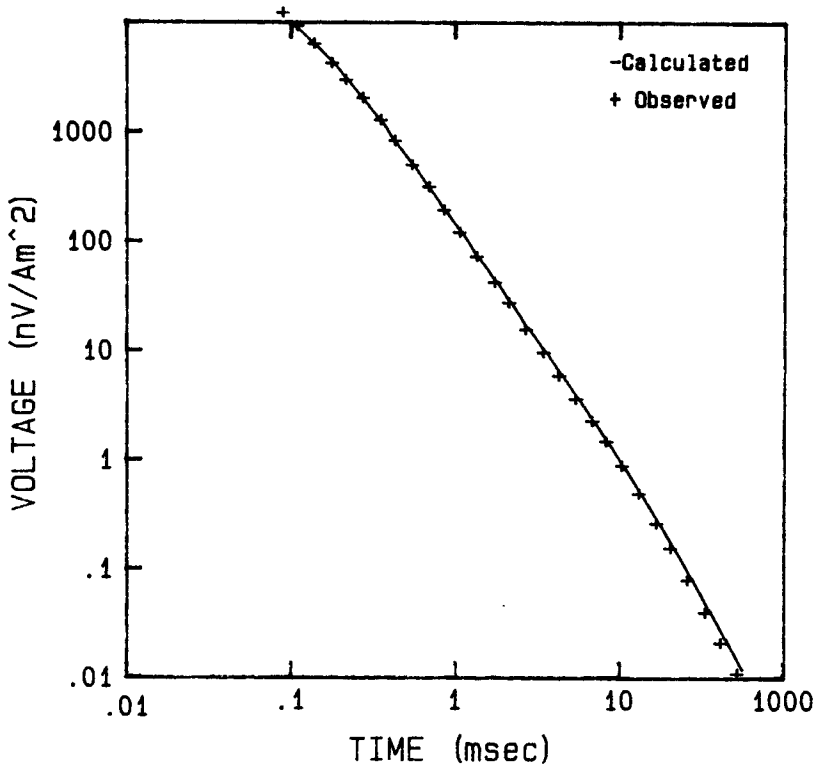
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4986E-01 | 0.1552E-02 | 0.3113E-01 | 0.3113E+01 |
| 2 | 0.2265E-01 | 0.3014E-02 | 0.1331E+00 | 0.1331E+02 |
| 3 | 0.3230E-01 | 0.3675E-02 | 0.1138E+00 | 0.1138E+02 |
| 4 | 0.1019E-01 | 0.2701E-02 | 0.2650E+00 | 0.2650E+02 |
| 5 | 0.1566E+02 | 0.1456E-02 | 0.9298E-04 | 0.9298E-02 |
| 6 | 0.1132E+03 | 0.5645E-02 | 0.4986E-04 | 0.4986E-02 |
| 7 | 0.2399E+03 | 0.3009E-02 | 0.1255E-04 | 0.1255E-02 |

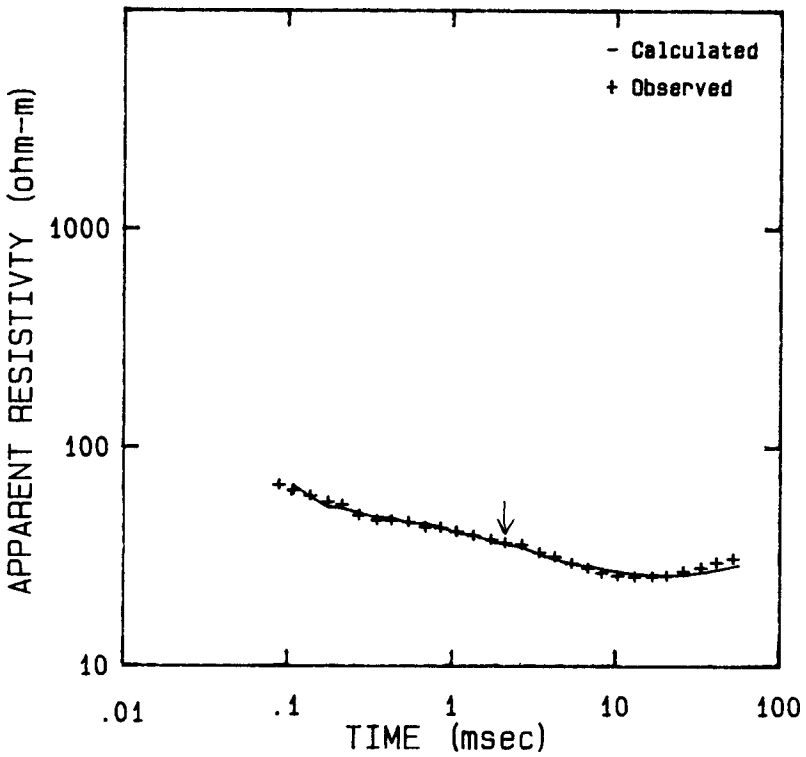
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.49865E-01 | 0.20054E+02 | |
| 2 | SIGMA( 2) | = | 0.22654E-01 | 0.44142E+02 | |
| 3 | SIGMA( 3) | = | 0.32296E-01 | 0.30964E+02 | |
| 4 | SIGMA( 4) | = | 0.10194E-01 | 0.98096E+02 | |
| 5 | THICK( 1) | = | 0.15662E+02 | | 0.15662E+02 |
| 6 | THICK( 2) | = | 0.11322E+03 | | 0.12888E+03 |
| 7 | THICK( 3) | = | 0.23986E+03 | | 0.36874E+03 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM35




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 83.5 | 25.1 |
| 36.3 | 130.9 |
| 20.6 | 46 |
| 54 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 35 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1241E+05 | 0.1160E+05 | 0.8055E+03 | 0.6943E+01 |
| 2 | 0.1100E-03 | 0.9348E+04 | 0.8986E+04 | 0.3621E+03 | 0.4029E+01 |
| 3 | 0.1400E-03 | 0.6445E+04 | 0.6467E+04 | -0.2232E+02 | -0.3451E+00 |
| 4 | 0.1770E-03 | 0.4274E+04 | 0.4490E+04 | -0.2163E+03 | -0.4818E+01 |
| 5 | 0.2200E-03 | 0.2991E+04 | 0.3106E+04 | -0.1150E+03 | -0.3703E+01 |
| 6 | 0.2800E-03 | 0.2048E+04 | 0.2001E+04 | 0.4744E+02 | 0.2371E+01 |
| 7 | 0.3550E-03 | 0.1290E+04 | 0.1255E+04 | 0.3464E+02 | 0.2759E+01 |
| 8 | 0.4430E-03 | 0.8283E+03 | 0.8022E+03 | 0.2613E+02 | 0.3258E+01 |
| 9 | 0.5540E-03 | 0.4991E+03 | 0.5075E+03 | -0.8415E+01 | -0.1658E+01 |
| 10 | 0.7130E-03 | 0.3132E+03 | 0.2991E+03 | 0.1408E+02 | 0.4706E+01 |
| 11 | 0.8810E-03 | 0.1927E+03 | 0.1920E+03 | 0.6988E+00 | 0.3639E+00 |
| 12 | 0.1096E-02 | 0.1205E+03 | 0.1226E+03 | -0.2137E+01 | -0.1742E+01 |
| 13 | 0.1411E-02 | 0.7201E+02 | 0.7193E+02 | 0.7707E-01 | 0.1071E+00 |
| 14 | 0.1795E-02 | 0.4209E+02 | 0.4345E+02 | -0.1367E+01 | -0.3145E+01 |
| 15 | 0.2224E-02 | 0.2717E+02 | 0.2767E+02 | -0.5028E+00 | -0.1817E+01 |
| 16 | 0.2850E-02 | 0.1651E+02 | 0.1628E+02 | 0.2374E+00 | 0.1459E+01 |
| 17 | 0.3600E-02 | 0.9498E+01 | 0.9845E+01 | -0.3474E+00 | -0.3529E+01 |
| 18 | 0.4490E-02 | 0.5843E+01 | 0.6115E+01 | -0.2720E+00 | -0.4448E+01 |
| 19 | 0.5700E-02 | 0.3577E+01 | 0.3633E+01 | -0.5612E-01 | -0.1545E+01 |
| 20 | 0.7190E-02 | 0.2250E+01 | 0.2178E+01 | 0.7243E-01 | 0.3326E+01 |
| 21 | 0.8800E-02 | 0.1474E+01 | 0.1385E+01 | 0.8886E-01 | 0.6415E+01 |
| 22 | 0.1100E-01 | 0.8780E+00 | 0.8304E+00 | 0.4761E-01 | 0.5734E+01 |
| 23 | 0.1400E-01 | 0.4880E+00 | 0.4709E+00 | 0.1710E-01 | 0.3630E+01 |
| 24 | 0.1800E-01 | 0.2590E+00 | 0.2545E+00 | 0.4476E-02 | 0.1758E+01 |
| 25 | 0.2200E-01 | 0.1550E+00 | 0.1536E+00 | 0.1413E-02 | 0.9198E+00 |
| 26 | 0.2800E-01 | 0.7900E-01 | 0.8261E-01 | -0.3607E-02 | -0.4367E+01 |
| 27 | 0.3600E-01 | 0.4000E-01 | 0.4248E-01 | -0.2483E-02 | -0.5844E+01 |
| 28 | 0.4500E-01 | 0.2100E-01 | 0.2317E-01 | -0.2168E-02 | -0.9358E+01 |
| 29 | 0.5700E-01 | 0.1100E-01 | 0.1207E-01 | -0.1068E-02 | -0.8848E+01 |

** %RMSERR= 4.25

CORRELATION MATRIX

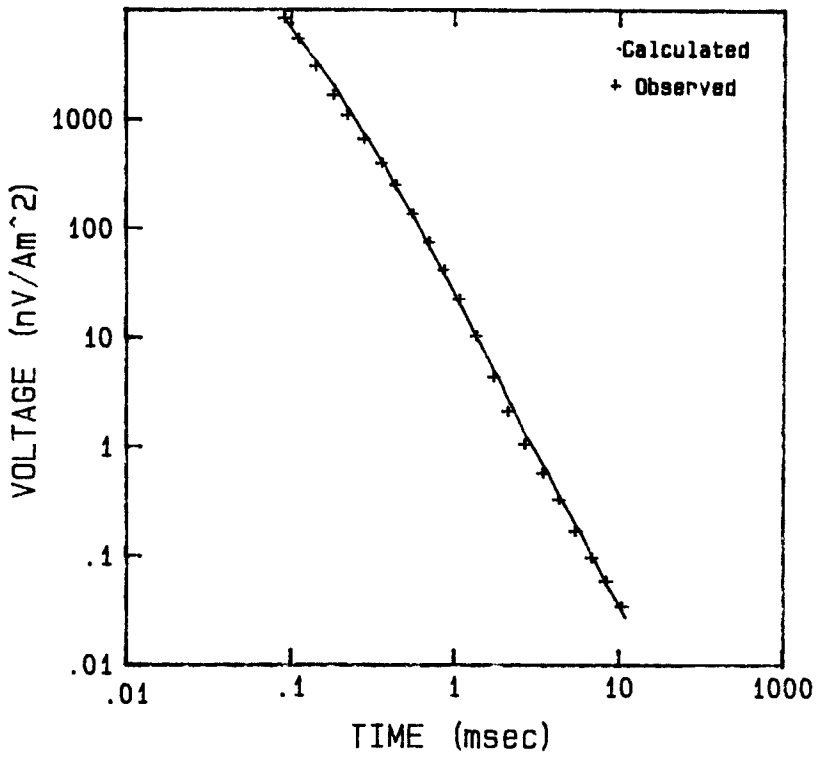
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.7843E+00 | 0.1000E+01 | | | | | |
| 3 | -0.6267E+00 | 0.2759E+00 | 0.1000E+01 | | | | |
| 4 | 0.7736E+00 | -0.7565E+00 | -0.4584E+00 | 0.1000E+01 | | | |
| 5 | -0.3730E+00 | 0.3652E+00 | 0.3031E+00 | -0.6488E+00 | 0.1000E+01 | | |
| 6 | -0.9450E+00 | 0.7116E+00 | 0.6555E+00 | -0.7838E+00 | 0.2460E+00 | 0.1000E+01 | |
| 7 | 0.7416E+00 | -0.4065E+00 | -0.8875E+00 | 0.4823E+00 | -0.4582E+00 | -0.6675E+00 | 0.1000E |

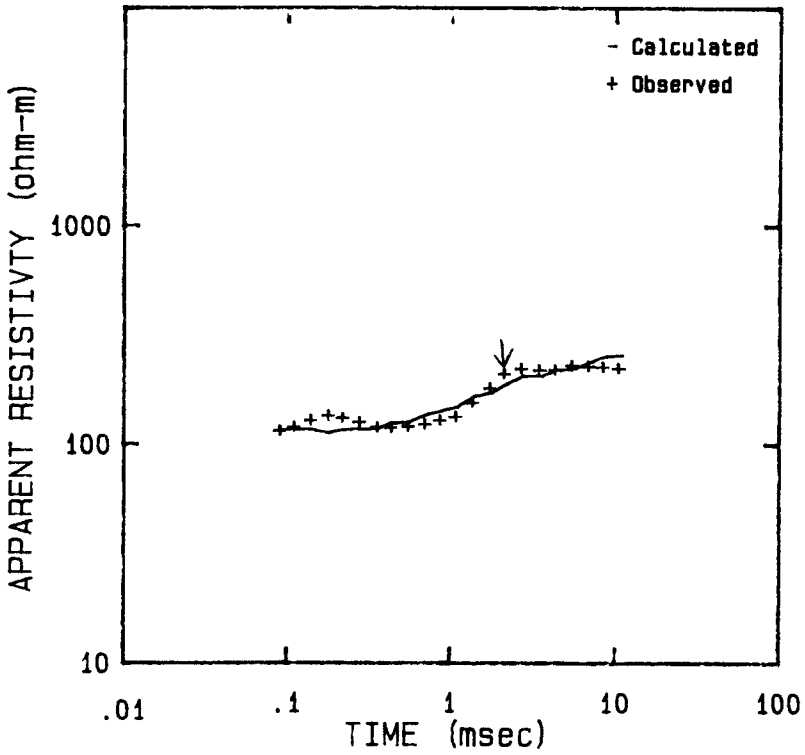
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1198E-01 | 0.5256E-02 | 0.4387E+00 | 0.4387E+02 |
| 2 | 0.2755E-01 | 0.8033E-02 | 0.2916E+00 | 0.2916E+02 |
| 3 | 0.4861E-01 | 0.1557E-01 | 0.3202E+00 | 0.3202E+02 |
| 4 | 0.1850E-01 | 0.3113E-01 | 0.1683E+01 | 0.1683E+03 |
| 5 | 0.2511E+02 | 0.1181E-02 | 0.4702E-04 | 0.4702E-02 |
| 6 | 0.1306E+03 | 0.9086E-02 | 0.6957E-04 | 0.6957E-02 |
| 7 | 0.4598E+03 | 0.1282E-01 | 0.2789E-04 | 0.2789E-02 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.11981E-01 | 0.83464E+02 | |
| 2 | SIGMA( 2) | = | 0.27546E-01 | 0.36304E+02 | |
| 3 | SIGMA( 3) | = | 0.48612E-01 | 0.20571E+02 | |
| 4 | SIGMA( 4) | = | 0.18503E-01 | 0.54046E+02 | |
| 5 | THICK( 1) | = | 0.25110E+02 | | 0.25110E+02 |
| 6 | THICK( 2) | = | 0.13062E+03 | | 0.15573E+03 |
| 7 | THICK( 3) | = | 0.45985E+03 | | 0.61557E+03 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM36




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 118 | 186 |
| 350 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 36 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.8362E+04 | 0.8300E+04 | 0.6224E+02 | 0.7500E+00 |
| 2 | 0.1100E-03 | 0.5826E+04 | 0.5543E+04 | 0.2832E+03 | 0.5110E+01 |
| 3 | 0.1400E-03 | 0.3525E+04 | 0.3393E+04 | 0.1324E+03 | 0.3904E+01 |
| 4 | 0.1770E-03 | 0.1945E+04 | 0.2049E+04 | -0.1036E+03 | -0.5058E+01 |
| 5 | 0.2200E-03 | 0.1182E+04 | 0.1267E+04 | -0.8541E+02 | -0.6739E+01 |
| 6 | 0.2800E-03 | 0.6291E+03 | 0.7215E+03 | -0.9241E+02 | -0.1281E+02 |
| 7 | 0.3550E-03 | 0.3554E+03 | 0.4019E+03 | -0.4648E+02 | -0.1157E+02 |
| 8 | 0.4430E-03 | 0.2479E+03 | 0.2303E+03 | 0.1763E+02 | 0.7656E+01 |
| 9 | 0.5540E-03 | 0.1364E+03 | 0.1269E+03 | 0.9525E+01 | 0.7508E+01 |
| 10 | 0.7130E-03 | 0.7493E+02 | 0.6441E+02 | 0.1052E+02 | 0.1633E+02 |
| 11 | 0.8810E-03 | 0.4173E+02 | 0.3585E+02 | 0.5879E+01 | 0.1640E+02 |
| 12 | 0.1096E-02 | 0.2248E+02 | 0.1925E+02 | 0.3229E+01 | 0.1677E+02 |
| 13 | 0.1411E-02 | 0.9377E+01 | 0.9431E+01 | -0.5414E-01 | -0.5741E+00 |
| 14 | 0.1795E-02 | 0.4392E+01 | 0.4721E+01 | -0.3290E+00 | -0.6969E+01 |
| 15 | 0.2224E-02 | 0.2427E+01 | 0.2526E+01 | -0.9908E-01 | -0.3922E+01 |
| 16 | 0.2850E-02 | 0.1071E+01 | 0.1248E+01 | -0.1773E+00 | -0.1421E+02 |
| 17 | 0.3600E-02 | 0.5830E+00 | 0.6403E+00 | -0.5730E-01 | -0.8948E+01 |
| 18 | 0.4490E-02 | 0.3330E+00 | 0.3334E+00 | -0.3561E-03 | -0.1068E+00 |
| 19 | 0.5700E-02 | 0.1720E+00 | 0.1769E+00 | -0.4890E-02 | -0.2764E+01 |
| 20 | 0.7190E-02 | 0.9100E-01 | 0.8977E-01 | 0.1235E-02 | 0.1376E+01 |
| 21 | 0.8800E-02 | 0.5400E-01 | 0.5126E-01 | 0.2740E-02 | 0.5346E+01 |
| 22 | 0.1100E-01 | 0.3000E-01 | 0.2839E-01 | 0.1612E-02 | 0.5678E+01 |

** %RMSERR= 8.94

CORRELATION MATRIX

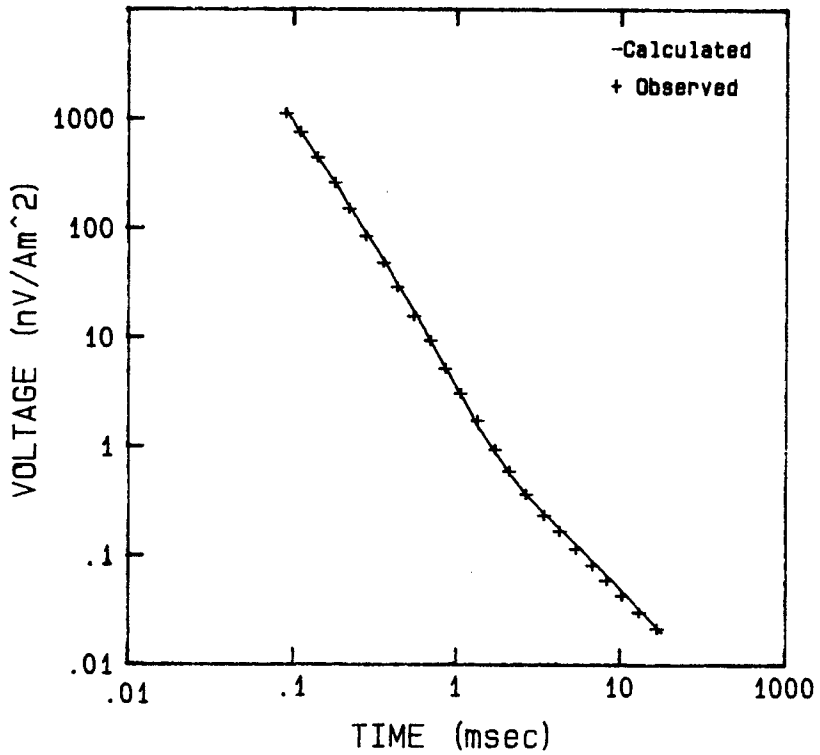
| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.1220E+00 | 0.1000E+01 | |
| 3 | -0.9324E+00 | 0.2824E+00 | 0.1000E+01 |

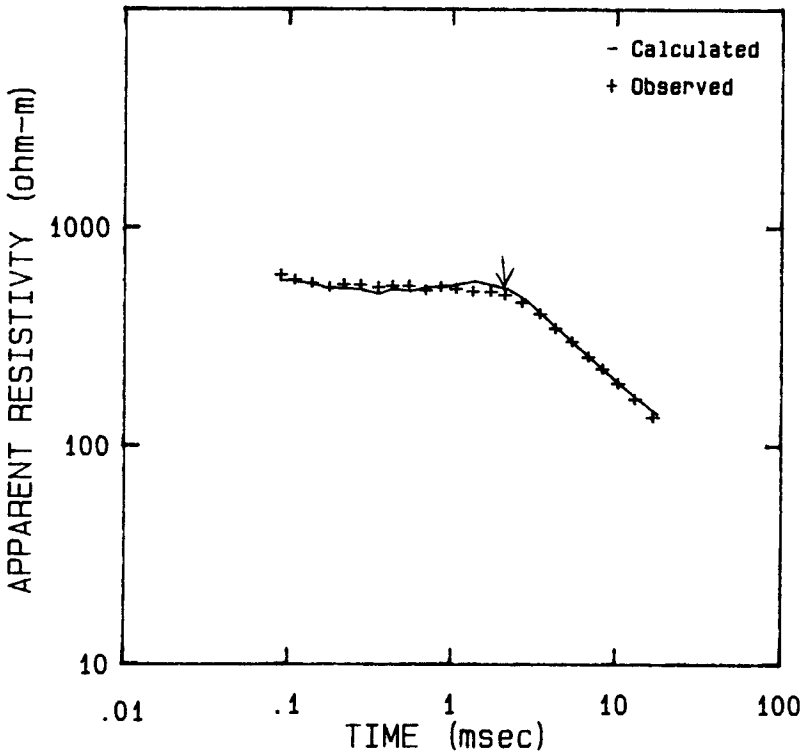
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.8498E-02 | 0.5024E-03 | 0.5912E-01 | 0.5912E+01 |
| 2 | 0.2861E-02 | 0.6178E-03 | 0.2160E+00 | 0.2160E+02 |
| 3 | 0.1864E+03 | 0.2230E-02 | 0.1196E-04 | 0.1196E-02 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.84981E-02 | 0.11767E+03 | |
| 2 | SIGMA( 2) | = | 0.28608E-02 | 0.34956E+03 | |
| 3 | THICK( 1) | = | 0.18642E+03 | | 0.18642E+03 |
| 4 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM37




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1296 | 47.2 |
| 439 | 829.8 |
| 35 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 37 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1130E+04 | 0.1223E+04 | -0.9337E+02 | -0.7632E+01 |
| 2 | 0.1100E-03 | 0.7558E+03 | 0.7712E+03 | -0.1547E+02 | -0.2005E+01 |
| 3 | 0.1400E-03 | 0.4459E+03 | 0.4486E+03 | -0.2774E+01 | -0.6183E+00 |
| 4 | 0.1770E-03 | 0.2582E+03 | 0.2622E+03 | -0.3965E+01 | -0.1512E+01 |
| 5 | 0.2200E-03 | 0.1514E+03 | 0.1592E+03 | -0.7769E+01 | -0.4879E+01 |
| 6 | 0.2800E-03 | 0.8446E+02 | 0.9032E+02 | -0.5851E+01 | -0.6478E+01 |
| 7 | 0.3550E-03 | 0.4851E+02 | 0.5135E+02 | -0.2837E+01 | -0.5524E+01 |
| 8 | 0.4430E-03 | 0.2880E+02 | 0.2997E+02 | -0.1169E+01 | -0.3899E+01 |
| 9 | 0.5540E-03 | 0.1569E+02 | 0.1706E+02 | -0.1366E+01 | -0.8006E+01 |
| 10 | 0.7130E-03 | 0.9318E+01 | 0.8846E+01 | 0.4716E+00 | 0.5331E+01 |
| 11 | 0.8810E-03 | 0.5170E+01 | 0.5063E+01 | 0.1075E+00 | 0.2123E+01 |
| 12 | 0.1096E-02 | 0.3054E+01 | 0.2831E+01 | 0.2231E+00 | 0.7880E+01 |
| 13 | 0.1411E-02 | 0.1739E+01 | 0.1474E+01 | 0.2646E+00 | 0.1795E+02 |
| 14 | 0.1795E-02 | 0.9350E+00 | 0.8396E+00 | 0.9537E-01 | 0.1136E+02 |
| 15 | 0.2224E-02 | 0.5950E+00 | 0.5393E+00 | 0.5571E-01 | 0.1033E+02 |
| 16 | 0.2850E-02 | 0.3650E+00 | 0.3453E+00 | 0.1974E-01 | 0.5717E+01 |
| 17 | 0.3600E-02 | 0.2340E+00 | 0.2357E+00 | -0.1703E-02 | -0.7227E+00 |
| 18 | 0.4490E-02 | 0.1680E+00 | 0.1699E+00 | -0.1864E-02 | -0.1097E+01 |
| 19 | 0.5700E-02 | 0.1150E+00 | 0.1197E+00 | -0.4685E-02 | -0.3915E+01 |
| 20 | 0.7190E-02 | 0.8200E-01 | 0.8423E-01 | -0.2233E-02 | -0.2651E+01 |
| 21 | 0.8800E-02 | 0.6000E-01 | 0.6270E-01 | -0.2699E-02 | -0.4305E+01 |
| 22 | 0.1100E-01 | 0.4300E-01 | 0.4460E-01 | -0.1598E-02 | -0.3583E+01 |
| 23 | 0.1400E-01 | 0.3000E-01 | 0.3042E-01 | -0.4224E-03 | -0.1388E+01 |
| 24 | 0.1800E-01 | 0.2100E-01 | 0.2020E-01 | 0.7964E-03 | 0.3942E+01 |

** %RMSERR= 6.45

CORRELATION MATRIX

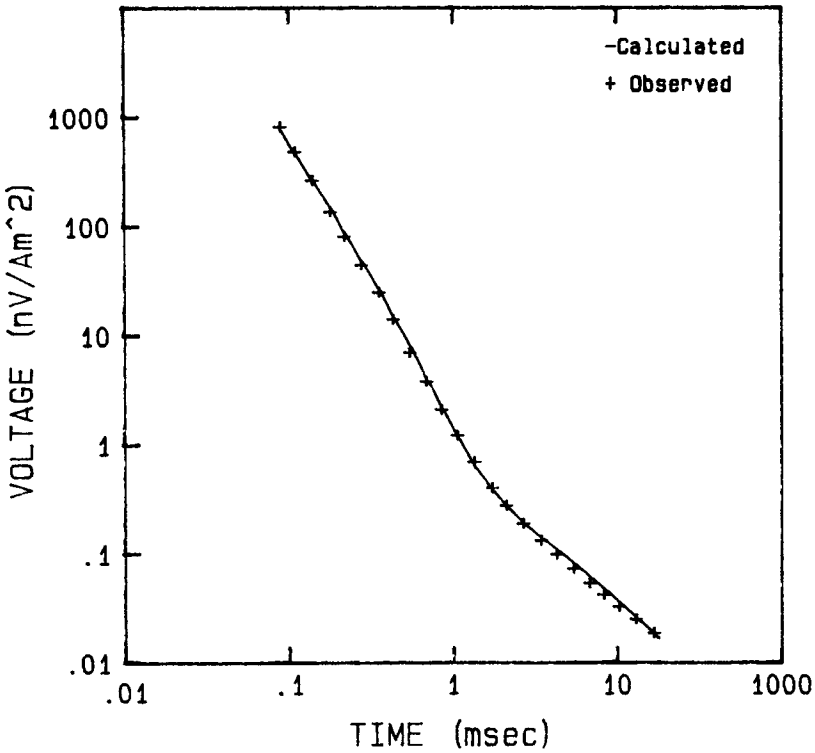
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.5011E-01 | 0.1000E+01 | | | |
| 3 | -0.9115E-01 | -0.6005E+00 | 0.1000E+01 | | |
| 4 | 0.6643E-01 | 0.1369E+00 | -0.2873E+00 | 0.1000E+01 | |
| 5 | -0.6026E+00 | -0.1944E-01 | 0.1779E+00 | -0.4089E+00 | 0.1000E+01 |

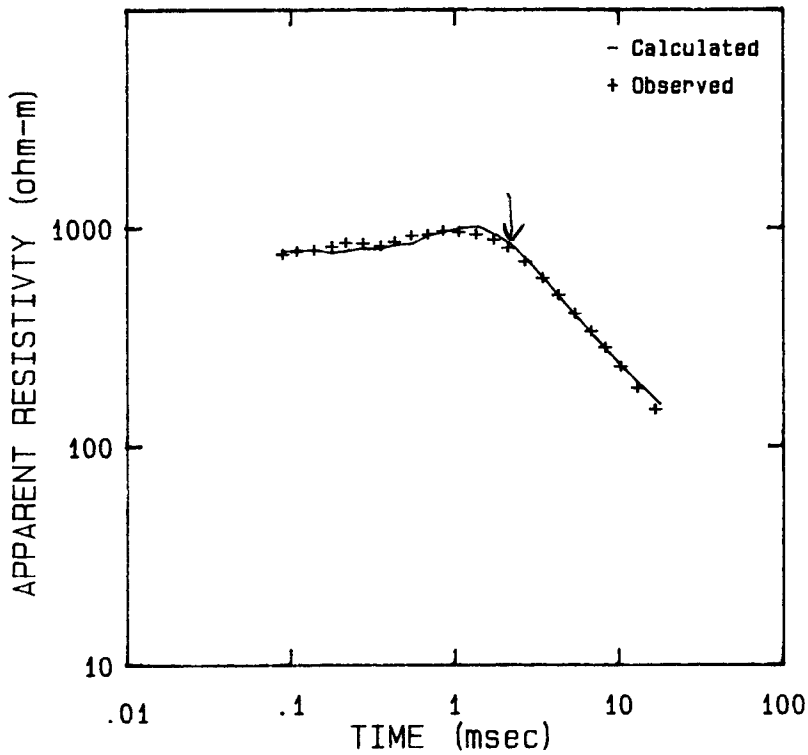
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.7717E-03 | 0.1362E-03 | 0.1765E+00 | 0.1765E+02 |
| 2 | 0.2279E-02 | 0.2452E-03 | 0.1076E+00 | 0.1076E+02 |
| 3 | 0.2855E-01 | 0.1600E-02 | 0.5605E-01 | 0.5605E+01 |
| 4 | 0.4717E+02 | 0.1088E-02 | 0.2307E-04 | 0.2307E-02 |
| 5 | 0.8297E+03 | 0.3807E-02 | 0.4588E-05 | 0.4588E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.77171E-03 | 0.12958E+04 | |
| 2 | SIGMA( 2) | = | 0.22790E-02 | 0.43878E+03 | |
| 3 | SIGMA( 3) | = | 0.28548E-01 | 0.35029E+02 | |
| 4 | THICK( 1) | = | 0.47169E+02 | | 0.47169E+02 |
| 5 | THICK( 2) | = | 0.82971E+03 | | 0.87688E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM38




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 780 | 169 |
| 773 | 828 |
| 25.1 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 38 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.8304E+03 | 0.7923E+03 | 0.3811E+02 | 0.4810E+01 |
| 2 | 0.1100E-03 | 0.4897E+03 | 0.4804E+03 | 0.9284E+01 | 0.1933E+01 |
| 3 | 0.1400E-03 | 0.2647E+03 | 0.2666E+03 | -0.1910E+01 | -0.7162E+00 |
| 4 | 0.1770E-03 | 0.1375E+03 | 0.1502E+03 | -0.1267E+02 | -0.8434E+01 |
| 5 | 0.2200E-03 | 0.8629E+02 | 0.8792E+02 | -0.1633E+01 | -0.1858E+01 |
| 6 | 0.2800E-03 | 0.4888E+02 | 0.4831E+02 | 0.5693E+00 | 0.1178E+01 |
| 7 | 0.3550E-03 | 0.2493E+02 | 0.2618E+02 | -0.1257E+01 | -0.4799E+01 |
| 8 | 0.4430E-03 | 0.1415E+02 | 0.1467E+02 | -0.5161E+00 | -0.3518E+01 |
| 9 | 0.5540E-03 | 0.7000E+01 | 0.7943E+01 | -0.9428E+00 | -0.1187E+02 |
| 10 | 0.7130E-03 | 0.3809E+01 | 0.3852E+01 | -0.4260E-01 | -0.1106E+01 |
| 11 | 0.8810E-03 | 0.2107E+01 | 0.2125E+01 | -0.1800E-01 | -0.8471E+00 |
| 12 | 0.1096E-02 | 0.1229E+01 | 0.1153E+01 | 0.7628E-01 | 0.6617E+01 |
| 13 | 0.1411E-02 | 0.7000E+00 | 0.6129E+00 | 0.8707E-01 | 0.1421E+02 |
| 14 | 0.1795E-02 | 0.4040E+00 | 0.3731E+00 | 0.3089E-01 | 0.8280E+01 |
| 15 | 0.2224E-02 | 0.2780E+00 | 0.2623E+00 | 0.1571E-01 | 0.5990E+01 |
| 16 | 0.2850E-02 | 0.1900E+00 | 0.1848E+00 | 0.5166E-02 | 0.2795E+01 |
| 17 | 0.3600E-02 | 0.1320E+00 | 0.1362E+00 | -0.4151E-02 | -0.3049E+01 |
| 18 | 0.4490E-02 | 0.9900E-01 | 0.1053E+00 | -0.6269E-02 | -0.5956E+01 |
| 19 | 0.5700E-02 | 0.7300E-01 | 0.7876E-01 | -0.5761E-02 | -0.7315E+01 |
| 20 | 0.7190E-02 | 0.5400E-01 | 0.5887E-01 | -0.4874E-02 | -0.8278E+01 |
| 21 | 0.8800E-02 | 0.4300E-01 | 0.4573E-01 | -0.2732E-02 | -0.5974E+01 |
| 22 | 0.1100E-01 | 0.3300E-01 | 0.3395E-01 | -0.9492E-03 | -0.2796E+01 |
| 23 | 0.1400E-01 | 0.2500E-01 | 0.2438E-01 | 0.6187E-03 | 0.2538E+01 |
| 24 | 0.1800E-01 | 0.1900E-01 | 0.1707E-01 | 0.1927E-02 | 0.1129E+02 |

** %RMSERR= 6.40

CORRELATION MATRIX

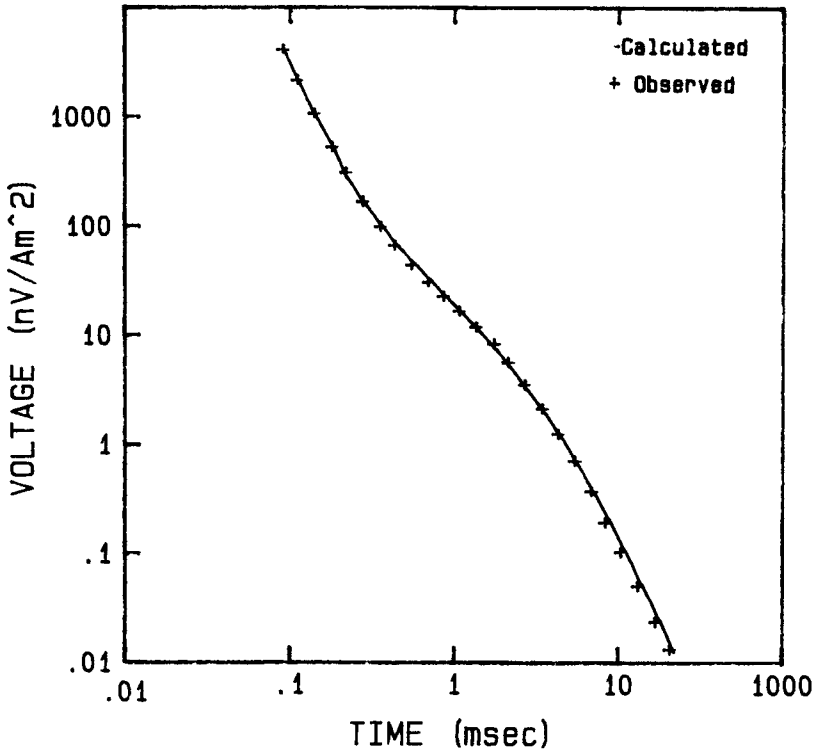
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.5469E+00 | 0.1000E+01 | | | |
| 3 | 0.3050E+00 | 0.8690E-01 | 0.1000E+01 | | |
| 4 | 0.4610E+00 | -0.3225E+00 | 0.3283E+00 | 0.1000E+01 | |
| 5 | 0.4851E+00 | -0.5482E+00 | -0.3479E+00 | -0.1650E+00 | 0.1000E+01 |

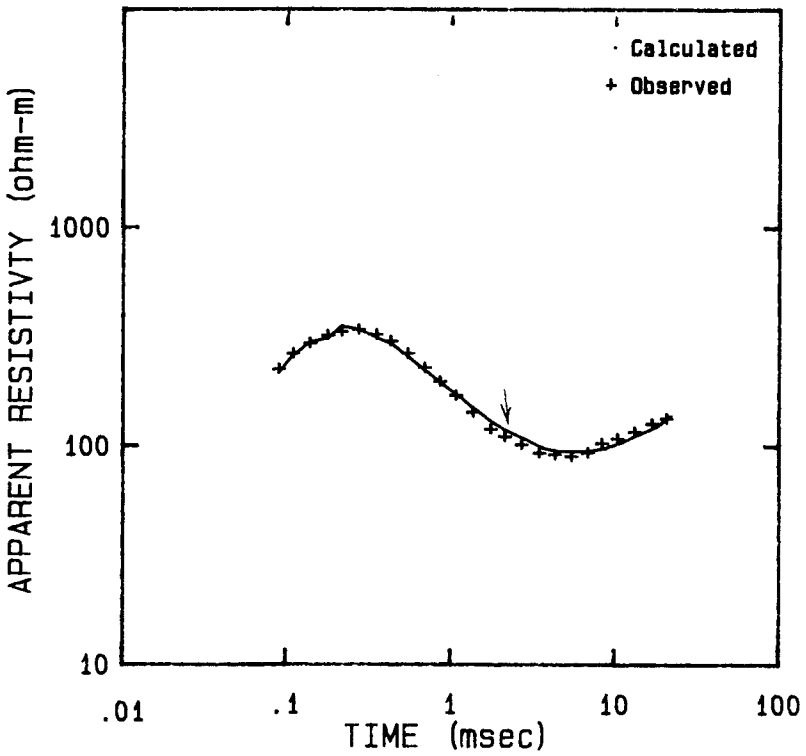
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1281E-02 | 0.2671E-03 | 0.2084E+00 | 0.2084E+02 |
| 2 | 0.1294E-02 | 0.2708E-03 | 0.2093E+00 | 0.2093E+02 |
| 3 | 0.3981E-01 | 0.3988E-02 | 0.1002E+00 | 0.1002E+02 |
| 4 | 0.1685E+03 | 0.1784E-02 | 0.1059E-04 | 0.1059E-02 |
| 5 | 0.8280E+03 | 0.2961E-02 | 0.3576E-05 | 0.3576E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.12813E-02 | 0.78046E+03 | |
| 2 | SIGMA( 2) | = | 0.12938E-02 | 0.77291E+03 | |
| 3 | SIGMA( 3) | = | 0.39808E-01 | 0.25120E+02 | |
| 4 | THICK( 1) | = | 0.16855E+03 | | 0.16855E+03 |
| 5 | THICK( 2) | = | 0.82804E+03 | | 0.99659E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM39




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 99.2 | 31.4 |
| 959 | 213.6 |
| 42.5 | 309 |
| 2112 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 39 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4100E+04 | 0.4291E+04 | -0.1907E+03 | -0.4445E+01 |
| 2 | 0.1100E-03 | 0.2151E+04 | 0.2208E+04 | -0.5739E+02 | -0.2599E+01 |
| 3 | 0.1400E-03 | 0.1071E+04 | 0.1056E+04 | 0.1456E+02 | 0.1378E+01 |
| 4 | 0.1770E-03 | 0.5298E+03 | 0.5477E+03 | -0.1788E+02 | -0.3264E+01 |
| 5 | 0.2200E-03 | 0.3077E+03 | 0.2832E+03 | 0.2451E+02 | 0.8656E+01 |
| 6 | 0.2800E-03 | 0.1675E+03 | 0.1666E+03 | 0.9154E+00 | 0.5496E+00 |
| 7 | 0.3550E-03 | 0.9812E+02 | 0.1029E+03 | -0.4807E+01 | -0.4670E+01 |
| 8 | 0.4430E-03 | 0.6627E+02 | 0.6852E+02 | -0.2246E+01 | -0.3277E+01 |
| 9 | 0.5540E-03 | 0.4395E+02 | 0.4708E+02 | -0.3133E+01 | -0.6655E+01 |
| 10 | 0.7130E-03 | 0.3038E+02 | 0.3250E+02 | -0.2112E+01 | -0.6501E+01 |
| 11 | 0.8810E-03 | 0.2252E+02 | 0.2286E+02 | -0.3390E+00 | -0.1483E+01 |
| 12 | 0.1096E-02 | 0.1652E+02 | 0.1648E+02 | 0.3988E-01 | 0.2420E+00 |
| 13 | 0.1411E-02 | 0.1179E+02 | 0.1115E+02 | 0.6348E+00 | 0.5691E+01 |
| 14 | 0.1795E-02 | 0.8259E+01 | 0.7444E+01 | 0.8146E+00 | 0.1094E+02 |
| 15 | 0.2224E-02 | 0.5611E+01 | 0.5114E+01 | 0.4972E+00 | 0.9723E+01 |
| 16 | 0.2850E-02 | 0.3504E+01 | 0.3158E+01 | 0.3458E+00 | 0.1095E+02 |
| 17 | 0.3600E-02 | 0.2117E+01 | 0.1941E+01 | 0.1765E+00 | 0.9093E+01 |
| 18 | 0.4490E-02 | 0.1246E+01 | 0.1179E+01 | 0.6691E-01 | 0.5675E+01 |
| 19 | 0.5700E-02 | 0.7080E+00 | 0.6581E+00 | 0.4992E-01 | 0.7585E+01 |
| 20 | 0.7190E-02 | 0.3730E+00 | 0.3608E+00 | 0.1220E-01 | 0.3381E+01 |
| 21 | 0.8800E-02 | 0.1930E+00 | 0.2095E+00 | -0.1649E-01 | -0.7872E+01 |
| 22 | 0.1100E-01 | 0.1030E+00 | 0.1096E+00 | -0.6589E-02 | -0.6012E+01 |
| 23 | 0.1400E-01 | 0.5100E-01 | 0.5335E-01 | -0.2355E-02 | -0.4413E+01 |
| 24 | 0.1800E-01 | 0.2400E-01 | 0.2481E-01 | -0.8125E-03 | -0.3275E+01 |
| 25 | 0.2200E-01 | 0.1300E-01 | 0.1275E-01 | 0.2469E-03 | 0.1936E+01 |

** %RMSERR= 6.06

CORRELATION MATRIX

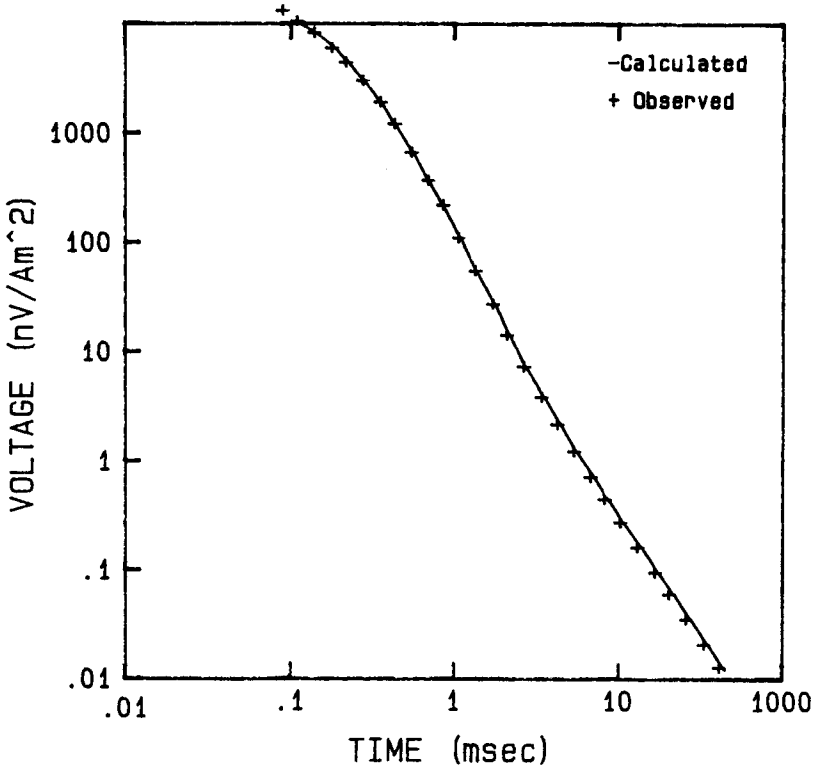
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.6812E+00 | 0.1000E+01 | | | | | |
| 3 | -0.2190E+00 | -0.2837E-01 | 0.1000E+01 | | | | |
| 4 | -0.8719E-01 | 0.5488E+00 | -0.5299E+00 | 0.1000E+01 | | | |
| 5 | 0.6371E+00 | -0.6937E+00 | 0.4799E+00 | -0.5729E+00 | 0.1000E+01 | | |
| 6 | -0.1607E+00 | 0.1388E+00 | 0.4917E+00 | -0.2407E+00 | 0.1666E+00 | 0.1000E+01 | |
| 7 | -0.5112E+00 | 0.6911E+00 | -0.5174E+00 | 0.6442E+00 | -0.9270E+00 | -0.1042E+00 | 0.1000E |

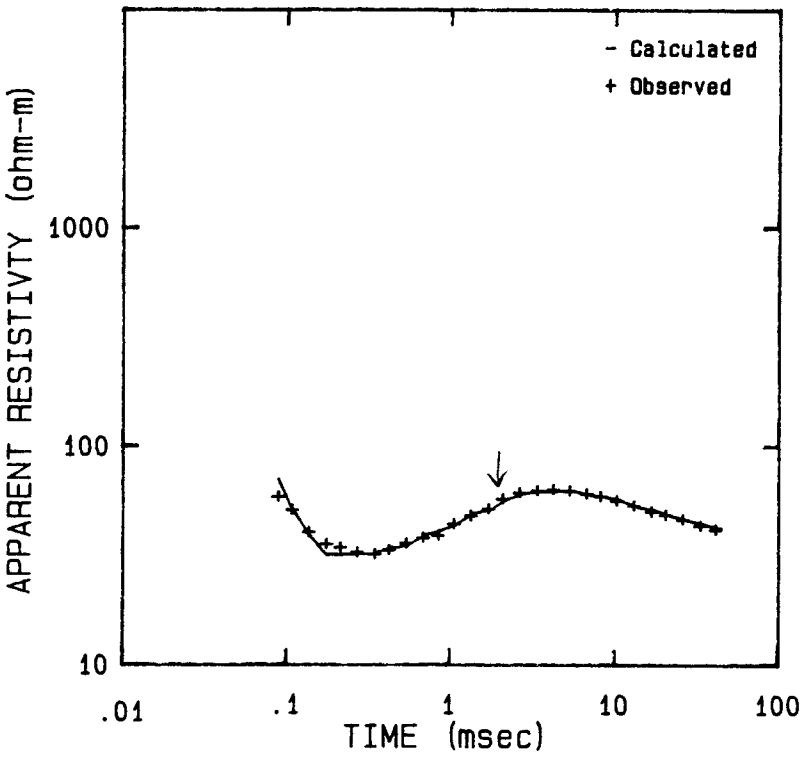
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1008E-01 | 0.5300E-03 | 0.5258E-01 | 0.5258E+01 |
| 2 | 0.1042E-02 | 0.7294E-03 | 0.6997E+00 | 0.6997E+02 |
| 3 | 0.2354E-01 | 0.2049E-02 | 0.8704E-01 | 0.8704E+01 |
| 4 | 0.4735E-03 | 0.7097E-03 | 0.1499E+01 | 0.1499E+03 |
| 5 | 0.3136E+02 | 0.9797E-03 | 0.3124E-04 | 0.3124E-02 |
| 6 | 0.2140E+03 | 0.2305E-02 | 0.1077E-04 | 0.1077E-02 |
| 7 | 0.3089E+03 | 0.1477E-02 | 0.4780E-05 | 0.4780E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.10080E-01 | 0.99208E+02 | |
| 2 | SIGMA( 2) | = | 0.10424E-02 | 0.95932E+03 | |
| 3 | SIGMA( 3) | = | 0.23543E-01 | 0.42476E+02 | |
| 4 | SIGMA( 4) | = | 0.47354E-03 | 0.21117E+04 | |
| 5 | THICK( 1) | = | 0.31360E+02 | | 0.31360E+02 |
| 6 | THICK( 2) | = | 0.21404E+03 | | 0.24540E+03 |
| 7 | THICK( 3) | = | 0.30893E+03 | | 0.55433E+03 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

GLASS MOUNTAIN
STATION: GM40




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 92.3 | 20.2 |
| 22.2 | 50.5 |
| 101 | 376.3 |
| 28.6 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 40 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1321E+05 | 0.1205E+05 | 0.1167E+04 | 0.9687E+01 |
| 2 | 0.1100E-03 | 0.1055E+05 | 0.1044E+05 | 0.1162E+03 | 0.1113E+01 |
| 3 | 0.1400E-03 | 0.8263E+04 | 0.8383E+04 | -0.1205E+03 | -0.1437E+01 |
| 4 | 0.1770E-03 | 0.6020E+04 | 0.6380E+04 | -0.3601E+03 | -0.5645E+01 |
| 5 | 0.2200E-03 | 0.4434E+04 | 0.4661E+04 | -0.2266E+03 | -0.4862E+01 |
| 6 | 0.2800E-03 | 0.3012E+04 | 0.3045E+04 | -0.3315E+02 | -0.1089E+01 |
| 7 | 0.3550E-03 | 0.1913E+04 | 0.1897E+04 | 0.1552E+02 | 0.8181E+00 |
| 8 | 0.4430E-03 | 0.1211E+04 | 0.1172E+04 | 0.3932E+02 | 0.3356E+01 |
| 9 | 0.5540E-03 | 0.6645E+03 | 0.6813E+03 | -0.1680E+02 | -0.2466E+01 |
| 10 | 0.7130E-03 | 0.3685E+03 | 0.3549E+03 | 0.1362E+02 | 0.3838E+01 |
| 11 | 0.8810E-03 | 0.2176E+03 | 0.2038E+03 | 0.1378E+02 | 0.6763E+01 |
| 12 | 0.1096E-02 | 0.1094E+03 | 0.1112E+03 | -0.1726E+01 | -0.1552E+01 |
| 13 | 0.1411E-02 | 0.5485E+02 | 0.5290E+02 | 0.1951E+01 | 0.3689E+01 |
| 14 | 0.1795E-02 | 0.2703E+02 | 0.2731E+02 | -0.2886E+00 | -0.1056E+01 |
| 15 | 0.2224E-02 | 0.1412E+02 | 0.1445E+02 | -0.3254E+00 | -0.2252E+01 |
| 16 | 0.2850E-02 | 0.7259E+01 | 0.7170E+01 | 0.8850E-01 | 0.1234E+01 |
| 17 | 0.3600E-02 | 0.3815E+01 | 0.3863E+01 | -0.4780E-01 | -0.1237E+01 |
| 18 | 0.4490E-02 | 0.2144E+01 | 0.2186E+01 | -0.4176E-01 | -0.1911E+01 |
| 19 | 0.5700E-02 | 0.1216E+01 | 0.1197E+01 | 0.1928E-01 | 0.1611E+01 |
| 20 | 0.7190E-02 | 0.7080E+00 | 0.7215E+00 | -0.1346E-01 | -0.1866E+01 |
| 21 | 0.8800E-02 | 0.4460E+00 | 0.4492E+00 | -0.3207E-02 | -0.7140E+00 |
| 22 | 0.1100E-01 | 0.2740E+00 | 0.2712E+00 | 0.2806E-02 | 0.1034E+01 |
| 23 | 0.1400E-01 | 0.1620E+00 | 0.1649E+00 | -0.2858E-02 | -0.1734E+01 |
| 24 | 0.1800E-01 | 0.9500E-01 | 0.9296E-01 | 0.2040E-02 | 0.2194E+01 |
| 25 | 0.2200E-01 | 0.6000E-01 | 0.6095E-01 | -0.9478E-03 | -0.1555E+01 |
| 26 | 0.2800E-01 | 0.3600E-01 | 0.3577E-01 | 0.2317E-03 | 0.6478E+00 |
| 27 | 0.3600E-01 | 0.2100E-01 | 0.2047E-01 | 0.5326E-03 | 0.2602E+01 |
| 28 | 0.4500E-01 | 0.1300E-01 | 0.1247E-01 | 0.5348E-03 | 0.4290E+01 |

** %RMSERR= 3.30

CORRELATION MATRIX

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.7598E+00 | 0.1000E+01 | | | | | |
| 3 | 0.5445E+00 | -0.2596E+00 | 0.1000E+01 | | | | |
| 4 | -0.3294E+00 | 0.3033E+00 | -0.3210E+00 | 0.1000E+01 | | | |
| 5 | -0.8647E+00 | 0.7390E+00 | -0.2732E+00 | 0.2894E-01 | 0.1000E+01 | | |
| 6 | 0.6164E+00 | -0.8483E+00 | -0.1573E+00 | -0.3088E+00 | -0.7163E+00 | 0.1000E+01 | |
| 7 | 0.4975E+00 | -0.6030E+00 | -0.1768E+00 | 0.3332E+00 | -0.7722E+00 | 0.7050E+00 | 0.1000E |

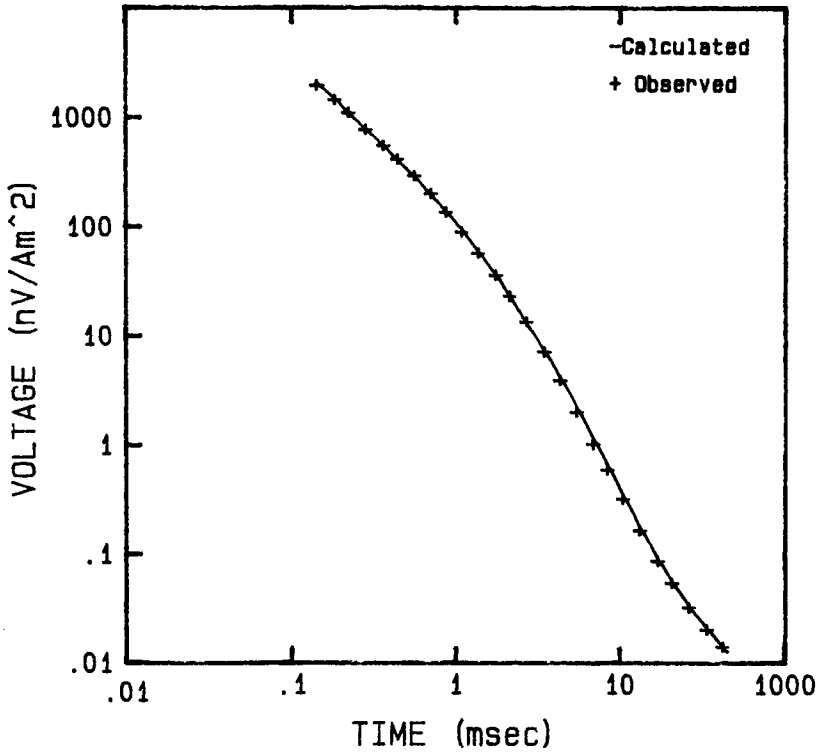
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1083E-01 | 0.8544E-03 | 0.7889E-01 | 0.7889E+01 |
| 2 | 0.4505E-01 | 0.2471E-02 | 0.5486E-01 | 0.5486E+01 |
| 3 | 0.9889E-02 | 0.1241E-02 | 0.1255E+00 | 0.1255E+02 |
| 4 | 0.3499E-01 | 0.2642E-02 | 0.7550E-01 | 0.7550E+01 |
| 5 | 0.2017E+02 | 0.5560E-03 | 0.2756E-04 | 0.2756E-02 |
| 6 | 0.5049E+02 | 0.2102E-02 | 0.4163E-04 | 0.4163E-02 |
| 7 | 0.3766E+03 | 0.1829E-02 | 0.4856E-05 | 0.4856E-03 |

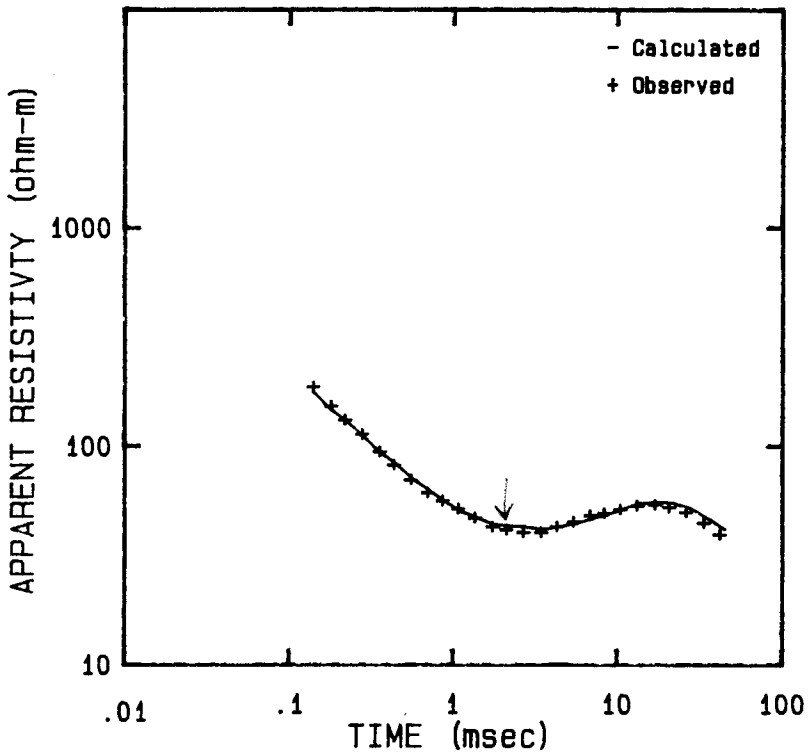
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.10830E-01 | 0.92335E+02 | |
| 2 | SIGMA( 2) | = | 0.45047E-01 | 0.22199E+02 | |
| 3 | SIGMA( 3) | = | 0.98890E-02 | 0.10112E+03 | |
| 4 | SIGMA( 4) | = | 0.34986E-01 | 0.28583E+02 | |
| 5 | THICK( 1) | = | 0.20174E+02 | | 0.20174E+02 |
| 6 | THICK( 2) | = | 0.50487E+02 | | 0.70661E+02 |
| 7 | THICK( 3) | = | 0.37658E+03 | | 0.44724E+03 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

GLASS MOUNTAIN
STATION: GM41




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 171 | 102 |
| 21.6 | 149 |
| 85.9 | 698 |
| 7.03 | |

ELECTROMAGNETIC SURVEYS INC.

GLASS MOUNTAIN STATION 41 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.1400E-03 | 0.1945E+04 | 0.2070E+04 | -0.1248E+03 | -0.6029E+01 |
| 2 | 0.1770E-03 | 0.1425E+04 | 0.1496E+04 | -0.7123E+02 | -0.4760E+01 |
| 3 | 0.2200E-03 | 0.1088E+04 | 0.1090E+04 | -0.2147E+01 | -0.1970E+00 |
| 4 | 0.2800E-03 | 0.7611E+03 | 0.7716E+03 | -0.1051E+02 | -0.1362E+01 |
| 5 | 0.3550E-03 | 0.5435E+03 | 0.5492E+03 | -0.5678E+01 | -0.1034E+01 |
| 6 | 0.4430E-03 | 0.4085E+03 | 0.3971E+03 | 0.1140E+02 | 0.2870E+01 |
| 7 | 0.5540E-03 | 0.2875E+03 | 0.2824E+03 | 0.5017E+01 | 0.1776E+01 |
| 8 | 0.7130E-03 | 0.1981E+03 | 0.1906E+03 | 0.7535E+01 | 0.3954E+01 |
| 9 | 0.8810E-03 | 0.1336E+03 | 0.1342E+03 | -0.6115E+00 | -0.4558E+00 |
| 10 | 0.1096E-02 | 0.8807E+02 | 0.9132E+02 | -0.3247E+01 | -0.3556E+01 |
| 11 | 0.1411E-02 | 0.5660E+02 | 0.5646E+02 | 0.1402E+00 | 0.2483E+00 |
| 12 | 0.1795E-02 | 0.3524E+02 | 0.3441E+02 | 0.8242E+00 | 0.2395E+01 |
| 13 | 0.2224E-02 | 0.2268E+02 | 0.2158E+02 | 0.1100E+01 | 0.5099E+01 |
| 14 | 0.2850E-02 | 0.1315E+02 | 0.1214E+02 | 0.1006E+01 | 0.8285E+01 |
| 15 | 0.3600E-02 | 0.6988E+01 | 0.6810E+01 | 0.1785E+00 | 0.2621E+01 |
| 16 | 0.4490E-02 | 0.3839E+01 | 0.3866E+01 | -0.2729E-01 | -0.7058E+00 |
| 17 | 0.5700E-02 | 0.1967E+01 | 0.2042E+01 | -0.7533E-01 | -0.3689E+01 |
| 18 | 0.7190E-02 | 0.9920E+00 | 0.1054E+01 | -0.6196E-01 | -0.5879E+01 |
| 19 | 0.8800E-02 | 0.5820E+00 | 0.5974E+00 | -0.1537E-01 | -0.2572E+01 |
| 20 | 0.1100E-01 | 0.3150E+00 | 0.3132E+00 | 0.1840E-02 | 0.5876E+00 |
| 21 | 0.1400E-01 | 0.1620E+00 | 0.1569E+00 | 0.5133E-02 | 0.3272E+01 |
| 22 | 0.1800E-01 | 0.8500E-01 | 0.8174E-01 | 0.3261E-02 | 0.3989E+01 |
| 23 | 0.2200E-01 | 0.5400E-01 | 0.5044E-01 | 0.3558E-02 | 0.7055E+01 |
| 24 | 0.2800E-01 | 0.3200E-01 | 0.2985E-01 | 0.2152E-02 | 0.7210E+01 |
| 25 | 0.3600E-01 | 0.2000E-01 | 0.1881E-01 | 0.1185E-02 | 0.6299E+01 |
| 26 | 0.4500E-01 | 0.1400E-01 | 0.1267E-01 | 0.1330E-02 | 0.1050E+02 |

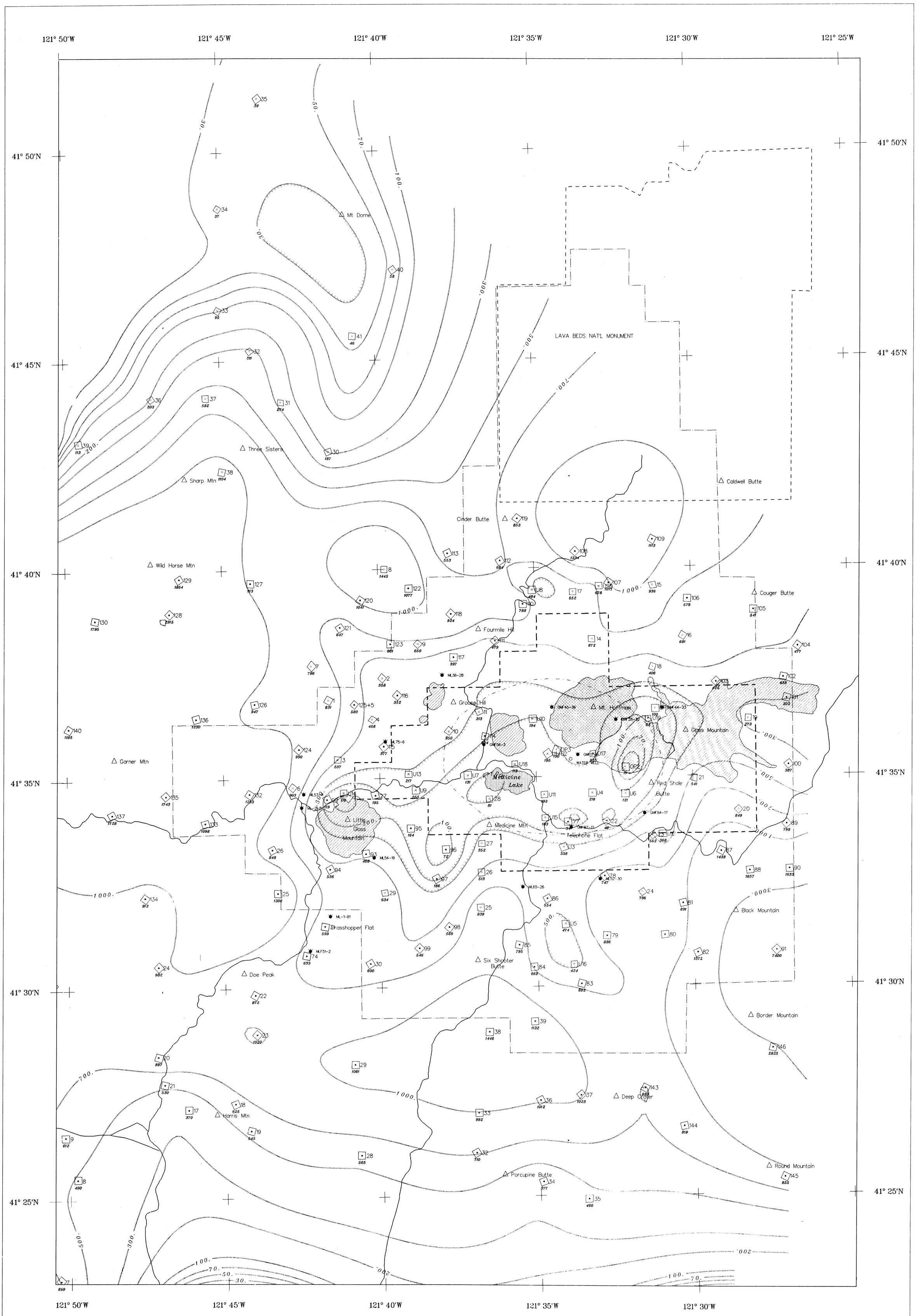
** %RMSERR= 4.57

CORRELATION MATRIX

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | 0.2414E+00 | 0.1000E+01 | | | | | |
| 3 | -0.5351E+00 | 0.4289E+00 | 0.1000E+01 | | | | |
| 4 | 0.3405E+00 | 0.3360E+00 | 0.1520E+00 | 0.1000E+01 | | | |
| 5 | 0.7632E+00 | 0.5246E+00 | -0.8757E-01 | 0.5830E+00 | 0.1000E+01 | | |
| 6 | 0.3727E+00 | -0.6980E+00 | -0.8386E+00 | -0.7487E-01 | 0.2143E-01 | 0.1000E+01 | |
| 7 | -0.5264E+00 | -0.6646E+00 | -0.2872E+00 | -0.8194E+00 | -0.8055E+00 | 0.2867E+00 | 0.1000E |

| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.5842E-02 | 0.1683E-02 | 0.2881E+00 | 0.2881E+02 |
| 2 | 0.4620E-01 | 0.2974E-02 | 0.6438E-01 | 0.6438E+01 |
| 3 | 0.1164E-01 | 0.3264E-02 | 0.2803E+00 | 0.2803E+02 |
| 4 | 0.1422E+00 | 0.1142E-01 | 0.8035E-01 | 0.8035E+01 |
| 5 | 0.1020E+03 | 0.2091E-02 | 0.2050E-04 | 0.2050E-02 |
| 6 | 0.1494E+03 | 0.6169E-02 | 0.4128E-04 | 0.4128E-02 |
| 7 | 0.6975E+03 | 0.1906E-01 | 0.2732E-04 | 0.2732E-02 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.58416E-02 | 0.17118E+03 | |
| 2 | SIGMA( 2) | = | 0.46196E-01 | 0.21647E+02 | |
| 3 | SIGMA( 3) | = | 0.11642E-01 | 0.85897E+02 | |
| 4 | SIGMA( 4) | = | 0.14217E+00 | 0.70337E+01 | |
| 5 | THICK( 1) | = | 0.10198E+03 | | 0.10198E+03 |
| 6 | THICK( 2) | = | 0.14944E+03 | | 0.25142E+03 |
| 7 | THICK( 3) | = | 0.69746E+03 | | 0.94888E+03 |
| 8 | SHIFT | = | 0.20700E+03 | | |




union 76

0 1 2 3 4 5

SCALE IN KILOMETERS

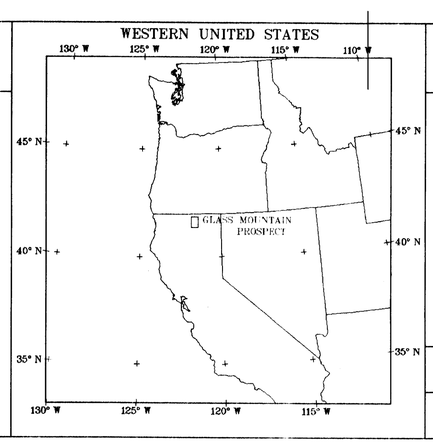
0 1 2 3 4 5

SCALE IN MILES

## Legend

- TDEM SITE (EMS-1983)
- TDEM SITE (EMS-1984)
- TDEM SITE (USGS)
- TDEM SITE (OXY-PET)
- MOUNTAIN
- GEOTHERMAL WELL
- RHYOLITE DOME
- GLASS FLOW
- LAKE
- MAJOR ROAD
- KGRA BOUNDARY
- UNIT AREA
- LAVA BEDS NAT'L MONUMENT
- ASSUMED CALDERA RING FRACTURE

WESTERN UNITED STATES




Union Oil Company of California
Geothermal Division

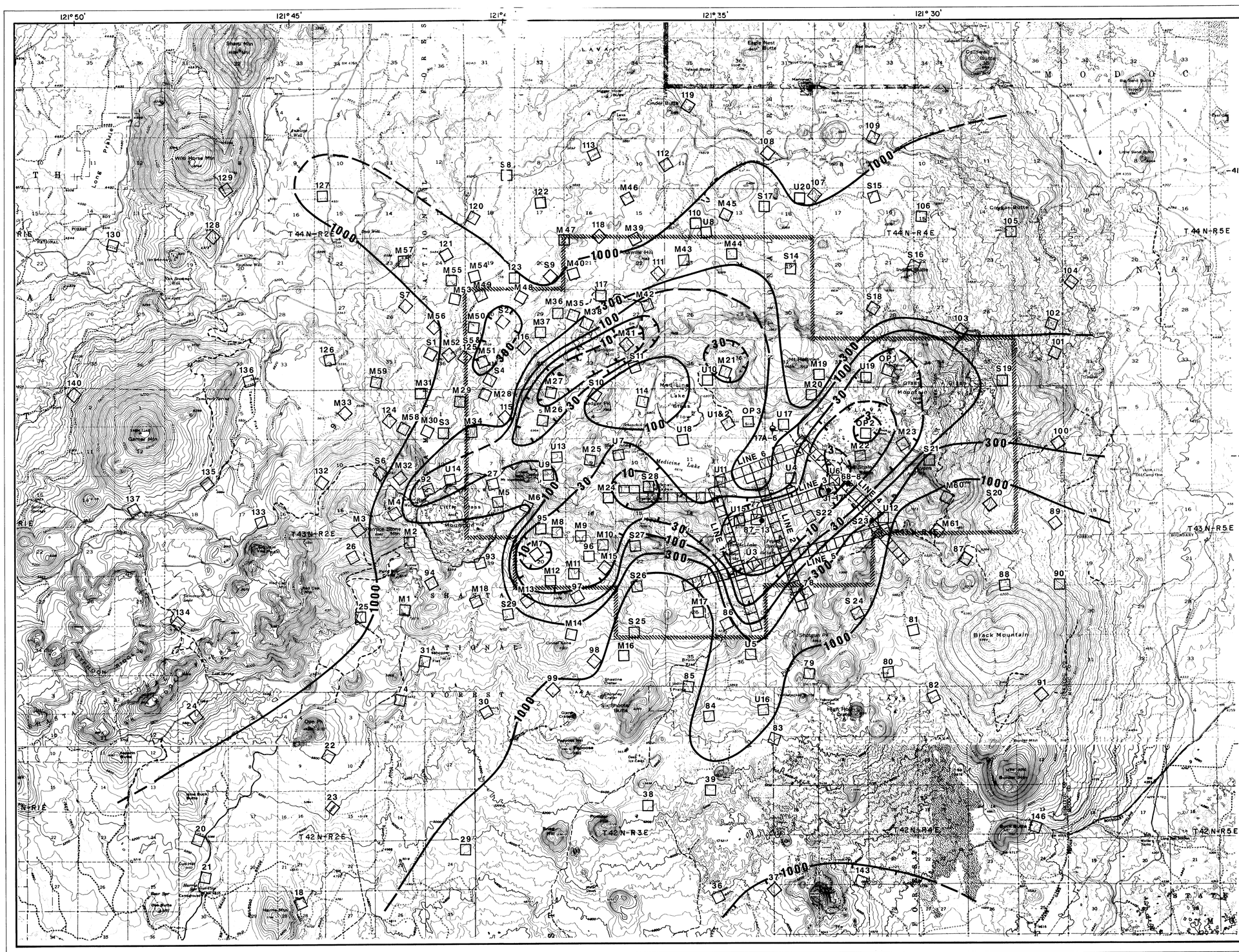
# GLASS MOUNTAIN

## TDEM APPARENT RESISTIVITY AT 2.22 MILLISEC

| PREPARED BY | DATE | SCALE | GRID SIZE |
|---|---|---|---|
| D.A. WHEELER | MAY 20, 1985 | 1:62,500 | .5 INCH |
| CONTOUR INTERVAL | DATA TYPE | | |
| LOGARITHMIC | TIME-DOMAIN EM | | |

EXPRESS > 12:14 MAY 20, 1985

UCA GM 38M 1:62500




1 1/2 0 1 2 MILES

SCALE 1:62,500

| REVISED | UNOCAL |
|---|---|
| CONTOURS ADDED 12/89 | UNOCAL CORPORATION–GEOTHERMAL DIVISION |

# GLASS MOUNTAIN PROSPECT

## TIME-DOMAIN ELECTOMAGNETIC STATION LOCATIONS
## BOSTICK RESISTIVITIES AT A DEPTH OF 1500 FEET
## (CONTOURS IN OHM-M)

TDEM STN.

| | |
|---|---|
| OP1 | EM SURVEYS, 1982 |
| U2 | USGS, 1983 |
| 2 | EM SURVEYS, 1983 |
| S2 | EM SURVEYS, 1984 |
| LINE 2 | EARTH TECH., 1985 |
| M2 | EARTH TECH., 1986 |

Plate 1
UCA07.3308 6/90

SISKIYOU & MODOC COUNTIES, CALIFORNIA

SCALE 1:62,500 G.A.N. OCTOBER, 1989

# APPENDIX L:
# TEM central induction sounding, Medicine Lake, California; Report #841301 Prepared for Occidental Geothermal, Inc. Bakersfield, CA

# Attachment XI

## CEC-500-2007-XXX-ATXI

## TEM central induction sounding, Medicine Lake, California; Report #841301 Prepared for Occidental Geothermal, Inc. Bakersfield, CA.

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GM 38.05

20 JUNE - 16 JULY 1984

~~GES~~, ~~DG~~, ~~MSW~~, file

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CAL.

M. LAKE - TDEM SURVEY

TEM CENTRAL INDUCTION SOUNDING

MEDICINE LAKE, CALIFORNIA

Report #841301

Prepared for:

Occidental Geothermal, Inc.

Bakersfield, California

30 January 1985

ELECTROMAGNETIC SURVEYS, INC.
2161 Shattuck Avenue, Suite 303
Berkeley, California 94704
(415) 845-8745

# TEM CENTRAL INDUCTION SOUNDING

# MEDICINE LAKE, CALIFORNIA

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APPENDIX I. Geonics EM-37 Specifications

APPENDIX II. TEM Sounding Data and Inversion Results

## SUMMARY

A transient electromagnetic survey was carried out by ElectroMagnetic Surveys, Inc. for Occidental Geothermal, Inc. in the Medicine Lake area of northeastern California during the period from 20 June to 16 July 1984. The objective of the survey was to locate deep conductors attributable to geothermal sources. A total of 76 stations were occupied using transmitter loops 1000 x 1000 feet in size.

Two, three, and four layer computer inversions of the data were performed and generally yielded RMS errors of less than 7 %. A conductor located at a depth of between 800 and 1000 meters was detected at over one half of the sounding locations. A resistive surficial unit was seen at approximately one half of the sounding locations.

## INTRODUCTION

A transient electromagnetic (TEM) survey was carried out by Electromagnetic Surveys, Inc. (EMSurveys) for Occidental Geothermal, Inc., in the Medicine Lake area of northeastern California during the summer of 1984. The objective of the survey was to locate deep conductors attributable to geothermal sources. The in-loop configuration was used to provide a relatively focused electromagnetic sounding to a depth of several kilometers. The Medicine Lake survey is part of a larger survey encompassing the Newberry Crater area of central Oregon as well. A separate report has been written for each area.

The survey was carried out between 20 June and 16 July 1984. Road access to station locations and good weather expedited the survey, but vehicle and equipment problems, as well as long drives, slowed data production on some days. A total of 76 stations were occupied.

The EMSurveys field crew consisted of H. A. Patsch (Crew Chief), Lars Holbek, Dimitri Bevc, Paul Rio, and Jim Versyp (Field Operators). Client representatives John Arestad and Michael Woodruff were present during the survey.

## EQUIPMENT AND FIELD PROCEDURES

A Geonics EM-37 system was used for the survey. Detailed specifications of this system can be found in Appendix I.

The transmitter loops were 1000 x 1000 feet square with at least one corner located on a road. Loop orientation was determined by logistical considerations unless a specific orientation was requested by the client. Synchronization of the receiver (Rx) and the transmitter (Tx) was achieved by use of a reference cable link.

The vertical component of the secondary magnetic field was measured at each sounding location using three combinations of frequency, Tx current, and Rx moment. Initial measurements were made at a Tx repetition rate of 30 Hz with a voltage setting of 110 V. The Tx current was in the range of 26 to 28 amps and the turnoff ramp time was in the range of 255 to 265 $\mu$s.

The measurement procedure was then repeated with a voltage setting of 20 V. This reduced the turnoff ramp time to the range of 75 to 85 $\mu$s and reduced the current to the range of 5.5 to 6.5 amps which enabled more accurate readings to be made at early times.

Measurements were then taken at a repetition rate of 3 Hz and a voltage setting of 110 V for further definition of the decay curve at later times. A large loop Rx coil measuring 6 meters on a side and containing 48 turns of wire was used for gathering the 3 Hz data. Use of this large loop increased the Rx moment by a factor of 17 which enhanced detection of low amplitude-late time signals. Tx current and turnoff ramp time were within the ranges of variability seen during the 30 Hz high voltage measurements.

Several sets of readings were taken at each station to improve

data statistics. Operator inspection of these data sets assured that noisy readings due to sferics or other spurious sources would be excluded from the summed and averaged data.

## DATA PROCESSING AND PRESENTATION

Field data were gathered and stored by a proprietary EMSurveys data acquisition system designed and built for use with the Geonics EM-37 system. Initial processing of data was completed in the field, and decisions on survey planning were made on a daily basis. Voltages were normalized for transmitter current and receiver moment, and are given in units of $nV/Am^2$. After manual smoothing the transient decay voltages were inverted using a non-linear least squares algorithm developed by Dennis et al(1979) and adapted by Anderson (1982) for use in interpreting one dimensional TEM sounding data.

### Description of Inversion

All data points were weighted in the inversion process with a factor set equal to $1/(\text{standard deviation})^2$. The standard deviation was set equal to ten percent of the measured voltage. This weighting scheme places more importance on the later sample times which carry information from greater depths and are of primary interest in geothermal exploration.

The inversion results are presented in Appendix II. Each data set includes a summary computer output; a plot of voltage and apparent resistivity versus time for both observed and calculated data and a schematic diagram of the interpreted layered model.

The computer output includes a description of the layered

model, parameter statistics, and a table containing values of the smoothed, normalized field voltages, the normalized voltages calculated from the layered model, the residual (or difference between the field and calculated values), and the percent residual error (the residual/voltage *100) for each sample time. The root mean square of the percent residual error (%RMSERR) has been calculated and is used as a measure of the "goodness of fit".

The statistics are given in table form using a parameter number and not the parameter name. The inversion routine assigns numbers to the parameters for an N layered model as follows: 1 through N indicates the layer conductivity, N+1 to 2N-1 indicates the layer thickness and parameter number 2N indicates the shift factor. The shift factor is equal to the reciprocal of the loop radius cubed ($1/a^3$) and is used within the inversion routine for normalizing the calculated voltages. The shift factor was fixed at a value of 207 for this field survey. In several cases the covariance matrix was not positive definite and thus the statistics could not be calculated (see Anderson, 1982).

An absolute value of .9 or larger between any two parameters in the correlation matrix indicates that these parameters are highly correlated i.e., their combination is well defined, but the individual parameters are not. A common example is a thin conductive layer where the conductivity - thickness product is well defined but the individual parameters cannot be resolved.

An estimate of the standard error and percent error are included in the parameter statistics. These parameters are not the same as those used in other error analyses. A percent error of 200

does not mean that this parameter can be varied by 200 percent and not change the calculated voltages within given error bounds. This error tends to be overestimated and will increase with increased correlation between parameters. These values should be used only in a relative manner to compare parameters within a given inversion.

EM sounding methods are more sensitive to conductive layers than to resistive layers, and in general, conductive layers will have a smaller percent error and will have the parameters of conductivity and thickness better defined than resistive units.

## RESULTS

The inversions indicate that variations are present in the geoelectric section in the geothermal prospect area. The data were inverted to a two, three, or four layer section which, in general, fit the data to less than 7 % RMS error. A conductor located at a depth of between 800 and 1000 meters was detected at more than one half of the sounding locations. A resistive surficial unit is present at approximately one half of the sounding locations.

## REFERENCES

Anderson, W. L., 1982, " Nonlinear Least Squares Inversion of Transient Soundings for a Central Induction Loop System ", USGS open File Report. 82-1129

Dennis, J.E., Gay, D.M., and Welsch R.E., 1979," An adaptive nonlinear least-squares algorithm ", Univ. of Wisconsin MRC Tech. Sum. Rept. 2010
(also avaliable as NTIS Rept. AD-A079-716), 40 p.

# APPENDIX I. GEONICS EM-37 SPECIFICATIONS

## Receiver

| | | |
|---|---|---|
| Measured quantity | - | time rate of decay of magnetic flux along 3 axes. |
| Sensor | - | air-cored coil of bandwidth 40 kHz; 100cm dia. by 7x5cm cross-section. Coil holder supplied to facilitate measurement along 3 axes. |
| Time channels | - | 20 time channels with locations and widths as shown in Fig. 2. Successive operation at 30Hz, then 3Hz, effectively gives 30 channels covering range from 80 μsec. to 80 msec. |
| Output display | - | 4 digit plus sign LED display; display also shows channel number and gain. |
| Integration time | - | $2^n$ cycles at 30Hz; n=4,6,8,10,12,14 (switch selectable); similar integration times at other base frequencies. |
| Receiver output noise referred to input | - | typically $1.5 \times 10^{-10}$ volt/$m^2$ at last gate at 30Hz with integration time of 34 seconds. Noise will be higher during intense local spherics activity. |
| Output connector | - | all 20 channels in analogue format and house-keeping functions in digital format available from output connector. |
| Synchronization to Tx | - | any of the following (switch selectable)<br>(1) reference cable<br>(2) primary pulse<br>(3) 27 MHz radio link (40 channels)<br>(4) high stability (oven controlled) quartz crystals. |
| Noise rejection circuitry | - | Selective clipping of atmospheric noise pulses at all times. Audio output of Rx coil (transmitter pulse blanked out) is available on built-in loud speaker for ready identification of interference. |
| Receiver batteries | - | 12 volt rechargeable Gel-cell; 9 hours continuous operating time at 17°C. Two batteries and a battery charger supplied to permit charging of second battery from transmitter motor-generator during survey. |

## Component Dimensions

| | |
|---|---|
| Transmitter console | 25x42x36 cm |
| GPU | 35x74x48 cm |
| Wirewinder | 42x38x35 cm each (2 off) |
| Wire reels (20 amp) | 33x31(dia.)cm each (6 off) |
| Receiver console | 38x37x27 cm |
| Receiver coil | 100 cm dia. 7x5 cm cross-section |

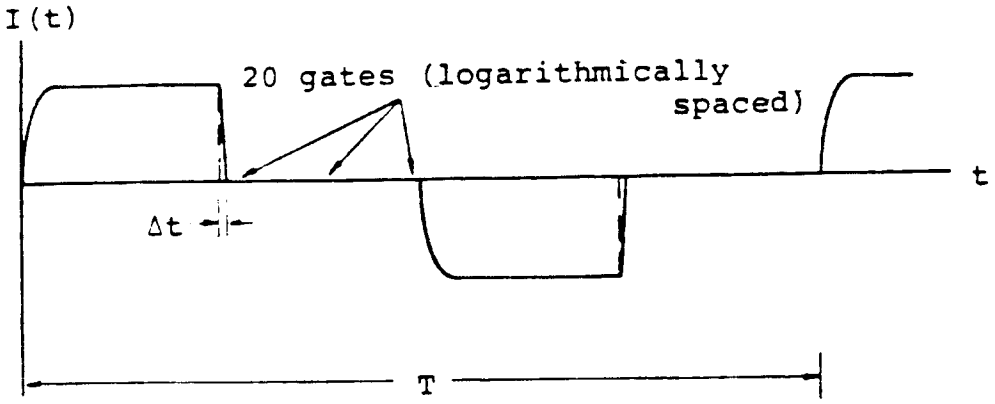
## Component Weights

| | |
|---|---|
| Transmitter console | 20 kg |
| GPU | 60 kg |
| Wirewinders and loaded reels (20 amp) | 120 kg (total) |
| Receiver console (incl.20 amp-hour battery) | 21.8 kg |
| Receiver coil | 8.0 kg |

## Shipping Information

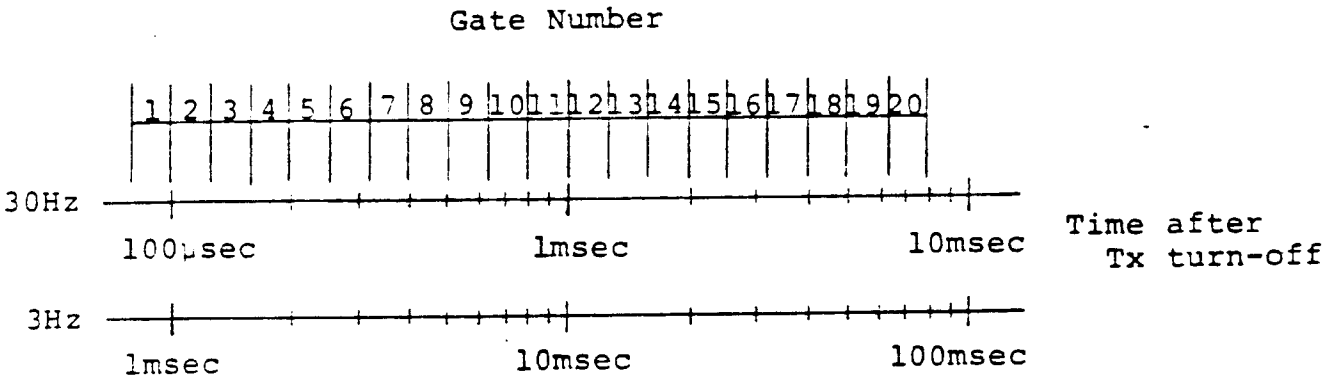
Shipment consists of 5 boxes

| | |
|---|---|
| Two wire boxes | 116x62x48 cm @ 186 kg (total) |
| GPU box | 96x61x73 cm @ 90 kg |
| Receiver/transmitter box | 96x75x73 cm @ 86 kg |
| Receiver coil/coil-holder box | 110x110x20 cm @ 34 kg |
| Total shipping volume | 1.90 cubic metres |
| Total shipping weight | 390 kg |




Transmitter Current Waveform

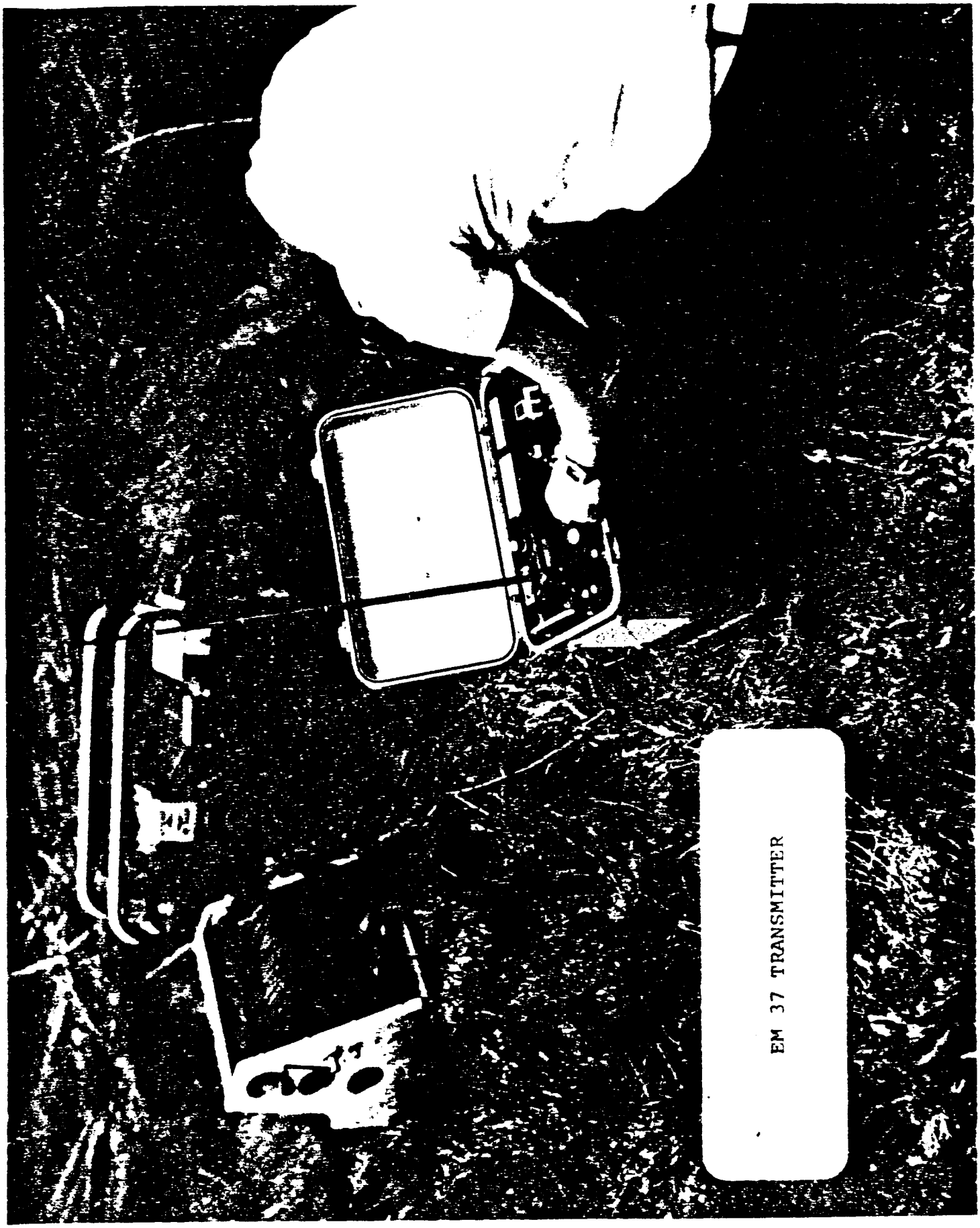
FIG. I-1




Gate Location and Widths (30 and 3Hz)

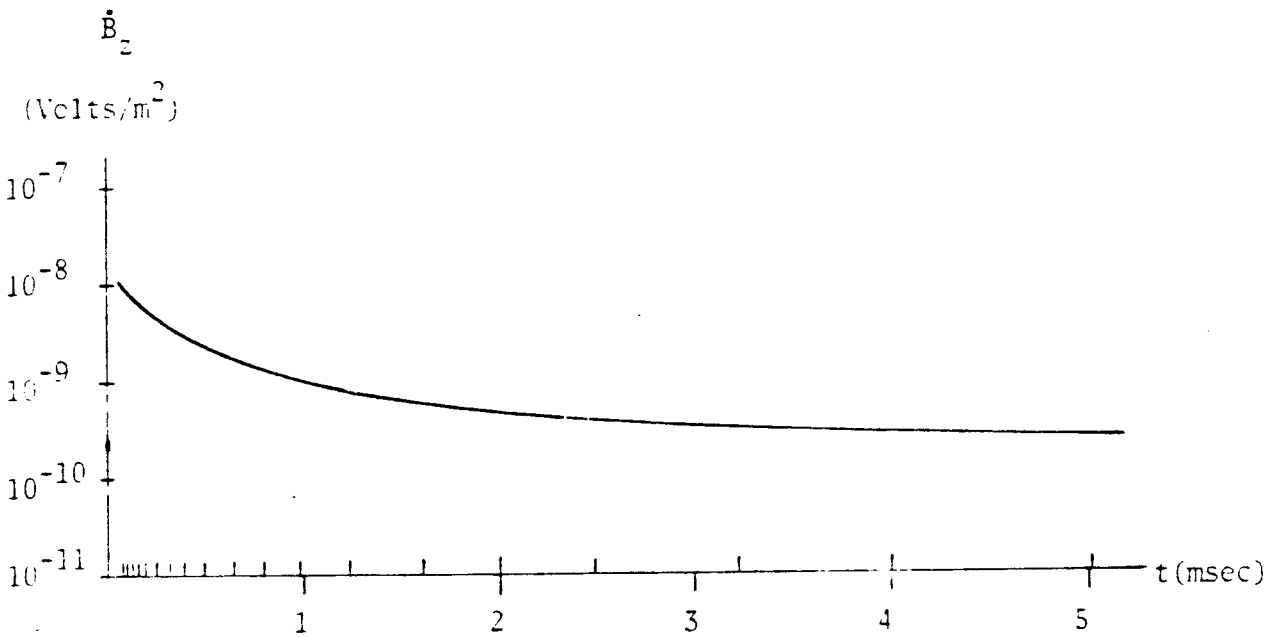
FIG. I-2

FM 37 RECEIVER



EM 37 TRANSMITTER

EM 37 TRANSMITTER
WIRE CARRIER




Average System Noise
(30Hz)

EM37 System Noise Graph for 300 m x 600 m Transmitter Loop

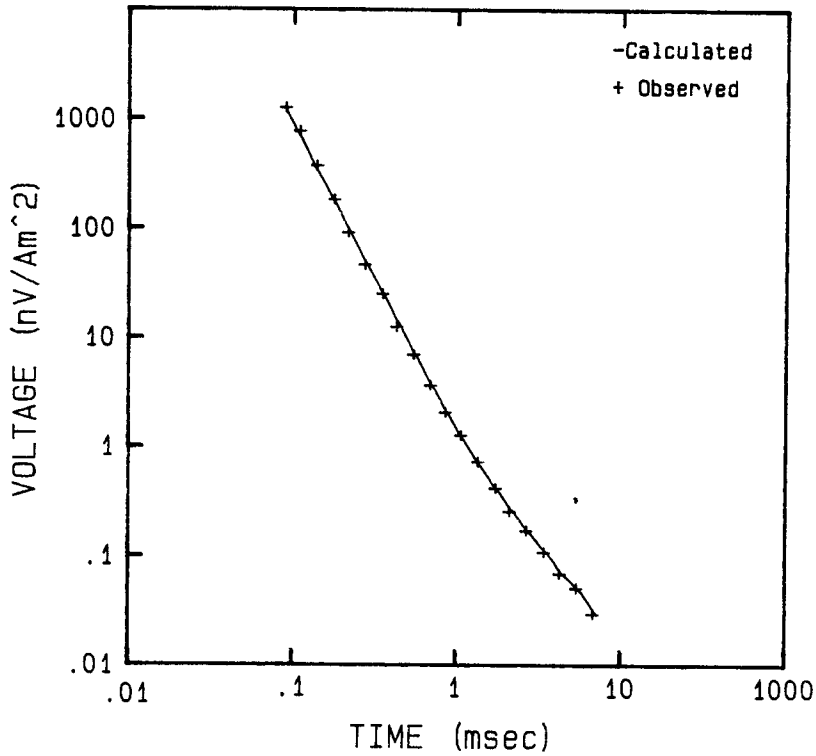
FIG. I-3

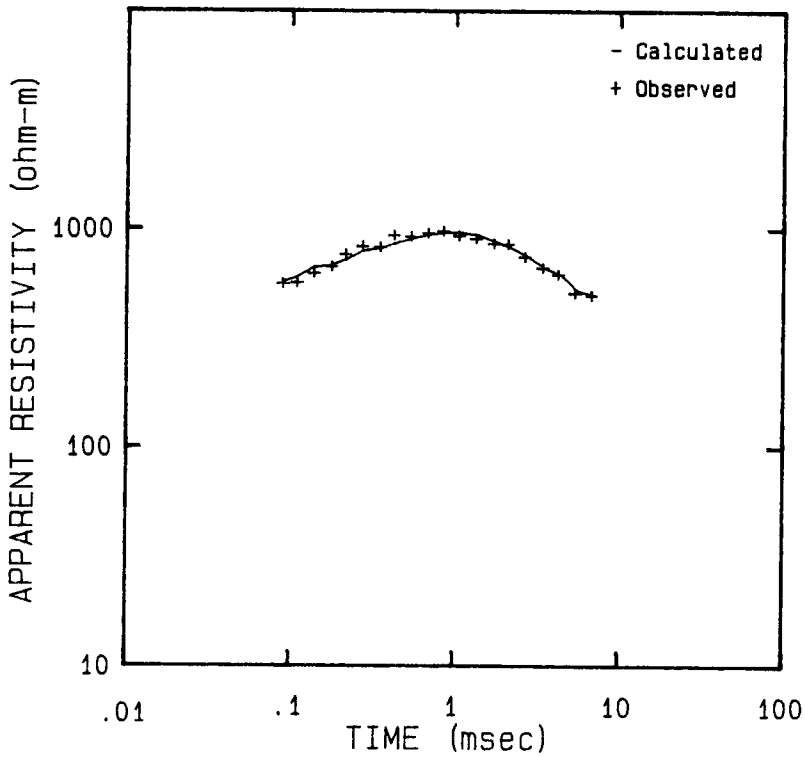
# APPENDIX II. TEM Sounding Data and Inversion Results

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML01




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 90.63 | 9.94 |
| 1071 | 966.81 |
| 179.58 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 1 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1268E+04 | 0.1229E+04 | 0.3912E+02 | 0.3184E+01 |
| 2 | 0.1100E-03 | 0.7733E+03 | 0.7114E+03 | 0.6187E+02 | 0.8696E+01 |
| 3 | 0.1400E-03 | 0.3754E+03 | 0.3429E+03 | 0.3241E+02 | 0.9450E+01 |
| 4 | 0.1770E-03 | 0.1843E+03 | 0.1794E+03 | 0.4910E+01 | 0.2737E+01 |
| 5 | 0.2200E-03 | 0.9168E+02 | 0.9947E+02 | -0.7788E+01 | -0.7830E+01 |
| 6 | 0.2800E-03 | 0.4646E+02 | 0.5000E+02 | -0.3539E+01 | -0.7079E+01 |
| 7 | 0.3550E-03 | 0.2510E+02 | 0.2538E+02 | -0.2833E+00 | -0.1116E+01 |
| 8 | 0.4430E-03 | 0.1260E+02 | 0.1427E+02 | -0.1673E+01 | -0.1172E+02 |
| 9 | 0.5540E-03 | 0.7022E+01 | 0.7211E+01 | -0.1888E+00 | -0.2619E+01 |
| 10 | 0.7130E-03 | 0.3688E+01 | 0.3746E+01 | -0.5766E-01 | -0.1539E+01 |
| 11 | 0.8810E-03 | 0.2089E+01 | 0.2115E+01 | -0.2645E-01 | -0.1251E+01 |
| 12 | 0.1096E-02 | 0.1288E+01 | 0.1207E+01 | 0.8101E-01 | 0.6712E+01 |
| 13 | 0.1411E-02 | 0.7370E+00 | 0.6899E+00 | 0.4706E-01 | 0.6821E+01 |
| 14 | 0.1795E-02 | 0.4250E+00 | 0.4057E+00 | 0.1934E-01 | 0.4768E+01 |
| 15 | 0.2224E-02 | 0.2600E+00 | 0.2702E+00 | -0.1017E-01 | -0.3765E+01 |
| 16 | 0.2850E-02 | 0.1740E+00 | 0.1684E+00 | 0.5594E-02 | 0.3322E+01 |
| 17 | 0.3600E-02 | 0.1100E+00 | 0.1104E+00 | -0.3548E-03 | -0.3215E+00 |
| 18 | 0.4490E-02 | 0.7000E-01 | 0.7499E-01 | -0.4993E-02 | -0.6658E+01 |
| 19 | 0.5700E-02 | 0.5200E-01 | 0.4839E-01 | 0.3612E-02 | 0.7466E+01 |
| 20 | 0.7190E-02 | 0.3000E-01 | 0.3117E-01 | -0.1169E-02 | -0.3749E+01 |

** %RMSERR= 5.90

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.2693E+00 | 0.1000E+01 | | | |
| 3 | 0.5680E+00 | -0.1157E+00 | 0.1000E+01 | | |
| 4 | -0.9479E+00 | -0.3514E+00 | -0.5289E+00 | 0.1000E+01 | |
| 5 | 0.4426E+00 | 0.2608E+00 | -0.8541E-01 | -0.6123E+00 | 0.1000E+01 |

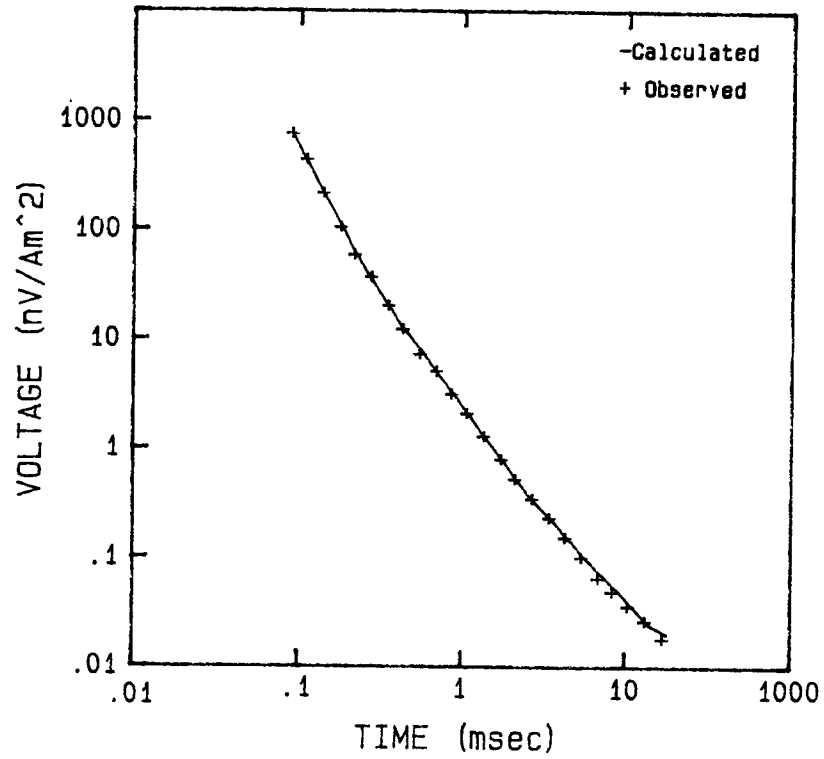
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1103E-01 | 0.2650E-03 | 0.2402E-01 | 0.2402E+01 |
| 2 | 0.9335E-03 | 0.1241E-03 | 0.1330E+00 | 0.1330E+02 |
| 3 | 0.5568E-02 | 0.1230E-02 | 0.2209E+00 | 0.2209E+02 |
| 4 | 0.9940E+01 | 0.2049E-03 | 0.2061E-04 | 0.2061E-02 |
| 5 | 0.9668E+03 | 0.2966E-02 | 0.3068E-05 | 0.3068E-03 |

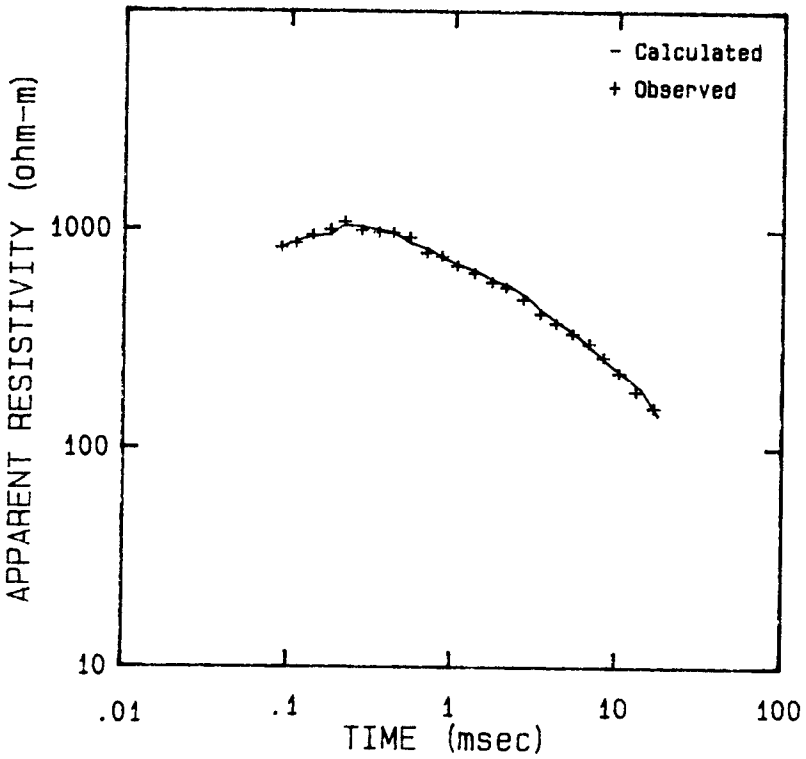
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.11033E-01 | 0.90634E+02 | |
| 2 | SIGMA( 2) | = | 0.93349E-03 | 0.10712E+04 | |
| 3 | SIGMA( 3) | = | 0.55685E-02 | 0.17958E+03 | |
| 4 | THICK( 1) | = | 0.99404E+01 | | 0.99404E+01 |
| 5 | THICK( 2) | = | 0.96681E+03 | | 0.97675E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML02




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 138.56 | 9.44 |
| 1175.2 | 496.79 |
| 182.02 | 484.87 |
| 41.94 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 2 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.7463E+03 | 0.7464E+03 | -0.8112E-01 | -0.1087E-01 |
| 2 | 0.1100E-03 | 0.4314E+03 | 0.4202E+03 | 0.1116E+02 | 0.2656E+01 |
| 3 | 0.1400E-03 | 0.2119E+03 | 0.2137E+03 | -0.1774E+01 | -0.8302E+00 |
| 4 | 0.1770E-03 | 0.1034E+03 | 0.1107E+03 | -0.7299E+01 | -0.6594E+01 |
| 5 | 0.2200E-03 | 0.5796E+02 | 0.6082E+02 | -0.2864E+01 | -0.4708E+01 |
| 6 | 0.2800E-03 | 0.3639E+02 | 0.3408E+02 | 0.2314E+01 | 0.6789E+01 |
| 7 | 0.3550E-03 | 0.2001E+02 | 0.1912E+02 | 0.8930E+00 | 0.4671E+01 |
| 8 | 0.4430E-03 | 0.1221E+02 | 0.1220E+02 | 0.7513E-02 | 0.6158E-01 |
| 9 | 0.5540E-03 | 0.7200E+01 | 0.7836E+01 | -0.6359E+00 | -0.8116E+01 |
| 10 | 0.7130E-03 | 0.5065E+01 | 0.4742E+01 | 0.3228E+00 | 0.6806E+01 |
| 11 | 0.8810E-03 | 0.3116E+01 | 0.3194E+01 | -0.7839E-01 | -0.2454E+01 |
| 12 | 0.1096E-02 | 0.2079E+01 | 0.2030E+01 | 0.4895E-01 | 0.2411E+01 |
| 13 | 0.1411E-02 | 0.1279E+01 | 0.1226E+01 | 0.5269E-01 | 0.4297E+01 |
| 14 | 0.1795E-02 | 0.7870E+00 | 0.7610E+00 | 0.2596E-01 | 0.3411E+01 |
| 15 | 0.2224E-02 | 0.5180E+00 | 0.4983E+00 | 0.1968E-01 | 0.3950E+01 |
| 16 | 0.2850E-02 | 0.3420E+00 | 0.3184E+00 | 0.2355E-01 | 0.7396E+01 |
| 17 | 0.3600E-02 | 0.2290E+00 | 0.2153E+00 | 0.1372E-01 | 0.6371E+01 |
| 18 | 0.4490E-02 | 0.1520E+00 | 0.1506E+00 | 0.1439E-02 | 0.9561E+00 |
| 19 | 0.5700E-02 | 0.9900E-01 | 0.1034E+00 | -0.4360E-02 | -0.4219E+01 |
| 20 | 0.7190E-02 | 0.6400E-01 | 0.7197E-01 | -0.7973E-02 | -0.1108E+02 |
| 21 | 0.8800E-02 | 0.4800E-01 | 0.5203E-01 | -0.4034E-02 | -0.7752E+01 |
| 22 | 0.1100E-01 | 0.3600E-01 | 0.3618E-01 | -0.1847E-03 | -0.5103E+00 |
| 23 | 0.1400E-01 | 0.2600E-01 | 0.2453E-01 | 0.1469E-02 | 0.5990E+01 |
| 24 | 0.1800E-01 | 0.1800E-01 | 0.1635E-01 | 0.1652E-02 | 0.1011E+02 |

** %RMSERR= 5.58

CORRELATION MATRIX

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.2371E+00 | 0.1000E+01 | | | | | |
| 3 | -0.4099E+00 | -0.1975E+00 | 0.1000E+01 | | | | |
| 4 | 0.4368E+00 | 0.2041E+00 | -0.7949E+00 | 0.1000E+01 | | | |
| 5 | -0.6108E+00 | 0.3512E+00 | 0.5205E+00 | -0.5261E+00 | 0.1000E+01 | | |
| 6 | -0.6642E+00 | 0.2067E-02 | 0.1587E+00 | -0.3266E+00 | 0.1162E+00 | 0.1000E+01 | |
| 7 | 0.6069E+00 | -0.5533E+00 | -0.2863E+00 | 0.7488E-01 | -0.5857E+00 | -0.9457E-01 | 0.1000E |

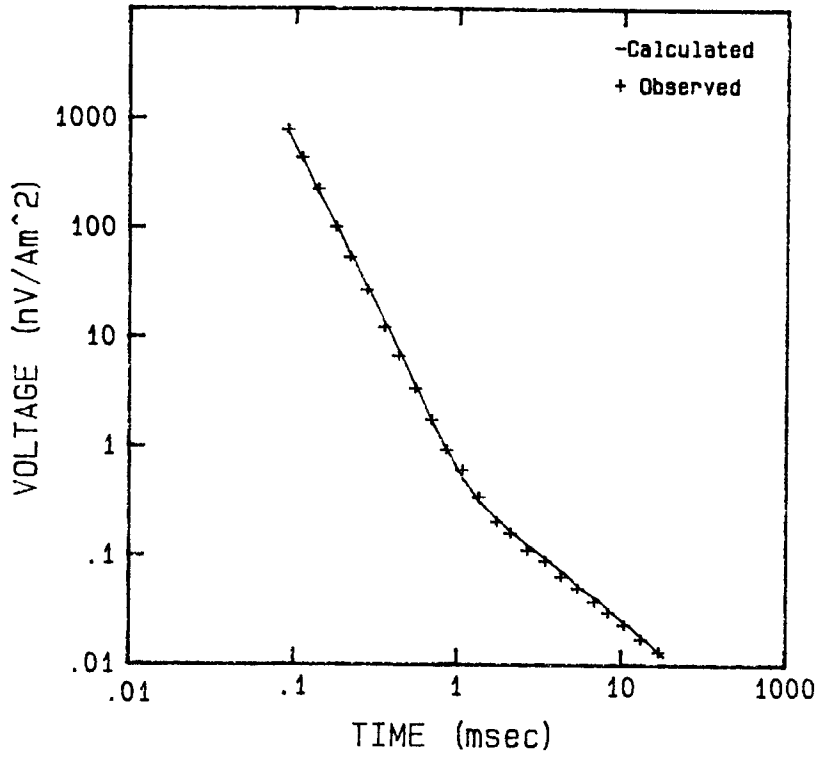
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.7217E-02 | 0.2078E-03 | 0.2880E-01 | 0.2880E+01 |
| 2 | 0.8509E-03 | 0.2177E-03 | 0.2559E+00 | 0.2559E+02 |
| 3 | 0.5494E-02 | 0.5648E-03 | 0.1028E+00 | 0.1028E+02 |
| 4 | 0.2384E-01 | 0.1589E-02 | 0.6667E-01 | 0.6667E+01 |
| 5 | 0.9443E+01 | 0.6558E-04 | 0.6945E-05 | 0.6945E-03 |
| 6 | 0.4968E+03 | 0.2410E-02 | 0.4850E-05 | 0.4850E-03 |
| 7 | 0.4849E+03 | 0.4201E-02 | 0.8664E-05 | 0.8664E-03 |

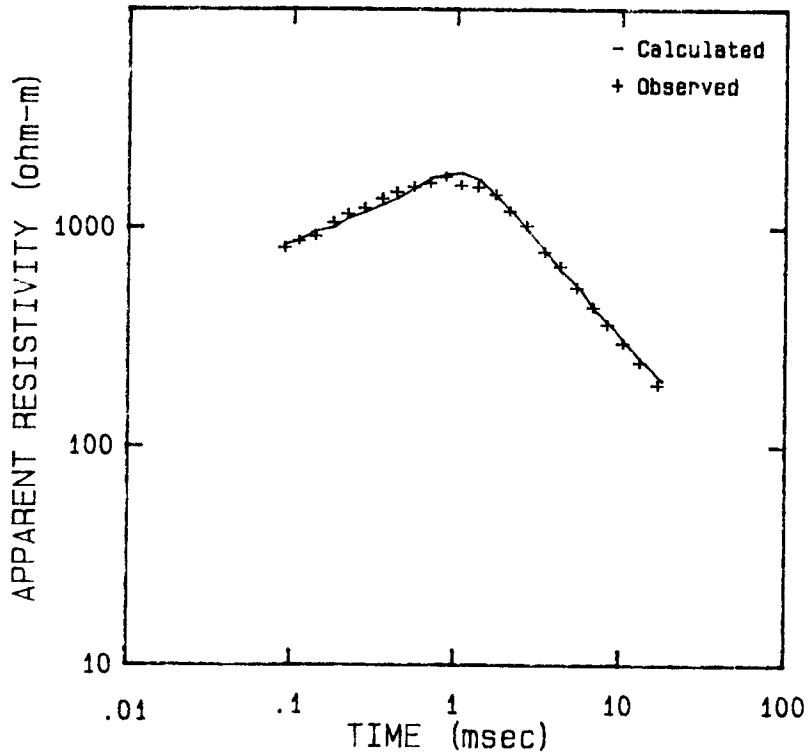
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.72173E-02 | 0.13856E+03 | |
| 2 | SIGMA( 2) = | 0.85092E-03 | 0.11752E+04 | |
| 3 | SIGMA( 3) = | 0.54940E-02 | 0.18202E+03 | |
| 4 | SIGMA( 4) = | 0.23843E-01 | 0.41942E+02 | |
| 5 | THICK( 1) = | 0.94430E+01 | | 0.94430E+01 |
| 6 | THICK( 2) = | 0.49679E+03 | | 0.50623E+03 |
| 7 | THICK( 3) = | 0.48487E+03 | | 0.99110E+03 |
| 8 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML03




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 155.78 | 15.63 |
| 1638 | 1095.4 |
| 31.97 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 3 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.7713E+03 | 0.7358E+03 | 0.3548E+02 | 0.4821E+01 |
| 2 | 0.1100E-03 | 0.4304E+03 | 0.4257E+03 | 0.4674E+01 | 0.1098E+01 |
| 3 | 0.1400E-03 | 0.2211E+03 | 0.2044E+03 | 0.1661E+02 | 0.8125E+01 |
| 4 | 0.1770E-03 | 0.9976E+02 | 0.1029E+03 | -0.3111E+01 | -0.3024E+01 |
| 5 | 0.2200E-03 | 0.5273E+02 | 0.5639E+02 | -0.3653E+01 | -0.6479E+01 |
| 6 | 0.2800E-03 | 0.2643E+02 | 0.2806E+02 | -0.1631E+01 | -0.5811E+01 |
| 7 | 0.3550E-03 | 0.1211E+02 | 0.1319E+02 | -0.1073E+01 | -0.8139E+01 |
| 8 | 0.4430E-03 | 0.6609E+01 | 0.7254E+01 | -0.6448E+00 | -0.8889E+01 |
| 9 | 0.5540E-03 | 0.3342E+01 | 0.3396E+01 | -0.5397E-01 | -0.1589E+01 |
| 10 | 0.7130E-03 | 0.1739E+01 | 0.1597E+01 | 0.1419E+00 | 0.8883E+01 |
| 11 | 0.8810E-03 | 0.9203E+00 | 0.8782E+00 | 0.4214E-01 | 0.4798E+01 |
| 12 | 0.1096E-02 | 0.6040E+00 | 0.4928E+00 | 0.1112E+00 | 0.2255E+02 |
| 13 | 0.1411E-02 | 0.3390E+00 | 0.3038E+00 | 0.3516E-01 | 0.1157E+02 |
| 14 | 0.1795E-02 | 0.2030E+00 | 0.2070E+00 | -0.3987E-02 | -0.1926E+01 |
| 15 | 0.2224E-02 | 0.1600E+00 | 0.1579E+00 | 0.2072E-02 | 0.1312E+01 |
| 16 | 0.2850E-02 | 0.1100E+00 | 0.1173E+00 | -0.7254E-02 | -0.6187E+01 |
| 17 | 0.3600E-02 | 0.8800E-01 | 0.8950E-01 | -0.1495E-02 | -0.1671E+01 |
| 18 | 0.4490E-02 | 0.6400E-01 | 0.7030E-01 | -0.6301E-02 | -0.8962E+01 |
| 19 | 0.5700E-02 | 0.5000E-01 | 0.5319E-01 | -0.3185E-02 | -0.5989E+01 |
| 20 | 0.7190E-02 | 0.3800E-01 | 0.3997E-01 | -0.1971E-02 | -0.4930E+01 |
| 21 | 0.8800E-02 | 0.3000E-01 | 0.3104E-01 | -0.1040E-02 | -0.3349E+01 |
| 22 | 0.1100E-01 | 0.2300E-01 | 0.2322E-01 | -0.2205E-03 | -0.9498E+00 |
| 23 | 0.1400E-01 | 0.1700E-01 | 0.1696E-01 | 0.4177E-04 | 0.2463E+00 |
| 24 | 0.1800E-01 | 0.1300E-01 | 0.1200E-01 | 0.1003E-02 | 0.8356E+01 |

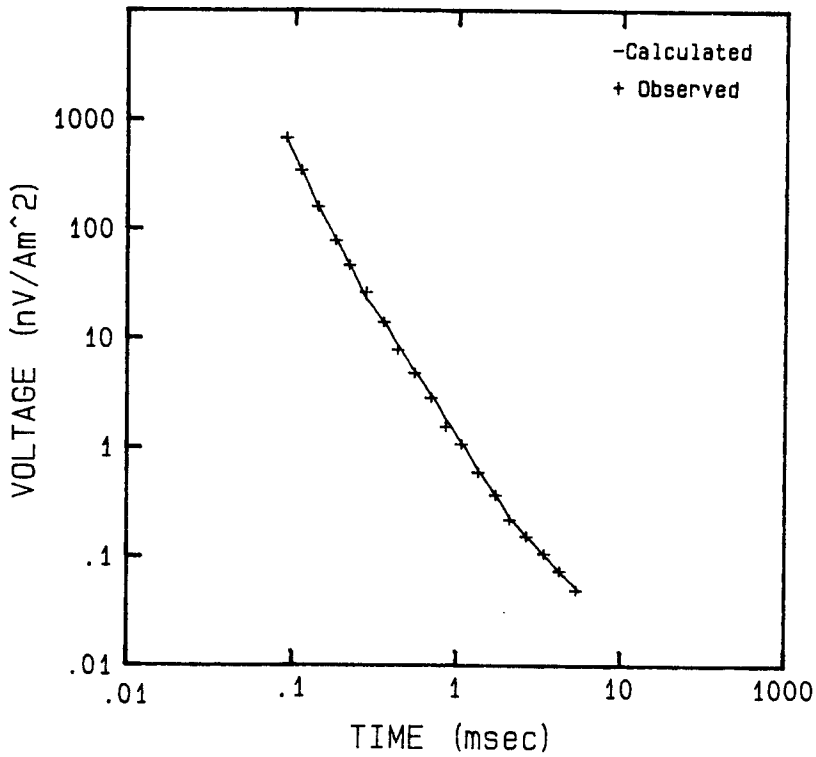
** %RMSERR= 7.46

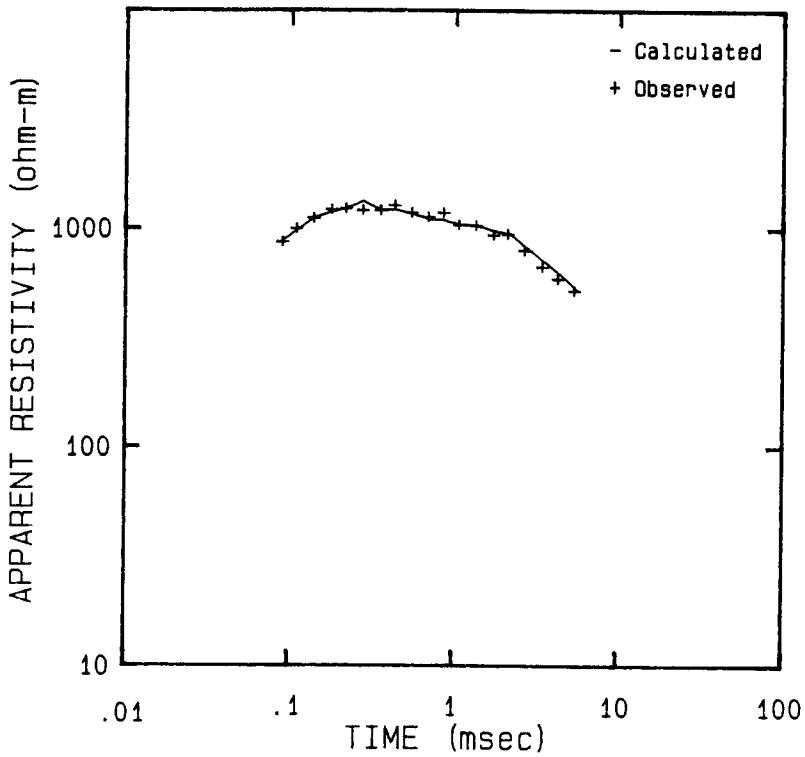
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.64192E-02 | 0.15578E+03 | |
| 2 | SIGMA( 2) = | 0.61050E-03 | 0.16380E+04 | |
| 3 | SIGMA( 3) = | 0.31280E-01 | 0.31969E+02 | |
| 4 | THICK( 1) = | 0.15632E+02 | | 0.15632E+02 |
| 5 | THICK( 2) = | 0.10955E+04 | | 0.11112E+04 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML04




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 100 | 10.44 |
| 2108 | 509.85 |
| 397.72 | 668.39 |
| 36 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 4 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.6848E+03 | 0.6766E+03 | 0.8275E+01 | 0.1223E+01 |
| 2 | 0.1100E-03 | 0.3445E+03 | 0.3540E+03 | -0.9553E+01 | -0.2698E+01 |
| 3 | 0.1400E-03 | 0.1609E+03 | 0.1611E+03 | -0.1955E+00 | -0.1213E+00 |
| 4 | 0.1770E-03 | 0.7866E+02 | 0.8165E+02 | -0.2992E+01 | -0.3665E+01 |
| 5 | 0.2200E-03 | 0.4680E+02 | 0.4691E+02 | -0.1111E+00 | -0.2368E+00 |
| 6 | 0.2800E-03 | 0.2640E+02 | 0.2277E+02 | 0.3633E+01 | 0.1595E+02 |
| 7 | 0.3550E-03 | 0.1407E+02 | 0.1404E+02 | 0.3561E-01 | 0.2537E+00 |
| 8 | 0.4430E-03 | 0.7857E+01 | 0.8402E+01 | -0.5455E+00 | -0.6492E+01 |
| 9 | 0.5540E-03 | 0.4833E+01 | 0.4925E+01 | -0.9207E-01 | -0.1869E+01 |
| 10 | 0.7130E-03 | 0.2859E+01 | 0.2984E+01 | -0.1249E+00 | -0.4186E+01 |
| 11 | 0.8810E-03 | 0.1558E+01 | 0.1764E+01 | -0.2061E+00 | -0.1168E+02 |
| 12 | 0.1096E-02 | 0.1082E+01 | 0.1080E+01 | 0.2025E-02 | 0.1875E+00 |
| 13 | 0.1411E-02 | 0.6050E+00 | 0.5970E+00 | 0.7956E-02 | 0.1333E+01 |
| 14 | 0.1795E-02 | 0.3710E+00 | 0.3456E+00 | 0.2539E-01 | 0.7346E+01 |
| 15 | 0.2244E-02 | 0.2210E+00 | 0.2205E+00 | 0.4636E-03 | 0.2102E+00 |
| 16 | 0.2850E-02 | 0.1560E+00 | 0.1467E+00 | 0.9276E-02 | 0.6322E+01 |
| 17 | 0.3600E-02 | 0.1080E+00 | 0.1009E+00 | 0.7085E-02 | 0.7021E+01 |
| 18 | 0.4490E-02 | 0.7500E-01 | 0.7351E-01 | 0.1487E-02 | 0.2023E+01 |
| 19 | 0.5700E-02 | 0.5000E-01 | 0.5358E-01 | -0.3576E-02 | -0.6674E+01 |

** %RMSERR= 5.94

CORRELATION MATRIX

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.8228E-01 | 0.1000E+01 | | | | | |
| 3 | 0.1053E+00 | -0.5248E-01 | 0.1000E+01 | | | | |
| 4 | -0.1236E+00 | -0.2726E+00 | -0.3477E+00 | 0.1000E+01 | | | |
| 5 | -0.3255E+00 | 0.4315E+00 | 0.5091E+00 | -0.5723E+00 | 0.1000E+01 | | |
| 6 | 0.2283E+00 | -0.2481E+00 | -0.6885E-01 | -0.2980E+00 | 0.1545E+00 | 0.1000E+01 | |
| 7 | 0.2989E-01 | -0.5120E+00 | -0.4706E+00 | 0.3799E+00 | -0.8612E+00 | -0.1043E+00 | 0.1000E |

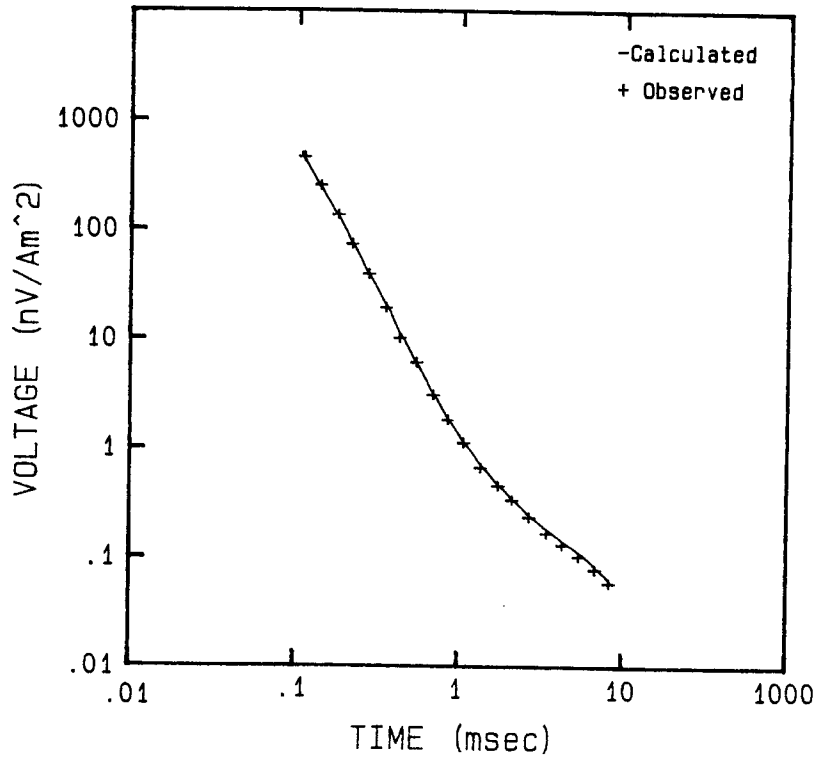
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.9960E-02 | 0.2328E-03 | 0.2337E-01 | 0.2337E+01 |
| 2 | 0.4744E-03 | 0.2336E-03 | 0.4924E+00 | 0.4924E+02 |
| 3 | 0.2514E-02 | 0.5017E-03 | 0.1995E+00 | 0.1995E+02 |
| 4 | 0.2777E-01 | 0.9468E-02 | 0.3409E+00 | 0.3409E+02 |
| 5 | 0.1044E+02 | 0.2459E-03 | 0.2356E-04 | 0.2356E-02 |
| 6 | 0.5099E+03 | 0.2337E-02 | 0.4583E-05 | 0.4583E-03 |
| 7 | 0.6684E+03 | 0.3035E-02 | 0.4540E-05 | 0.4540E-03 |

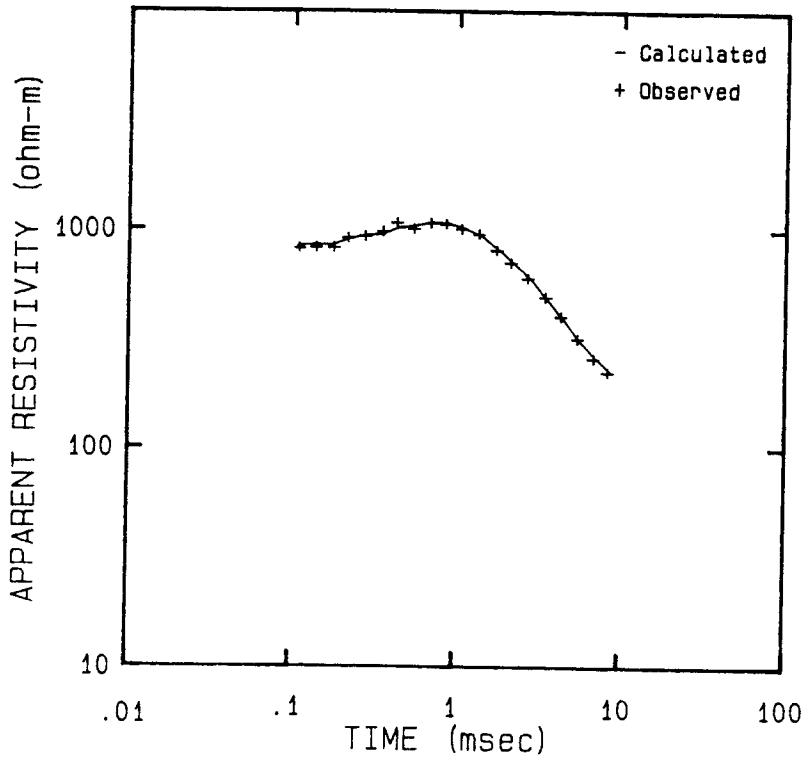
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.99599E-02 | 0.10040E+03 | |
| 2 | SIGMA( 2) | = | 0.47438E-03 | 0.21080E+04 | |
| 3 | SIGMA( 3) | = | 0.25143E-02 | 0.39772E+03 | |
| 4 | SIGMA( 4) | = | 0.27775E-01 | 0.36004E+02 | |
| 5 | THICK( 1) | = | 0.10437E+02 | | 0.10437E+02 |
| 6 | THICK( 2) | = | 0.50985E+03 | | 0.52029E+03 |
| 7 | THICK( 3) | = | 0.66839E+03 | | 0.11887E+04 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML05




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 168.32 | 4.63 |
| 919.47 | 760.15 |
| 81.13 | 172.21 |
| 19.33 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 5 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.1100E-03 | 0.4620E+03 | 0.4428E+03 | 0.1915E+02 | 0.4325E+01 |
| 2 | 0.1400E-03 | 0.2525E+03 | 0.2410E+03 | 0.1152E+02 | 0.4780E+01 |
| 3 | 0.1770E-03 | 0.1366E+03 | 0.1312E+03 | 0.5486E+01 | 0.4183E+01 |
| 4 | 0.2200E-03 | 0.7381E+02 | 0.7473E+02 | -0.9228E+00 | -0.1235E+01 |
| 5 | 0.2800E-03 | 0.3929E+02 | 0.3863E+02 | 0.6617E+00 | 0.1713E+01 |
| 6 | 0.3550E-03 | 0.1937E+02 | 0.2017E+02 | -0.7953E+00 | -0.3943E+01 |
| 7 | 0.4430E-03 | 0.1024E+02 | 0.1104E+02 | -0.7902E+00 | -0.7160E+01 |
| 8 | 0.5540E-03 | 0.6160E+01 | 0.5879E+01 | 0.2808E+00 | 0.4776E+01 |
| 9 | 0.7130E-03 | 0.3115E+01 | 0.3062E+01 | 0.5346E-01 | 0.1746E+01 |
| 10 | 0.8810E-03 | 0.1848E+01 | 0.1807E+01 | 0.4149E-01 | 0.2297E+01 |
| 11 | 0.1096E-02 | 0.1139E+01 | 0.1116E+01 | 0.2301E-01 | 0.2062E+01 |
| 12 | 0.1411E-02 | 0.6740E+00 | 0.6858E+00 | -0.1176E-01 | -0.1715E+01 |
| 13 | 0.1795E-02 | 0.4650E+00 | 0.4556E+00 | 0.9442E-02 | 0.2073E+01 |
| 14 | 0.2224E-02 | 0.3440E+00 | 0.3361E+00 | 0.7913E-02 | 0.2354E+01 |
| 15 | 0.2850E-02 | 0.2410E+00 | 0.2397E+00 | 0.1259E-02 | 0.5253E+00 |
| 16 | 0.3600E-02 | 0.1720E+00 | 0.1806E+00 | -0.8647E-02 | -0.4787E+01 |
| 17 | 0.4490E-02 | 0.1340E+00 | 0.1398E+00 | -0.5849E-02 | -0.4182E+01 |
| 18 | 0.5700E-02 | 0.1050E+00 | 0.1055E+00 | -0.5412E-03 | -0.5128E+00 |
| 19 | 0.7190E-02 | 0.8000E-01 | 0.7984E-01 | 0.1609E-03 | 0.2016E+00 |
| 20 | 0.8800E-02 | 0.6000E-01 | 0.6173E-01 | -0.1726E-02 | -0.2796E+01 |

** %RMSERR= 3.37

CORRELATION MATRIX

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | 0.3968E+00 | 0.1000E+01 | | | | | |
| 3 | -0.9281E+00 | -0.4539E+00 | 0.1000E+01 | | | | |
| 4 | 0.2512E+00 | 0.3905E-01 | -0.3349E+00 | 0.1000E+01 | | | |
| 5 | -0.8529E+00 | -0.2649E+00 | 0.7001E+00 | -0.2090E+00 | 0.1000E+01 | | |
| 6 | -0.9290E+00 | -0.2535E+00 | 0.9090E+00 | -0.3395E+00 | 0.7012E+00 | 0.1000E+01 | |
| 7 | -0.6683E+00 | -0.4527E+00 | 0.5306E+00 | -0.3904E-01 | 0.8448E+00 | 0.4408E+00 | 0.1000E |

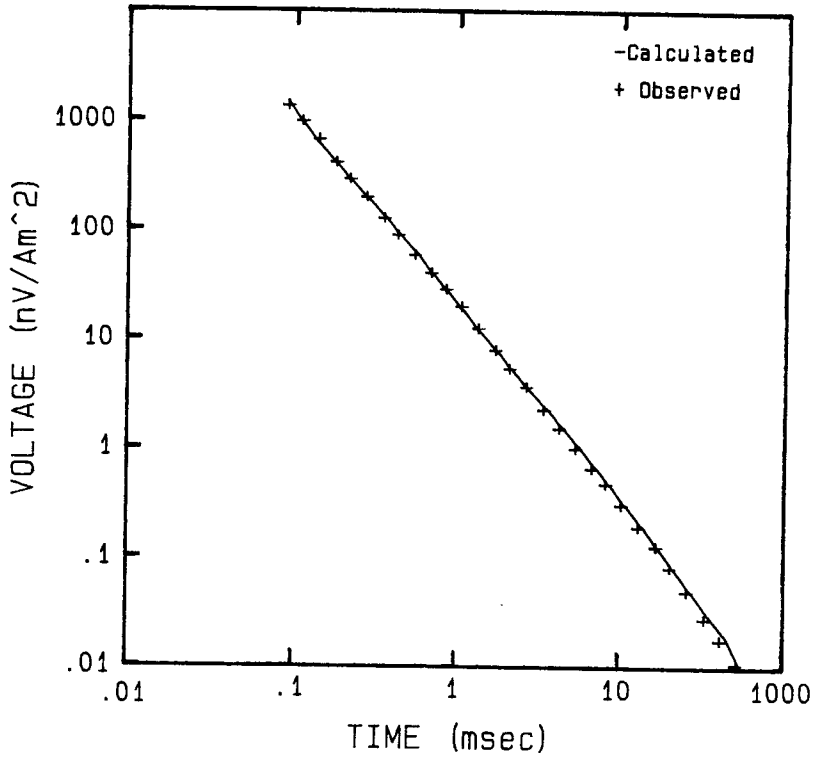
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.5941E-02 | 0.6033E-03 | 0.1015E+00 | 0.1015E+02 |
| 2 | 0.1088E-02 | 0.1446E-03 | 0.1330E+00 | 0.1330E+02 |
| 3 | 0.1233E-01 | 0.1918E-02 | 0.1556E+00 | 0.1556E+02 |
| 4 | 0.5174E-01 | 0.2201E-02 | 0.4254E-01 | 0.4254E+01 |
| 5 | 0.4630E+01 | 0.8381E-04 | 0.1810E-04 | 0.1810E-02 |
| 6 | 0.7601E+03 | 0.2030E-02 | 0.2670E-05 | 0.2670E-03 |
| 7 | 0.1722E+03 | 0.4270E-02 | 0.2480E-04 | 0.2480E-02 |

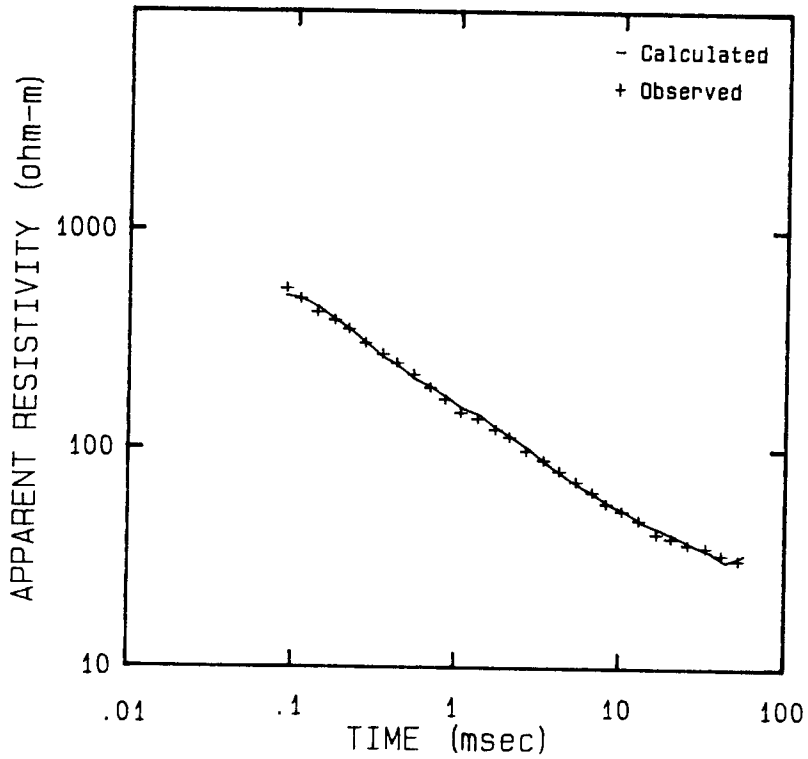
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.59411E-02 | 0.16832E+03 | |
| 2 | SIGMA( 2) | = | 0.10876E-02 | 0.91947E+03 | |
| 3 | SIGMA( 3) | = | 0.12325E-01 | 0.81133E+02 | |
| 4 | SIGMA( 4) | = | 0.51741E-01 | 0.19327E+02 | |
| 5 | THICK( 1) | = | 0.46304E+01 | | 0.46304E+01 |
| 6 | THICK( 2) | = | 0.76015E+03 | | 0.76478E+03 |
| 7 | THICK( 3) | = | 0.17221E+03 | | 0.93699E+03 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML06




## MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 422.74 | 191.32 |
| 49.36 | 190.79 |
| 20.095 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 6 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1349E+04 | 0.1485E+04 | -0.1361E+03 | -0.9162E+01 |
| 2 | 0.1100E-03 | 0.9717E+03 | 0.9639E+03 | 0.7732E+01 | 0.8022E+00 |
| 3 | 0.1400E-03 | 0.6669E+03 | 0.6087E+03 | 0.5823E+02 | 0.9567E+01 |
| 4 | 0.1770E-03 | 0.4106E+03 | 0.4027E+03 | 0.7955E+01 | 0.1975E+01 |
| 5 | 0.2200E-03 | 0.2884E+03 | 0.2853E+03 | 0.3071E+01 | 0.1076E+01 |
| 6 | 0.2800E-03 | 0.1975E+03 | 0.1952E+03 | 0.2233E+01 | 0.1144E+01 |
| 7 | 0.3550E-03 | 0.1266E+03 | 0.1323E+03 | -0.5754E+01 | -0.4348E+01 |
| 8 | 0.4430E-03 | 0.8871E+02 | 0.9173E+02 | -0.3024E+01 | -0.3296E+01 |
| 9 | 0.5540E-03 | 0.5863E+02 | 0.6255E+02 | -0.3924E+01 | -0.6273E+01 |
| 10 | 0.7130E-03 | 0.4004E+02 | 0.3964E+02 | 0.4002E+00 | 0.1010E+01 |
| 11 | 0.8810E-03 | 0.2834E+02 | 0.2720E+02 | 0.1135E+01 | 0.4172E+01 |
| 12 | 0.1096E-02 | 0.1974E+02 | 0.1838E+02 | 0.1360E+01 | 0.7398E+01 |
| 13 | 0.1411E-02 | 0.1245E+02 | 0.1172E+02 | 0.7272E+00 | 0.6203E+01 |
| 14 | 0.1795E-02 | 0.7600E+01 | 0.7726E+01 | 0.7422E-01 | 0.9607E+00 |
| 15 | 0.2224E-02 | 0.5390E+01 | 0.5371E+01 | 0.1856E-01 | 0.3454E+00 |
| 16 | 0.2850E-02 | 0.3668E+01 | 0.3513E+01 | 0.1553E+00 | 0.4421E+01 |
| 17 | 0.3600E-02 | 0.2261E+01 | 0.2358E+01 | -0.9684E-01 | -0.4107E+01 |
| 18 | 0.4490E-02 | 0.1529E+01 | 0.1609E+01 | -0.8010E-01 | -0.4978E+01 |
| 19 | 0.5700E-02 | 0.1000E+01 | 0.1055E+01 | -0.5550E-01 | -0.5258E+01 |
| 20 | 0.7190E-02 | 0.6600E+00 | 0.6935E+00 | -0.3354E-01 | -0.4836E+01 |
| 21 | 0.8800E-02 | 0.4790E+00 | 0.4782E+00 | 0.7694E-03 | 0.1609E+00 |
| 22 | 0.1100E-01 | 0.3070E+00 | 0.3140E+00 | -0.7042E-02 | -0.2242E+01 |
| 23 | 0.1400E-01 | 0.1900E+00 | 0.1969E+00 | -0.6936E-02 | -0.3522E+01 |
| 24 | 0.1800E-01 | 0.1280E+00 | 0.1198E+00 | 0.8185E-02 | 0.6831E+01 |
| 25 | 0.2200E-01 | 0.8300E-01 | 0.7986E-01 | 0.3140E-02 | 0.3931E+01 |
| 26 | 0.2800E-01 | 0.5000E-01 | 0.4852E-01 | 0.1482E-02 | 0.3054E+01 |
| 27 | 0.3600E-01 | 0.2800E-01 | 0.2867E-01 | -0.6748E-03 | -0.2353E+01 |
| 28 | 0.4500E-01 | 0.1800E-01 | 0.1779E-01 | 0.2107E-03 | 0.1184E+01 |
| 29 | 0.5700E-01 | 0.1100E-01 | 0.1065E-01 | 0.3478E-03 | 0.3265E+01 |

** %RMSERR= 4.48

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.5772E+00 | 0.1000E+01 | | | |
| 3 | 0.1620E-01 | -0.2683E+00 | 0.1000E+01 | | |
| 4 | -0.2959E+00 | 0.3056E+00 | 0.2348E+00 | 0.1000E+01 | |
| 5 | -0.1354E+00 | -0.9620E-01 | -0.3342E+00 | -0.7294E-01 | 0.1000E+01 |

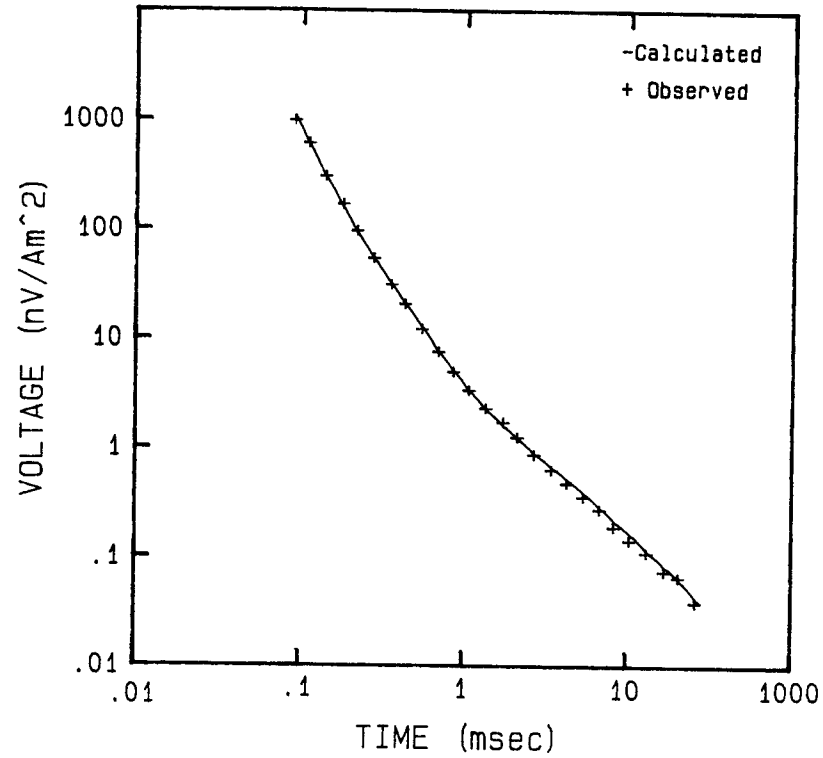
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2366E-02 | 0.3170E-03 | 0.1340E+00 | 0.1340E+02 |
| 2 | 0.2026E-01 | 0.1401E-02 | 0.6916E-01 | 0.6916E+01 |
| 3 | 0.4976E-01 | 0.1814E-02 | 0.3646E-01 | 0.3646E+01 |
| 4 | 0.1913E+03 | 0.1085E-02 | 0.5673E-05 | 0.5673E-03 |
| 5 | 0.1908E+03 | 0.2106E-02 | 0.1104E-04 | 0.1104E-02 |

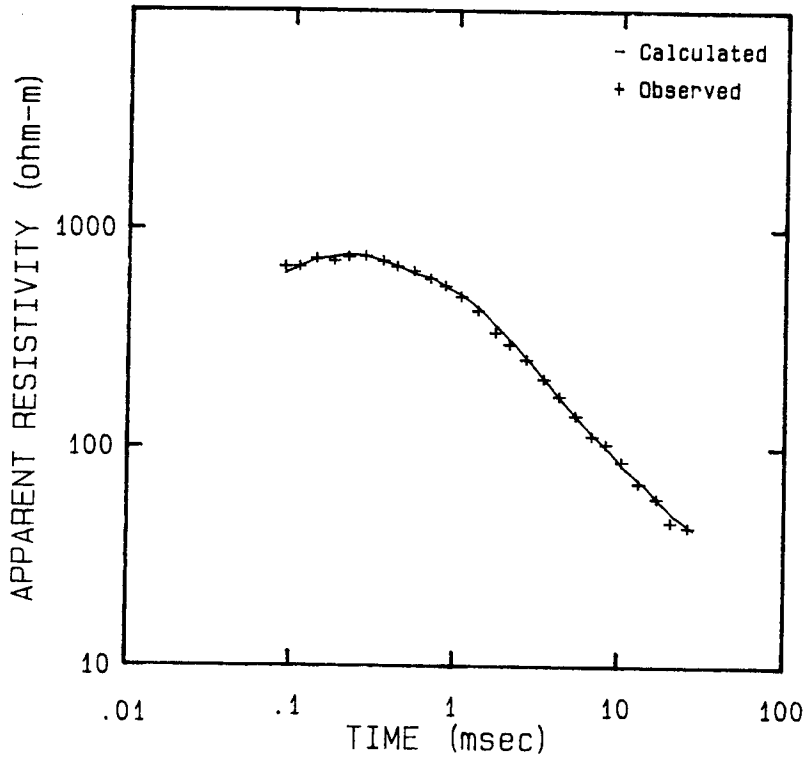
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.23655E-02 | 0.42274E+03 | |
| 2 | SIGMA( 2) | = | 0.20261E-01 | 0.49356E+02 | |
| 3 | SIGMA( 3) | = | 0.49764E-01 | 0.20095E+02 | |
| 4 | THICK( 1) | = | 0.19132E+03 | | 0.19132E+03 |
| 5 | THICK( 2) | = | 0.19078E+03 | | 0.38211E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML07




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 145.39 | 15.14 |
| 991.09 | 353.51 |
| 96.86 | 218.23 |
| 11.27 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 7 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.9870E+03 | 0.1094E+04 | -0.1067E+03 | -0.9756E+01 |
| 2 | 0.1100E-03 | 0.6126E+03 | 0.6171E+03 | -0.4499E+01 | -0.7291E+00 |
| 3 | 0.1400E-03 | 0.3032E+03 | 0.3029E+03 | 0.2621E+00 | 0.8653E-01 |
| 4 | 0.1770E-03 | 0.1690E+03 | 0.1585E+03 | 0.1049E+02 | 0.6619E+01 |
| 5 | 0.2200E-03 | 0.9608E+02 | 0.9219E+02 | 0.3893E+01 | 0.4223E+01 |
| 6 | 0.2800E-03 | 0.5427E+02 | 0.5379E+02 | 0.4848E+00 | 0.9013E+00 |
| 7 | 0.3550E-03 | 0.3124E+02 | 0.3142E+02 | -0.1793E+00 | -0.5706E+00 |
| 8 | 0.4430E-03 | 0.2071E+02 | 0.2056E+02 | 0.1411E+00 | 0.6863E+00 |
| 9 | 0.5540E-03 | 0.1218E+02 | 0.1270E+02 | -0.5222E+00 | -0.4112E+01 |
| 10 | 0.7130E-03 | 0.7600E+01 | 0.7480E+01 | 0.1202E+00 | 0.1607E+01 |
| 11 | 0.8810E-03 | 0.4981E+01 | 0.5048E+01 | -0.6682E-01 | -0.1324E+01 |
| 12 | 0.1096E-02 | 0.3382E+01 | 0.3318E+01 | 0.6418E-01 | 0.1934E+01 |
| 13 | 0.1411E-02 | 0.2308E+01 | 0.2219E+01 | 0.8899E-01 | 0.4010E+01 |
| 14 | 0.1795E-02 | 0.1733E+01 | 0.1582E+01 | 0.1515E+00 | 0.9576E+01 |
| 15 | 0.2224E-02 | 0.1266E+01 | 0.1201E+01 | 0.6543E-01 | 0.5450E+01 |
| 16 | 0.2850E-02 | 0.8760E+00 | 0.8811E+00 | -0.5145E-02 | -0.5639E+00 |
| 17 | 0.3600E-02 | 0.6370E+00 | 0.6648E+00 | -0.2783E-01 | -0.4186E+01 |
| 18 | 0.4490E-02 | 0.4800E+00 | 0.5085E+00 | -0.2852E-01 | -0.5609E+01 |
| 19 | 0.5700E-02 | 0.3620E+00 | 0.3770E+00 | -0.1497E-01 | -0.3971E+01 |
| 20 | 0.7190E-02 | 0.2770E+00 | 0.2790E+00 | -0.2030E-02 | -0.7277E+00 |
| 21 | 0.8800E-02 | 0.1910E+00 | 0.2127E+00 | -0.2166E-01 | -0.1018E+02 |
| 22 | 0.1100E-01 | 0.1440E+00 | 0.1556E+00 | -0.1156E-01 | -0.7429E+01 |
| 23 | 0.1400E-01 | 0.1110E+00 | 0.1101E+00 | 0.9499E-03 | 0.8631E+00 |
| 24 | 0.1800E-01 | 0.7500E-01 | 0.7563E-01 | -0.6306E-03 | -0.8338E+00 |
| 25 | 0.2200E-01 | 0.6600E-01 | 0.5528E-01 | 0.1072E-01 | 0.1938E+02 |
| 26 | 0.2800E-01 | 0.3900E-01 | 0.3727E-01 | 0.1729E-02 | 0.4639E+01 |

** %RMSERR= 6.03

CORRELATION MATRIX

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | |
| 2 | -0.8697E-01 | 0.1000E+01 | | | | |
| 3 | 0.5676E+00 | 0.1100E+00 | 0.1000E+01 | | | |
| 4 | 0.1329E+00 | 0.7866E-01 | -0.1012E+00 | 0.1000E+01 | | |
| 5 | -0.7541E+00 | -0.9614E-01 | -0.6797E+00 | -0.1216E+00 | 0.1000E+01 | |
| 6 | 0.3512E+00 | 0.2664E+00 | 0.7190E+00 | -0.9649E-01 | -0.4534E+00 | 0.1000E+01 |
| 7 | -0.6703E-01 | -0.4882E+00 | -0.6306E+00 | 0.1416E+00 | 0.2709E+00 | -0.7451E+00 0.1000E |

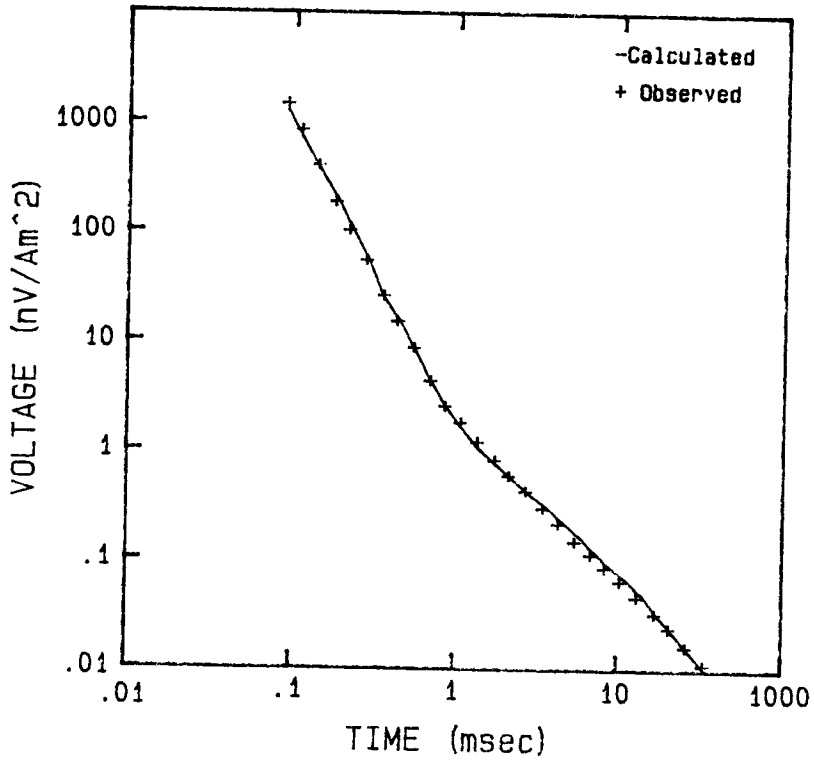
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.6878E-02 | 0.3427E-03 | 0.4982E-01 | 0.4982E+01 |
| 2 | 0.1009E-02 | 0.3749E-03 | 0.3716E+00 | 0.3716E+02 |
| 3 | 0.1032E-01 | 0.2500E-02 | 0.2422E+00 | 0.2422E+02 |
| 4 | 0.8876E-01 | 0.4269E-02 | 0.4809E-01 | 0.4809E+01 |
| 5 | 0.1514E+02 | 0.3980E-03 | 0.2629E-04 | 0.2629E-02 |
| 6 | 0.3535E+03 | 0.3079E-02 | 0.8710E-05 | 0.8710E-03 |
| 7 | 0.2182E+03 | 0.5074E-02 | 0.2325E-04 | 0.2325E-02 |

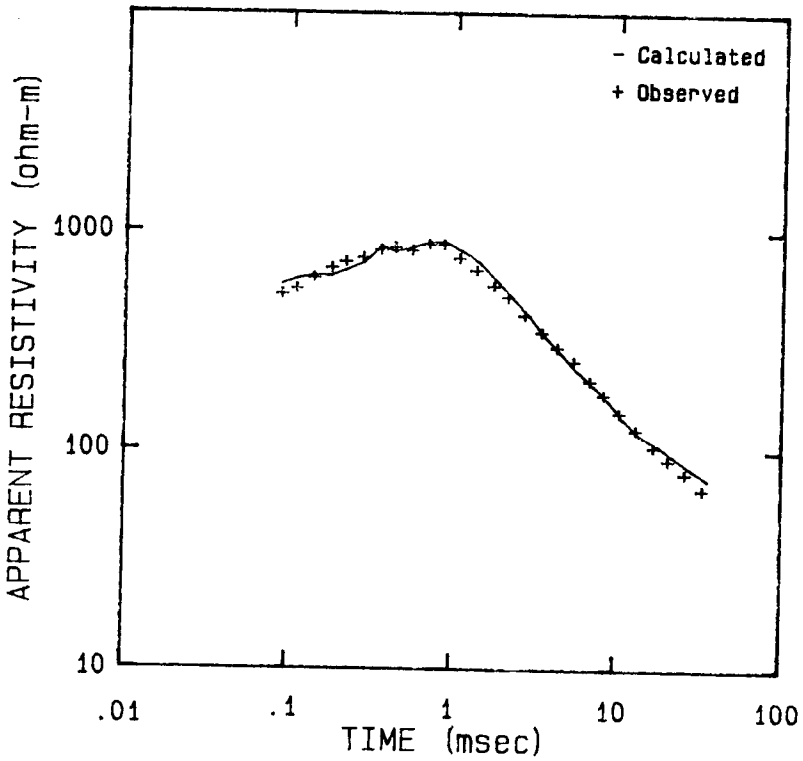
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.68778E-02 | 0.14539E+03 | |
| 2 | SIGMA( 2) = | 0.10090E-02 | 0.99109E+03 | |
| 3 | SIGMA( 3) = | 0.10324E-01 | 0.96864E+02 | |
| 4 | SIGMA( 4) = | 0.88759E-01 | 0.11266E+02 | |
| 5 | THICK( 1) = | 0.15139E+02 | | 0.15139E+02 |
| 6 | THICK( 2) = | 0.35352E+03 | | 0.36865E+03 |
| 7 | THICK( 3) = | 0.21822E+03 | | 0.58688E+03 |
| 8 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML08




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 101.67 | 6.38 |
| 755.82 | 724.86 |
| 24.97 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 8 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1442E+04 | 0.1249E+04 | 0.1926E+03 | 0.1541E+02 |
| 2 | 0.1100E-03 | 0.8305E+03 | 0.7194E+03 | 0.1111E+03 | 0.1545E+02 |
| 3 | 0.1400E-03 | 0.3948E+03 | 0.3798E+03 | 0.1501E+02 | 0.3953E+01 |
| 4 | 0.1770E-03 | 0.1829E+03 | 0.2066E+03 | -0.2366E+02 | -0.1145E+02 |
| 5 | 0.2200E-03 | 0.1003E+03 | 0.1158E+03 | -0.1555E+02 | -0.1343E+02 |
| 6 | 0.2800E-03 | 0.5374E+02 | 0.5855E+02 | -0.4806E+01 | -0.8209E+01 |
| 7 | 0.3850E-03 | 0.2553E+02 | 0.2407E+02 | 0.1462E+01 | 0.6073E+01 |
| 8 | 0.4430E-03 | 0.1489E+02 | 0.1579E+02 | -0.9079E+00 | -0.5748E+01 |
| 9 | 0.5540E-03 | 0.8535E+01 | 0.8072E+01 | 0.4628E+00 | 0.5733E+01 |
| 10 | 0.7130E-03 | 0.4274E+01 | 0.4125E+01 | 0.1494E+00 | 0.3622E+01 |
| 11 | 0.8810E-03 | 0.2499E+01 | 0.2426E+01 | 0.7340E-01 | 0.3026E+01 |
| 12 | 0.1096E-02 | 0.1778E+01 | 0.1564E+01 | 0.2136E+00 | 0.1365E+02 |
| 13 | 0.1411E-02 | 0.1179E+01 | 0.1017E+01 | 0.1623E+00 | 0.1596E+02 |
| 14 | 0.1795E-02 | 0.8060E+00 | 0.7330E+00 | 0.7299E-01 | 0.9957E+01 |
| 15 | 0.2224E-02 | 0.5810E+00 | 0.5619E+00 | 0.1914E-01 | 0.3407E+01 |
| 16 | 0.2850E-02 | 0.4210E+00 | 0.4096E+00 | 0.1137E-01 | 0.2777E+01 |
| 17 | 0.3600E-02 | 0.2950E+00 | 0.3087E+00 | -0.1373E-01 | -0.4446E+01 |
| 18 | 0.4490E-02 | 0.2140E+00 | 0.2315E+00 | -0.1751E-01 | -0.7563E+01 |
| 19 | 0.5700E-02 | 0.1470E+00 | 0.1685E+00 | -0.2147E-01 | -0.1274E+02 |
| 20 | 0.7190E-02 | 0.1120E+00 | 0.1230E+00 | -0.1095E-01 | -0.8909E+01 |
| 21 | 0.8800E-02 | 0.8400E-01 | 0.9219E-01 | -0.8186E-02 | -0.8880E+01 |
| 22 | 0.1100E-01 | 0.6200E-01 | 0.6661E-01 | -0.4607E-02 | -0.6916E+01 |
| 23 | 0.1400E-01 | 0.4600E-01 | 0.4617E-01 | -0.1687E-03 | -0.3654E+00 |
| 24 | 0.1800E-01 | 0.3200E-01 | 0.3095E-01 | 0.1046E-02 | 0.3380E+01 |
| 25 | 0.2200E-01 | 0.2400E-01 | 0.2213E-01 | 0.1865E-02 | 0.8427E+01 |
| 26 | 0.2800E-01 | 0.1600E-01 | 0.1461E-01 | 0.1386E-02 | 0.9484E+01 |
| 27 | 0.3600E-01 | 0.1100E-01 | 0.9366E-02 | 0.1634E-02 | 0.1745E+02 |

** %RMSERR= 9.58

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3238E-01 | 0.1000E+01 | | | |
| 3 | -0.1302E+00 | -0.2441E+00 | 0.1000E+01 | | |
| 4 | -0.8194E+00 | -0.6772E-01 | 0.3867E-01 | 0.1000E+01 | |
| 5 | 0.6168E+00 | 0.3933E-01 | 0.9897E-01 | -0.7324E+00 | 0.1000E+01 |

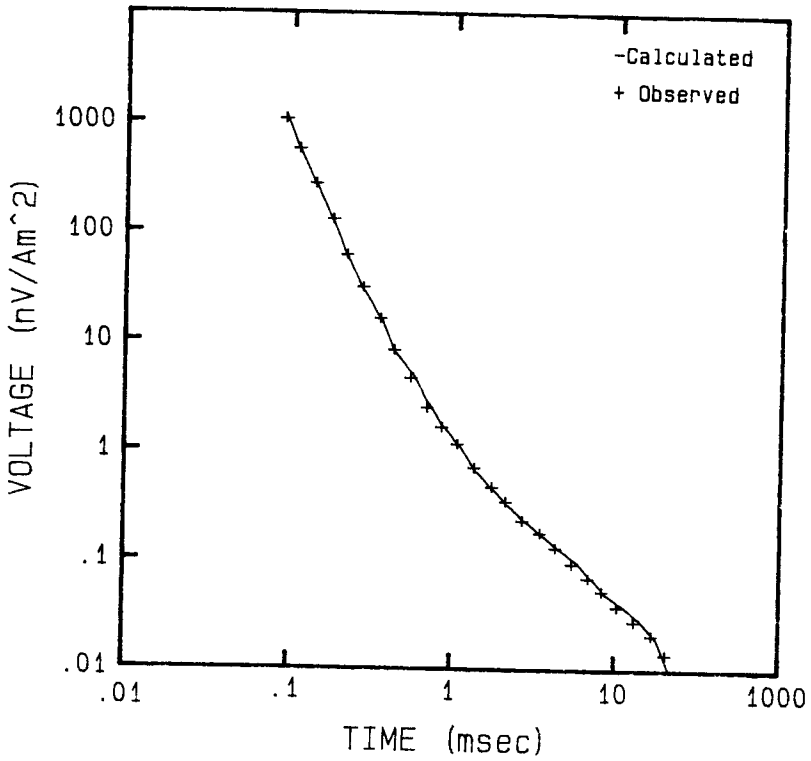
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.9835E-02 | 0.4319E-03 | 0.4391E-01 | 0.4391E+01 |
| 2 | 0.1323E-02 | 0.2947E-03 | 0.2227E+00 | 0.2227E+02 |
| 3 | 0.4005E-01 | 0.2255E-02 | 0.5632E-01 | 0.5632E+01 |
| 4 | 0.6380E+01 | 0.1265E-03 | 0.1983E-04 | 0.1983E-02 |
| 5 | 0.7249E+03 | 0.1821E-02 | 0.2513E-05 | 0.2513E-03 |

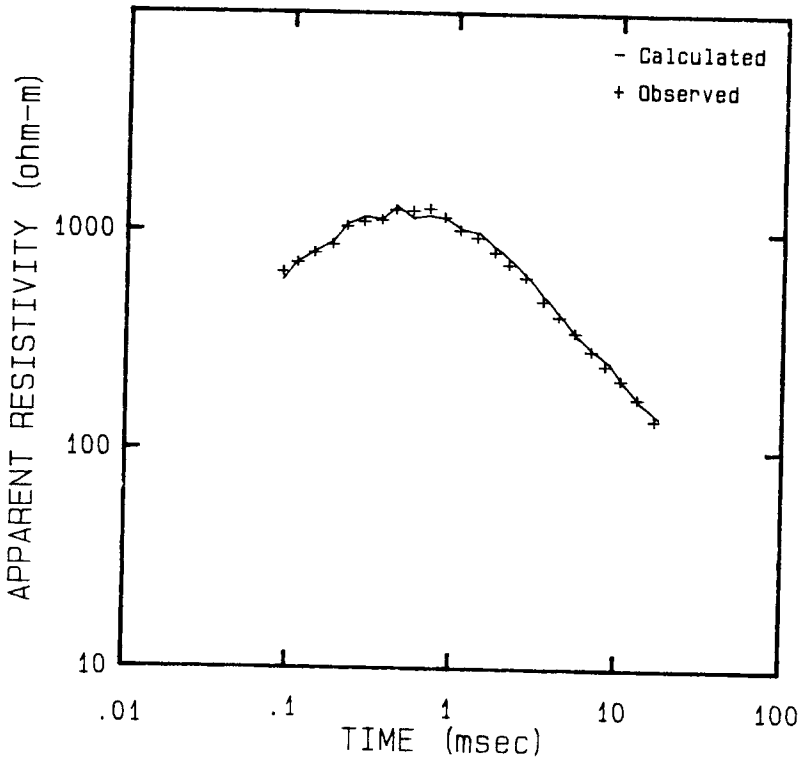
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.98353E-02 | 0.10167E+03 | |
| 2 | SIGMA( 2) = | 0.13231E-02 | 0.75582E+03 | |
| 3 | SIGMA( 3) = | 0.40047E-01 | 0.24971E+02 | |
| 4 | THICK( 1) = | 0.63803E+01 | | 0.63803E+01 |
| 5 | THICK( 2) = | 0.72485E+03 | | 0.73124E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML09




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 206.4 | 37.2 |
| 2829.3 | 532.3 |
| 228.39 | 376.64 |
| 26.13 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 9 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1050E+04 | 0.1174E+04 | -0.1240E+03 | -0.1056E+02 |
| 2 | 0.1100E-03 | 0.5640E+03 | 0.5625E+03 | 0.1525E+01 | 0.2710E+00 |
| 3 | 0.1400E-03 | 0.2699E+03 | 0.2651E+03 | 0.4764E+01 | 0.1797E+01 |
| 4 | 0.1770E-03 | 0.1284E+03 | 0.1221E+03 | 0.6315E+01 | 0.5171E+01 |
| 5 | 0.2200E-03 | 0.6055E+02 | 0.5859E+02 | 0.1958E+01 | 0.3342E+01 |
| 6 | 0.2800E-03 | 0.3066E+02 | 0.2849E+02 | 0.2162E+01 | 0.7586E+01 |
| 7 | 0.3550E-03 | 0.1590E+02 | 0.1568E+02 | 0.2295E+00 | 0.1464E+01 |
| 8 | 0.4430E-03 | 0.8200E+01 | 0.7812E+01 | 0.3879E+00 | 0.4965E+01 |
| 9 | 0.5540E-03 | 0.4555E+01 | 0.5121E+01 | -0.5661E+00 | -0.1105E+02 |
| 10 | 0.7130E-03 | 0.2437E+01 | 0.2711E+01 | -0.2738E+00 | -0.1010E+02 |
| 11 | 0.8810E-03 | 0.1633E+01 | 0.1662E+01 | -0.2910E-01 | -0.1751E+01 |
| 12 | 0.1096E-02 | 0.1146E+01 | 0.1121E+01 | 0.2469E-01 | 0.2202E+01 |
| 13 | 0.1411E-02 | 0.7000E+00 | 0.6456E+00 | 0.5442E-01 | 0.8430E+01 |
| 14 | 0.1795E-02 | 0.4690E+00 | 0.4440E+00 | 0.2499E-01 | 0.5629E+01 |
| 15 | 0.2224E-02 | 0.3460E+00 | 0.3226E+00 | 0.2343E-01 | 0.7262E+01 |
| 16 | 0.2850E-02 | 0.2320E+00 | 0.2315E+00 | 0.5057E-03 | 0.2185E+00 |
| 17 | 0.3600E-02 | 0.1800E+00 | 0.1720E+00 | 0.7960E-02 | 0.4627E+01 |
| 18 | 0.4490E-02 | 0.1310E+00 | 0.1309E+00 | 0.1129E-03 | 0.8626E-01 |
| 19 | 0.5700E-02 | 0.9300E-01 | 0.9638E-01 | -0.3381E-02 | -0.3508E+01 |
| 20 | 0.7190E-02 | 0.7000E-01 | 0.7093E-01 | -0.9258E-03 | -0.1305E+01 |
| 21 | 0.8800E-02 | 0.5300E-01 | 0.5416E-01 | -0.1158E-02 | -0.2139E+01 |
| 22 | 0.1100E-01 | 0.3800E-01 | 0.3989E-01 | -0.1888E-02 | -0.4733E+01 |
| 23 | 0.1400E-01 | 0.2800E-01 | 0.2838E-01 | -0.3768E-03 | -0.1328E+01 |
| 24 | 0.1800E-01 | 0.2100E-01 | 0.1960E-01 | 0.1396E-02 | 0.7120E+01 |
| 25 | 0.2200E-01 | 0.1400E-01 | 0.1441E-01 | -0.4074E-03 | -0.2828E+01 |

** %RMSERR= 5.47

CORRELATION MATRIX

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.1190E+00 | 0.1000E+01 | | | | | |
| 3 | 0.3993E+00 | -0.6607E-01 | 0.1000E+01 | | | | |
| 4 | 0.2305E+00 | 0.8269E-01 | -0.2438E+00 | 0.1000E+01 | | | |
| 5 | -0.3606E+00 | -0.5160E+00 | -0.3154E+00 | -0.4441E+00 | 0.1000E+01 | | |
| 6 | -0.5011E+00 | 0.1688E+00 | -0.2685E+00 | 0.1847E-01 | 0.2037E-01 | 0.1000E+01 | |
| 7 | 0.4613E-01 | 0.2396E+00 | -0.3621E+00 | 0.8124E-01 | -0.1201E+00 | -0.4467E+00 | 0.1000E |

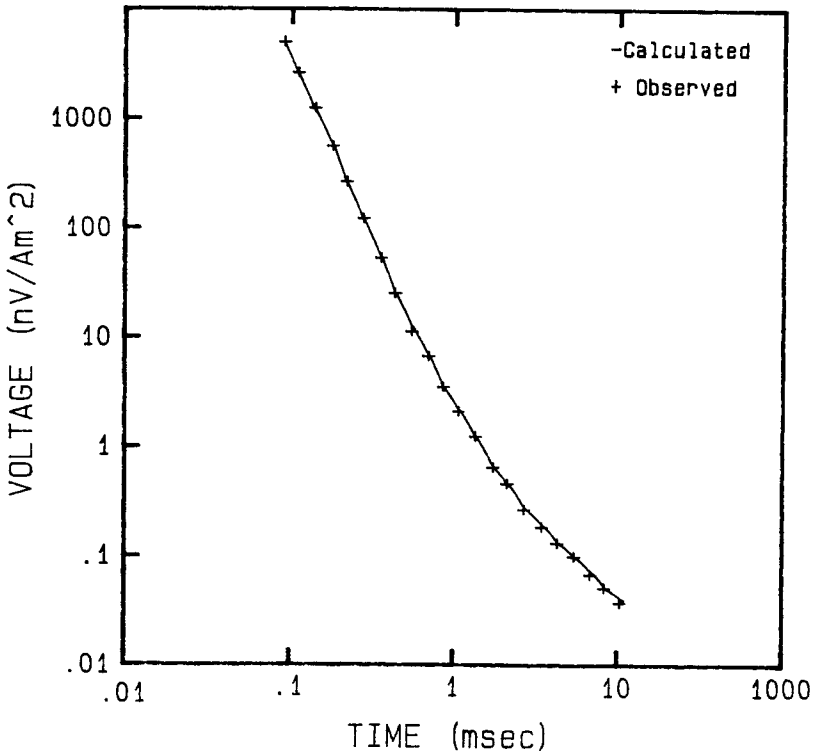
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4845E-02 | 0.1261E-03 | 0.2604E-01 | 0.2604E+01 |
| 2 | 0.3534E-03 | 0.1437E-03 | 0.4066E+00 | 0.4066E+02 |
| 3 | 0.4378E-02 | 0.5335E-03 | 0.1218E+00 | 0.1218E+02 |
| 4 | 0.3827E-01 | 0.2460E-02 | 0.6429E-01 | 0.6429E+01 |
| 5 | 0.3720E+02 | 0.3369E-03 | 0.9056E-05 | 0.9056E-03 |
| 6 | 0.5323E+03 | 0.9177E-03 | 0.1724E-05 | 0.1724E-03 |
| 7 | 0.3766E+03 | 0.3387E-02 | 0.8993E-05 | 0.8993E-03 |

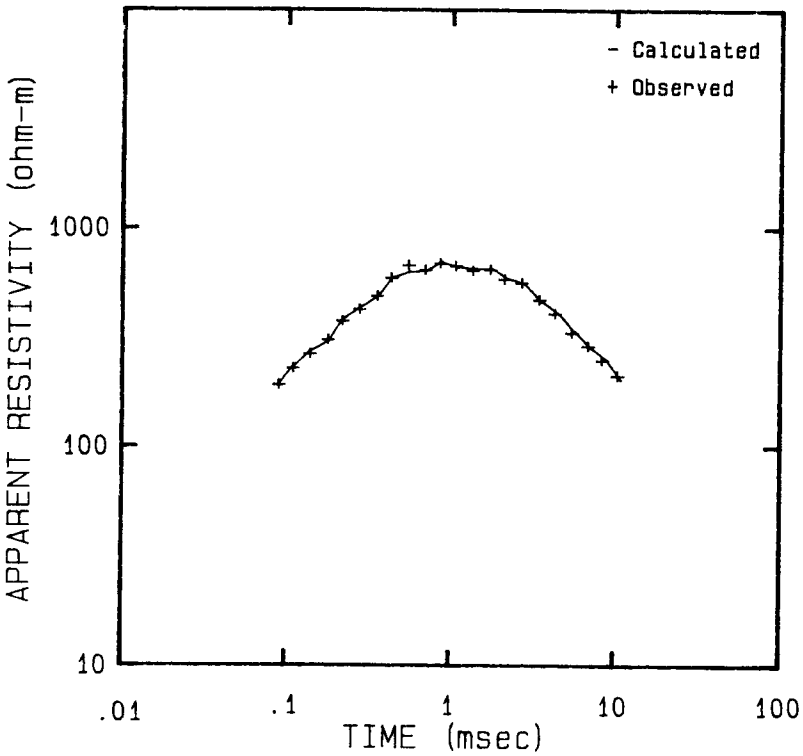
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.48451E-02 | 0.20640E+03 | |
| 2 | SIGMA( 2) = | 0.35345E-03 | 0.28293E+04 | |
| 3 | SIGMA( 3) = | 0.43785E-02 | 0.22839E+03 | |
| 4 | SIGMA( 4) = | 0.38267E-01 | 0.26132E+02 | |
| 5 | THICK( 1) = | 0.37204E+02 | | |
| 6 | THICK( 2) = | 0.53230E+03 | | 0.37204E+02 |
| 7 | THICK( 3) = | 0.37663E+03 | | 0.56950E+03 |
| 8 | SHIFT = | 0.20700E+03 | | 0.94614E+03 |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML10




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 98.4 | 36.36 |
| 2317 | 508.26 |
| 200 | 458.48 |
| 30.77 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 10  TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4995E+04 | 0.4964E+04 | 0.3111E+02 | 0.6268E+00 |
| 2 | 0.1100E-03 | 0.2600E+04 | 0.2558E+04 | 0.4175E+02 | 0.1632E+01 |
| 3 | 0.1400E-03 | 0.1238E+04 | 0.1195E+04 | 0.4252E+02 | 0.3557E+01 |
| 4 | 0.1770E-03 | 0.5604E+03 | 0.5738E+03 | -0.1346E+02 | -0.2346E+01 |
| 5 | 0.2200E-03 | 0.2628E+03 | 0.2553E+03 | 0.7529E+01 | 0.2949E+01 |
| 6 | 0.2800E-03 | 0.1222E+03 | 0.1188E+03 | 0.3337E+01 | 0.2808E+01 |
| 7 | 0.3550E-03 | 0.5324E+02 | 0.5348E+02 | -0.2437E+00 | -0.4557E+00 |
| 8 | 0.4430E-03 | 0.2525E+02 | 0.2522E+02 | 0.2321E-01 | 0.9201E-01 |
| 9 | 0.5540E-03 | 0.1130E+02 | 0.1251E+02 | -0.1212E+01 | -0.9685E+01 |
| 10 | 0.7130E-03 | 0.6742E+01 | 0.6784E+01 | -0.4173E-01 | -0.6152E+00 |
| 11 | 0.8810E-03 | 0.3542E+01 | 0.3441E+01 | 0.1006E+00 | 0.2924E+01 |
| 12 | 0.1096E-02 | 0.2112E+01 | 0.2138E+01 | -0.2565E-01 | -0.1200E+01 |
| 13 | 0.1411E-02 | 0.1244E+01 | 0.1209E+01 | 0.3522E-01 | 0.2913E+01 |
| 14 | 0.1795E-02 | 0.6520E+00 | 0.6394E+00 | 0.1257E-01 | 0.1966E+01 |
| 15 | 0.2224E-02 | 0.4620E+00 | 0.4539E+00 | 0.8068E-02 | 0.1777E+01 |
| 16 | 0.2850E-02 | 0.2670E+00 | 0.2731E+00 | -0.6104E-02 | -0.2235E+01 |
| 17 | 0.3600E-02 | 0.1850E+00 | 0.1868E+00 | -0.1833E-02 | -0.9812E+00 |
| 18 | 0.4490E-02 | 0.1320E+00 | 0.1346E+00 | -0.2614E-02 | -0.1942E+01 |
| 19 | 0.5700E-02 | 0.9900E-01 | 0.9588E-01 | 0.3121E-02 | 0.3255E+01 |
| 20 | 0.7190E-02 | 0.6800E-01 | 0.6890E-01 | -0.9027E-03 | -0.1310E+01 |
| 21 | 0.8800E-02 | 0.5100E-01 | 0.5176E-01 | -0.7574E-03 | -0.1463E+01 |
| 22 | 0.1100E-01 | 0.3800E-01 | 0.3713E-01 | 0.8736E-03 | 0.2353E+01 |

** %RMSERR=  2.92

CORRELATION MATRIX

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | 0.3520E+00 | 0.1000E+01 | | | | | |
| 3 | -0.2453E+00 | -0.8461E+00 | 0.1000E+01 | | | | |
| 4 | 0.1905E+00 | 0.4704E+00 | -0.5325E+00 | 0.1000E+01 | | | |
| 5 | -0.7489E+00 | -0.4630E+00 | 0.3066E+00 | -0.2597E+00 | 0.1000E+01 | | |
| 6 | -0.7832E+00 | -0.5640E+00 | 0.5893E+00 | -0.1303E+00 | 0.5197E+00 | 0.1000E+01 | |
| 7 | -0.1379E+00 | -0.4693E+00 | 0.5754E+00 | -0.6572E+00 | 0.3204E+00 | 0.3118E+00 | 0.1000E |

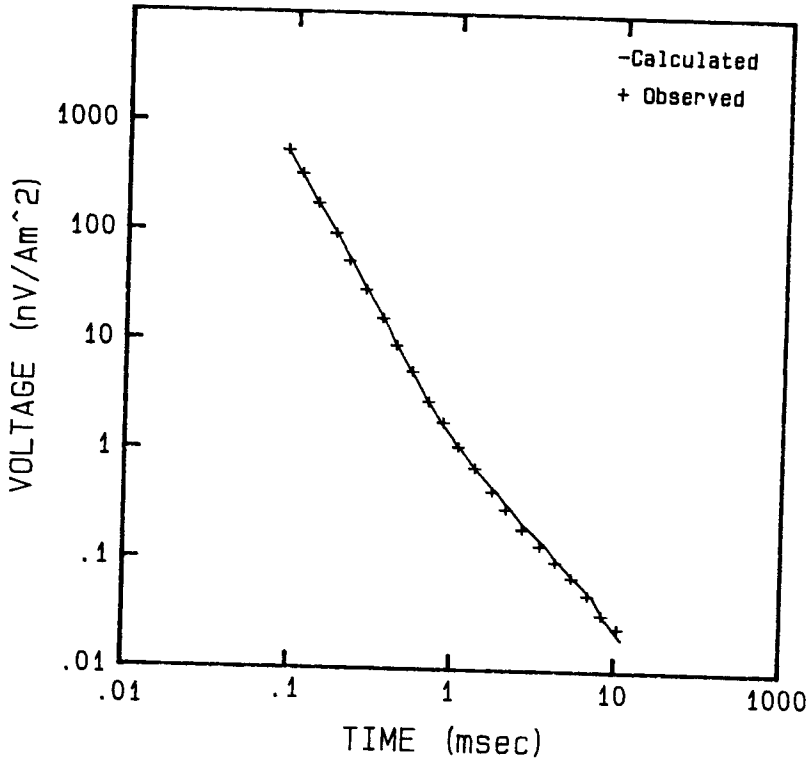
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1016E-01 | 0.1566E-03 | 0.1541E-01 | 0.1541E+01 |
| 2 | 0.4317E-03 | 0.2036E-03 | 0.4717E+00 | 0.4717E+02 |
| 3 | 0.4999E-02 | 0.7053E-03 | 0.1411E+00 | 0.1411E+02 |
| 4 | 0.3250E-01 | 0.2732E-02 | 0.8406E-01 | 0.8406E+01 |
| 5 | 0.3636E+02 | 0.3859E-03 | 0.1061E-04 | 0.1061E-02 |
| 6 | 0.5083E+03 | 0.6907E-03 | 0.1359E-05 | 0.1359E-03 |
| 7 | 0.4584E+03 | 0.3405E-02 | 0.7427E-05 | 0.7427E-03 |

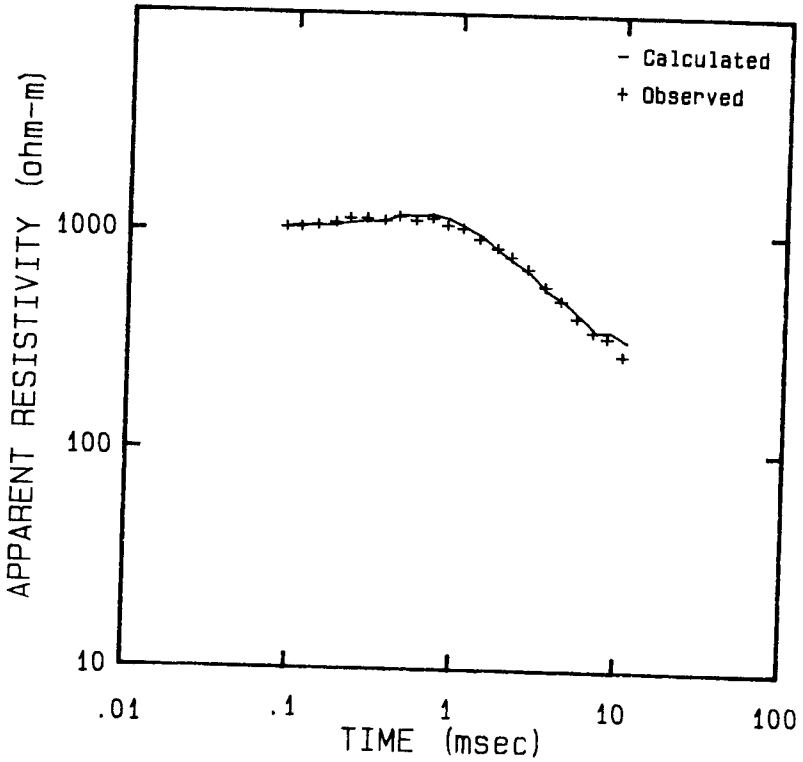
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.10163E-01 | 0.98400E+02 | |
| 2 | SIGMA( 2) = | 0.43167E-03 | 0.23166E+04 | |
| 3 | SIGMA( 3) = | 0.49989E-02 | 0.20004E+03 | |
| 4 | SIGMA( 4) = | 0.32501E-01 | 0.30768E+02 | |
| 5 | THICK( 1) = | 0.36360E+02 | | 0.36360E+02 |
| 6 | THICK( 2) = | 0.50826E+03 | | 0.54462E+03 |
| 7 | THICK( 3) = | 0.45844E+03 | | 0.10031E+04 |
| 8 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML11




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1031 | 872.69 |
| 107.08 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 11 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.5409E+03 | 0.5359E+03 | 0.4960E+01 | 0.9255E+00 |
| 2 | 0.1100E-03 | 0.3288E+03 | 0.3210E+03 | 0.7809E+01 | 0.2433E+01 |
| 3 | 0.1400E-03 | 0.1764E+03 | 0.1766E+03 | -0.2202E+00 | -0.1247E+00 |
| 4 | 0.1770E-03 | 0.9398E+02 | 0.9870E+02 | -0.4716E+01 | -0.4779E+01 |
| 5 | 0.2200E-03 | 0.5295E+02 | 0.5683E+02 | -0.3880E+01 | -0.6827E+01 |
| 6 | 0.2800E-03 | 0.2898E+02 | 0.3011E+02 | -0.1125E+01 | -0.3736E+01 |
| 7 | 0.3550E-03 | 0.1596E+02 | 0.1614E+02 | -0.1837E+00 | -0.1138E+01 |
| 8 | 0.4430E-03 | 0.9015E+01 | 0.8871E+01 | 0.1438E+00 | 0.1621E+01 |
| 9 | 0.5540E-03 | 0.5249E+01 | 0.4893E+01 | 0.3565E+00 | 0.7286E+01 |
| 10 | 0.7130E-03 | 0.2793E+01 | 0.2639E+01 | 0.1536E+00 | 0.5819E+01 |
| 11 | 0.8810E-03 | 0.1821E+01 | 0.1637E+01 | 0.1844E+00 | 0.1127E+02 |
| 12 | 0.1096E-02 | 0.1090E+01 | 0.1060E+01 | 0.3005E-01 | 0.2835E+01 |
| 13 | 0.1411E-02 | 0.7020E+00 | 0.6683E+00 | 0.3365E-01 | 0.5035E+01 |
| 14 | 0.1795E-02 | 0.4310E+00 | 0.4517E+00 | -0.2074E-01 | -0.4592E+01 |
| 15 | 0.2224E-02 | 0.2970E+00 | 0.3214E+00 | -0.2438E-01 | -0.7586E+01 |
| 16 | 0.2850E-02 | 0.1970E+00 | 0.2148E+00 | -0.1784E-01 | -0.8302E+01 |
| 17 | 0.3600E-02 | 0.1390E+00 | 0.1488E+00 | -0.9840E-02 | -0.6611E+01 |
| 18 | 0.4490E-02 | 0.9900E-01 | 0.1031E+00 | -0.4133E-02 | -0.4007E+01 |
| 19 | 0.5700E-02 | 0.7200E-01 | 0.6913E-01 | 0.2870E-02 | 0.4151E+01 |
| 20 | 0.7190E-02 | 0.5000E-01 | 0.4655E-01 | 0.3452E-02 | 0.7415E+01 |
| 21 | 0.8800E-02 | 0.3300E-01 | 0.3256E-01 | 0.4400E-03 | 0.1351E+01 |
| 22 | 0.1100E-01 | 0.2500E-01 | 0.2171E-01 | 0.3285E-02 | 0.1513E+02 |

** %RMSERR= 6.22

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.4996E+00 | 0.1000E+01 | |
| 3 | -0.4907E+00 | 0.7972E-02 | 0.1000E+01 |

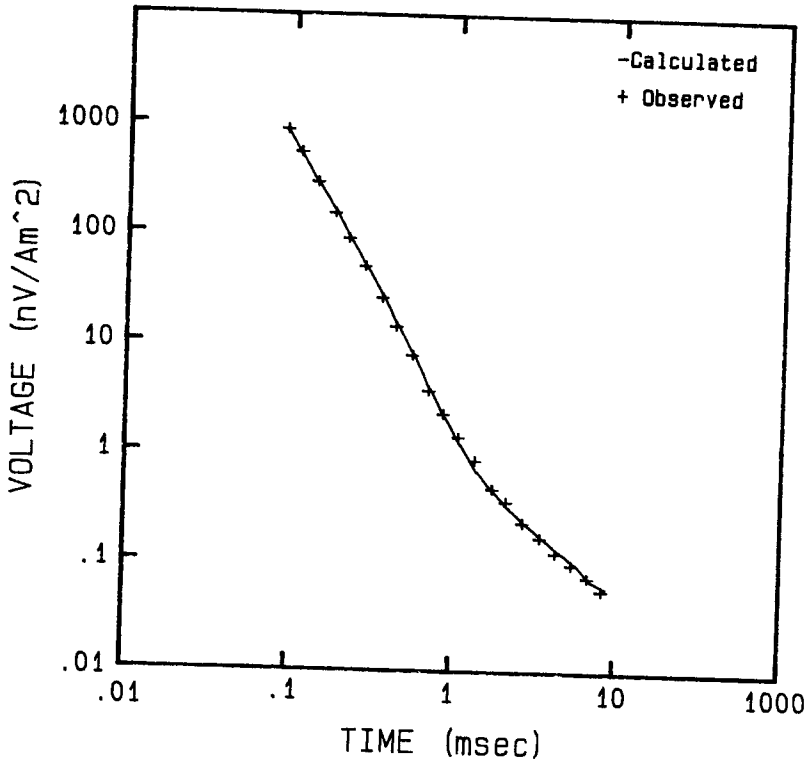
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.9698E-03 | 0.1413E-03 | 0.1457E+00 | 0.1457E+02 |
| 2 | 0.9338E-02 | 0.7689E-03 | 0.8234E-01 | 0.8234E+01 |
| 3 | 0.8727E+03 | 0.2247E-02 | 0.2574E-05 | 0.2574E-03 |

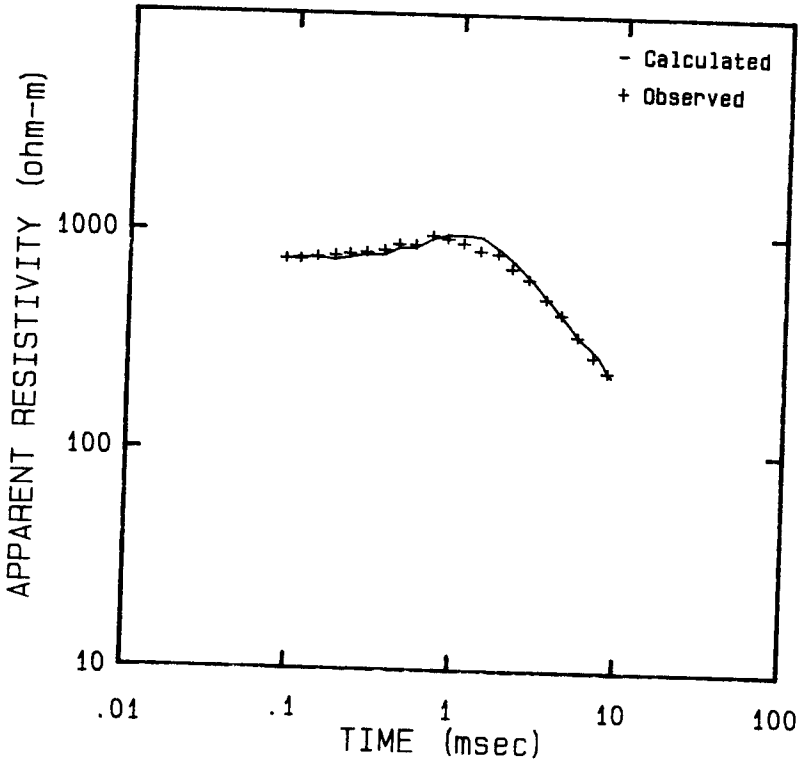
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.96982E-03 | 0.10311E+04 | |
| 2 | SIGMA( 2) | = | 0.93384E-02 | 0.10708E+03 | |
| 3 | THICK( 1) | = | 0.87269E+03 | | 0.87269E+03 |
| 4 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML12




## MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 698.32 | 74.2 |
| 768.72 | 839.69 |
| 26.2 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 12 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.8593E+03 | 0.8671E+03 | -0.7847E+01 | -0.9050E+00 |
| 2 | 0.1100E-03 | 0.5332E+03 | 0.5186E+03 | 0.1464E+02 | 0.2824E+01 |
| 3 | 0.1400E-03 | 0.2844E+03 | 0.2873E+03 | -0.2829E+01 | -0.9847E+00 |
| 4 | 0.1770E-03 | 0.1492E+03 | 0.1607E+03 | -0.1146E+02 | -0.7130E+01 |
| 5 | 0.2200E-03 | 0.8762E+02 | 0.9310E+02 | -0.5476E+01 | -0.5882E+01 |
| 6 | 0.2800E-03 | 0.4899E+02 | 0.5055E+02 | -0.1554E+01 | -0.3074E+01 |
| 7 | 0.3550E-03 | 0.2514E+02 | 0.2706E+02 | -0.1918E+01 | -0.7088E+01 |
| 8 | 0.4430E-03 | 0.1387E+02 | 0.1473E+02 | -0.8591E+00 | -0.5834E+01 |
| 9 | 0.5540E-03 | 0.7630E+01 | 0.7934E+01 | -0.3045E+00 | -0.3837E+01 |
| 10 | 0.7130E-03 | 0.3628E+01 | 0.3795E+01 | -0.1668E+00 | -0.4395E+01 |
| 11 | 0.8810E-03 | 0.2224E+01 | 0.2102E+01 | 0.1225E+00 | 0.5827E+01 |
| 12 | 0.1096E-02 | 0.1368E+01 | 0.1201E+01 | 0.1674E+00 | 0.1394E+02 |
| 13 | 0.1411E-02 | 0.8410E+00 | 0.6835E+00 | 0.1575E+00 | 0.2304E+02 |
| 14 | 0.1795E-02 | 0.4680E+00 | 0.4404E+00 | 0.2756E-01 | 0.6257E+01 |
| 15 | 0.2224E-02 | 0.3570E+00 | 0.3162E+00 | 0.4077E-01 | 0.1289E+02 |
| 16 | 0.2850E-02 | 0.2310E+00 | 0.2307E+00 | 0.2630E-03 | 0.1140E+00 |
| 17 | 0.3600E-02 | 0.1680E+00 | 0.1722E+00 | -0.4186E-02 | -0.2431E+01 |
| 18 | 0.4490E-02 | 0.1220E+00 | 0.1314E+00 | -0.9361E-02 | -0.7126E+01 |
| 19 | 0.5700E-02 | 0.9600E-01 | 0.9843E-01 | -0.2432E-02 | -0.2471E+01 |
| 20 | 0.7190E-02 | 0.7400E-01 | 0.7260E-01 | 0.1399E-02 | 0.1927E+01 |
| 21 | 0.8800E-02 | 0.5600E-01 | 0.5567E-01 | 0.3332E-03 | 0.5986E+00 |

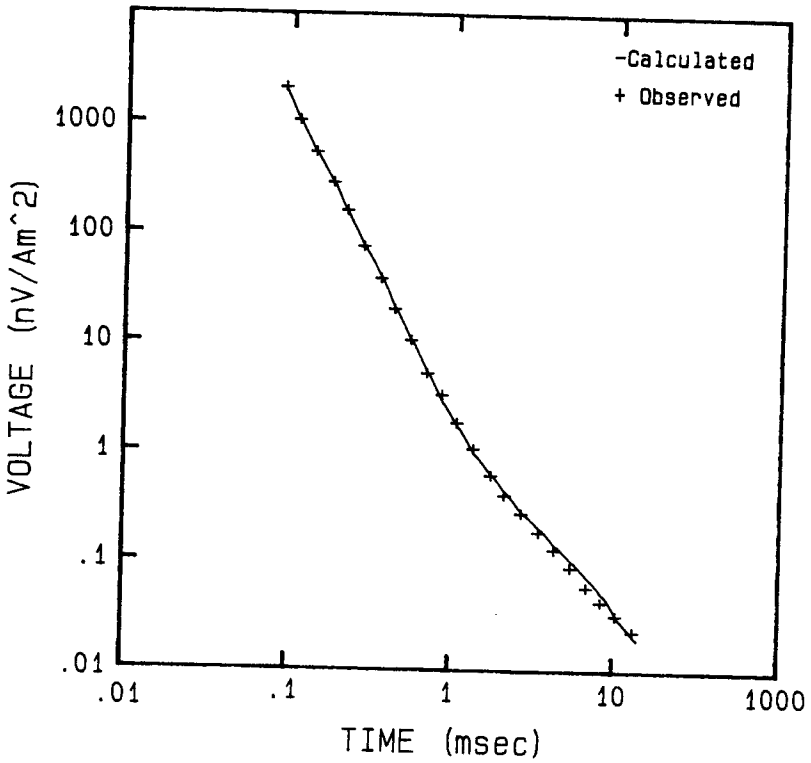
** %RMSERR= 7.73

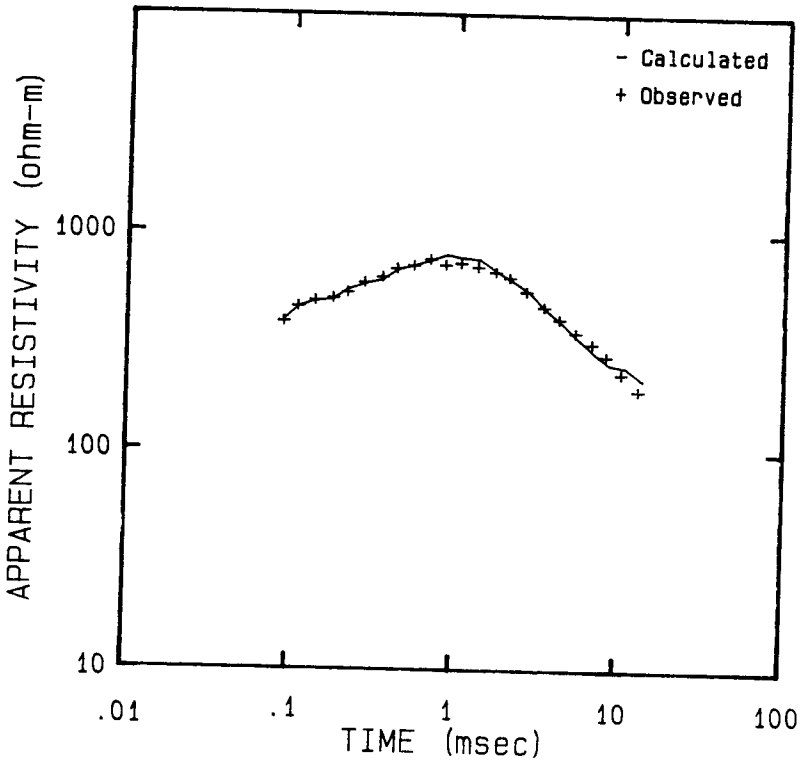
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.14320E-02 | 0.69832E+03 | |
| 2 | SIGMA( 2) = | 0.13009E-02 | 0.76872E+03 | |
| 3 | SIGMA( 3) = | 0.38165E-01 | 0.26202E+02 | |
| 4 | THICK( 1) = | 0.74202E+02 | | 0.74202E+02 |
| 5 | THICK( 2) = | 0.83969E+03 | | 0.91389E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML13




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 104.09 | 15.82 |
| 849.71 | 823.73 |
| 70.14 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 13 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2087E+04 | 0.2048E+04 | 0.3928E+02 | 0.1918E+01 |
| 2 | 0.1110E-03 | 0.1051E+04 | 0.1067E+04 | -0.1574E+02 | -0.1475E+01 |
| 3 | 0.1400E-03 | 0.5411E+03 | 0.5451E+03 | -0.3986E+01 | -0.7313E+00 |
| 4 | 0.1770E-03 | 0.2844E+03 | 0.2883E+03 | -0.3920E+01 | -0.1360E+01 |
| 5 | 0.2200E-03 | 0.1596E+03 | 0.1526E+03 | 0.6926E+01 | 0.4538E+01 |
| 6 | 0.2800E-03 | 0.7466E+02 | 0.7618E+02 | -0.1521E+01 | -0.1996E+01 |
| 7 | 0.3550E-03 | 0.3818E+02 | 0.3971E+02 | -0.1525E+01 | -0.3841E+01 |
| 8 | 0.4430E-03 | 0.2015E+02 | 0.2046E+02 | -0.3187E+00 | -0.1557E+01 |
| 9 | 0.5540E-03 | 0.1051E+02 | 0.1048E+02 | 0.2704E-01 | 0.2580E+00 |
| 10 | 0.7130E-03 | 0.5240E+01 | 0.5316E+01 | -0.7567E-01 | -0.1423E+01 |
| 11 | 0.8810E-03 | 0.3351E+01 | 0.2841E+01 | 0.5103E+00 | 0.1796E+02 |
| 12 | 0.1096E-02 | 0.1864E+01 | 0.1708E+01 | 0.1559E+00 | 0.9125E+01 |
| 13 | 0.1411E-02 | 0.1082E+01 | 0.9648E+00 | 0.1172E+00 | 0.1214E+02 |
| 14 | 0.1795E-02 | 0.6230E+00 | 0.6157E+00 | 0.7271E-02 | 0.1181E+01 |
| 15 | 0.2224E-02 | 0.4110E+00 | 0.4304E+00 | -0.1937E-01 | -0.4502E+01 |
| 16 | 0.2850E-02 | 0.2800E+00 | 0.2849E+00 | -0.4921E-02 | -0.1727E+01 |
| 17 | 0.3600E-02 | 0.1900E+00 | 0.2005E+00 | -0.1054E-01 | -0.5255E+01 |
| 18 | 0.4490E-02 | 0.1320E+00 | 0.1407E+00 | -0.8736E-02 | -0.6207E+01 |
| 19 | 0.5700E-02 | 0.9000E-01 | 0.9597E-01 | -0.5967E-02 | -0.6217E+01 |
| 20 | 0.7190E-02 | 0.6000E-01 | 0.6537E-01 | -0.5369E-02 | -0.8213E+01 |
| 21 | 0.8800E-02 | 0.4400E-01 | 0.4616E-01 | -0.2157E-02 | -0.4673E+01 |
| 22 | 0.1100E-01 | 0.3300E-01 | 0.3136E-01 | 0.1638E-02 | 0.5223E+01 |
| 23 | 0.1400E-01 | 0.2400E-01 | 0.2057E-01 | 0.3432E-02 | 0.1669E+02 |

** %RMSERR= 7.01

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.4903E+00 | 0.1000E+01 | | | |
| 3 | -0.9203E-01 | -0.4549E+00 | 0.1000E+01 | | |
| 4 | -0.7999E+00 | -0.2338E+00 | -0.3231E+00 | 0.1000E+01 | |
| 5 | 0.5605E+00 | -0.4684E-01 | 0.4008E+00 | -0.8121E+00 | 0.1000E+01 |

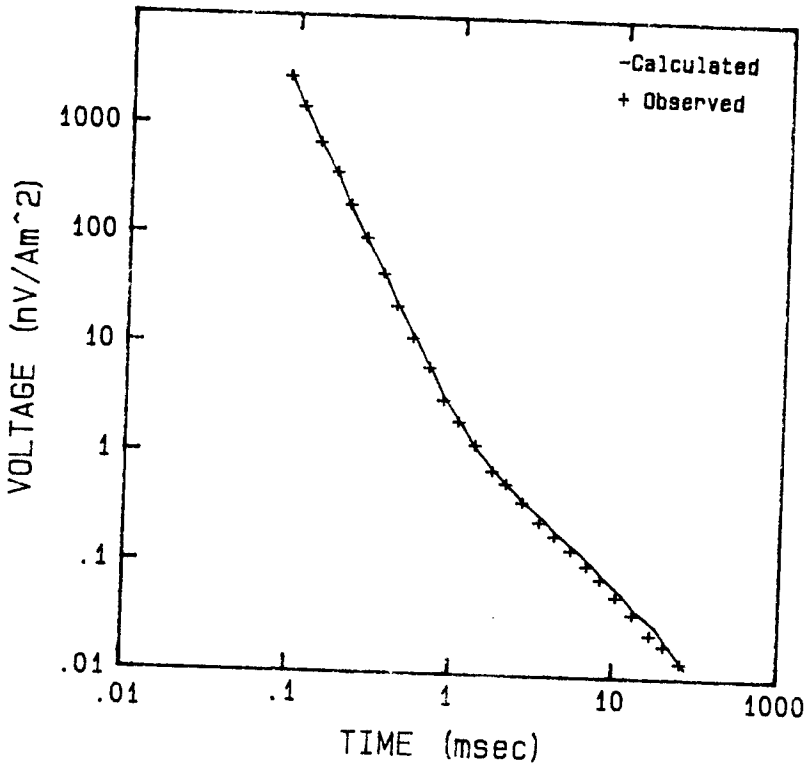
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.9607E-02 | 0.2565E-03 | 0.2670E-01 | 0.2670E+01 |
| 2 | 0.1177E-02 | 0.1759E-03 | 0.1495E+00 | 0.1495E+02 |
| 3 | 0.1426E-01 | 0.1186E-02 | 0.8321E-01 | 0.8321E+01 |
| 4 | 0.1581E+02 | 0.2068E-03 | 0.1308E-04 | 0.1308E-02 |
| 5 | 0.8237E+03 | 0.2304E-02 | 0.2797E-05 | 0.2797E-03 |

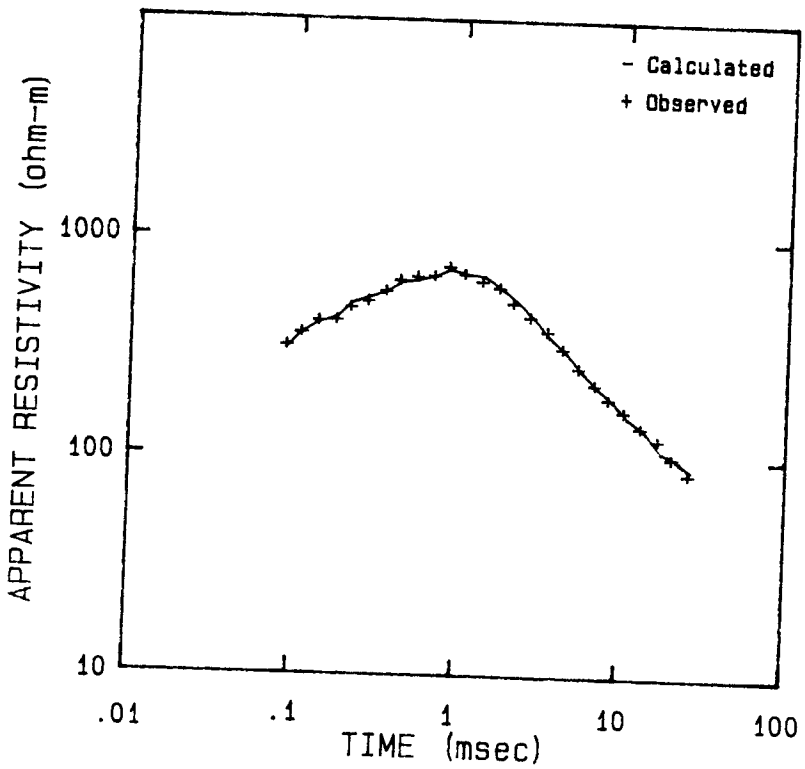
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.96072E-02 | 0.10409E+03 | |
| 2 | SIGMA( 2) = | 0.11769E-02 | 0.84971E+03 | |
| 3 | SIGMA( 3) = | 0.14257E-01 | 0.70142E+02 | |
| 4 | THICK( 1) = | 0.15815E+02 | | 0.15815E+02 |
| 5 | THICK( 2) = | 0.82374E+03 | | 0.83955E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML14




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 105.28 | 23.2 |
| 1005.9 | 395.16 |
| 369.31 | 375.37 |
| 27.75 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 14 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2714E+04 | 0.2802E+04 | -0.8849E+02 | -0.3158E+01 |
| 2 | 0.1100E-03 | 0.1434E+04 | 0.1448E+04 | -0.1376E+02 | -0.9501E+00 |
| 3 | 0.1400E-03 | 0.6836E+03 | 0.6998E+03 | -0.1626E+02 | -0.2323E+01 |
| 4 | 0.1770E-03 | 0.3685E+03 | 0.3537E+03 | 0.1473E+02 | 0.4164E+01 |
| 5 | 0.2200E-03 | 0.1869E+03 | 0.1756E+03 | 0.1133E+02 | 0.6451E+01 |
| 6 | 0.2800E-03 | 0.9362E+02 | 0.8835E+02 | 0.5269E+01 | 0.5964E+01 |
| 7 | 0.3550E-03 | 0.4432E+02 | 0.4481E+02 | -0.4923E+00 | -0.1099E+01 |
| 8 | 0.4430E-03 | 0.2255E+02 | 0.2325E+02 | -0.7062E+00 | -0.3037E+01 |
| 9 | 0.5540E-03 | 0.1159E+02 | 0.1222E+02 | -0.6313E+00 | -0.5166E+01 |
| 10 | 0.7130E-03 | 0.6301E+01 | 0.6309E+01 | -0.7986E-02 | -0.1266E+00 |
| 11 | 0.8810E-03 | 0.3176E+01 | 0.3311E+01 | -0.1349E+00 | -0.4073E+01 |
| 12 | 0.1096E-02 | 0.2042E+01 | 0.2040E+01 | 0.2074E-02 | 0.1017E+00 |
| 13 | 0.1411E-02 | 0.1254E+01 | 0.1148E+01 | 0.1057E+00 | 0.9206E+01 |
| 14 | 0.1795E-02 | 0.7350E+00 | 0.7420E+00 | -0.7010E-02 | -0.9446E+00 |
| 15 | 0.2224E-02 | 0.5660E+00 | 0.5400E+00 | 0.2603E-01 | 0.4820E+01 |
| 16 | 0.2850E-02 | 0.3860E+00 | 0.3756E+00 | 0.1036E-01 | 0.2757E+01 |
| 17 | 0.3600E-02 | 0.2570E+00 | 0.2755E+00 | -0.1849E-01 | -0.6710E+01 |
| 18 | 0.4490E-02 | 0.1930E+00 | 0.2031E+00 | -0.1008E-01 | -0.4963E+01 |
| 19 | 0.5700E-02 | 0.1440E+00 | 0.1467E+00 | -0.2669E-02 | -0.1820E+01 |
| 20 | 0.7190E-02 | 0.1040E+00 | 0.1065E+00 | -0.2491E-02 | -0.2339E+01 |
| 21 | 0.8800E-02 | 0.7900E-01 | 0.7947E-01 | -0.4734E-03 | -0.5956E+00 |
| 22 | 0.1100E-01 | 0.5500E-01 | 0.5693E-01 | -0.1928E-02 | -0.3386E+01 |
| 23 | 0.1400E-01 | 0.3800E-01 | 0.3910E-01 | -0.1103E-02 | -0.2821E+01 |
| 24 | 0.1800E-01 | 0.2500E-01 | 0.2621E-01 | -0.1206E-02 | -0.4601E+01 |
| 25 | 0.2200E-01 | 0.2000E-01 | 0.1894E-01 | 0.1064E-02 | 0.5619E+01 |
| 26 | 0.2800E-01 | 0.1400E-01 | 0.1258E-01 | 0.1423E-02 | 0.1131E+02 |

** %RMSERR= 4.64

CORRELATION MATRIX

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | 0.6826E-01 | 0.1000E+01 | | | | | |
| 3 | -0.2198E+00 | -0.7724E+00 | 0.1000E+01 | | | | |
| 4 | 0.3569E+00 | 0.1896E+00 | -0.3809E+00 | 0.1000E+01 | | | |
| 5 | -0.6606E+00 | 0.2091E+00 | -0.6034E-02 | -0.5497E+00 | 0.1000E+01 | | |
| 6 | -0.6304E-01 | 0.4697E-02 | -0.1239E+00 | 0.1392E+00 | -0.4641E-01 | 0.1000E+01 | |
| 7 | -0.4356E+00 | 0.5985E-01 | 0.3075E-02 | -0.1215E+00 | 0.7165E-01 | -0.5445E+00 | 0.1000E |

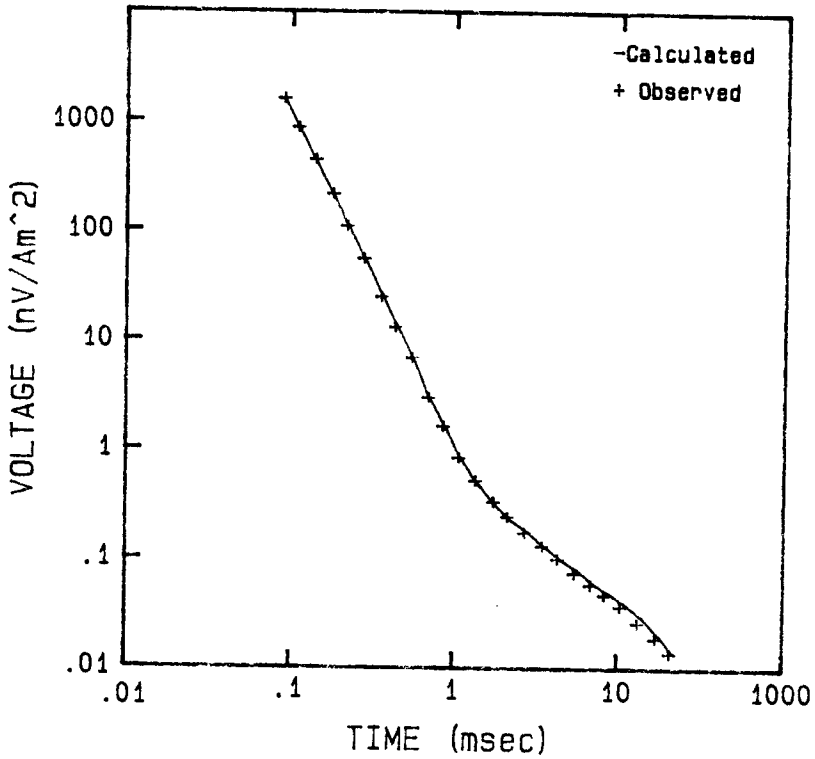
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.9498E-02 | 0.2101E-03 | 0.2212E-01 | 0.2212E+01 |
| 2 | 0.9941E-03 | 0.2512E-03 | 0.2527E+00 | 0.2527E+02 |
| 3 | 0.2708E-02 | 0.7550E-03 | 0.2788E+00 | 0.2788E+02 |
| 4 | 0.3603E-01 | 0.1816E-02 | 0.5041E-01 | 0.5041E+01 |
| 5 | 0.2320E+02 | 0.1516E-03 | 0.6535E-05 | 0.6535E-03 |
| 6 | 0.3952E+03 | 0.5478E-03 | 0.1386E-05 | 0.1386E-03 |
| 7 | 0.3754E+03 | 0.2081E-02 | 0.5543E-05 | 0.5543E-03 |

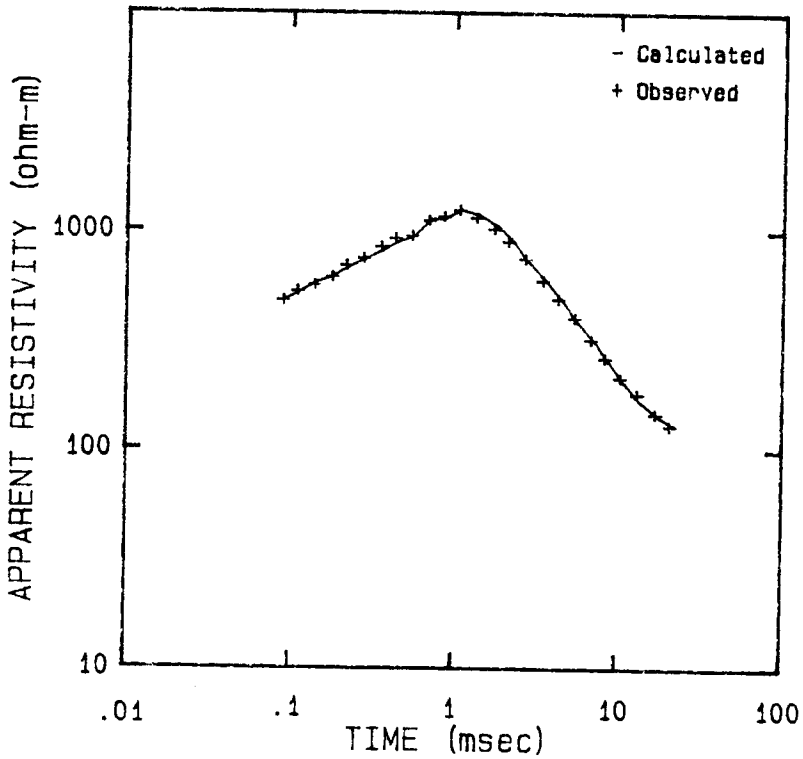
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.94983E-02 | 0.10528E+03 | |
| 2 | SIGMA( 2) = | 0.99409E-03 | 0.10059E+04 | |
| 3 | SIGMA( 3) = | 0.27077E-02 | 0.36931E+03 | |
| 4 | SIGMA( 4) = | 0.36031E-01 | 0.27754E+02 | |
| 5 | THICK( 1) = | 0.23200E+02 | | 0.23200E+02 |
| 6 | THICK( 2) = | 0.39516E+03 | | 0.41836E+03 |
| 7 | THICK( 3) = | 0.37537E+03 | | 0.79373E+03 |
| 8 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML15




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 142.97 | 23.27 |
| 1202.5 | 953.73 |
| 21.26 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 15 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1584E+04 | 0.1575E+04 | 0.8533E+01 | 0.5416E+00 |
| 2 | 0.1100E-03 | 0.8637E+03 | 0.8894E+03 | -0.2573E+02 | -0.2892E+01 |
| 3 | 0.1400E-03 | 0.4416E+03 | 0.4272E+03 | 0.1445E+02 | 0.3384E+01 |
| 4 | 0.1770E-03 | 0.2129E+03 | 0.2098E+03 | 0.3024E+01 | 0.1441E+01 |
| 5 | 0.2200E-03 | 0.1084E+03 | 0.1125E+03 | -0.4122E+01 | -0.3664E+01 |
| 6 | 0.2800E-03 | 0.5503E+02 | 0.5604E+02 | -0.1013E+01 | -0.1808E+01 |
| 7 | 0.3550E-03 | 0.2450E+02 | 0.2592E+02 | -0.1414E+01 | -0.5458E+01 |
| 8 | 0.4430E-03 | 0.1299E+02 | 0.1387E+02 | -0.8738E+00 | -0.6302E+01 |
| 9 | 0.5540E-03 | 0.6855E+01 | 0.6841E+01 | 0.1377E-01 | 0.2012E+00 |
| 10 | 0.7130E-03 | 0.2966E+01 | 0.2904E+01 | 0.6175E-01 | 0.2126E+01 |
| 11 | 0.8810E-03 | 0.1631E+01 | 0.1650E+01 | -0.1947E-01 | -0.1180E+01 |
| 12 | 0.1096E-02 | 0.8430E+00 | 0.8304E+00 | 0.1258E-01 | 0.1515E+01 |
| 13 | 0.1411E-02 | 0.5190E+00 | 0.4912E+00 | 0.2776E-01 | 0.5651E+01 |
| 14 | 0.1795E-02 | 0.3320E+00 | 0.3144E+00 | 0.1762E-01 | 0.5603E+01 |
| 15 | 0.2224E-02 | 0.2440E+00 | 0.2334E+00 | 0.1059E-01 | 0.4536E+01 |
| 16 | 0.2850E-02 | 0.1750E+00 | 0.1752E+00 | -0.1886E-03 | -0.1077E+00 |
| 17 | 0.3600E-02 | 0.1320E+00 | 0.1324E+00 | -0.4015E-03 | -0.3032E+00 |
| 18 | 0.4490E-02 | 0.1010E+00 | 0.1045E+00 | -0.3462E-02 | -0.3314E+01 |
| 19 | 0.5700E-02 | 0.7500E-01 | 0.7939E-01 | -0.4386E-02 | -0.5525E+01 |
| 20 | 0.7190E-02 | 0.5900E-01 | 0.6056E-01 | -0.1559E-02 | -0.2575E+01 |
| 21 | 0.8800E-02 | 0.4800E-01 | 0.4754E-01 | 0.4575E-03 | 0.9622E+00 |
| 22 | 0.1100E-01 | 0.3700E-01 | 0.3597E-01 | 0.1032E-02 | 0.2868E+01 |
| 23 | 0.1400E-01 | 0.2600E-01 | 0.2621E-01 | -0.2144E-03 | -0.8179E+00 |
| 24 | 0.1800E-01 | 0.1900E-01 | 0.1851E-01 | 0.4946E-03 | 0.2673E+01 |
| 25 | 0.2200E-01 | 0.1400E-01 | 0.1386E-01 | 0.1353E-03 | 0.9761E+00 |

** %RMSERR= 3.27

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.1625E+00 | 0.1000E+01 | | | |
| 3 | -0.2893E-01 | -0.5728E+00 | 0.1000E+01 | | |
| 4 | 0.1482E+00 | -0.6491E-01 | -0.4134E+00 | 0.1000E+01 | |
| 5 | 0.1268E+00 | -0.2424E+00 | 0.1929E+00 | -0.3191E+00 | 0.1000E+01 |

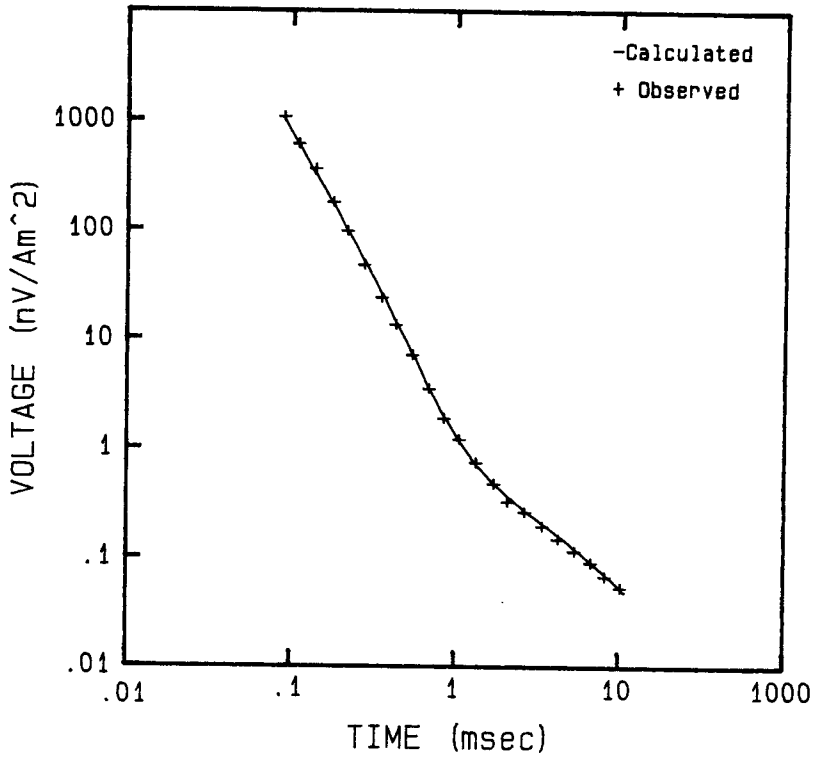
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.6994E-02 | 0.4663E-04 | 0.6667E-02 | 0.6667E+00 |
| 2 | 0.8316E-03 | 0.1014E-03 | 0.1219E+00 | 0.1219E+02 |
| 3 | 0.4704E-01 | 0.8938E-03 | 0.1900E-01 | 0.1900E+01 |
| 4 | 0.2327E+02 | 0.8528E-04 | 0.3664E-05 | 0.3664E-03 |
| 5 | 0.9537E+03 | 0.5668E-03 | 0.5943E-06 | 0.5943E-04 |

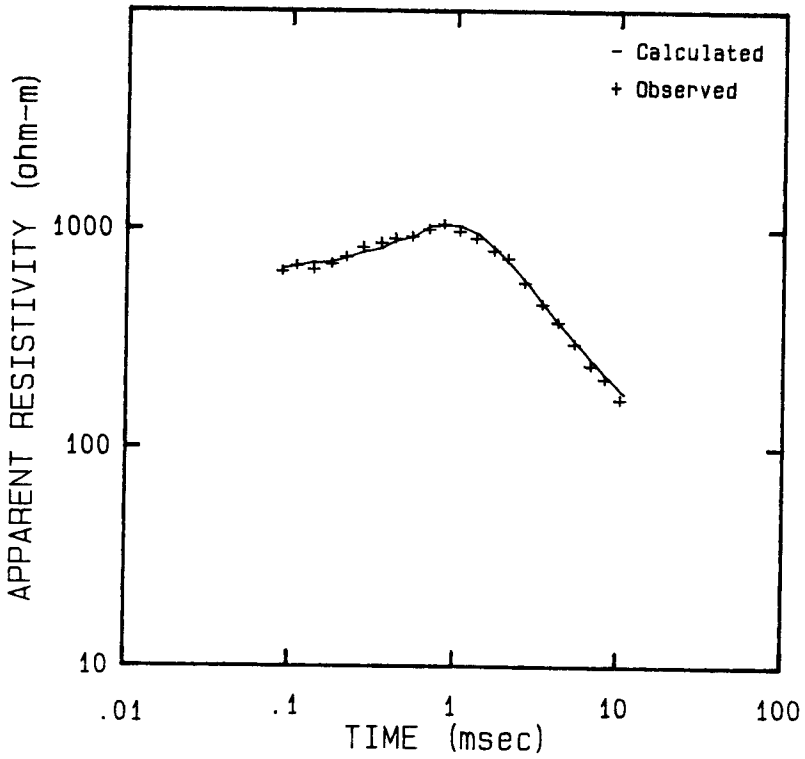
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.69943E-02 | 0.14297E+03 | |
| 2 | SIGMA( 2) = | 0.83161E-03 | 0.12025E+04 | |
| 3 | SIGMA( 3) = | 0.47043E-01 | 0.21257E+02 | |
| 4 | THICK( 1) = | 0.23273E+02 | | 0.23273E+02 |
| 5 | THICK( 2) = | 0.95374E+03 | | 0.97701E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML16




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 145 | 9.2 |
| 863 | 844.8 |
| 22.1 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 16 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1064E+04 | 0.1025E+04 | 0.3875E+02 | 0.3780E+01 |
| 2 | 0.1100E-03 | 0.6023E+03 | 0.6061E+03 | -0.3769E+01 | -0.6218E+00 |
| 3 | 0.1400E-03 | 0.3559E+03 | 0.3204E+03 | 0.3552E+02 | 0.1109E+02 |
| 4 | 0.1770E-03 | 0.1762E+03 | 0.1724E+03 | 0.3825E+01 | 0.2219E+01 |
| 5 | 0.2200E-03 | 0.9544E+02 | 0.9701E+02 | -0.1570E+01 | -0.1618E+01 |
| 6 | 0.2800E-03 | 0.4698E+02 | 0.5104E+02 | -0.4066E+01 | -0.7965E+01 |
| 7 | 0.3550E-03 | 0.2342E+02 | 0.2562E+02 | -0.2202E+01 | -0.8595E+01 |
| 8 | 0.4430E-03 | 0.1326E+02 | 0.1381E+02 | -0.5536E+00 | -0.4009E+01 |
| 9 | 0.5540E-03 | 0.7035E+01 | 0.7077E+01 | -0.4219E-01 | -0.5961E+00 |
| 10 | 0.7130E-03 | 0.3468E+01 | 0.3321E+01 | 0.1474E+00 | 0.4439E+01 |
| 11 | 0.8810E-03 | 0.1863E+01 | 0.1891E+01 | -0.2827E-01 | -0.1495E+01 |
| 12 | 0.1096E-02 | 0.1197E+01 | 0.1105E+01 | 0.9199E-01 | 0.8325E+01 |
| 13 | 0.1411E-02 | 0.7320E+00 | 0.6806E+00 | 0.5144E-01 | 0.7558E+01 |
| 14 | 0.1795E-02 | 0.4720E+00 | 0.4644E+00 | 0.7621E-02 | 0.1641E+01 |
| 15 | 0.2224E-02 | 0.3220E+00 | 0.3529E+00 | -0.3089E-01 | -0.8754E+01 |
| 16 | 0.2850E-02 | 0.2600E+00 | 0.2634E+00 | -0.3381E-02 | -0.1284E+01 |
| 17 | 0.3600E-02 | 0.1940E+00 | 0.1989E+00 | -0.4875E-02 | -0.2451E+01 |
| 18 | 0.4490E-02 | 0.1480E+00 | 0.1548E+00 | -0.6760E-02 | -0.4368E+01 |
| 19 | 0.5700E-02 | 0.1150E+00 | 0.1157E+00 | -0.7438E-03 | -0.6426E+00 |
| 20 | 0.7190E-02 | 0.9000E-01 | 0.8649E-01 | 0.3509E-02 | 0.4057E+01 |
| 21 | 0.8800E-02 | 0.6800E-01 | 0.6671E-01 | 0.1291E-02 | 0.1936E+01 |
| 22 | 0.1100E-01 | 0.5400E-01 | 0.4933E-01 | 0.4670E-02 | 0.9467E+01 |

** %RMSERR= 5.49

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.9192E-01 | 0.1000E+01 | | | |
| 3 | 0.7689E-01 | 0.6464E-01 | 0.1000E+01 | | |
| 4 | -0.3589E+00 | -0.4469E+00 | -0.2625E+00 | 0.1000E+01 | |
| 5 | -0.4580E+00 | -0.4945E+00 | -0.1853E-01 | 0.8506E+00 | 0.1000E+01 |

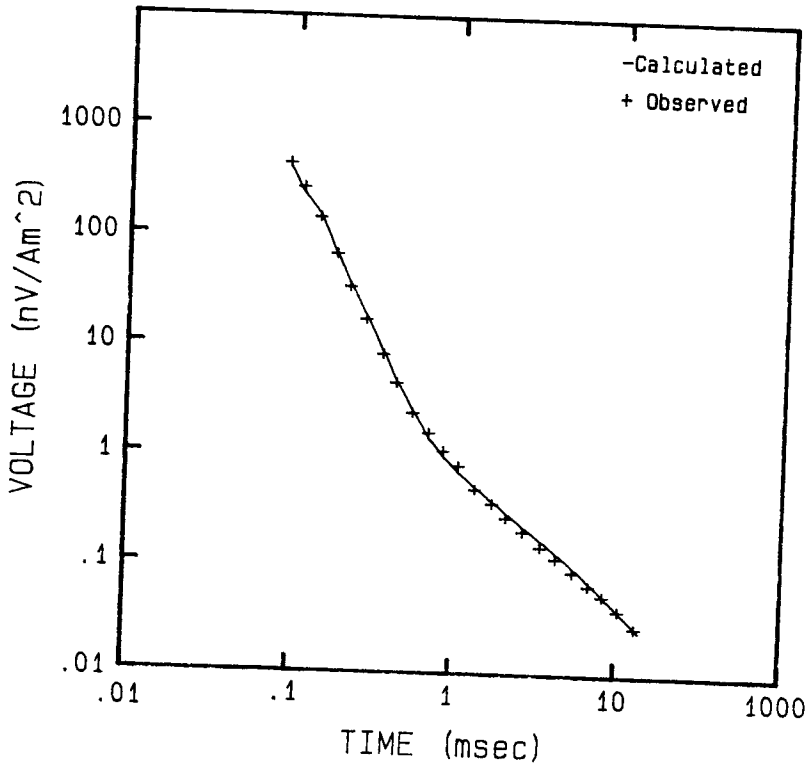
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.6884E-02 | 0.1204E-03 | 0.1750E-01 | 0.1750E+01 |
| 2 | 0.1159E-02 | 0.2025E-03 | 0.1748E+00 | 0.1748E+02 |
| 3 | 0.4525E-01 | 0.2671E-02 | 0.5902E-01 | 0.5902E+01 |
| 4 | 0.9175E+01 | 0.2337E-03 | 0.2548E-04 | 0.2548E-02 |
| 5 | 0.8453E+03 | 0.2029E-02 | 0.2400E-05 | 0.2400E-03 |

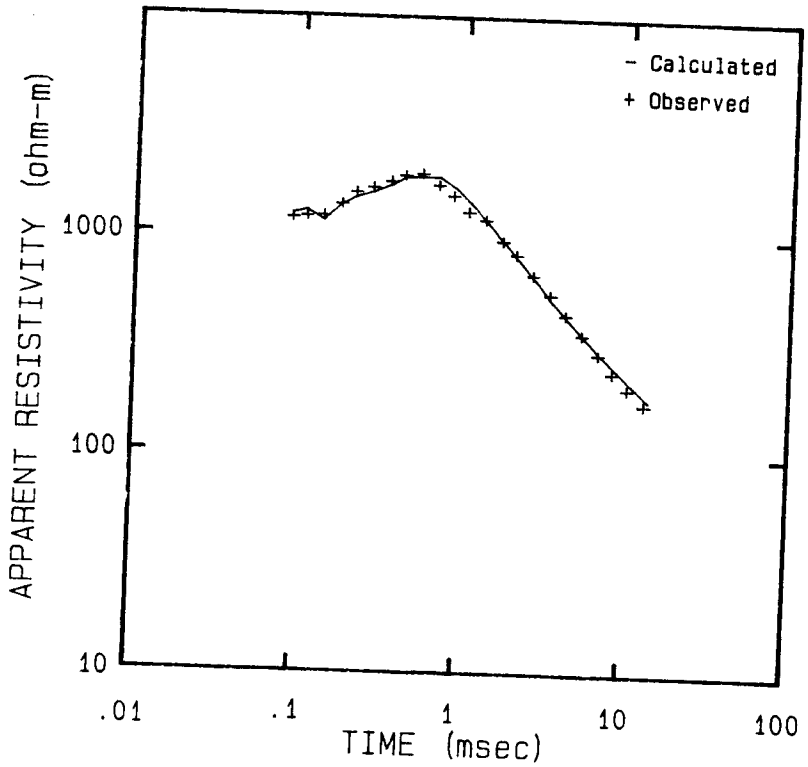
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.68836E-02 | 0.14527E+03 | |
| 2 | SIGMA( 2) = | 0.11585E-02 | 0.86316E+03 | |
| 3 | SIGMA( 3) = | 0.45252E-01 | 0.22098E+02 | |
| 4 | THICK( 1) = | 0.91750E+01 | | 0.91750E+01 |
| 5 | THICK( 2) = | 0.84530E+03 | | 0.85447E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML17




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 464 | 20.8 |
| 1534 | 860.2 |
| 36.4 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 17 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4432E+03 | 0.4168E+03 | 0.2643E+02 | 0.6341E+01 |
| 2 | 0.1100E-03 | 0.2661E+03 | 0.2407E+03 | 0.2546E+02 | 0.1058E+02 |
| 3 | 0.1300E-03 | 0.1428E+03 | 0.1543E+03 | -0.1151E+02 | -0.7460E+01 |
| 4 | 0.1770E-03 | 0.6629E+02 | 0.6641E+02 | -0.1165E+00 | -0.1754E+00 |
| 5 | 0.2200E-03 | 0.3330E+02 | 0.3591E+02 | -0.2610E+01 | -0.7268E+01 |
| 6 | 0.2800E-03 | 0.1688E+02 | 0.1811E+02 | -0.1225E+01 | -0.6768E+01 |
| 7 | 0.3550E-03 | 0.8146E+01 | 0.8586E+01 | -0.4397E+00 | -0.5121E+01 |
| 8 | 0.4430E-03 | 0.4482E+01 | 0.4589E+01 | -0.1066E+00 | -0.2323E+01 |
| 9 | 0.5540E-03 | 0.2383E+01 | 0.2484E+01 | -0.1005E+00 | -0.4048E+01 |
| 10 | 0.7130E-03 | 0.1579E+01 | 0.1386E+01 | 0.1934E+00 | 0.1396E+02 |
| 11 | 0.8810E-03 | 0.1086E+01 | 0.9492E+00 | 0.1368E+00 | 0.1441E+02 |
| 12 | 0.1096E-02 | 0.7980E+00 | 0.6873E+00 | 0.1107E+00 | 0.1611E+02 |
| 13 | 0.1411E-02 | 0.4920E+00 | 0.5056E+00 | -0.1365E-01 | -0.2699E+01 |
| 14 | 0.1795E-02 | 0.3670E+00 | 0.3750E+00 | -0.8025E-02 | -0.2140E+01 |
| 15 | 0.2224E-02 | 0.2740E+00 | 0.2929E+00 | -0.1894E-01 | -0.6467E+01 |
| 16 | 0.2850E-02 | 0.2070E+00 | 0.2204E+00 | -0.1343E-01 | -0.6091E+01 |
| 17 | 0.3600E-02 | 0.1500E+00 | 0.1657E+00 | -0.1573E-01 | -0.9491E+01 |
| 18 | 0.4490E-02 | 0.1170E+00 | 0.1264E+00 | -0.9396E-02 | -0.7434E+01 |
| 19 | 0.5700E-02 | 0.8900E-01 | 0.9289E-01 | -0.3885E-02 | -0.4183E+01 |
| 20 | 0.7190E-02 | 0.6700E-01 | 0.6812E-01 | -0.1118E-02 | -0.1642E+01 |
| 21 | 0.8800E-02 | 0.5400E-01 | 0.5143E-01 | 0.2572E-02 | 0.5000E+01 |
| 22 | 0.1100E-01 | 0.4000E-01 | 0.3720E-01 | 0.2799E-02 | 0.7525E+01 |
| 23 | 0.1400E-01 | 0.2800E-01 | 0.2577E-01 | 0.2229E-02 | 0.8650E+01 |

** %RMSERR= 7.88

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.2040E+00 | 0.1000E+01 | | | |
| 3 | 0.5425E-02 | -0.6140E-01 | 0.1000E+01 | | |
| 4 | -0.6994E+00 | -0.2086E+00 | -0.3321E+00 | 0.1000E+01 | |
| 5 | 0.2836E+00 | -0.2077E+00 | 0.8291E-01 | -0.4020E+00 | 0.1000E+01 |

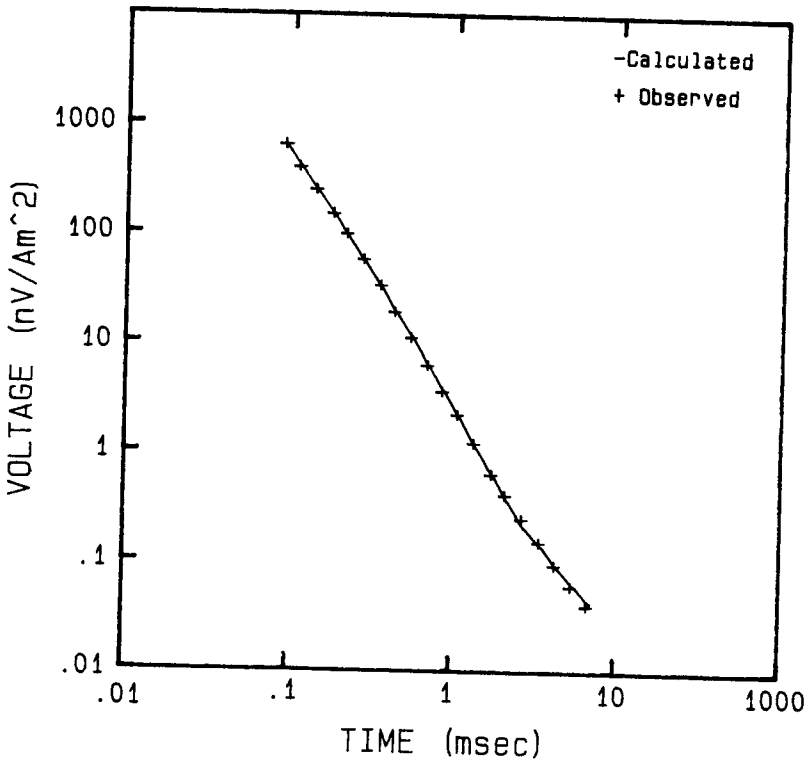
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2155E-02 | 0.7122E-04 | 0.3304E-01 | 0.3304E+01 |
| 2 | 0.6518E-03 | 0.1899E-03 | 0.2914E+00 | 0.2914E+02 |
| 3 | 0.2746E-01 | 0.2497E-02 | 0.9091E-01 | 0.9091E+01 |
| 4 | 0.2082E+02 | 0.3559E-03 | 0.1709E-04 | 0.1709E-02 |
| 5 | 0.8604E+03 | 0.2989E-02 | 0.3474E-05 | 0.3474E-03 |

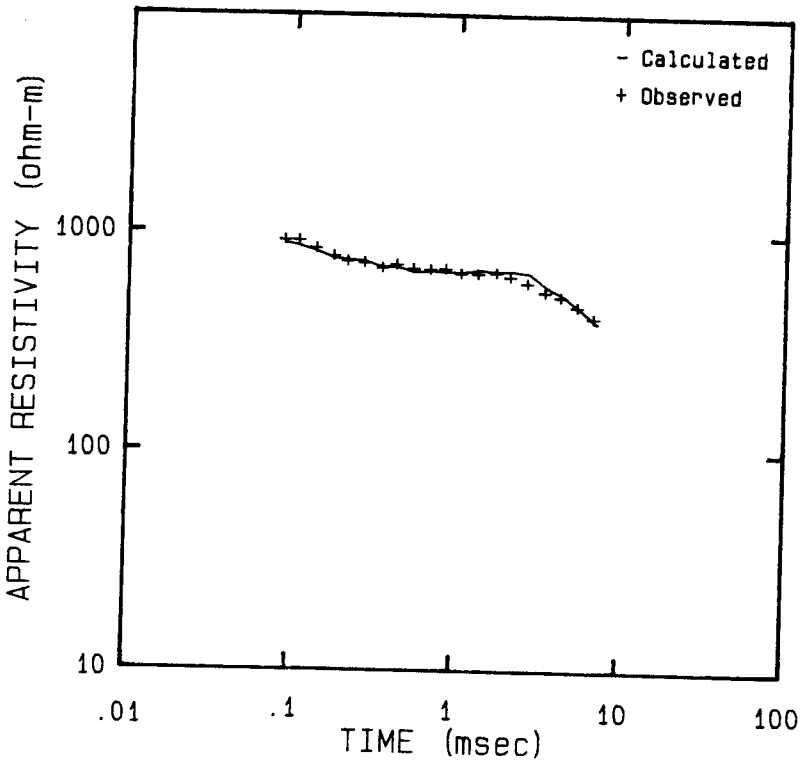
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.21553E-02 | 0.46398E+03 | |
| 2 | SIGMA( 2) = | 0.65178E-03 | 0.15343E+04 | |
| 3 | SIGMA( 3) = | 0.27463E-01 | 0.36412E+02 | |
| 4 | THICK( 1) = | 0.20825E+02 | | 0.20825E+02 |
| 5 | THICK( 2) = | 0.86038E+03 | | 0.88120E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML18




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 9594 | 75.4 |
| 526 | 1114.6 |
| 71.6 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 18 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.6390E+03 | 0.6608E+03 | -0.2176E+02 | -0.3293E+01 |
| 2 | 0.1100E-03 | 0.3950E+03 | 0.4266E+03 | -0.3160E+02 | -0.7408E+01 |
| 3 | 0.1400E-03 | 0.2460E+03 | 0.2553E+03 | -0.9321E+01 | -0.3651E+01 |
| 4 | 0.1770E-03 | 0.1491E+03 | 0.1542E+03 | -0.5064E+01 | -0.3285E+01 |
| 5 | 0.2200E-03 | 0.9718E+02 | 0.9522E+02 | 0.1960E+01 | 0.2059E+01 |
| 6 | 0.2800E-03 | 0.5700E+02 | 0.5571E+02 | 0.1287E+01 | 0.2310E+01 |
| 7 | 0.3550E-03 | 0.3290E+02 | 0.3248E+02 | 0.4192E+00 | 0.1290E+01 |
| 8 | 0.4430E-03 | 0.1890E+02 | 0.1949E+02 | -0.5904E+00 | -0.3029E+01 |
| 9 | 0.5540E-03 | 0.1100E+02 | 0.1157E+02 | -0.5677E+00 | -0.4906E+01 |
| 10 | 0.7130E-03 | 0.6183E+01 | 0.6307E+01 | -0.1241E+00 | -0.1967E+01 |
| 11 | 0.8810E-03 | 0.3560E+01 | 0.3741E+01 | -0.1810E+00 | -0.4837E+01 |
| 12 | 0.1096E-02 | 0.2191E+01 | 0.2159E+01 | 0.3187E-01 | 0.1476E+01 |
| 13 | 0.1411E-02 | 0.1203E+01 | 0.1133E+01 | 0.6951E-01 | 0.6133E+01 |
| 14 | 0.1795E-02 | 0.6300E+00 | 0.6155E+00 | 0.1446E-01 | 0.2348E+01 |
| 15 | 0.2224E-02 | 0.4070E+00 | 0.3691E+00 | 0.3787E-01 | 0.1026E+02 |
| 16 | 0.2850E-02 | 0.2460E+00 | 0.2146E+00 | 0.3136E-01 | 0.1461E+02 |
| 17 | 0.3600E-02 | 0.1510E+00 | 0.1359E+00 | 0.1506E-01 | 0.1108E+02 |
| 18 | 0.4490E-02 | 0.9300E-01 | 0.9135E-01 | 0.1649E-02 | 0.1805E+01 |
| 19 | 0.5700E-02 | 0.6000E-01 | 0.6196E-01 | -0.1958E-02 | -0.3160E+01 |
| 20 | 0.7190E-02 | 0.4000E-01 | 0.4338E-01 | -0.3376E-02 | -0.7782E+01 |

** %RMSERR= 6.01

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.2090E+00 | 0.1000E+01 | | | |
| 3 | 0.8743E-01 | 0.8135E-01 | 0.1000E+01 | | |
| 4 | -0.4270E+00 | -0.3252E+00 | -0.8585E+00 | 0.1000E+01 | |
| 5 | -0.9132E+00 | -0.2014E+00 | 0.5801E-01 | 0.2087E+00 | 0.1000E+01 |

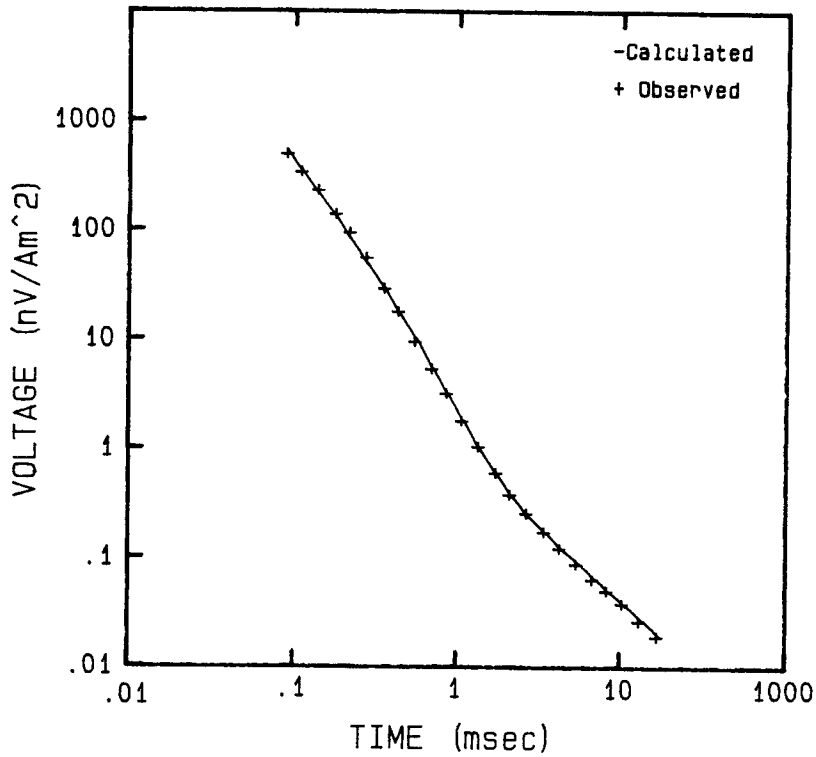
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1042E-03 | 0.1125E-03 | 0.1079E+01 | 0.1079E+03 |
| 2 | 0.1902E-02 | 0.2370E-03 | 0.1246E+00 | 0.1246E+02 |
| 3 | 0.1397E-01 | 0.3910E-02 | 0.2799E+00 | 0.2799E+02 |
| 4 | 0.7538E+02 | 0.1641E-02 | 0.2177E-04 | 0.2177E-02 |
| 5 | 0.1115E+04 | 0.1401E-01 | 0.1257E-04 | 0.1257E-02 |

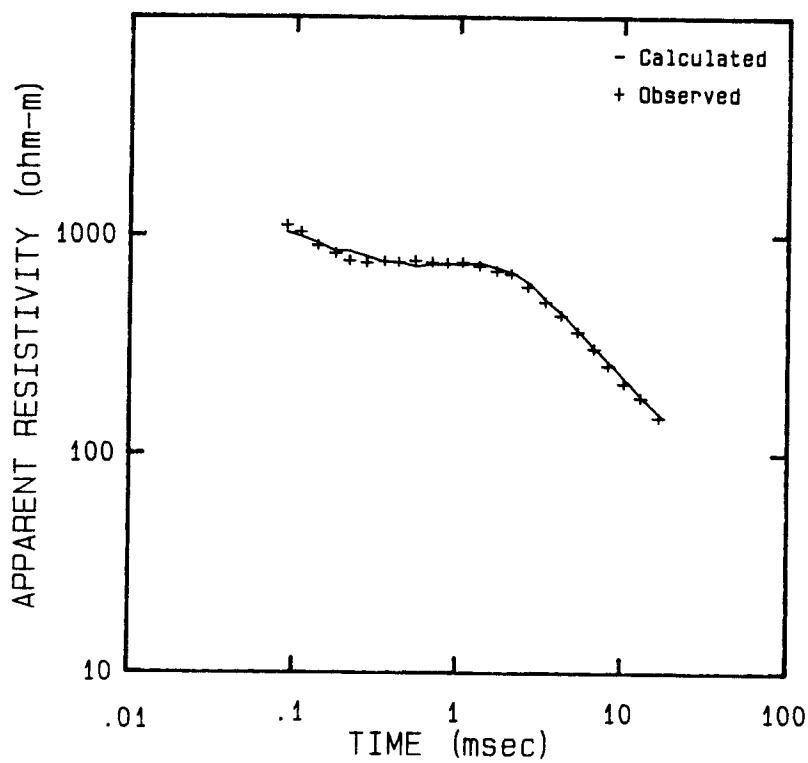
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.10423E-03 | 0.95939E+04 | |
| 2 | SIGMA( 2) | = | 0.19023E-02 | 0.52569E+03 | |
| 3 | SIGMA( 3) | = | 0.13970E-01 | 0.71584E+02 | |
| 4 | THICK( 1) | = | 0.75383E+02 | | 0.75383E+02 |
| 5 | THICK( 2) | = | 0.11148E+04 | | 0.11902E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML19




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 10972 | 99 |
| 518 | 896 |
| 45.8 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 19 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4894E+03 | 0.5381E+03 | -0.4872E+02 | -0.9055E+01 |
| 2 | 0.1100E-03 | 0.3330E+03 | 0.3537E+03 | -0.2077E+02 | -0.5873E+01 |
| 3 | 0.1400E-03 | 0.2262E+03 | 0.2165E+03 | 0.9719E+01 | 0.4489E+01 |
| 4 | 0.1770E-03 | 0.1371E+03 | 0.1326E+03 | 0.4543E+01 | 0.3427E+01 |
| 5 | 0.2200E-03 | 0.9264E+02 | 0.8346E+02 | 0.9184E+01 | 0.1100E+02 |
| 6 | 0.2800E-03 | 0.5487E+02 | 0.4945E+02 | 0.5415E+01 | 0.1095E+02 |
| 7 | 0.3550E-03 | 0.2851E+02 | 0.2900E+02 | -0.4821E+00 | -0.1663E+01 |
| 8 | 0.4430E-03 | 0.1755E+02 | 0.1745E+02 | 0.9684E-01 | 0.5550E+00 |
| 9 | 0.5540E-03 | 0.9335E+01 | 0.1022E+02 | -0.8873E+00 | -0.8680E+01 |
| 10 | 0.7130E-03 | 0.5300E+01 | 0.5453E+01 | -0.1534E+00 | -0.2814E+01 |
| 11 | 0.8810E-03 | 0.3154E+01 | 0.3176E+01 | -0.2242E-01 | -0.7058E+00 |
| 12 | 0.1096E-02 | 0.1773E+01 | 0.1820E+01 | -0.4729E-01 | -0.2598E+01 |
| 13 | 0.1411E-02 | 0.1031E+01 | 0.9801E+00 | 0.5090E-01 | 0.5193E+01 |
| 14 | 0.1795E-02 | 0.5970E+00 | 0.5682E+00 | 0.2880E-01 | 0.5069E+01 |
| 15 | 0.2224E-02 | 0.3760E+00 | 0.3710E+00 | 0.5049E-02 | 0.1361E+01 |
| 16 | 0.2850E-02 | 0.2540E+00 | 0.2435E+00 | 0.1053E-01 | 0.4324E+01 |
| 17 | 0.3600E-02 | 0.1720E+00 | 0.1697E+00 | 0.2271E-02 | 0.1338E+01 |
| 18 | 0.4490E-02 | 0.1210E+00 | 0.1232E+00 | -0.2210E-02 | -0.1794E+01 |
| 19 | 0.5700E-02 | 0.8700E-01 | 0.8946E-01 | -0.2457E-02 | -0.2747E+01 |
| 20 | 0.7190E-02 | 0.6300E-01 | 0.6511E-01 | -0.2113E-02 | -0.3245E+01 |
| 21 | 0.8800E-02 | 0.5000E-01 | 0.4949E-01 | 0.5060E-03 | 0.1022E+01 |
| 22 | 0.1100E-01 | 0.3600E-01 | 0.3700E-01 | 0.1004E-02 | 0.2713E+01 |
| 23 | 0.1400E-01 | 0.2600E-01 | 0.2681E-01 | -0.8051E-03 | -0.3004E+01 |
| 24 | 0.1800E-01 | 0.1900E-01 | 0.1925E-01 | -0.2499E-03 | -0.1298E+01 |

** %RMSERR= 4.99

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.2672E+00 | 0.1000E+01 | | | |
| 3 | -0.4381E+00 | -0.4155E+00 | 0.1000E+01 | | |
| 4 | -0.1892E+00 | -0.8131E-01 | 0.3066E+00 | 0.1000E+01 | |
| 5 | -0.3152E+00 | 0.2421E+00 | -0.1323E+00 | -0.4089E+00 | 0.1000E+01 |

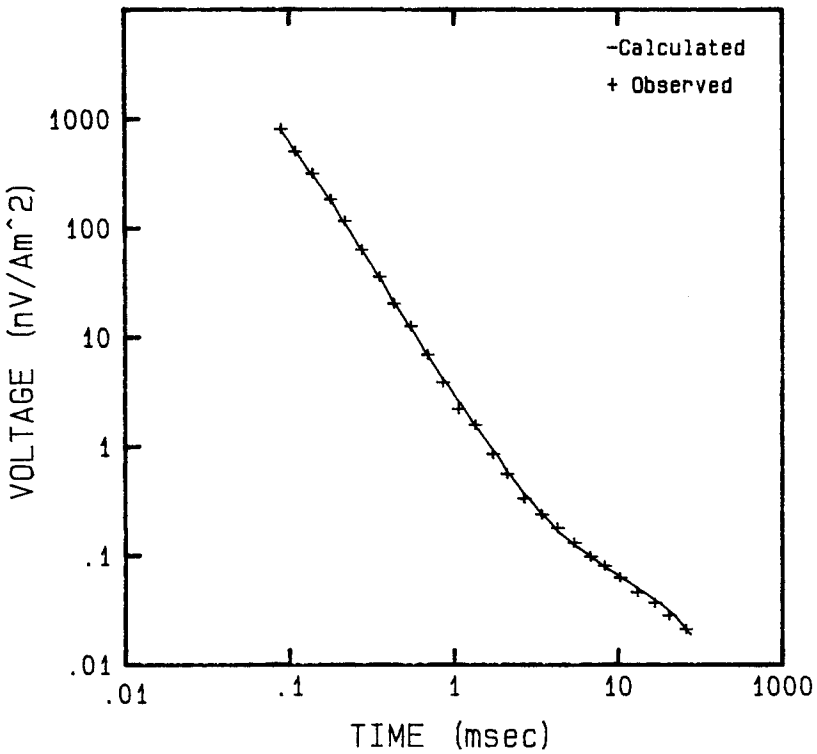
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.9114E-04 | 0.6493E-04 | 0.7124E+00 | 0.7124E+02 |
| 2 | 0.1931E-02 | 0.1608E-03 | 0.8328E-01 | 0.8328E+01 |
| 3 | 0.2185E-01 | 0.9934E-03 | 0.4547E-01 | 0.4547E+01 |
| 4 | 0.9905E+02 | 0.8847E-03 | 0.8933E-05 | 0.8933E-03 |
| 5 | 0.8956E+03 | 0.3126E-02 | 0.3491E-05 | 0.3491E-03 |

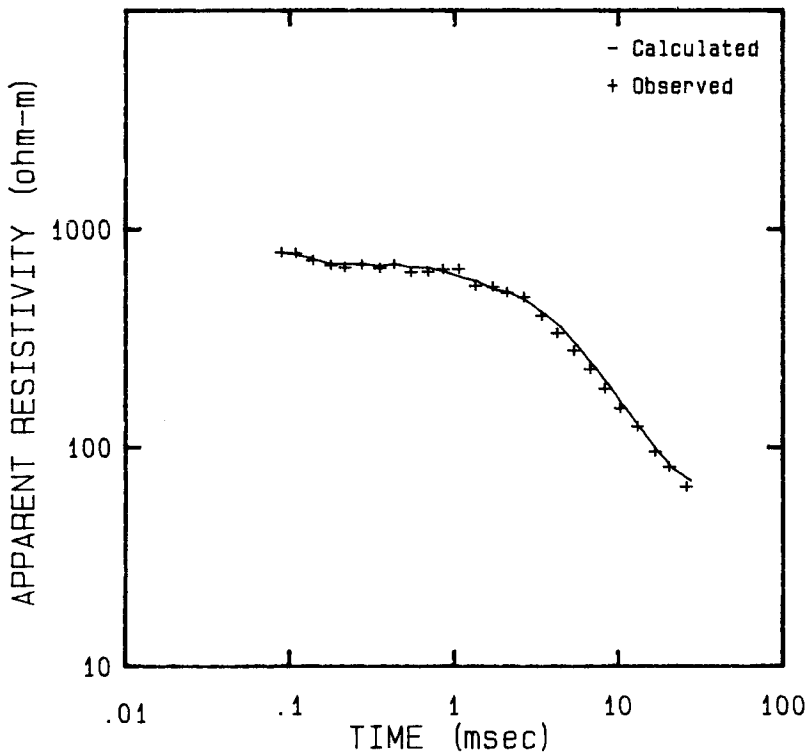
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.91142E-04 | 0.10972E+05 | |
| 2 | SIGMA( 2) | = | 0.19311E-02 | 0.51784E+03 | |
| 3 | SIGMA( 3) | = | 0.21849E-01 | 0.45768E+02 | |
| 4 | THICK( 1) | = | 0.99046E+02 | | 0.99046E+02 |
| 5 | THICK( 2) | = | 0.89557E+03 | | 0.99462E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML20




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 11911 | 58 |
| 507 | 606 |
| 103 | 389 |
| 14 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 20  TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.8070E+03 | 0.8010E+03 | 0.6032E+01 | 0.7531E+00 |
| 2 | 0.1100E-03 | 0.5010E+03 | 0.5116E+03 | -0.1063E+02 | -0.2078E+01 |
| 3 | 0.1400E-03 | 0.3120E+03 | 0.3031E+03 | 0.8924E+01 | 0.2945E+01 |
| 4 | 0.1770E-03 | 0.1820E+03 | 0.1788E+03 | 0.3171E+01 | 0.1773E+01 |
| 5 | 0.2200E-03 | 0.1150E+03 | 0.1088E+03 | 0.6233E+01 | 0.5731E+01 |
| 6 | 0.2800E-03 | 0.6280E+02 | 0.6147E+02 | 0.1328E+01 | 0.2160E+01 |
| 7 | 0.3550E-03 | 0.3530E+02 | 0.3447E+02 | 0.8288E+00 | 0.2404E+01 |
| 8 | 0.4430E-03 | 0.2009E+02 | 0.2003E+02 | 0.5822E-01 | 0.2907E+00 |
| 9 | 0.5540E-03 | 0.1250E+02 | 0.1162E+02 | 0.8798E+00 | 0.7574E+01 |
| 10 | 0.7130E-03 | 0.6856E+01 | 0.6449E+01 | 0.4066E+00 | 0.6305E+01 |
| 11 | 0.8810E-03 | 0.3840E+01 | 0.4008E+01 | -0.1677E+00 | -0.4185E+01 |
| 12 | 0.1096E-02 | 0.2182E+01 | 0.2489E+01 | -0.3073E+00 | -0.1235E+02 |
| 13 | 0.1411E-02 | 0.1566E+01 | 0.1464E+01 | 0.1020E+00 | 0.6969E+01 |
| 14 | 0.1795E-02 | 0.8450E+00 | 0.8860E+00 | -0.4103E-01 | -0.4630E+01 |
| 15 | 0.2224E-02 | 0.5600E+00 | 0.5626E+00 | -0.2604E-02 | -0.4628E+00 |
| 16 | 0.2850E-02 | 0.3300E+00 | 0.3462E+00 | -0.1623E-01 | -0.4688E+01 |
| 17 | 0.3600E-02 | 0.2370E+00 | 0.2306E+00 | 0.6439E-02 | 0.2793E+01 |
| 18 | 0.4490E-02 | 0.1780E+00 | 0.1637E+00 | 0.1430E-01 | 0.8737E+01 |
| 19 | 0.5700E-02 | 0.1300E+00 | 0.1198E+00 | 0.1016E-01 | 0.8474E+01 |
| 20 | 0.7190E-02 | 0.9700E-01 | 0.9251E-01 | 0.4489E-02 | 0.4852E+01 |
| 21 | 0.8800E-02 | 0.8000E-01 | 0.7523E-01 | 0.4775E-02 | 0.6348E+01 |
| 22 | 0.1100E-01 | 0.6300E-01 | 0.6059E-01 | 0.2411E-02 | 0.3980E+01 |
| 23 | 0.1400E-01 | 0.4600E-01 | 0.4805E-01 | -0.2054E-02 | -0.4275E+01 |
| 24 | 0.1800E-01 | 0.3600E-01 | 0.3684E-01 | -0.8368E-03 | -0.2272E+01 |
| 25 | 0.2200E-01 | 0.2800E-01 | 0.2894E-01 | -0.9391E-03 | -0.3245E+01 |
| 26 | 0.2800E-01 | 0.2100E-01 | 0.1869E-01 | 0.2310E-02 | 0.1236E+02 |

** %RMSERR=  5.69

CORRELATION MATRIX

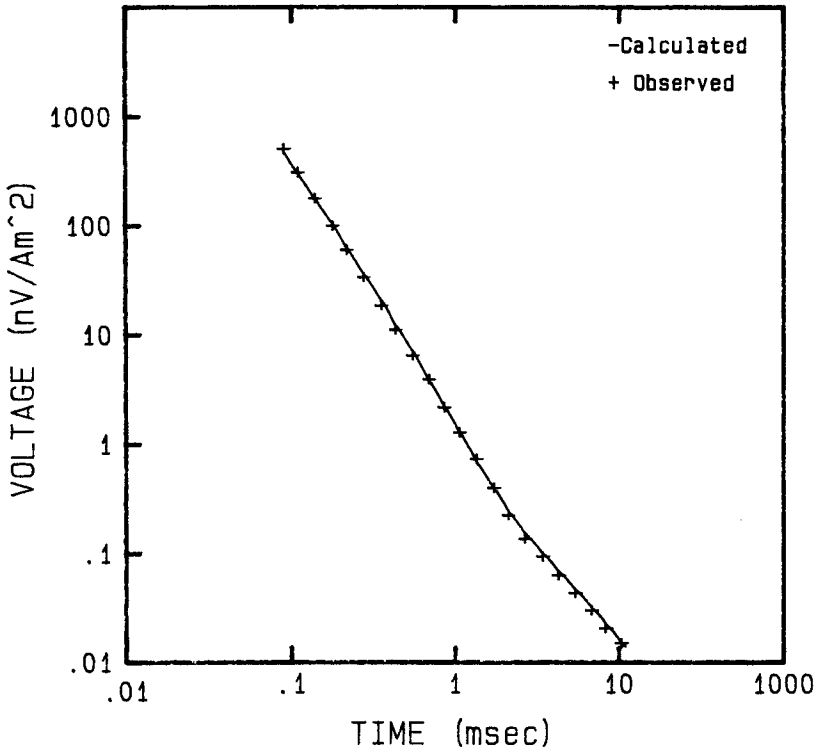
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.4376E+00 | 0.1000E+01 | | | | | |
| 3 | -0.4349E+00 | -0.4838E-01 | 0.1000E+01 | | | | |
| 4 | 0.9422E-02 | -0.6674E-01 | -0.3960E+00 | 0.1000E+01 | | | |
| 5 | -0.3338E+00 | -0.5519E-01 | 0.8659E-01 | 0.8132E-01 | 0.1000E+01 | | |
| 6 | -0.3951E+00 | 0.2833E+00 | 0.6087E+00 | -0.3708E+00 | -0.1077E+00 | 0.1000E+01 | |
| 7 | -0.1497E+00 | 0.3438E+00 | -0.5244E+00 | 0.2945E+00 | -0.2223E+00 | -0.3468E+00 | 0.1000E |

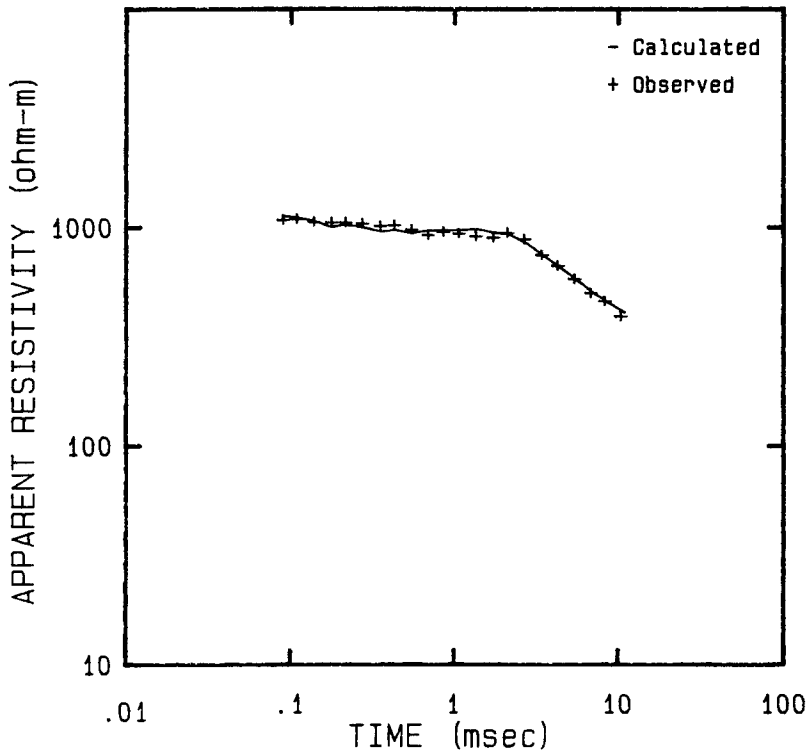
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.8396E-04 | 0.8755E-04 | 0.1043E+01 | 0.1043E+03 |
| 2 0.1972E-02 | 0.2829E-03 | 0.1434E+00 | 0.1434E+02 |
| 3 0.9690E-02 | 0.1253E-02 | 0.1293E+00 | 0.1293E+02 |
| 4 0.7142E-01 | 0.2826E-02 | 0.3957E-01 | 0.3957E+01 |
| 5 0.5801E+02 | 0.6166E-03 | 0.1063E-04 | 0.1063E-02 |
| 6 0.6063E+03 | 0.3523E-02 | 0.5810E-05 | 0.5810E-03 |
| 7 0.3882E+03 | 0.2788E-02 | 0.7182E-05 | 0.7182E-03 |

| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.83955E-04 | 0.11911E+05 | |
| 2 | SIGMA( 2) = | 0.19720E-02 | 0.50709E+03 | |
| 3 | SIGMA( 3) = | 0.96900E-02 | 0.10320E+03 | |
| 4 | SIGMA( 4) = | 0.71422E-01 | 0.14001E+02 | |
| 5 | THICK( 1) = | 0.58009E+02 | | 0.58009E+02 |
| 6 | THICK( 2) = | 0.60629E+03 | | 0.66430E+03 |
| 7 | THICK( 3) = | 0.38822E+03 | | 0.10525E+04 |
| 8 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML21




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 2063 | 95 |
| 783 | 1103 |
| 114 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 21 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.5043E+03 | 0.4747E+03 | 0.2956E+02 | 0.6227E+01 |
| 2 | 0.1100E-03 | 0.3051E+03 | 0.2987E+03 | 0.6378E+01 | 0.2135E+01 |
| 3 | 0.1400E-03 | 0.1767E+03 | 0.1741E+03 | 0.2545E+01 | 0.1461E+01 |
| 4 | 0.1770E-03 | 0.9903E+02 | 0.1023E+03 | -0.3261E+01 | -0.3188E+01 |
| 5 | 0.2200E-03 | 0.5993E+02 | 0.6218E+02 | -0.2251E+01 | -0.3620E+01 |
| 6 | 0.2800E-03 | 0.3347E+02 | 0.3555E+02 | -0.2086E+01 | -0.5867E+01 |
| 7 | 0.3550E-03 | 0.1848E+02 | 0.2030E+02 | -0.1815E+01 | -0.8939E+01 |
| 8 | 0.4430E-03 | 0.1106E+02 | 0.1194E+02 | -0.8744E+00 | -0.7324E+01 |
| 9 | 0.5540E-03 | 0.6479E+01 | 0.6892E+01 | -0.4131E+00 | -0.5994E+01 |
| 10 | 0.7130E-03 | 0.3901E+01 | 0.3638E+01 | 0.2626E+00 | 0.7219E+01 |
| 11 | 0.8810E-03 | 0.2167E+01 | 0.2116E+01 | 0.5074E-01 | 0.2397E+01 |
| 12 | 0.1096E-02 | 0.1275E+01 | 0.1217E+01 | 0.5831E-01 | 0.4792E+01 |
| 13 | 0.1411E-02 | 0.7310E+00 | 0.6490E+00 | 0.8198E-01 | 0.1263E+02 |
| 14 | 0.1795E-02 | 0.3990E+00 | 0.3701E+00 | 0.2891E-01 | 0.7810E+01 |
| 15 | 0.2224E-02 | 0.2230E+00 | 0.2336E+00 | -0.1060E-01 | -0.4536E+01 |
| 16 | 0.2850E-02 | 0.1360E+00 | 0.1447E+00 | -0.8746E-02 | -0.6042E+01 |
| 17 | 0.3600E-02 | 0.9300E-01 | 0.9488E-01 | -0.1876E-02 | -0.1977E+01 |
| 18 | 0.4490E-02 | 0.6300E-01 | 0.6494E-01 | -0.1938E-02 | -0.2985E+01 |
| 19 | 0.5700E-02 | 0.4300E-01 | 0.4389E-01 | -0.8902E-03 | -0.2028E+01 |
| 20 | 0.7190E-02 | 0.3000E-01 | 0.2957E-01 | 0.4301E-03 | 0.1454E+01 |
| 21 | 0.8800E-02 | 0.2100E-01 | 0.2095E-01 | 0.5480E-04 | 0.2616E+00 |
| 22 | 0.1100E-01 | 0.1500E-01 | 0.1421E-01 | 0.7917E-03 | 0.5572E+01 |

** %RMSERR= 5.56

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3745E+00 | 0.1000E+01 | | | |
| 3 | 0.7014E+00 | -0.1957E+00 | 0.1000E+01 | | |
| 4 | -0.7560E+00 | 0.2100E-01 | -0.6226E+00 | 0.1000E+01 | |
| 5 | 0.6317E-02 | 0.1119E+00 | 0.1556E+00 | -0.4674E+00 | 0.1000E+01 |

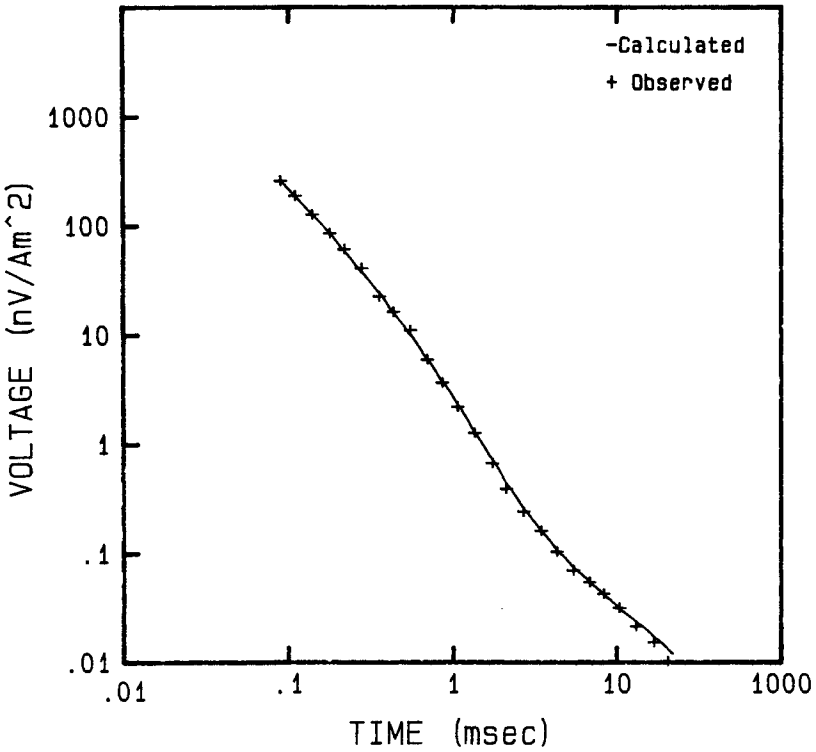
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4848E-03 | 0.1247E-03 | 0.2572E+00 | 0.2572E+02 |
| 2 | 0.1277E-02 | 0.1064E-03 | 0.8330E-01 | 0.8330E+01 |
| 3 | 0.8741E-02 | 0.1537E-01 | 0.1758E+01 | 0.1758E+03 |
| 4 | 0.9499E+02 | 0.6594E-03 | 0.6942E-05 | 0.6942E-03 |
| 5 | 0.1103E+04 | 0.2027E-02 | 0.1838E-05 | 0.1838E-03 |

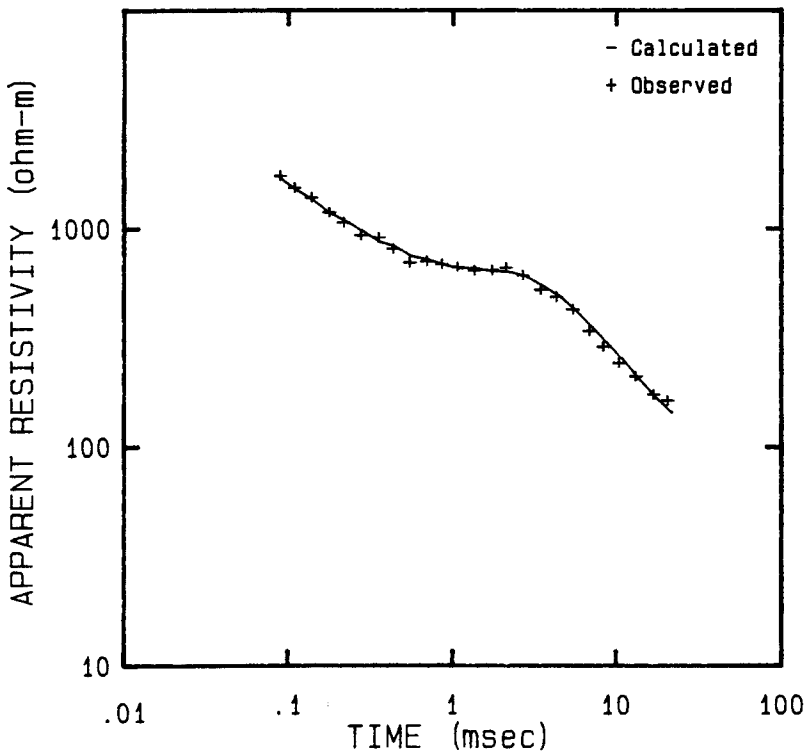
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.48476E-03 | 0.20629E+04 | |
| 2 | SIGMA( 2) | = | 0.12772E-02 | 0.78299E+03 | |
| 3 | SIGMA( 3) | = | 0.87415E-02 | 0.11440E+03 | |
| 4 | THICK( 1) | = | 0.94993E+02 | | 0.94993E+02 |
| 5 | THICK( 2) | = | 0.11028E+04 | | 0.11978E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML22




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 9217 | 211 |
| 373 | 983 |
| 41.6 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 22  TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2553E+03 | 0.2624E+03 | -0.7081E+01 | -0.2699E+01 |
| 2 | 0.1100E-03 | 0.1856E+03 | 0.1876E+03 | -0.2020E+01 | -0.1076E+01 |
| 3 | 0.1400E-03 | 0.1244E+03 | 0.1260E+03 | -0.1619E+01 | -0.1285E+01 |
| 4 | 0.1770E-03 | 0.8386E+02 | 0.8425E+02 | -0.3872E+00 | -0.4596E+00 |
| 5 | 0.2200E-03 | 0.5972E+02 | 0.5721E+02 | 0.2511E+01 | 0.4388E+01 |
| 6 | 0.2800E-03 | 0.4007E+02 | 0.3677E+02 | 0.3299E+01 | 0.8972E+01 |
| 7 | 0.3550E-03 | 0.2208E+02 | 0.2344E+02 | -0.1354E+01 | -0.5779E+01 |
| 8 | 0.4430E-03 | 0.1594E+02 | 0.1521E+02 | 0.7272E+00 | 0.4782E+01 |
| 9 | 0.5540E-03 | 0.1086E+02 | 0.9711E+01 | 0.1152E+01 | 0.1186E+02 |
| 10 | 0.7130E-03 | 0.5876E+01 | 0.5709E+01 | 0.1669E+00 | 0.2923E+01 |
| 11 | 0.8810E-03 | 0.3594E+01 | 0.3597E+01 | -0.3077E-02 | -0.8554E-01 |
| 12 | 0.1096E-02 | 0.2158E+01 | 0.2187E+01 | -0.2941E-01 | -0.1345E+01 |
| 13 | 0.1411E-02 | 0.1246E+01 | 0.1202E+01 | 0.4446E-01 | 0.3701E+01 |
| 14 | 0.1795E-02 | 0.6630E+00 | 0.6735E+00 | -0.1052E-01 | -0.1562E+01 |
| 15 | 0.2224E-02 | 0.3850E+00 | 0.4050E+00 | -0.2004E-01 | -0.4948E+01 |
| 16 | 0.2850E-02 | 0.2380E+00 | 0.2356E+00 | 0.2433E-02 | 0.1033E+01 |
| 17 | 0.3600E-02 | 0.1590E+00 | 0.1484E+00 | 0.1057E-01 | 0.7124E+01 |
| 18 | 0.4490E-02 | 0.1020E+00 | 0.1005E+00 | 0.1547E-02 | 0.1540E+01 |
| 19 | 0.5700E-02 | 0.6900E-01 | 0.7016E-01 | -0.1158E-02 | -0.1650E+01 |
| 20 | 0.7190E-02 | 0.5400E-01 | 0.5069E-01 | 0.3311E-02 | 0.6532E+01 |
| 21 | 0.8800E-02 | 0.4200E-01 | 0.3877E-01 | 0.3230E-02 | 0.8331E+01 |
| 22 | 0.1100E-01 | 0.3100E-01 | 0.2922E-01 | 0.1778E-02 | 0.6083E+01 |
| 23 | 0.1400E-01 | 0.2100E-01 | 0.2169E-01 | -0.6947E-03 | -0.3202E+01 |
| 24 | 0.1800E-01 | 0.1500E-01 | 0.1586E-01 | -0.8620E-03 | -0.5434E+01 |
| 25 | 0.2200E-01 | 0.1000E-01 | 0.1212E-01 | -0.2118E-02 | -0.1748E+02 |

** %RMSERR=  6.03

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.2805E+00 | 0.1000E+01 | | | |
| 3 | -0.1937E+00 | -0.2682E+00 | 0.1000E+01 | | |
| 4 | -0.1039E+00 | 0.8048E-01 | -0.2122E+00 | 0.1000E+01 | |
| 5 | -0.2864E+00 | -0.9035E-01 | -0.7836E-01 | -0.5598E+00 | 0.1000E+01 |

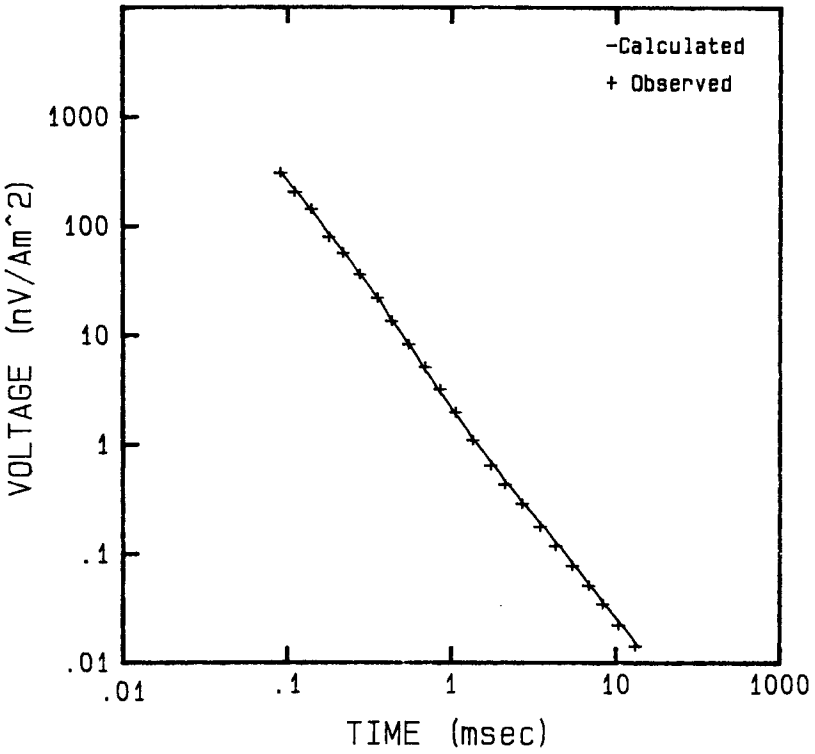
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1085E-03 | 0.5535E-04 | 0.5102E+00 | 0.5102E+02 |
| 2 | 0.2678E-02 | 0.2346E-03 | 0.8760E-01 | 0.8760E+01 |
| 3 | 0.2406E-01 | 0.1174E-02 | 0.4877E-01 | 0.4877E+01 |
| 4 | 0.2106E+03 | 0.1174E-02 | 0.5576E-05 | 0.5576E-03 |
| 5 | 0.9835E+03 | 0.2749E-02 | 0.2795E-05 | 0.2795E-03 |

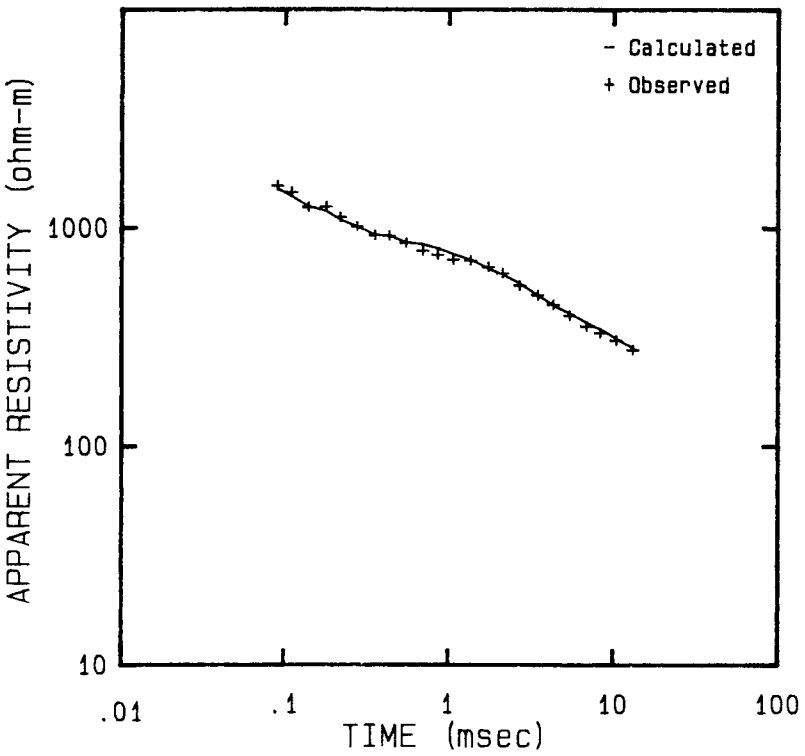
| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.10849E-03 | 0.92171E+04 | |
| 2 | SIGMA( 2) = | 0.26784E-02 | 0.37335E+03 | |
| 3 | SIGMA( 3) = | 0.24064E-01 | 0.41555E+02 | |
| 4 | THICK( 1) = | 0.21057E+03 | | 0.21057E+03 |
| 5 | THICK( 2) = | 0.98350E+03 | | 0.11941E+04 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML23




## MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 6976 | 173 |
| 493 | 665 |
| 151 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 23 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3019E+03 | 0.3135E+03 | -0.1158E+02 | -0.3694E+01 |
| 2 | 0.1100E-03 | 0.2010E+03 | 0.2156E+03 | -0.1458E+02 | -0.6763E+01 |
| 3 | 0.1400E-03 | 0.1399E+03 | 0.1382E+03 | 0.1617E+01 | 0.1169E+01 |
| 4 | 0.1830E-03 | 0.7756E+02 | 0.8302E+02 | -0.5459E+01 | -0.6575E+01 |
| 5 | 0.2200E-03 | 0.5552E+02 | 0.5786E+02 | -0.2342E+01 | -0.4048E+01 |
| 6 | 0.2800E-03 | 0.3511E+02 | 0.3534E+02 | -0.2312E+00 | -0.6542E+00 |
| 7 | 0.3550E-03 | 0.2153E+02 | 0.2137E+02 | 0.1530E+00 | 0.7158E+00 |
| 8 | 0.4430E-03 | 0.1317E+02 | 0.1318E+02 | -0.1048E-01 | -0.7946E-01 |
| 9 | 0.5540E-03 | 0.8051E+01 | 0.7995E+01 | 0.5630E-01 | 0.7042E+00 |
| 10 | 0.7130E-03 | 0.5023E+01 | 0.4554E+01 | 0.4688E+00 | 0.1029E+02 |
| 11 | 0.8810E-03 | 0.3138E+01 | 0.2845E+01 | 0.2926E+00 | 0.1028E+02 |
| 12 | 0.1096E-02 | 0.1941E+01 | 0.1785E+01 | 0.1560E+00 | 0.8742E+01 |
| 13 | 0.1411E-02 | 0.1079E+01 | 0.1067E+01 | 0.1210E-01 | 0.1134E+01 |
| 14 | 0.1795E-02 | 0.6360E+00 | 0.6614E+00 | -0.2542E-01 | -0.3843E+01 |
| 15 | 0.2224E-02 | 0.4270E+00 | 0.4404E+00 | -0.1340E-01 | -0.3043E+01 |
| 16 | 0.2850E-02 | 0.2830E+00 | 0.2778E+00 | 0.5176E-02 | 0.1863E+01 |
| 17 | 0.3600E-02 | 0.1750E+00 | 0.1793E+00 | -0.4290E-02 | -0.2393E+01 |
| 18 | 0.4490E-02 | 0.1170E+00 | 0.1185E+00 | -0.1510E-02 | -0.1274E+01 |
| 19 | 0.5700E-02 | 0.7700E-01 | 0.7595E-01 | 0.1053E-02 | 0.1387E+01 |
| 20 | 0.7190E-02 | 0.5100E-01 | 0.4861E-01 | 0.2389E-02 | 0.4914E+01 |
| 21 | 0.8800E-02 | 0.3400E-01 | 0.3303E-01 | 0.9701E-03 | 0.2937E+01 |
| 22 | 0.1100E-01 | 0.2200E-01 | 0.2153E-01 | 0.4656E-03 | 0.2162E+01 |
| 23 | 0.1400E-01 | 0.1400E-01 | 0.1354E-01 | 0.4600E-03 | 0.3397E+01 |

** %RMSERR= 4.65

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.8989E-01 | 0.1000E+01 | | | |
| 3 | -0.4340E-01 | -0.4877E+00 | 0.1000E+01 | | |
| 4 | -0.8774E-01 | -0.1792E+00 | -0.2467E+00 | 0.1000E+01 | |
| 5 | 0.7168E+00 | 0.1162E+00 | -0.3110E+00 | 0.1523E+00 | 0.1000E+01 |

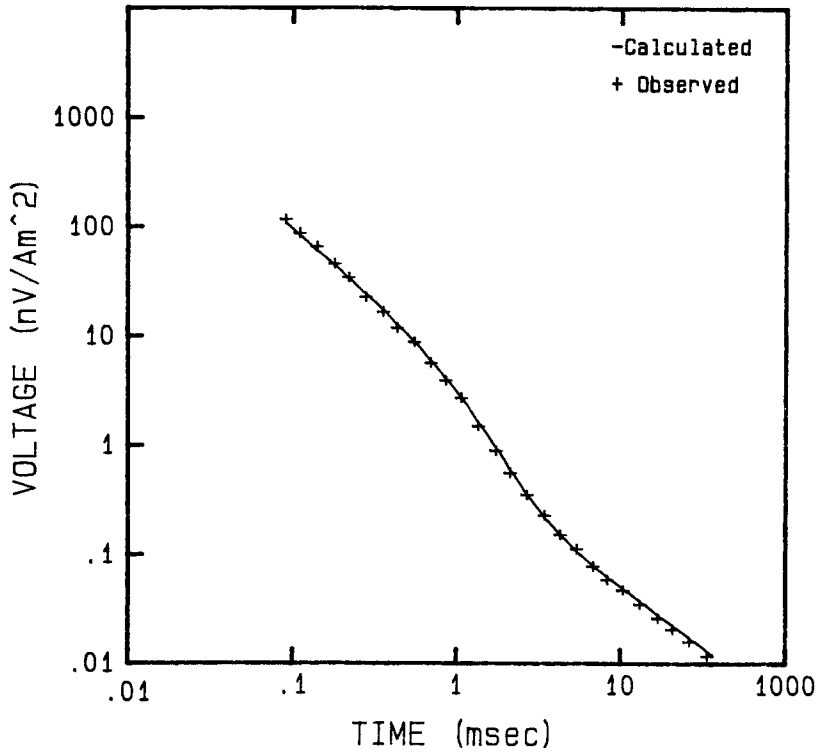
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1433E-03 | 0.5395E-04 | 0.3764E+00 | 0.3764E+02 |
| 2 | 0.2027E-02 | 0.1758E-03 | 0.8674E-01 | 0.8674E+01 |
| 3 | 0.6639E-02 | 0.5580E-03 | 0.8404E-01 | 0.8404E+01 |
| 4 | 0.1727E+03 | 0.7861E-03 | 0.4553E-05 | 0.4553E-03 |
| 5 | 0.6658E+03 | 0.2797E-02 | 0.4201E-05 | 0.4201E-03 |

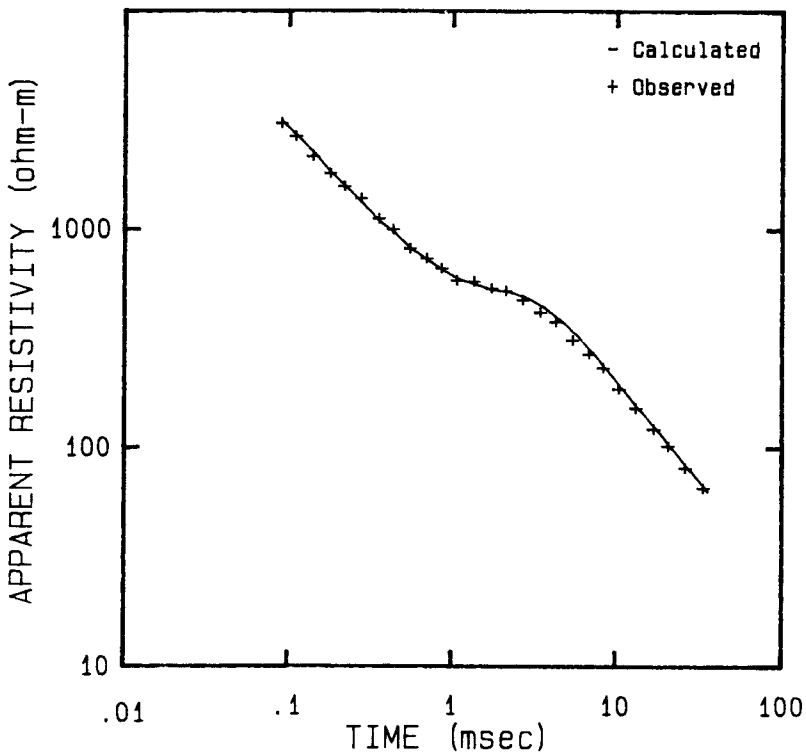
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.14334E-03 | 0.69762E+04 | |
| 2 | SIGMA( 2) | = | 0.20269E-02 | 0.49336E+03 | |
| 3 | SIGMA( 3) | = | 0.66394E-02 | 0.15062E+03 | |
| 4 | THICK( 1) | = | 0.17268E+03 | | 0.17268E+03 |
| 5 | THICK( 2) | = | 0.66577E+03 | | 0.83845E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML24




## MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 3375 | 379 |
| 162 | 635 |
| 10.8 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 24 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1147E+03 | 0.1093E+03 | 0.5383E+01 | 0.4925E+01 |
| 2 | 0.1100E-03 | 0.8551E+02 | 0.8254E+02 | 0.2975E+01 | 0.3605E+01 |
| 3 | 0.1400E-03 | 0.6452E+02 | 0.5939E+02 | 0.5123E+01 | 0.8625E+01 |
| 4 | 0.1770E-03 | 0.4504E+02 | 0.4390E+02 | 0.1136E+01 | 0.2589E+01 |
| 5 | 0.2200E-03 | 0.3353E+02 | 0.3297E+02 | 0.5614E+00 | 0.1703E+01 |
| 6 | 0.2800E-03 | 0.2216E+02 | 0.2354E+02 | -0.1377E+01 | -0.5851E+01 |
| 7 | 0.3550E-03 | 0.1624E+02 | 0.1691E+02 | -0.6654E+00 | -0.3936E+01 |
| 8 | 0.4430E-03 | 0.1160E+02 | 0.1217E+02 | -0.5658E+00 | -0.4650E+01 |
| 9 | 0.5540E-03 | 0.8614E+01 | 0.8611E+01 | 0.2799E-02 | 0.3250E-01 |
| 10 | 0.7130E-03 | 0.5564E+01 | 0.5696E+01 | -0.1316E+00 | -0.2310E+01 |
| 11 | 0.8810E-03 | 0.3834E+01 | 0.3917E+01 | -0.8298E-01 | -0.2119E+01 |
| 12 | 0.1096E-02 | 0.2648E+01 | 0.2579E+01 | 0.6855E-01 | 0.2657E+01 |
| 13 | 0.1411E-02 | 0.1471E+01 | 0.1526E+01 | -0.5531E-01 | -0.3624E+01 |
| 14 | 0.1795E-02 | 0.8750E+00 | 0.8993E+00 | -0.2429E-01 | -0.2701E+01 |
| 15 | 0.2224E-02 | 0.5510E+00 | 0.5580E+00 | -0.7042E-02 | -0.1262E+01 |
| 16 | 0.2850E-02 | 0.3460E+00 | 0.3253E+00 | 0.2072E-01 | 0.6368E+01 |
| 17 | 0.3600E-02 | 0.2250E+00 | 0.2046E+00 | 0.2038E-01 | 0.9959E+01 |
| 18 | 0.4490E-02 | 0.1500E+00 | 0.1423E+00 | 0.7698E-02 | 0.5409E+01 |
| 19 | 0.5700E-02 | 0.1110E+00 | 0.1003E+00 | 0.1074E-01 | 0.1071E+02 |
| 20 | 0.7190E-02 | 0.7700E-01 | 0.7414E-01 | 0.2864E-02 | 0.3864E+01 |
| 21 | 0.8800E-02 | 0.5800E-01 | 0.5878E-01 | -0.7785E-03 | -0.1324E+01 |
| 22 | 0.1100E-01 | 0.4600E-01 | 0.4564E-01 | 0.3638E-03 | 0.7971E+00 |
| 23 | 0.1400E-01 | 0.3400E-01 | 0.3469E-01 | -0.6931E-03 | -0.1998E+01 |
| 24 | 0.1800E-01 | 0.2600E-01 | 0.2623E-01 | -0.2347E-03 | -0.8945E+00 |
| 25 | 0.2200E-01 | 0.2000E-01 | 0.2100E-01 | -0.9984E-03 | -0.4755E+01 |
| 26 | 0.2800E-01 | 0.1600E-01 | 0.1596E-01 | 0.3603E-04 | 0.2257E+00 |
| 27 | 0.3600E-01 | 0.1150E-01 | 0.1209E-01 | -0.5927E-03 | -0.4901E+01 |

** %RMSERR= 4.65

CORRELATION MATRIX

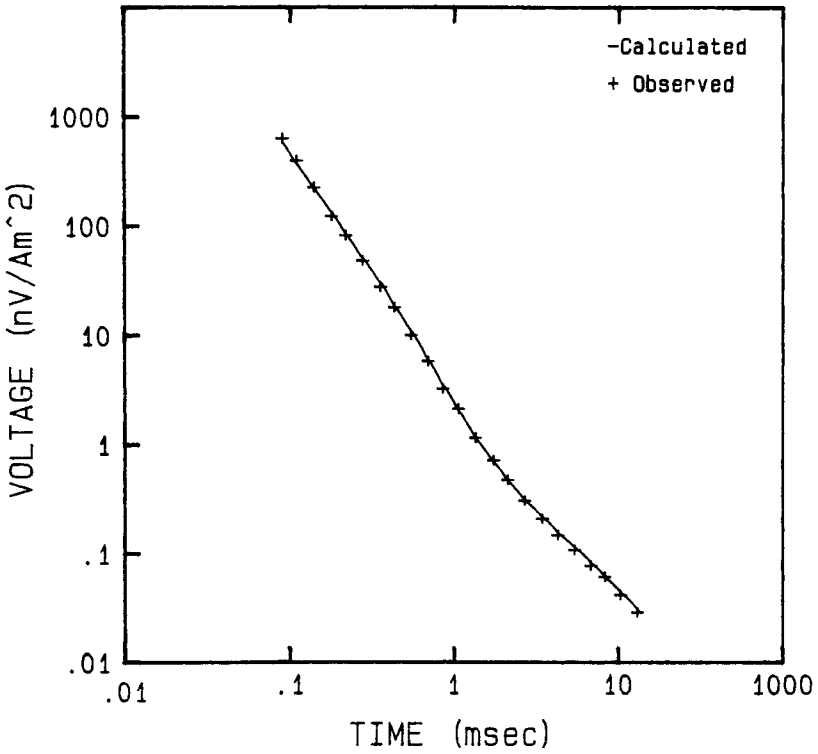
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.1116E-01 | 0.1000E+01 | | | |
| 3 | -0.2109E+00 | -0.1372E+00 | 0.1000E+01 | | |
| 4 | -0.8417E-01 | 0.2911E+00 | 0.2181E+00 | 0.1000E+01 | |
| 5 | -0.8949E-01 | -0.3690E+00 | -0.2426E+00 | -0.1303E+00 | 0.1000E+01 |

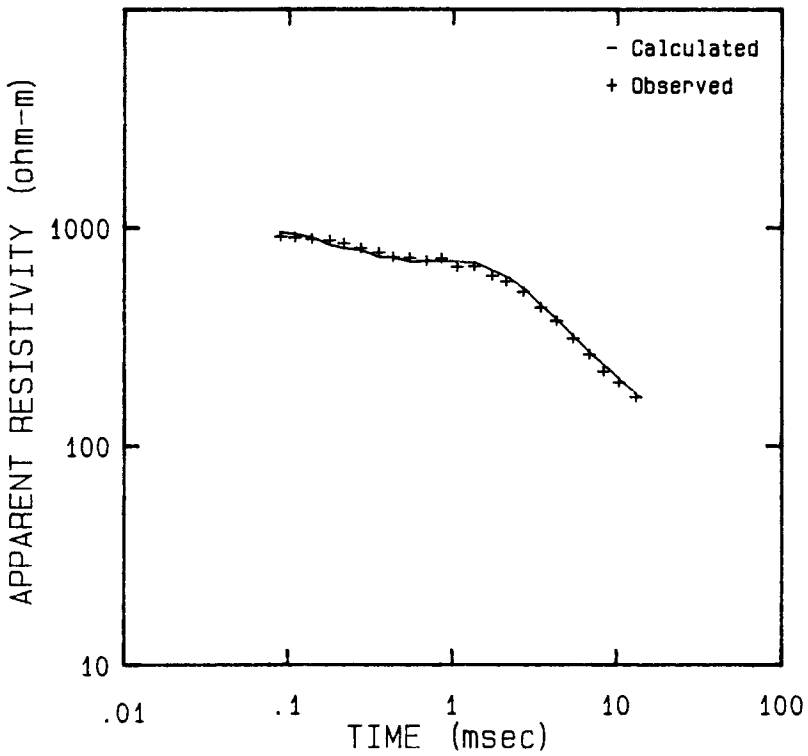
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.2963E-03 | 0.5893E-04 | 0.1989E+00 | 0.1989E+02 |
| 2 0.6156E-02 | 0.3824E-03 | 0.6212E-01 | 0.6212E+01 |
| 3 0.9271E-01 | 0.1654E-02 | 0.1784E-01 | 0.1784E+01 |
| 4 0.3793E+03 | 0.1152E-02 | 0.3038E-05 | 0.3038E-03 |
| 5 0.6344E+03 | 0.2159E-02 | 0.3403E-05 | 0.3403E-03 |

| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.29629E-03 | 0.33751E+04 | |
| 2 SIGMA( 2) = | 0.61560E-02 | 0.16244E+03 | |
| 3 SIGMA( 3) = | 0.92707E-01 | 0.10787E+02 | |
| 4 THICK( 1) = | 0.37931E+03 | | 0.37931E+03 |
| 5 THICK( 2) = | 0.63441E+03 | | 0.10137E+04 |
| 6 SHIFT = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML25




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 947 | 254 |
| 414 | 638 |
| 35.9 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 25 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.6412E+03 | 0.6009E+03 | 0.4034E+02 | 0.6713E+01 |
| 2 | 0.1100E-03 | 0.4002E+03 | 0.3786E+03 | 0.2157E+02 | 0.5698E+01 |
| 3 | 0.1400E-03 | 0.2269E+03 | 0.2221E+03 | 0.4849E+01 | 0.2183E+01 |
| 4 | 0.1770E-03 | 0.1236E+03 | 0.1346E+03 | -0.1093E+02 | -0.8122E+01 |
| 5 | 0.2200E-03 | 0.8244E+02 | 0.8514E+02 | -0.2706E+01 | -0.3178E+01 |
| 6 | 0.2800E-03 | 0.4861E+02 | 0.5044E+02 | -0.1833E+01 | -0.3635E+01 |
| 7 | 0.3550E-03 | 0.2773E+02 | 0.3005E+02 | -0.2322E+01 | -0.7726E+01 |
| 8 | 0.4430E-03 | 0.1809E+02 | 0.1827E+02 | -0.1765E+00 | -0.9662E+00 |
| 9 | 0.5540E-03 | 0.1002E+02 | 0.1071E+02 | -0.6914E+00 | -0.6457E+01 |
| 10 | 0.7130E-03 | 0.5828E+01 | 0.5815E+01 | 0.1347E-01 | 0.2316E+00 |
| 11 | 0.8810E-03 | 0.3267E+01 | 0.3413E+01 | -0.1462E+00 | -0.4284E+01 |
| 12 | 0.1096E-02 | 0.2139E+01 | 0.1979E+01 | 0.1600E+00 | 0.8085E+01 |
| 13 | 0.1411E-02 | 0.1163E+01 | 0.1101E+01 | 0.6197E-01 | 0.5629E+01 |
| 14 | 0.1795E-02 | 0.7190E+00 | 0.6702E+00 | 0.4883E-01 | 0.7286E+01 |
| 15 | 0.2224E-02 | 0.4760E+00 | 0.4498E+00 | 0.2616E-01 | 0.5814E+01 |
| 16 | 0.2850E-02 | 0.3070E+00 | 0.3017E+00 | 0.5271E-02 | 0.1747E+01 |
| 17 | 0.3600E-02 | 0.2100E+00 | 0.2140E+00 | -0.4005E-02 | -0.1871E+01 |
| 18 | 0.4490E-02 | 0.1480E+00 | 0.1548E+00 | -0.6818E-02 | -0.4404E+01 |
| 19 | 0.5700E-02 | 0.1090E+00 | 0.1096E+00 | -0.5654E-03 | -0.5160E+00 |
| 20 | 0.7190E-02 | 0.7800E-01 | 0.7891E-01 | -0.9105E-03 | -0.1154E+01 |
| 21 | 0.8800E-02 | 0.6200E-01 | 0.5844E-01 | 0.3560E-02 | 0.6091E+01 |
| 22 | 0.1100E-01 | 0.4200E-01 | 0.4164E-01 | 0.3635E-03 | 0.8731E+00 |
| 23 | 0.1400E-01 | 0.2900E-01 | 0.2856E-01 | 0.4433E-03 | 0.1552E+01 |

** %RMSERR= 4.86

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.6449E+00 | 0.1000E+01 | | | |
| 3 | 0.3913E+00 | -0.7724E+00 | 0.1000E+01 | | |
| 4 | -0.3163E+00 | 0.5912E+00 | -0.6501E+00 | 0.1000E+01 | |
| 5 | -0.1027E+00 | 0.7943E-01 | -0.1991E+00 | -0.4057E+00 | 0.1000E+01 |

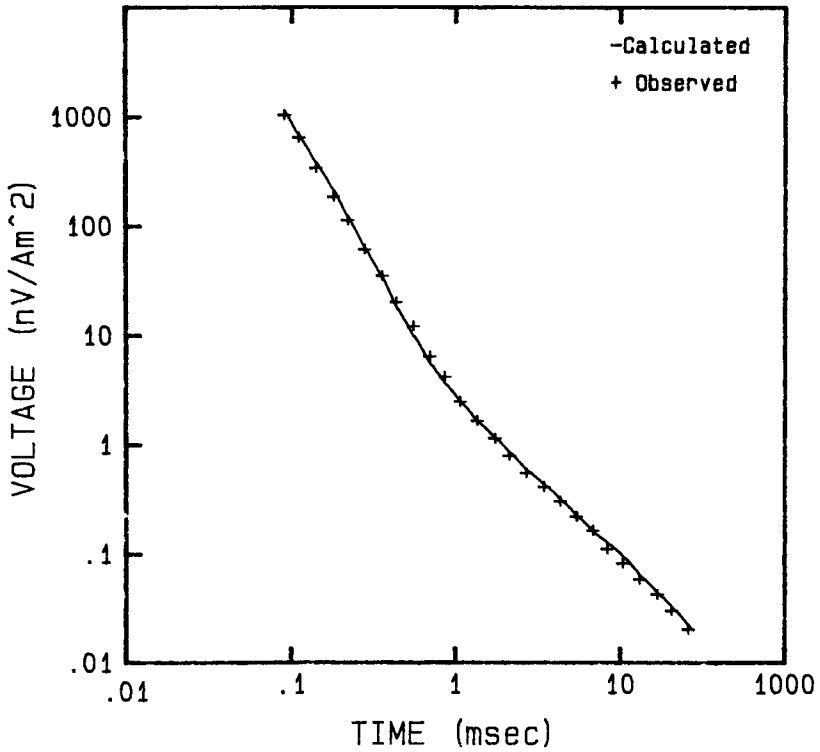
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1056E-02 | 0.8964E-04 | 0.8487E-01 | 0.8487E+01 |
| 2 | 0.2415E-02 | 0.4797E-03 | 0.1986E+00 | 0.1986E+02 |
| 3 | 0.2783E-01 | 0.1811E-02 | 0.6506E-01 | 0.6506E+01 |
| 4 | 0.2544E+03 | 0.2492E-02 | 0.9796E-05 | 0.9796E-03 |
| 5 | 0.6381E+03 | 0.3345E-02 | 0.5243E-05 | 0.5243E-03 |

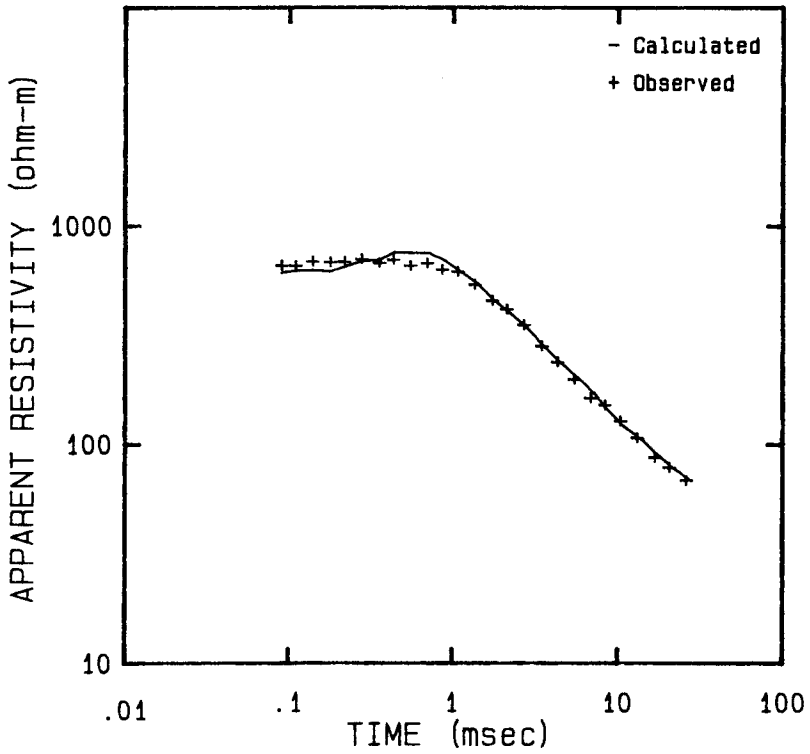
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.10563E-02 | 0.94674E+03 | |
| 2 | SIGMA( 2) | = | 0.24151E-02 | 0.41407E+03 | |
| 3 | SIGMA( 3) | = | 0.27833E-01 | 0.35929E+02 | |
| 4 | THICK( 1) | = | 0.25437E+03 | | 0.25437E+03 |
| 5 | THICK( 2) | = | 0.63806E+03 | | 0.89244E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML26




## MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 605 | 614 |
| 31 | 232 |
| 15.8 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 26 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1027E+04 | 0.1140E+04 | -0.1128E+03 | -0.9895E+01 |
| 2 | 0.1100E-03 | 0.6376E+03 | 0.6833E+03 | -0.4570E+02 | -0.6688E+01 |
| 3 | 0.1400E-03 | 0.3333E+03 | 0.3789E+03 | -0.4563E+02 | -0.1204E+02 |
| 4 | 0.1770E-03 | 0.1824E+03 | 0.2108E+03 | -0.2835E+02 | -0.1345E+02 |
| 5 | 0.2200E-03 | 0.1105E+03 | 0.1194E+03 | -0.8846E+01 | -0.7411E+01 |
| 6 | 0.2800E-03 | 0.6027E+02 | 0.6225E+02 | -0.1981E+01 | -0.3183E+01 |
| 7 | 0.3550E-03 | 0.3434E+02 | 0.3248E+02 | 0.1858E+01 | 0.5721E+01 |
| 8 | 0.4430E-03 | 0.1974E+02 | 0.1753E+02 | 0.2209E+01 | 0.1260E+02 |
| 9 | 0.5540E-03 | 0.1188E+02 | 0.9680E+01 | 0.2200E+01 | 0.2272E+02 |
| 10 | 0.7130E-03 | 0.6310E+01 | 0.5350E+01 | 0.9603E+00 | 0.1795E+02 |
| 11 | 0.8810E-03 | 0.4096E+01 | 0.3487E+01 | 0.6091E+00 | 0.1747E+02 |
| 12 | 0.1096E-02 | 0.2415E+01 | 0.2376E+01 | 0.3923E-01 | 0.1651E+01 |
| 13 | 0.1411E-02 | 0.1615E+01 | 0.1577E+01 | 0.3801E-01 | 0.2410E+01 |
| 14 | 0.1795E-02 | 0.1113E+01 | 0.1114E+01 | -0.1398E-02 | -0.1255E+00 |
| 15 | 0.2224E-02 | 0.7740E+00 | 0.8148E+00 | -0.4076E-01 | -0.5002E+01 |
| 16 | 0.2850E-02 | 0.5420E+00 | 0.5645E+00 | -0.2247E-01 | -0.3981E+01 |
| 17 | 0.3600E-02 | 0.4040E+00 | 0.4091E+00 | -0.5053E-02 | -0.1235E+01 |
| 18 | 0.4490E-02 | 0.2980E+00 | 0.2985E+00 | -0.4668E-03 | -0.1564E+00 |
| 19 | 0.5700E-02 | 0.2170E+00 | 0.2138E+00 | 0.3238E-02 | 0.1515E+01 |
| 20 | 0.7190E-02 | 0.1620E+00 | 0.1542E+00 | 0.7789E-02 | 0.5051E+01 |
| 21 | 0.8800E-02 | 0.1100E+00 | 0.1159E+00 | -0.5854E-02 | -0.5053E+01 |
| 22 | 0.1100E-01 | 0.8100E-01 | 0.8418E-01 | -0.3181E-02 | -0.3778E+01 |
| 23 | 0.1400E-01 | 0.5800E-01 | 0.5918E-01 | -0.1185E-02 | -0.2002E+01 |
| 24 | 0.1800E-01 | 0.4200E-01 | 0.4052E-01 | 0.1475E-02 | 0.3641E+01 |
| 25 | 0.2200E-01 | 0.2900E-01 | 0.2959E-01 | -0.5891E-03 | -0.1991E+01 |
| 26 | 0.2800E-01 | 0.2000E-01 | 0.2005E-01 | -0.4798E-04 | -0.2393E+00 |

** %RMSERR= 8.79

CORRELATION MATRIX

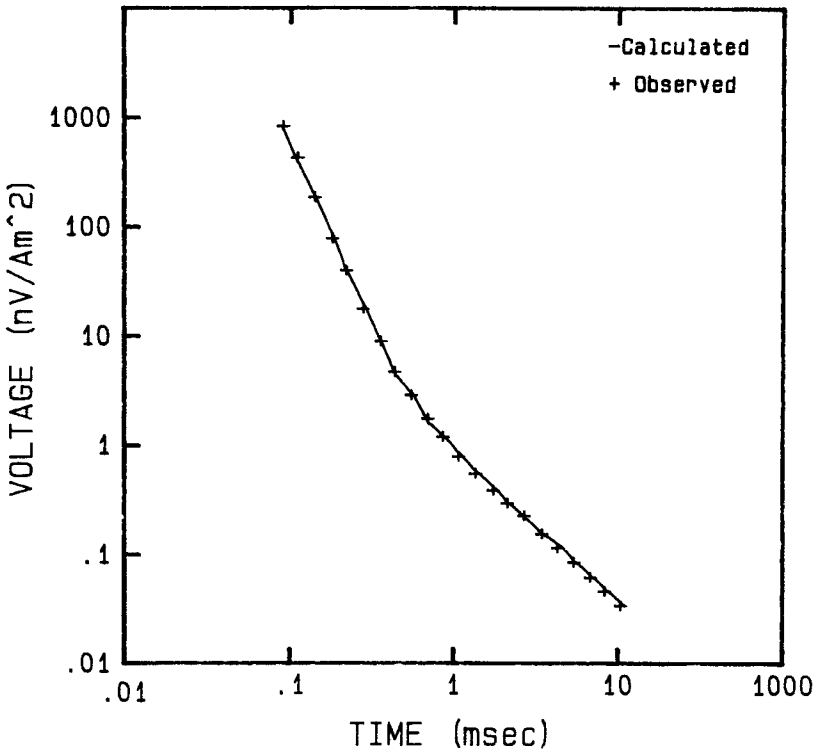
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.4782E-03 | 0.1000E+01 | | | |
| 3 | 0.2896E+00 | 0.3273E+00 | 0.1000E+01 | | |
| 4 | -0.2223E+00 | 0.4230E+00 | -0.3688E-01 | 0.1000E+01 | |
| 5 | -0.1607E+00 | -0.8461E+00 | -0.4658E+00 | -0.3516E+00 | 0.1000E+01 |

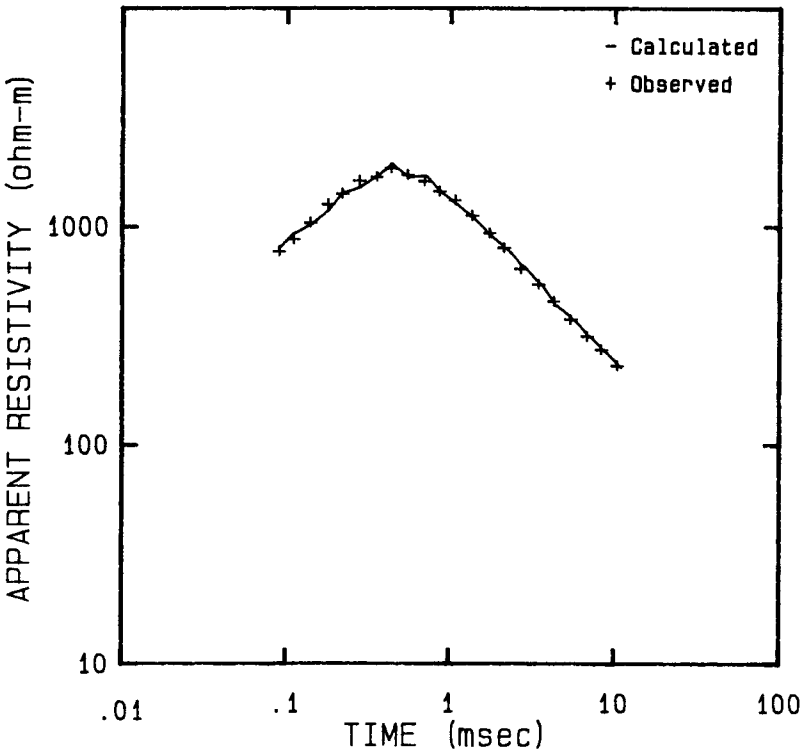
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1653E-02 | 0.3176E-03 | 0.1921E+00 | 0.1921E+02 |
| 2 | 0.3212E-01 | 0.4687E-02 | 0.1459E+00 | 0.1459E+02 |
| 3 | 0.6318E-01 | 0.3945E-02 | 0.6244E-01 | 0.6244E+01 |
| 4 | 0.6144E+03 | 0.3243E-02 | 0.5279E-05 | 0.5279E-03 |
| 5 | 0.2314E+03 | 0.7507E-02 | 0.3245E-04 | 0.3245E-02 |

| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.16534E-02 | 0.60483E+03 | |
| 2 | SIGMA( 2) = | 0.32123E-01 | 0.31130E+02 | |
| 3 | SIGMA( 3) = | 0.63179E-01 | 0.15828E+02 | |
| 4 | THICK( 1) = | 0.61436E+03 | | 0.61436E+03 |
| 5 | THICK( 2) = | 0.23136E+03 | | 0.84573E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML27




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 130 | 17 |
| 2698 | 776 |
| 72 | 281 |
| 27 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 27  TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.8230E+03 | 0.7874E+03 | 0.3561E+02 | 0.4522E+01 |
| 2 | 0.1100E-03 | 0.4224E+03 | 0.3904E+03 | 0.3207E+02 | 0.8215E+01 |
| 3 | 0.1400E-03 | 0.1826E+03 | 0.1889E+03 | -0.6342E+01 | -0.3357E+01 |
| 4 | 0.1770E-03 | 0.7615E+02 | 0.8434E+02 | -0.8187E+01 | -0.9708E+01 |
| 5 | 0.2200E-03 | 0.3892E+02 | 0.3863E+02 | 0.2868E+00 | 0.7423E+00 |
| 6 | 0.2800E-03 | 0.1740E+02 | 0.1929E+02 | -0.1887E+01 | -0.9784E+01 |
| 7 | 0.3550E-03 | 0.8739E+01 | 0.8604E+01 | 0.1355E+00 | 0.1575E+01 |
| 8 | 0.4430E-03 | 0.4623E+01 | 0.4318E+01 | 0.3053E+00 | 0.7070E+01 |
| 9 | 0.5540E-03 | 0.2813E+01 | 0.2912E+01 | -0.9859E-01 | -0.3386E+01 |
| 10 | 0.7130E-03 | 0.1718E+01 | 0.1561E+01 | 0.1569E+00 | 0.1005E+02 |
| 11 | 0.8810E-03 | 0.1176E+01 | 0.1178E+01 | -0.2299E-02 | -0.1951E+00 |
| 12 | 0.1096E-02 | 0.7720E+00 | 0.8174E+00 | -0.4536E-01 | -0.5550E+01 |
| 13 | 0.1411E-02 | 0.5420E+00 | 0.5554E+00 | -0.1345E-01 | -0.2421E+01 |
| 14 | 0.1795E-02 | 0.3800E+00 | 0.3960E+00 | -0.1600E-01 | -0.4041E+01 |
| 15 | 0.2224E-02 | 0.2900E+00 | 0.2884E+00 | 0.1552E-02 | 0.5382E+00 |
| 16 | 0.2850E-02 | 0.2230E+00 | 0.2070E+00 | 0.1601E-01 | 0.7733E+01 |
| 17 | 0.3600E-02 | 0.1520E+00 | 0.1532E+00 | -0.1250E-02 | -0.8157E+00 |
| 18 | 0.4490E-02 | 0.1130E+00 | 0.1150E+00 | -0.1951E-02 | -0.1697E+01 |
| 19 | 0.5700E-02 | 0.8400E-01 | 0.8339E-01 | 0.6129E-03 | 0.7350E+00 |
| 20 | 0.7190E-02 | 0.6100E-01 | 0.6131E-01 | -0.3130E-03 | -0.5106E+00 |
| 21 | 0.8800E-02 | 0.4500E-01 | 0.4646E-01 | -0.1459E-02 | -0.3140E+01 |
| 22 | 0.1100E-01 | 0.3300E-01 | 0.3417E-01 | -0.1173E-02 | -0.3433E+01 |

** %RMSERR=  5.20

CORRELATION MATRIX

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | 0.3595E+00 | 0.1000E+01 | | | | | |
| 3 | -0.9502E-01 | -0.8185E+00 | 0.1000E+01 | | | | |
| 4 | 0.5123E+00 | 0.2306E+00 | -0.1114E+00 | 0.1000E+01 | | | |
| 5 | -0.6192E+00 | 0.1890E+00 | -0.4521E+00 | -0.4302E+00 | 0.1000E+01 | | |
| 6 | -0.7430E+00 | -0.2020E+00 | 0.4242E-01 | -0.7422E+00 | 0.5569E+00 | 0.1000E+01 | |
| 7 | -0.4309E+00 | -0.1175E+00 | 0.5130E-01 | -0.3524E+00 | 0.2527E+00 | 0.2574E+00 | 0.1000E |

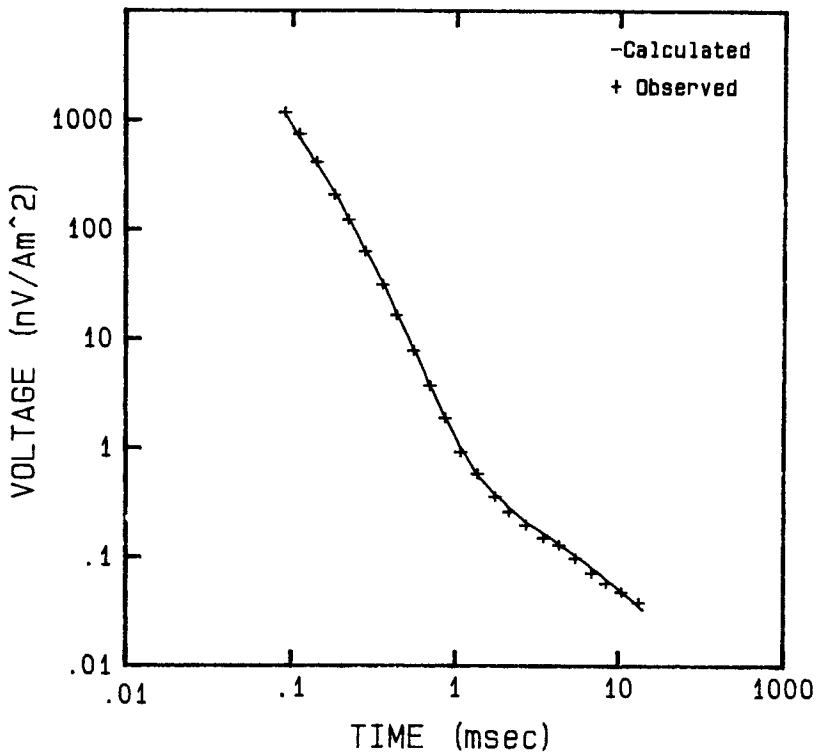
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.7715E-02 | 0.1845E-03 | 0.2392E-01 | 0.2392E+01 |
| 2 | 0.3706E-03 | 0.2093E-03 | 0.5647E+00 | 0.5647E+02 |
| 3 | 0.1389E-01 | 0.1192E-02 | 0.8579E-01 | 0.8579E+01 |
| 4 | 0.3685E-01 | 0.2597E-02 | 0.7047E-01 | 0.7047E+01 |
| 5 | 0.1714E+02 | 0.8851E-04 | 0.5164E-05 | 0.5164E-03 |
| 6 | 0.7757E+03 | 0.2678E-02 | 0.3452E-05 | 0.3452E-03 |
| 7 | 0.2814E+03 | 0.4215E-02 | 0.1498E-04 | 0.1498E-02 |

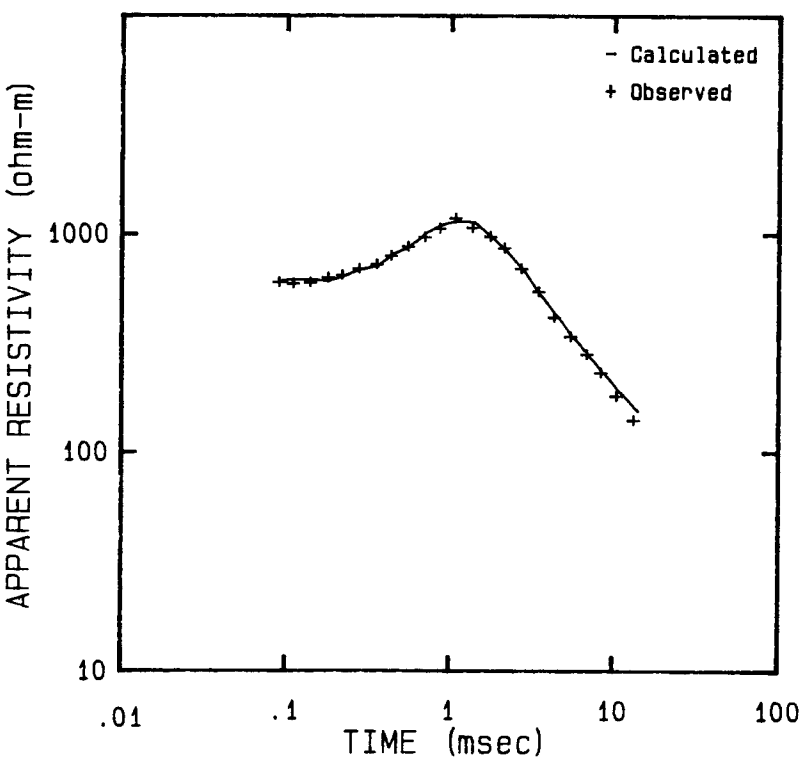
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.77147E-02 | 0.12962E+03 | |
| 2 | SIGMA( 2) = | 0.37065E-03 | 0.26980E+04 | |
| 3 | SIGMA( 3) = | 0.13893E-01 | 0.71979E+02 | |
| 4 | SIGMA( 4) = | 0.36852E-01 | 0.27135E+02 | |
| 5 | THICK( 1) = | 0.17140E+02 | | 0.17140E+02 |
| 6 | THICK( 2) = | 0.77570E+03 | | 0.79284E+03 |
| 7 | THICK( 3) = | 0.28137E+03 | | 0.10742E+04 |
| 8 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML28




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 616 | 383 |
| 6274 | 521 |
| 16.3 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 28  TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1164E+04 | 0.1142E+04 | 0.2183E+02 | 0.1911E+01 |
| 2 | 0.1100E-03 | 0.7370E+03 | 0.6921E+03 | 0.4491E+02 | 0.6489E+01 |
| 3 | 0.1400E-03 | 0.4060E+03 | 0.3880E+03 | 0.1797E+02 | 0.4632E+01 |
| 4 | 0.1770E-03 | 0.2038E+03 | 0.2171E+03 | -0.1328E+02 | -0.6118E+01 |
| 5 | 0.2200E-03 | 0.1203E+03 | 0.1226E+03 | -0.2372E+01 | -0.1934E+01 |
| 6 | 0.2800E-03 | 0.6188E+02 | 0.6290E+02 | -0.1021E+01 | -0.1623E+01 |
| 7 | 0.3550E-03 | 0.3070E+02 | 0.3167E+02 | -0.9723E+00 | -0.3070E+01 |
| 8 | 0.4430E-03 | 0.1621E+02 | 0.1597E+02 | 0.2370E+00 | 0.1484E+01 |
| 9 | 0.5540E-03 | 0.7676E+01 | 0.7783E+01 | -0.1074E+00 | -0.1380E+01 |
| 10 | 0.7130E-03 | 0.3653E+01 | 0.3433E+01 | 0.2199E+00 | 0.6406E+01 |
| 11 | 0.8810E-03 | 0.1864E+01 | 0.1768E+01 | 0.9595E-01 | 0.5427E+01 |
| 12 | 0.1096E-02 | 0.9040E+00 | 0.9496E+00 | -0.4560E-01 | -0.4802E+01 |
| 13 | 0.1411E-02 | 0.5750E+00 | 0.5250E+00 | 0.5000E-01 | 0.9524E+01 |
| 14 | 0.1795E-02 | 0.3550E+00 | 0.3587E+00 | -0.3678E-02 | -0.1025E+01 |
| 15 | 0.2224E-02 | 0.2570E+00 | 0.2696E+00 | -0.1257E-01 | -0.4662E+01 |
| 16 | 0.2850E-02 | 0.1950E+00 | 0.2020E+00 | -0.7023E-02 | -0.3476E+01 |
| 17 | 0.3600E-02 | 0.1490E+00 | 0.1610E+00 | -0.1200E-01 | -0.7453E+01 |
| 18 | 0.4490E-02 | 0.1280E+00 | 0.1253E+00 | 0.2727E-02 | 0.2177E+01 |
| 19 | 0.5700E-02 | 0.9600E-01 | 0.9770E-01 | -0.1701E-02 | -0.1741E+01 |
| 20 | 0.7190E-02 | 0.7100E-01 | 0.7547E-01 | -0.4466E-02 | -0.5918E+01 |
| 21 | 0.8800E-02 | 0.5700E-01 | 0.5941E-01 | -0.2406E-02 | -0.4050E+01 |
| 22 | 0.1100E-01 | 0.4800E-01 | 0.4533E-01 | 0.2671E-02 | 0.5892E+01 |
| 23 | 0.1400E-01 | 0.3800E-01 | 0.3320E-01 | 0.4798E-02 | 0.1445E+02 |

** %RMSERR=  5.52

CORRELATION MATRIX

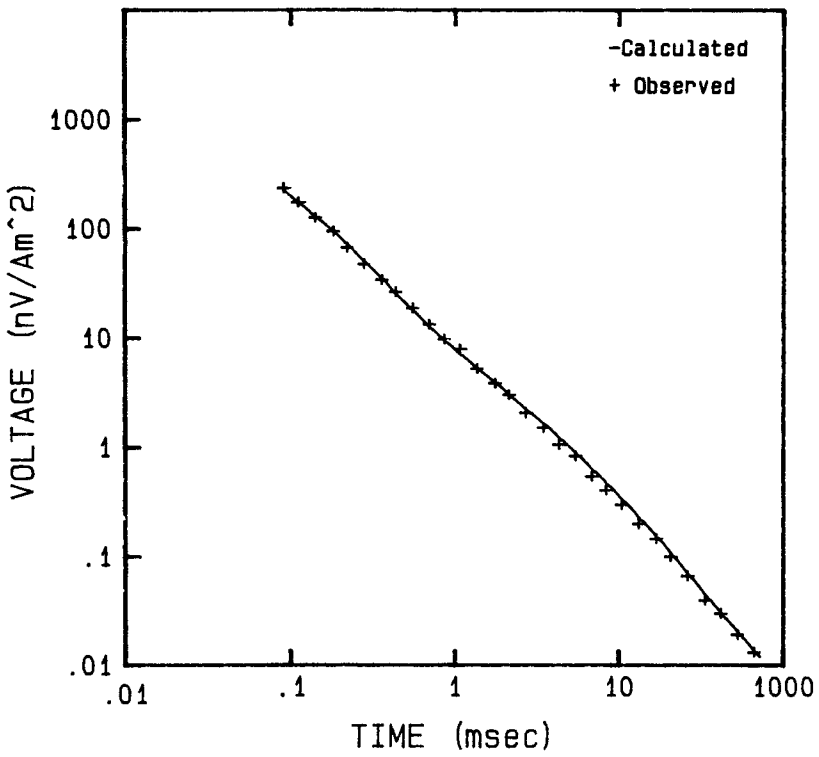
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.6525E+00 | 0.1000E+01 | | | |
| 3 | 0.2988E+00 | 0.4774E-01 | 0.1000E+01 | | |
| 4 | 0.2232E+00 | -0.3811E+00 | -0.2017E+00 | 0.1000E+01 | |
| 5 | -0.4105E+00 | 0.4482E+00 | 0.2325E+00 | -0.1974E+00 | 0.1000E+01 |

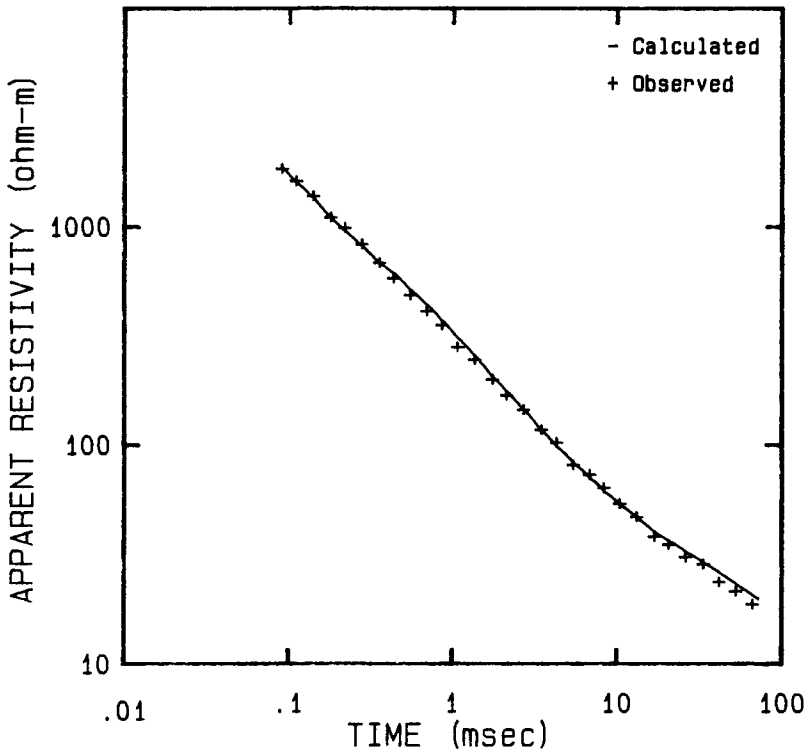
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1624E-02 | 0.1190E-03 | 0.7325E-01 | 0.7325E+01 |
| 2 | 0.1594E-03 | 0.1343E-03 | 0.8429E+00 | 0.8429E+02 |
| 3 | 0.6127E-01 | 0.1972E-02 | 0.3218E-01 | 0.3218E+01 |
| 4 | 0.3831E+03 | 0.1593E-02 | 0.4157E-05 | 0.4157E-03 |
| 5 | 0.5211E+03 | 0.1791E-02 | 0.3438E-05 | 0.3438E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.16241E-02 | 0.61572E+03 | |
| 2 | SIGMA( 2) | = | 0.15938E-03 | 0.62744E+04 | |
| 3 | SIGMA( 3) | = | 0.61271E-01 | 0.16321E+02 | |
| 4 | THICK( 1) | = | 0.38312E+03 | | 0.38312E+03 |
| 5 | THICK( 2) | = | 0.52106E+03 | | 0.90418E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML29




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1904 | 284 |
| 55.6 | 136 |
| 11.7 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 29 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2331E+03 | 0.2257E+03 | 0.7323E+01 | 0.3244E+01 |
| 2 | 0.1100E-03 | 0.1721E+03 | 0.1736E+03 | -0.1466E+01 | -0.8444E+00 |
| 3 | 0.1400E-03 | 0.1245E+03 | 0.1275E+03 | -0.2960E+01 | -0.2322E+01 |
| 4 | 0.1770E-03 | 0.9328E+02 | 0.9479E+02 | -0.1514E+01 | -0.1597E+01 |
| 5 | 0.2200E-03 | 0.6644E+02 | 0.7042E+02 | -0.3975E+01 | -0.5645E+01 |
| 6 | 0.2800E-03 | 0.4692E+02 | 0.4908E+02 | -0.2161E+01 | -0.4404E+01 |
| 7 | 0.3550E-03 | 0.3368E+02 | 0.3443E+02 | -0.7570E+00 | -0.2198E+01 |
| 8 | 0.4430E-03 | 0.2600E+02 | 0.2436E+02 | 0.1637E+01 | 0.6721E+01 |
| 9 | 0.5540E-03 | 0.1856E+02 | 0.1737E+02 | 0.1190E+01 | 0.6852E+01 |
| 10 | 0.7130E-03 | 0.1319E+02 | 0.1216E+02 | 0.1034E+01 | 0.8500E+01 |
| 11 | 0.8810E-03 | 0.9639E+01 | 0.9155E+01 | 0.4836E+00 | 0.5283E+01 |
| 12 | 0.1096E-02 | 0.7815E+01 | 0.6907E+01 | 0.9081E+00 | 0.1315E+02 |
| 13 | 0.1411E-02 | 0.5200E+01 | 0.5067E+01 | 0.1335E+00 | 0.2635E+01 |
| 14 | 0.1795E-02 | 0.3808E+01 | 0.3776E+01 | 0.3198E-01 | 0.8469E+00 |
| 15 | 0.2224E-02 | 0.2971E+01 | 0.2894E+01 | 0.7651E-01 | 0.2643E+01 |
| 16 | 0.2850E-02 | 0.2036E+01 | 0.2118E+01 | -0.8223E-01 | -0.3882E+01 |
| 17 | 0.3600E-02 | 0.1489E+01 | 0.1565E+01 | -0.7591E-01 | -0.4851E+01 |
| 18 | 0.4490E-02 | 0.1046E+01 | 0.1161E+01 | -0.1150E+00 | -0.9908E+01 |
| 19 | 0.5700E-02 | 0.8210E+00 | 0.8322E+00 | -0.1120E-01 | -0.1346E+01 |
| 20 | 0.7190E-02 | 0.5340E+00 | 0.5933E+00 | -0.5926E-01 | -0.9988E+01 |
| 21 | 0.8800E-02 | 0.3980E+00 | 0.4368E+00 | -0.3882E-01 | -0.8886E+01 |
| 22 | 0.1100E-01 | 0.2930E+00 | 0.3083E+00 | -0.1531E-01 | -0.4966E+01 |
| 23 | 0.1400E-01 | 0.1970E+00 | 0.2085E+00 | -0.1151E-01 | -0.5521E+01 |
| 24 | 0.1800E-01 | 0.1440E+00 | 0.1368E+00 | 0.7235E-02 | 0.5290E+01 |
| 25 | 0.2200E-01 | 0.9800E-01 | 0.9672E-01 | 0.1283E-02 | 0.1327E+01 |
| 26 | 0.2800E-01 | 0.6600E-01 | 0.6318E-01 | 0.2823E-02 | 0.4468E+01 |
| 27 | 0.3600E-01 | 0.3900E-01 | 0.4023E-01 | -0.1230E-02 | -0.3058E+01 |
| 28 | 0.4500E-01 | 0.2900E-01 | 0.2694E-01 | 0.2062E-02 | 0.7654E+01 |
| 29 | 0.5700E-01 | 0.1900E-01 | 0.1762E-01 | 0.1378E-02 | 0.7823E+01 |
| 30 | 0.7200E-01 | 0.1300E-01 | 0.1163E-01 | 0.1369E-02 | 0.1177E+02 |

** %RMSERR= 6.18

CORRELATION MATRIX

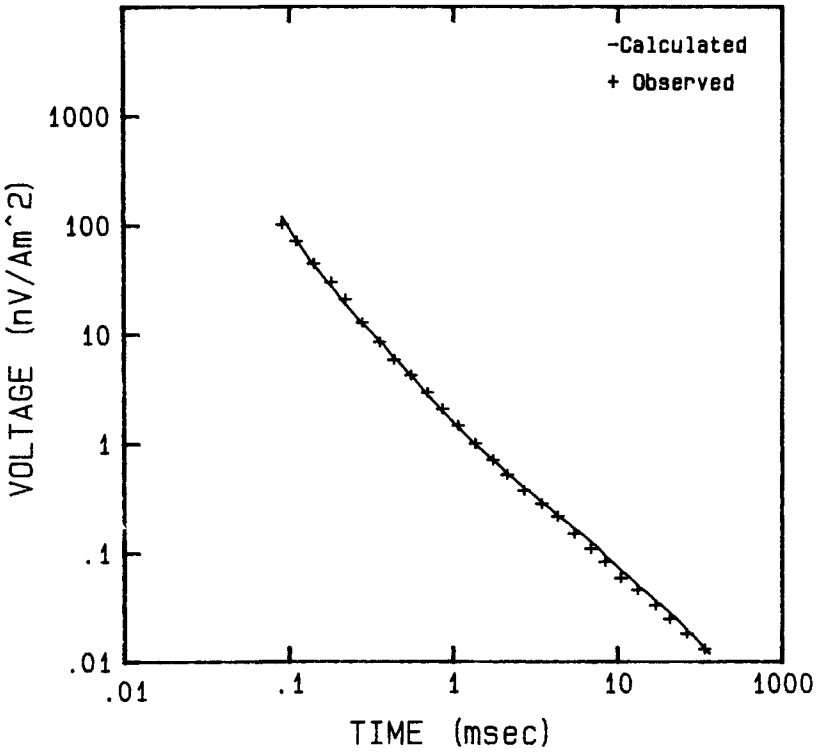
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.1554E+00 | 0.1000E+01 | | | |
| 3 | -0.1705E+00 | -0.1570E+00 | 0.1000E+01 | | |
| 4 | 0.2043E+00 | 0.4707E+00 | -0.1010E+00 | 0.1000E+01 | |
| 5 | -0.2400E+00 | -0.2231E+00 | 0.2998E+00 | -0.4215E+00 | 0.1000E+01 |

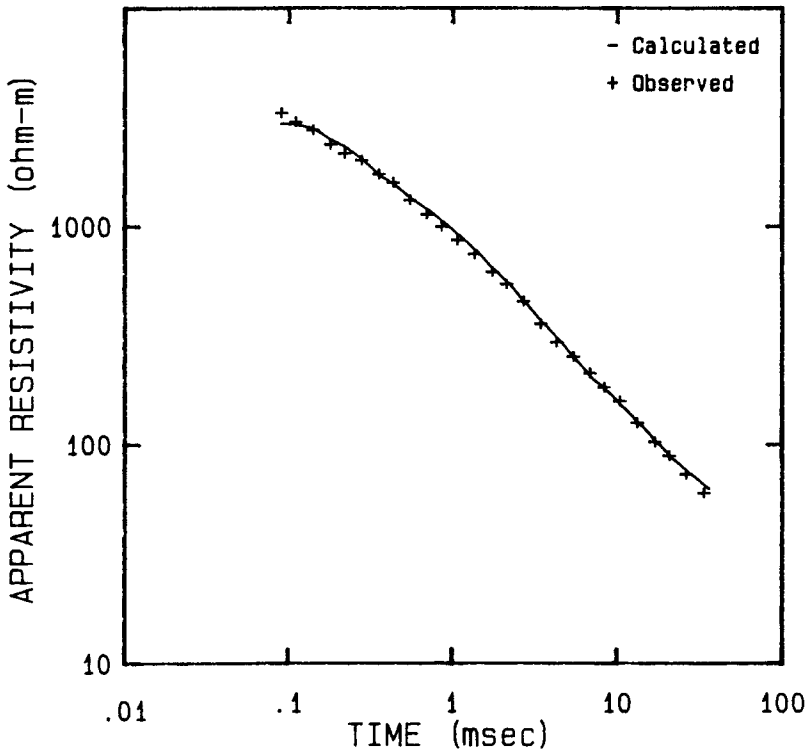
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.5253E-03 | 0.4048E-03 | 0.7707E+00 | 0.7707E+02 |
| 2 | 0.1797E-01 | 0.2414E-02 | 0.1343E+00 | 0.1343E+02 |
| 3 | 0.8515E-01 | 0.4797E-02 | 0.5634E-01 | 0.5634E+01 |
| 4 | 0.2843E+03 | 0.1337E-02 | 0.4703E-05 | 0.4703E-03 |
| 5 | 0.1358E+03 | 0.2555E-02 | 0.1881E-04 | 0.1881E-02 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.52528E-03 | 0.19037E+04 | |
| 2 | SIGMA( 2) | = | 0.17972E-01 | 0.55642E+02 | |
| 3 | SIGMA( 3) | = | 0.85146E-01 | 0.11745E+02 | |
| 4 | THICK( 1) | = | 0.28428E+03 | | 0.28428E+03 |
| 5 | THICK( 2) | = | 0.13581E+03 | | 0.42009E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML30




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 8440 | 154 |
| 1411 | 394 |
| 131 | 256 |
| 29 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 30  TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1014E+03 | 0.1200E+03 | -0.1860E+02 | -0.1550E+02 |
| 2 | 0.1100E-03 | 0.7096E+02 | 0.7365E+02 | -0.2690E+01 | -0.3652E+01 |
| 3 | 0.1400E-03 | 0.4419E+02 | 0.4302E+02 | 0.1169E+01 | 0.2716E+01 |
| 4 | 0.1770E-03 | 0.2967E+02 | 0.2737E+02 | 0.2298E+01 | 0.8396E+01 |
| 5 | 0.2200E-03 | 0.2077E+02 | 0.1860E+02 | 0.2162E+01 | 0.1162E+02 |
| 6 | 0.2800E-03 | 0.1266E+02 | 0.1243E+02 | 0.2390E+00 | 0.1924E+01 |
| 7 | 0.3550E-03 | 0.8430E+01 | 0.8572E+01 | -0.1419E+00 | -0.1656E+01 |
| 8 | 0.4430E-03 | 0.5824E+01 | 0.5978E+01 | -0.1538E+00 | -0.2573E+01 |
| 9 | 0.5540E-03 | 0.4193E+01 | 0.4087E+01 | 0.1056E+00 | 0.2584E+01 |
| 10 | 0.7130E-03 | 0.2911E+01 | 0.2685E+01 | 0.2256E+00 | 0.8400E+01 |
| 11 | 0.8810E-03 | 0.2060E+01 | 0.1911E+01 | 0.1490E+00 | 0.7795E+01 |
| 12 | 0.1096E-02 | 0.1461E+01 | 0.1354E+01 | 0.1066E+00 | 0.7873E+01 |
| 13 | 0.1411E-02 | 0.9950E+00 | 0.9395E+00 | 0.5548E-01 | 0.5905E+01 |
| 14 | 0.1795E-02 | 0.7040E+00 | 0.6796E+00 | 0.2440E-01 | 0.3590E+01 |
| 15 | 0.2224E-02 | 0.5190E+00 | 0.5148E+00 | 0.4188E-02 | 0.8136E+00 |
| 16 | 0.2850E-02 | 0.3700E+00 | 0.3754E+00 | -0.5442E-02 | -0.1450E+01 |
| 17 | 0.3600E-02 | 0.2810E+00 | 0.2803E+00 | 0.6549E-03 | 0.2336E+00 |
| 18 | 0.4490E-02 | 0.2160E+00 | 0.2120E+00 | 0.3986E-02 | 0.1880E+01 |
| 19 | 0.5700E-02 | 0.1500E+00 | 0.1557E+00 | -0.5686E-02 | -0.3652E+01 |
| 20 | 0.7190E-02 | 0.1090E+00 | 0.1151E+00 | -0.6125E-02 | -0.5320E+01 |
| 21 | 0.8800E-02 | 0.8200E-01 | 0.8807E-01 | -0.6075E-02 | -0.6897E+01 |
| 22 | 0.1100E-01 | 0.5900E-01 | 0.6539E-01 | -0.6388E-02 | -0.9770E+01 |
| 23 | 0.1400E-01 | 0.4500E-01 | 0.4745E-01 | -0.2454E-02 | -0.5172E+01 |
| 24 | 0.1800E-01 | 0.3300E-01 | 0.3373E-01 | -0.7349E-03 | -0.2178E+01 |
| 25 | 0.2200E-01 | 0.2500E-01 | 0.2577E-01 | -0.7726E-03 | -0.2998E+01 |
| 26 | 0.2800E-01 | 0.1800E-01 | 0.1809E-01 | -0.8839E-04 | -0.4887E+00 |
| 27 | 0.3600E-01 | 0.1300E-01 | 0.1188E-01 | 0.1124E-02 | 0.9461E+01 |

** %RMSERR=  6.23

CORRELATION MATRIX

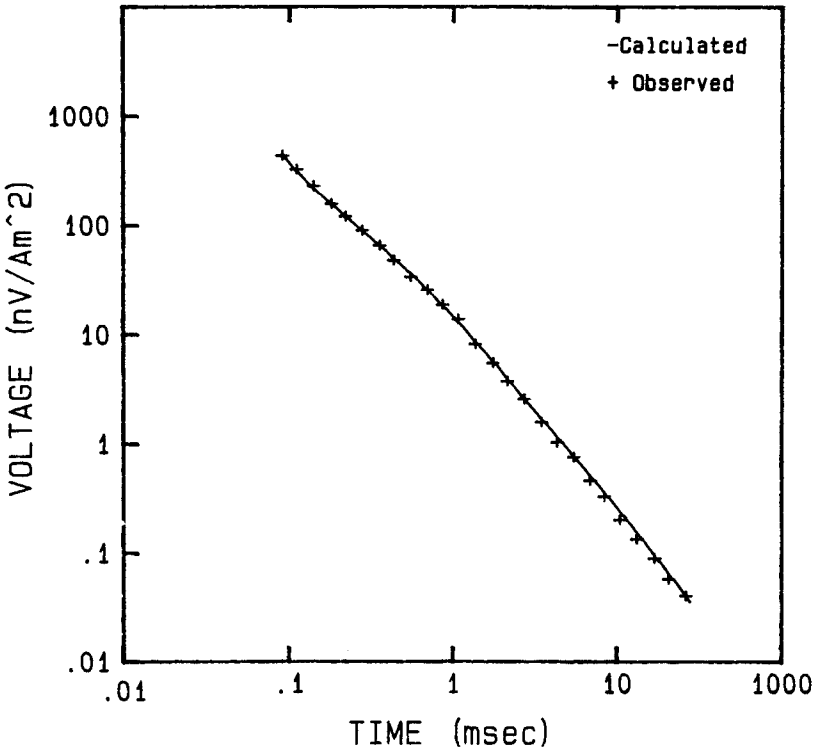
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.3328E+00 | 0.1000E+01 | | | | | |
| 3 | -0.4667E-01 | 0.3334E-01 | 0.1000E+01 | | | | |
| 4 | -0.7892E-01 | -0.1314E+00 | -0.6406E+00 | 0.1000E+01 | | | |
| 5 | 0.4480E-01 | -0.1038E+00 | -0.2062E+00 | 0.3118E+00 | 0.1000E+01 | | |
| 6 | -0.2169E+00 | 0.1969E+00 | 0.4210E+00 | -0.3035E+00 | -0.5638E+00 | 0.1000E+01 | |
| 7 | -0.1014E+00 | -0.1585E+00 | 0.2747E+00 | -0.6625E+00 | -0.1281E+00 | -0.6468E-01 | 0.1000E |

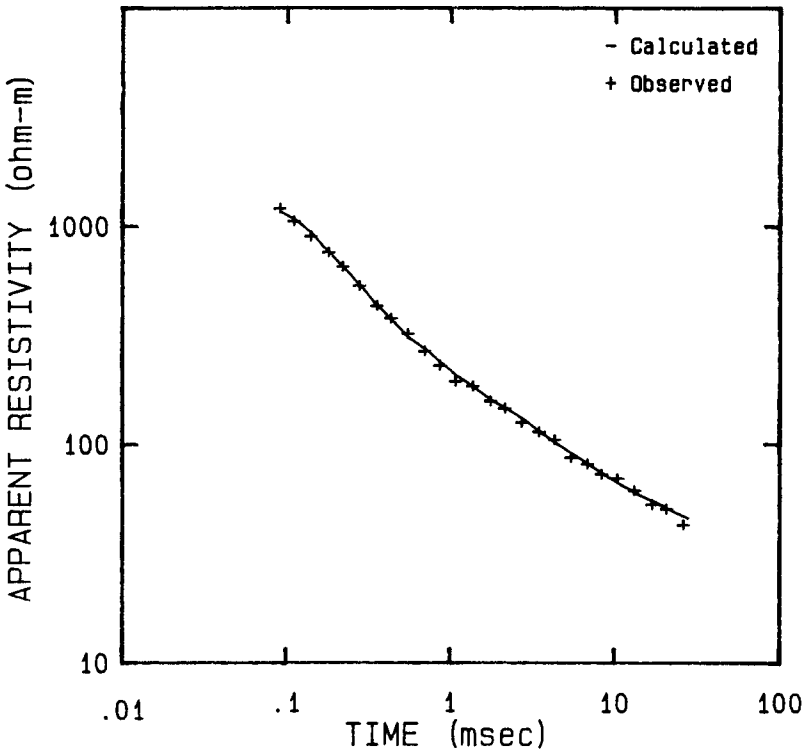
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1185E-03 | 0.6440E-04 | 0.5436E+00 | 0.5436E+02 |
| 2 | 0.7086E-03 | 0.2351E-03 | 0.3317E+00 | 0.3317E+02 |
| 3 | 0.7616E-02 | 0.6907E-03 | 0.9069E-01 | 0.9069E+01 |
| 4 | 0.3434E-01 | 0.3263E-02 | 0.9504E-01 | 0.9504E+01 |
| 5 | 0.1538E+03 | 0.2717E-02 | 0.1767E-04 | 0.1767E-02 |
| 6 | 0.3941E+03 | 0.3181E-02 | 0.8072E-05 | 0.8072E-03 |
| 7 | 0.2563E+03 | 0.3574E-02 | 0.1394E-04 | 0.1394E-02 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.11848E-03 | 0.84402E+04 | |
| 2 | SIGMA( 2) | = | 0.70864E-03 | 0.14111E+04 | |
| 3 | SIGMA( 3) | = | 0.76159E-02 | 0.13130E+03 | |
| 4 | SIGMA( 4) | = | 0.34336E-01 | 0.29124E+02 | |
| 5 | THICK( 1) | = | 0.15379E+03 | | 0.15379E+03 |
| 6 | THICK( 2) | = | 0.39412E+03 | | 0.54791E+03 |
| 7 | THICK( 3) | = | 0.25628E+03 | | 0.80419E+03 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML31




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 948 | 254 |
| 42 | 278 |
| 21.8 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 31 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4339E+03 | 0.4508E+03 | -0.1692E+02 | -0.3752E+01 |
| 2 | 0.1100E-03 | 0.3226E+03 | 0.3114E+03 | 0.1120E+02 | 0.3598E+01 |
| 3 | 0.1400E-03 | 0.2259E+03 | 0.2125E+03 | 0.1338E+02 | 0.6298E+01 |
| 4 | 0.1770E-03 | 0.1560E+03 | 0.1561E+03 | -0.3540E-01 | -0.2268E-01 |
| 5 | 0.2200E-03 | 0.1185E+03 | 0.1192E+03 | -0.6802E+00 | -0.5705E+00 |
| 6 | 0.2800E-03 | 0.8830E+02 | 0.8710E+02 | 0.1205E+01 | 0.1384E+01 |
| 7 | 0.3550E-03 | 0.6451E+02 | 0.6447E+02 | 0.4266E-01 | 0.6617E-01 |
| 8 | 0.4430E-03 | 0.4717E+02 | 0.4831E+02 | -0.1135E+01 | -0.2351E+01 |
| 9 | 0.5540E-03 | 0.3307E+02 | 0.3530E+02 | -0.2228E+01 | -0.6313E+01 |
| 10 | 0.7130E-03 | 0.2512E+02 | 0.2455E+02 | 0.5669E+00 | 0.2309E+01 |
| 11 | 0.8810E-03 | 0.1849E+02 | 0.1773E+02 | 0.7608E+00 | 0.4292E+01 |
| 12 | 0.1096E-02 | 0.1364E+02 | 0.1249E+02 | 0.1148E+01 | 0.9193E+01 |
| 13 | 0.1411E-02 | 0.8039E+01 | 0.8186E+01 | -0.1470E+00 | -0.1795E+01 |
| 14 | 0.1795E-02 | 0.5421E+01 | 0.5396E+01 | 0.2466E-01 | 0.4570E+00 |
| 15 | 0.2224E-02 | 0.3684E+01 | 0.3710E+01 | -0.2645E-01 | -0.7128E+00 |
| 16 | 0.2850E-02 | 0.2522E+01 | 0.2404E+01 | 0.1178E+00 | 0.4899E+01 |
| 17 | 0.3600E-02 | 0.1558E+01 | 0.1592E+01 | -0.3362E-01 | -0.2112E+01 |
| 18 | 0.4490E-02 | 0.1010E+01 | 0.1079E+01 | -0.6910E-01 | -0.6404E+01 |
| 19 | 0.5700E-02 | 0.7390E+00 | 0.7098E+00 | 0.2916E-01 | 0.4108E+01 |
| 20 | 0.7190E-02 | 0.4550E+00 | 0.4686E+00 | -0.1359E-01 | -0.2900E+01 |
| 21 | 0.8800E-02 | 0.3250E+00 | 0.3259E+00 | -0.9078E-03 | -0.2785E+00 |
| 22 | 0.1100E-01 | 0.1990E+00 | 0.2167E+00 | -0.1775E-01 | -0.8188E+01 |
| 23 | 0.1400E-01 | 0.1320E+00 | 0.1381E+00 | -0.6063E-02 | -0.4391E+01 |
| 24 | 0.1800E-01 | 0.8800E-01 | 0.8540E-01 | 0.2602E-02 | 0.3047E+01 |
| 25 | 0.2200E-01 | 0.5700E-01 | 0.5781E-01 | -0.8055E-03 | -0.1393E+01 |
| 26 | 0.2800E-01 | 0.4000E-01 | 0.3587E-01 | 0.4132E-02 | 0.1152E+02 |

** %RMSERR= 4.61

CORRELATION MATRIX

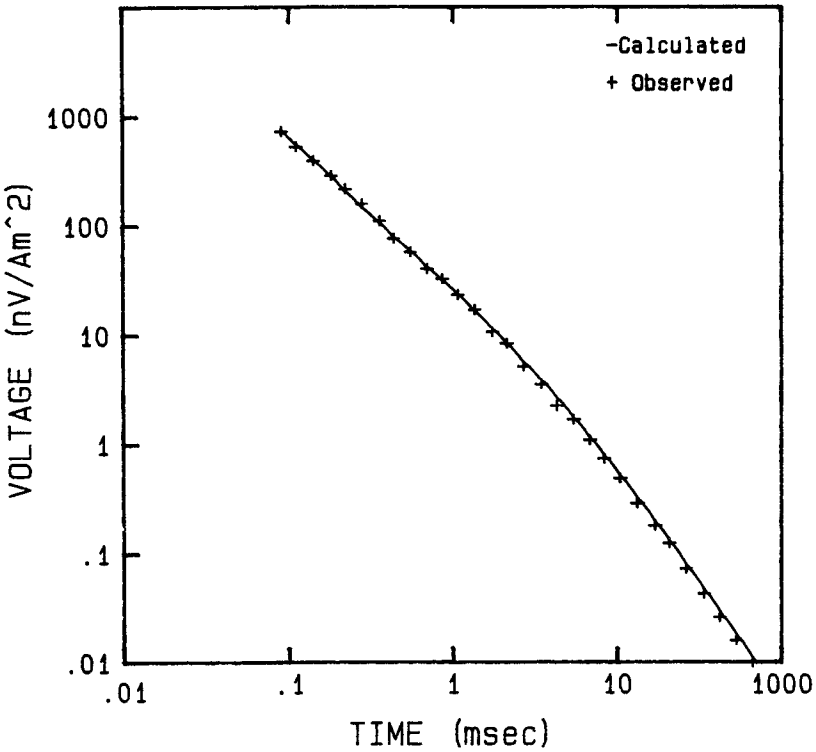
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.8566E-01 | 0.1000E+01 | | | |
| 3 | -0.4988E+00 | -0.2579E+00 | 0.1000E+01 | | |
| 4 | 0.3967E+00 | 0.4954E+00 | -0.5735E+00 | 0.1000E+01 | |
| 5 | -0.1691E+00 | 0.2316E-02 | -0.2614E+00 | -0.9059E-01 | 0.1000E+01 |

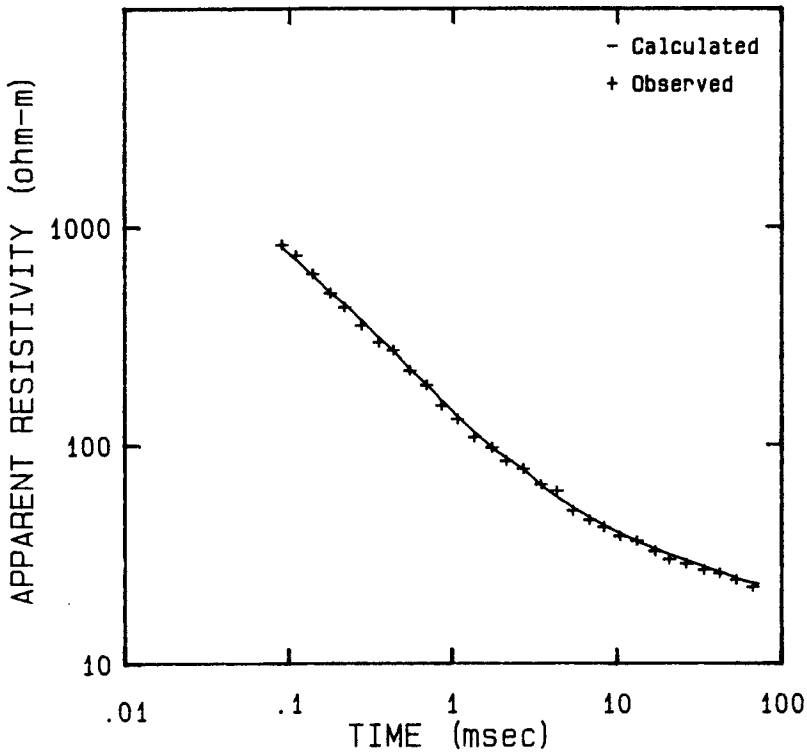
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1055E-02 | 0.2760E-03 | 0.2617E+00 | 0.2617E+02 |
| 2 | 0.2381E-01 | 0.1699E-02 | 0.7136E-01 | 0.7136E+01 |
| 3 | 0.4593E-01 | 0.5566E-02 | 0.1212E+00 | 0.1212E+02 |
| 4 | 0.2536E+03 | 0.1345E-02 | 0.5306E-05 | 0.5306E-03 |
| 5 | 0.2785E+03 | 0.2514E-02 | 0.9025E-05 | 0.9025E-03 |

| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.10548E-02 | 0.94807E+03 | |
| 2 | SIGMA( 2) = | 0.23814E-01 | 0.41992E+02 | |
| 3 | SIGMA( 3) = | 0.45934E-01 | 0.21770E+02 | |
| 4 | THICK( 1) = | 0.25356E+03 | | 0.25356E+03 |
| 5 | THICK( 2) = | 0.27853E+03 | | 0.53209E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML32




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1433 | 168 |
| 54.2 | 88 |
| 17.2 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 32 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.7353E+03 | 0.7581E+03 | -0.2287E+02 | -0.3016E+01 |
| 2 | 0.1100E-03 | 0.5329E+03 | 0.5648E+03 | -0.3191E+02 | -0.5650E+01 |
| 3 | 0.1400E-03 | 0.3945E+03 | 0.4026E+03 | -0.8174E+01 | -0.2030E+01 |
| 4 | 0.1770E-03 | 0.2868E+03 | 0.2853E+03 | 0.1571E+01 | 0.5507E+00 |
| 5 | 0.2200E-03 | 0.2168E+03 | 0.2069E+03 | 0.9907E+01 | 0.4789E+01 |
| 6 | 0.2800E-03 | 0.1591E+03 | 0.1468E+03 | 0.1234E+02 | 0.8405E+01 |
| 7 | 0.3550E-03 | 0.1110E+03 | 0.1054E+03 | 0.5614E+01 | 0.5326E+01 |
| 8 | 0.4430E-03 | 0.7661E+02 | 0.7795E+02 | -0.1341E+01 | -0.1721E+01 |
| 9 | 0.5540E-03 | 0.5813E+02 | 0.5785E+02 | 0.2812E+00 | 0.4861E+00 |
| 10 | 0.7130E-03 | 0.4056E+02 | 0.4137E+02 | -0.8091E+00 | -0.1956E+01 |
| 11 | 0.8810E-03 | 0.3272E+02 | 0.3104E+02 | 0.1683E+01 | 0.5422E+01 |
| 12 | 0.1096E-02 | 0.2333E+02 | 0.2295E+02 | 0.3770E+00 | 0.1643E+01 |
| 13 | 0.1411E-02 | 0.1705E+02 | 0.1603E+02 | 0.1020E+01 | 0.6366E+01 |
| 14 | 0.1795E-02 | 0.1065E+02 | 0.1122E+02 | -0.5692E+00 | -0.5073E+01 |
| 15 | 0.2224E-02 | 0.8307E+01 | 0.8075E+01 | 0.2325E+00 | 0.2879E+01 |
| 16 | 0.2850E-02 | 0.5144E+01 | 0.5444E+01 | -0.2995E+00 | -0.5502E+01 |
| 17 | 0.3600E-02 | 0.3528E+01 | 0.3695E+01 | -0.1670E+00 | -0.4519E+01 |
| 18 | 0.4490E-02 | 0.2237E+01 | 0.2530E+01 | -0.2935E+00 | -0.1160E+02 |
| 19 | 0.5700E-02 | 0.1685E+01 | 0.1658E+01 | 0.2724E-01 | 0.1643E+01 |
| 20 | 0.7190E-02 | 0.1086E+01 | 0.1082E+01 | 0.3578E-02 | 0.3306E+00 |
| 21 | 0.8800E-02 | 0.7410E+00 | 0.7397E+00 | 0.1341E-02 | 0.1812E+00 |
| 22 | 0.1100E-01 | 0.4850E+00 | 0.4811E+00 | 0.3920E-02 | 0.8149E+00 |
| 23 | 0.1400E-01 | 0.2890E+00 | 0.2979E+00 | -0.8873E-02 | -0.2979E+01 |
| 24 | 0.1800E-01 | 0.1810E+00 | 0.1793E+00 | 0.1740E-02 | 0.9708E+00 |
| 25 | 0.2200E-01 | 0.1250E+00 | 0.1184E+00 | 0.6598E-02 | 0.5572E+01 |
| 26 | 0.2800E-01 | 0.7300E-01 | 0.7124E-01 | 0.1757E-02 | 0.2466E+01 |
| 27 | 0.3600E-01 | 0.4300E-01 | 0.4186E-01 | 0.1136E-02 | 0.2713E+01 |
| 28 | 0.4500E-01 | 0.2600E-01 | 0.2590E-01 | 0.1002E-03 | 0.3868E+00 |
| 29 | 0.5700E-01 | 0.1600E-01 | 0.1563E-01 | 0.3726E-03 | 0.2384E+01 |
| 30 | 0.7200E-01 | 0.1000E-01 | 0.9533E-02 | 0.4670E-03 | 0.4899E+01 |

** %RMSERR= 4.30

CORRELATION MATRIX

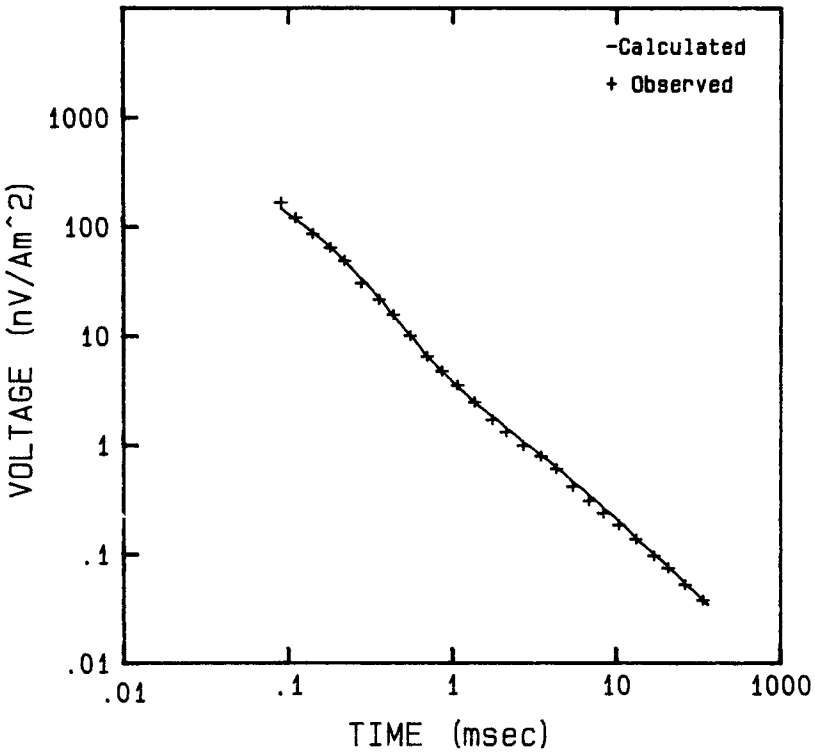
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.5129E+00 | 0.1000E+01 | | | |
| 3 | -0.5961E+00 | -0.5273E+00 | 0.1000E+01 | | |
| 4 | 0.5994E+00 | 0.6167E+00 | -0.3901E+00 | 0.1000E+01 | |
| 5 | -0.8485E+00 | -0.4867E+00 | 0.6173E+00 | -0.6161E+00 | 0.1000E+01 |

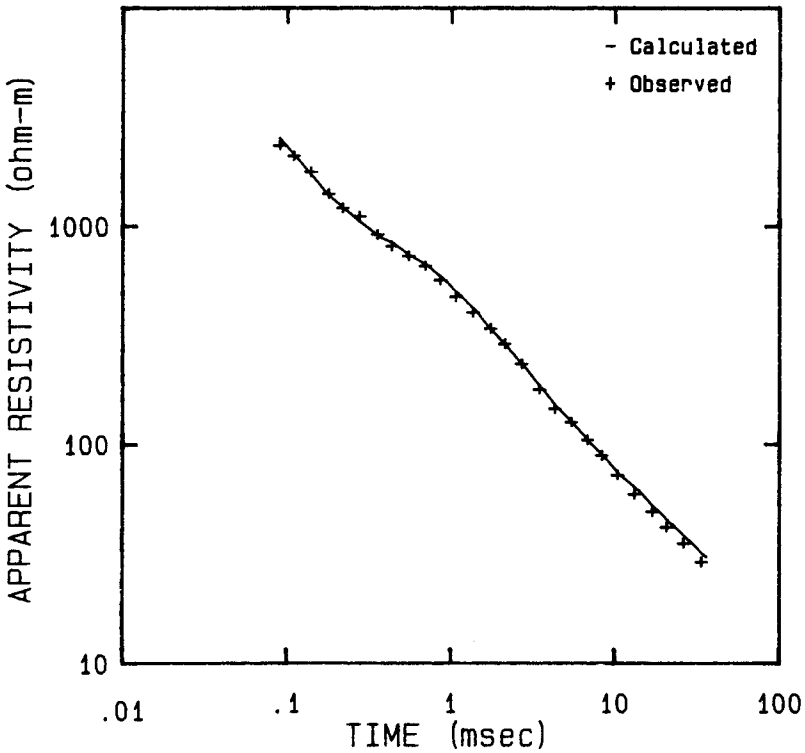
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.6980E-03 | 0.3451E-03 | 0.4944E+00 | 0.4944E+02 |
| 2 | 0.1846E-01 | 0.1632E-02 | 0.8839E-01 | 0.8839E+01 |
| 3 | 0.5812E-01 | 0.3041E-02 | 0.5233E-01 | 0.5233E+01 |
| 4 | 0.1677E+03 | 0.1155E-02 | 0.6886E-05 | 0.6886E-03 |
| 5 | 0.8860E+02 | 0.3021E-02 | 0.3410E-04 | 0.3410E-02 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.69797E-03 | 0.14327E+04 | |
| 2 | SIGMA( 2) | = | 0.18459E-01 | 0.54174E+02 | |
| 3 | SIGMA( 3) | = | 0.58120E-01 | 0.17206E+02 | |
| 4 | THICK( 1) | = | 0.16767E+03 | | 0.16767E+03 |
| 5 | THICK( 2) | = | 0.88602E+02 | | 0.25627E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML33




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 5143 | 311 |
| 112 | 233 |
| 12.5 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 33 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1677E+03 | 0.1489E+03 | 0.1875E+02 | 0.1259E+02 |
| 2 | 0.1100E-03 | 0.1204E+03 | 0.1172E+03 | 0.3254E+01 | 0.2776E+01 |
| 3 | 0.1400E-03 | 0.8515E+02 | 0.8864E+02 | -0.3492E+01 | -0.3940E+01 |
| 4 | 0.1770E-03 | 0.6389E+02 | 0.6539E+02 | -0.1502E+01 | -0.2297E+01 |
| 5 | 0.2200E-03 | 0.4856E+02 | 0.4813E+02 | 0.4278E+00 | 0.8889E+00 |
| 6 | 0.2800E-03 | 0.3020E+02 | 0.3297E+02 | -0.2778E+01 | -0.8424E+01 |
| 7 | 0.3550E-03 | 0.2148E+02 | 0.2206E+02 | -0.5831E+00 | -0.2643E+01 |
| 8 | 0.4430E-03 | 0.1560E+02 | 0.1487E+02 | 0.7308E+00 | 0.4916E+01 |
| 9 | 0.5540E-03 | 0.1004E+02 | 0.9878E+01 | 0.1629E+00 | 0.1649E+01 |
| 10 | 0.7130E-03 | 0.6472E+01 | 0.6366E+01 | 0.1059E+00 | 0.1663E+01 |
| 11 | 0.8810E-03 | 0.4748E+01 | 0.4563E+01 | 0.1848E+00 | 0.4049E+01 |
| 12 | 0.1096E-02 | 0.3520E+01 | 0.3321E+01 | 0.1989E+00 | 0.5989E+01 |
| 13 | 0.1411E-02 | 0.2467E+01 | 0.2374E+01 | 0.9266E-01 | 0.3903E+01 |
| 14 | 0.1795E-02 | 0.1702E+01 | 0.1783E+01 | -0.8121E-01 | -0.4554E+01 |
| 15 | 0.2224E-02 | 0.1315E+01 | 0.1383E+01 | -0.6844E-01 | -0.4947E+01 |
| 16 | 0.2850E-02 | 0.9870E+00 | 0.1033E+01 | -0.4587E-01 | -0.4441E+01 |
| 17 | 0.3600E-02 | 0.7910E+00 | 0.7835E+00 | 0.7518E-02 | 0.9596E+00 |
| 18 | 0.4490E-02 | 0.6080E+00 | 0.5994E+00 | 0.8551E-02 | 0.1426E+01 |
| 19 | 0.5700E-02 | 0.4180E+00 | 0.4440E+00 | -0.2597E-01 | -0.5850E+01 |
| 20 | 0.7190E-02 | 0.3100E+00 | 0.3298E+00 | -0.1975E-01 | -0.5990E+01 |
| 21 | 0.8800E-02 | 0.2390E+00 | 0.2522E+00 | -0.1320E-01 | -0.5233E+01 |
| 22 | 0.1100E-01 | 0.1870E+00 | 0.1864E+00 | 0.6211E-03 | 0.3332E+00 |
| 23 | 0.1400E-01 | 0.1380E+00 | 0.1337E+00 | 0.4277E-02 | 0.3199E+01 |
| 24 | 0.1800E-01 | 0.9700E-01 | 0.9398E-01 | 0.3023E-02 | 0.3217E+01 |
| 25 | 0.2200E-01 | 0.7500E-01 | 0.7110E-01 | 0.3896E-02 | 0.5479E+01 |
| 26 | 0.2800E-01 | 0.5300E-01 | 0.5045E-01 | 0.2546E-02 | 0.5046E+01 |
| 27 | 0.3600E-01 | 0.3800E-01 | 0.3521E-01 | 0.2792E-02 | 0.7929E+01 |

** %RMSERR= 4.97

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.5303E+00 | 0.1000E+01 | | | |
| 3 | -0.4876E+00 | -0.1411E-01 | 0.1000E+01 | | |
| 4 | -0.3925E+00 | 0.6280E+00 | -0.6607E-01 | 0.1000E+01 | |
| 5 | -0.2609E+00 | -0.1158E+00 | 0.4216E+00 | -0.2522E+00 | 0.1000E+01 |

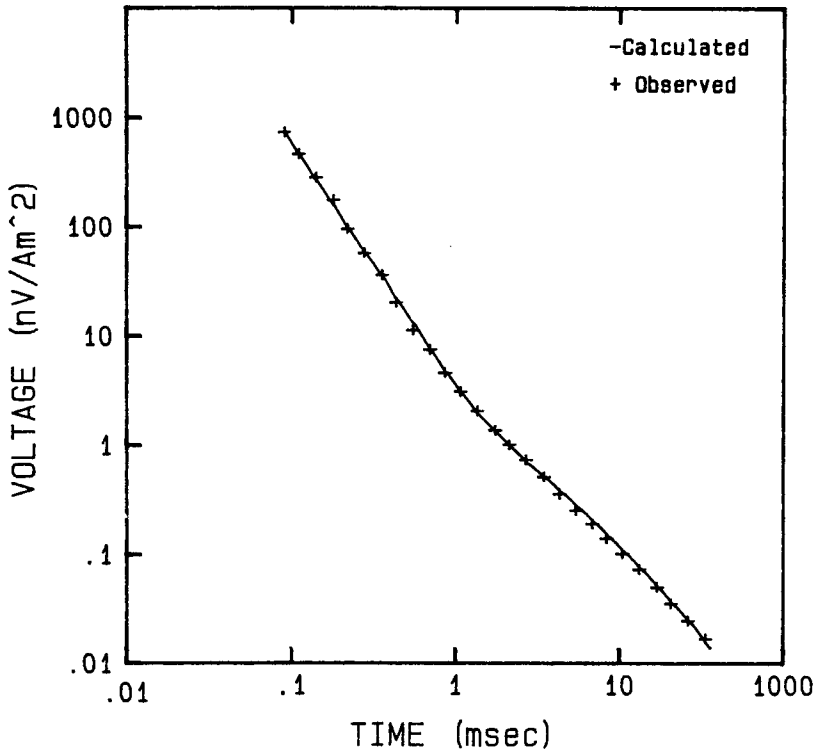
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.1944E-03 | 0.1642E-03 | 0.8448E+00 | 0.8448E+02 |
| 2 0.8947E-02 | 0.1197E-02 | 0.1338E+00 | 0.1338E+02 |
| 3 0.7980E-01 | 0.4021E-02 | 0.5039E-01 | 0.5039E+01 |
| 4 0.3112E+03 | 0.1336E-02 | 0.4291E-05 | 0.4291E-03 |
| 5 0.2326E+03 | 0.2333E-02 | 0.1003E-04 | 0.1003E-02 |

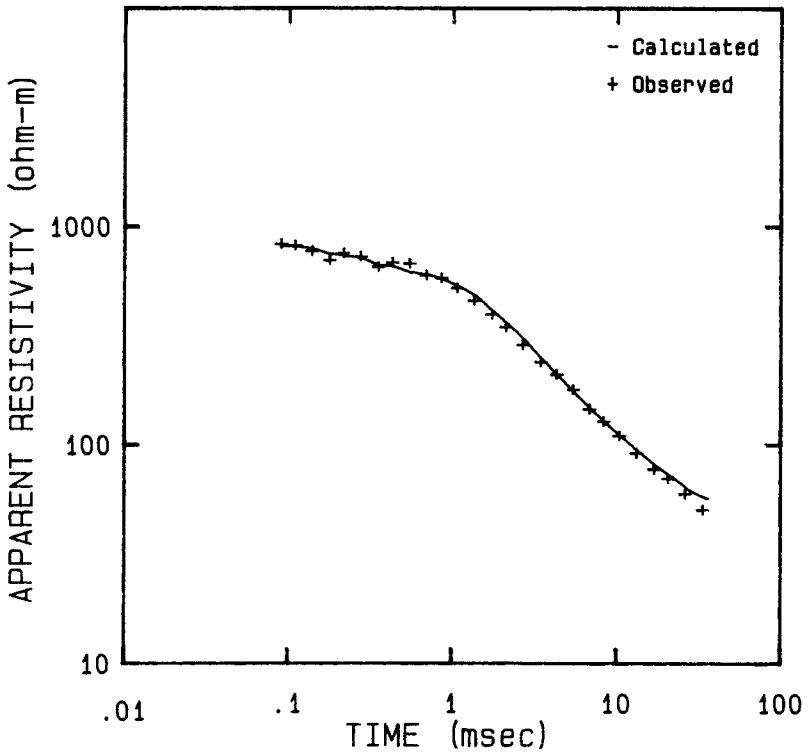
| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.19443E-03 | 0.51434E+04 | |
| 2 SIGMA( 2) = | 0.89467E-02 | 0.11177E+03 | |
| 3 SIGMA( 3) = | 0.79797E-01 | 0.12532E+02 | |
| 4 THICK( 1) = | 0.31125E+03 | | 0.31125E+03 |
| 5 THICK( 2) = | 0.23262E+03 | | 0.54387E+03 |
| 6 SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML34




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 939 | 126 |
| 535 | 245 |
| 172 | 276 |
| 19.3 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 34 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.7340E+03 | 0.7552E+03 | -0.2120E+02 | -0.2807E+01 |
| 2 | 0.1100E-03 | 0.4620E+03 | 0.4667E+03 | -0.4689E+01 | -0.1005E+01 |
| 3 | 0.1400E-03 | 0.2800E+03 | 0.2680E+03 | 0.1196E+02 | 0.4462E+01 |
| 4 | 0.1770E-03 | 0.1750E+03 | 0.1577E+03 | 0.1733E+02 | 0.1099E+02 |
| 5 | 0.2200E-03 | 0.9470E+02 | 0.9754E+02 | -0.2844E+01 | -0.2915E+01 |
| 6 | 0.2800E-03 | 0.5726E+02 | 0.5817E+02 | -0.9108E+00 | -0.1566E+01 |
| 7 | 0.3550E-03 | 0.3602E+02 | 0.3502E+02 | 0.9981E+00 | 0.2850E+01 |
| 8 | 0.4430E-03 | 0.2029E+02 | 0.2146E+02 | -0.1175E+01 | -0.5476E+01 |
| 9 | 0.5540E-03 | 0.1131E+02 | 0.1297E+02 | -0.1659E+01 | -0.1279E+02 |
| 10 | 0.7130E-03 | 0.7521E+01 | 0.7426E+01 | 0.9499E-01 | 0.1279E+01 |
| 11 | 0.8810E-03 | 0.4609E+01 | 0.4664E+01 | -0.5454E-01 | -0.1170E+01 |
| 12 | 0.1096E-02 | 0.3081E+01 | 0.2980E+01 | 0.1014E+00 | 0.3402E+01 |
| 13 | 0.1411E-02 | 0.2053E+01 | 0.1901E+01 | 0.1520E+00 | 0.7993E+01 |
| 14 | 0.1795E-02 | 0.1364E+01 | 0.1306E+01 | 0.5837E-01 | 0.4471E+01 |
| 15 | 0.2224E-02 | 0.1009E+01 | 0.9591E+00 | 0.4989E-01 | 0.5202E+01 |
| 16 | 0.2850E-02 | 0.7330E+00 | 0.6848E+00 | 0.4823E-01 | 0.7043E+01 |
| 17 | 0.3600E-02 | 0.5120E+00 | 0.5039E+00 | 0.8094E-02 | 0.1606E+01 |
| 18 | 0.4490E-02 | 0.3570E+00 | 0.3746E+00 | -0.1757E-01 | -0.4691E+01 |
| 19 | 0.5700E-02 | 0.2510E+00 | 0.2697E+00 | -0.1872E-01 | -0.6939E+01 |
| 20 | 0.7190E-02 | 0.1900E+00 | 0.1953E+00 | -0.5300E-02 | -0.2714E+01 |
| 21 | 0.8800E-02 | 0.1400E+00 | 0.1456E+00 | -0.5628E-02 | -0.3865E+01 |
| 22 | 0.1100E-01 | 0.1010E+00 | 0.1042E+00 | -0.3193E-02 | -0.3064E+01 |
| 23 | 0.1400E-01 | 0.7300E-01 | 0.7164E-01 | 0.1361E-02 | 0.1900E+01 |
| 24 | 0.1800E-01 | 0.5000E-01 | 0.4771E-01 | 0.2293E-02 | 0.4807E+01 |
| 25 | 0.2200E-01 | 0.3500E-01 | 0.3417E-01 | 0.8280E-03 | 0.2423E+01 |
| 26 | 0.2800E-01 | 0.2400E-01 | 0.2261E-01 | 0.1390E-02 | 0.6146E+01 |
| 27 | 0.3600E-01 | 0.1500E-01 | 0.1446E-01 | 0.5415E-03 | 0.3745E+01 |

** %RMSERR= 5.19

CORRELATION MATRIX

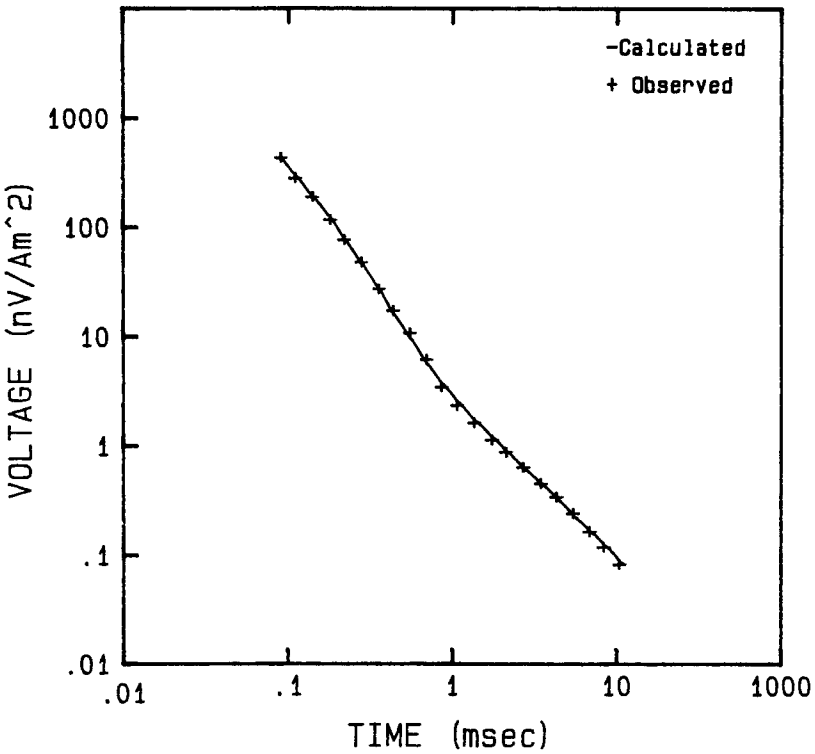
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.5770E+00 | 0.1000E+01 | | | | | |
| 3 | 0.6809E-01 | -0.4430E+00 | 0.1000E+01 | | | | |
| 4 | 0.2745E+00 | -0.7003E-01 | -0.4545E-01 | 0.1000E+01 | | | |
| 5 | -0.4417E-01 | 0.2325E+00 | -0.8175E-01 | 0.3209E+00 | 0.1000E+01 | | |
| 6 | -0.2686E+00 | 0.5190E-01 | 0.5359E-01 | -0.2188E+00 | -0.8356E+00 | 0.1000E+01 | |
| 7 | 0.1032E+00 | -0.7570E-01 | -0.1330E+00 | 0.1916E+00 | 0.3982E+00 | -0.5264E+00 | 0.1000E |

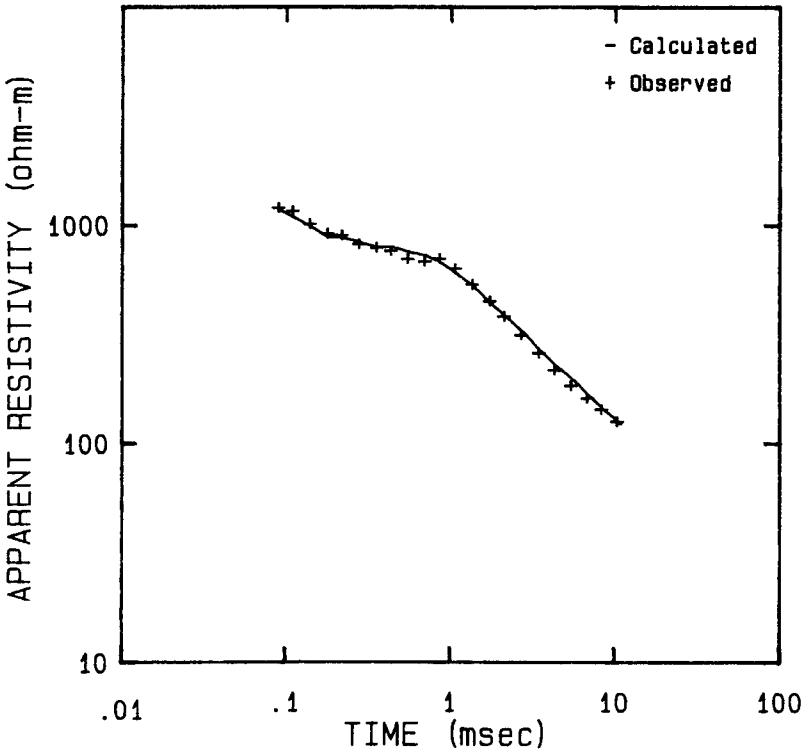
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1065E-02 | 0.3662E-03 | 0.3440E+00 | 0.3440E+02 |
| 2 | 0.1870E-02 | 0.6763E-03 | 0.3618E+00 | 0.3618E+02 |
| 3 | 0.5815E-02 | 0.1011E-02 | 0.1738E+00 | 0.1738E+02 |
| 4 | 0.5182E-01 | 0.2076E-02 | 0.4006E-01 | 0.4006E+01 |
| 5 | 0.1264E+03 | 0.3360E-02 | 0.2658E-04 | 0.2658E-02 |
| 6 | 0.2450E+03 | 0.4229E-02 | 0.1726E-04 | 0.1726E-02 |
| 7 | 0.2755E+03 | 0.2042E-02 | 0.7411E-05 | 0.7411E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.10646E-02 | 0.93932E+03 | |
| 2 | SIGMA( 2) | = | 0.18696E-02 | 0.53488E+03 | |
| 3 | SIGMA( 3) | = | 0.58154E-02 | 0.17196E+03 | |
| 4 | SIGMA( 4) | = | 0.51817E-01 | 0.19299E+02 | |
| 5 | THICK( 1) | = | 0.12642E+03 | | 0.12642E+03 |
| 6 | THICK( 2) | = | 0.24497E+03 | | 0.37139E+03 |
| 7 | THICK( 3) | = | 0.27552E+03 | | 0.64691E+03 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML35




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 12150 | 144 |
| 396 | 489 |
| 42.6 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 35 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4341E+03 | 0.4415E+03 | -0.7383E+01 | -0.1672E+01 |
| 2 | 0.1100E-03 | 0.2792E+03 | 0.3040E+03 | -0.2480E+02 | -0.8158E+01 |
| 3 | 0.1400E-03 | 0.1881E+03 | 0.1942E+03 | -0.6094E+01 | -0.3138E+01 |
| 4 | 0.1770E-03 | 0.1161E+03 | 0.1226E+03 | -0.6527E+01 | -0.5322E+01 |
| 5 | 0.2200E-03 | 0.7579E+02 | 0.7831E+02 | -0.2516E+01 | -0.3213E+01 |
| 6 | 0.2800E-03 | 0.4764E+02 | 0.4620E+02 | 0.1442E+01 | 0.3121E+01 |
| 7 | 0.3550E-03 | 0.2690E+02 | 0.2682E+02 | 0.8427E-01 | 0.3143E+00 |
| 8 | 0.4430E-03 | 0.1716E+02 | 0.1597E+02 | 0.1191E+01 | 0.7461E+01 |
| 9 | 0.5540E-03 | 0.1072E+02 | 0.9527E+01 | 0.1192E+01 | 0.1251E+02 |
| 10 | 0.7130E-03 | 0.6150E+01 | 0.5577E+01 | 0.5726E+00 | 0.1027E+02 |
| 11 | 0.8810E-03 | 0.3428E+01 | 0.3674E+01 | -0.2459E+00 | -0.6693E+01 |
| 12 | 0.1096E-02 | 0.2310E+01 | 0.2497E+01 | -0.1875E+00 | -0.7506E+01 |
| 13 | 0.1411E-02 | 0.1616E+01 | 0.1691E+01 | -0.7465E-01 | -0.4416E+01 |
| 14 | 0.1795E-02 | 0.1120E+01 | 0.1182E+01 | -0.6214E-01 | -0.5257E+01 |
| 15 | 0.2224E-02 | 0.8640E+00 | 0.8678E+00 | -0.3774E-02 | -0.4349E+00 |
| 16 | 0.2850E-02 | 0.6320E+00 | 0.6122E+00 | 0.1982E-01 | 0.3237E+01 |
| 17 | 0.3600E-02 | 0.4490E+00 | 0.4369E+00 | 0.1206E-01 | 0.2760E+01 |
| 18 | 0.4490E-02 | 0.3370E+00 | 0.3161E+00 | 0.2091E-01 | 0.6617E+01 |
| 19 | 0.5700E-02 | 0.2390E+00 | 0.2230E+00 | 0.1599E-01 | 0.7172E+01 |
| 20 | 0.7190E-02 | 0.1630E+00 | 0.1577E+00 | 0.5312E-02 | 0.3369E+01 |
| 21 | 0.8800E-02 | 0.1180E+00 | 0.1168E+00 | 0.1216E-02 | 0.1042E+01 |
| 22 | 0.1100E-01 | 0.8200E-01 | 0.8407E-01 | -0.2072E-02 | -0.2464E+01 |

** %RMSERR= 5.74

CORRELATION MATRIX

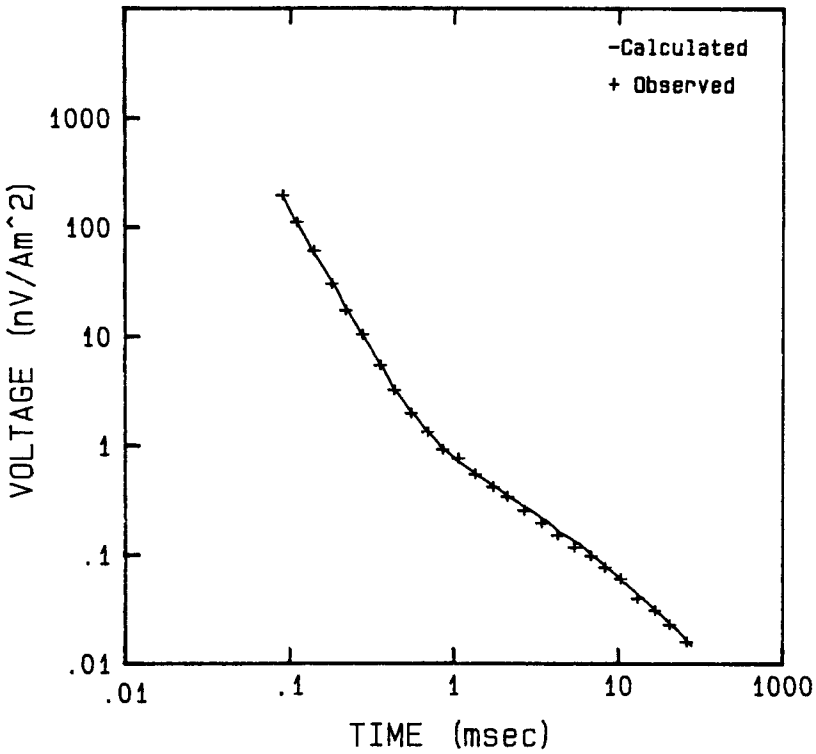
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3240E+00 | 0.1000E+01 | | | |
| 3 | 0.5732E-01 | -0.2259E+00 | 0.1000E+01 | | |
| 4 | -0.5760E+00 | 0.5833E+00 | -0.2402E+00 | 0.1000E+01 | |
| 5 | -0.1506E+00 | -0.2699E+00 | 0.3811E+00 | -0.2818E+00 | 0.1000E+01 |

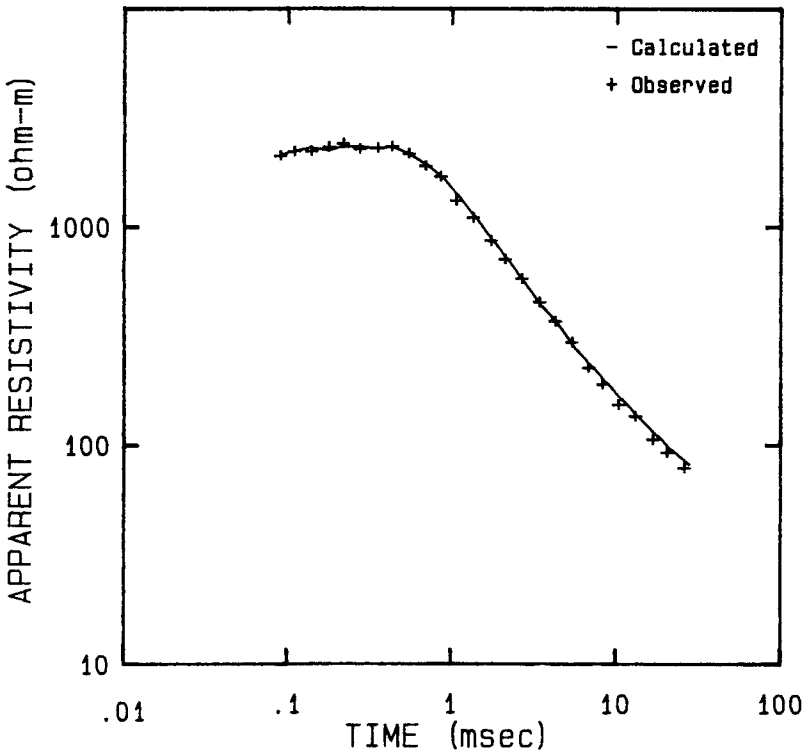
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.8231E-04 | 0.1022E-03 | 0.1241E+01 | 0.1241E+03 |
| 2 | 0.2527E-02 | 0.4454E-03 | 0.1763E+00 | 0.1763E+02 |
| 3 | 0.2345E-01 | 0.1814E-02 | 0.7736E-01 | 0.7736E+01 |
| 4 | 0.1442E+03 | 0.2400E-02 | 0.1664E-04 | 0.1664E-02 |
| 5 | 0.4885E+03 | 0.3165E-02 | 0.6479E-05 | 0.6479E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.82307E-04 | 0.12150E+05 | |
| 2 | SIGMA( 2) | = | 0.25267E-02 | 0.39577E+03 | |
| 3 | SIGMA( 3) | = | 0.23454E-01 | 0.42636E+02 | |
| 4 | THICK( 1) | = | 0.14421E+03 | | 0.14421E+03 |
| 5 | THICK( 2) | = | 0.48846E+03 | | 0.63267E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML36




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1265 | 74 |
| 2524 | 488 |
| 345 | 267 |
| 17 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 36 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1967E+03 | 0.1940E+03 | 0.2705E+01 | 0.1395E+01 |
| 2 | 0.1100E-03 | 0.1110E+03 | 0.1095E+03 | 0.1578E+01 | 0.1442E+01 |
| 3 | 0.1400E-03 | 0.6081E+02 | 0.5674E+02 | 0.4071E+01 | 0.7176E+01 |
| 4 | 0.1770E-03 | 0.3025E+02 | 0.3161E+02 | -0.1364E+01 | -0.4314E+01 |
| 5 | 0.2200E-03 | 0.1731E+02 | 0.1801E+02 | -0.7056E+00 | -0.3917E+01 |
| 6 | 0.2800E-03 | 0.1036E+02 | 0.1011E+02 | 0.2498E+00 | 0.2469E+01 |
| 7 | 0.3550E-03 | 0.5455E+01 | 0.5521E+01 | -0.6586E-01 | -0.1193E+01 |
| 8 | 0.4430E-03 | 0.3213E+01 | 0.3178E+01 | 0.3498E-01 | 0.1101E+01 |
| 9 | 0.5540E-03 | 0.1977E+01 | 0.2014E+01 | -0.3725E-01 | -0.1850E+01 |
| 10 | 0.7130E-03 | 0.1329E+01 | 0.1252E+01 | 0.7703E-01 | 0.6153E+01 |
| 11 | 0.8810E-03 | 0.9170E+00 | 0.9182E+00 | -0.1179E-02 | -0.1284E+00 |
| 12 | 0.1096E-02 | 0.7660E+00 | 0.7044E+00 | 0.6162E-01 | 0.8748E+01 |
| 13 | 0.1411E-02 | 0.5490E+00 | 0.5404E+00 | 0.8646E-02 | 0.1600E+01 |
| 14 | 0.1795E-02 | 0.4210E+00 | 0.4245E+00 | -0.3544E-02 | -0.8348E+00 |
| 15 | 0.2224E-02 | 0.3430E+00 | 0.3415E+00 | 0.1459E-02 | 0.4273E+00 |
| 16 | 0.2850E-02 | 0.2550E+00 | 0.2652E+00 | -0.1016E-01 | -0.3832E+01 |
| 17 | 0.3600E-02 | 0.1960E+00 | 0.2068E+00 | -0.1081E-01 | -0.5225E+01 |
| 18 | 0.4490E-02 | 0.1520E+00 | 0.1627E+00 | -0.1068E-01 | -0.6567E+01 |
| 19 | 0.5700E-02 | 0.1180E+00 | 0.1251E+00 | -0.7070E-02 | -0.5653E+01 |
| 20 | 0.7190E-02 | 0.9800E-01 | 0.9556E-01 | 0.2442E-02 | 0.2556E+01 |
| 21 | 0.8800E-02 | 0.7700E-01 | 0.7491E-01 | 0.2092E-02 | 0.2792E+01 |
| 22 | 0.1100E-01 | 0.6100E-01 | 0.5639E-01 | 0.4611E-02 | 0.8177E+01 |
| 23 | 0.1400E-01 | 0.4000E-01 | 0.4102E-01 | -0.1019E-02 | -0.2483E+01 |
| 24 | 0.1800E-01 | 0.3100E-01 | 0.2903E-01 | 0.1965E-02 | 0.6769E+01 |
| 25 | 0.2200E-01 | 0.2300E-01 | 0.2175E-01 | 0.1250E-02 | 0.5746E+01 |
| 26 | 0.2800E-01 | 0.1600E-01 | 0.1518E-01 | 0.8182E-03 | 0.5389E+01 |

** %RMSERR= 4.52

CORRELATION MATRIX

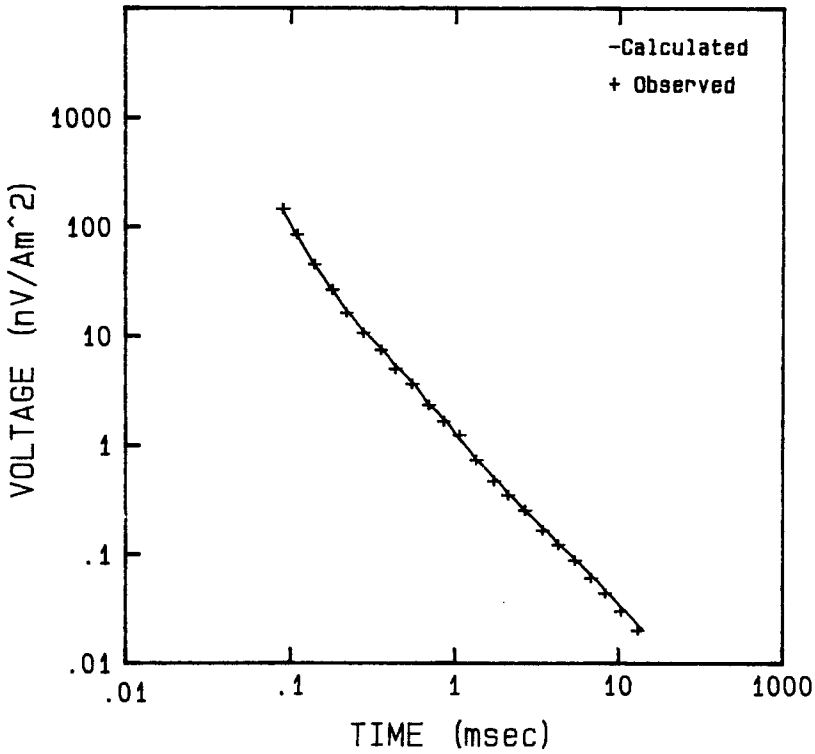
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.5809E+00 | 0.1000E+01 | | | | | |
| 3 | 0.3558E+00 | -0.7817E+00 | 0.1000E+01 | | | | |
| 4 | 0.1234E+00 | 0.1204E+00 | -0.3855E+00 | 0.1000E+01 | | | |
| 5 | -0.5967E+00 | 0.5396E+00 | -0.6317E+00 | 0.1664E+00 | 0.1000E+01 | | |
| 6 | 0.3428E+00 | -0.2645E+00 | 0.3111E+00 | -0.1789E+00 | -0.3612E+00 | 0.1000E+01 | |
| 7 | -0.4353E+00 | -0.3618E-02 | -0.2636E-01 | -0.2433E+00 | 0.5416E-01 | -0.2708E+00 | 0.1000E |

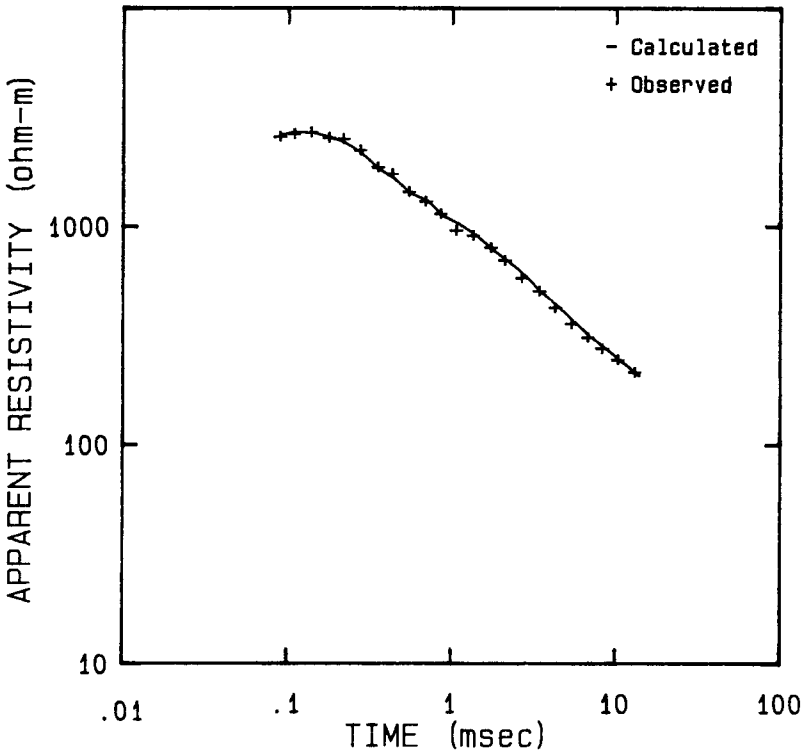
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.7905E-03 | 0.7051E-04 | 0.8920E-01 | 0.8920E+01 |
| 2 | 0.3961E-03 | 0.1678E-03 | 0.4236E+00 | 0.4236E+02 |
| 3 | 0.2899E-02 | 0.5386E-03 | 0.1858E+00 | 0.1858E+02 |
| 4 | 0.5885E-01 | 0.1771E-02 | 0.3010E-01 | 0.3010E+01 |
| 5 | 0.7388E+02 | 0.8595E-03 | 0.1163E-04 | 0.1163E-02 |
| 6 | 0.4884E+03 | 0.1157E-02 | 0.2369E-05 | 0.2369E-03 |
| 7 | 0.2664E+03 | 0.1894E-02 | 0.7110E-05 | 0.7110E-03 |

| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.79053E-03 | 0.12650E+04 | |
| 2 | SIGMA( 2) = | 0.39614E-03 | 0.25244E+04 | |
| 3 | SIGMA( 3) = | 0.28986E-02 | 0.34500E+03 | |
| 4 | SIGMA( 4) = | 0.58855E-01 | 0.16991E+02 | |
| 5 | THICK( 1) = | 0.73885E+02 | | 0.73885E+02 |
| 6 | THICK( 2) = | 0.48837E+03 | | 0.56225E+03 |
| 7 | THICK( 3) = | 0.26645E+03 | | 0.82870E+03 |
| 8 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML37




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 2282 | 582 |
| 194 | 409 |
| 52 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 37 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1463E+03 | 0.1430E+03 | 0.3228E+01 | 0.2257E+01 |
| 2 | 0.1100E-03 | 0.8457E+02 | 0.8235E+02 | 0.2220E+01 | 0.2695E+01 |
| 3 | 0.1400E-03 | 0.4516E+02 | 0.4451E+02 | 0.6496E+00 | 0.1459E+01 |
| 4 | 0.1770E-03 | 0.2628E+02 | 0.2633E+02 | -0.5552E-01 | -0.2108E+00 |
| 5 | 0.2200E-03 | 0.1619E+02 | 0.1708E+02 | -0.8897E+00 | -0.5209E+01 |
| 6 | 0.2800E-03 | 0.1159E+02 | 0.1125E+02 | 0.3336E+00 | 0.2964E+01 |
| 7 | 0.3550E-03 | 0.7413E+01 | 0.7584E+01 | -0.1706E+00 | -0.2250E+01 |
| 8 | 0.4430E-03 | 0.4987E+01 | 0.5326E+01 | -0.3392E+00 | -0.6369E+01 |
| 9 | 0.5540E-03 | 0.3616E+01 | 0.3708E+01 | -0.9222E-01 | -0.2487E+01 |
| 10 | 0.7130E-03 | 0.2320E+01 | 0.2382E+01 | -0.6241E-01 | -0.2620E+01 |
| 11 | 0.8810E-03 | 0.1655E+01 | 0.1656E+01 | -0.1103E-02 | -0.6663E-01 |
| 12 | 0.1096E-02 | 0.1232E+01 | 0.1127E+01 | 0.1046E+00 | 0.9277E+01 |
| 13 | 0.1411E-02 | 0.7310E+00 | 0.7246E+00 | 0.6397E-02 | 0.8829E+00 |
| 14 | 0.1795E-02 | 0.4700E+00 | 0.4883E+00 | -0.1829E-01 | -0.3746E+01 |
| 15 | 0.2224E-02 | 0.3490E+00 | 0.3494E+00 | -0.3885E-03 | -0.1112E+00 |
| 16 | 0.2850E-02 | 0.2530E+00 | 0.2394E+00 | 0.1357E-01 | 0.5669E+01 |
| 17 | 0.3600E-02 | 0.1660E+00 | 0.1700E+00 | -0.3988E-02 | -0.2346E+01 |
| 18 | 0.4490E-02 | 0.1230E+00 | 0.1233E+00 | -0.2564E-03 | -0.2080E+00 |
| 19 | 0.5700E-02 | 0.8700E-01 | 0.8635E-01 | 0.6468E-03 | 0.7490E+00 |
| 20 | 0.7190E-02 | 0.6100E-01 | 0.6073E-01 | 0.2735E-03 | 0.4504E+00 |
| 21 | 0.8800E-02 | 0.4400E-01 | 0.4447E-01 | -0.4691E-03 | -0.1055E+01 |
| 22 | 0.1100E-01 | 0.3000E-01 | 0.3125E-01 | -0.1253E-02 | -0.4010E+01 |
| 23 | 0.1400E-01 | 0.2000E-01 | 0.2105E-01 | -0.1055E-02 | -0.5009E+01 |

** %RMSERR= 3.56

CORRELATION MATRIX

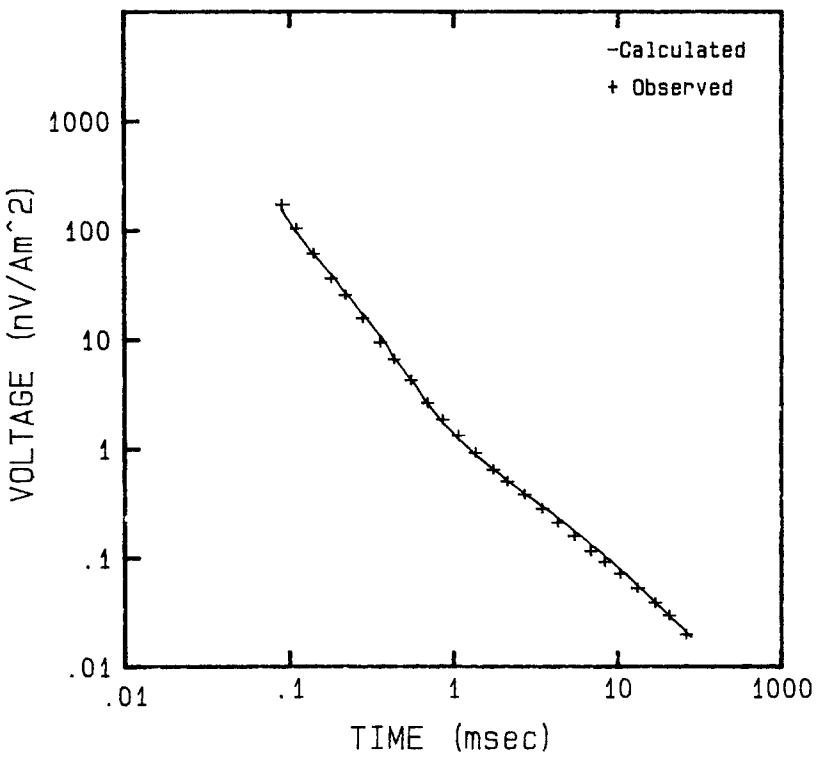
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.2763E+00 | 0.1000E+01 | | | |
| 3 | -0.1359E+00 | 0.5268E+00 | 0.1000E+01 | | |
| 4 | -0.1139E+00 | -0.7760E-01 | 0.2965E+00 | 0.1000E+01 | |
| 5 | -0.2020E-01 | -0.7102E+00 | -0.7764E+00 | -0.1083E+00 | 0.1000E+01 |

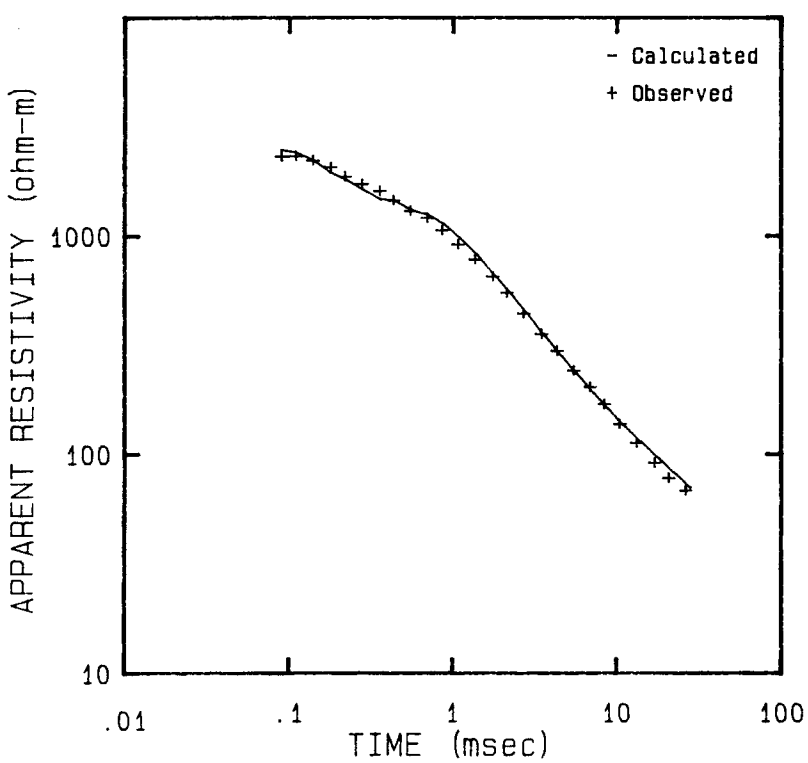
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4382E-03 | 0.4145E-04 | 0.9459E-01 | 0.9459E+01 |
| 2 | 0.5145E-02 | 0.3881E-03 | 0.7544E-01 | 0.7544E+01 |
| 3 | 0.1909E-01 | 0.1374E-02 | 0.7198E-01 | 0.7198E+01 |
| 4 | 0.5819E+03 | 0.7093E-03 | 0.1219E-05 | 0.1219E-03 |
| 5 | 0.4090E+03 | 0.3783E-02 | 0.9250E-05 | 0.9250E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.43823E-03 | 0.22819E+04 | |
| 2 | SIGMA( 2) | = | 0.51447E-02 | 0.19437E+03 | |
| 3 | SIGMA( 3) | = | 0.19087E-01 | 0.52393E+02 | |
| 4 | THICK( 1) | = | 0.58190E+03 | | 0.58190E+03 |
| 5 | THICK( 2) | = | 0.40902E+03 | | 0.99092E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML38




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 2158 | 439.2 |
| 241 | 319.6 |
| 17.1 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 38 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1720E+03 | 0.1542E+03 | 0.1777E+02 | 0.1152E+02 |
| 2 | 0.1100E-03 | 0.1038E+03 | 0.9743E+02 | 0.6425E+01 | 0.6594E+01 |
| 3 | 0.1400E-03 | 0.6085E+02 | 0.6028E+02 | 0.5714E+00 | 0.9479E+00 |
| 4 | 0.1770E-03 | 0.3609E+02 | 0.3939E+02 | -0.3301E+01 | -0.8379E+01 |
| 5 | 0.2200E-03 | 0.2535E+02 | 0.2644E+02 | -0.1083E+01 | -0.4098E+01 |
| 6 | 0.2800E-03 | 0.1562E+02 | 0.1701E+02 | -0.1394E+01 | -0.8193E+01 |
| 7 | 0.3550E-03 | 0.9339E+01 | 0.1060E+02 | -0.1264E+01 | -0.1192E+02 |
| 8 | 0.4430E-03 | 0.6543E+01 | 0.6575E+01 | -0.3230E-01 | -0.4912E+00 |
| 9 | 0.5540E-03 | 0.4225E+01 | 0.4156E+01 | 0.6873E-01 | 0.1654E+01 |
| 10 | 0.7130E-03 | 0.2606E+01 | 0.2478E+01 | 0.1282E+00 | 0.5175E+01 |
| 11 | 0.8810E-03 | 0.1852E+01 | 0.1671E+01 | 0.1808E+00 | 0.1082E+02 |
| 12 | 0.1096E-02 | 0.1324E+01 | 0.1188E+01 | 0.1362E+00 | 0.1147E+02 |
| 13 | 0.1411E-02 | 0.9170E+00 | 0.8494E+00 | 0.6757E-01 | 0.7955E+01 |
| 14 | 0.1795E-02 | 0.6430E+00 | 0.6300E+00 | 0.1296E-01 | 0.2057E+01 |
| 15 | 0.2224E-02 | 0.5030E+00 | 0.4938E+00 | 0.9240E-02 | 0.1871E+01 |
| 16 | 0.2850E-02 | 0.3810E+00 | 0.3751E+00 | 0.5872E-02 | 0.1565E+01 |
| 17 | 0.3600E-02 | 0.2820E+00 | 0.2874E+00 | -0.5358E-02 | -0.1865E+01 |
| 18 | 0.4490E-02 | 0.2110E+00 | 0.2226E+00 | -0.1164E-01 | -0.5227E+01 |
| 19 | 0.5700E-02 | 0.1600E+00 | 0.1683E+00 | -0.8305E-02 | -0.4934E+01 |
| 20 | 0.7190E-02 | 0.1160E+00 | 0.1264E+00 | -0.1036E-01 | -0.8196E+01 |
| 21 | 0.8800E-02 | 0.9200E-01 | 0.9767E-01 | -0.5673E-02 | -0.5808E+01 |
| 22 | 0.1100E-01 | 0.7200E-01 | 0.7269E-01 | -0.6859E-03 | -0.9437E+00 |
| 23 | 0.1400E-01 | 0.5300E-01 | 0.5207E-01 | 0.9315E-03 | 0.1789E+01 |
| 24 | 0.1800E-01 | 0.3900E-01 | 0.3639E-01 | 0.2606E-02 | 0.7161E+01 |
| 25 | 0.2200E-01 | 0.3000E-01 | 0.2704E-01 | 0.2965E-02 | 0.1097E+02 |
| 26 | 0.2800E-01 | 0.2000E-01 | 0.1874E-01 | 0.1258E-02 | 0.6711E+01 |

** %RMSERR= 6.80

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.2643E+00 | 0.1000E+01 | | | |
| 3 | 0.7734E-01 | -0.8197E-01 | 0.1000E+01 | | |
| 4 | 0.7032E+00 | 0.6675E+00 | 0.9988E-01 | 0.1000E+01 | |
| 5 | -0.5384E+00 | -0.5735E+00 | -0.3047E+00 | -0.7274E+00 | 0.1000E+01 |

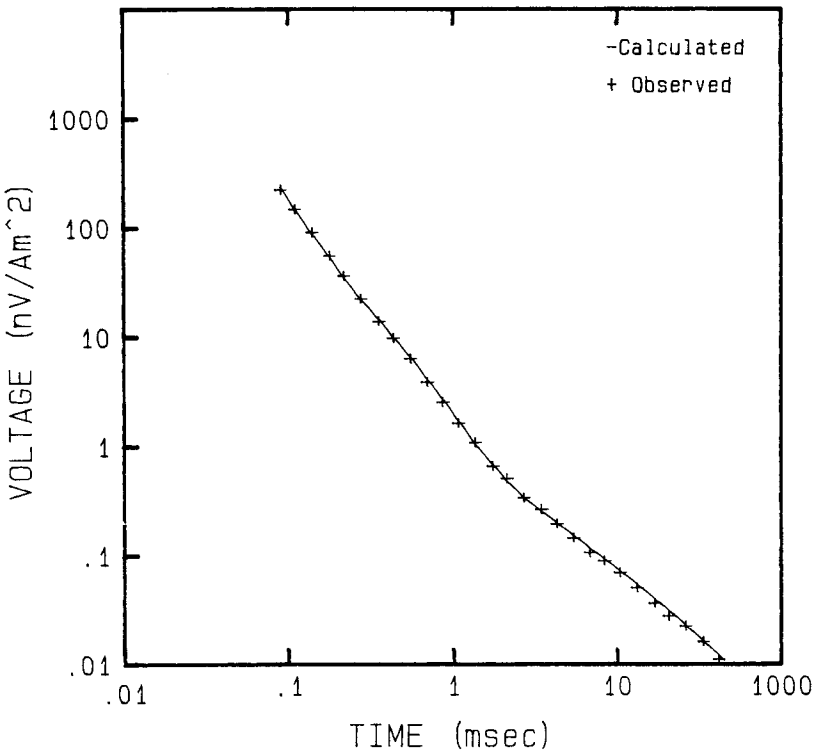
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4635E-03 | 0.1036E-03 | 0.2234E+00 | 0.2234E+02 |
| 2 | 0.4142E-02 | 0.6549E-03 | 0.1581E+00 | 0.1581E+02 |
| 3 | 0.5859E-01 | 0.2684E-02 | 0.4580E-01 | 0.4580E+01 |
| 4 | 0.4392E+03 | 0.3417E-02 | 0.7780E-05 | 0.7780E-03 |
| 5 | 0.3196E+03 | 0.3518E-02 | 0.1101E-04 | 0.1101E-02 |

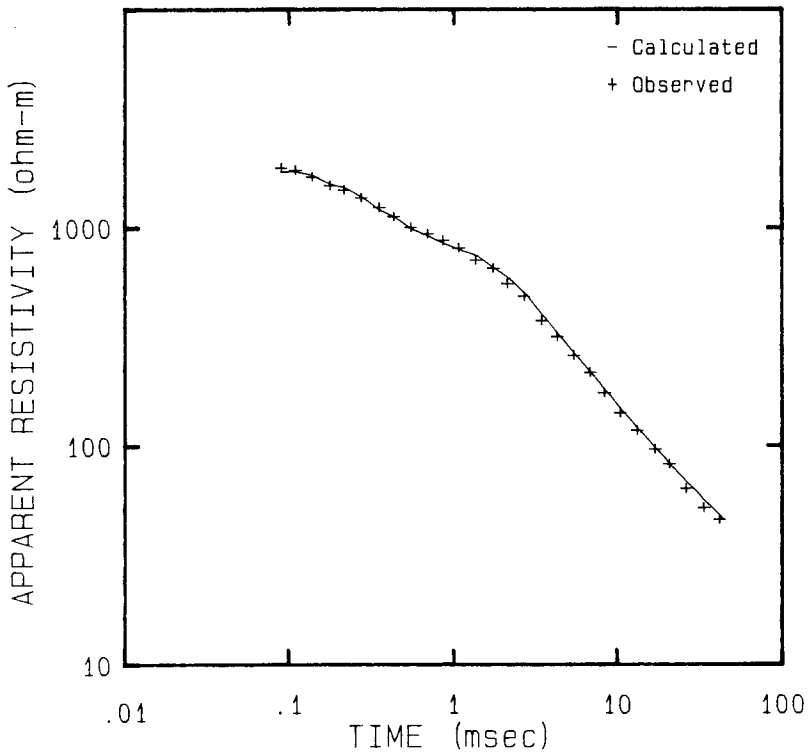
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.46350E-03 | 0.21575E+04 | |
| 2 | SIGMA( 2) = | 0.41415E-02 | 0.24146E+03 | |
| 3 | SIGMA( 3) = | 0.58595E-01 | 0.17066E+02 | |
| 4 | THICK( 1) = | 0.43919E+03 | | 0.43919E+03 |
| 5 | THICK( 2) = | 0.31959E+03 | | 0.75878E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML39




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 2412 | 226 |
| 696 | 289 |
| 130 | 321 |
| 10.9 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 39 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2241E+03 | 0.2374E+03 | -0.1331E+02 | -0.5606E+01 |
| 2 | 0.1100E-03 | 0.1480E+03 | 0.1495E+03 | -0.1500E+01 | -0.1004E+01 |
| 3 | 0.1400E-03 | 0.9050E+02 | 0.8800E+02 | 0.2504E+01 | 0.2846E+01 |
| 4 | 0.1770E-03 | 0.5528E+02 | 0.5376E+02 | 0.1525E+01 | 0.2838E+01 |
| 5 | 0.2200E-03 | 0.3597E+02 | 0.3442E+02 | 0.1552E+01 | 0.4508E+01 |
| 6 | 0.2800E-03 | 0.2222E+02 | 0.2176E+02 | 0.4572E+00 | 0.2101E+01 |
| 7 | 0.3550E-03 | 0.1379E+02 | 0.1432E+02 | -0.5339E+00 | -0.3727E+01 |
| 8 | 0.4430E-03 | 0.9669E+01 | 0.9704E+01 | -0.3479E-01 | -0.3585E+00 |
| 9 | 0.5540E-03 | 0.6294E+01 | 0.6433E+01 | -0.1386E+00 | -0.2155E+01 |
| 10 | 0.7130E-03 | 0.3831E+01 | 0.3974E+01 | -0.1427E+00 | -0.3592E+01 |
| 11 | 0.8810E-03 | 0.2503E+01 | 0.2608E+01 | -0.1047E+00 | -0.4014E+01 |
| 12 | 0.1096E-02 | 0.1611F+01 | 0.1650E+01 | -0.3918E-01 | -0.2374E+01 |
| 13 | 0.1411E-02 | 0.1069E+01 | 0.9928E+00 | 0.7616E-01 | 0.7671E+01 |
| 14 | 0.1795E-02 | 0.6500E+00 | 0.6475E+00 | 0.2541E-02 | 0.3925E+00 |
| 15 | 0.2224E-02 | 0.5020E+00 | 0.4603E+00 | 0.4173E-01 | 0.9067E+01 |
| 16 | 0.2850E-02 | 0.3340E+00 | 0.3247E+00 | 0.9310E-02 | 0.2867E+01 |
| 17 | 0.3600E-02 | 0.2620E+00 | 0.2449E+00 | 0.1711E-01 | 0.6985E+01 |
| 18 | 0.4490E-02 | 0.1930E+00 | 0.1898E+00 | 0.3241E-02 | 0.1708E+01 |
| 19 | 0.5700E-02 | 0.1440E+00 | 0.1446E+00 | -0.5677E-03 | -0.3927E+00 |
| 20 | 0.7190E-02 | 0.1050E+00 | 0.1112E+00 | -0.6249E-02 | -0.5617E+01 |
| 21 | 0.8800E-02 | 0.8800E-01 | 0.8839E-01 | -0.3910E-03 | -0.4423E+00 |
| 22 | 0.1100E-01 | 0.6900E-01 | 0.6792E-01 | 0.1082E-02 | 0.1593E+01 |
| 23 | 0.1400E-01 | 0.5000E-01 | 0.5079E-01 | -0.7906E-03 | -0.1557E+01 |
| 24 | 0.1800E-01 | 0.3600F-01 | 0.3715E-01 | -0.1151E-02 | -0.3098E+01 |
| 25 | 0.2200E-01 | 0.2700E-01 | 0.2873E-01 | -0.1726E-02 | -0.6008E+01 |
| 26 | 0.2800E-01 | 0.2200E-01 | 0.2097E-01 | 0.1029E-02 | 0.4908E+01 |
| 27 | 0.3600E-01 | 0.1600E-01 | 0.1501E-01 | 0.9889E-03 | 0.6588E+01 |
| 28 | 0.4500E-01 | 0.1100E-01 | 0.1113E-01 | -0.1322E-03 | -0.1187E+01 |

** %RMSERR= 4.14

CORRELATION MATRIX

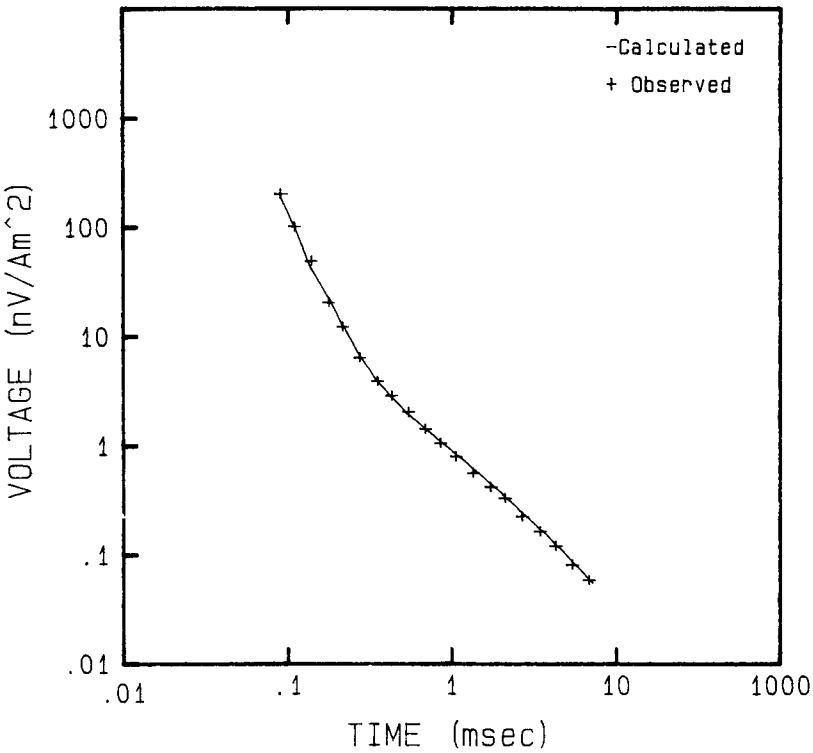
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.1938E+00 | 0.1000E+01 | | | | | |
| 3 | -0.2973E+00 | -0.7492E-01 | 0.1000E+01 | | | | |
| 4 | 0.4952E-01 | -0.2992E+00 | -0.4948E-01 | 0.1000E+01 | | | |
| 5 | 0.1378E+00 | 0.5614E-01 | 0.5774E-01 | -0.6796E-01 | 0.1000E+01 | | |
| 6 | -0.3654E+00 | -0.3157E+00 | 0.2112E+00 | 0.6932E-01 | -0.6593E+00 | 0.1000E+01 | |
| 7 | -0.3753E+00 | 0.5580E+00 | -0.1540E+00 | -0.1482E+00 | 0.7588E-01 | -0.1527E+00 | 0.1000E |

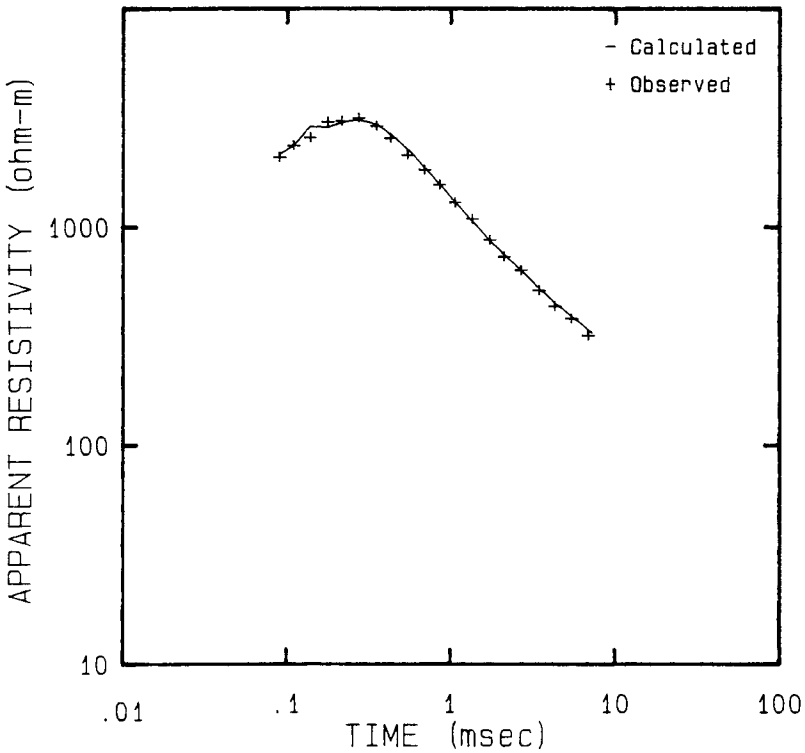
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4145E-03 | 0.8445E-04 | 0.2037E+00 | 0.2037E+02 |
| 2 | 0.1436E-02 | 0.2266E-03 | 0.1578E+00 | 0.1578E+02 |
| 3 | 0.7675E-02 | 0.6306E-03 | 0.8216E-01 | 0.8216E+01 |
| 4 | 0.9176E-01 | 0.2077E-02 | 0.2264E-01 | 0.2264E+01 |
| 5 | 0.2264E+03 | 0.1252E-02 | 0.5529E-05 | 0.5529E-03 |
| 6 | 0.2882E+03 | 0.1897E-02 | 0.6583E-05 | 0.6583E-03 |
| 7 | 0.3214E+03 | 0.1758E-02 | 0.5468E-05 | 0.5468E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.41455E-03 | 0.24123E+04 | |
| 2 | SIGMA( 2) | = | 0.14359E-02 | 0.69641E+03 | |
| 3 | SIGMA( 3) | = | 0.76749E-02 | 0.13029E+03 | |
| 4 | SIGMA( 4) | = | 0.91763E-01 | 0.10898E+02 | |
| 5 | THICK( 1) | = | 0.22641E+03 | | 0.22641E+03 |
| 6 | THICK( 2) | = | 0.28821E+03 | | 0.51462E+03 |
| 7 | THICK( 3) | = | 0.32140E+03 | | 0.83602E+03 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML40




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 511 | 32.3 |
| 3710 | 509.7 |
| 2046 | 250 |
| 84.2 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 40  TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2013E+03 | 0.1930E+03 | 0.8358E+01 | 0.4331E+01 |
| 2 | 0.1100E-03 | 0.1010E+03 | 0.1017E+03 | -0.7410E+00 | -0.7283E+00 |
| 3 | 0.1480E-03 | 0.4075E+02 | 0.4113E+02 | -0.3738E+00 | -0.9090E+00 |
| 4 | 0.1770E-03 | 0.2032E+02 | 0.2220E+02 | -0.1877E+01 | -0.8454E+01 |
| 5 | 0.2200E-03 | 0.1217E+02 | 0.1239E+02 | -0.2273E+00 | -0.1834E+01 |
| 6 | 0.2800E-03 | 0.6346E+01 | 0.6477E+01 | -0.1309E+00 | -0.2021E+01 |
| 7 | 0.3550E-03 | 0.3857E+01 | 0.3767E+01 | 0.9037E-01 | 0.2399E+01 |
| 8 | 0.4430E-03 | 0.2828E+01 | 0.2704E+01 | 0.1241E+00 | 0.4590E+01 |
| 9 | 0.5540E-03 | 0.2018E+01 | 0.1867E+01 | 0.1514E+00 | 0.8110E+01 |
| 10 | 0.7130E-03 | 0.1412E+01 | 0.1389E+01 | 0.2283E-01 | 0.1643E+01 |
| 11 | 0.8810E-03 | 0.1045E+01 | 0.1064E+01 | -0.1860E-01 | -0.1749E+01 |
| 12 | 0.1096E-02 | 0.7900E+00 | 0.8103E+00 | -0.2030E-01 | -0.2505E+01 |
| 13 | 0.1411E-02 | 0.5600E+00 | 0.5972E+00 | -0.3725E-01 | -0.6237E+01 |
| 14 | 0.1795E-02 | 0.4170E+00 | 0.4352E+00 | -0.1817E-01 | -0.4176E+01 |
| 15 | 0.2224E-02 | 0.3290E+00 | 0.3277E+00 | 0.1336E-02 | 0.4076E+00 |
| 16 | 0.2850E-02 | 0.2240E+00 | 0.2317E+00 | -0.7733E-02 | -0.3337E+01 |
| 17 | 0.3600E-02 | 0.1640E+00 | 0.1652E+00 | -0.1164E-02 | -0.7049E+00 |
| 18 | 0.4490E-02 | 0.1200E+00 | 0.1184E+00 | 0.1575E-02 | 0.1330E+01 |
| 19 | 0.5700E-02 | 0.8100E-01 | 0.8144E-01 | -0.4361E-03 | -0.5355E+00 |
| 20 | 0.7190E-02 | 0.5900E-01 | 0.5563E-01 | 0.3367E-02 | 0.6052E+01 |

** %RMSERR=  3.94

CORRELATION MATRIX

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | 0.3610E-01 | 0.1000E+01 | | | | | |
| 3 | -0.1644E+00 | -0.5609E+00 | 0.1000E+01 | | | | |
| 4 | -0.4084E+00 | 0.3497E-01 | -0.3434E+00 | 0.1000E+01 | | | |
| 5 | -0.3026E+00 | -0.8193E-01 | -0.2578E+00 | 0.5221E+00 | 0.1000E+01 | | |
| 6 | -0.1483E+00 | -0.6261E-01 | -0.1250E+00 | 0.2886E+00 | 0.5480E+00 | 0.1000E+01 | |
| 7 | 0.1935E+00 | -0.7438E-01 | 0.1338E+00 | -0.3407E+00 | -0.6220E+00 | -0.6624E+00 | 0.1000E |

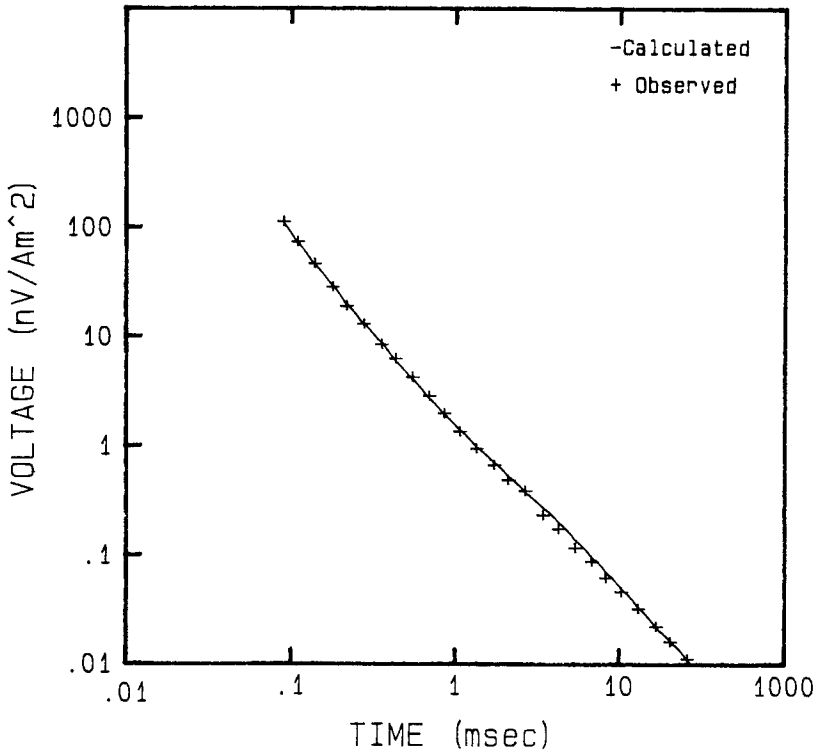
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1956E-02 | 0.6929E-04 | 0.3543E-01 | 0.3543E+01 |
| 2 | 0.2695E-03 | 0.1082E-03 | 0.4016E+00 | 0.4016E+02 |
| 3 | 0.4887E-03 | 0.2001E-03 | 0.4095E+00 | 0.4095E+02 |
| 4 | 0.1188E-01 | 0.1560E-02 | 0.1313E+00 | 0.1313E+02 |
| 5 | 0.3227E+02 | 0.1650E-03 | 0.5113E-05 | 0.5113E-03 |
| 6 | 0.5093E+03 | 0.9743E-03 | 0.1913E-05 | 0.1913E-03 |
| 7 | 0.2505E+03 | 0.2390E-02 | 0.9541E-05 | 0.9541E-03 |

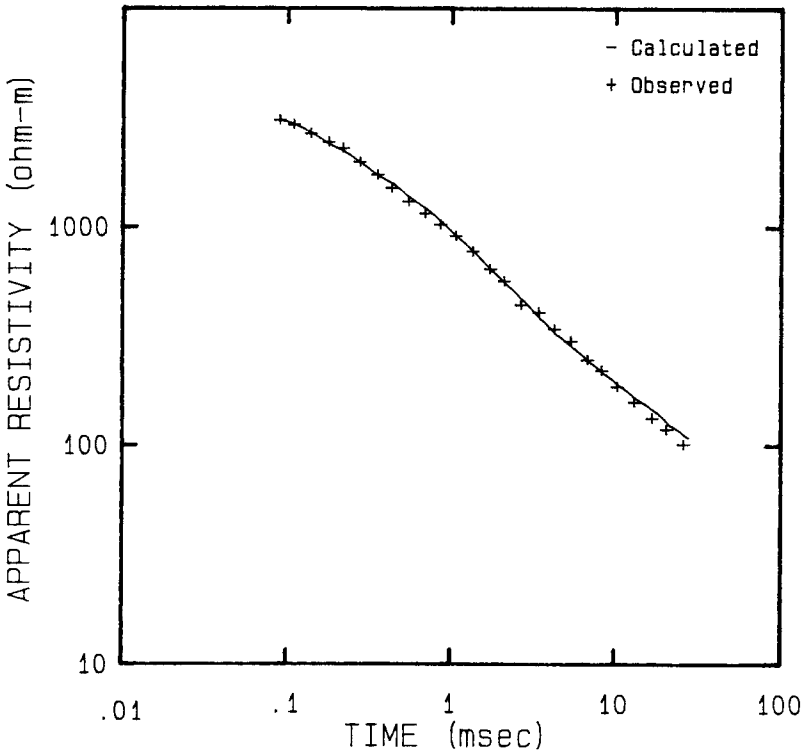
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.19557E-02 | 0.51134E+03 | |
| 2 | SIGMA( 2) = | 0.26954E-03 | 0.37101E+04 | |
| 3 | SIGMA( 3) = | 0.48869E-03 | 0.20463E+04 | |
| 4 | SIGMA( 4) = | 0.11882E-01 | 0.84159E+02 | |
| 5 | THICK( 1) = | 0.32269E+02 | | 0.32269E+02 |
| 6 | THICK( 2) = | 0.50931E+03 | | 0.54158E+03 |
| 7 | THICK( 3) = | 0.25048E+03 | | 0.79206E+03 |
| 8 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML41




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 5444 | 272 |
| 886 | 289 |
| 176 | 227 |
| 52.4 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 41  TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1123E+03 | 0.1106E+03 | 0.1685E+01 | 0.1523E+01 |
| 2 | 0.1100E-03 | 0.7311E+02 | 0.7241E+02 | 0.7010E+00 | 0.9681E+00 |
| 3 | 0.1400E-03 | 0.4610E+02 | 0.4529E+02 | 0.8113E+00 | 0.1792E+01 |
| 4 | 0.1770E-03 | 0.2809E+02 | 0.2901E+02 | -0.9258E+00 | -0.3191E+01 |
| 5 | 0.2200E-03 | 0.1878E+02 | 0.1950E+02 | -0.7208E+00 | -0.3696E+01 |
| 6 | 0.2800E-03 | 0.1281E+02 | 0.1286E+02 | -0.4613E-01 | -0.3588E+00 |
| 7 | 0.3550E-03 | 0.8340E+01 | 0.8528E+01 | -0.1875E+00 | -0.2199E+01 |
| 8 | 0.4430E-03 | 0.6223E+01 | 0.5787E+01 | 0.4365E+00 | 0.7543E+01 |
| 9 | 0.5540E-03 | 0.4211E+01 | 0.3953E+01 | 0.2576E+00 | 0.6516E+01 |
| 10 | 0.7130E-03 | 0.2819E+01 | 0.2619E+01 | 0.1997E+00 | 0.7624E+01 |
| 11 | 0.8810E-03 | 0.1962E+01 | 0.1881E+01 | 0.8121E-01 | 0.4318E+01 |
| 12 | 0.1096E-02 | 0.1341E+01 | 0.1358E+01 | -0.1701E-01 | -0.1253E+01 |
| 13 | 0.1411E-02 | 0.9340E+00 | 0.9484E+00 | -0.1445E-01 | -0.1523E+01 |
| 14 | 0.1795E-02 | 0.6640E+00 | 0.6798E+00 | -0.1581E-01 | -0.2325E+01 |
| 15 | 0.2224E-02 | 0.4850E+00 | 0.5050E+00 | -0.1996E-01 | -0.3953E+01 |
| 16 | 0.2850E-02 | 0.3850E+00 | 0.3567E+00 | 0.2829E-01 | 0.7930E+01 |
| 17 | 0.3600E-02 | 0.2310E+00 | 0.2560E+00 | -0.2505E-01 | -0.9783E+01 |
| 18 | 0.4490E-02 | 0.1730E+00 | 0.1856E+00 | -0.1258E-01 | -0.6777E+01 |
| 19 | 0.5700E-02 | 0.1160E+00 | 0.1295E+00 | -0.1353E-01 | -0.1045E+02 |
| 20 | 0.7190E-02 | 0.8600E-01 | 0.9065E-01 | -0.4653E-02 | -0.5133E+01 |
| 21 | 0.8800E-02 | 0.6200E-01 | 0.6572E-01 | -0.3716E-02 | -0.5655E+01 |
| 22 | 0.1100E-01 | 0.4600E-01 | 0.4587E-01 | 0.1287E-03 | 0.2806E+00 |
| 23 | 0.1400E-01 | 0.3200E-01 | 0.3093E-01 | 0.1069E-02 | 0.3457E+01 |
| 24 | 0.1800E-01 | 0.2200E-01 | 0.2041E-01 | 0.1590E-02 | 0.7790E+01 |
| 25 | 0.2200E-01 | 0.1600E-01 | 0.1472E-01 | 0.1283E-02 | 0.8716E+01 |
| 26 | 0.2800E-01 | 0.1100E-01 | 0.9943E-02 | 0.1057E-02 | 0.1063E+02 |

** %RMSERR=  5.78

CORRELATION MATRIX

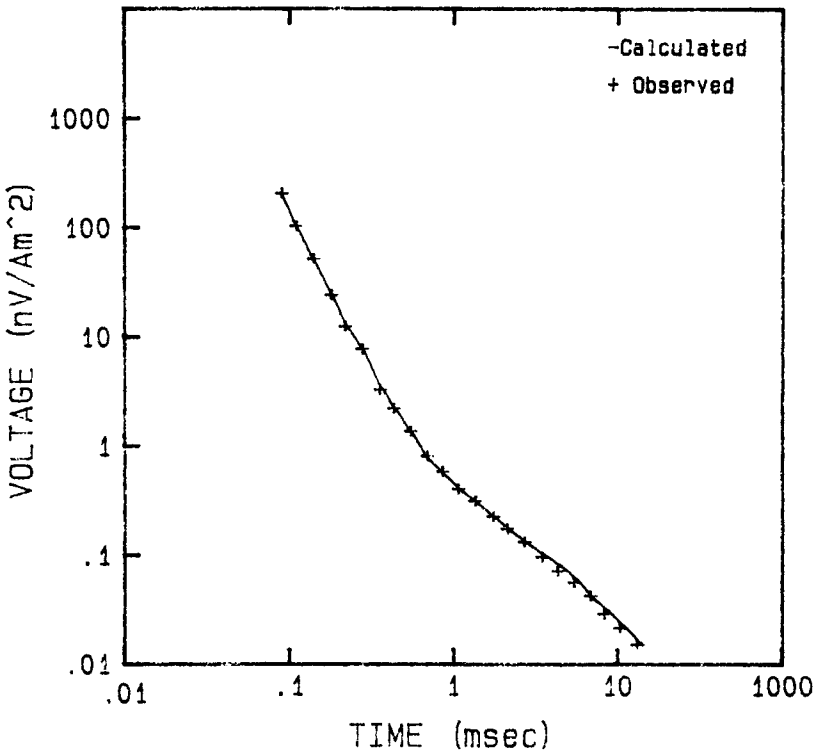
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.2209E+00 | 0.1000E+01 | | | | | |
| 3 | -0.3217E+00 | -0.1735E+00 | 0.1000E+01 | | | | |
| 4 | -0.2619E+00 | -0.3795E+00 | -0.2595E-01 | 0.1000E+01 | | | |
| 5 | -0.4022E+00 | 0.4900E+00 | 0.2032E+00 | -0.1833E+00 | 0.1000E+01 | | |
| 6 | -0.1596E+00 | -0.1442E+00 | -0.2147E+00 | 0.5465E-01 | -0.4218E+00 | 0.1000E+01 | |
| 7 | 0.1839E+00 | -0.5547E+00 | 0.1535E+00 | -0.4185E-01 | -0.4149E+00 | -0.1067E+00 | 0.1000E |

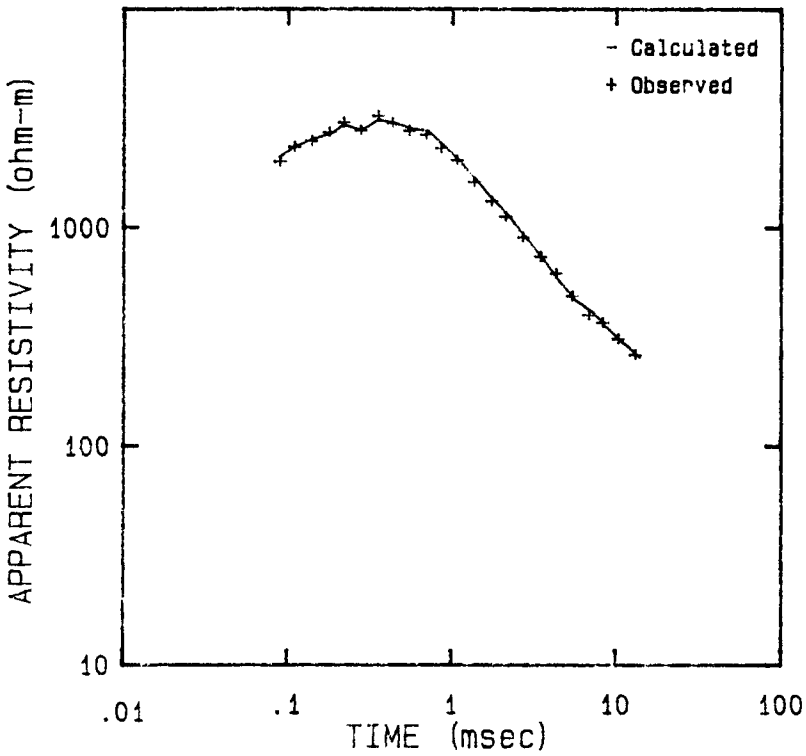
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1837E-03 | 0.1113E-03 | 0.6060E+00 | 0.6060E+02 |
| 2 | 0.1128E-02 | 0.3219E-03 | 0.2853E+00 | 0.2853E+02 |
| 3 | 0.5693E-02 | 0.6203E-03 | 0.1090E+00 | 0.1090E+02 |
| 4 | 0.1907E-01 | 0.1063E-02 | 0.5575E-01 | 0.5575E+01 |
| 5 | 0.2718E+03 | 0.2236E-02 | 0.8229E-05 | 0.8229E-03 |
| 6 | 0.2891E+03 | 0.2347E-02 | 0.8117E-05 | 0.8117E-03 |
| 7 | 0.2275E+03 | 0.1807E-02 | 0.7944E-05 | 0.7944E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.18370E-03 | 0.54436E+04 | |
| 2 | SIGMA( 2) | = | 0.11283E-02 | 0.88632E+03 | |
| 3 | SIGMA( 3) | = | 0.56931E-02 | 0.17565E+03 | |
| 4 | SIGMA( 4) | = | 0.19070E-01 | 0.52439E+02 | |
| 5 | THICK( 1) | = | 0.27177E+03 | | 0.27177E+03 |
| 6 | THICK( 2) | = | 0.28909E+03 | | 0.56087E+03 |
| 7 | THICK( 3) | = | 0.22747E+03 | | 0.78833E+03 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML42




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 451 | 39 |
| 6808 | 578 |
| 787 | 447 |
| 48 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 42  TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2054E+03 | 0.1993E+03 | 0.6049E+01 | 0.3035E+01 |
| 2 | 0.1100E-03 | 0.1028E+03 | 0.1031E+03 | -0.2649E+00 | -0.2569E+00 |
| 3 | 0.1400E-03 | 0.5125E+02 | 0.5035E+02 | 0.8956E+00 | 0.1779E+01 |
| 4 | 0.1770E-03 | 0.2389E+02 | 0.2452E+02 | -0.6278E+00 | -0.2560E+01 |
| 5 | 0.2200E-03 | 0.1232E+02 | 0.1281E+02 | -0.4896E+00 | -0.3822E+01 |
| 6 | 0.2800E-03 | 0.7670E+01 | 0.7623E+01 | 0.4695E-01 | 0.6159E+00 |
| 7 | 0.3550E-03 | 0.3240E+01 | 0.3449E+01 | -0.2089E+00 | -0.6058E+01 |
| 8 | 0.4430E-03 | 0.2198E+01 | 0.2186E+01 | 0.1177E-01 | 0.5385E+00 |
| 9 | 0.5540E-03 | 0.1350E+01 | 0.1314E+01 | 0.3604E-01 | 0.2743E+01 |
| 10 | 0.7130E-03 | 0.8000E+00 | 0.7480E+00 | 0.5197E-01 | 0.6948E+01 |
| 11 | 0.8810E-03 | 0.5800E+00 | 0.5485E+00 | 0.3155E-01 | 0.5752E+01 |
| 12 | 0.1096E-02 | 0.4000E+00 | 0.4034E+00 | -0.3409E-02 | -0.8451E+00 |
| 13 | 0.1411E-02 | 0.3100E+00 | 0.2953E+00 | 0.1473E-01 | 0.4988E+01 |
| 14 | 0.1795E-02 | 0.2240E+00 | 0.2228E+00 | 0.1201E-02 | 0.5389E+00 |
| 15 | 0.2224E-02 | 0.1730E+00 | 0.1739E+00 | -0.9444E-03 | -0.5430E+00 |
| 16 | 0.2850E-02 | 0.1310E+00 | 0.1297E+00 | 0.1298E-02 | 0.1001E+01 |
| 17 | 0.3600E-02 | 0.9500E-01 | 0.9836E-01 | -0.3363E-02 | -0.3419E+01 |
| 18 | 0.4490E-02 | 0.7100E-01 | 0.7541E-01 | -0.4414E-02 | -0.5853E+01 |
| 19 | 0.5700E-02 | 0.5600E-01 | 0.5640E-01 | -0.3975E-03 | -0.7048E+00 |
| 20 | 0.7190E-02 | 0.4200E-01 | 0.4134E-01 | 0.6554E-03 | 0.1585E+01 |
| 21 | 0.8800E-02 | 0.2900E-01 | 0.3115E-01 | -0.2147E-02 | -0.6894E+01 |
| 22 | 0.1100E-01 | 0.2100E-01 | 0.2241E-01 | -0.1405E-02 | -0.6273E+01 |
| 23 | 0.1400E-01 | 0.1500E-01 | 0.1560E-01 | -0.5967E-03 | -0.3826E+01 |

** %RMSERR=  3.83

CORRELATION MATRIX

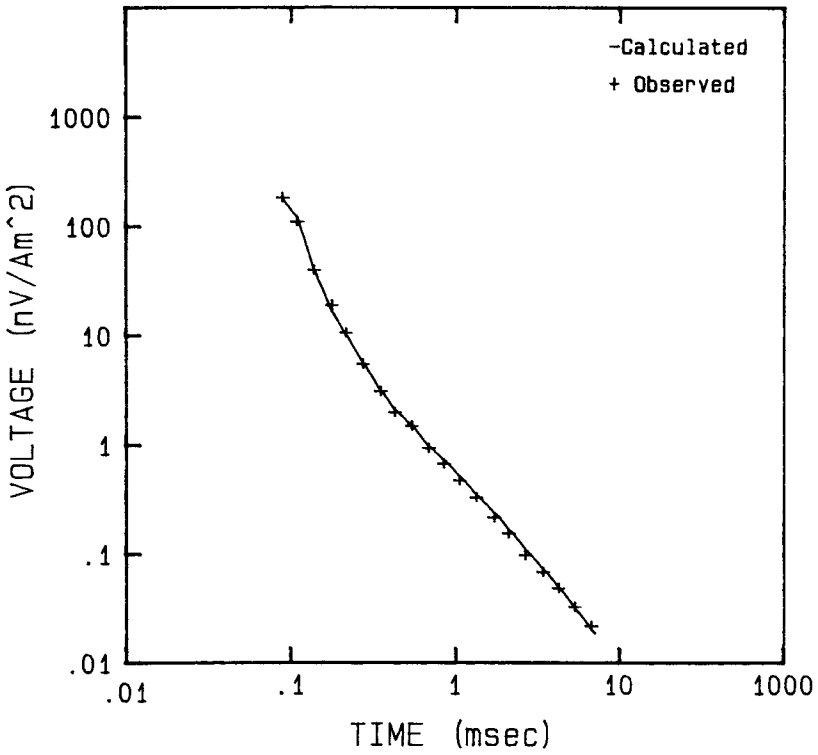
| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | |
| 2 | -0.6296E+00 | 0.1000E+01 | | | | |
| 3 | 0.3341E+00 | -0.5879E+00 | 0.1000E+01 | | | |
| 4 | 0.6459E+00 | -0.4444E+00 | 0.3613E+00 | 0.1000E+01 | | |
| 5 | -0.2497E+00 | 0.4546E-01 | 0.4814E-01 | -0.2262E+00 | 0.1000E+01 | |
| 6 | 0.4082E-01 | -0.2247E+00 | -0.1886E+00 | -0.9334E-01 | -0.3467E+00 | 0.1000E+01 |
| 7 | -0.8916E-01 | -0.8816E-01 | -0.3264E+00 | -0.2921E+00 | 0.4155E-01 | 0.2452E+00 | 0.1000E |

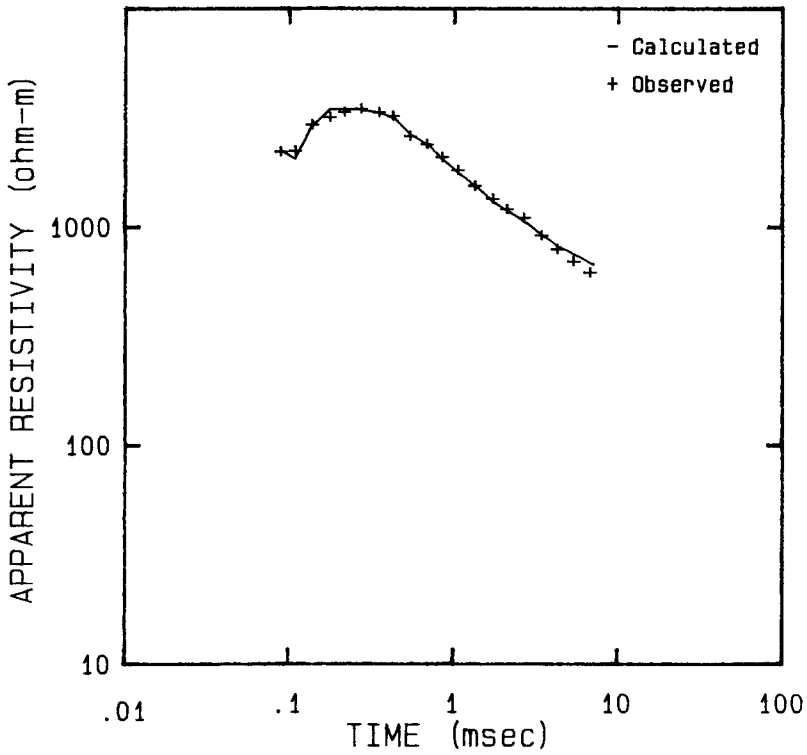
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2217E-02 | 0.4759E-04 | 0.2147E-01 | 0.2147E+01 |
| 2 | 0.1469E-03 | 0.5038E-04 | 0.3430E+00 | 0.3430E+02 |
| 3 | 0.1271E-02 | 0.1573E-03 | 0.1238E+00 | 0.1238E+02 |
| 4 | 0.2096E-01 | 0.6010E-03 | 0.2868E-01 | 0.2868E+01 |
| 5 | 0.3948E+02 | 0.2476E-03 | 0.6271E-05 | 0.6271E-03 |
| 6 | 0.5779E+03 | 0.1117E-02 | 0.1933E-05 | 0.1933E-03 |
| 7 | 0.4472E+03 | 0.1445E-02 | 0.3230E-05 | 0.3230E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.22170E-02 | 0.45106E+03 | |
| 2 | SIGMA( 2) | = | 0.14688E-03 | 0.68083E+04 | |
| 3 | SIGMA( 3) | = | 0.12712E-02 | 0.78666E+03 | |
| 4 | SIGMA( 4) | = | 0.20956E-01 | 0.47719E+02 | |
| 5 | THICK( 1) | = | 0.39476E+02 | | 0.39476E+02 |
| 6 | THICK( 2) | = | 0.57788E+03 | | 0.61736E+03 |
| 7 | THICK( 3) | = | 0.44722E+03 | | 0.10646E+04 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML43




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1324 | 152 |
| 8921 | 705 |
| 291 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 43 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1851E+03 | 0.1810E+03 | 0.4175E+01 | 0.2307E+01 |
| 2 | 0.1000E-03 | 0.1109E+03 | 0.1253E+03 | -0.1438E+02 | -0.1148E+02 |
| 3 | 0.1420E-03 | 0.4011E+02 | 0.4050E+02 | -0.3912E+00 | -0.9658E+00 |
| 4 | 0.1870E-03 | 0.1898E+02 | 0.1671E+02 | 0.2274E+01 | 0.1361E+02 |
| 5 | 0.2200E-03 | 0.1060E+02 | 0.1007E+02 | 0.5262E+00 | 0.5223E+01 |
| 6 | 0.2800E-03 | 0.5510E+01 | 0.5600E+01 | -0.8959E-01 | -0.1600E+01 |
| 7 | 0.3550E-03 | 0.3100E+01 | 0.3120E+01 | -0.2031E-01 | -0.6509E+00 |
| 8 | 0.4430E-03 | 0.1997E+01 | 0.2075E+01 | -0.7799E-01 | -0.3758E+01 |
| 9 | 0.5540E-03 | 0.1503E+01 | 0.1478E+01 | 0.2480E-01 | 0.1678E+01 |
| 10 | 0.7130E-03 | 0.9430E+00 | 0.9563E+00 | -0.1329E-01 | -0.1390E+01 |
| 11 | 0.8810E-03 | 0.6780E+00 | 0.7157E+00 | -0.3773E-01 | -0.5271E+01 |
| 12 | 0.1096E-02 | 0.4770E+00 | 0.5066E+00 | -0.2956E-01 | -0.5836E+01 |
| 13 | 0.1411E-02 | 0.3340E+00 | 0.3413E+00 | -0.7328E-02 | -0.2147E+01 |
| 14 | 0.1795E-02 | 0.2190E+00 | 0.2334E+00 | -0.1445E-01 | -0.6189E+01 |
| 15 | 0.2224E-02 | 0.1560E+00 | 0.1632E+00 | -0.7224E-02 | -0.4426E+01 |
| 16 | 0.2850E-02 | 0.9800E-01 | 0.1061E+00 | -0.8101E-02 | -0.7635E+01 |
| 17 | 0.3600E-02 | 0.6900E-01 | 0.7002E-01 | -0.1015E-02 | -0.1450E+01 |
| 18 | 0.4440E-02 | 0.4900E-01 | 0.4745E-01 | 0.1549E-02 | 0.3264E+01 |
| 19 | 0.5700E-02 | 0.3300E-01 | 0.2989E-01 | 0.3114E-02 | 0.1042E+02 |
| 20 | 0.7190E-02 | 0.2200E-01 | 0.1917E-01 | 0.2832E-02 | 0.1478E+02 |

** %RMSERR= 6.69

CORRELATION MATRIX

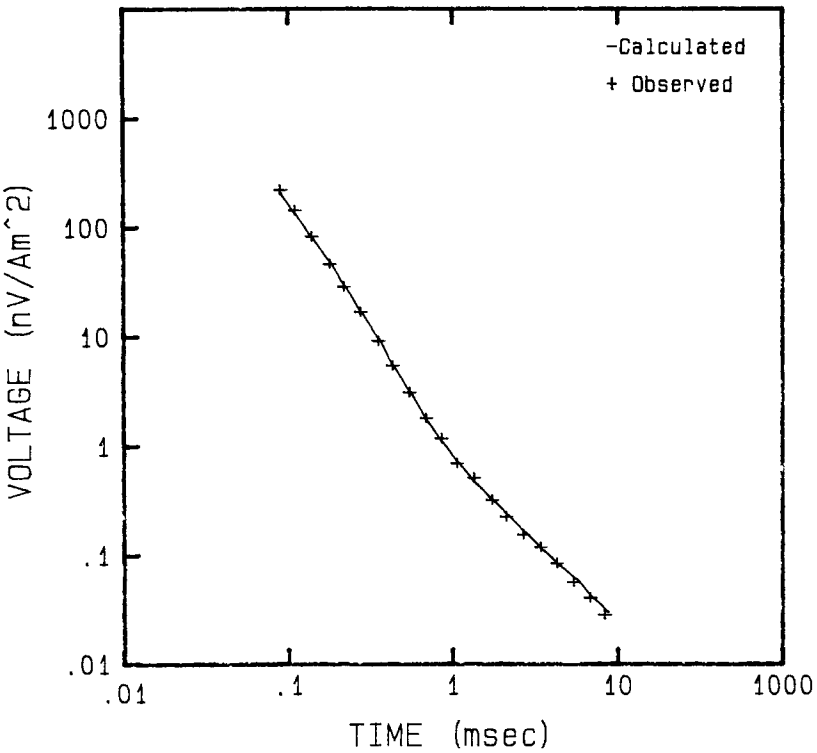
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3602E+00 | 0.1000E+01 | | | |
| 3 | -0.1259E+00 | -0.7023E+00 | 0.1000E+01 | | |
| 4 | -0.1820E+00 | 0.2195E+00 | -0.2934E+00 | 0.1000E+01 | |
| 5 | 0.3057E+00 | 0.2407E+00 | -0.7019E+00 | -0.2634E-01 | 0.1000E+01 |

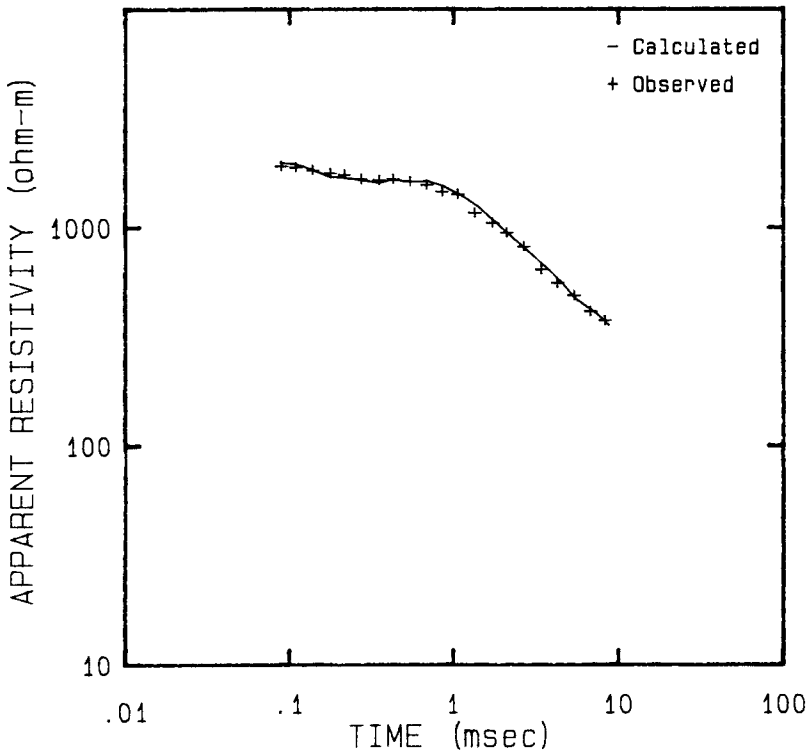
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.7555E-03 | 0.7045E-04 | 0.9325E-01 | 0.9325E+01 |
| 2 | 0.1121E-03 | 0.8711E-04 | 0.7771E+00 | 0.7771E+02 |
| 3 | 0.3431E-02 | 0.5360E-03 | 0.1562E+00 | 0.1562E+02 |
| 4 | 0.1520E+03 | 0.5643E-03 | 0.3712E-05 | 0.3712E-03 |
| 5 | 0.7049E+03 | 0.1113E-02 | 0.1579E-05 | 0.1579E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.75553E-03 | 0.13236E+04 | |
| 2 | SIGMA( 2) | = | 0.11210E-03 | 0.89209E+04 | |
| 3 | SIGMA( 3) | = | 0.34311E-02 | 0.29145E+03 | |
| 4 | THICK( 1) | = | 0.15204E+03 | | 0.15204E+03 |
| 5 | THICK( 2) | = | 0.70489E+03 | | 0.85693E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML44




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 3123.4 | 196.05 |
| 1036.8 | 806.25 |
| 89.66 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 44 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2204E+03 | 0.2088E+03 | 0.1162E+02 | 0.5565E+01 |
| 2 | 0.1100E-03 | 0.1427E+03 | 0.1352E+03 | 0.7550E+01 | 0.5585E+01 |
| 3 | 0.1400E-03 | 0.8177E+02 | 0.8115E+02 | 0.6252E+00 | 0.7705E+00 |
| 4 | 0.1770E-03 | 0.4577E+02 | 0.4865E+02 | -0.2882E+01 | -0.5924E+01 |
| 5 | 0.2200E-03 | 0.2835E+02 | 0.2979E+02 | -0.1434E+01 | -0.4814E+01 |
| 6 | 0.2800E-03 | 0.1666E+02 | 0.1690E+02 | -0.2316E+00 | -0.1371E+01 |
| 7 | 0.3550E-03 | 0.9011E+01 | 0.9435E+01 | -0.4241E+00 | -0.4495E+01 |
| 8 | 0.4430E-03 | 0.5368E+01 | 0.5396E+01 | -0.2820E-01 | -0.5227E+00 |
| 9 | 0.5540E-03 | 0.3045E+01 | 0.3065E+01 | -0.1951E-01 | -0.6366E+00 |
| 10 | 0.7130E-03 | 0.1775E+01 | 0.1669E+01 | 0.1056E+00 | 0.6325E+01 |
| 11 | 0.8810E-03 | 0.1154E+01 | 0.1062E+01 | 0.9206E-01 | 0.8669E+01 |
| 12 | 0.1096E-02 | 0.6860E+00 | 0.6944E+00 | -0.8428E-02 | -0.1214E+01 |
| 13 | 0.1411E-02 | 0.5060E+00 | 0.4501E+00 | 0.5593E-01 | 0.1243E+02 |
| 14 | 0.1795E-02 | 0.3160E+00 | 0.3132E+00 | 0.2842E-02 | 0.9074E+00 |
| 15 | 0.2224E-02 | 0.2230E+00 | 0.2282E+00 | -0.5191E-02 | -0.2275E+01 |
| 16 | 0.2850E-02 | 0.1530E+00 | 0.1579E+00 | -0.4949E-02 | -0.3133E+01 |
| 17 | 0.3600E-02 | 0.1170E+00 | 0.1133E+00 | 0.3694E-02 | 0.3261E+01 |
| 18 | 0.4490E-02 | 0.8300E-01 | 0.8153E-01 | 0.1471E-02 | 0.1804E+01 |
| 19 | 0.5700E-02 | 0.5600E-01 | 0.5657E-01 | -0.5735E-03 | -0.1014E+01 |
| 20 | 0.7190E-02 | 0.4000E-01 | 0.3939E-01 | 0.6127E-03 | 0.1556E+01 |
| 21 | 0.8800E-02 | 0.2800E-01 | 0.2824E-01 | -0.2387E-03 | -0.8454E+00 |

** %RMSERR= 4.62

CORRELATION MATRIX

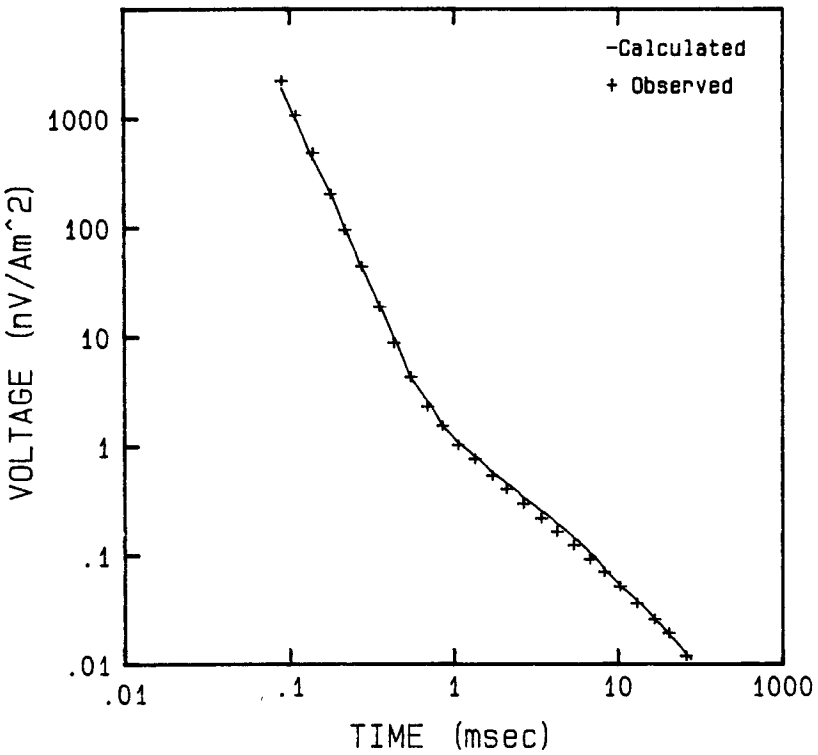
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.1013E-01 | 0.1000E+01 | | | |
| 3 | -0.2646E+00 | -0.5924E+00 | 0.1000E+01 | | |
| 4 | 0.2530E+00 | -0.3363E-01 | -0.3834E+00 | 0.1000E+01 | |
| 5 | -0.2096E+00 | -0.8979E-01 | 0.3334E+00 | -0.5125E+00 | 0.1000E+01 |

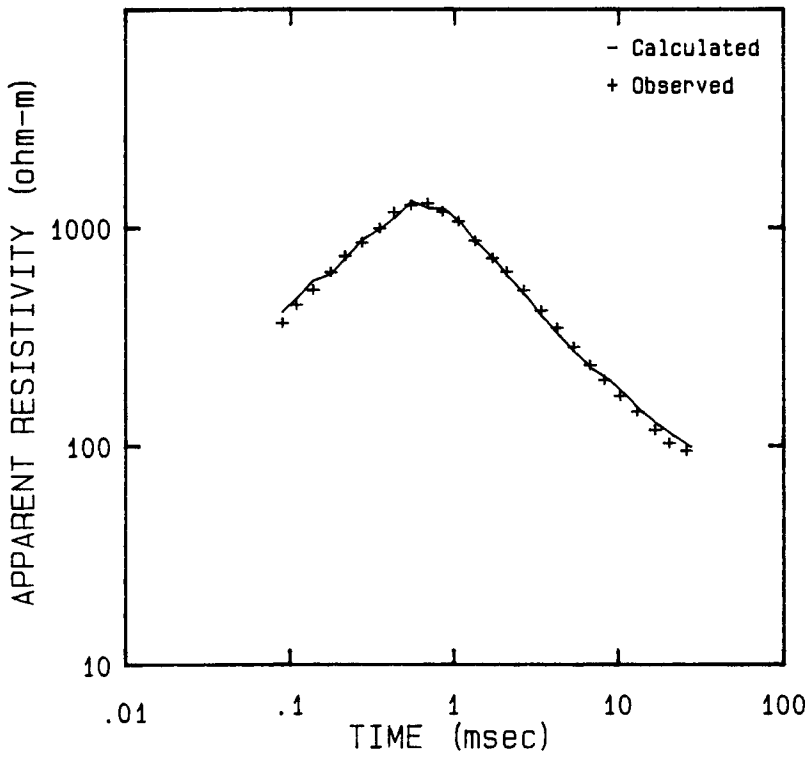
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3202E-03 | 0.6239E-04 | 0.1949E+00 | 0.1949E+02 |
| 2 | 0.9645E-03 | 0.1138E-03 | 0.1179E+00 | 0.1179E+02 |
| 3 | 0.1115E-01 | 0.5264E-03 | 0.4719E-01 | 0.4719E+01 |
| 4 | 0.1961E+03 | 0.1366E-02 | 0.6967E-05 | 0.6967E-03 |
| 5 | 0.8062E+03 | 0.2342E-02 | 0.2905E-05 | 0.2905E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.32016E-03 | 0.31234E+04 | |
| 2 | SIGMA( 2) | = | 0.96449E-03 | 0.10368E+04 | |
| 3 | SIGMA( 3) | = | 0.11154E-01 | 0.89656E+02 | |
| 4 | THICK( 1) | = | 0.19605E+03 | | 0.19605E+03 |
| 5 | THICK( 2) | = | 0.80622E+03 | | 0.10023E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML45




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 167.46 | 37.16 |
| 2115.4 | 721.75 |
| 32.13 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 45  TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2232E+04 | 0.1907E+04 | 0.3251E+03 | 0.1705E+02 |
| 2 | 0.1100E-03 | 0.1080E+04 | 0.9907E+03 | 0.8927E+02 | 0.9011E+01 |
| 3 | 0.1400E-03 | 0.4895E+03 | 0.4281E+03 | 0.6143E+02 | 0.1435E+02 |
| 4 | 0.1770E-03 | 0.2041E+03 | 0.2099E+03 | -0.5791E+01 | -0.2759E+01 |
| 5 | 0.2200E-03 | 0.9613E+02 | 0.9975E+02 | -0.3619E+01 | -0.3628E+01 |
| 6 | 0.2800E-03 | 0.4451E+02 | 0.4238E+02 | 0.2127E+01 | 0.5018E+01 |
| 7 | 0.3550E-03 | 0.1902E+02 | 0.1917E+02 | -0.1509E+00 | -0.7872E+00 |
| 8 | 0.4430E-03 | 0.8882E+01 | 0.9696E+01 | -0.8139E+00 | -0.8394E+01 |
| 9 | 0.5540E-03 | 0.4355E+01 | 0.4111E+01 | 0.2439E+00 | 0.5934E+01 |
| 10 | 0.7130E-03 | 0.2333E+01 | 0.2531E+01 | -0.1979E+00 | -0.7818E+01 |
| 11 | 0.8810E-03 | 0.1565E+01 | 0.1497E+01 | 0.6838E-01 | 0.4569E+01 |
| 12 | 0.1096E-02 | 0.1042E+01 | 0.1058E+01 | -0.1593E-01 | -0.1505E+01 |
| 13 | 0.1411E-02 | 0.7760E+00 | 0.7963E+00 | -0.2032E-01 | -0.2552E+01 |
| 14 | 0.1795E-02 | 0.5460E+00 | 0.5639E+00 | -0.1788E-01 | -0.3170E+01 |
| 15 | 0.2224E-02 | 0.4110E+00 | 0.4549E+00 | -0.4395E-01 | -0.9660E+01 |
| 16 | 0.2850E-02 | 0.3010E+00 | 0.3349E+00 | -0.3387E-01 | -0.1011E+02 |
| 17 | 0.3600E-02 | 0.2210E+00 | 0.2505E+00 | -0.2954E-01 | -0.1179E+02 |
| 18 | 0.4490E-02 | 0.1670E+00 | 0.1889E+00 | -0.2190E-01 | -0.1159E+02 |
| 19 | 0.5700E-02 | 0.1250E+00 | 0.1367E+00 | -0.1174E-01 | -0.8588E+01 |
| 20 | 0.7190E-02 | 0.9300E-01 | 0.9886E-01 | -0.5857E-02 | -0.5925E+01 |
| 21 | 0.8800E-02 | 0.7100E-01 | 0.7381E-01 | -0.2807E-02 | -0.3803E+01 |
| 22 | 0.1100E-01 | 0.5200E-01 | 0.5288E-01 | -0.8765E-03 | -0.1658E+01 |
| 23 | 0.1400E-01 | 0.3700E-01 | 0.3639E-01 | 0.6142E-03 | 0.1688E+01 |
| 24 | 0.1800E-01 | 0.2600E-01 | 0.2426E-01 | 0.1741E-02 | 0.7177E+01 |
| 25 | 0.2200E-01 | 0.2000E-01 | 0.1729E-01 | 0.2712E-02 | 0.1569E+02 |
| 26 | 0.2800E-01 | 0.1200E-01 | 0.1133E-01 | 0.6681E-03 | 0.5896E+01 |

** %RMSERR=  8.23

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.8582E-01 | 0.1000E+01 | | | |
| 3 | -0.1725E+00 | -0.5197E+00 | 0.1000E+01 | | |
| 4 | -0.2135E+00 | -0.4928E+00 | 0.1346E-02 | 0.1000E+01 | |
| 5 | -0.4980E+00 | -0.3317E+00 | 0.4604E+00 | 0.3115E+00 | 0.1000E+01 |

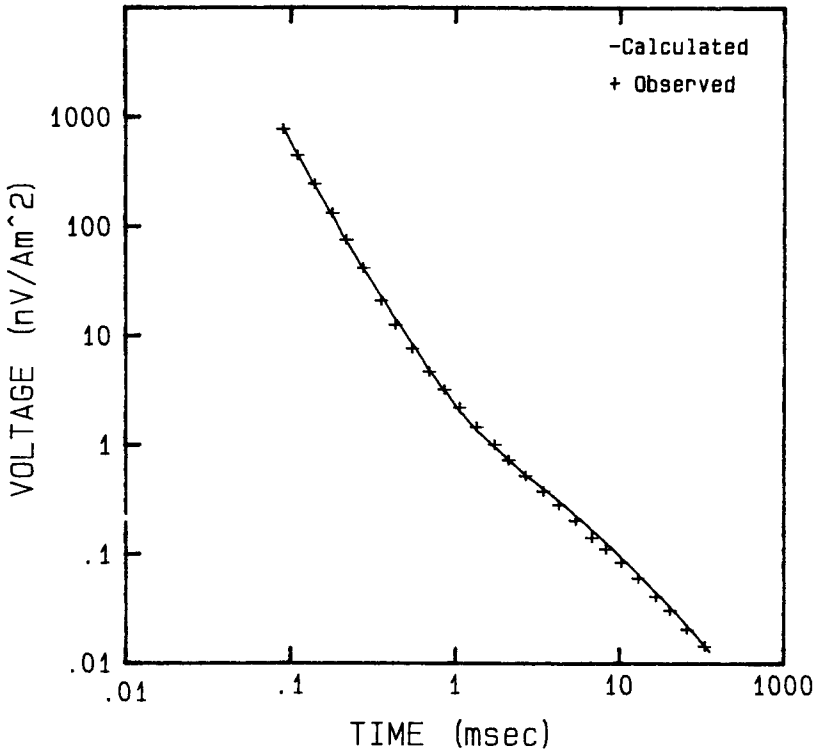
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.5972E-02 | 0.1672E-03 | 0.2800E-01 | 0.2800E+01 |
| 2 | 0.4727E-03 | 0.2773E-03 | 0.5865E+00 | 0.5865E+02 |
| 3 | 0.3113E-01 | 0.1812E-02 | 0.5820E-01 | 0.5820E+01 |
| 4 | 0.3716E+02 | 0.4685E-03 | 0.1261E-04 | 0.1261E-02 |
| 5 | 0.7217E+03 | 0.1300E-02 | 0.1801E-05 | 0.1801E-03 |

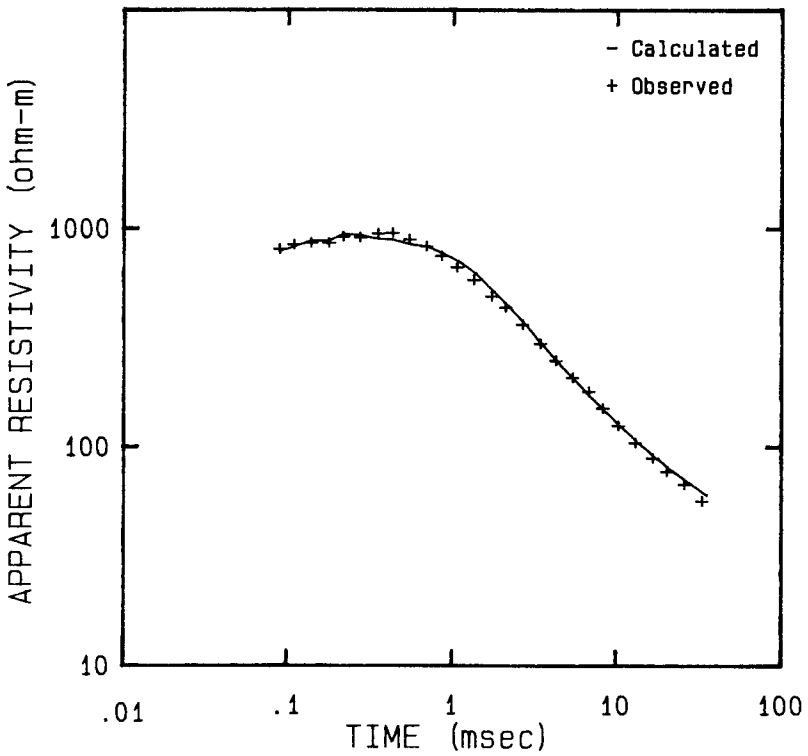
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.59716E-02 | 0.16746E+03 | |
| 2 | SIGMA( 2) = | 0.47273E-03 | 0.21154E+04 | |
| 3 | SIGMA( 3) = | 0.31128E-01 | 0.32126E+02 | |
| 4 | THICK( 1) = | 0.37159E+02 | | 0.37159E+02 |
| 5 | THICK( 2) = | 0.72175E+03 | | 0.75891E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML46




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 478.79 | 50.412 |
| 1045.6 | 389.5 |
| 172.88 | 264.57 |
| 18.467 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 46 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.7723E+03 | 0.8005E+03 | -0.2824E+02 | -0.3528E+01 |
| 2 | 0.1100E-03 | 0.4442E+03 | 0.4602E+03 | -0.1602E+02 | -0.3481E+01 |
| 3 | 0.1400E-03 | 0.2411E+03 | 0.2334E+03 | 0.7649E+01 | 0.3276E+01 |
| 4 | 0.1770E-03 | 0.1306E+03 | 0.1243E+03 | 0.6304E+01 | 0.5073E+01 |
| 5 | 0.2200E-03 | 0.7436E+02 | 0.7122E+02 | 0.3144E+01 | 0.4415E+01 |
| 6 | 0.2800E-03 | 0.4112E+02 | 0.3957E+02 | 0.1552E+01 | 0.3923E+01 |
| 7 | 0.3550E-03 | 0.2061E+02 | 0.2248E+02 | -0.1863E+01 | -0.8290E+01 |
| 8 | 0.4430E-03 | 0.1237E+02 | 0.1378E+02 | -0.1411E+01 | -0.1024E+02 |
| 9 | 0.5540E-03 | 0.7519E+01 | 0.8092E+01 | -0.5727E+00 | -0.7077E+01 |
| 10 | 0.7130E-03 | 0.4626E+01 | 0.4644E+01 | -0.1828E-01 | -0.3936E+00 |
| 11 | 0.8810E-03 | 0.3159E+01 | 0.3016E+01 | 0.1431E+00 | 0.4745E+01 |
| 12 | 0.1096E-02 | 0.2167E+01 | 0.1957E+01 | 0.2095E+00 | 0.1070E+02 |
| 13 | 0.1411E-02 | 0.1446E+01 | 0.1302E+01 | 0.1439E+00 | 0.1105E+02 |
| 14 | 0.1795E-02 | 0.9970E+00 | 0.9223E+00 | 0.7469E-01 | 0.8098E+01 |
| 15 | 0.2224E-02 | 0.7190E+00 | 0.6977E+00 | 0.2133E-01 | 0.3058E+01 |
| 16 | 0.2850E-02 | 0.5160E+00 | 0.5096E+00 | 0.6392E-02 | 0.1254E+01 |
| 17 | 0.3600E-02 | 0.3740E+00 | 0.3818E+00 | -0.7787E-02 | -0.2040E+01 |
| 18 | 0.4490E-02 | 0.2800E+00 | 0.2901E+00 | -0.1011E-01 | -0.3485E+01 |
| 19 | 0.5700E-02 | 0.2020E+00 | 0.2132E+00 | -0.1118E-01 | -0.5244E+01 |
| 20 | 0.7190E-02 | 0.1410E+00 | 0.1565E+00 | -0.1548E-01 | -0.9894E+01 |
| 21 | 0.8800E-02 | 0.1110E+00 | 0.1184E+00 | -0.7426E-02 | -0.6271E+01 |
| 22 | 0.1100E-01 | 0.8400E-01 | 0.8603E-01 | -0.2031E-02 | -0.2361E+01 |
| 23 | 0.1400E-01 | 0.6000E-01 | 0.6031E-01 | -0.3066E-03 | -0.5084E+00 |
| 24 | 0.1800E-01 | 0.4100E-01 | 0.4098E-01 | 0.1550E-04 | 0.3783E-01 |
| 25 | 0.2200E-01 | 0.3000E-01 | 0.2974E-01 | 0.2649E-03 | 0.8908E+00 |
| 26 | 0.2800E-01 | 0.2000E-01 | 0.1986E-01 | 0.1385E-03 | 0.6973E+00 |
| 27 | 0.3600E-01 | 0.1400E-01 | 0.1285E-01 | 0.1154E-02 | 0.8983E+01 |

** %RMSERR= 5.85

CORRELATION MATRIX

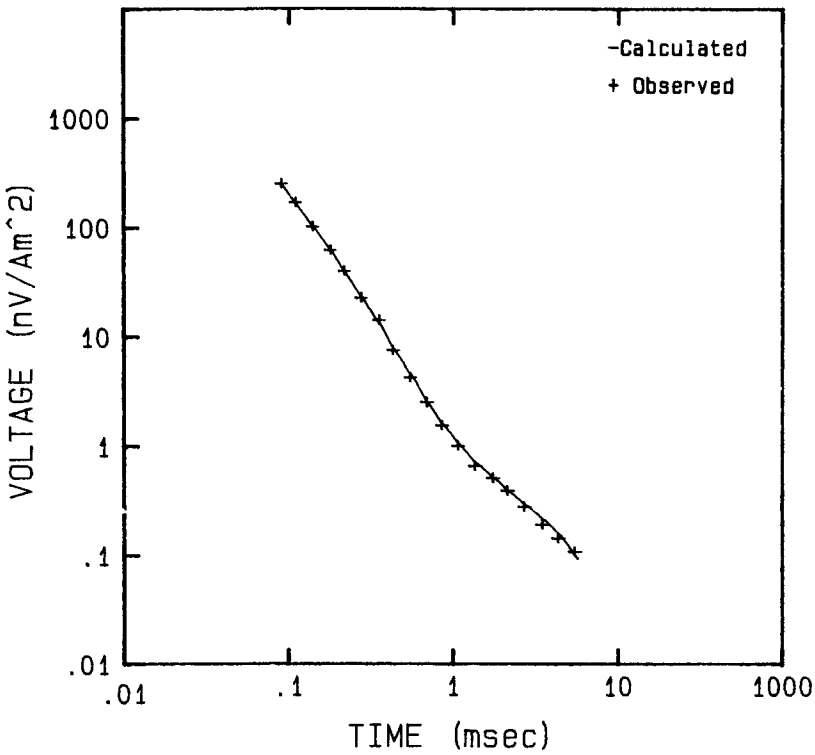
| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | |
| 2 | 0.4229E-01 | 0.1000E+01 | | | | |
| 3 | -0.1250E+00 | -0.5497E+00 | 0.1000E+01 | | | |
| 4 | 0.6326E-01 | 0.1892E+00 | -0.7439E+00 | 0.1000E+01 | | |
| 5 | -0.2928E-01 | -0.4917E+00 | -0.1689E+00 | 0.2241E+00 | 0.1000E+01 | |
| 6 | -0.4300E+00 | 0.2261E+00 | 0.3313E+00 | -0.3928E+00 | -0.5986E+00 | 0.1000E+01 |
| 7 | 0.9194E-01 | 0.2306E+00 | 0.7510E-02 | -0.1397E+00 | -0.5719E+00 | -0.4418E-01 0.1000E |

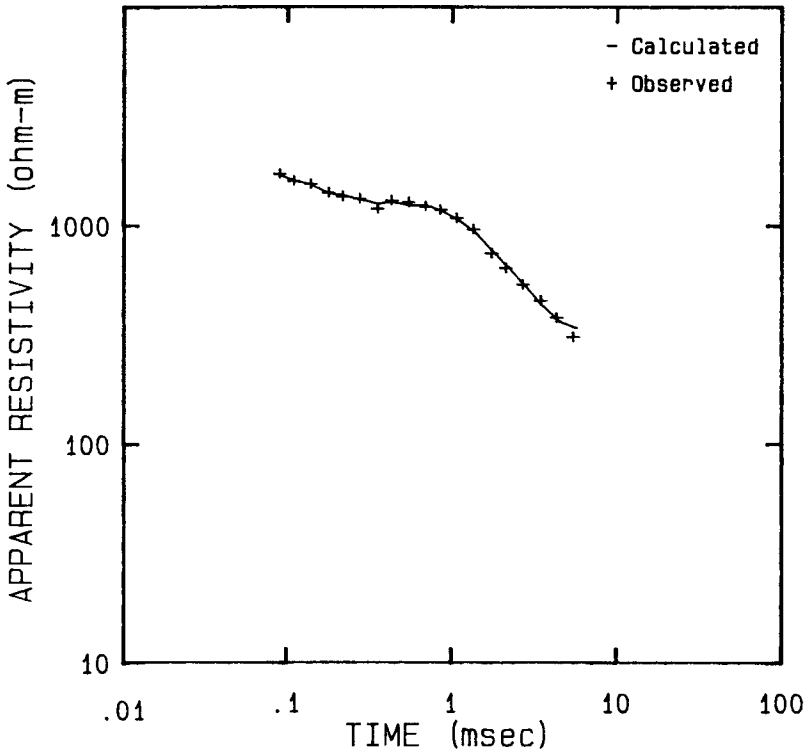
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2089E-02 | 0.1465E-03 | 0.7016E-01 | 0.7016E+01 |
| 2 | 0.9564E-03 | 0.3778E-03 | 0.3950E+00 | 0.3950E+02 |
| 3 | 0.5784E-02 | 0.1478E-02 | 0.2555E+00 | 0.2555E+02 |
| 4 | 0.5415E-01 | 0.3638E-02 | 0.6718E-01 | 0.6718E+01 |
| 5 | 0.5041E+02 | 0.1810E-02 | 0.3591E-04 | 0.3591E-02 |
| 6 | 0.3895E+03 | 0.2039E-02 | 0.5235E-05 | 0.5235E-03 |
| 7 | 0.2646E+03 | 0.3796E-02 | 0.1435E-04 | 0.1435E-02 |

| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.20886E-02 | 0.47879E+03 | |
| 2 | SIGMA( 2) = | 0.95637E-03 | 0.10456E+04 | |
| 3 | SIGMA( 3) = | 0.57845E-02 | 0.17288E+03 | |
| 4 | SIGMA( 4) = | 0.54150E-01 | 0.18467E+02 | |
| 5 | THICK( 1) = | 0.50412E+02 | | 0.50412E+02 |
| 6 | THICK( 2) = | 0.38950E+03 | | 0.43991E+03 |
| 7 | THICK( 3) = | 0.26457E+03 | | 0.70448E+03 |
| 8 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML47




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 57570 | 132 |
| 816 | 832 |
| 82.7 | 639 |
| 5 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 47 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2556E+03 | 0.2582E+03 | -0.2551E+01 | -0.9882E+00 |
| 2 | 0.1100E-03 | 0.1719E+03 | 0.1700E+03 | 0.1864E+01 | 0.1097E+01 |
| 3 | 0.1400E-03 | 0.1032E+03 | 0.1042E+03 | -0.1015E+01 | -0.9736E+00 |
| 4 | 0.1770E-03 | 0.6317E+02 | 0.6385E+02 | -0.6770E+00 | -0.1060E+01 |
| 5 | 0.2200E-03 | 0.4055E+02 | 0.3983E+02 | 0.7176E+00 | 0.1802E+01 |
| 6 | 0.2800E-03 | 0.2300E+02 | 0.2326E+02 | -0.2528E+00 | -0.1087E+01 |
| 7 | 0.3550E-03 | 0.1441E+02 | 0.1332E+02 | 0.1089E+01 | 0.8176E+01 |
| 8 | 0.4430E-03 | 0.7631E+01 | 0.7807E+01 | -0.1759E+00 | -0.2253E+01 |
| 9 | 0.5540E-03 | 0.4300E+01 | 0.4531E+01 | -0.2314E+00 | -0.5106E+01 |
| 10 | 0.7130E-03 | 0.2543E+01 | 0.2508E+01 | 0.3453E-01 | 0.1376E+01 |
| 11 | 0.8810E-03 | 0.1565E+01 | 0.1597E+01 | -0.3248E-01 | -0.2033E+01 |
| 12 | 0.1096E-02 | 0.1020E+01 | 0.1052E+01 | -0.3160E-01 | -0.3005E+01 |
| 13 | 0.1411E-02 | 0.6680E+00 | 0.7050E+00 | -0.3700E-01 | -0.5248E+01 |
| 14 | 0.1795E-02 | 0.5200E+00 | 0.5111E+00 | 0.8899E-02 | 0.1741E+01 |
| 15 | 0.2224E-02 | 0.3980E+00 | 0.3914E+00 | 0.6607E-02 | 0.1688E+01 |
| 16 | 0.2850E-02 | 0.2820E+00 | 0.2889E+00 | -0.6947E-02 | -0.2404E+01 |
| 17 | 0.3600E-02 | 0.1940E+00 | 0.2129E+00 | -0.1888E-01 | -0.8868E+01 |
| 18 | 0.4490E-02 | 0.1450E+00 | 0.1542E+00 | -0.9198E-02 | -0.5965E+01 |
| 19 | 0.5700E-02 | 0.1090E+00 | 0.9505E-01 | 0.1395E-01 | 0.1468E+02 |

** %RMSERR= 5.08

CORRELATION MATRIX

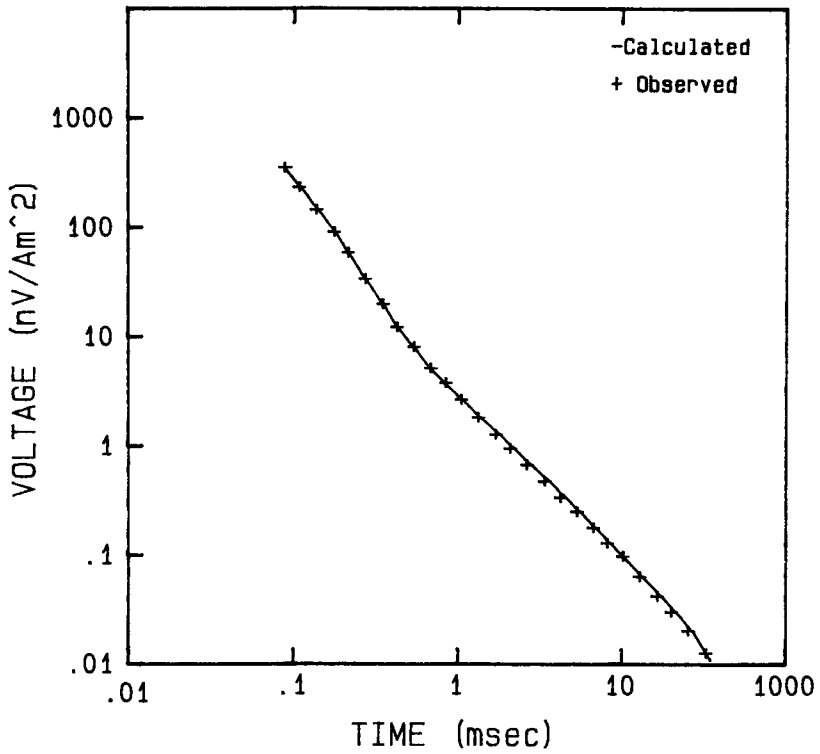
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.1794E+00 | 0.1000E+01 | | | | | |
| 3 | -0.4779E+00 | -0.5718E+00 | 0.1000E+01 | | | | |
| 4 | 0.2601E+00 | 0.3541E+00 | -0.8085E+00 | 0.1000E+01 | | | |
| 5 | -0.1682E+00 | 0.7744E+00 | -0.6370E+00 | 0.4048E+00 | 0.1000E+01 | | |
| 6 | -0.5197E+00 | 0.4519E+00 | -0.5942E-01 | 0.1621E+00 | 0.3698E+00 | 0.1000E+01 | |
| 7 | 0.2892E+00 | 0.3274E+00 | -0.8113E+00 | 0.9983E+00 | 0.3811E+00 | 0.1400E+00 | 0.1000E |

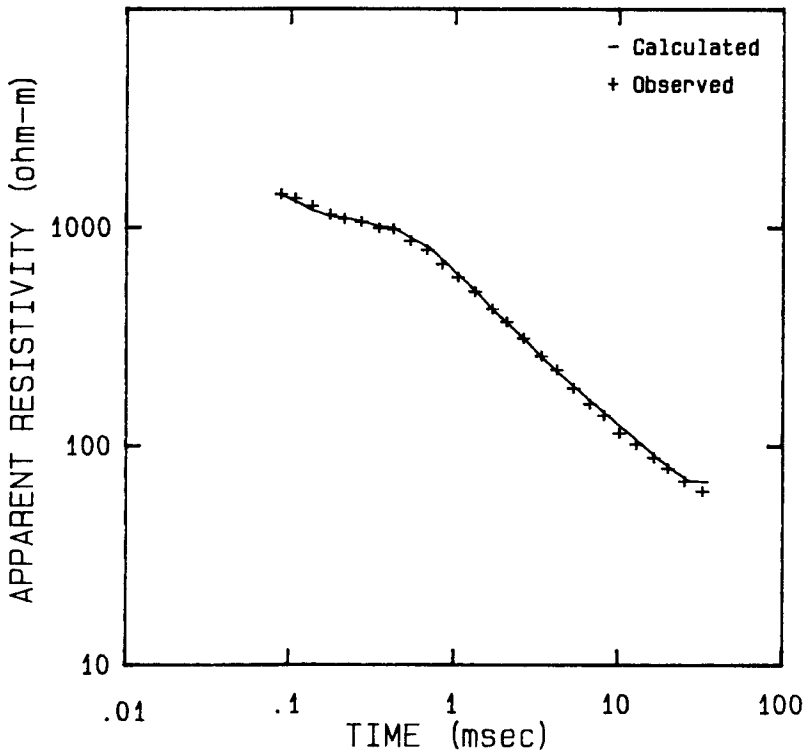
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1737E-04 | 0.1000E-03 | 0.5760E+01 | 0.5760E+03 |
| 2 | 0.1225E-02 | 0.3970E-03 | 0.3240E+00 | 0.3240E+02 |
| 3 | 0.1209E-01 | 0.5164E-02 | 0.4270E+00 | 0.4270E+02 |
| 4 | 0.2000E+00 | 0.1729E+02 | 0.8643E+02 | 0.8643E+04 |
| 5 | 0.1321E+03 | 0.3948E-02 | 0.2989E-04 | 0.2989E-02 |
| 6 | 0.8318E+03 | 0.4871E-02 | 0.5856E-05 | 0.5856E-03 |
| 7 | 0.6390E+03 | 0.3231E+01 | 0.5056E-02 | 0.5056E+00 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.17370E-04 | 0.57570E+05 | |
| 2 | SIGMA( 2) | = | 0.12251E-02 | 0.81626E+03 | |
| 3 | SIGMA( 3) | = | 0.12094E-01 | 0.82684E+02 | |
| 4 | SIGMA( 4) | = | 0.20000E+00 | 0.50000E+01 | |
| 5 | THICK( 1) | = | 0.13207E+03 | | 0.13207E+03 |
| 6 | THICK( 2) | = | 0.83184E+03 | | 0.96391E+03 |
| 7 | THICK( 3) | = | 0.63900E+03 | | 0.16029E+04 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML48




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 9721.7 | 164.6 |
| 444.47 | 417.89 |
| 41.054 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 48 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3465E+03 | 0.3449E+03 | 0.1617E+01 | 0.4689E+00 |
| 2 | 0.1100E-03 | 0.2278E+03 | 0.2353E+03 | -0.7567E+01 | -0.3215E+01 |
| 3 | 0.1400E-03 | 0.1421E+03 | 0.1477E+03 | -0.5549E+01 | -0.3757E+01 |
| 4 | 0.1770E-03 | 0.8879E+02 | 0.9108E+02 | -0.2285E+01 | -0.2508E+01 |
| 5 | 0.2200E-03 | 0.5754E+02 | 0.5658E+02 | 0.9575E+00 | 0.1692E+01 |
| 6 | 0.2800E-03 | 0.3293E+02 | 0.3268E+02 | 0.2440E+00 | 0.7466E+00 |
| 7 | 0.3550E-03 | 0.1945E+02 | 0.1894E+02 | 0.5084E+00 | 0.2684E+01 |
| 8 | 0.4430E-03 | 0.1200E+02 | 0.1174E+02 | 0.2592E+00 | 0.2207E+01 |
| 9 | 0.5540E-03 | 0.7902E+01 | 0.7560E+01 | 0.3422E+00 | 0.4527E+01 |
| 10 | 0.7130E-03 | 0.5033E+01 | 0.4808E+01 | 0.2252E+00 | 0.4683E+01 |
| 11 | 0.8810E-03 | 0.3701E+01 | 0.3486E+01 | 0.2145E+00 | 0.6152E+01 |
| 12 | 0.1096E-02 | 0.2605E+01 | 0.2555E+01 | 0.4983E-01 | 0.1950E+01 |
| 13 | 0.1411E-02 | 0.1785E+01 | 0.1796E+01 | -0.1108E-01 | -0.6167E+00 |
| 14 | 0.1795E-02 | 0.1249E+01 | 0.1296E+01 | -0.4685E-01 | -0.3616E+01 |
| 15 | 0.2224E-02 | 0.9270E+00 | 0.9685E+00 | -0.4153E-01 | -0.4288E+01 |
| 16 | 0.2850E-02 | 0.6580E+00 | 0.6817E+00 | -0.2366E-01 | -0.3470E+01 |
| 17 | 0.3600E-02 | 0.4650E+00 | 0.4882E+00 | -0.2319E-01 | -0.4750E+01 |
| 18 | 0.4490E-02 | 0.3310E+00 | 0.3523E+00 | -0.2127E-01 | -0.6037E+01 |
| 19 | 0.5700E-02 | 0.2450E+00 | 0.2456E+00 | -0.6264E-03 | -0.2550E+00 |
| 20 | 0.7190E-02 | 0.1750E+00 | 0.1720E+00 | 0.3027E-02 | 0.1760E+01 |
| 21 | 0.8800E-02 | 0.1270E+00 | 0.1257E+00 | 0.1302E-02 | 0.1036E+01 |
| 22 | 0.1100E-01 | 0.9600E-01 | 0.8883E-01 | 0.7172E-02 | 0.8074E+01 |
| 23 | 0.1400E-01 | 0.6300E-01 | 0.6118E-01 | 0.1824E-02 | 0.2981E+01 |
| 24 | 0.1800E-01 | 0.4100E-01 | 0.4155E-01 | -0.5482E-03 | -0.1320E+01 |
| 25 | 0.2200E-01 | 0.3000E-01 | 0.2992E-01 | 0.8263E-04 | 0.2762E+00 |
| 26 | 0.2800E-01 | 0.2000E-01 | 0.1969E-01 | 0.3139E-03 | 0.1595E+01 |
| 27 | 0.3600E-01 | 0.1200E-01 | 0.1068E-01 | 0.1324E-02 | 0.1240E+02 |

** %RMSERR= 4.17

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3372E+00 | 0.1000E+01 | | | |
| 3 | -0.4473E-01 | -0.6416E+00 | 0.1000E+01 | | |
| 4 | -0.3597E+00 | 0.7618E+00 | -0.4573E+00 | 0.1000E+01 | |
| 5 | 0.1899E+00 | -0.4924E+00 | 0.1899E+00 | -0.5772E+00 | 0.1000E+01 |

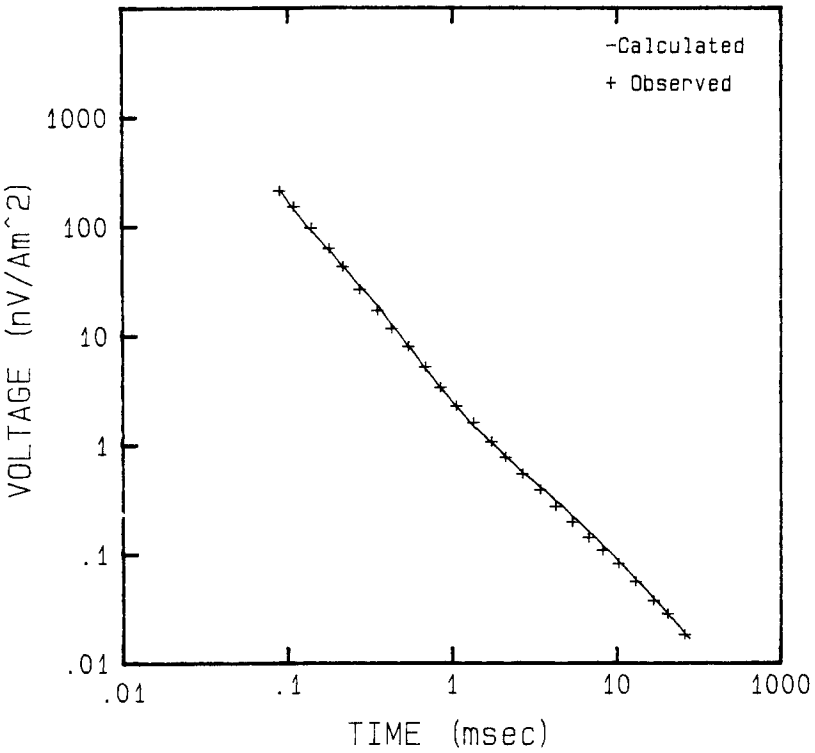
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1029E-03 | 0.7732E-04 | 0.7517E+00 | 0.7517E+02 |
| 2 | 0.2250E-02 | 0.3652E-03 | 0.1623E+00 | 0.1623E+02 |
| 3 | 0.2436E-01 | 0.9357E-03 | 0.3841E-01 | 0.3841E+01 |
| 4 | 0.1646E+03 | 0.2081E-02 | 0.1264E-04 | 0.1264E-02 |
| 5 | 0.4179E+03 | 0.1650E-02 | 0.3948E-05 | 0.3948E-03 |

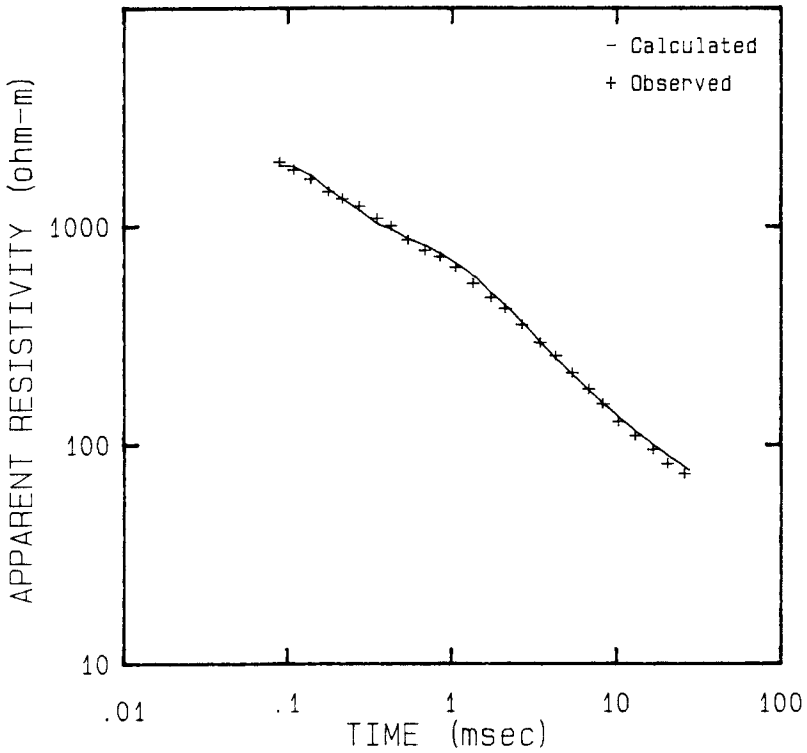
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.10286E-03 | 0.97217E+04 | |
| 2 | SIGMA( 2) | = | 0.22499E-02 | 0.44447E+03 | |
| 3 | SIGMA( 3) | = | 0.24358E-01 | 0.41054E+02 | |
| 4 | THICK( 1) | = | 0.16460E+03 | | 0.16460E+03 |
| 5 | THICK( 2) | = | 0.41789E+03 | | 0.58249E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML49




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1696.4 | 372.23 |
| 183.21 | 326.84 |
| 25.371 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 49 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2107E+03 | 0.2213E+03 | -0.1058E+02 | -0.4781E+01 |
| 2 | 0.1100E-03 | 0.1512E+03 | 0.1431E+03 | 0.8089E+01 | 0.5652E+01 |
| 3 | 0.1400E-03 | 0.9595E+02 | 0.9016E+02 | 0.5795E+01 | 0.6427E+01 |
| 4 | 0.1770E-03 | 0.6256E+02 | 0.6044E+02 | 0.2125E+01 | 0.3517E+01 |
| 5 | 0.2200E-03 | 0.4236E+02 | 0.4241E+02 | -0.5223E-01 | -0.1232E+00 |
| 6 | 0.2800E-03 | 0.2611E+02 | 0.2792E+02 | -0.1803E+01 | -0.6457E+01 |
| 7 | 0.3550E-03 | 0.1690E+02 | 0.1842E+02 | -0.1514E+01 | -0.8223E+01 |
| 8 | 0.4430E-03 | 0.1151E+02 | 0.1218E+02 | -0.6648E+00 | -0.5459E+01 |
| 9 | 0.5540E-03 | 0.7881E+01 | 0.7769E+01 | 0.1118E+00 | 0.1439E+01 |
| 10 | 0.7130E-03 | 0.5126E+01 | 0.4769E+01 | 0.3574E+00 | 0.7495E+01 |
| 11 | 0.8810E-03 | 0.3321E+01 | 0.3181E+01 | 0.1401E+00 | 0.4406E+01 |
| 12 | 0.1096E-02 | 0.2251E+01 | 0.2142E+01 | 0.1093E+00 | 0.5104E+01 |
| 13 | 0.1411E-02 | 0.1586E+01 | 0.1423E+01 | 0.1633E+00 | 0.1148E+02 |
| 14 | 0.1795E-02 | 0.1056E+01 | 0.1005E+01 | 0.5124E-01 | 0.5100E+01 |
| 15 | 0.2224E-02 | 0.7610E+00 | 0.7441E+00 | 0.1689E-01 | 0.2269E+01 |
| 16 | 0.2850E-02 | 0.5380E+00 | 0.5350E+00 | 0.2959E-02 | 0.5530E+00 |
| 17 | 0.3600E-02 | 0.3830E+00 | 0.3928E+00 | -0.9764E-02 | -0.2486E+01 |
| 18 | 0.4490E-02 | 0.2690E+00 | 0.2908E+00 | -0.2183E-01 | -0.7507E+01 |
| 19 | 0.5700E-02 | 0.1960E+00 | 0.2084E+00 | -0.1245E-01 | -0.5971E+01 |
| 20 | 0.7190E-02 | 0.1410E+00 | 0.1499E+00 | -0.8867E-02 | -0.5917E+01 |
| 21 | 0.8800E-02 | 0.1070E+00 | 0.1110E+00 | -0.3996E-02 | -0.3600E+01 |
| 22 | 0.1100E-01 | 0.8100E-01 | 0.7897E-01 | 0.2028E-02 | 0.2567E+01 |
| 23 | 0.1400E-01 | 0.5600E-01 | 0.5404E-01 | 0.1963E-02 | 0.3634E+01 |
| 24 | 0.1800E-01 | 0.3700E-01 | 0.3581E-01 | 0.1190E-02 | 0.3323E+01 |
| 25 | 0.2200E-01 | 0.2800E-01 | 0.2553E-01 | 0.2472E-02 | 0.9683E+01 |
| 26 | 0.2800E-01 | 0.1800E-01 | 0.1680E-01 | 0.1200E-02 | 0.7144E+01 |

** %RMSERR= 5.67

CORRELATION MATRIX

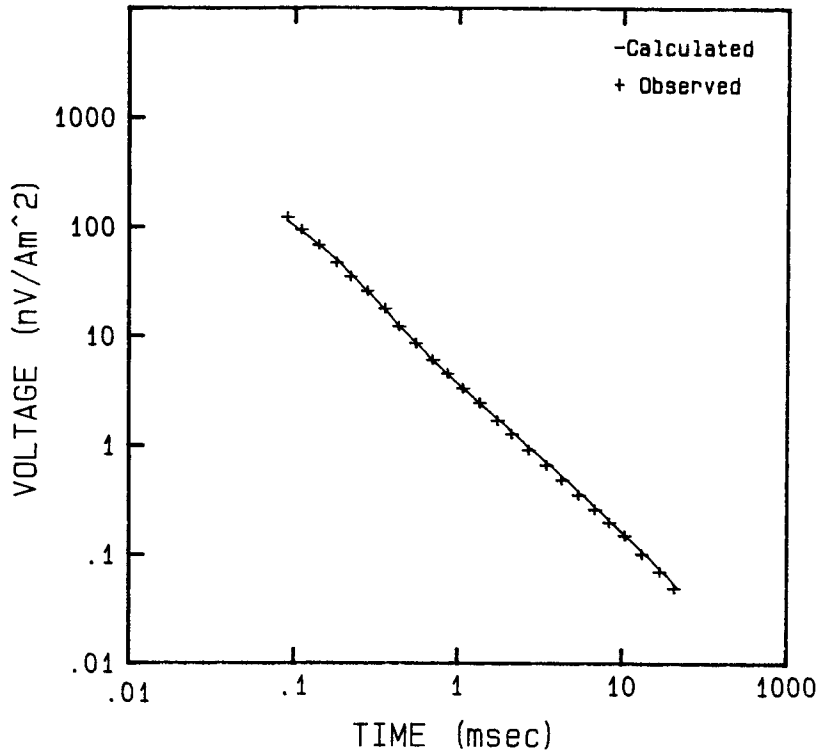
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.2046E+00 | 0.1000E+01 | | | |
| 3 | -0.2246E-01 | -0.5882E+00 | 0.1000E+01 | | |
| 4 | 0.3568E+00 | 0.1390E-01 | -0.9376E-01 | 0.1000E+01 | |
| 5 | -0.5110E+00 | -0.1968E+00 | 0.1880E+00 | -0.2689E+00 | 0.1000E+01 |

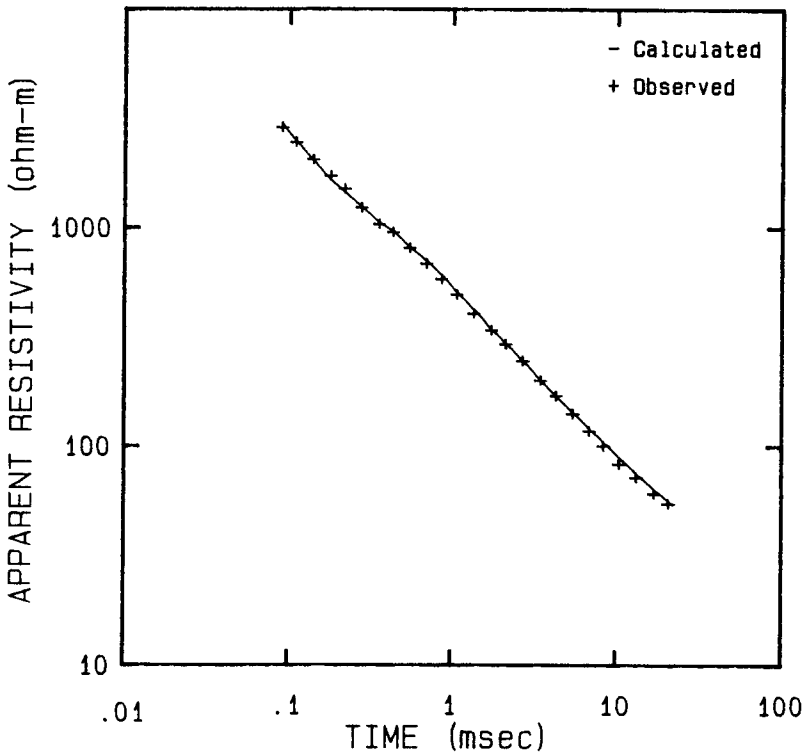
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.5895E-03 | 0.5667E-03 | 0.9614E+00 | 0.9614E+02 |
| 2 | 0.5458E-02 | 0.1748E-02 | 0.3203E+00 | 0.3203E+02 |
| 3 | 0.3942E-01 | 0.8167E-02 | 0.2072E+00 | 0.2072E+02 |
| 4 | 0.3722E+03 | 0.1704E-02 | 0.4578E-05 | 0.4578E-03 |
| 5 | 0.3268E+03 | 0.2476E-02 | 0.7577E-05 | 0.7577E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.58947E-03 | 0.16964E+04 | |
| 2 | SIGMA( 2) | = | 0.54582E-02 | 0.18321E+03 | |
| 3 | SIGMA( 3) | = | 0.39416E-01 | 0.25371E+02 | |
| 4 | THICK( 1) | = | 0.37223E+03 | | 0.37223E+03 |
| 5 | THICK( 2) | = | 0.32685E+03 | | 0.69907E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML50




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 13370 | 329 |
| 132 | 222 |
| 27.3 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 50 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1235E+03 | 0.1161E+03 | 0.7389E+01 | 0.6366E+01 |
| 2 | 0.1100E-03 | 0.9457E+02 | 0.9185E+02 | 0.2712E+01 | 0.2953E+01 |
| 3 | 0.1400E-03 | 0.6822E+02 | 0.6878E+02 | -0.5570E+00 | -0.8098E+00 |
| 4 | 0.1770E-03 | 0.4715E+02 | 0.5046E+02 | -0.3306E+01 | -0.6552E+01 |
| 5 | 0.2200E-03 | 0.3499E+02 | 0.3696E+02 | -0.1969E+01 | -0.5329E+01 |
| 6 | 0.2800E-03 | 0.2580E+02 | 0.2559E+02 | 0.2160E+00 | 0.8444E+00 |
| 7 | 0.3550E-03 | 0.1788E+02 | 0.1746E+02 | 0.4200E+00 | 0.2406E+01 |
| 8 | 0.4430E-03 | 0.1225E+02 | 0.1221E+02 | 0.3856E-01 | 0.3158E+00 |
| 9 | 0.5540E-03 | 0.8580E+01 | 0.8617E+01 | -0.3695E-01 | -0.4288E+00 |
| 10 | 0.7130E-03 | 0.6100E+01 | 0.5912E+01 | 0.1883E+00 | 0.3185E+01 |
| 11 | 0.8810E-03 | 0.4541E+01 | 0.4380E+01 | 0.1613E+00 | 0.3683E+01 |
| 12 | 0.1096E-02 | 0.3321E+01 | 0.3278E+01 | 0.4337E-01 | 0.1323E+01 |
| 13 | 0.1411E-02 | 0.2449E+01 | 0.2361E+01 | 0.8837E-01 | 0.3743E+01 |
| 14 | 0.1795E-02 | 0.1703E+01 | 0.1727E+01 | -0.2405E-01 | -0.1393E+01 |
| 15 | 0.2224E-02 | 0.1284E+01 | 0.1310E+01 | -0.2560E-01 | -0.1955E+01 |
| 16 | 0.2850E-02 | 0.9170E+00 | 0.9457E+00 | -0.2867E-01 | -0.3032E+01 |
| 17 | 0.3600E-02 | 0.6670E+00 | 0.6897E+00 | -0.2270E-01 | -0.3292E+01 |
| 18 | 0.4490E-02 | 0.4870E+00 | 0.5099E+00 | -0.2287E-01 | -0.4485E+01 |
| 19 | 0.5700E-02 | 0.3570E+00 | 0.3650E+00 | -0.7984E-02 | -0.2187E+01 |
| 20 | 0.7190E-02 | 0.2610E+00 | 0.2629E+00 | -0.1888E-02 | -0.7180E+00 |
| 21 | 0.8800E-02 | 0.2010E+00 | 0.1974E+00 | 0.3628E-02 | 0.1838E+01 |
| 22 | 0.1100E-01 | 0.1520E+00 | 0.1438E+00 | 0.8183E-02 | 0.5690E+01 |
| 23 | 0.1400E-01 | 0.1030E+00 | 0.1019E+00 | 0.1140E-02 | 0.1119E+01 |
| 24 | 0.1800E-01 | 0.7100E-01 | 0.6974E-01 | 0.1257E-02 | 0.1803E+01 |
| 25 | 0.2200E-01 | 0.5000E-01 | 0.5058E-01 | -0.5772E-03 | -0.1141E+01 |

** %RMSERR= 3.23

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.4016E+00 | 0.1000E+01 | | | |
| 3 | -0.1317E-01 | -0.3130E+00 | 0.1000E+01 | | |
| 4 | 0.1655E+00 | 0.3915E+00 | -0.1723E+00 | 0.1000E+01 | |
| 5 | -0.2948E+00 | -0.1350E+00 | 0.1780E+00 | -0.2848E+00 | 0.1000E+01 |

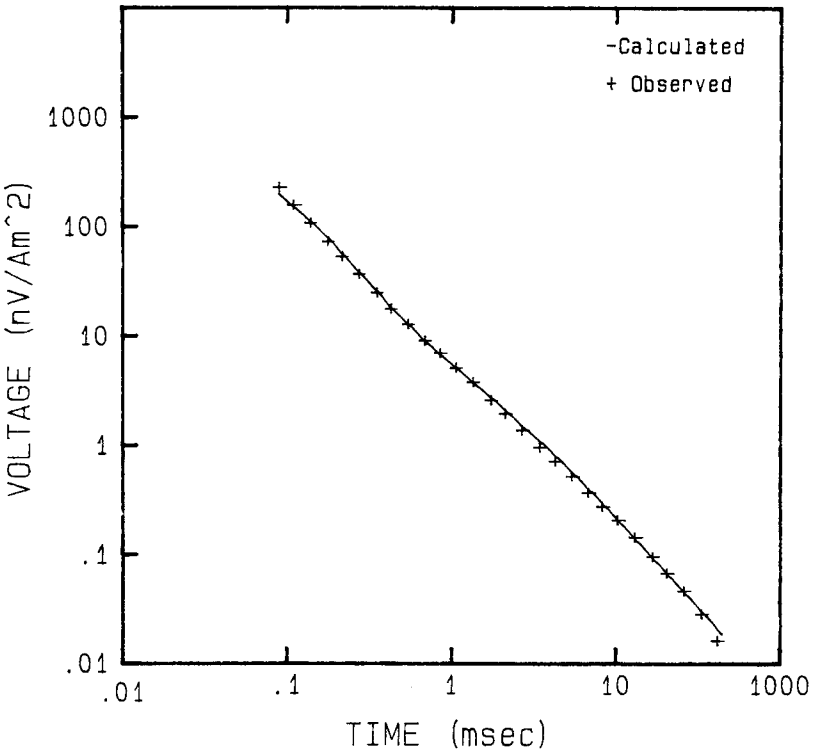
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.7479E-04 | 0.8332E-04 | 0.1114E+01 | 0.1114E+03 |
| 2 | 0.7549E-02 | 0.6433E-03 | 0.8522E-01 | 0.8522E+01 |
| 3 | 0.3659E-01 | 0.1630E-02 | 0.4453E-01 | 0.4453E+01 |
| 4 | 0.3294E+03 | 0.8705E-03 | 0.2643E-05 | 0.2643E-03 |
| 5 | 0.2213E+03 | 0.1936E-02 | 0.8745E-05 | 0.8745E-03 |

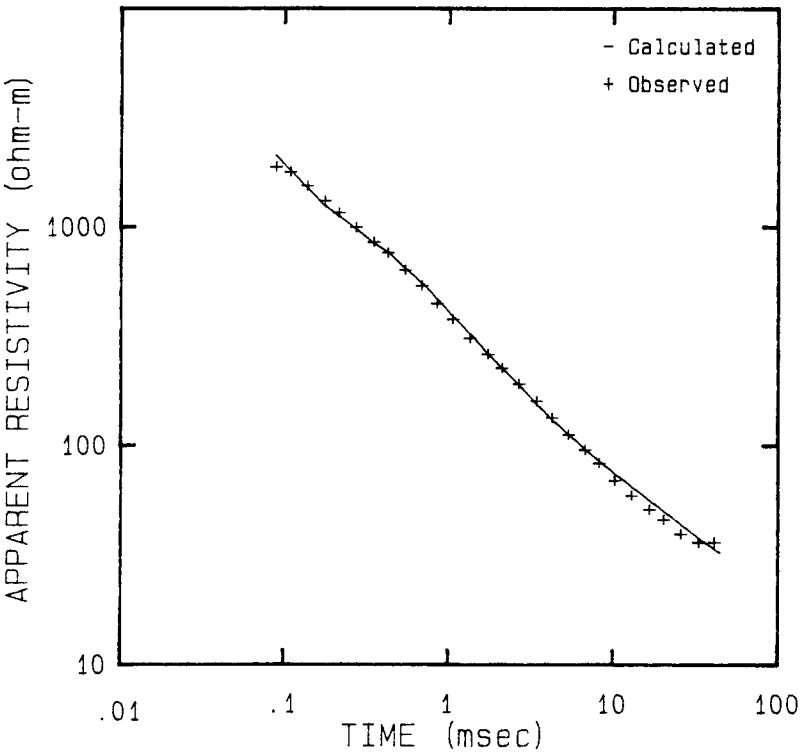
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.74793E-04 | 0.13370E+05 | |
| 2 | SIGMA( 2) | = | 0.75487E-02 | 0.13247E+03 | |
| 3 | SIGMA( 3) | = | 0.36592E-01 | 0.27328E+02 | |
| 4 | THICK( 1) | = | 0.32935E+03 | | 0.32935E+03 |
| 5 | THICK( 2) | = | 0.22134E+03 | | 0.55069E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML51




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 4979.9 | 279.32 |
| 116.01 | 185.68 |
| 20.373 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 51 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2260E+03 | 0.1969E+03 | 0.2912E+02 | 0.1479E+02 |
| 2 | 0.1100E-03 | 0.1556E+03 | 0.1511E+03 | 0.4495E+01 | 0.2974E+01 |
| 3 | 0.1400E-03 | 0.1062E+03 | 0.1100E+03 | -0.3848E+01 | -0.3498E+01 |
| 4 | 0.1770E-03 | 0.7160E+02 | 0.7792E+02 | -0.6315E+01 | -0.8104E+01 |
| 5 | 0.2200E-03 | 0.5237E+02 | 0.5553E+02 | -0.3158E+01 | -0.5688E+01 |
| 6 | 0.2800E-03 | 0.3621E+02 | 0.3729E+02 | -0.1087E+01 | -0.2915E+01 |
| 7 | 0.3550E-03 | 0.2445E+02 | 0.2503E+02 | -0.5786E+00 | -0.2312E+01 |
| 8 | 0.4430E-03 | 0.1747E+02 | 0.1751E+02 | -0.4132E-01 | -0.2359E+00 |
| 9 | 0.5540E-03 | 0.1261E+02 | 0.1244E+02 | 0.1677E+00 | 0.1348E+01 |
| 10 | 0.7130E-03 | 0.8922E+01 | 0.8639E+01 | 0.2833E+00 | 0.3279E+01 |
| 11 | 0.8810E-03 | 0.6879E+01 | 0.6518E+01 | 0.3615E+00 | 0.5547E+01 |
| 12 | 0.1096E-02 | 0.5050E+01 | 0.4932E+01 | 0.1182E+00 | 0.2397E+01 |
| 13 | 0.1411E-02 | 0.3730E+01 | 0.3571E+01 | 0.1588E+00 | 0.4448E+01 |
| 14 | 0.1795E-02 | 0.2553E+01 | 0.2630E+01 | -0.7735E-01 | -0.2941E+01 |
| 15 | 0.2224E-02 | 0.1923E+01 | 0.1995E+01 | -0.7164E-01 | -0.3592E+01 |
| 16 | 0.2850E-02 | 0.1357E+01 | 0.1432E+01 | -0.7530E-01 | -0.5257E+01 |
| 17 | 0.3600E-02 | 0.9460E+00 | 0.1038E+01 | -0.9194E-01 | -0.8858E+01 |
| 18 | 0.4490E-02 | 0.7050E+00 | 0.7586E+00 | -0.5359E-01 | -0.7065E+01 |
| 19 | 0.5700E-02 | 0.5120E+00 | 0.5326E+00 | -0.2062E-01 | -0.3872E+01 |
| 20 | 0.7190E-02 | 0.3620E+00 | 0.3741E+00 | -0.1212E-01 | -0.3240E+01 |
| 21 | 0.8800E-02 | 0.2700E+00 | 0.2725E+00 | -0.2467E-02 | -0.9056E+00 |
| 22 | 0.1100E-01 | 0.2040E+00 | 0.1904E+00 | 0.1359E-01 | 0.7136E+01 |
| 23 | 0.1400E-01 | 0.1420E+00 | 0.1286E+00 | 0.1335E-01 | 0.1038E+02 |
| 24 | 0.1800E-01 | 0.9400E-01 | 0.8511E-01 | 0.8892E-02 | 0.1045E+02 |
| 25 | 0.2200E-01 | 0.6700E-01 | 0.6133E-01 | 0.5667E-02 | 0.9239E+01 |
| 26 | 0.2800E-01 | 0.4600E-01 | 0.4130E-01 | 0.4705E-02 | 0.1139E+02 |
| 27 | 0.3600E-01 | 0.2800E-01 | 0.2743E-01 | 0.5705E-03 | 0.2080E+01 |
| 28 | 0.4500E-01 | 0.1600E-01 | 0.1860E-01 | -0.2599E-02 | -0.1397E+02 |

** %RMSERR= 6.83

CORRELATION MATRIX

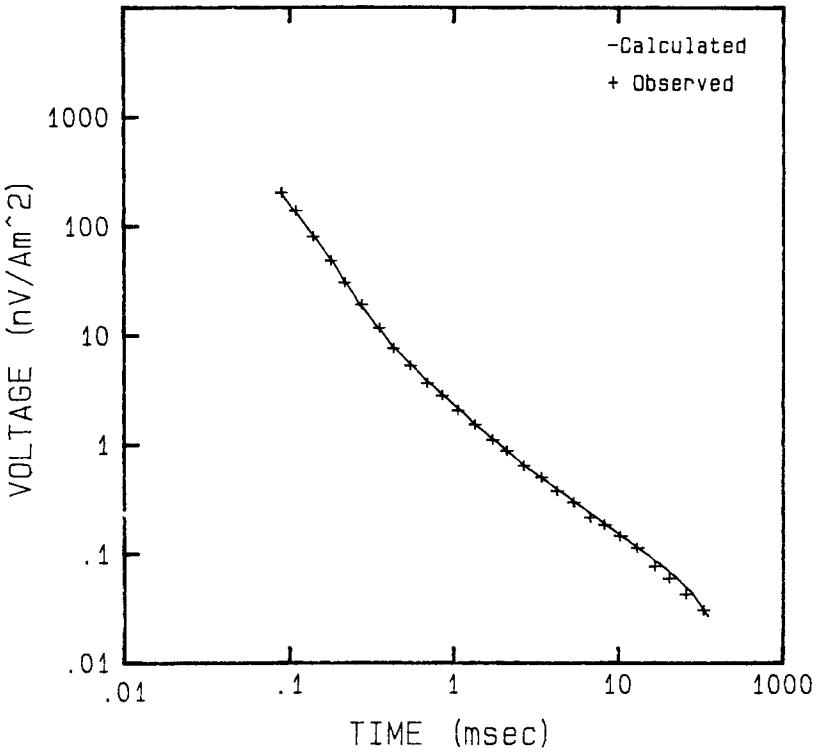
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3741E+00 | 0.1000E+01 | | | |
| 3 | -0.6088E+00 | 0.7714E-01 | 0.1000E+01 | | |
| 4 | -0.1934E+00 | 0.5055E+00 | 0.4784E-01 | 0.1000E+01 | |
| 5 | -0.2651E+00 | -0.2441E+00 | -0.1712E-01 | -0.3516E+00 | 0.1000E+01 |

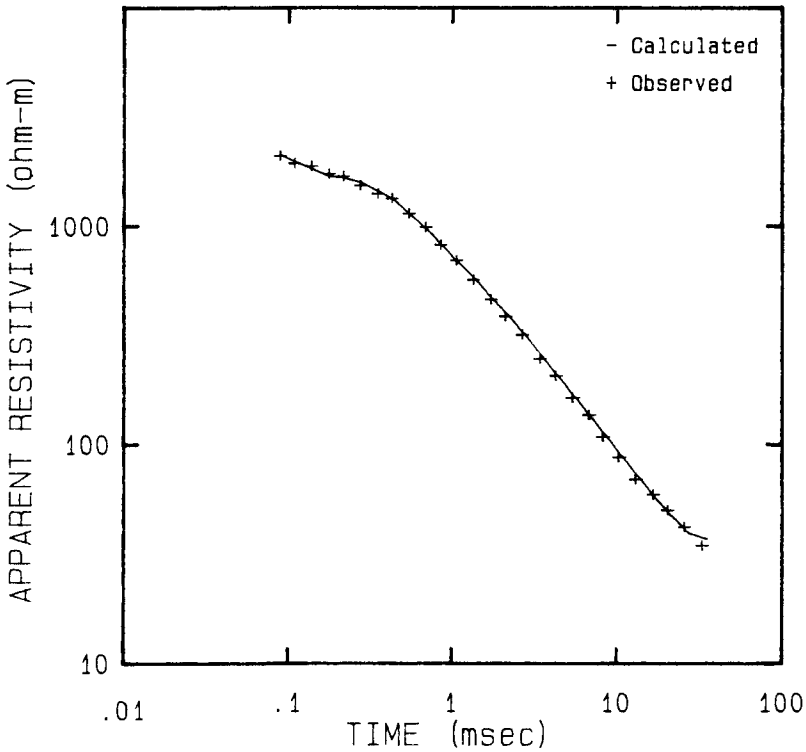
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2008E-03 | 0.2559E-03 | 0.1274E+01 | 0.1274E+03 |
| 2 | 0.8620E-02 | 0.1370E-02 | 0.1589E+00 | 0.1589E+02 |
| 3 | 0.4908E-01 | 0.2501E-02 | 0.5096E-01 | 0.5096E+01 |
| 4 | 0.2793E+03 | 0.1612E-02 | 0.5770E-05 | 0.5770E-03 |
| 5 | 0.1857E+03 | 0.2860E-02 | 0.1540E-04 | 0.1540E-02 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.20081E-03 | 0.49799E+04 | |
| 2 | SIGMA( 2) | = | 0.86198E-02 | 0.11601E+03 | |
| 3 | SIGMA( 3) | = | 0.49084E-01 | 0.20373E+02 | |
| 4 | THICK( 1) | = | 0.27932E+03 | | 0.27932E+03 |
| 5 | THICK( 2) | = | 0.18568E+03 | | 0.46500E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML52




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 10776 | 225.17 |
| 476.58 | 344.68 |
| 28.723 | 156.34 |
| 11.475 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 52 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2014E+03 | 0.1961E+03 | 0.5220E+01 | 0.2662E+01 |
| 2 | 0.1100E-03 | 0.1374E+03 | 0.1330E+03 | 0.4397E+01 | 0.3307E+01 |
| 3 | 0.1400E-03 | 0.7864E+02 | 0.8170E+02 | -0.3052E+01 | -0.3736E+01 |
| 4 | 0.1770E-03 | 0.4751E+02 | 0.4938E+02 | -0.1873E+01 | -0.3792E+01 |
| 5 | 0.2200E-03 | 0.2988E+02 | 0.3055E+02 | -0.6681E+00 | -0.2187E+01 |
| 6 | 0.2800E-03 | 0.1888E+02 | 0.1795E+02 | 0.9317E+00 | 0.5191E+01 |
| 7 | 0.3550E-03 | 0.1148E+02 | 0.1108E+02 | 0.3999E+00 | 0.3611E+01 |
| 8 | 0.4430E-03 | 0.7494E+01 | 0.7562E+01 | -0.6835E-01 | -0.9038E+00 |
| 9 | 0.5540E-03 | 0.5220E+01 | 0.5313E+01 | -0.9320E-01 | -0.1754E+01 |
| 10 | 0.7130E-03 | 0.3578E+01 | 0.3687E+01 | -0.1095E+00 | -0.2968E+01 |
| 11 | 0.8810E-03 | 0.2760E+01 | 0.2786E+01 | -0.2574E-01 | -0.9238E+00 |
| 12 | 0.1096E-02 | 0.2028E+01 | 0.2082E+01 | -0.5368E-01 | -0.2579E+01 |
| 13 | 0.1411E-02 | 0.1507E+01 | 0.1483E+01 | 0.2440E-01 | 0.1646E+01 |
| 14 | 0.1795E-02 | 0.1092E+01 | 0.1091E+01 | 0.5254E-03 | 0.4813E-01 |
| 15 | 0.2224E-02 | 0.8650E+00 | 0.8394E+00 | 0.2561E-01 | 0.3052E+01 |
| 16 | 0.2850E-02 | 0.6340E+00 | 0.6237E+00 | 0.1035E-01 | 0.1660E+01 |
| 17 | 0.3600E-02 | 0.4950E+00 | 0.4778E+00 | 0.1721E-01 | 0.3603E+01 |
| 18 | 0.4490E-02 | 0.3710E+00 | 0.3728E+00 | -0.1839E-02 | -0.4931E+00 |
| 19 | 0.5700E-02 | 0.2920E+00 | 0.2871E+00 | 0.4895E-02 | 0.1705E+01 |
| 20 | 0.7190E-02 | 0.2130E+00 | 0.2225E+00 | -0.9516E-02 | -0.4277E+01 |
| 21 | 0.8800E-02 | 0.1830E+00 | 0.1789E+00 | 0.4072E-02 | 0.2276E+01 |
| 22 | 0.1100E-01 | 0.1440E+00 | 0.1405E+00 | 0.3479E-02 | 0.2475E+01 |
| 23 | 0.1400E-01 | 0.1120E+00 | 0.1080E+00 | 0.4030E-02 | 0.3733E+01 |
| 24 | 0.1800E-01 | 0.7600E-01 | 0.8188E-01 | -0.5880E-02 | -0.7181E+01 |
| 25 | 0.2200E-01 | 0.5900E-01 | 0.6380E-01 | -0.4798E-02 | -0.7520E+01 |
| 26 | 0.2800E-01 | 0.4200E-01 | 0.4558E-01 | -0.3579E-02 | -0.7852E+01 |
| 27 | 0.3600E-01 | 0.3000E-01 | 0.2680E-01 | 0.3200E-02 | 0.1194E+02 |

** %RMSERR= 4.30

CORRELATION MATRIX

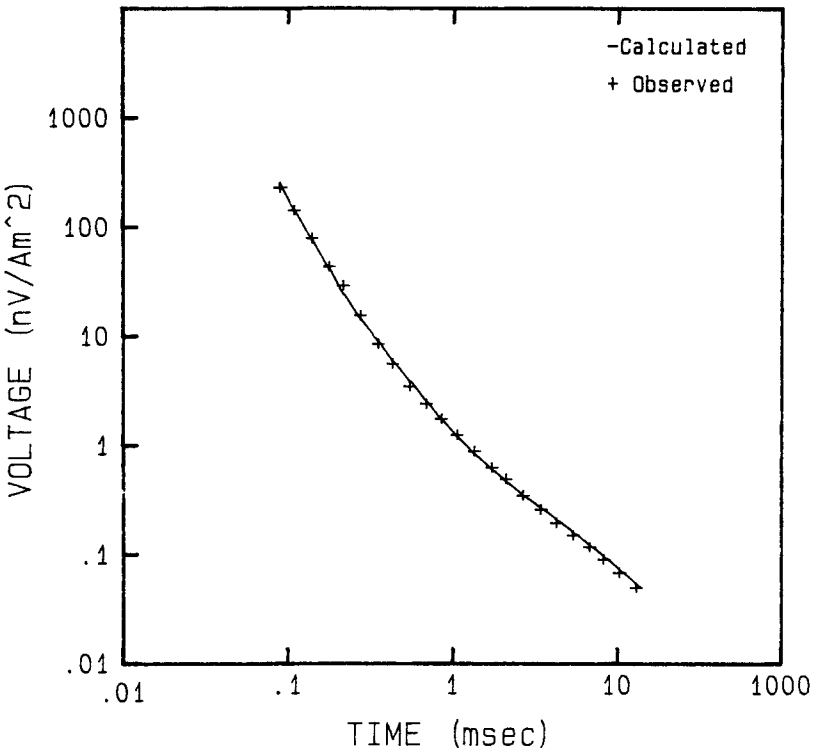
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.2348E-01 | 0.1000E+01 | | | | | |
| 3 | -0.2649E+00 | -0.3878E+00 | 0.1000E+01 | | | | |
| 4 | 0.2358E+00 | -0.1196E+00 | -0.4457E+00 | 0.1000E+01 | | | |
| 5 | 0.2648E-01 | 0.6983E+00 | -0.3215E+00 | -0.7814E-01 | 0.1000E+01 | | |
| 6 | 0.1022E+00 | -0.5792E+00 | 0.4503E+00 | -0.5918E-01 | -0.6819E+00 | 0.1000E+01 | |
| 7 | -0.2315E+00 | 0.1842E-01 | -0.7182E-01 | -0.4054E+00 | -0.1048E+00 | -0.7062E-02 | 0.1000E |

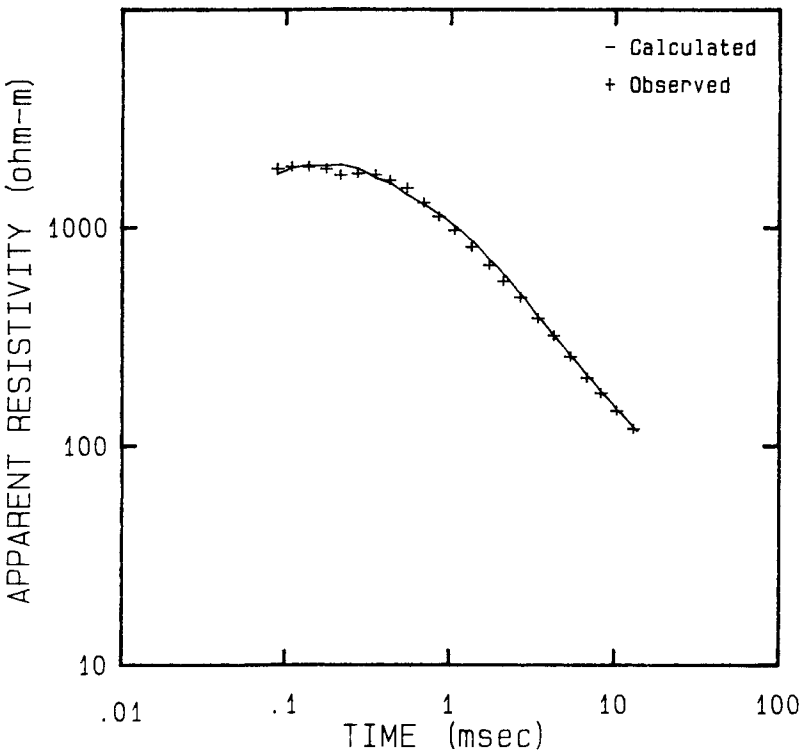
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.9280E-04 | 0.1202E-03 | 0.1295E+01 | 0.1295E+03 |
| 2 | 0.2098E-02 | 0.4595E-03 | 0.2190E+00 | 0.2190E+02 |
| 3 | 0.3482E-01 | 0.2421E-02 | 0.6955E-01 | 0.6955E+01 |
| 4 | 0.8715E-01 | 0.4050E-02 | 0.4648E-01 | 0.4648E+01 |
| 5 | 0.2252E+03 | 0.1918E-02 | 0.8517E-05 | 0.8517E-03 |
| 6 | 0.3447E+03 | 0.2383E-02 | 0.6913E-05 | 0.6913E-03 |
| 7 | 0.1563E+03 | 0.3181E-02 | 0.2035E-04 | 0.2035E-02 |

| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.92802E-04 | 0.10776E+05 | |
| 2 | SIGMA( 2) = | 0.20983E-02 | 0.47658E+03 | |
| 3 | SIGMA( 3) = | 0.34815E-01 | 0.28723E+02 | |
| 4 | SIGMA( 4) = | 0.87149E-01 | 0.11475E+02 | |
| 5 | THICK( 1) = | 0.22517E+03 | | 0.22517E+03 |
| 6 | THICK( 2) = | 0.34469E+03 | | 0.56985E+03 |
| 7 | THICK( 3) = | 0.15633E+03 | | 0.72619E+03 |
| 8 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML53




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1642.5 | 455.61 |
| 703.43 | 153.25 |
| 87.627 | 202.97 |
| 13.87 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 53 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.2280E+03 | 0.2487E+03 | -0.2064E+02 | -0.8299E+01 |
| 2 | 0.1100E-03 | 0.1404E+03 | 0.1434E+03 | -0.2958E+01 | -0.2063E+01 |
| 3 | 0.1400E-03 | 0.7734E+02 | 0.7528E+02 | 0.2053E+01 | 0.2727E+01 |
| 4 | 0.1770E-03 | 0.4265E+02 | 0.4072E+02 | 0.1929E+01 | 0.4739E+01 |
| 5 | 0.2200E-03 | 0.2851E+02 | 0.2399E+02 | 0.4526E+01 | 0.1887E+02 |
| 6 | 0.2800E-03 | 0.1525E+02 | 0.1399E+02 | 0.1256E+01 | 0.8973E+01 |
| 7 | 0.3550E-03 | 0.8317E+01 | 0.8706E+01 | -0.3890E+00 | -0.4468E+01 |
| 8 | 0.4430E-03 | 0.5494E+01 | 0.5738E+01 | -0.2441E+00 | -0.4255E+01 |
| 9 | 0.5540E-03 | 0.3393E+01 | 0.3793E+01 | -0.3996E+00 | -0.1054E+02 |
| 10 | 0.7130E-03 | 0.2368E+01 | 0.2445E+01 | -0.7655E-01 | -0.3132E+01 |
| 11 | 0.8810E-03 | 0.1726E+01 | 0.1669E+01 | 0.5666E-01 | 0.3394E+01 |
| 12 | 0.1096E-02 | 0.1231E+01 | 0.1158E+01 | 0.7316E-01 | 0.6318E+01 |
| 13 | 0.1411E-02 | 0.8720E+00 | 0.8027E+00 | 0.6927E-01 | 0.8629E+01 |
| 14 | 0.1795E-02 | 0.6200E+00 | 0.5801E+00 | 0.3993E-01 | 0.6884E+01 |
| 15 | 0.2224E-02 | 0.4850E+00 | 0.4465E+00 | 0.3847E-01 | 0.8615E+01 |
| 16 | 0.2850E-02 | 0.3420E+00 | 0.3355E+00 | 0.6486E-02 | 0.1933E+01 |
| 17 | 0.3600E-02 | 0.2550E+00 | 0.2581E+00 | -0.3067E-02 | -0.1188E+01 |
| 18 | 0.4490E-02 | 0.1920E+00 | 0.2005E+00 | -0.8460E-02 | -0.4220E+01 |
| 19 | 0.5700E-02 | 0.1480E+00 | 0.1522E+00 | -0.4163E-02 | -0.2736E+01 |
| 20 | 0.7190E-02 | 0.1150E+00 | 0.1159E+00 | -0.9460E-03 | -0.8159E+00 |
| 21 | 0.8800E-02 | 0.8900E-01 | 0.9082E-01 | -0.1818E-02 | -0.2002E+01 |
| 22 | 0.1100E-01 | 0.6700E-01 | 0.6868E-01 | -0.1684E-02 | -0.2451E+01 |
| 23 | 0.1400E-01 | 0.4900E-01 | 0.5020E-01 | -0.1202E-02 | -0.2394E+01 |

** %RMSERR= 6.57

CORRELATION MATRIX

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | |
| 2 | -0.3974E+00 | 0.1000E+01 | | | | |
| 3 | 0.7623E-01 | -0.4376E+00 | 0.1000E+01 | | | |
| 4 | -0.5653E+00 | 0.6451E+00 | -0.4494E+00 | 0.1000E+01 | | |
| 5 | -0.4392E+00 | 0.1815E+00 | -0.2651E+00 | 0.4572E+00 | 0.1000E+01 | |
| 6 | 0.3130E+00 | -0.2560E+00 | 0.5099E+00 | -0.5734E+00 | -0.7098E+00 | 0.1000E+01 |
| 7 | 0.6228E-01 | -0.1950E-01 | -0.1136E+00 | -0.2721E+00 | 0.2266E+00 | -0.2699E+00 0.1000E |

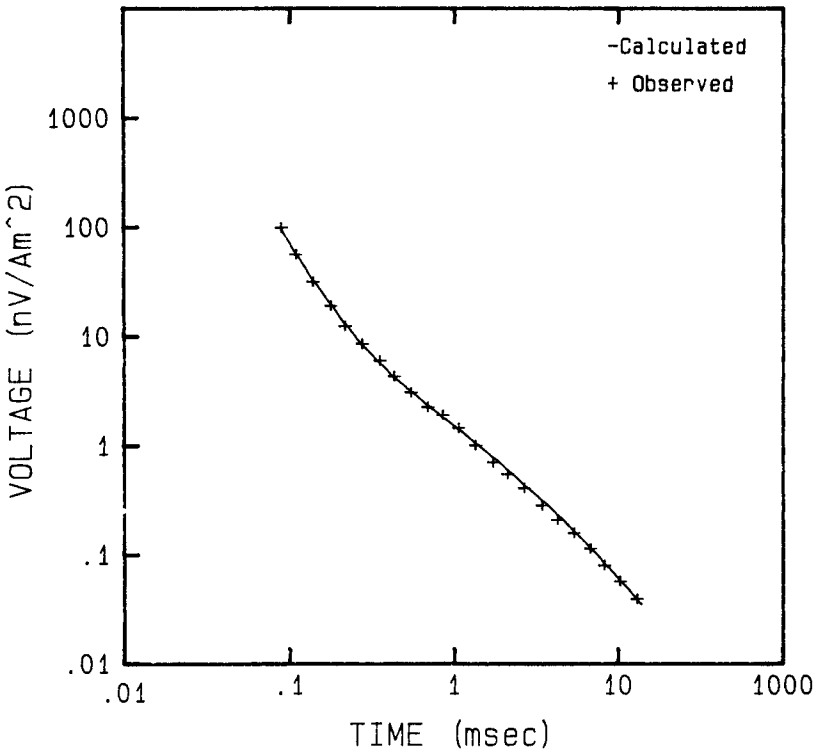
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.6088E-03 | 0.1376E-03 | 0.2259E+00 | 0.2259E+02 |
| 2 | 0.1422E-02 | 0.6446E-03 | 0.4534E+00 | 0.4534E+02 |
| 3 | 0.1141E-01 | 0.1771E-02 | 0.1552E+00 | 0.1552E+02 |
| 4 | 0.7210E-01 | 0.8792E-02 | 0.1219E+00 | 0.1219E+02 |
| 5 | 0.4556E+03 | 0.1486E-02 | 0.3262E-05 | 0.3262E-03 |
| 6 | 0.1532E+03 | 0.4022E-02 | 0.2625E-04 | 0.2625E-02 |
| 7 | 0.2030E+03 | 0.3424E-02 | 0.1687E-04 | 0.1687E-02 |

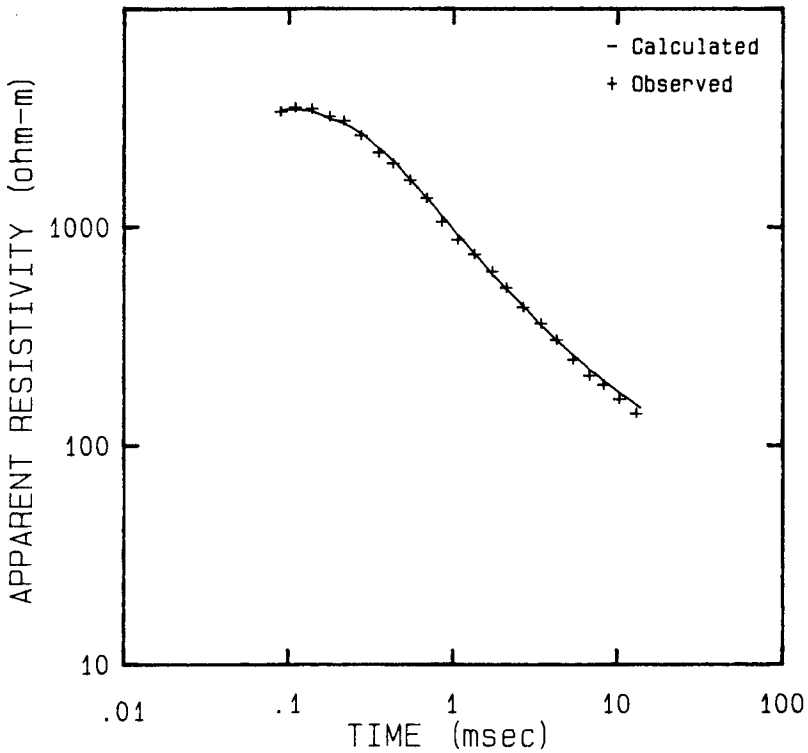
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.60884E-03 | 0.16425E+04 | |
| 2 | SIGMA( 2) | = | 0.14216E-02 | 0.70343E+03 | |
| 3 | SIGMA( 3) | = | 0.11412E-01 | 0.87627E+02 | |
| 4 | SIGMA( 4) | = | 0.72098E-01 | 0.13870E+02 | |
| 5 | THICK( 1) | = | 0.45561E+03 | | 0.45561E+03 |
| 6 | THICK( 2) | = | 0.15325E+03 | | 0.60886E+03 |
| 7 | THICK( 3) | = | 0.20297E+03 | | 0.81183E+03 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML54




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 2868.3 | 531.82 |
| 250.77 | 158.12 |
| 47.24 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 54 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.9807E+02 | 0.9572E+02 | 0.2352E+01 | 0.2457E+01 |
| 2 | 0.1100E-03 | 0.5569E+02 | 0.5715E+02 | -0.1462E+01 | -0.2559E+01 |
| 3 | 0.1400E-03 | 0.3113E+02 | 0.3238E+02 | -0.1252E+01 | -0.3867E+01 |
| 4 | 0.1770E-03 | 0.1876E+02 | 0.1943E+02 | -0.6636E+00 | -0.3416E+01 |
| 5 | 0.2200E-03 | 0.1221E+02 | 0.1273E+02 | -0.5183E+00 | -0.4071E+01 |
| 6 | 0.2800E-03 | 0.8395E+01 | 0.8156E+01 | 0.2389E+00 | 0.2929E+01 |
| 7 | 0.3550E-03 | 0.5897E+01 | 0.5557E+01 | 0.3403E+00 | 0.6124E+01 |
| 8 | 0.4430E-03 | 0.4240E+01 | 0.4093E+01 | 0.1469E+00 | 0.3589E+01 |
| 9 | 0.5540E-03 | 0.3023E+01 | 0.3049E+01 | -0.2630E-01 | -0.8626E+00 |
| 10 | 0.7130E-03 | 0.2214E+01 | 0.2257E+01 | -0.4288E-01 | -0.1900E+01 |
| 11 | 0.8810E-03 | 0.1882E+01 | 0.1759E+01 | 0.1226E+00 | 0.6967E+01 |
| 12 | 0.1096E-02 | 0.1429E+01 | 0.1362E+01 | 0.6664E-01 | 0.4892E+01 |
| 13 | 0.1411E-02 | 0.9860E+00 | 0.1008E+01 | -0.2191E-01 | -0.2174E+01 |
| 14 | 0.1795E-02 | 0.6910E+00 | 0.7479E+00 | -0.5690E-01 | -0.7608E+01 |
| 15 | 0.2224E-02 | 0.5410E+00 | 0.5701E+00 | -0.2907E-01 | -0.5099E+01 |
| 16 | 0.2850E-02 | 0.4020E+00 | 0.4106E+00 | -0.8628E-02 | -0.2101E+01 |
| 17 | 0.3600E-02 | 0.2780E+00 | 0.2979E+00 | -0.1985E-01 | -0.6665E+01 |
| 18 | 0.4490E-02 | 0.2060E+00 | 0.2170E+00 | -0.1097E-01 | -0.5054E+01 |
| 19 | 0.5700E-02 | 0.1560E+00 | 0.1520E+00 | 0.4025E-02 | 0.2649E+01 |
| 20 | 0.7190E-02 | 0.1120E+00 | 0.1060E+00 | 0.6043E-02 | 0.5704E+01 |
| 21 | 0.8800E-02 | 0.7900E-01 | 0.7665E-01 | 0.2354E-02 | 0.3072E+01 |
| 22 | 0.1100E-01 | 0.5600E-01 | 0.5293E-01 | 0.3066E-02 | 0.5793E+01 |
| 23 | 0.1400E-01 | 0.3900E-01 | 0.3506E-01 | 0.3939E-02 | 0.1124E+02 |

** %RMSERR= 4.95

CORRELATION MATRIX

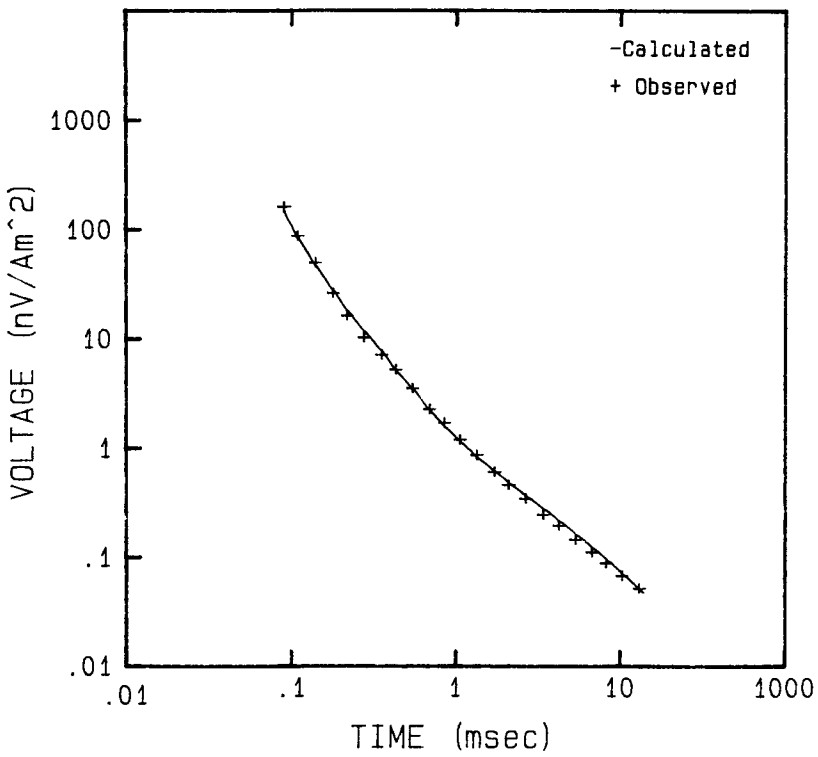
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.1569E+00 | 0.1000E+01 | | | |
| 3 | 0.1592E+00 | -0.2777E+00 | 0.1000E+01 | | |
| 4 | 0.3155E+00 | 0.1548E-01 | -0.6058E-01 | 0.1000E+01 | |
| 5 | -0.3111E+00 | -0.4854E+00 | -0.3327E+00 | -0.1930E+00 | 0.1000E+01 |

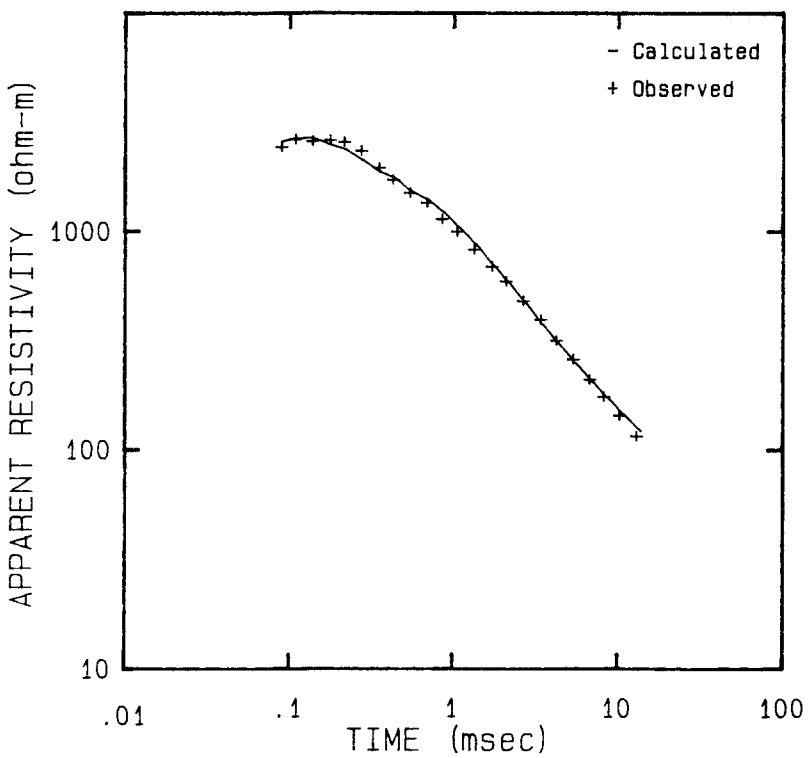
| **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|
| 1 0.3486E-03 | 0.1890E-03 | 0.5420E+00 | 0.5420E+02 |
| 2 0.3988E-02 | 0.1948E-02 | 0.4885E+00 | 0.4885E+02 |
| 3 0.2117E-01 | 0.4493E-02 | 0.2123E+00 | 0.2123E+02 |
| 4 0.5318E+03 | 0.1389E-02 | 0.2611E-05 | 0.2611E-03 |
| 5 0.1581E+03 | 0.2279E-02 | 0.1441E-04 | 0.1441E-02 |

| PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|
| 1 SIGMA( 1) = | 0.34864E-03 | 0.28683E+04 | |
| 2 SIGMA( 2) = | 0.39878E-02 | 0.25077E+03 | |
| 3 SIGMA( 3) = | 0.21169E-01 | 0.47240E+02 | |
| 4 THICK( 1) = | 0.53182E+03 | | 0.53182E+03 |
| 5 THICK( 2) = | 0.15812E+03 | | 0.68994E+03 |
| 6 SHIFT = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML55




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 2177.6 | 553.76 |
| 140.32 | 234.36 |
| 18.862 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 55 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1604E+03 | 0.1472E+03 | 0.1320E+02 | 0.8970E+01 |
| 2 | 0.1100E-03 | 0.8607E+02 | 0.8459E+02 | 0.1478E+01 | 0.1747E+01 |
| 3 | 0.1400E-03 | 0.4871E+02 | 0.4584E+02 | 0.2874E+01 | 0.6271E+01 |
| 4 | 0.1770E-03 | 0.2556E+02 | 0.2730E+02 | -0.1741E+01 | -0.6375E+01 |
| 5 | 0.2200E-03 | 0.1593E+02 | 0.1774E+02 | -0.1808E+01 | -0.1019E+02 |
| 6 | 0.2800E-03 | 0.1005E+02 | 0.1150E+02 | -0.1454E+01 | -0.1264E+02 |
| 7 | 0.3550E-03 | 0.7020E+01 | 0.7439E+01 | -0.4187E+00 | -0.5629E+01 |
| 8 | 0.4430E-03 | 0.5150E+01 | 0.4953E+01 | 0.1968E+00 | 0.3974E+01 |
| 9 | 0.5540E-03 | 0.3460E+01 | 0.3355E+01 | 0.1052E+00 | 0.3137E+01 |
| 10 | 0.7130E-03 | 0.2240E+01 | 0.2127E+01 | 0.1128E+00 | 0.5302E+01 |
| 11 | 0.8810E-03 | 0.1690E+01 | 0.1509E+01 | 0.1809E+00 | 0.1199E+02 |
| 12 | 0.1096E-02 | 0.1180E+01 | 0.1103E+01 | 0.7738E-01 | 0.7018E+01 |
| 13 | 0.1411E-02 | 0.8600E+00 | 0.7903E+00 | 0.6975E-01 | 0.8826E+01 |
| 14 | 0.1795E-02 | 0.6000E+00 | 0.5900E+00 | 0.9972E-02 | 0.1690E+01 |
| 15 | 0.2224E-02 | 0.4600E+00 | 0.4618E+00 | -0.1833E-02 | -0.3970E+00 |
| 16 | 0.2850E-02 | 0.3400E+00 | 0.3487E+00 | -0.8670E-02 | -0.2487E+01 |
| 17 | 0.3600E-02 | 0.2440E+00 | 0.2661E+00 | -0.2210E-01 | -0.8304E+01 |
| 18 | 0.4490E-02 | 0.1950E+00 | 0.2057E+00 | -0.1067E-01 | -0.5186E+01 |
| 19 | 0.5700E-02 | 0.1450E+00 | 0.1548E+00 | -0.9768E-02 | -0.6312E+01 |
| 20 | 0.7190E-02 | 0.1110E+00 | 0.1158E+00 | -0.4847E-02 | -0.4184E+01 |
| 21 | 0.8800E-02 | 0.8800E-01 | 0.8938E-01 | -0.1375E-02 | -0.1539E+01 |
| 22 | 0.1100E-01 | 0.6800E-01 | 0.6616E-01 | 0.1839E-02 | 0.2779E+01 |
| 23 | 0.1400E-01 | 0.5200E-01 | 0.4721E-01 | 0.4786E-02 | 0.1014E+02 |

** %RMSERR= 6.78

CORRELATION MATRIX

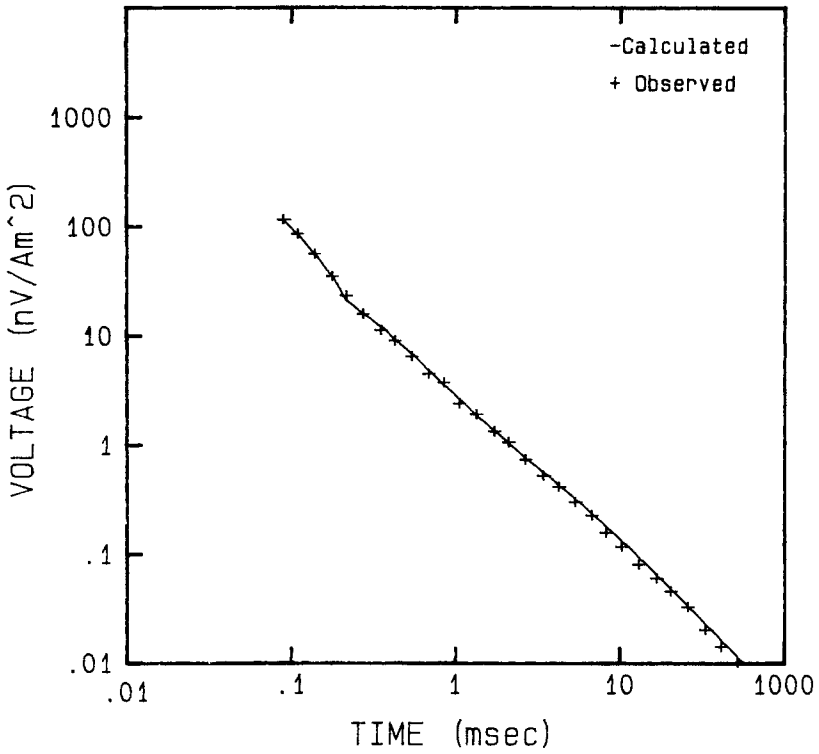
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.3122E-01 | 0.1000E+01 | | | |
| 3 | 0.3741E-01 | -0.5306E+00 | 0.1000E+01 | | |
| 4 | -0.4158E+00 | -0.7310E-01 | 0.7205E-01 | 0.1000E+01 | |
| 5 | 0.4833E-01 | -0.2260E+00 | -0.1058E+00 | -0.5214E+00 | 0.1000E+01 |

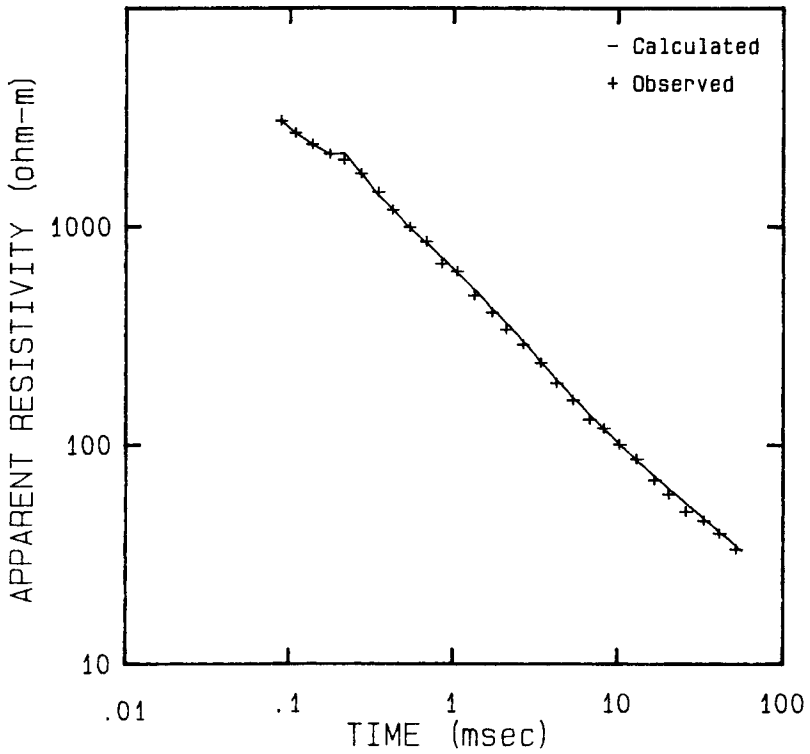
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4592E-03 | 0.2539E-03 | 0.5529E+00 | 0.5529E+02 |
| 2 | 0.7127E-02 | 0.2819E-02 | 0.3956E+00 | 0.3956E+02 |
| 3 | 0.5302E-01 | 0.1419E-01 | 0.2676E+00 | 0.2676E+02 |
| 4 | 0.5538E+03 | 0.1549E-02 | 0.2797E-05 | 0.2797E-03 |
| 5 | 0.2344E+03 | 0.3004E-02 | 0.1282E-04 | 0.1282E-02 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.45921E-03 | 0.21776E+04 | |
| 2 | SIGMA( 2) | = | 0.71267E-02 | 0.14032E+03 | |
| 3 | SIGMA( 3) | = | 0.53017E-01 | 0.18862E+02 | |
| 4 | THICK( 1) | = | 0.55376E+03 | | 0.55376E+03 |
| 5 | THICK( 2) | = | 0.23436E+03 | | 0.78812E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML56




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 3339.2 | 451.56 |
| 57.183 | 198.48 |
| 15.623 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 56 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.2200E-03 | 0.2289E+02 | 0.2064E+02 | 0.2250E+01 | 0.1090E+02 |
| 2 | 0.2800E-03 | 0.1559E+02 | 0.1566E+02 | -0.7211E-01 | -0.4606E+00 |
| 3 | 0.3550E-03 | 0.1109E+02 | 0.1192E+02 | -0.8296E+00 | -0.6957E+01 |
| 4 | 0.4430E-03 | 0.8903E+01 | 0.8958E+01 | -0.5521E-01 | -0.6164E+00 |
| 5 | 0.5540E-03 | 0.6400E+01 | 0.6630E+01 | -0.2304E+00 | -0.3475E+01 |
| 6 | 0.7130E-03 | 0.4432E+01 | 0.4649E+01 | -0.2169E+00 | -0.4665E+01 |
| 7 | 0.8810E-03 | 0.3693E+01 | 0.3422E+01 | 0.2709E+00 | 0.7915E+01 |
| 8 | 0.1096E-02 | 0.2379E+01 | 0.2517E+01 | -0.1376E+00 | -0.5469E+01 |
| 9 | 0.1411E-02 | 0.1902E+01 | 0.1782E+01 | 0.1196E+00 | 0.6708E+01 |
| 10 | 0.1795E-02 | 0.1328E+01 | 0.1297E+01 | 0.3141E-01 | 0.2423E+01 |
| 11 | 0.2224E-02 | 0.1054E+01 | 0.9862E+00 | 0.6779E-01 | 0.6874E+01 |
| 12 | 0.2850E-02 | 0.7300E+00 | 0.7242E+00 | 0.5791E-02 | 0.7997E+00 |
| 13 | 0.3600E-02 | 0.5210E+00 | 0.5401E+00 | -0.1912E-01 | -0.3541E+01 |
| 14 | 0.4490E-02 | 0.4100E+00 | 0.4084E+00 | 0.1581E-02 | 0.3871E+00 |
| 15 | 0.5700E-02 | 0.2970E+00 | 0.3004E+00 | -0.3367E-02 | -0.1121E+01 |
| 16 | 0.7190E-02 | 0.2250E+00 | 0.2205E+00 | 0.4534E-02 | 0.2057E+01 |
| 17 | 0.8800E-02 | 0.1570E+00 | 0.1671E+00 | -0.1014E-01 | -0.6064E+01 |
| 18 | 0.1100E-01 | 0.1160E+00 | 0.1223E+00 | -0.6279E-02 | -0.5135E+01 |
| 19 | 0.1400E-01 | 0.8000E-01 | 0.8608E-01 | -0.6079E-02 | -0.7062E+01 |
| 20 | 0.1800E-01 | 0.6000E-01 | 0.5921E-01 | 0.7939E-03 | 0.1341E+01 |
| 21 | 0.2200E-01 | 0.4500E-01 | 0.4366E-01 | 0.1345E-02 | 0.3081E+01 |
| 22 | 0.2800E-01 | 0.3200E-01 | 0.3013E-01 | 0.1871E-02 | 0.6210E+01 |
| 23 | 0.3600E-01 | 0.2000E-01 | 0.2052E-01 | -0.5161E-03 | -0.2515E+01 |
| 24 | 0.4500E-01 | 0.1400E-01 | 0.1453E-01 | -0.5300E-03 | -0.3648E+01 |
| 25 | 0.5700E-01 | 0.1000E-01 | 0.1012E-01 | -0.1203E-03 | -0.1188E+01 |

** %RMSERR= 4.88

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.2665E+00 | 0.1000E+01 | | | |
| 3 | 0.3252E+00 | -0.6199E+00 | 0.1000E+01 | | |
| 4 | -0.4682E+00 | 0.4852E+00 | -0.3723E+00 | 0.1000E+01 | |
| 5 | -0.9504E-01 | 0.2157E+00 | -0.5965E+00 | 0.3440E-01 | 0.1000E+01 |

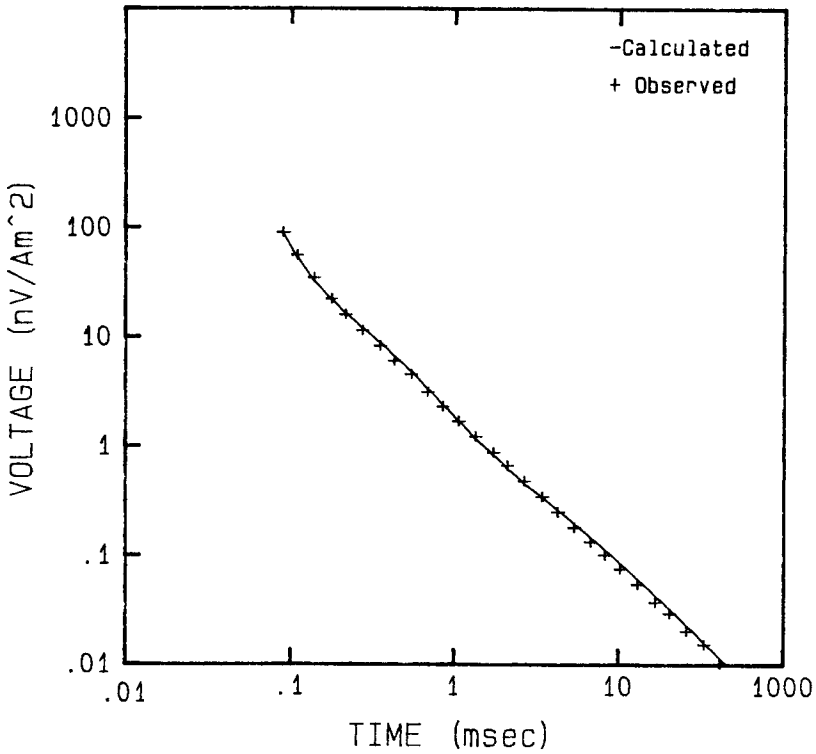
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2995E-03 | 0.1197E-03 | 0.3998E+00 | 0.3998E+02 |
| 2 | 0.1749E-01 | 0.1672E-02 | 0.9563E-01 | 0.9563E+01 |
| 3 | 0.6401E-01 | 0.2439E-02 | 0.3810E-01 | 0.3810E+01 |
| 4 | 0.4516E+03 | 0.1253E-02 | 0.2776E-05 | 0.2776E-03 |
| 5 | 0.1985E+03 | 0.2523E-02 | 0.1271E-04 | 0.1271E-02 |

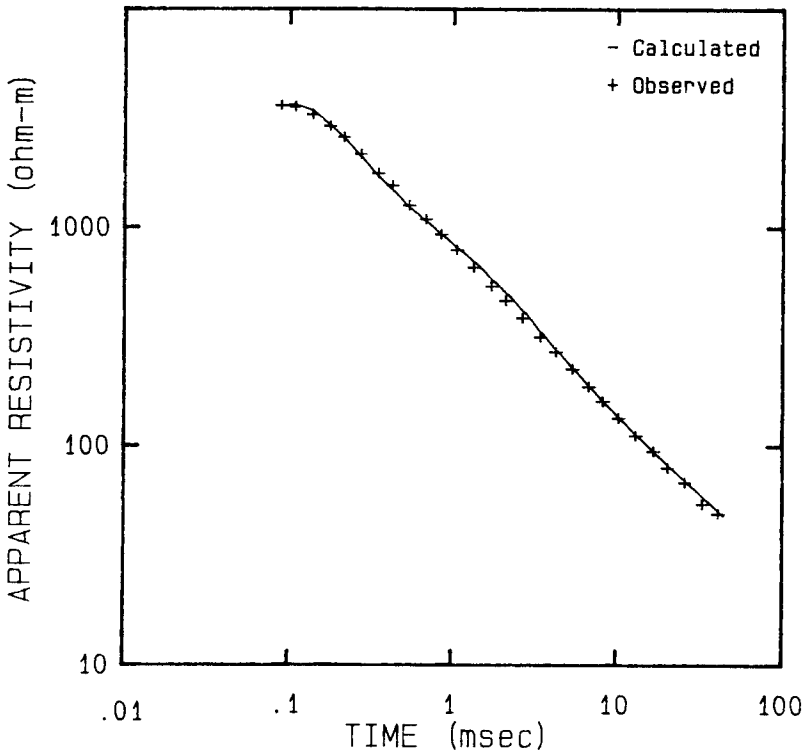
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.29947E-03 | 0.33392E+04 | |
| 2 | SIGMA( 2) | = | 0.17488E-01 | 0.57183E+02 | |
| 3 | SIGMA( 3) | = | 0.64008E-01 | 0.15623E+02 | |
| 4 | THICK( 1) | = | 0.45156E+03 | | 0.45156E+03 |
| 5 | THICK( 2) | = | 0.19848E+03 | | 0.65004E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML57




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 2721.6 | 522.33 |
| 80.83 | 254.83 |
| 16.812 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 57 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.8873E+02 | 0.8871E+02 | 0.2199E-01 | 0.2479E-01 |
| 2 | 0.1100E-03 | 0.5510E+02 | 0.5283E+02 | 0.2267E+01 | 0.4291E+01 |
| 3 | 0.1400E-03 | 0.3413E+02 | 0.3172E+02 | 0.2413E+01 | 0.7609E+01 |
| 4 | 0.1770E-03 | 0.2190E+02 | 0.2146E+02 | 0.4440E+00 | 0.2069E+01 |
| 5 | 0.2200E-03 | 0.1576E+02 | 0.1602E+02 | -0.2624E+00 | -0.1638E+01 |
| 6 | 0.2800E-03 | 0.1127E+02 | 0.1174E+02 | -0.4733E+00 | -0.4032E+01 |
| 7 | 0.3550E-03 | 0.8163E+01 | 0.8646E+01 | -0.4827E+00 | -0.5583E+01 |
| 8 | 0.4430E-03 | 0.5964E+01 | 0.6493E+01 | -0.5294E+00 | -0.8153E+01 |
| 9 | 0.5540E-03 | 0.4492E+01 | 0.4692E+01 | -0.1999E+00 | -0.4260E+01 |
| 10 | 0.7130E-03 | 0.3082E+01 | 0.3214E+01 | -0.1325E+00 | -0.4121E+01 |
| 11 | 0.8810E-03 | 0.2285E+01 | 0.2314E+01 | -0.2909E-01 | -0.1257E+01 |
| 12 | 0.1096E-02 | 0.1674E+01 | 0.1637E+01 | 0.3706E-01 | 0.2264E+01 |
| 13 | 0.1411E-02 | 0.1209E+01 | 0.1119E+01 | 0.8983E-01 | 0.8026E+01 |
| 14 | 0.1795E-02 | 0.8660E+00 | 0.7945E+00 | 0.7151E-01 | 0.9001E+01 |
| 15 | 0.2224E-02 | 0.6580E+00 | 0.5944E+00 | 0.6356E-01 | 0.1069E+02 |
| 16 | 0.2850E-02 | 0.4740E+00 | 0.4332E+00 | 0.4079E-01 | 0.9416E+01 |
| 17 | 0.3600E-02 | 0.3410E+00 | 0.3252E+00 | 0.1579E-01 | 0.4856E+01 |
| 18 | 0.4490E-02 | 0.2470E+00 | 0.2473E+00 | -0.2960E-03 | -0.1197E+00 |
| 19 | 0.5700E-02 | 0.1790E+00 | 0.1839E+00 | -0.4879E-02 | -0.2653E+01 |
| 20 | 0.7190E-02 | 0.1320E+00 | 0.1371E+00 | -0.5127E-02 | -0.3739E+01 |
| 21 | 0.8800E-02 | 0.1000E+00 | 0.1055E+00 | -0.5502E-02 | -0.5215E+01 |
| 22 | 0.1100E-01 | 0.7500E-01 | 0.7830E-01 | -0.3299E-02 | -0.4214E+01 |
| 23 | 0.1400E-01 | 0.5400E-01 | 0.5622E-01 | -0.2225E-02 | -0.3957E+01 |
| 24 | 0.1800E-01 | 0.3700E-01 | 0.3939E-01 | -0.2388E-02 | -0.6064E+01 |
| 25 | 0.2200E-01 | 0.2900E-01 | 0.2944E-01 | -0.4442E-03 | -0.1509E+01 |
| 26 | 0.2800E-01 | 0.2000E-01 | 0.2072E-01 | -0.7203E-03 | -0.3476E+01 |
| 27 | 0.3600E-01 | 0.1500E-01 | 0.1428E-01 | 0.7158E-03 | 0.5011E+01 |
| 28 | 0.4500E-01 | 0.1000E-01 | 0.1028E-01 | -0.2808E-03 | -0.2731E+01 |

** %RMSERR= 5.27

CORRELATION MATRIX

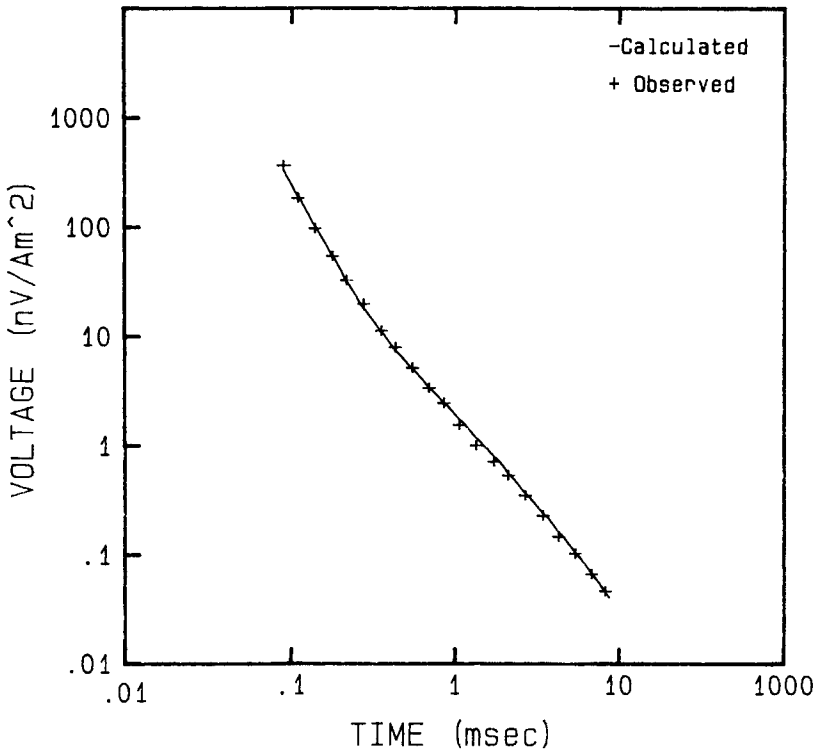
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.3710E+00 | 0.1000E+01 | | | |
| 3 | -0.1354E+00 | -0.3376E+00 | 0.1000E+01 | | |
| 4 | 0.4839E+00 | 0.3488E+00 | -0.1800E+00 | 0.1000E+01 | |
| 5 | -0.1304E-01 | -0.1317E+00 | -0.4599E+00 | -0.2499E+00 | 0.1000E+01 |

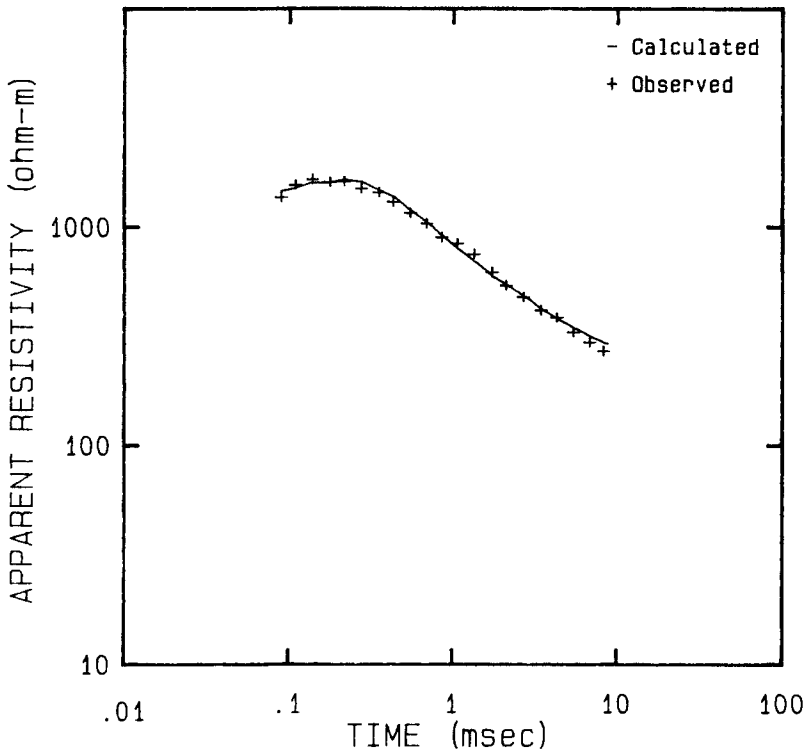
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3674E-03 | 0.1019E-03 | 0.2774E+00 | 0.2774E+02 |
| 2 | 0.1237E-01 | 0.1174E-02 | 0.9492E-01 | 0.9492E+01 |
| 3 | 0.5948E-01 | 0.2200E-02 | 0.3699E-01 | 0.3699E+01 |
| 4 | 0.5223E+03 | 0.1398E-02 | 0.2677E-05 | 0.2677E-03 |
| 5 | 0.2548E+03 | 0.2706E-02 | 0.1062E-04 | 0.1062E-02 |

| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.36744E-03 | 0.27216E+04 | |
| 2 | SIGMA( 2) = | 0.12372E-01 | 0.80830E+02 | |
| 3 | SIGMA( 3) = | 0.59480E-01 | 0.16812E+02 | |
| 4 | THICK( 1) = | 0.52233E+03 | | 0.52233E+03 |
| 5 | THICK( 2) = | 0.25483E+03 | | 0.77716E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML58




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1391.6 | 593.44 |
| 136.51 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 58 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.3619E+03 | 0.3303E+03 | 0.3162E+02 | 0.9573E+01 |
| 2 | 0.1100E-03 | 0.1812E+03 | 0.1905E+03 | -0.9282E+01 | -0.4873E+01 |
| 3 | 0.1400E-03 | 0.9540E+02 | 0.9989E+02 | -0.4483E+01 | -0.4488E+01 |
| 4 | 0.1770E-03 | 0.5321E+02 | 0.5375E+02 | -0.5349E+00 | -0.9951E+00 |
| 5 | 0.2200E-03 | 0.3183E+02 | 0.3074E+02 | 0.1094E+01 | 0.3558E+01 |
| 6 | 0.2800E-03 | 0.1949E+02 | 0.1751E+02 | 0.1973E+01 | 0.1126E+02 |
| 7 | 0.3550E-03 | 0.1103E+02 | 0.1068E+02 | 0.3524E+00 | 0.3300E+01 |
| 8 | 0.4430E-03 | 0.7786E+01 | 0.7155E+01 | 0.6306E+00 | 0.8813E+01 |
| 9 | 0.5540E-03 | 0.5081E+01 | 0.4899E+01 | 0.1818E+00 | 0.3712E+01 |
| 10 | 0.7130E-03 | 0.3320E+01 | 0.3283E+01 | 0.3675E-01 | 0.1119E+01 |
| 11 | 0.8810E-03 | 0.2419E+01 | 0.2378E+01 | 0.4086E-01 | 0.1718E+01 |
| 12 | 0.1096E-02 | 0.1524E+01 | 0.1669E+01 | -0.1448E+00 | -0.8678E+01 |
| 13 | 0.1411E-02 | 0.9870E+00 | 0.1120E+01 | -0.1330E+00 | -0.1188E+02 |
| 14 | 0.1795E-02 | 0.7000E+00 | 0.7567E+00 | -0.5669E-01 | -0.7492E+01 |
| 15 | 0.2224E-02 | 0.5240E+00 | 0.5253E+00 | -0.1275E-02 | -0.2427E+00 |
| 16 | 0.2850E-02 | 0.3430E+00 | 0.3428E+00 | 0.2246E-03 | 0.6551E-01 |
| 17 | 0.3600E-02 | 0.2250E+00 | 0.2254E+00 | -0.4199E-03 | -0.1863E+00 |
| 18 | 0.4490E-02 | 0.1440E+00 | 0.1502E+00 | -0.6209E-02 | -0.4133E+01 |
| 19 | 0.5700E-02 | 0.1010E+00 | 0.9594E-01 | 0.5060E-02 | 0.5274E+01 |
| 20 | 0.7190E-02 | 0.6600E-01 | 0.6121E-01 | 0.4790E-02 | 0.7825E+01 |
| 21 | 0.8800E-02 | 0.4600E-01 | 0.4084E-01 | 0.5155E-02 | 0.1262E+02 |

** %RMSERR= 6.62

CORRELATION MATRIX

| | | | |
|---|---|---|---|
| 1 | 0.1000E+01 | | |
| 2 | -0.1998E+00 | 0.1000E+01 | |
| 3 | 0.3628E+00 | -0.4441E+00 | 0.1000E+01 |

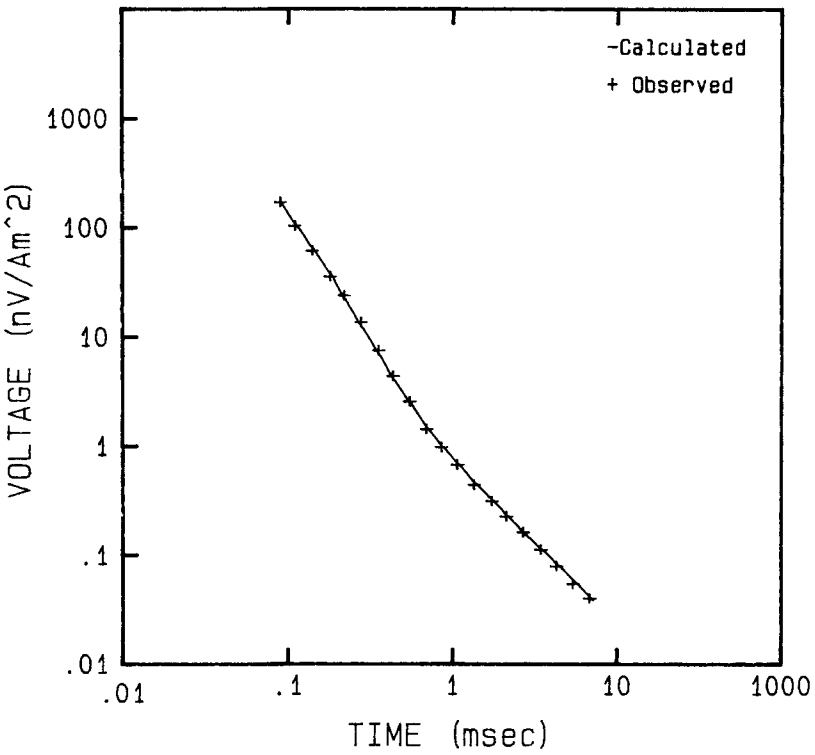
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.7186E-03 | 0.8768E-04 | 0.1220E+00 | 0.1220E+02 |
| 2 | 0.7325E-02 | 0.7350E-03 | 0.1003E+00 | 0.1003E+02 |
| 3 | 0.5934E+03 | 0.2560E-02 | 0.4314E-05 | 0.4314E-03 |

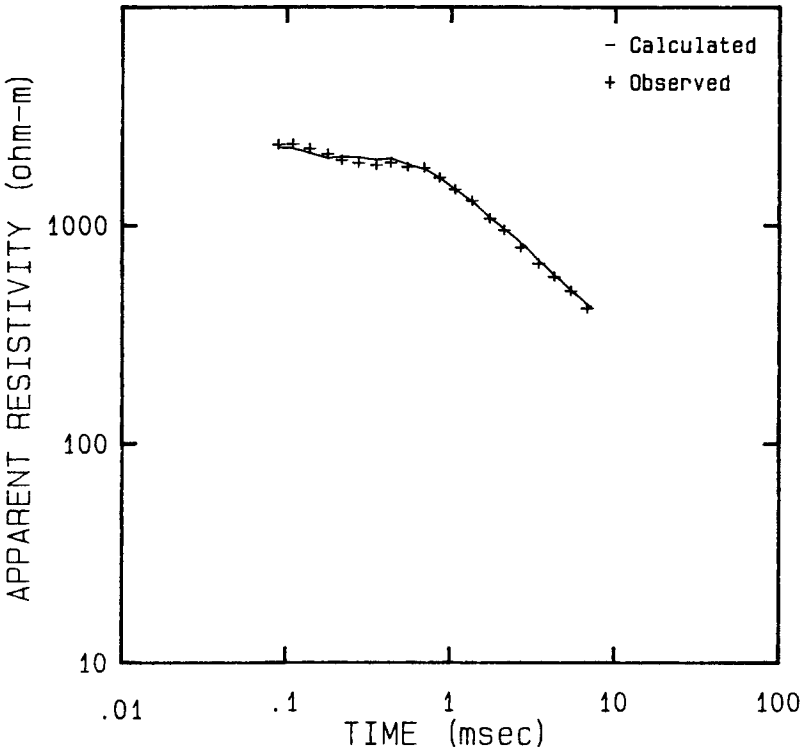
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.71859E-03 | 0.13916E+04 | |
| 2 | SIGMA( 2) | = | 0.73254E-02 | 0.13651E+03 | |
| 3 | THICK( 1) | = | 0.59344E+03 | | 0.59344E+03 |
| 4 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML59




## MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 31084 | 105.68 |
| 1412.3 | 839.35 |
| 199.74 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 59 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1700E+03 | 0.1764E+03 | -0.6410E+01 | -0.3633E+01 |
| 2 | 0.1110E-03 | 0.1023E+03 | 0.1090E+03 | -0.6700E+01 | -0.6146E+01 |
| 3 | 0.1400E-03 | 0.6031E+02 | 0.6447E+02 | -0.4165E+01 | -0.6461E+01 |
| 4 | 0.1770E-03 | 0.3507E+02 | 0.3746E+02 | -0.2388E+01 | -0.6374E+01 |
| 5 | 0.2200E-03 | 0.2345E+02 | 0.2215E+02 | 0.1304E+01 | 0.5887E+01 |
| 6 | 0.2800E-03 | 0.1341E+02 | 0.1223E+02 | 0.1179E+01 | 0.9638E+01 |
| 7 | 0.3550E-03 | 0.7290E+01 | 0.6796E+01 | 0.4936E+00 | 0.7263E+01 |
| 8 | 0.4430E-03 | 0.4308E+01 | 0.4008E+01 | 0.2998E+00 | 0.7479E+01 |
| 9 | 0.5540E-03 | 0.2522E+01 | 0.2428E+01 | 0.9426E-01 | 0.3882E+01 |
| 10 | 0.7130E-03 | 0.1412E+01 | 0.1443E+01 | -0.3082E-01 | -0.2136E+01 |
| 11 | 0.8810E-03 | 0.9640E+00 | 0.9785E+00 | -0.1448E-01 | -0.1480E+01 |
| 12 | 0.1096E-02 | 0.6660E+00 | 0.6774E+00 | -0.1144E-01 | -0.1688E+01 |
| 13 | 0.1411E-02 | 0.4360E+00 | 0.4493E+00 | -0.1329E-01 | -0.2958E+01 |
| 14 | 0.1795E-02 | 0.3080E+00 | 0.3101E+00 | -0.2115E-02 | -0.6820E+00 |
| 15 | 0.2224E-02 | 0.2240E+00 | 0.2249E+00 | -0.9132E-03 | -0.4060E+00 |
| 16 | 0.2850E-02 | 0.1610E+00 | 0.1541E+00 | 0.6937E-02 | 0.4503E+01 |
| 17 | 0.3600E-02 | 0.1110E+00 | 0.1096E+00 | 0.1449E-02 | 0.1323E+01 |
| 18 | 0.4490E-02 | 0.7800E-01 | 0.7912E-01 | -0.1119E-02 | -0.1414E+01 |
| 19 | 0.5700E-02 | 0.5400E-01 | 0.5573E-01 | -0.1732E-02 | -0.3108E+01 |
| 20 | 0.7190E-02 | 0.4000E-01 | 0.3864E-01 | 0.1355E-02 | 0.3506E+01 |

** %RMSERR= 4.74

CORRELATION MATRIX

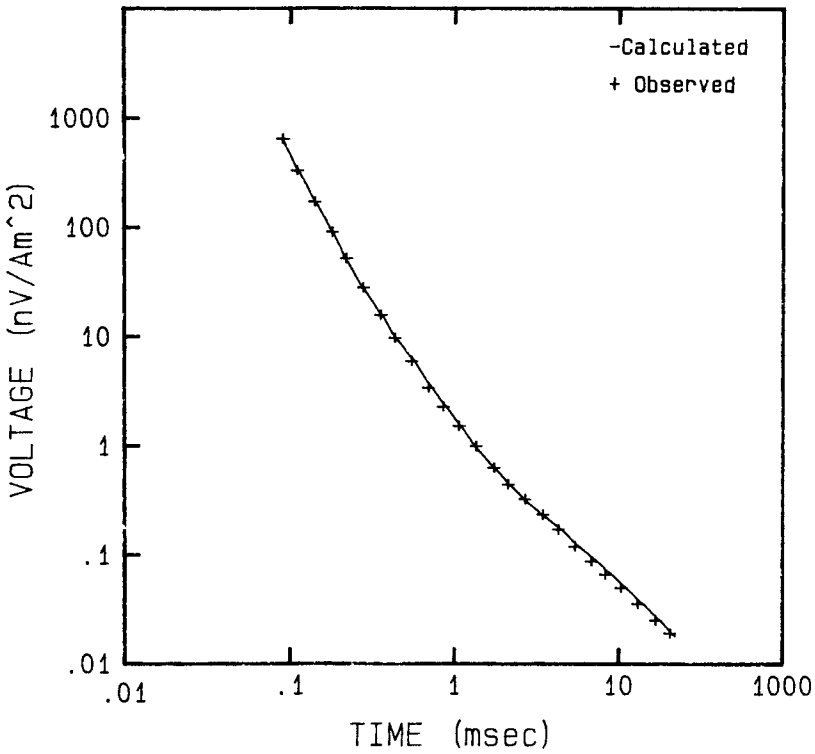
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.2565E-01 | 0.1000E+01 | | | |
| 3 | 0.2885E+00 | -0.7477E+00 | 0.1000E+01 | | |
| 4 | -0.4778E+00 | 0.4341E+00 | -0.7570E+00 | 0.1000E+01 | |
| 5 | -0.1701E+00 | -0.3805E+00 | 0.3825E+00 | -0.4460E+00 | 0.1000E+01 |

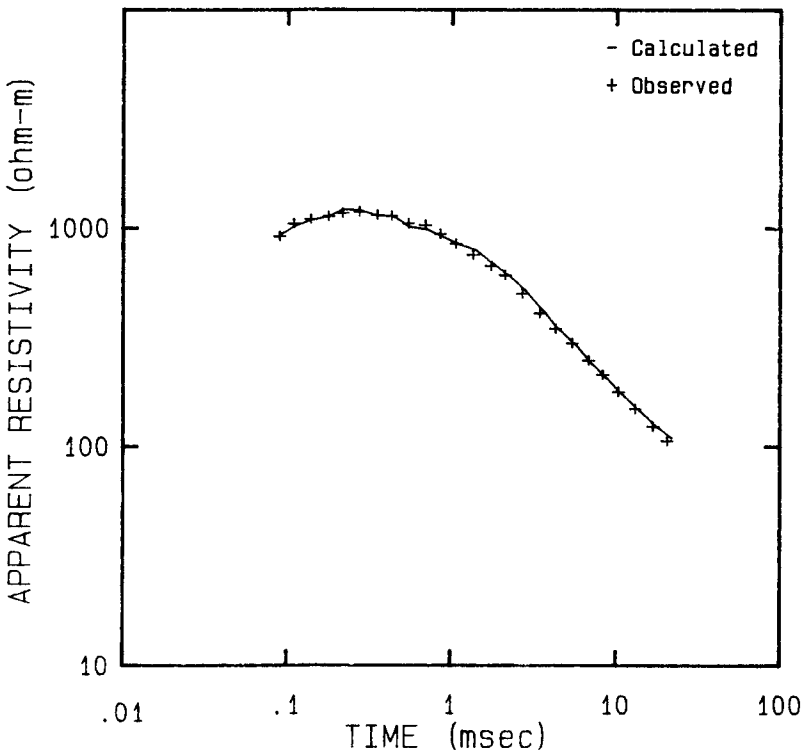
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3217E-04 | 0.2683E-04 | 0.8338E+00 | 0.8338E+02 |
| 2 | 0.7081E-03 | 0.1114E-03 | 0.1574E+00 | 0.1574E+02 |
| 3 | 0.5007E-02 | 0.6767E-03 | 0.1352E+00 | 0.1352E+02 |
| 4 | 0.1057E+03 | 0.8724E-03 | 0.8256E-05 | 0.8256E-03 |
| 5 | 0.8394E+03 | 0.2901E-02 | 0.3457E-05 | 0.3457E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.32171E-04 | 0.31084E+05 | |
| 2 | SIGMA( 2) | = | 0.70807E-03 | 0.14123E+04 | |
| 3 | SIGMA( 3) | = | 0.50066E-02 | 0.19974E+03 | |
| 4 | THICK( 1) | = | 0.10568E+03 | | 0.10568E+03 |
| 5 | THICK( 2) | = | 0.83935E+03 | | 0.94503E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML60




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 385 | 34.1 |
| 1418 | 496.9 |
| 171 | 351 |
| 21.8 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 60 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.6409E+03 | 0.6335E+03 | 0.7457E+01 | 0.1177E+01 |
| 2 | 0.1100E-03 | 0.3265E+03 | 0.3424E+03 | -0.1589E+02 | -0.4642E+01 |
| 3 | 0.1400E-03 | 0.1690E+03 | 0.1713E+03 | -0.2339E+01 | -0.1365E+01 |
| 4 | 0.1770E-03 | 0.8929E+02 | 0.8961E+02 | -0.3193E+00 | -0.3563E+00 |
| 5 | 0.2200E-03 | 0.5129E+02 | 0.4854E+02 | 0.2755E+01 | 0.5676E+01 |
| 6 | 0.2800E-03 | 0.2758E+02 | 0.2680E+02 | 0.7719E+00 | 0.2880E+01 |
| 7 | 0.3550E-03 | 0.1549E+02 | 0.1565E+02 | -0.1607E+00 | -0.1027E+01 |
| 8 | 0.4430E-03 | 0.9531E+01 | 0.9524E+01 | 0.6537E-02 | 0.6864E-01 |
| 9 | 0.5540E-03 | 0.5870E+01 | 0.6176E+01 | -0.3065E+00 | -0.4962E+01 |
| 10 | 0.7130E-03 | 0.3335E+01 | 0.3557E+01 | -0.2216E+00 | -0.6232E+01 |
| 11 | 0.8810E-03 | 0.2243E+01 | 0.2317E+01 | -0.7424E-01 | -0.3204E+01 |
| 12 | 0.1096E-02 | 0.1500E+01 | 0.1499E+01 | 0.1463E-02 | 0.9762E-01 |
| 13 | 0.1411E-02 | 0.9790E+00 | 0.9001E+00 | 0.7893E-01 | 0.8769E+01 |
| 14 | 0.1795E-02 | 0.6230E+00 | 0.5961E+00 | 0.2687E-01 | 0.4507E+01 |
| 15 | 0.2224E-02 | 0.4370E+00 | 0.4269E+00 | 0.1006E-01 | 0.2357E+01 |
| 16 | 0.2850E-02 | 0.3200E+00 | 0.2997E+00 | 0.2027E-01 | 0.6762E+01 |
| 17 | 0.3600E-02 | 0.2320E+00 | 0.2205E+00 | 0.1152E-01 | 0.5223E+01 |
| 18 | 0.4490E-02 | 0.1700E+00 | 0.1672E+00 | 0.2784E-02 | 0.1665E+01 |
| 19 | 0.5700E-02 | 0.1180E+00 | 0.1231E+00 | -0.5134E-02 | -0.4170E+01 |
| 20 | 0.7190E-02 | 0.8600E-01 | 0.9102E-01 | -0.5019E-02 | -0.5514E+01 |
| 21 | 0.8800E-02 | 0.6600E-01 | 0.6944E-01 | -0.3438E-02 | -0.4952E+01 |
| 22 | 0.1100E-01 | 0.4900E-01 | 0.5094E-01 | -0.1945E-02 | -0.3817E+01 |
| 23 | 0.1400E-01 | 0.3500E-01 | 0.3600E-01 | -0.1004E-02 | -0.2788E+01 |
| 24 | 0.1800E-01 | 0.2500E-01 | 0.2493E-01 | 0.6891E-04 | 0.2764E+00 |
| 25 | 0.2200E-01 | 0.1900E-01 | 0.1836E-01 | 0.6365E-03 | 0.3466E+01 |

** %RMSERR= 4.13

CORRELATION MATRIX

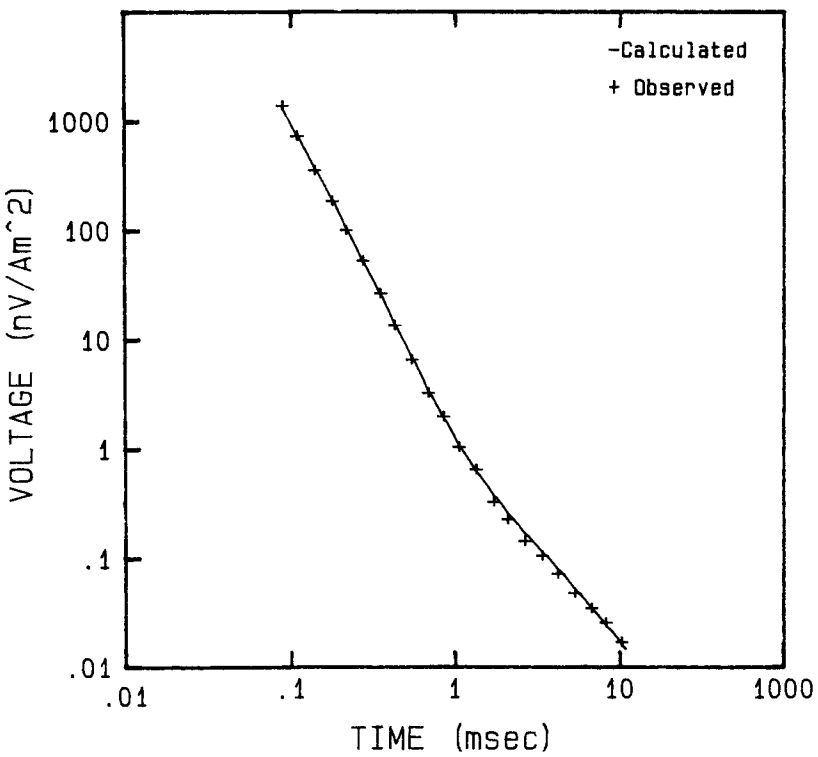
| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | |
| 2 | -0.2240E-01 | 0.1000E+01 | | | | |
| 3 | 0.2765E+00 | -0.3713E+00 | 0.1000E+01 | | | |
| 4 | -0.1107E+00 | 0.1344E+00 | 0.8448E-01 | 0.1000E+01 | | |
| 5 | -0.7968E+00 | -0.2359E-01 | -0.1676E+00 | 0.6987E-02 | 0.1000E+01 | |
| 6 | -0.3463E+00 | -0.1326E+00 | -0.4903E+00 | -0.2201E+00 | 0.1614E+00 | 0.1000E+01 |
| 7 | -0.3195E+00 | -0.1756E+00 | -0.6791E+00 | -0.2919E+00 | 0.2676E+00 | 0.5899E+00 0.1000E |

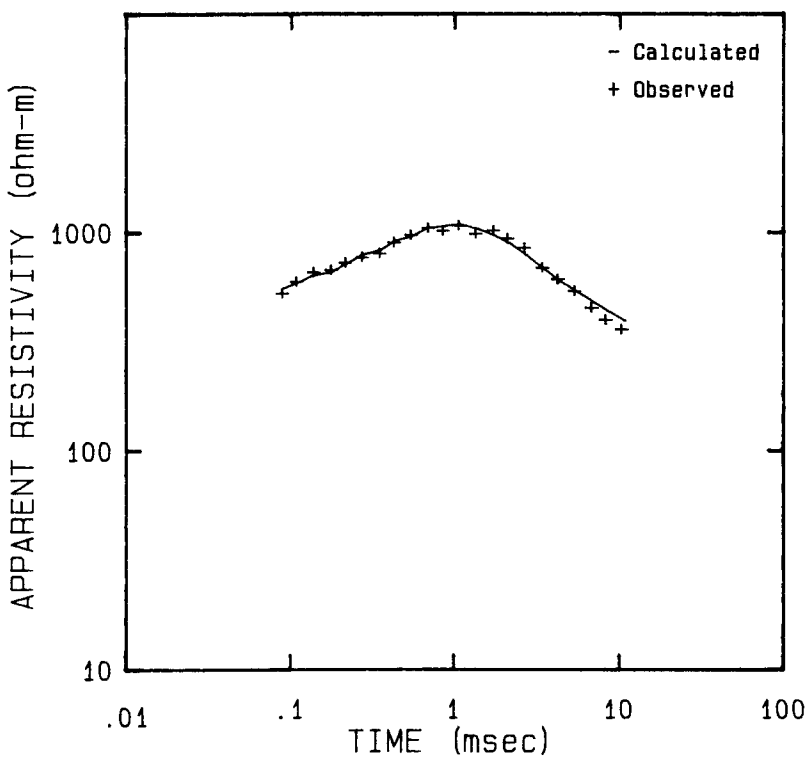
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2600E-02 | 0.1328E-03 | 0.5108E-01 | 0.5108E+01 |
| 2 | 0.7050E-03 | 0.1555E-03 | 0.2206E+00 | 0.2206E+02 |
| 3 | 0.5832E-02 | 0.8566E-03 | 0.1469E+00 | 0.1469E+02 |
| 4 | 0.4591E-01 | 0.2545E-02 | 0.5544E-01 | 0.5544E+01 |
| 5 | 0.3406E+02 | 0.3784E-03 | 0.1111E-04 | 0.1111E-02 |
| 6 | 0.4969E+03 | 0.5415E-03 | 0.1090E-05 | 0.1090E-03 |
| 7 | 0.3513E+03 | 0.2407E-02 | 0.6852E-05 | 0.6852E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.26004E-02 | 0.38455E+03 | |
| 2 | SIGMA( 2) | = | 0.70500E-03 | 0.14184E+04 | |
| 3 | SIGMA( 3) | = | 0.58318E-02 | 0.17147E+03 | |
| 4 | SIGMA( 4) | = | 0.45909E-01 | 0.21782E+02 | |
| 5 | THICK( 1) | = | 0.34064E+02 | | 0.34064E+02 |
| 6 | THICK( 2) | = | 0.49690E+03 | | 0.53096E+03 |
| 7 | THICK( 3) | = | 0.35131E+03 | | 0.88227E+03 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML61




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 467.86 | 121.07 |
| 1430.5 | 869.99 |
| 145.37 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 61 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1386E+04 | 0.1302E+04 | 0.8438E+02 | 0.6482E+01 |
| 2 | 0.1100E-03 | 0.7276E+03 | 0.7456E+03 | -0.1796E+02 | -0.2409E+01 |
| 3 | 0.1400E-03 | 0.3537E+03 | 0.3719E+03 | -0.1814E+02 | -0.4878E+01 |
| 4 | 0.1770E-03 | 0.1853E+03 | 0.1921E+03 | -0.6833E+01 | -0.3556E+01 |
| 5 | 0.2200E-03 | 0.9987E+02 | 0.1035E+03 | -0.3646E+01 | -0.3522E+01 |
| 6 | 0.2800E-03 | 0.5271E+02 | 0.5070E+02 | 0.2010E+01 | 0.3964E+01 |
| 7 | 0.3550E-03 | 0.2643E+02 | 0.2508E+02 | 0.1350E+01 | 0.5381E+01 |
| 8 | 0.4430E-03 | 0.1345E+02 | 0.1319E+02 | 0.2620E+00 | 0.1987E+01 |
| 9 | 0.5540E-03 | 0.6526E+01 | 0.6679E+01 | -0.1532E+00 | -0.2294E+01 |
| 10 | 0.7130E-03 | 0.3235E+01 | 0.3206E+01 | 0.2869E-01 | 0.8947E+00 |
| 11 | 0.8810E-03 | 0.1974E+01 | 0.1836E+01 | 0.1381E+00 | 0.7523E+01 |
| 12 | 0.1096E-02 | 0.1039E+01 | 0.1016E+01 | 0.2341E-01 | 0.2305E+01 |
| 13 | 0.1411E-02 | 0.6490E+00 | 0.5970E+00 | 0.5201E-01 | 0.8711E+01 |
| 14 | 0.1795E-02 | 0.3280E+00 | 0.3584E+00 | -0.3043E-01 | -0.8490E+01 |
| 15 | 0.2224E-02 | 0.2270E+00 | 0.2431E+00 | -0.1608E-01 | -0.6616E+01 |
| 16 | 0.2850E-02 | 0.1430E+00 | 0.1615E+00 | -0.1847E-01 | -0.1144E+02 |
| 17 | 0.3600E-02 | 0.1050E+00 | 0.1075E+00 | -0.2464E-02 | -0.2293E+01 |
| 18 | 0.4490E-02 | 0.7200E-01 | 0.7447E-01 | -0.2471E-02 | -0.3318E+01 |
| 19 | 0.5700E-02 | 0.4800E-01 | 0.4864E-01 | -0.6350E-03 | -0.1306E+01 |
| 20 | 0.7190E-02 | 0.3500E-01 | 0.3212E-01 | 0.2885E-02 | 0.8982E+01 |
| 21 | 0.8800E-02 | 0.2600E-01 | 0.2237E-01 | 0.3626E-02 | 0.1621E+02 |
| 22 | 0.1100E-01 | 0.1700E-01 | 0.1480E-01 | 0.2201E-02 | 0.1487E+02 |

** %RMSERR= 7.13

CORRELATION MATRIX

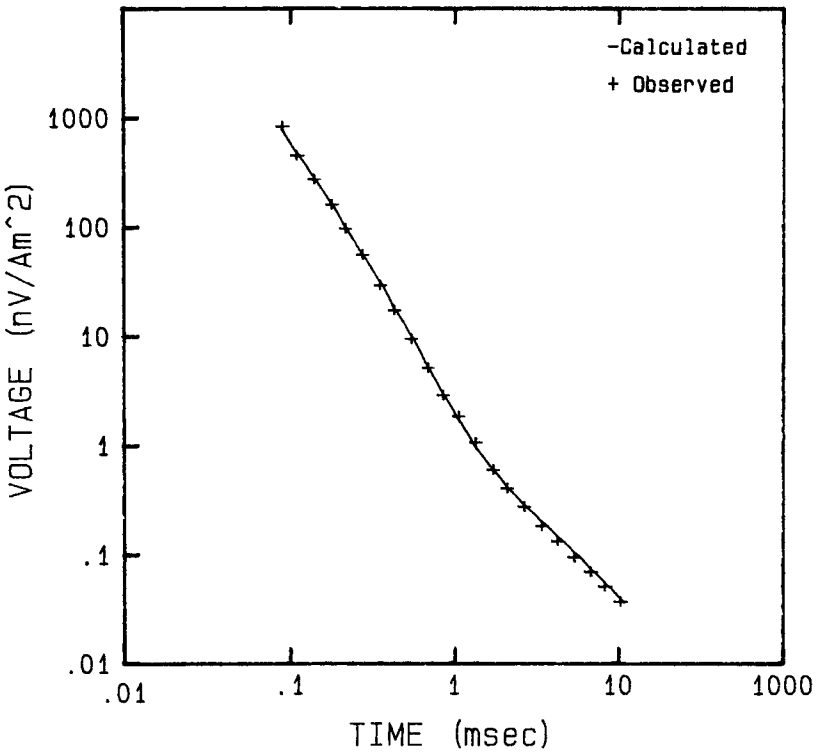
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.7202E+00 | 0.1000E+01 | | | |
| 3 | -0.1069E+00 | -0.6060E-01 | 0.1000E+01 | | |
| 4 | -0.4722E+00 | 0.1678E+00 | -0.4415E+00 | 0.1000E+01 | |
| 5 | 0.2872E+00 | -0.3483E-01 | 0.6545E-01 | -0.1711E+00 | 0.1000E+01 |

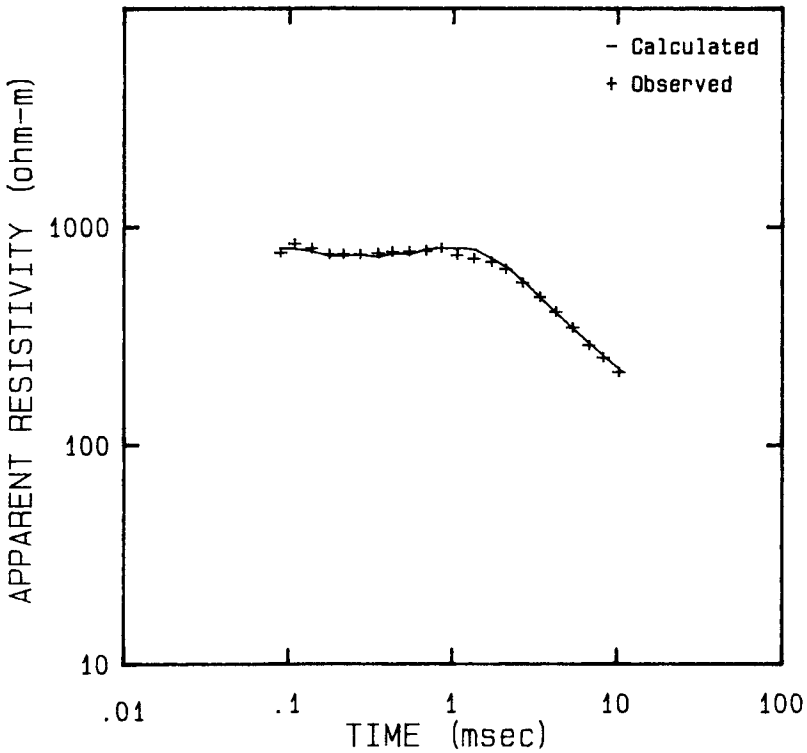
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2137E-02 | 0.1290E-03 | 0.6035E-01 | 0.6035E+01 |
| 2 | 0.6991E-03 | 0.1489E-03 | 0.2130E+00 | 0.2130E+02 |
| 3 | 0.6879E-02 | 0.8990E-03 | 0.1307E+00 | 0.1307E+02 |
| 4 | 0.1211E+03 | 0.1093E-02 | 0.9030E-05 | 0.9030E-03 |
| 5 | 0.8700E+03 | 0.1108E-02 | 0.1274E-05 | 0.1274E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.21374E-02 | 0.46786E+03 | |
| 2 | SIGMA( 2) | = | 0.69907E-03 | 0.14305E+04 | |
| 3 | SIGMA( 3) | = | 0.68790E-02 | 0.14537E+03 | |
| 4 | THICK( 1) | = | 0.12107E+03 | | 0.12107E+03 |
| 5 | THICK( 2) | = | 0.87000E+03 | | 0.99106E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML62




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 2234.5 | 47.96 |
| 617.68 | 846.57 |
| 45.426 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 62 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.8329E+03 | 0.7802E+03 | 0.5274E+02 | 0.6760E+01 |
| 2 | 0.1100E-03 | 0.4477E+03 | 0.4868E+03 | -0.3903E+02 | -0.8019E+01 |
| 3 | 0.1400E-03 | 0.2685E+03 | 0.2811E+03 | -0.1256E+02 | -0.4469E+01 |
| 4 | 0.1770E-03 | 0.1587E+03 | 0.1631E+03 | -0.4331E+01 | -0.2656E+01 |
| 5 | 0.2200E-03 | 0.9555E+02 | 0.9820E+02 | -0.2645E+01 | -0.2694E+01 |
| 6 | 0.2800E-03 | 0.5525E+02 | 0.5511E+02 | 0.1428E+00 | 0.2591E+00 |
| 7 | 0.3550E-03 | 0.2891E+02 | 0.3072E+02 | -0.1805E+01 | -0.5878E+01 |
| 8 | 0.4430E-03 | 0.1715E+02 | 0.1753E+02 | -0.3761E+00 | -0.2146E+01 |
| 9 | 0.5540E-03 | 0.9340E+01 | 0.9763E+01 | -0.4227E+00 | -0.4329E+01 |
| 10 | 0.7130E-03 | 0.5090E+01 | 0.4944E+01 | 0.1459E+00 | 0.2950E+01 |
| 11 | 0.8810E-03 | 0.2850E+01 | 0.2823E+01 | 0.2681E-01 | 0.9498E+00 |
| 12 | 0.1096E-02 | 0.1830E+01 | 0.1633E+01 | 0.1970E+00 | 0.1206E+02 |
| 13 | 0.1411E-02 | 0.1060E+01 | 0.9187E+00 | 0.1413E+00 | 0.1538E+02 |
| 14 | 0.1795E-02 | 0.5960E+00 | 0.5715E+00 | 0.2445E-01 | 0.4278E+01 |
| 15 | 0.2224E-02 | 0.4040E+00 | 0.3963E+00 | 0.7711E-02 | 0.1946E+01 |
| 16 | 0.2850E-02 | 0.2730E+00 | 0.2722E+00 | 0.7973E-03 | 0.2929E+00 |
| 17 | 0.3600E-02 | 0.1830E+00 | 0.1919E+00 | -0.8884E-02 | -0.4630E+01 |
| 18 | 0.4490E-02 | 0.1320E+00 | 0.1396E+00 | -0.7626E-02 | -0.5462E+01 |
| 19 | 0.5700E-02 | 0.9400E-01 | 0.9966E-01 | -0.5662E-02 | -0.5681E+01 |
| 20 | 0.7190E-02 | 0.7000E-01 | 0.7004E-01 | -0.4108E-04 | -0.5865E-01 |
| 21 | 0.8800E-02 | 0.5100E-01 | 0.5174E-01 | -0.7391E-03 | -0.1428E+01 |
| 22 | 0.1100E-01 | 0.3700E-01 | 0.3659E-01 | 0.4057E-03 | 0.1109E+01 |

** %RMSERR= 5.65

CORRELATION MATRIX

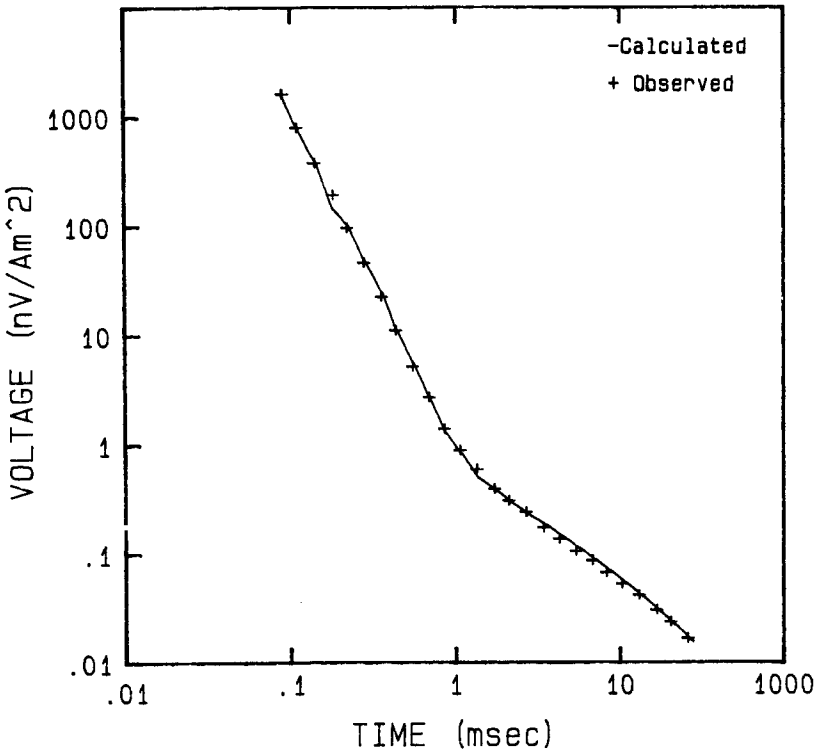
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.2487E+00 | 0.1000E+01 | | | |
| 3 | -0.4637E-01 | -0.2825E+00 | 0.1000E+01 | | |
| 4 | 0.4833E-01 | -0.2408E+00 | -0.4021E+00 | 0.1000E+01 | |
| 5 | 0.9873E-01 | -0.1429E+00 | -0.1273E+00 | 0.4462E-01 | 0.1000E+01 |

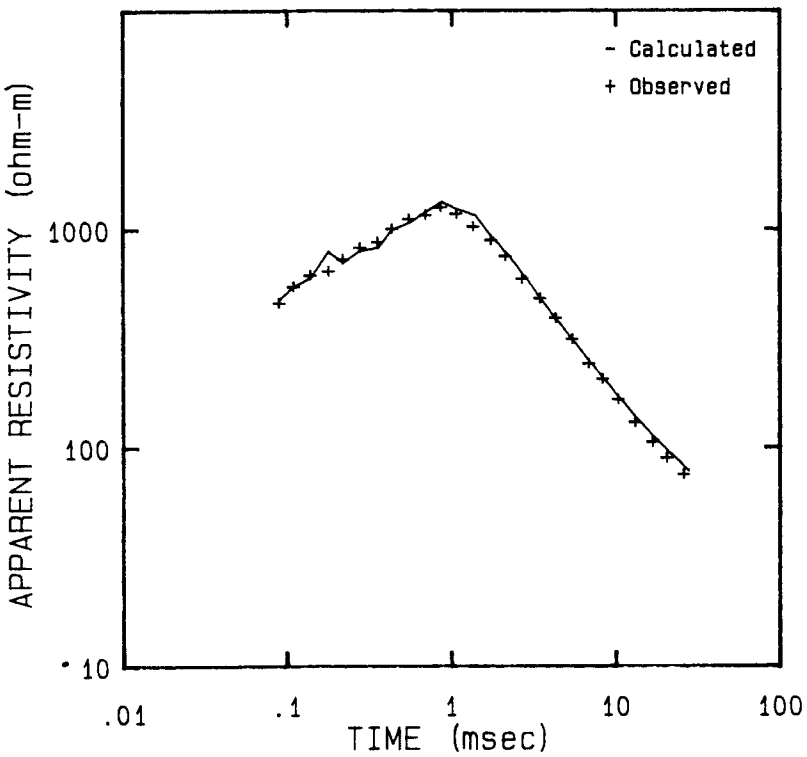
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4475E-03 | 0.6571E-04 | 0.1468E+00 | 0.1468E+02 |
| 2 | 0.1619E-02 | 0.2003E-03 | 0.1237E+00 | 0.1237E+02 |
| 3 | 0.2201E-01 | 0.1423E-02 | 0.6464E-01 | 0.6464E+01 |
| 4 | 0.4796E+02 | 0.1141E-02 | 0.2378E-04 | 0.2378E-02 |
| 5 | 0.8466E+03 | 0.3222E-02 | 0.3806E-05 | 0.3806E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.44752E-03 | 0.22345E+04 | |
| 2 | SIGMA( 2) | = | 0.16190E-02 | 0.61768E+03 | |
| 3 | SIGMA( 3) | = | 0.22014E-01 | 0.45426E+02 | |
| 4 | THICK( 1) | = | 0.47960E+02 | | 0.47960E+02 |
| 5 | THICK( 2) | = | 0.84657E+03 | | 0.89453E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML63




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 109.31 | 16.239 |
| 1196.9 | 837.54 |
| 12.359 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 63 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1652E+04 | 0.1584E+04 | 0.6766E+02 | 0.4270E+01 |
| 2 | 0.1100E-03 | 0.8132E+03 | 0.8152E+03 | -0.2032E+01 | -0.2493E+00 |
| 3 | 0.1400E-03 | 0.3840E+03 | 0.4009E+03 | -0.1690E+02 | -0.4216E+01 |
| 4 | 0.1970E-03 | 0.1761E+03 | 0.1455E+03 | 0.3055E+02 | 0.2099E+02 |
| 5 | 0.2200E-03 | 0.9808E+02 | 0.1046E+03 | -0.6499E+01 | -0.6215E+01 |
| 6 | 0.2800E-03 | 0.4705E+02 | 0.4945E+02 | -0.2395E+01 | -0.4843E+01 |
| 7 | 0.3550E-03 | 0.2296E+02 | 0.2505E+02 | -0.2090E+01 | -0.8344E+01 |
| 8 | 0.4430E-03 | 0.1129E+02 | 0.1139E+02 | -0.9626E-01 | -0.8452E+00 |
| 9 | 0.5540E-03 | 0.5272E+01 | 0.5603E+01 | -0.3312E+00 | -0.5911E+01 |
| 10 | 0.7130E-03 | 0.2745E+01 | 0.2585E+01 | 0.1601E+00 | 0.6193E+01 |
| 11 | 0.8810E-03 | 0.1420E+01 | 0.1307E+01 | 0.1133E+00 | 0.8667E+01 |
| 12 | 0.1096E-02 | 0.9020E+00 | 0.8408E+00 | 0.6117E-01 | 0.7274E+01 |
| 13 | 0.1411E-02 | 0.6060E+00 | 0.5046E+00 | 0.1014E+00 | 0.2011E+02 |
| 14 | 0.1795E-02 | 0.4000E+00 | 0.3855E+00 | 0.1449E-01 | 0.3758E+01 |
| 15 | 0.2224E-02 | 0.3120E+00 | 0.3030E+00 | 0.9031E-02 | 0.2981E+01 |
| 16 | 0.2850E-02 | 0.2460E+00 | 0.2338E+00 | 0.1219E-01 | 0.5214E+01 |
| 17 | 0.3600E-02 | 0.1770E+00 | 0.1869E+00 | -0.9881E-02 | -0.5287E+01 |
| 18 | 0.4490E-02 | 0.1390E+00 | 0.1475E+00 | -0.8466E-02 | -0.5741E+01 |
| 19 | 0.5700E-02 | 0.1070E+00 | 0.1148E+00 | -0.7828E-02 | -0.6817E+01 |
| 20 | 0.7190E-02 | 0.8800E-01 | 0.8922E-01 | -0.1219E-02 | -0.1367E+01 |
| 21 | 0.8800E-02 | 0.6800E-01 | 0.7121E-01 | -0.3214E-02 | -0.4513E+01 |
| 22 | 0.1100E-01 | 0.5400E-01 | 0.5515E-01 | -0.1150E-02 | -0.2085E+01 |
| 23 | 0.1400E-01 | 0.4200E-01 | 0.4131E-01 | 0.6899E-03 | 0.1670E+01 |
| 24 | 0.1800E-01 | 0.3100E-01 | 0.2981E-01 | 0.1189E-02 | 0.3989E+01 |
| 25 | 0.2200E-01 | 0.2400E-01 | 0.2259E-01 | 0.1414E-02 | 0.6260E+01 |
| 26 | 0.2800E-01 | 0.1700E-01 | 0.1599E-01 | 0.1008E-02 | 0.6305E+01 |

** %RMSERR= 7.59

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.1949E+00 | 0.1000E+01 | | | |
| 3 | -0.1633E+00 | 0.9073E-01 | 0.1000E+01 | | |
| 4 | -0.6693E+00 | -0.1143E+00 | -0.4458E+00 | 0.1000E+01 | |
| 5 | 0.7142E+00 | -0.4005E-01 | 0.2056E+00 | -0.7529E+00 | 0.1000E+01 |

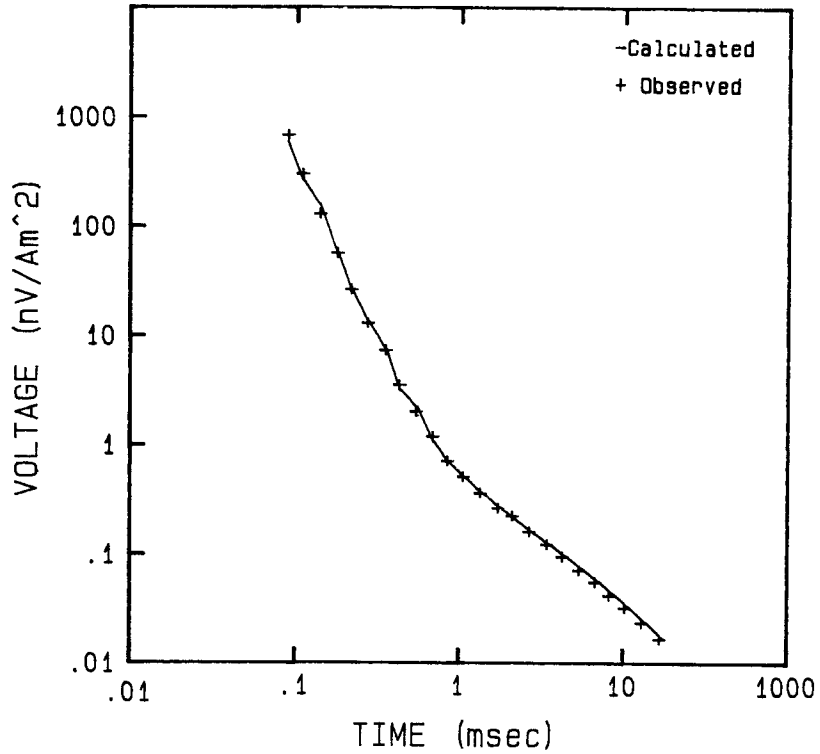
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.9149E-02 | 0.2078E-03 | 0.2271E-01 | 0.2271E+01 |
| 2 | 0.8355E-03 | 0.1908E-03 | 0.2284E+00 | 0.2284E+02 |
| 3 | 0.8091E-01 | 0.3345E-02 | 0.4134E-01 | 0.4134E+01 |
| 4 | 0.1624E+02 | 0.2164E-03 | 0.1333E-04 | 0.1333E-02 |
| 5 | 0.8375E+03 | 0.2413E-02 | 0.2881E-05 | 0.2881E-03 |

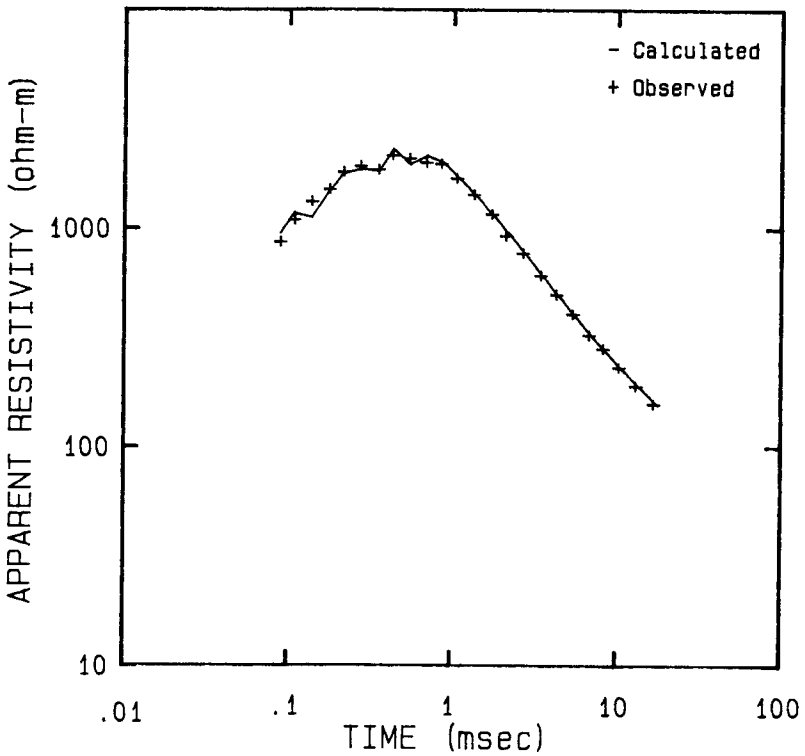
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.91486E-02 | 0.10931E+03 | |
| 2 | SIGMA( 2) | = | 0.83546E-03 | 0.11969E+04 | |
| 3 | SIGMA( 3) | = | 0.80910E-01 | 0.12359E+02 | |
| 4 | THICK( 1) | = | 0.16239E+02 | | 0.16239E+02 |
| 5 | THICK( 2) | = | 0.83754E+03 | | 0.85378E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML64




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 213.88 | 30.585 |
| 6899.1 | 550.4 |
| 507.84 | 406.04 |
| 24.439 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 64 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.6898E+03 | 0.6038E+03 | 0.8600E+02 | 0.1424E+02 |
| 2 | 0.1100E-03 | 0.3032E+03 | 0.2718E+03 | 0.3138E+02 | 0.1155E+02 |
| 3 | 0.1300E-03 | 0.1408E+03 | 0.1598E+03 | -0.1903E+02 | -0.1191E+02 |
| 4 | 0.1770E-03 | 0.5747E+02 | 0.5899E+02 | -0.1516E+01 | -0.2571E+01 |
| 5 | 0.2200E-03 | 0.2654E+02 | 0.2701E+02 | -0.4665E+00 | -0.1727E+01 |
| 6 | 0.2800E-03 | 0.1316E+02 | 0.1374E+02 | -0.5869E+00 | -0.4270E+01 |
| 7 | 0.3550E-03 | 0.7433E+01 | 0.7584E+01 | -0.1513E+00 | -0.1994E+01 |
| 8 | 0.4430E-03 | 0.3586E+01 | 0.3248E+01 | 0.3380E+00 | 0.1041E+02 |
| 9 | 0.5540E-03 | 0.2058E+01 | 0.2264E+01 | -0.2063E+00 | -0.9110E+01 |
| 10 | 0.7130E-03 | 0.1116E+01 | 0.1091E+01 | 0.2528E-01 | 0.2318E+01 |
| 11 | 0.8810E-03 | 0.7270E+00 | 0.7060E+00 | 0.2097E-01 | 0.2970E+01 |
| 12 | 0.1096E-02 | 0.5250E+00 | 0.5173E+00 | 0.7667E-02 | 0.1482E+01 |
| 13 | 0.1371E-02 | 0.4100E+00 | 0.3708E+00 | 0.3924E-01 | 0.1058E+02 |
| 14 | 0.1795E-02 | 0.2690E+00 | 0.2745E+00 | -0.5502E-02 | -0.2004E+01 |
| 15 | 0.2224E-02 | 0.2290E+00 | 0.2167E+00 | 0.1231E-01 | 0.5679E+01 |
| 16 | 0.2850E-02 | 0.1650E+00 | 0.1649E+00 | 0.9145E-04 | 0.5545E-01 |
| 17 | 0.3600E-02 | 0.1250E+00 | 0.1266E+00 | -0.1608E-02 | -0.1270E+01 |
| 18 | 0.4490E-02 | 0.9700E-01 | 0.9871E-01 | -0.1706E-02 | -0.1729E+01 |
| 19 | 0.5700E-02 | 0.7300E-01 | 0.7555E-01 | -0.2553E-02 | -0.3379E+01 |
| 20 | 0.7190E-02 | 0.5700E-01 | 0.5787E-01 | -0.8730E-03 | -0.1508E+01 |
| 21 | 0.8800E-02 | 0.4300E-01 | 0.4509E-01 | -0.2086E-02 | -0.4626E+01 |
| 22 | 0.1100E-01 | 0.3300E-01 | 0.3370E-01 | -0.6963E-03 | -0.2066E+01 |
| 23 | 0.1400E-01 | 0.2400E-01 | 0.2432E-01 | -0.3157E-03 | -0.1298E+01 |
| 24 | 0.1800E-01 | 0.1700E-01 | 0.1710E-01 | -0.1028E-03 | -0.6009E+00 |

** %RMSERR= 6.16

CORRELATION MATRIX

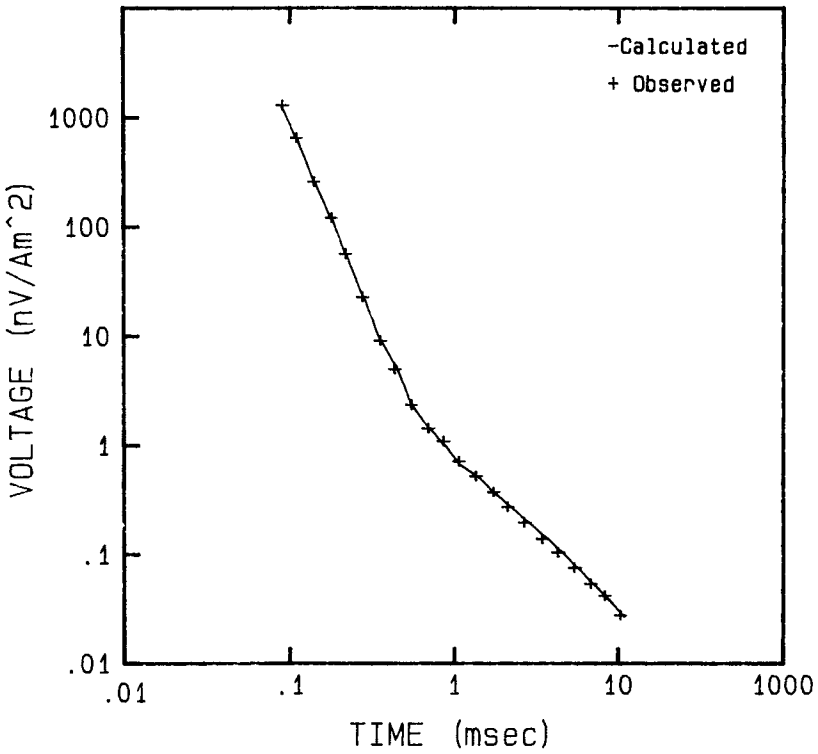
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | 0.3394E+00 | 0.1000E+01 | | | | | |
| 3 | -0.4288E-01 | -0.1030E+00 | 0.1000E+01 | | | | |
| 4 | -0.8185E-01 | -0.1006E+00 | -0.1366E+00 | 0.1000E+01 | | | |
| 5 | -0.6593E+00 | -0.2599E+00 | -0.3207E+00 | -0.5677E-01 | 0.1000E+01 | | |
| 6 | -0.4754E+00 | -0.6989E-01 | 0.3066E+00 | -0.7775E-01 | 0.4792E+00 | 0.1000E+01 | |
| 7 | -0.9787E-01 | 0.6824E-01 | -0.3588E+00 | -0.2332E-01 | -0.1244E+00 | -0.5276E+00 | 0.1000E |

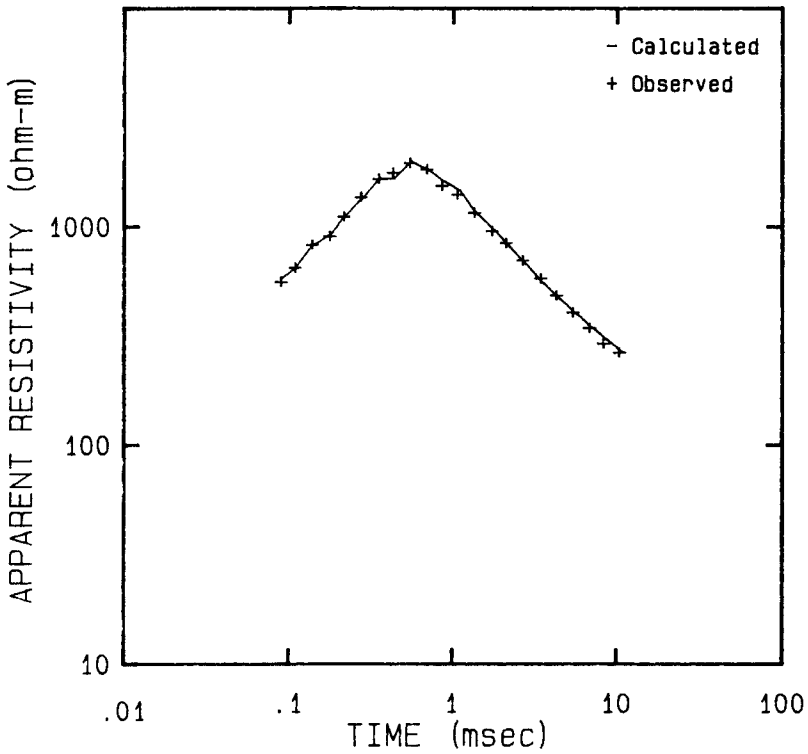
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4676E-02 | 0.9826E-04 | 0.2102E-01 | 0.2102E+01 |
| 2 | 0.1449E-03 | 0.1005E-03 | 0.6932E+00 | 0.6932E+02 |
| 3 | 0.1969E-02 | 0.4315E-03 | 0.2191E+00 | 0.2191E+02 |
| 4 | 0.4092E-01 | 0.2186E-02 | 0.5341E-01 | 0.5341E+01 |
| 5 | 0.3058E+02 | 0.2083E-03 | 0.6809E-05 | 0.6809E-03 |
| 6 | 0.5504E+03 | 0.1920E-02 | 0.3489E-05 | 0.3489E-03 |
| 7 | 0.4060E+03 | 0.2766E-02 | 0.6812E-05 | 0.6812E-03 |

| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.46755E-02 | 0.21388E+03 | |
| 2 | SIGMA( 2) = | 0.14495E-03 | 0.68991E+04 | |
| 3 | SIGMA( 3) = | 0.19691E-02 | 0.50784E+03 | |
| 4 | SIGMA( 4) = | 0.40918E-01 | 0.24439E+02 | |
| 5 | THICK( 1) = | 0.30585E+02 | | 0.30585E+02 |
| 6 | THICK( 2) = | 0.55040E+03 | | 0.58098E+03 |
| 7 | THICK( 3) = | 0.40604E+03 | | 0.98702E+03 |
| 8 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML65




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 156.27 | 30.002 |
| 4542.7 | 843.53 |
| 66.826 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 65 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1287E+04 | 0.1229E+04 | 0.5823E+02 | 0.4739E+01 |
| 2 | 0.1100E-03 | 0.6483E+03 | 0.6544E+03 | -0.6112E+01 | -0.9339E+00 |
| 3 | 0.1400E-03 | 0.2551E+03 | 0.2584E+03 | -0.3247E+01 | -0.1257E+01 |
| 4 | 0.1770E-03 | 0.1194E+03 | 0.1168E+03 | 0.2597E+01 | 0.2224E+01 |
| 5 | 0.2200E-03 | 0.5528E+02 | 0.5585E+02 | -0.5675E+00 | -0.1016E+01 |
| 6 | 0.2800E-03 | 0.2235E+02 | 0.2303E+02 | -0.6715E+00 | -0.2916E+01 |
| 7 | 0.3550E-03 | 0.9462E+01 | 0.8945E+01 | 0.5167E+00 | 0.5776E+01 |
| 8 | 0.4430E-03 | 0.4917E+01 | 0.5417E+01 | -0.5002E+00 | -0.9234E+01 |
| 9 | 0.5540E-03 | 0.2312E+01 | 0.2252E+01 | 0.6034E-01 | 0.2680E+01 |
| 10 | 0.7130E-03 | 0.1411E+01 | 0.1416E+01 | -0.5089E-02 | -0.3594E+00 |
| 11 | 0.8810E-03 | 0.1072E+01 | 0.9918E+00 | 0.8022E-01 | 0.8088E+01 |
| 12 | 0.1096E-02 | 0.7010E+00 | 0.6526E+00 | 0.4836E-01 | 0.7410E+01 |
| 13 | 0.1411E-02 | 0.5140E+00 | 0.5149E+00 | -0.9187E-03 | -0.1784E+00 |
| 14 | 0.1795E-02 | 0.3660E+00 | 0.3570E+00 | 0.9018E-02 | 0.2526E+01 |
| 15 | 0.2224E-02 | 0.2680E+00 | 0.2776E+00 | -0.9581E-02 | -0.3452E+01 |
| 16 | 0.2850E-02 | 0.1930E+00 | 0.2025E+00 | -0.9477E-02 | -0.4681E+01 |
| 17 | 0.3600E-02 | 0.1370E+00 | 0.1469E+00 | -0.9935E-02 | -0.6761E+01 |
| 18 | 0.4490E-02 | 0.1020E+00 | 0.1072E+00 | -0.5206E-02 | -0.4856E+01 |
| 19 | 0.5700E-02 | 0.7400E-01 | 0.7532E-01 | -0.1318E-02 | -0.1751E+01 |
| 20 | 0.7190E-02 | 0.5300E-01 | 0.5285E-01 | 0.1513E-03 | 0.2862E+00 |
| 21 | 0.8800E-02 | 0.3800E-01 | 0.3852E-01 | -0.5216E-03 | -0.1354E+01 |
| 22 | 0.1100E-01 | 0.2700E-01 | 0.2697E-01 | 0.2947E-04 | 0.1093E+00 |

** %RMSERR= 4.26

CORRELATION MATRIX

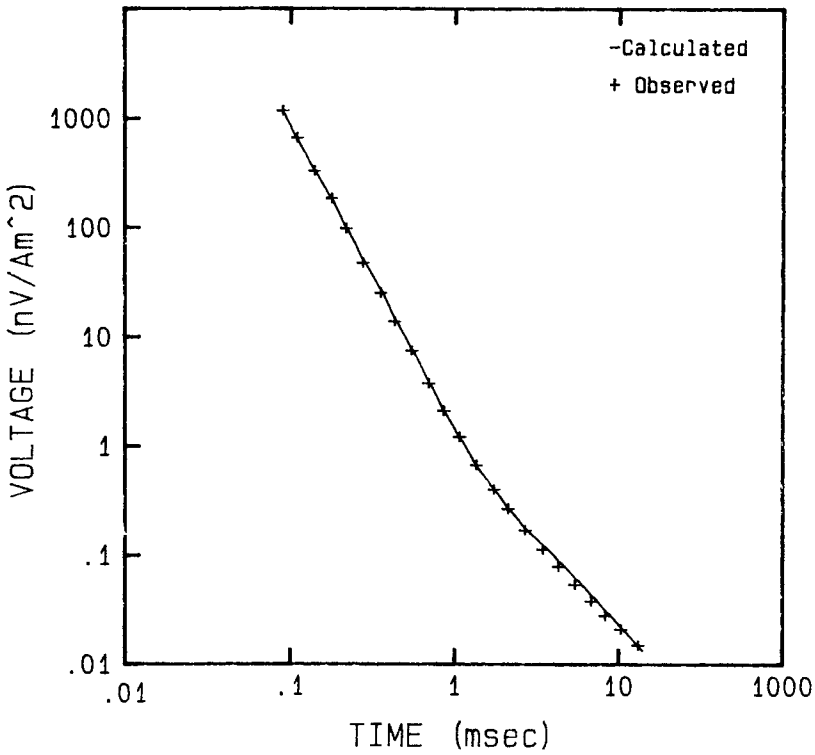
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.2910E+00 | 0.1000E+01 | | | |
| 3 | -0.6065E-01 | -0.3801E+00 | 0.1000E+01 | | |
| 4 | 0.1523E+00 | 0.3810E+00 | -0.3105E+00 | 0.1000E+01 | |
| 5 | -0.1121E+00 | 0.3547E+00 | -0.5089E+00 | 0.1559E+00 | 0.1000E+01 |

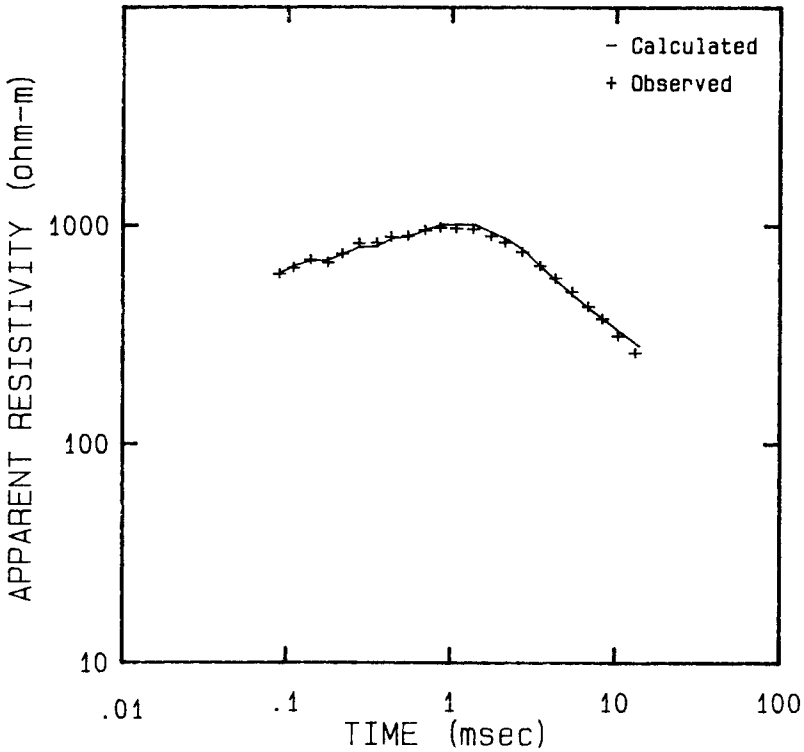
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.6399E-02 | 0.4774E-04 | 0.7461E-02 | 0.7461E+00 |
| 2 | 0.2201E-03 | 0.6502E-04 | 0.2954E+00 | 0.2954E+02 |
| 3 | 0.1496E-01 | 0.7471E-03 | 0.4993E-01 | 0.4993E+01 |
| 4 | 0.3000E+02 | 0.9124E-04 | 0.3041E-05 | 0.3041E-03 |
| 5 | 0.8435E+03 | 0.6124E-03 | 0.7260E-06 | 0.7260E-04 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.63993E-02 | 0.15627E+03 | |
| 2 | SIGMA( 2) | = | 0.22014E-03 | 0.45427E+04 | |
| 3 | SIGMA( 3) | = | 0.14964E-01 | 0.66826E+02 | |
| 4 | THICK( 1) | = | 0.30002E+02 | | 0.30002E+02 |
| 5 | THICK( 2) | = | 0.84353E+03 | | 0.87353E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML66




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 332.03 | 43.46 |
| 1008.2 | 996.86 |
| 80.784 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 66 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1168E+04 | 0.1162E+04 | 0.5833E+01 | 0.5020E+00 |
| 2 | 0.1100E-03 | 0.6603E+03 | 0.6433E+03 | 0.1705E+02 | 0.2651E+01 |
| 3 | 0.1400E-03 | 0.3258E+03 | 0.3307E+03 | -0.4899E+01 | -0.1481E+01 |
| 4 | 0.1770E-03 | 0.1843E+03 | 0.1771E+03 | 0.7206E+01 | 0.4069E+01 |
| 5 | 0.2200E-03 | 0.9714E+02 | 0.9767E+02 | -0.5280E+00 | -0.5406E+00 |
| 6 | 0.2800E-03 | 0.4718E+02 | 0.4990E+02 | -0.2720E+01 | -0.5451E+01 |
| 7 | 0.3550E-03 | 0.2490E+02 | 0.2667E+02 | -0.1774E+01 | -0.6653E+01 |
| 8 | 0.4430E-03 | 0.1373E+02 | 0.1412E+02 | -0.3947E+00 | -0.2795E+01 |
| 9 | 0.5540E-03 | 0.7416E+01 | 0.7460E+01 | -0.4357E-01 | -0.5840E+00 |
| 10 | 0.7130E-03 | 0.3731E+01 | 0.3724E+01 | 0.7082E-02 | 0.1902E+00 |
| 11 | 0.8810E-03 | 0.2093E+01 | 0.1994E+01 | 0.9895E-01 | 0.4962E+01 |
| 12 | 0.1096E-02 | 0.1212E+01 | 0.1150E+01 | 0.6249E-01 | 0.5436E+01 |
| 13 | 0.1411E-02 | 0.6720E+00 | 0.6243E+00 | 0.4767E-01 | 0.7635E+01 |
| 14 | 0.1795E-02 | 0.4010E+00 | 0.3806E+00 | 0.2036E-01 | 0.5348E+01 |
| 15 | 0.2224E-02 | 0.2670E+00 | 0.2558E+00 | 0.1116E-01 | 0.4360E+01 |
| 16 | 0.2850E-02 | 0.1700E+00 | 0.1674E+00 | 0.2574E-02 | 0.1537E+01 |
| 17 | 0.3600E-02 | 0.1130E+00 | 0.1186E+00 | -0.5646E-02 | -0.4759E+01 |
| 18 | 0.4490E-02 | 0.7900E-01 | 0.8473E-01 | -0.5734E-02 | -0.6767E+01 |
| 19 | 0.5700E-02 | 0.5400E-01 | 0.5882E-01 | -0.4823E-02 | -0.8200E+01 |
| 20 | 0.7190E-02 | 0.3800E-01 | 0.4066E-01 | -0.2663E-02 | -0.6550E+01 |
| 21 | 0.8800E-02 | 0.2800E-01 | 0.2909E-01 | -0.1086E-02 | -0.3733E+01 |
| 22 | 0.1100E-01 | 0.2100E-01 | 0.2019E-01 | 0.8112E-03 | 0.4018E+01 |
| 23 | 0.1400E-01 | 0.1500E-01 | 0.1346E-01 | 0.1542E-02 | 0.1146E+02 |

** %RMSERR= 5.15

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.4537E+00 | 0.1000E+01 | | | |
| 3 | 0.2504E+00 | -0.2554E-01 | 0.1000E+01 | | |
| 4 | -0.8137E+00 | -0.2699E+00 | -0.6338E+00 | 0.1000E+01 | |
| 5 | 0.6669E+00 | 0.1829E+00 | 0.6907E+00 | -0.9538E+00 | 0.1000E+01 |

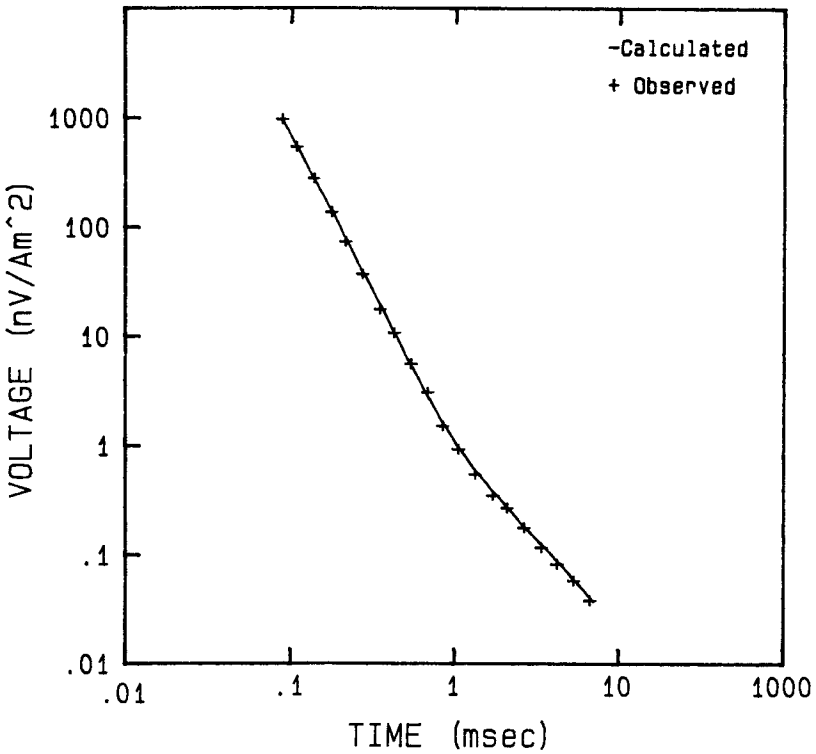
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3012E-02 | 0.1400E-03 | 0.4649E-01 | 0.4649E+01 |
| 2 | 0.9918E-03 | 0.8852E-04 | 0.8925E-01 | 0.8925E+01 |
| 3 | 0.1238E-01 | 0.7215E-03 | 0.5828E-01 | 0.5828E+01 |
| 4 | 0.4346E+02 | 0.7250E-03 | 0.1668E-04 | 0.1668E-02 |
| 5 | 0.9969E+03 | 0.1619E-02 | 0.1624E-05 | 0.1624E-03 |

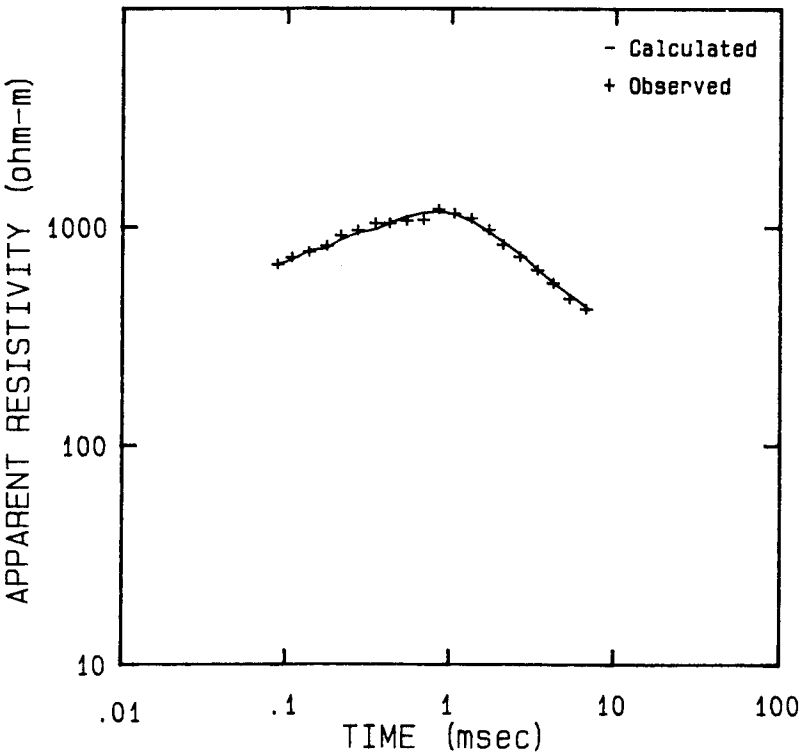
| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.30118E-02 | 0.33203E+03 | |
| 2 | SIGMA( 2) | = | 0.99184E-03 | 0.10082E+04 | |
| 3 | SIGMA( 3) | = | 0.12379E-01 | 0.80784E+02 | |
| 4 | THICK( 1) | = | 0.43464E+02 | | 0.43464E+02 |
| 5 | THICK( 2) | = | 0.99686E+03 | | 0.10403E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML67




## MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 288.89 | 36.932 |
| 1291.4 | 919.74 |
| 114.49 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 67 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.9815E+03 | 0.9891E+03 | -0.7672E+01 | -0.7756E+00 |
| 2 | 0.1100E-03 | 0.5865E+03 | 0.5654E+03 | 0.2114E+02 | 0.3739E+01 |
| 3 | 0.1400E-03 | 0.2796E+03 | 0.2743E+03 | 0.5315E+01 | 0.1937E+01 |
| 4 | 0.1770E-03 | 0.1374E+03 | 0.1426E+03 | -0.5231E+01 | -0.3669E+01 |
| 5 | 0.2200E-03 | 0.7360E+02 | 0.7830E+02 | -0.4705E+01 | -0.6008E+01 |
| 6 | 0.2800E-03 | 0.3713E+02 | 0.3857E+02 | -0.1439E+01 | -0.3732E+01 |
| 7 | 0.3550E-03 | 0.1768E+02 | 0.1935E+02 | -0.1670E+01 | -0.8629E+01 |
| 8 | 0.4430E-03 | 0.1072E+02 | 0.1059E+02 | 0.1354E+00 | 0.1279E+01 |
| 9 | 0.5540E-03 | 0.5624E+01 | 0.5257E+01 | 0.3671E+00 | 0.6983E+01 |
| 10 | 0.7130E-03 | 0.3073E+01 | 0.2729E+01 | 0.3439E+00 | 0.1260E+02 |
| 11 | 0.8810E-03 | 0.1523E+01 | 0.1563E+01 | -0.4017E-01 | -0.2570E+01 |
| 12 | 0.1096E-02 | 0.9360E+00 | 0.9390E+00 | -0.2958E-02 | -0.3150E+00 |
| 13 | 0.1411E-02 | 0.6030E+00 | 0.5774E+00 | 0.2564E-01 | 0.4440E+01 |
| 14 | 0.1795E-02 | 0.3510E+00 | 0.3701E+00 | -0.1915E-01 | -0.5173E+01 |
| 15 | 0.2224E-02 | 0.2700E+00 | 0.2629E+00 | 0.7098E-02 | 0.2700E+01 |
| 16 | 0.2850E-02 | 0.1790E+00 | 0.1746E+00 | 0.4405E-02 | 0.2523E+01 |
| 17 | 0.3600E-02 | 0.1180E+00 | 0.1200E+00 | -0.1955E-02 | -0.1630E+01 |
| 18 | 0.4490E-02 | 0.8300E-01 | 0.8459E-01 | -0.1586E-02 | -0.1875E+01 |
| 19 | 0.5700E-02 | 0.5900E-01 | 0.5673E-01 | 0.2267E-02 | 0.3996E+01 |
| 20 | 0.7190E-02 | 0.3800E-01 | 0.3827E-01 | -0.2709E-03 | -0.7078E+00 |

** %RMSERR= 4.77

CORRELATION MATRIX

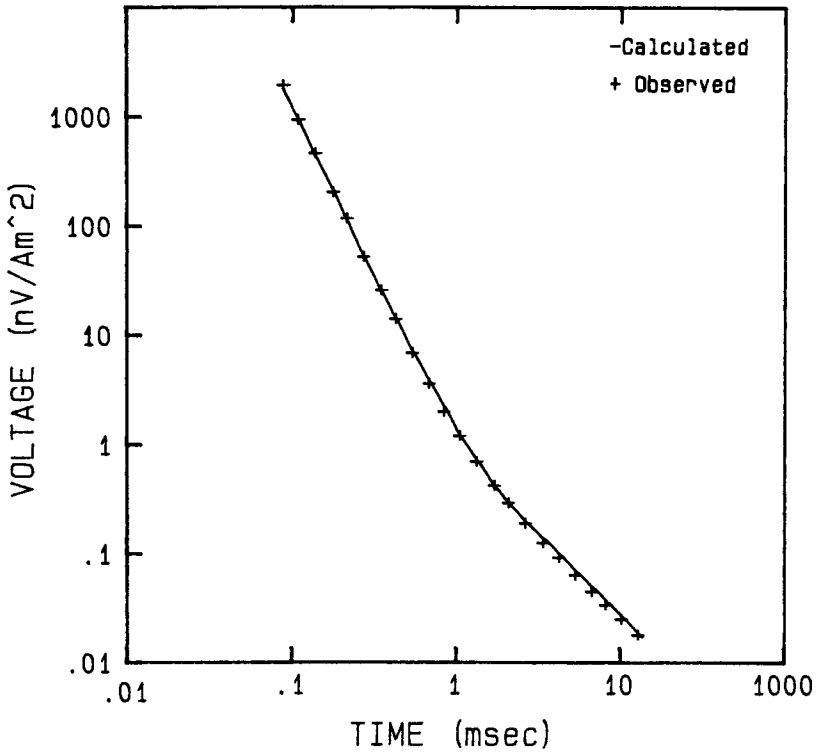
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.9990E-01 | 0.1000E+01 | | | |
| 3 | 0.4600E+00 | -0.3376E+00 | 0.1000E+01 | | |
| 4 | -0.6300E+00 | -0.4170E+00 | -0.4800E+00 | 0.1000E+01 | |
| 5 | 0.7650E+00 | -0.3696E+00 | 0.5402E+00 | -0.2771E+00 | 0.1000E+01 |

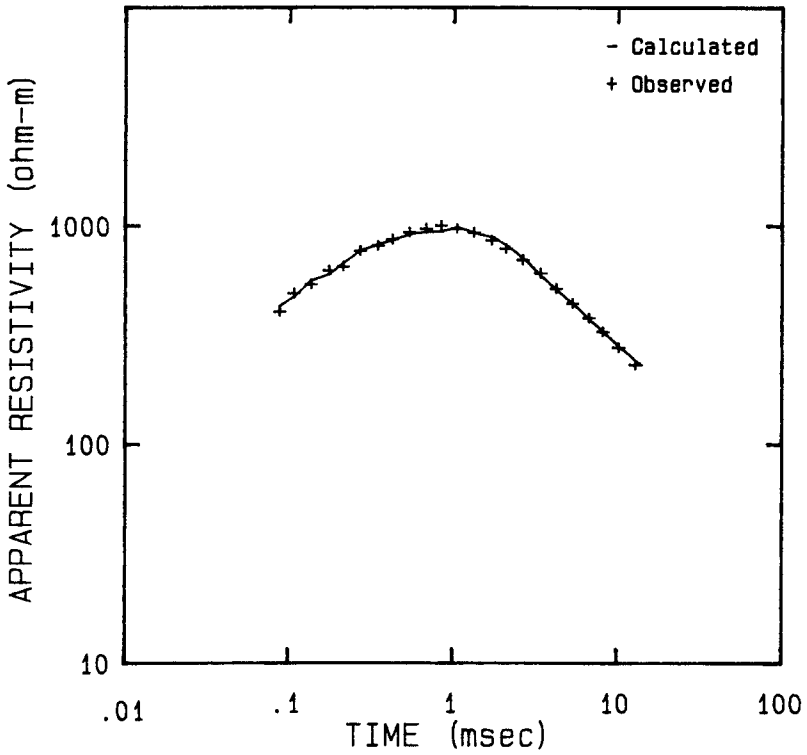
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.3461E-02 | 0.1173E-03 | 0.3388E-01 | 0.3388E+01 |
| 2 | 0.7744E-03 | 0.1437E-03 | 0.1856E+00 | 0.1856E+02 |
| 3 | 0.8735E-02 | 0.7660E-03 | 0.8769E-01 | 0.8769E+01 |
| 4 | 0.3693E+02 | 0.4067E-03 | 0.1101E-04 | 0.1101E-02 |
| 5 | 0.9197E+03 | 0.2021E-02 | 0.2197E-05 | 0.2197E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.34615E-02 | 0.28889E+03 | |
| 2 | SIGMA( 2) | = | 0.77437E-03 | 0.12914E+04 | |
| 3 | SIGMA( 3) | = | 0.87348E-02 | 0.11449E+03 | |
| 4 | THICK( 1) | = | 0.36932E+02 | | 0.36932E+02 |
| 5 | THICK( 2) | = | 0.91974E+03 | | 0.95667E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML68




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 156 | 31.276 |
| 1546.4 | 562.68 |
| 394.96 | 462.04 |
| 50.642 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 68 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1959E+04 | 0.1815E+04 | 0.1441E+03 | 0.7939E+01 |
| 2 | 0.1100E-03 | 0.9431E+03 | 0.9959E+03 | -0.5275E+02 | -0.5297E+01 |
| 3 | 0.1400E-03 | 0.4644E+03 | 0.4394E+03 | 0.2502E+02 | 0.5693E+01 |
| 4 | 0.1770E-03 | 0.2051E+03 | 0.2171E+03 | -0.1200E+02 | -0.5528E+01 |
| 5 | 0.2200E-03 | 0.1180E+03 | 0.1117E+03 | 0.6318E+01 | 0.5658E+01 |
| 6 | 0.2800E-03 | 0.5243E+02 | 0.5230E+02 | 0.1285E+00 | 0.2457E+00 |
| 7 | 0.3550E-03 | 0.2577E+02 | 0.2516E+02 | 0.6146E+00 | 0.2443E+01 |
| 8 | 0.4430E-03 | 0.1413E+02 | 0.1427E+02 | -0.1387E+00 | -0.9723E+00 |
| 9 | 0.5540E-03 | 0.6886E+01 | 0.7097E+01 | -0.2112E+00 | -0.2976E+01 |
| 10 | 0.7130E-03 | 0.3598E+01 | 0.3775E+01 | -0.1771E+00 | -0.4691E+01 |
| 11 | 0.8810E-03 | 0.2000E+01 | 0.2182E+01 | -0.1822E+00 | -0.8347E+01 |
| 12 | 0.1096E-02 | 0.1203E+01 | 0.1177E+01 | 0.2589E-01 | 0.2200E+01 |
| 13 | 0.1411E-02 | 0.6990E+00 | 0.7070E+00 | -0.8045E-02 | -0.1138E+01 |
| 14 | 0.1795E-02 | 0.4230E+00 | 0.4043E+00 | 0.1867E-01 | 0.4618E+01 |
| 15 | 0.2224E-02 | 0.2920E+00 | 0.2812E+00 | 0.1079E-01 | 0.3836E+01 |
| 16 | 0.2850E-02 | 0.1910E+00 | 0.1909E+00 | 0.1301E-03 | 0.6818E-01 |
| 17 | 0.3600E-02 | 0.1260E+00 | 0.1348E+00 | -0.8759E-02 | -0.6500E+01 |
| 18 | 0.4490E-02 | 0.9200E-01 | 0.9677E-01 | -0.4775E-02 | -0.4934E+01 |
| 19 | 0.5700E-02 | 0.6400E-01 | 0.6730E-01 | -0.3302E-02 | -0.4906E+01 |
| 20 | 0.7190E-02 | 0.4500E-01 | 0.4805E-01 | -0.3049E-02 | -0.6345E+01 |
| 21 | 0.8800E-02 | 0.3400E-01 | 0.3567E-01 | -0.1667E-02 | -0.4674E+01 |
| 22 | 0.1100E-01 | 0.2500E-01 | 0.2556E-01 | -0.5585E-03 | -0.2185E+01 |
| 23 | 0.1400E-01 | 0.1800E-01 | 0.1751E-01 | 0.4912E-03 | 0.2805E+01 |

** %RMSERR= 4.67

CORRELATION MATRIX

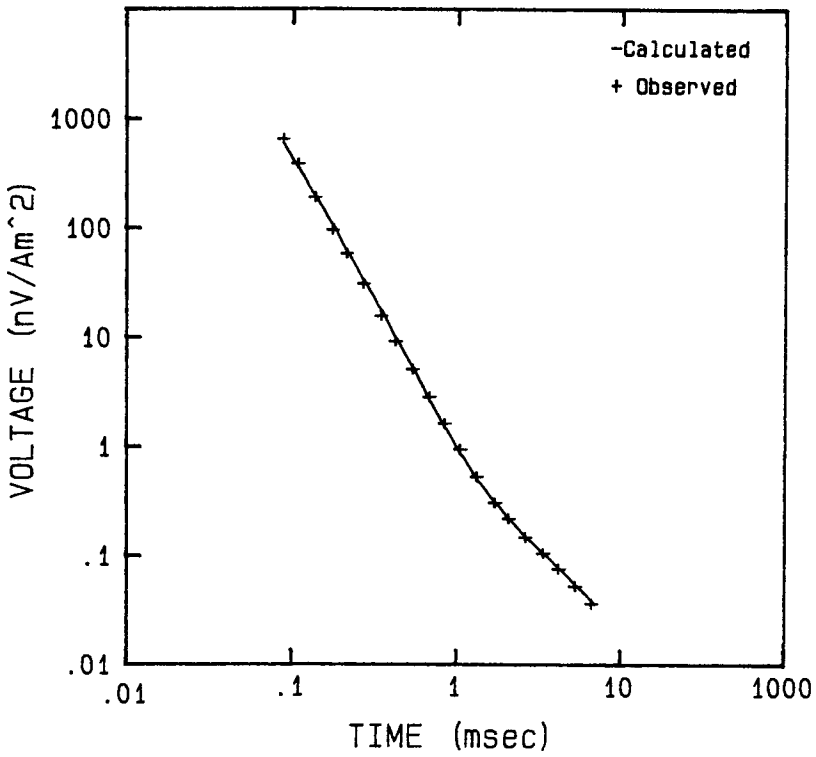
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | 0.7705E-01 | 0.1000E+01 | | | | | |
| 3 | 0.2528E+00 | -0.2610E+00 | 0.1000E+01 | | | | |
| 4 | -0.3588E+00 | -0.1688E-01 | -0.8591E+00 | 0.1000E+01 | | | |
| 5 | -0.5733E+00 | -0.4154E+00 | 0.4406E+00 | -0.3277E+00 | 0.1000E+01 | | |
| 6 | -0.6749E+00 | -0.3099E+00 | 0.2224E+00 | -0.7278E-02 | 0.6102E+00 | 0.1000E+01 | |
| 7 | 0.2758E+00 | -0.3721E+00 | -0.3060E+00 | 0.2134E+00 | -0.2854E+00 | -0.3828E+00 | 0.1000E |

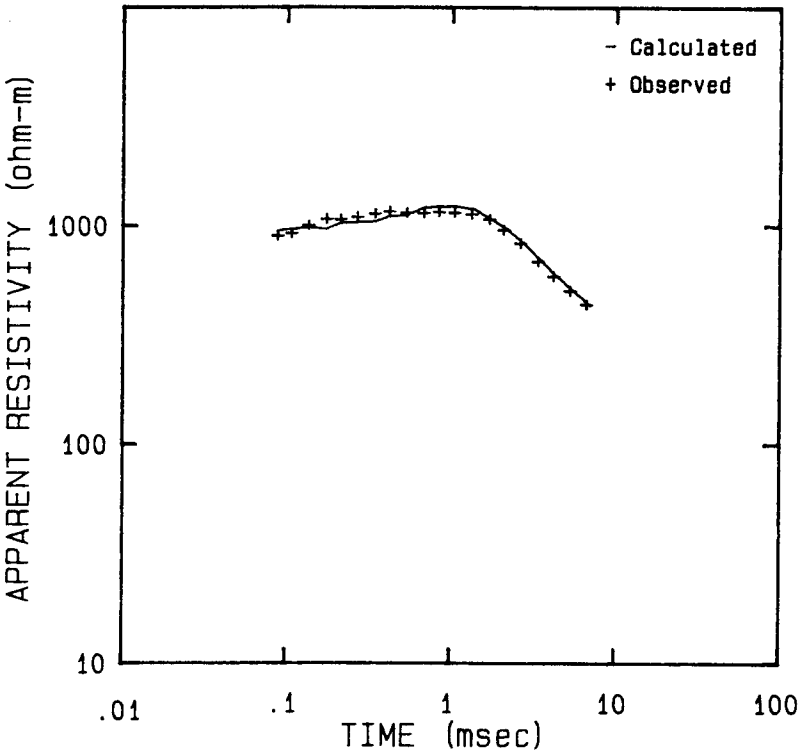
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.6410E-02 | 0.8396E-04 | 0.1310E-01 | 0.1310E+01 |
| 2 | 0.6467E-03 | 0.1568E-03 | 0.2424E+00 | 0.2424E+02 |
| 3 | 0.2532E-02 | 0.3761E-03 | 0.1485E+00 | 0.1485E+02 |
| 4 | 0.1975E-01 | 0.1300E-02 | 0.6583E-01 | 0.6583E+01 |
| 5 | 0.3128E+02 | 0.1708E-03 | 0.5462E-05 | 0.5462E-03 |
| 6 | 0.5627E+03 | 0.1185E-02 | 0.2106E-05 | 0.2106E-03 |
| 7 | 0.4620E+03 | 0.3300E-02 | 0.7142E-05 | 0.7142E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.64101E-02 | 0.15600E+03 | |
| 2 | SIGMA( 2) | = | 0.64666E-03 | 0.15464E+04 | |
| 3 | SIGMA( 3) | = | 0.25319E-02 | 0.39496E+03 | |
| 4 | SIGMA( 4) | = | 0.19746E-01 | 0.50642E+02 | |
| 5 | THICK( 1) | = | 0.31276E+02 | | 0.31276E+02 |
| 6 | THICK( 2) | = | 0.56268E+03 | | 0.59396E+03 |
| 7 | THICK( 3) | = | 0.46202E+03 | | 0.10560E+04 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML69




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 810.83 | 85.753 |
| 1096.5 | 998.35 |
| 77.037 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 69 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.6548E+03 | 0.6112E+03 | 0.4368E+02 | 0.7147E+01 |
| 2 | 0.1100E-03 | 0.3880E+03 | 0.3631E+03 | 0.2488E+02 | 0.6851E+01 |
| 3 | 0.1400E-03 | 0.1906E+03 | 0.1960E+03 | -0.5409E+01 | -0.2760E+01 |
| 4 | 0.1770E-03 | 0.9580E+02 | 0.1076E+03 | -0.1179E+02 | -0.1096E+02 |
| 5 | 0.2200E-03 | 0.5836E+02 | 0.6169E+02 | -0.3335E+01 | -0.5405E+01 |
| 6 | 0.2800E-03 | 0.3076E+02 | 0.3325E+02 | -0.2493E+01 | -0.7496E+01 |
| 7 | 0.3550E-03 | 0.1557E+02 | 0.1752E+02 | -0.1949E+01 | -0.1112E+02 |
| 8 | 0.4430E-03 | 0.9105E+01 | 0.9753E+01 | -0.6481E+00 | -0.6645E+01 |
| 9 | 0.5540E-03 | 0.5082E+01 | 0.5232E+01 | -0.1500E+00 | -0.2867E+01 |
| 10 | 0.7130E-03 | 0.2819E+01 | 0.2575E+01 | 0.2438E+00 | 0.9465E+01 |
| 11 | 0.8810E-03 | 0.1621E+01 | 0.1476E+01 | 0.1453E+00 | 0.9844E+01 |
| 12 | 0.1096E-02 | 0.9360E+00 | 0.8439E+00 | 0.9209E-01 | 0.1091E+02 |
| 13 | 0.1411E-02 | 0.5260E+00 | 0.4828E+00 | 0.4319E-01 | 0.8945E+01 |
| 14 | 0.1795E-02 | 0.3040E+00 | 0.3025E+00 | 0.1492E-02 | 0.4931E+00 |
| 15 | 0.2224E-02 | 0.2180E+00 | 0.2121E+00 | 0.5923E-02 | 0.2793E+01 |
| 16 | 0.2850E-02 | 0.1470E+00 | 0.1450E+00 | 0.1958E-02 | 0.1350E+01 |
| 17 | 0.3600E-02 | 0.1050E+00 | 0.1022E+00 | 0.2791E-02 | 0.2731E+01 |
| 18 | 0.4490E-02 | 0.7600E-01 | 0.7492E-01 | 0.1085E-02 | 0.1448E+01 |
| 19 | 0.5700E-02 | 0.5300E-01 | 0.5236E-01 | 0.6411E-03 | 0.1225E+01 |
| 20 | 0.7190E-02 | 0.3600E-01 | 0.3678E-01 | -0.7792E-03 | -0.2119E+01 |

** %RMSERR= 6.70

CORRELATION MATRIX

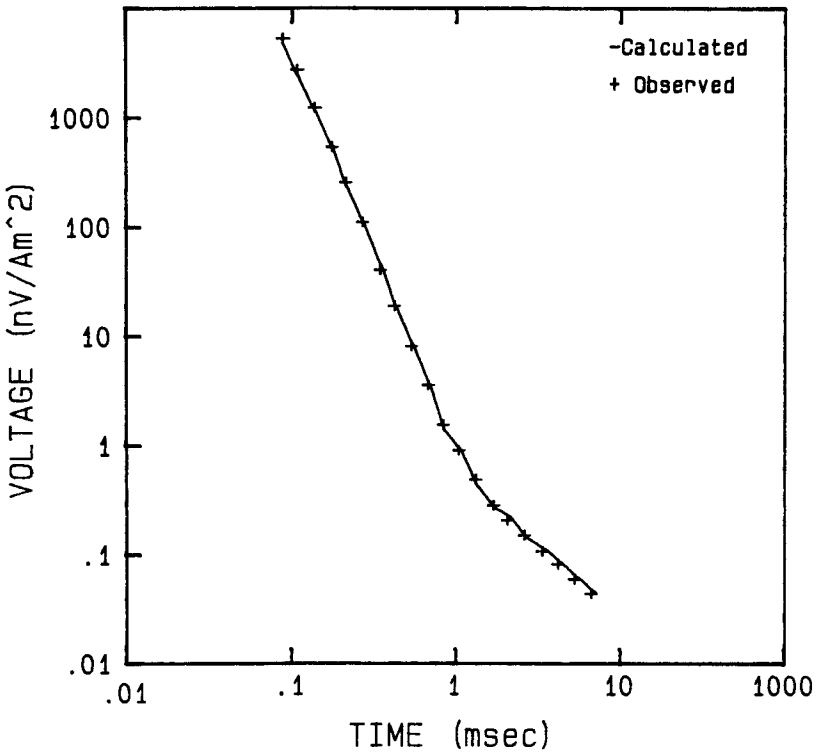
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.5305E+00 | 0.1000E+01 | | | |
| 3 | 0.3486E+00 | 0.4442E-01 | 0.1000E+01 | | |
| 4 | -0.5269E+00 | -0.5333E+00 | -0.2135E+00 | 0.1000E+01 | |
| 5 | -0.5379E+00 | -0.7975E-01 | -0.2074E+00 | 0.2971E+00 | 0.1000E+01 |

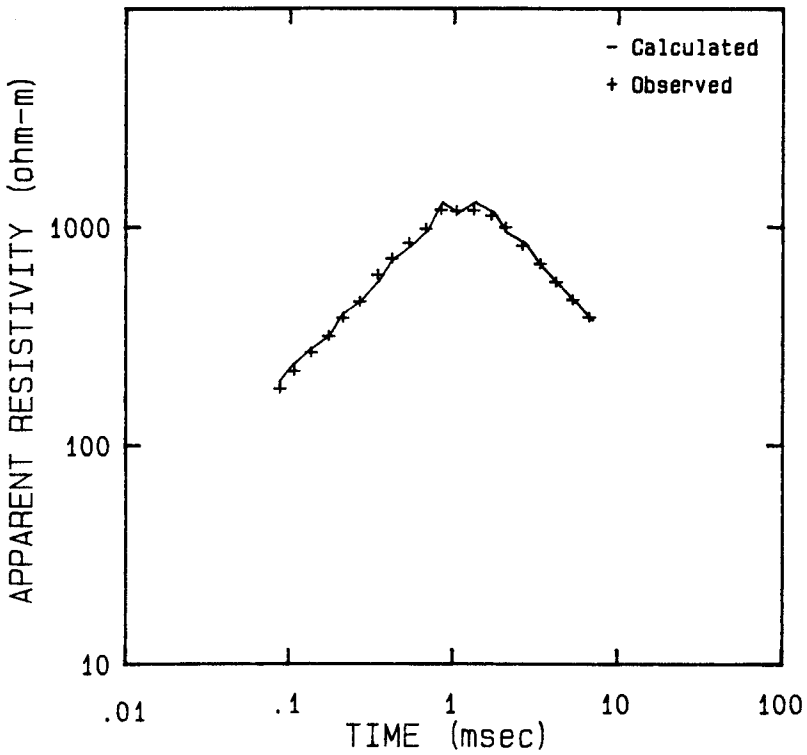
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1233E-02 | 0.6969E-04 | 0.5651E-01 | 0.5651E+01 |
| 2 | 0.9120E-03 | 0.2048E-03 | 0.2245E+00 | 0.2245E+02 |
| 3 | 0.1298E-01 | 0.5979E-03 | 0.4606E-01 | 0.4606E+01 |
| 4 | 0.8575E+02 | 0.8475E-03 | 0.9883E-05 | 0.9883E-03 |
| 5 | 0.9984E+03 | 0.3177E-02 | 0.3182E-05 | 0.3182E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.12333E-02 | 0.81083E+03 | |
| 2 | SIGMA( 2) | = | 0.91196E-03 | 0.10965E+04 | |
| 3 | SIGMA( 3) | = | 0.12981E-01 | 0.77037E+02 | |
| 4 | THICK( 1) | = | 0.85753E+02 | | 0.85753E+02 |
| 5 | THICK( 2) | = | 0.99839E+03 | | 0.10841E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML70




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 103.98 | 39.794 |
| 4854.1 | 983.11 |
| 42.75 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 70 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.5290E+04 | 0.4828E+04 | 0.4621E+03 | 0.9572E+01 |
| 2 | 0.1100E-03 | 0.2727E+04 | 0.2495E+04 | 0.2315E+03 | 0.9278E+01 |
| 3 | 0.1400E-03 | 0.1228E+04 | 0.1177E+04 | 0.5146E+02 | 0.4374E+01 |
| 4 | 0.1770E-03 | 0.5384E+03 | 0.5422E+03 | -0.3820E+01 | -0.7046E+00 |
| 5 | 0.2200E-03 | 0.2538E+03 | 0.2379E+03 | 0.1583E+02 | 0.6653E+01 |
| 6 | 0.2800E-03 | 0.1103E+03 | 0.1110E+03 | -0.7426E+00 | -0.6689E+00 |
| 7 | 0.3550E-03 | 0.4030E+02 | 0.4505E+02 | -0.4755E+01 | -0.1055E+02 |
| 8 | 0.4430E-03 | 0.1891E+02 | 0.1926E+02 | -0.3456E+00 | -0.1794E+01 |
| 9 | 0.5540E-03 | 0.8080E+01 | 0.8569E+01 | -0.4894E+00 | -0.5711E+01 |
| 10 | 0.7130E-03 | 0.3560E+01 | 0.3713E+01 | -0.1532E+00 | -0.4126E+01 |
| 11 | 0.8810E-03 | 0.1546E+01 | 0.1381E+01 | 0.1652E+00 | 0.1196E+02 |
| 12 | 0.1096E-02 | 0.9010E+00 | 0.9274E+00 | -0.2636E-01 | -0.2843E+01 |
| 13 | 0.1411E-02 | 0.4880E+00 | 0.4294E+00 | 0.5863E-01 | 0.1365E+02 |
| 14 | 0.1795E-02 | 0.2820E+00 | 0.2678E+00 | 0.1425E-01 | 0.5321E+01 |
| 15 | 0.2224E-02 | 0.2060E+00 | 0.2261E+00 | -0.2013E-01 | -0.8902E+01 |
| 16 | 0.2850E-02 | 0.1510E+00 | 0.1442E+00 | 0.6827E-02 | 0.4735E+01 |
| 17 | 0.3600E-02 | 0.1070E+00 | 0.1135E+00 | -0.6452E-02 | -0.5687E+01 |
| 18 | 0.4490E-02 | 0.8200E-01 | 0.8514E-01 | -0.3143E-02 | -0.3691E+01 |
| 19 | 0.5700E-02 | 0.6000E-01 | 0.6220E-01 | -0.2195E-02 | -0.3530E+01 |
| 20 | 0.7190E-02 | 0.4400E-01 | 0.4605E-01 | -0.2050E-02 | -0.4453E+01 |

** %RMSERR= 6.90

CORRELATION MATRIX

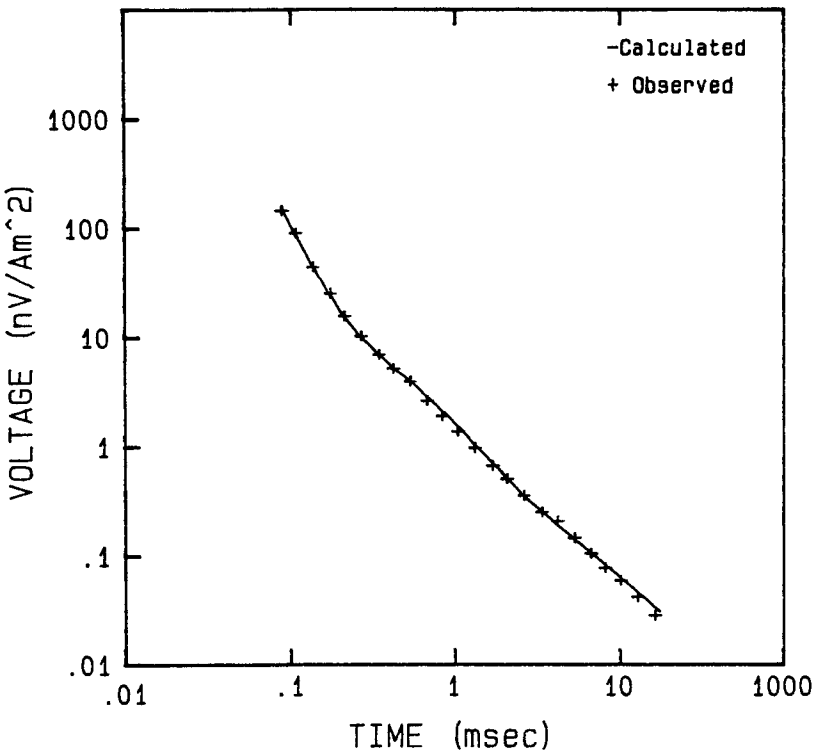
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.3033E+00 | 0.1000E+01 | | | |
| 3 | 0.2865E+00 | -0.5613E+00 | 0.1000E+01 | | |
| 4 | 0.2547E-01 | -0.9077E+00 | 0.4039E+00 | 0.1000E+01 | |
| 5 | -0.6806E+00 | 0.8129E+00 | -0.6245E+00 | -0.6493E+00 | 0.1000E+01 |

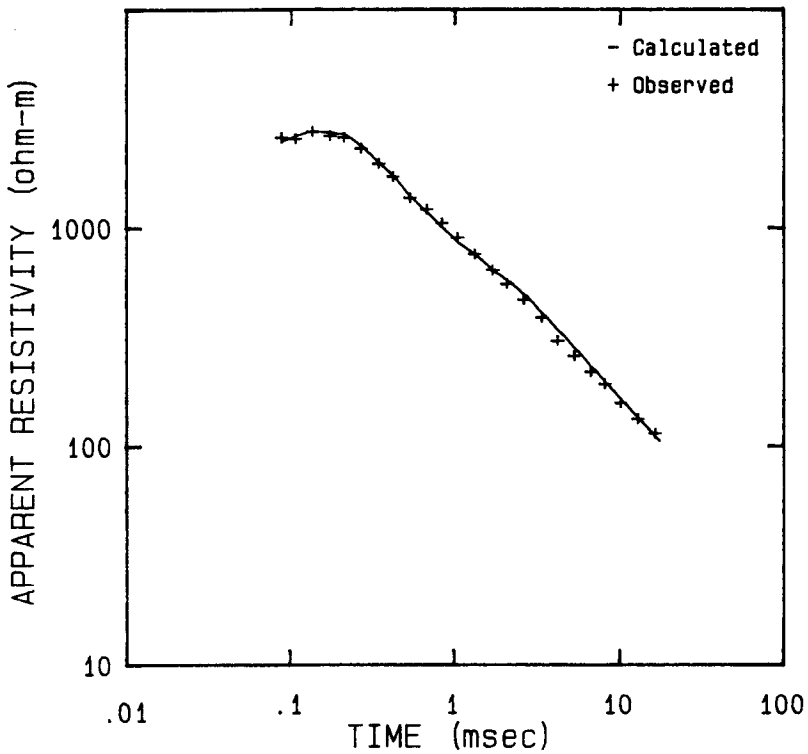
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.9617E-02 | 0.2596E-03 | 0.2700E-01 | 0.2700E+01 |
| 2 | 0.2060E-03 | 0.2377E-03 | 0.1154E+01 | 0.1154E+03 |
| 3 | 0.2339E-01 | 0.2229E-02 | 0.9528E-01 | 0.9528E+01 |
| 4 | 0.3979E+02 | 0.4438E-03 | 0.1115E-04 | 0.1115E-02 |
| 5 | 0.9831E+03 | 0.2607E-02 | 0.2652E-05 | 0.2652E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.96170E-02 | 0.10398E+03 | |
| 2 | SIGMA( 2) | = | 0.20601E-03 | 0.48541E+04 | |
| 3 | SIGMA( 3) | = | 0.23392E-01 | 0.42750E+02 | |
| 4 | THICK( 1) | = | 0.39794E+02 | | 0.39794E+02 |
| 5 | THICK( 2) | = | 0.98306E+03 | | 0.10229E+04 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML71




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 2107 | 597.43 |
| 66.899 | 309.05 |
| 13.316 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 71 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1452E+03 | 0.1557E+03 | -0.1057E+02 | -0.6787E+01 |
| 2 | 0.1100E-03 | 0.8978E+02 | 0.8620E+02 | 0.3584E+01 | 0.4158E+01 |
| 3 | 0.1400E-03 | 0.4382E+02 | 0.4328E+02 | 0.5399E+00 | 0.1247E+01 |
| 4 | 0.1770E-03 | 0.2501E+02 | 0.2381E+02 | 0.1196E+01 | 0.5024E+01 |
| 5 | 0.2200E-03 | 0.1552E+02 | 0.1481E+02 | 0.7114E+00 | 0.4804E+01 |
| 6 | 0.2800E-03 | 0.1013E+02 | 0.9720E+01 | 0.4100E+00 | 0.4218E+01 |
| 7 | 0.3550E-03 | 0.6910E+01 | 0.6837E+01 | 0.7259E-01 | 0.1062E+01 |
| 8 | 0.4430E-03 | 0.5140E+01 | 0.5107E+01 | 0.3259E-01 | 0.6380E+00 |
| 9 | 0.5540E-03 | 0.3930E+01 | 0.3888E+01 | 0.4190E-01 | 0.1078E+01 |
| 10 | 0.7130E-03 | 0.2600E+01 | 0.2765E+01 | -0.1647E+00 | -0.5956E+01 |
| 11 | 0.8810E-03 | 0.1890E+01 | 0.2056E+01 | -0.1656E+00 | -0.8055E+01 |
| 12 | 0.1096E-02 | 0.1370E+01 | 0.1487E+01 | -0.1173E+00 | -0.7887E+01 |
| 13 | 0.1411E-02 | 0.9680E+00 | 0.9913E+00 | -0.2329E-01 | -0.2349E+01 |
| 14 | 0.1795E-02 | 0.6660E+00 | 0.6773E+00 | -0.1129E-01 | -0.1667E+01 |
| 15 | 0.2224E-02 | 0.5090E+00 | 0.4827E+00 | 0.2630E-01 | 0.5448E+01 |
| 16 | 0.2850E-02 | 0.3530E+00 | 0.3320E+00 | 0.2096E-01 | 0.6311E+01 |
| 17 | 0.3600E-02 | 0.2490E+00 | 0.2405E+00 | 0.8525E-02 | 0.3545E+01 |
| 18 | 0.4490E-02 | 0.2060E+00 | 0.1805E+00 | 0.2552E-01 | 0.1414E+02 |
| 19 | 0.5700E-02 | 0.1450E+00 | 0.1333E+00 | 0.1173E-01 | 0.8803E+01 |
| 20 | 0.7190E-02 | 0.1040E+00 | 0.1001E+00 | 0.3927E-02 | 0.3925E+01 |
| 21 | 0.8800E-02 | 0.7700E-01 | 0.7798E-01 | -0.9804E-03 | -0.1257E+01 |
| 22 | 0.1100E-01 | 0.5900E-01 | 0.5881E-01 | 0.1864E-03 | 0.3170E+00 |
| 23 | 0.1400E-01 | 0.4200E-01 | 0.4312E-01 | -0.1124E-02 | -0.2606E+01 |
| 24 | 0.1800E-01 | 0.2800E-01 | 0.3105E-01 | -0.3051E-02 | -0.9826E+01 |

** %RMSERR= 5.72

CORRELATION MATRIX

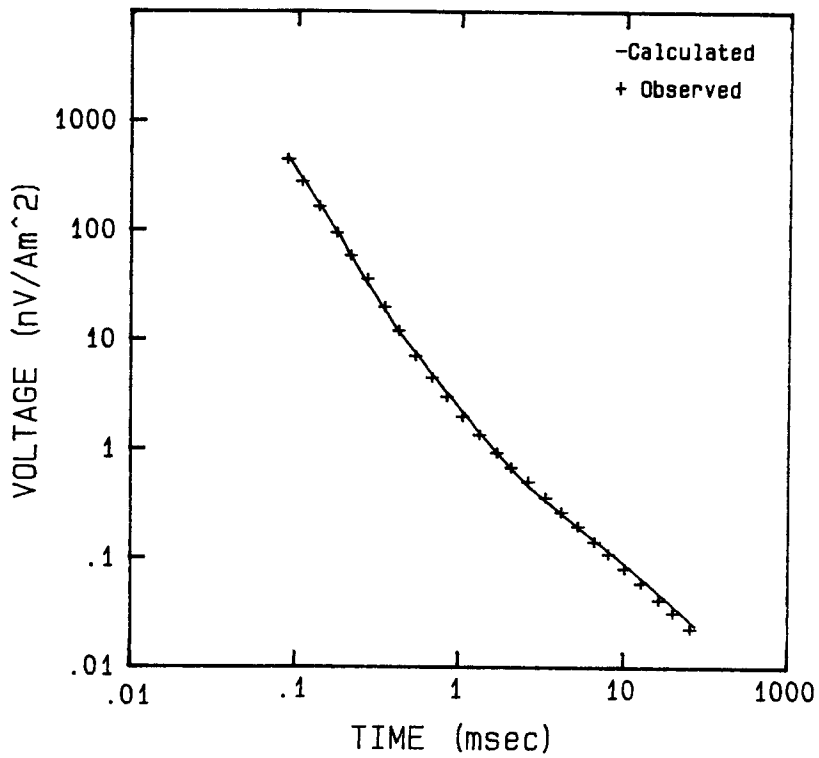
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.1652E+00 | 0.1000E+01 | | | |
| 3 | -0.1346E+00 | -0.4451E+00 | 0.1000E+01 | | |
| 4 | 0.2419E+00 | 0.9133E-01 | 0.3302E-01 | 0.1000E+01 | |
| 5 | 0.2567E-01 | -0.3128E+00 | 0.6541E+00 | 0.5752E-01 | 0.1000E+01 |

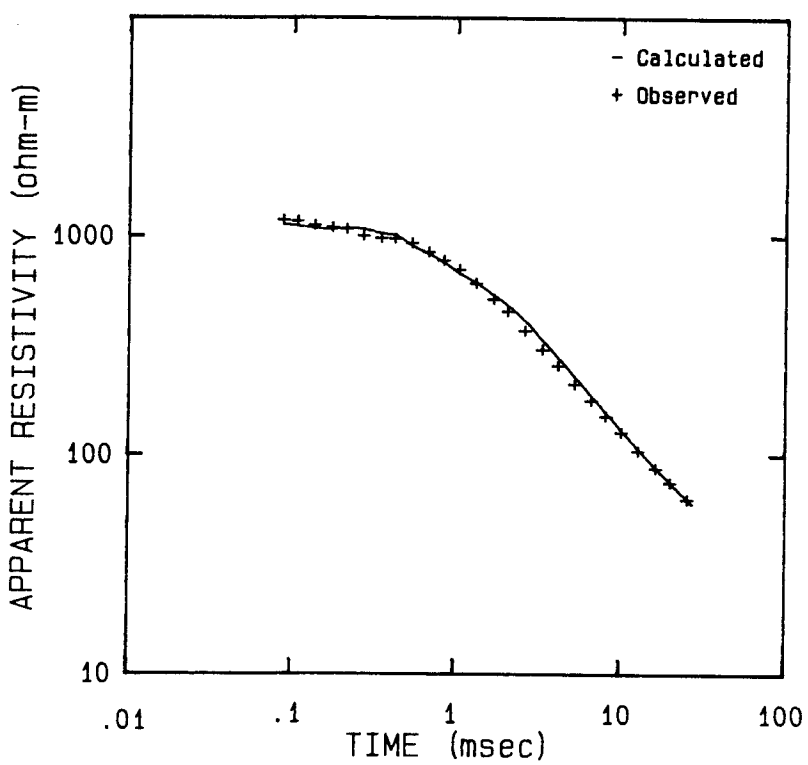
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4746E-03 | 0.8248E-04 | 0.1738E+00 | 0.1738E+02 |
| 2 | 0.1495E-01 | 0.8205E-03 | 0.5489E-01 | 0.5489E+01 |
| 3 | 0.7510E-01 | 0.3534E-02 | 0.4706E-01 | 0.4706E+01 |
| 4 | 0.5974E+03 | 0.1763E-02 | 0.2951E-05 | 0.2951E-03 |
| 5 | 0.3090E+03 | 0.3474E-02 | 0.1124E-04 | 0.1124E-02 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.47460E-03 | 0.21070E+04 | |
| 2 | SIGMA( 2) | = | 0.14948E-01 | 0.66899E+02 | |
| 3 | SIGMA( 3) | = | 0.75097E-01 | 0.13316E+02 | |
| 4 | THICK( 1) | = | 0.59743E+03 | | 0.59743E+03 |
| 5 | THICK( 2) | = | 0.30905E+03 | | 0.90648E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML72




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1605.1 | 145.26 |
| 639.32 | 411.74 |
| 61.328 | 235.26 |
| 10.004 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 72 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4412E+03 | 0.4735E+03 | -0.3229E+02 | -0.6820E+01 |
| 2 | 0.1100E-03 | 0.2741E+03 | 0.2976E+03 | -0.2347E+02 | -0.7888E+01 |
| 3 | 0.1400E-03 | 0.1630E+03 | 0.1709E+03 | -0.7948E+01 | -0.4649E+01 |
| 4 | 0.1770E-03 | 0.9345E+02 | 0.9696E+02 | -0.3506E+01 | -0.3616E+01 |
| 5 | 0.2200E-03 | 0.5807E+02 | 0.5682E+02 | 0.1251E+01 | 0.2201E+01 |
| 6 | 0.2800E-03 | 0.3534E+02 | 0.3164E+02 | 0.3705E+01 | 0.1171E+02 |
| 7 | 0.3550E-03 | 0.1953E+02 | 0.1817E+02 | 0.1361E+01 | 0.7489E+01 |
| 8 | 0.4430E-03 | 0.1190E+02 | 0.1130E+02 | 0.6011E+00 | 0.5319E+01 |
| 9 | 0.5540E-03 | 0.7001E+01 | 0.7382E+01 | -0.3812E+00 | -0.5164E+01 |
| 10 | 0.7130E-03 | 0.4457E+01 | 0.4629E+01 | -0.1722E+00 | -0.3720E+01 |
| 11 | 0.8810E-03 | 0.2968E+01 | 0.3131E+01 | -0.1626E+00 | -0.5195E+01 |
| 12 | 0.1096E-02 | 0.1960F+01 | 0.2114E+01 | -0.1543E+00 | -0.7299E+01 |
| 13 | 0.1411E-02 | 0.1333E+01 | 0.1350E+01 | -0.1739E-01 | -0.1288E+01 |
| 14 | 0.1795E-02 | 0.9140E+00 | 0.8796E+00 | 0.3436E-01 | 0.3906E+01 |
| 15 | 0.2224E-02 | 0.6700E+00 | 0.6272E+00 | 0.4277E-01 | 0.6819E+01 |
| 16 | 0.2850E-02 | 0.4970E+00 | 0.4401E+00 | 0.5690E-01 | 0.1293E+02 |
| 17 | 0.3600E-02 | 0.3570E+00 | 0.3225E+00 | 0.3447E-01 | 0.1069E+02 |
| 18 | 0.4490E-02 | 0.2630E+00 | 0.2445E+00 | 0.1845E-01 | 0.7545E+01 |
| 19 | 0.5700E-02 | 0.1950E+00 | 0.1838E+00 | 0.1118E-01 | 0.6079E+01 |
| 20 | 0.7190E-02 | 0.1410E+00 | 0.1395E+00 | 0.1516E-02 | 0.1087E+01 |
| 21 | 0.8800E-02 | 0.1090E+00 | 0.1095E+00 | -0.5220E-03 | -0.4767E+00 |
| 22 | 0.1100E-01 | 0.8000E-01 | 0.8337E-01 | -0.3366E-02 | -0.4038E+01 |
| 23 | 0.1400E-01 | 0.5900E-01 | 0.6151E-01 | -0.2508E-02 | -0.4077E+01 |
| 24 | 0.1800E-01 | 0.4200E-01 | 0.4419E-01 | -0.2191E-02 | -0.4959E+01 |
| 25 | 0.2200E-01 | 0.3200E-01 | 0.3377E-01 | -0.1770E-02 | -0.5242E+01 |
| 26 | 0.2800E-01 | 0.2200E-01 | 0.2415E-01 | -0.2152E-02 | -0.8911E+01 |

** %RMSERR= 6.49

CORRELATION MATRIX

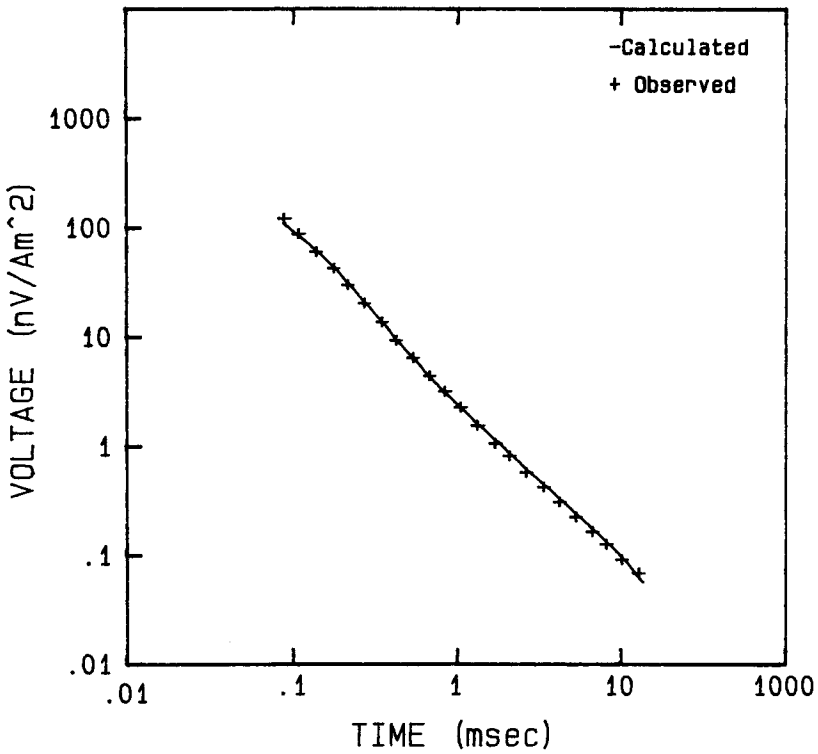
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | | | |
| 2 | -0.4305E-02 | 0.1000E+01 | | | | | |
| 3 | 0.6968E-01 | -0.4666E+00 | 0.1000E+01 | | | | |
| 4 | -0.1961E+00 | -0.1474E+00 | -0.2829E+00 | 0.1000E+01 | | | |
| 5 | -0.7131E-01 | 0.5630E+00 | -0.5588E+00 | 0.3521E-01 | 0.1000E+01 | | |
| 6 | -0.1157E+00 | -0.4196E+00 | 0.6346E+00 | -0.2989E+00 | -0.7168E+00 | 0.1000E+01 | |
| 7 | -0.2480E+00 | -0.2550E+00 | -0.1433E+00 | -0.3428E+00 | -0.2883E+00 | 0.1777E+00 | 0.1000E |

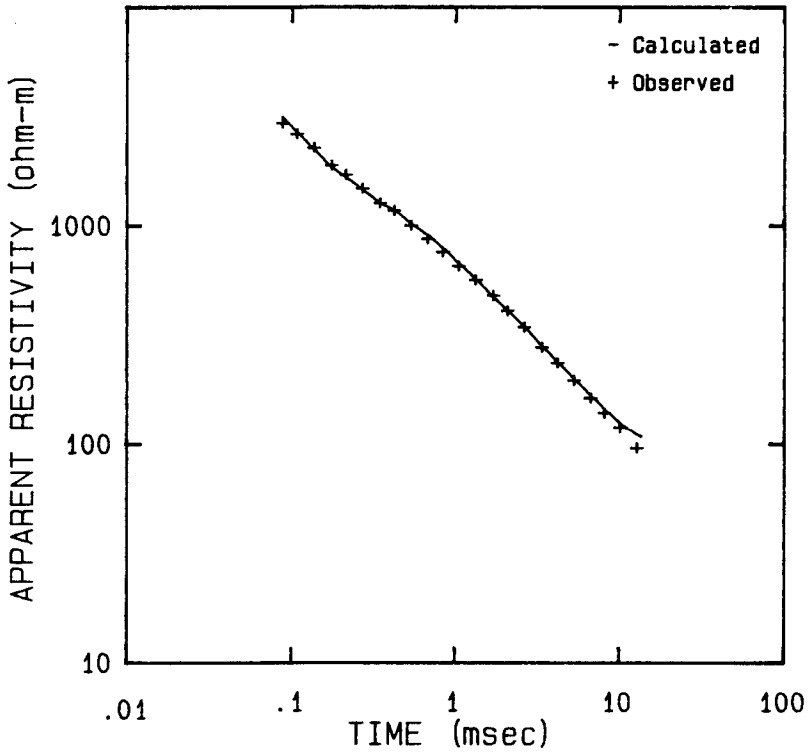
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.6230E-03 | 0.2576E-03 | 0.4135E+00 | 0.4135E+02 |
| 2 | 0.1564E-02 | 0.4190E-03 | 0.2679E+00 | 0.2679E+02 |
| 3 | 0.1631E-01 | 0.2263E-02 | 0.1388E+00 | 0.1388E+02 |
| 4 | 0.9996E-01 | 0.5824E-02 | 0.5826E-01 | 0.5826E+01 |
| 5 | 0.1453E+03 | 0.3056E-02 | 0.2104E-04 | 0.2104E-02 |
| 6 | 0.4117E+03 | 0.3465E-02 | 0.8417E-05 | 0.8417E-03 |
| 7 | 0.2353E+03 | 0.3665E-02 | 0.1558E-04 | 0.1558E-02 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.62303E-03 | 0.16051E+04 | |
| 2 | SIGMA( 2) | = | 0.15642E-02 | 0.63932E+03 | |
| 3 | SIGMA( 3) | = | 0.16306E-01 | 0.61328E+02 | |
| 4 | SIGMA( 4) | = | 0.99963E-01 | 0.10004E+02 | |
| 5 | THICK( 1) | = | 0.14526E+03 | | 0.14526E+03 |
| 6 | THICK( 2) | = | 0.41173E+03 | | 0.55700E+03 |
| 7 | THICK( 3) | = | 0.23526E+03 | | 0.79226E+03 |
| 8 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML73




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 23996 | 328.57 |
| 245.87 | 318.49 |
| 51.394 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 73 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1207E+03 | 0.1093E+03 | 0.1144E+02 | 0.1047E+02 |
| 2 | 0.1100E-03 | 0.8671E+02 | 0.8405E+02 | 0.2662E+01 | 0.3168E+01 |
| 3 | 0.1400E-03 | 0.5923E+02 | 0.6084E+02 | -0.1612E+01 | -0.2649E+01 |
| 4 | 0.1770E-03 | 0.4181E+02 | 0.4317E+02 | -0.1354E+01 | -0.3137E+01 |
| 5 | 0.2200E-03 | 0.2934E+02 | 0.3064E+02 | -0.1298E+01 | -0.4237E+01 |
| 6 | 0.2800E-03 | 0.1994E+02 | 0.2047E+02 | -0.5269E+00 | -0.2574E+01 |
| 7 | 0.3550E-03 | 0.1342E+02 | 0.1348E+02 | -0.6000E-01 | -0.4450E+00 |
| 8 | 0.4430E-03 | 0.9122E+01 | 0.9118E+01 | 0.3631E-02 | 0.3982E-01 |
| 9 | 0.5540E-03 | 0.6337E+01 | 0.6231E+01 | 0.1061E+00 | 0.1703E+01 |
| 10 | 0.7130E-03 | 0.4322E+01 | 0.4132E+01 | 0.1897E+00 | 0.4590E+01 |
| 11 | 0.8810E-03 | 0.3115E+01 | 0.2978E+01 | 0.1372E+00 | 0.4609E+01 |
| 12 | 0.1096E-02 | 0.2234E+01 | 0.2177E+01 | 0.5684E-01 | 0.2611E+01 |
| 13 | 0.1411E-02 | 0.1521E+01 | 0.1530E+01 | -0.8655E-02 | -0.5658E+00 |
| 14 | 0.1795E-02 | 0.1037E+01 | 0.1097E+01 | -0.6037E-01 | -0.5501E+01 |
| 15 | 0.2224E-02 | 0.7990E+00 | 0.8200E+00 | -0.2098E-01 | -0.2559E+01 |
| 16 | 0.2850E-02 | 0.5660E+00 | 0.5846E+00 | -0.1857E-01 | -0.3176E+01 |
| 17 | 0.3600E-02 | 0.4150E+00 | 0.4242E+00 | -0.9202E-02 | -0.2169E+01 |
| 18 | 0.4490E-02 | 0.3040E+00 | 0.3130E+00 | -0.9041E-02 | -0.2888E+01 |
| 19 | 0.5700E-02 | 0.2220E+00 | 0.2264E+00 | -0.4378E-02 | -0.1934E+01 |
| 20 | 0.7190E-02 | 0.1630E+00 | 0.1640E+00 | -0.9585E-03 | -0.5846E+00 |
| 21 | 0.8800E-02 | 0.1250E+00 | 0.1239E+00 | 0.1094E-02 | 0.8829E+00 |
| 22 | 0.1100E-01 | 0.9000E-01 | 0.8826E-01 | 0.1743E-02 | 0.1975E+01 |
| 23 | 0.1400E-01 | 0.6800E-01 | 0.5665E-01 | 0.1135E-01 | 0.2004E+02 |

** %RMSERR= 5.45

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.2300E+00 | 0.1000E+01 | | | |
| 3 | 0.1396E+00 | -0.3231E+00 | 0.1000E+01 | | |
| 4 | -0.3068E+00 | 0.6425E+00 | -0.2300E+00 | 0.1000E+01 | |
| 5 | 0.4780E-01 | -0.5006E+00 | 0.3479E+00 | -0.4679E+00 | 0.1000E+01 |

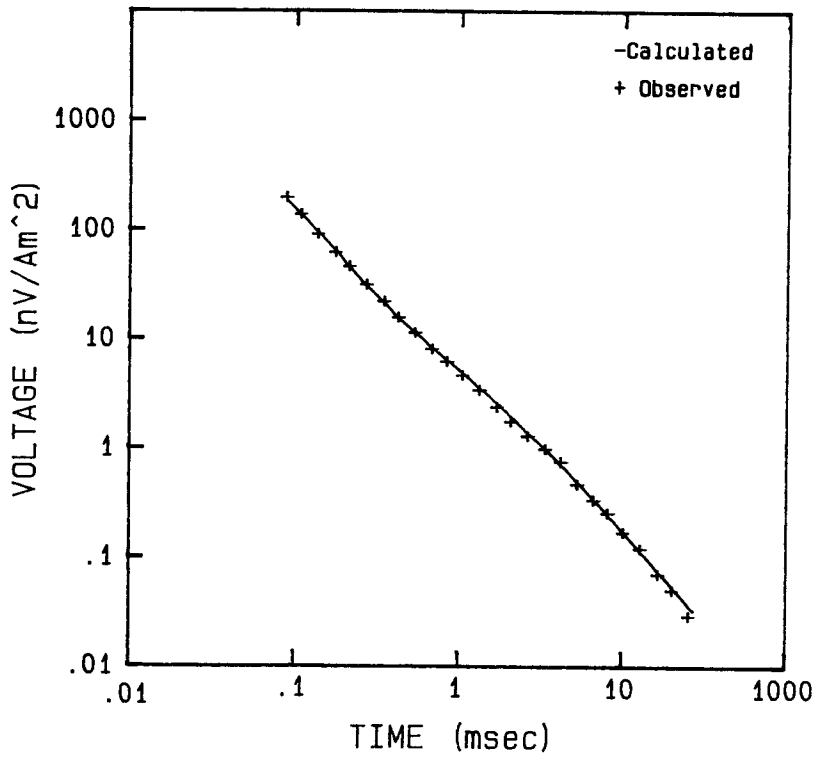
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.4167E-04 | 0.6641E-04 | 0.1594E+01 | 0.1594E+03 |
| 2 | 0.4067E-02 | 0.7790E-03 | 0.1915E+00 | 0.1915E+02 |
| 3 | 0.1946E-01 | 0.1471E-02 | 0.7558E-01 | 0.7558E+01 |
| 4 | 0.3286E+03 | 0.1722E-02 | 0.5242E-05 | 0.5242E-03 |
| 5 | 0.3185E+03 | 0.2864E-02 | 0.8993E-05 | 0.8993E-03 |

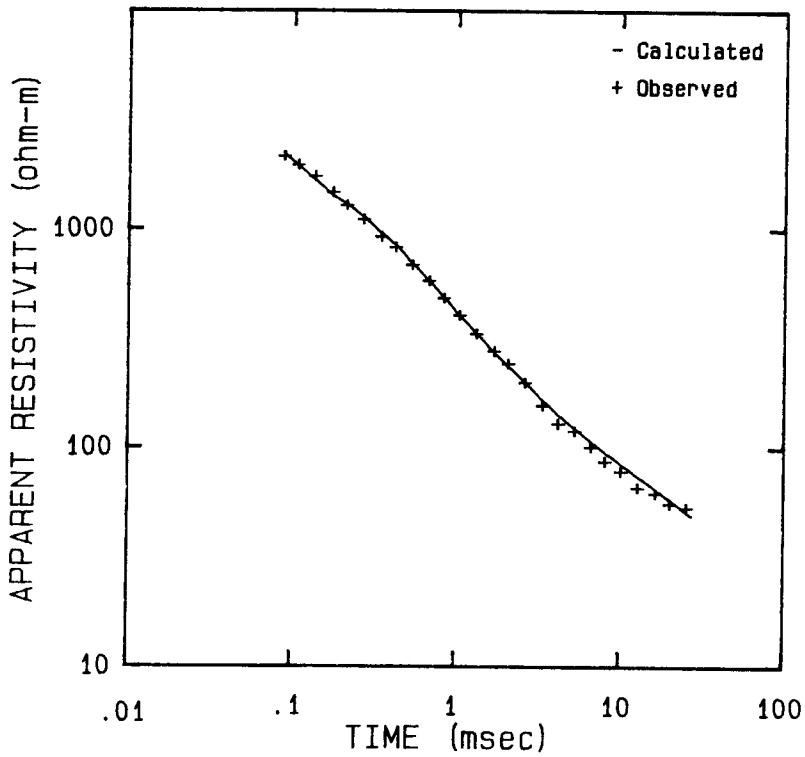
| | PARAMETER NAME | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.41674E-04 | 0.23996E+05 | |
| 2 | SIGMA( 2) = | 0.40671E-02 | 0.24587E+03 | |
| 3 | SIGMA( 3) = | 0.19458E-01 | 0.51394E+02 | |
| 4 | THICK( 1) = | 0.32857E+03 | | 0.32857E+03 |
| 5 | THICK( 2) = | 0.31849E+03 | | 0.64706E+03 |
| 6 | SHIFT = | 0.20700E+03 | | |

EMSURVEYS

# TEM INVERSION

MEDICINE LAKE
STATION: ML74




## MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 7328.9 | 273.89 |
| 167.47 | 179.81 |
| 28.113 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 74 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1938E+03 | 0.1847E+03 | 0.9116E+01 | 0.4937E+01 |
| 2 | 0.1100E-03 | 0.1350E+03 | 0.1360E+03 | -0.9890E+00 | -0.7273E+00 |
| 3 | 0.1400E-03 | 0.8857E+02 | 0.9350E+02 | -0.4921E+01 | -0.5263E+01 |
| 4 | 0.1770E-03 | 0.6066E+02 | 0.6370E+02 | -0.3042E+01 | -0.4776E+01 |
| 5 | 0.2200E-03 | 0.4508E+02 | 0.4411E+02 | 0.9692E+00 | 0.2197E+01 |
| 6 | 0.2800E-03 | 0.3077E+02 | 0.2974E+02 | 0.1031E+01 | 0.3467E+01 |
| 7 | 0.3550E-03 | 0.2156E+02 | 0.2068E+02 | 0.8799E+00 | 0.4255E+01 |
| 8 | 0.4430E-03 | 0.1545E+02 | 0.1501E+02 | 0.4404E+00 | 0.2935E+01 |
| 9 | 0.5540E-03 | 0.1119E+02 | 0.1109E+02 | 0.9817E-01 | 0.8851E+00 |
| 10 | 0.7130E-03 | 0.7927E+01 | 0.8066E+01 | -0.1390E+00 | -0.1723E+01 |
| 11 | 0.8810E-03 | 0.6095E+01 | 0.6180E+01 | -0.8525E-01 | -0.1379E+01 |
| 12 | 0.1096E-02 | 0.4563E+01 | 0.4696E+01 | -0.1330E+00 | -0.2832E+01 |
| 13 | 0.1411E-02 | 0.3353E+01 | 0.3407E+01 | -0.5432E-01 | -0.1594E+01 |
| 14 | 0.1795E-02 | 0.2353E+01 | 0.2485E+01 | -0.1323E+00 | -0.5324E+01 |
| 15 | 0.2224E-02 | 0.1735E+01 | 0.1857E+01 | -0.1219E+00 | -0.6565E+01 |
| 16 | 0.2850E-02 | 0.1277E+01 | 0.1313E+01 | -0.3640E-01 | -0.2772E+01 |
| 17 | 0.3600E-02 | 0.9760E+00 | 0.9340E+00 | 0.4199E-01 | 0.4496E+01 |
| 18 | 0.4490E-02 | 0.7450E+00 | 0.6691E+00 | 0.7586E-01 | 0.1134E+02 |
| 19 | 0.5700E-02 | 0.4640E+00 | 0.4613E+00 | 0.2692E-02 | 0.5836E+00 |
| 20 | 0.7190E-02 | 0.3330E+00 | 0.3172E+00 | 0.1579E-01 | 0.4977E+01 |
| 21 | 0.8800E-02 | 0.2330E+00 | 0.2276E+00 | 0.5384E-02 | 0.2365E+01 |
| 22 | 0.1100E-01 | 0.1690E+00 | 0.1568E+00 | 0.1216E-01 | 0.7753E+01 |
| 23 | 0.1400E-01 | 0.1100E+00 | 0.1044E+00 | 0.5575E-02 | 0.5339E+01 |
| 24 | 0.1800E-01 | 0.7000E-01 | 0.6862E-01 | 0.1380E-02 | 0.2012E+01 |
| 25 | 0.2200E-01 | 0.5000E-01 | 0.4894E-01 | 0.1055E-02 | 0.2156E+01 |
| 26 | 0.2800E-01 | 0.2900E-01 | 0.3280E-01 | -0.3800E-02 | -0.1159E+02 |

** %RMSERR= 4.90

CORRELATION MATRIX

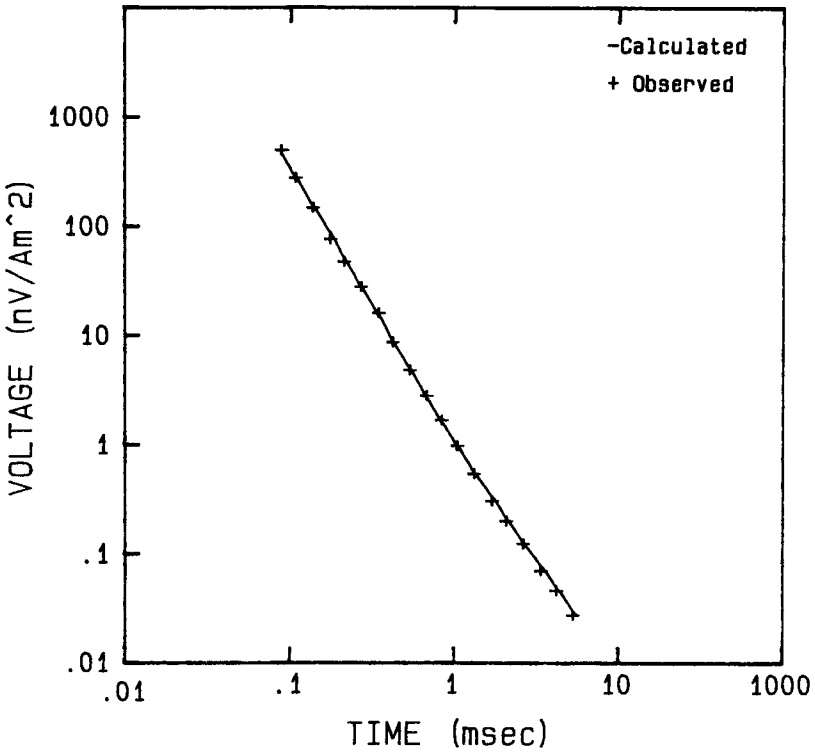
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | -0.4482E+00 | 0.1000E+01 | | | |
| 3 | -0.3198E+00 | 0.3500E+00 | 0.1000E+01 | | |
| 4 | -0.1382E+00 | 0.6783E+00 | 0.3260E+00 | 0.1000E+01 | |
| 5 | -0.5522E+00 | -0.7846E-01 | -0.1791E-01 | -0.3308E+00 | 0.1000E+01 |

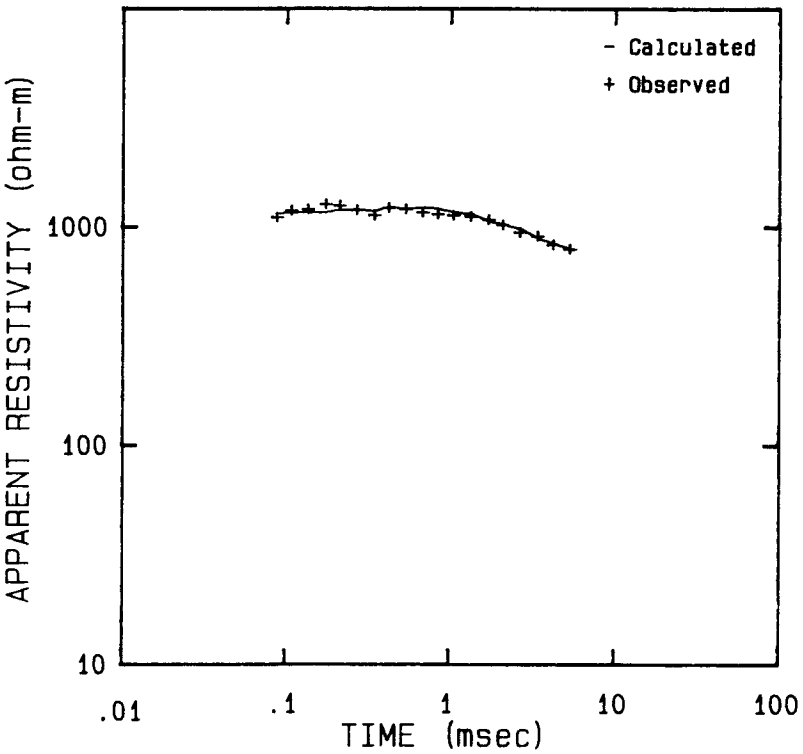
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.1364E-03 | 0.1610E-03 | 0.1180E+01 | 0.1180E+03 |
| 2 | 0.5971E-02 | 0.1252E-02 | 0.2097E+00 | 0.2097E+02 |
| 3 | 0.3557E-01 | 0.1648E-02 | 0.4632E-01 | 0.4632E+01 |
| 4 | 0.2739E+03 | 0.1601E-02 | 0.5844E-05 | 0.5844E-03 |
| 5 | 0.1798E+03 | 0.2699E-02 | 0.1501E-04 | 0.1501E-02 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.13645E-03 | 0.73288E+04 | |
| 2 | SIGMA( 2) | = | 0.59712E-02 | 0.16747E+03 | |
| 3 | SIGMA( 3) | = | 0.35571E-01 | 0.28113E+02 | |
| 4 | THICK( 1) | = | 0.27389E+03 | | 0.27389E+03 |
| 5 | THICK( 2) | = | 0.17980E+03 | | 0.45370E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML75




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 1091 | 44.879 |
| 1151.3 | 931.52 |
| 429.76 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 75 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.4922E+03 | 0.4663E+03 | 0.2584E+02 | 0.5541E+01 |
| 2 | 0.1100E-03 | 0.2729E+03 | 0.2784E+03 | -0.5485E+01 | -0.1970E+01 |
| 3 | 0.1400E-03 | 0.1459E+03 | 0.1530E+03 | -0.7032E+01 | -0.4597E+01 |
| 4 | 0.1770E-03 | 0.7523E+02 | 0.8587E+02 | -0.1063E+02 | -0.1238E+02 |
| 5 | 0.2200E-03 | 0.4666E+02 | 0.4982E+02 | -0.3160E+01 | -0.6344E+01 |
| 6 | 0.2800E-03 | 0.2742E+02 | 0.2699E+02 | 0.4331E+00 | 0.1605E+01 |
| 7 | 0.3550E-03 | 0.1585E+02 | 0.1488E+02 | 0.9682E+00 | 0.6507E+01 |
| 8 | 0.4430E-03 | 0.8541E+01 | 0.8383E+01 | 0.1577E+00 | 0.1881E+01 |
| 9 | 0.5540E-03 | 0.4767E+01 | 0.4774E+01 | -0.6620E-02 | -0.1387E+00 |
| 10 | 0.7130E-03 | 0.2773E+01 | 0.2559E+01 | 0.2137E+00 | 0.8351E+01 |
| 11 | 0.8810E-03 | 0.1663E+01 | 0.1533E+01 | 0.1299E+00 | 0.8470E+01 |
| 12 | 0.1096E-02 | 0.9710E+00 | 0.9287E+00 | 0.4227E-01 | 0.4551E+01 |
| 13 | 0.1411E-02 | 0.5380E+00 | 0.5241E+00 | 0.1391E-01 | 0.2655E+01 |
| 14 | 0.1795E-02 | 0.3020E+00 | 0.3135E+00 | -0.1148E-01 | -0.3663E+01 |
| 15 | 0.2224E-02 | 0.1990E+00 | 0.1990E+00 | -0.4730E-04 | -0.2376E-01 |
| 16 | 0.2850E-02 | 0.1230E+00 | 0.1179E+00 | 0.5119E-02 | 0.4342E+01 |
| 17 | 0.3600E-02 | 0.7000E-01 | 0.7295E-01 | -0.2955E-02 | -0.4050E+01 |
| 18 | 0.4490E-02 | 0.4600E-01 | 0.4548E-01 | 0.5151E-03 | 0.1132E+01 |
| 19 | 0.5700E-02 | 0.2700E-01 | 0.2727E-01 | -0.2742E-03 | -0.1005E+01 |

** %RMSERR= 5.22

CORRELATION MATRIX

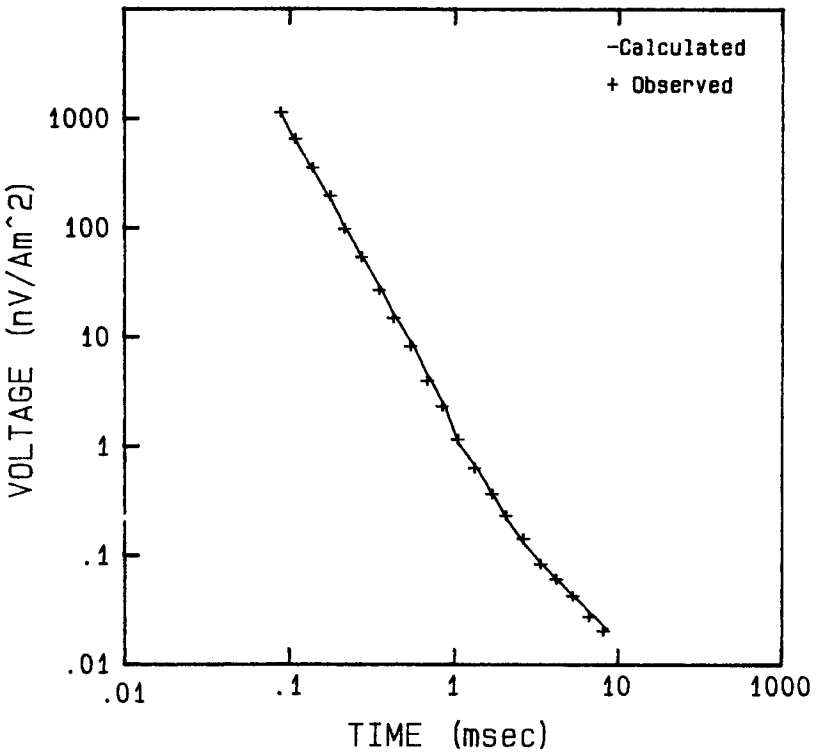
| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.5050E+00 | 0.1000E+01 | | | |
| 3 | 0.1141E+00 | 0.4866E+00 | 0.1000E+01 | | |
| 4 | -0.6805E+00 | -0.4277E+00 | -0.6182E+00 | 0.1000E+01 | |
| 5 | -0.5455E+00 | -0.5873E+00 | -0.4746E+00 | 0.4049E+00 | 0.1000E+01 |

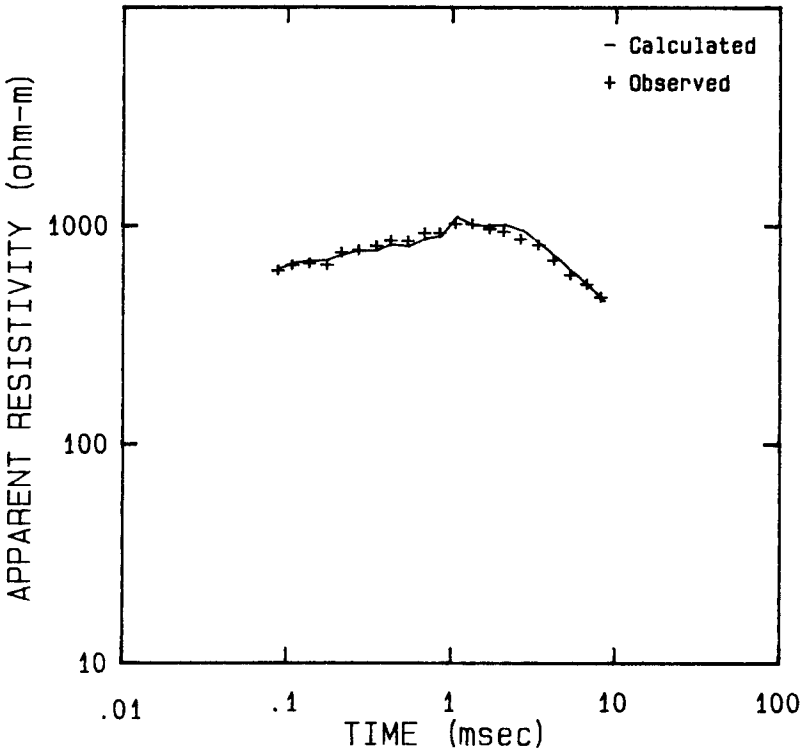
| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.9166E-03 | 0.1031E-03 | 0.1125E+00 | 0.1125E+02 |
| 2 | 0.8686E-03 | 0.1104E-03 | 0.1271E+00 | 0.1271E+02 |
| 3 | 0.2327E-02 | 0.3613E-02 | 0.1553E+01 | 0.1553E+03 |
| 4 | 0.4488E+02 | 0.6678E-03 | 0.1488E-04 | 0.1488E-02 |
| 5 | 0.9315E+03 | 0.3786E-02 | 0.4065E-05 | 0.4065E-03 |

| | PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|---|
| 1 | SIGMA( 1) | = | 0.91657E-03 | 0.10910E+04 | |
| 2 | SIGMA( 2) | = | 0.86857E-03 | 0.11513E+04 | |
| 3 | SIGMA( 3) | = | 0.23269E-02 | 0.42976E+03 | |
| 4 | THICK( 1) | = | 0.44879E+02 | | 0.44879E+02 |
| 5 | THICK( 2) | = | 0.93152E+03 | | 0.97640E+03 |
| 6 | SHIFT | = | 0.20700E+03 | | |

EMSURVEYS TEM INVERSION

MEDICINE LAKE
STATION: ML76




MODEL

| RESISTIVITY (ohm-m) | THICKNESS (meters) |
|---|---|
| 388.17 | 46.95 |
| 910.69 | 1251.7 |
| 59.876 | |

ELECTROMAGNETIC SURVEYS INC.

MEDICINE LAKE STATION 76 TEM INVERSION

| I | TIME (sec) | VOLTAGE (nV/Am^2) | CALC.VOLT | RESIDUAL | %RES.ERR |
|---|---|---|---|---|---|
| 1 | 0.8900E-04 | 0.1118E+04 | 0.1099E+04 | 0.1917E+02 | 0.1745E+01 |
| 2 | 0.1100E-03 | 0.6383E+03 | 0.6238E+03 | 0.1457E+02 | 0.2335E+01 |
| 3 | 0.1400E-03 | 0.3469E+03 | 0.3333E+03 | 0.1358E+02 | 0.4075E+01 |
| 4 | 0.1770E-03 | 0.1922E+03 | 0.1783E+03 | 0.1394E+02 | 0.7817E+01 |
| 5 | 0.2200E-03 | 0.9587E+02 | 0.9959E+02 | -0.3717E+01 | -0.3732E+01 |
| 6 | 0.2800E-03 | 0.5300E+02 | 0.5319E+02 | -0.1973E+00 | -0.3708E+00 |
| 7 | 0.3550E-03 | 0.2636E+02 | 0.2851E+02 | -0.2152E+01 | -0.7550E+01 |
| 8 | 0.4430E-03 | 0.1470E+02 | 0.1559E+02 | -0.8885E+00 | -0.5699E+01 |
| 9 | 0.5540E-03 | 0.8088E+01 | 0.8788E+01 | -0.7000E+00 | -0.7965E+01 |
| 10 | 0.7130E-03 | 0.3928E+01 | 0.4317E+01 | -0.3891E+00 | -0.9012E+01 |
| 11 | 0.8810E-03 | 0.2295E+01 | 0.2423E+01 | -0.1284E+00 | -0.5298E+01 |
| 12 | 0.1196E-02 | 0.1039E+01 | 0.1021E+01 | 0.1800E-01 | 0.1763E+01 |
| 13 | 0.1411E-02 | 0.6250E+00 | 0.6386E+00 | -0.1359E-01 | -0.2127E+01 |
| 14 | 0.1795E-02 | 0.3600E+00 | 0.3435E+00 | 0.1649E-01 | 0.4801E+01 |
| 15 | 0.2224E-02 | 0.2280E+00 | 0.2036E+00 | 0.2438E-01 | 0.1197E+02 |
| 16 | 0.2850E-02 | 0.1400E+00 | 0.1223E+00 | 0.1773E-01 | 0.1450E+02 |
| 17 | 0.3600E-02 | 0.8200E-01 | 0.8078E-01 | 0.1218E-02 | 0.1508E+01 |
| 18 | 0.4490E-02 | 0.6000E-01 | 0.5724E-01 | 0.2758E-02 | 0.4818E+01 |
| 19 | 0.5700E-02 | 0.4200E-01 | 0.4020E-01 | 0.1797E-02 | 0.4470E+01 |
| 20 | 0.7190E-02 | 0.2700E-01 | 0.2830E-01 | -0.1300E-02 | -0.4595E+01 |
| 21 | 0.8800E-02 | 0.2000E-01 | 0.2111E-01 | -0.1113E-02 | -0.5270E+01 |

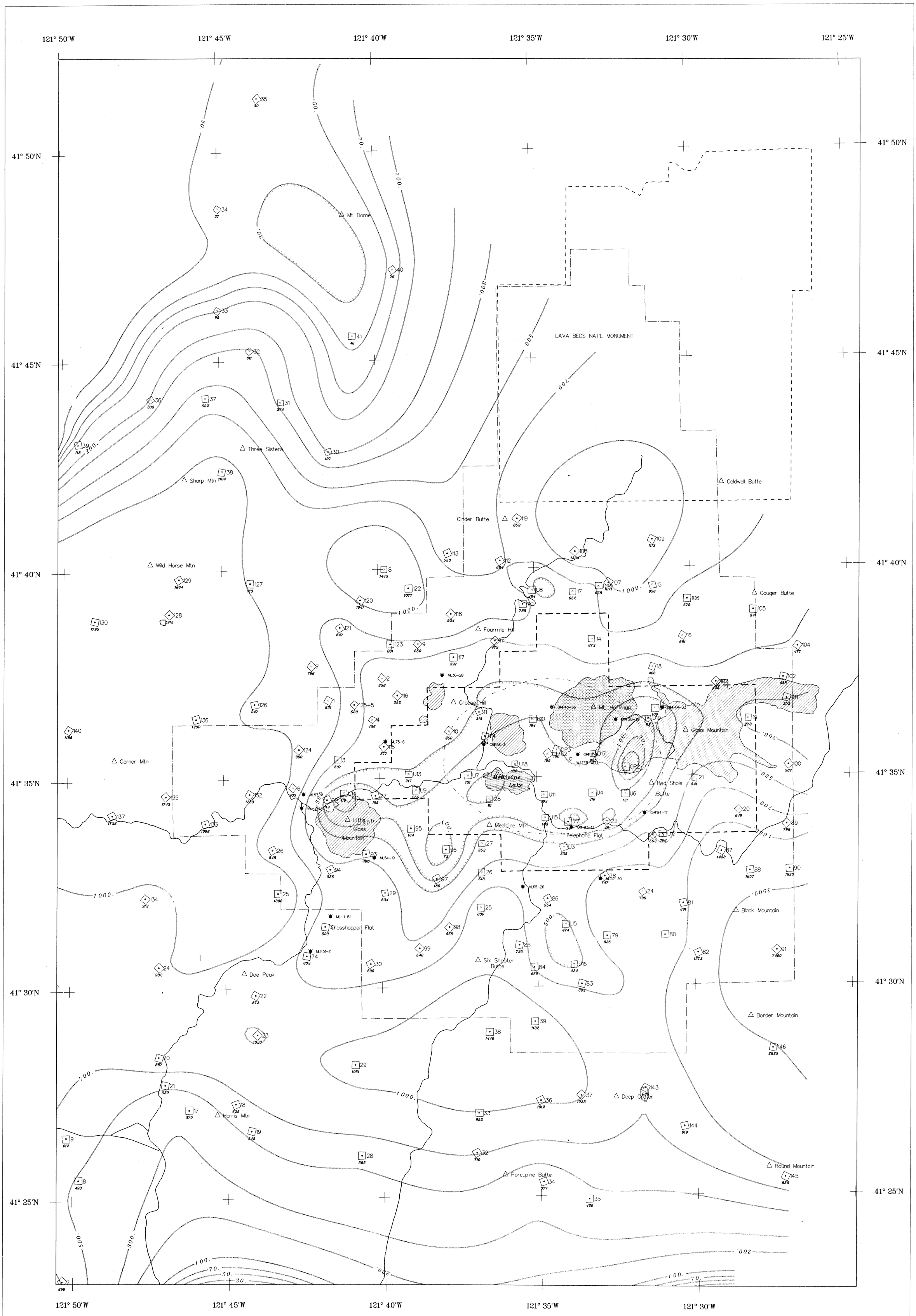
** %RMSERR= 6.33

CORRELATION MATRIX

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0.1000E+01 | | | | |
| 2 | 0.3269E+00 | 0.1000E+01 | | | |
| 3 | 0.5342E+00 | 0.1304E+00 | 0.1000E+01 | | |
| 4 | -0.7895E+00 | -0.2767E-01 | -0.5524E+00 | 0.1000E+01 | |
| 5 | 0.2916E+00 | 0.7041E+00 | 0.1762E+00 | 0.3341E-01 | 0.1000E+01 |

| | **PARM_SOL. | STD_ERROR | REL_ERROR | % ERROR ** |
|---|---|---|---|---|
| 1 | 0.2576E-02 | 0.2927E-03 | 0.1136E+00 | 0.1136E+02 |
| 2 | 0.1098E-02 | 0.1751E-03 | 0.1594E+00 | 0.1594E+02 |
| 3 | 0.1670E-01 | 0.1090E-02 | 0.6525E-01 | 0.6525E+01 |
| 4 | 0.4695E+02 | 0.6642E-03 | 0.1415E-04 | 0.1415E-02 |
| 5 | 0.1252E+04 | 0.7290E-03 | 0.5824E-06 | 0.5824E-04 |

| PARAMETER NAME | | FINAL SOLUTION | RESISITIVITY | LAYER DEPTH |
|---|---|---|---|---|
| 1 | SIGMA( 1) = | 0.25762E-02 | 0.38817E+03 | |
| 2 | SIGMA( 2) = | 0.10981E-02 | 0.91069E+03 | |
| 3 | SIGMA( 3) = | 0.16701E-01 | 0.59876E+02 | |
| 4 | THICK( 1) = | 0.46950E+02 | | 0.46950E+02 |
| 5 | THICK( 2) = | 0.12517E+04 | | 0.12986E+04 |
| 6 | SHIFT = | 0.20700E+03 | | |




union 76

0 1 2 3 4 5

SCALE IN KILOMETERS

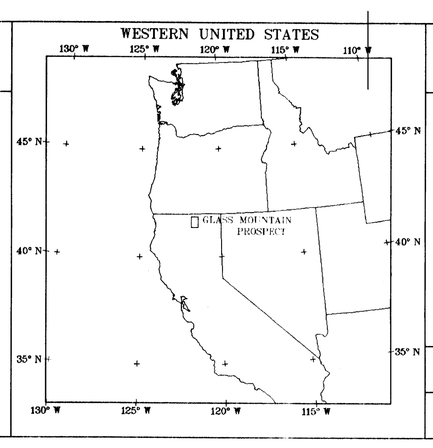
0 1 2 3 4 5

SCALE IN MILES

## Legend

- TDEM SITE (EMS-1983)
- TDEM SITE (EMS-1984)
- TDEM SITE (USGS)
- TDEM SITE (OXY-PET)
- MOUNTAIN
- GEOTHERMAL WELL
- RHYOLITE DOME
- GLASS FLOW
- LAKE
- MAJOR ROAD
- KGRA BOUNDARY
- UNIT AREA
- LAVA BEDS NAT'L MONUMENT
- ASSUMED CALDERA RING FRACTURE

WESTERN UNITED STATES




Union Oil Company of California
Geothermal Division

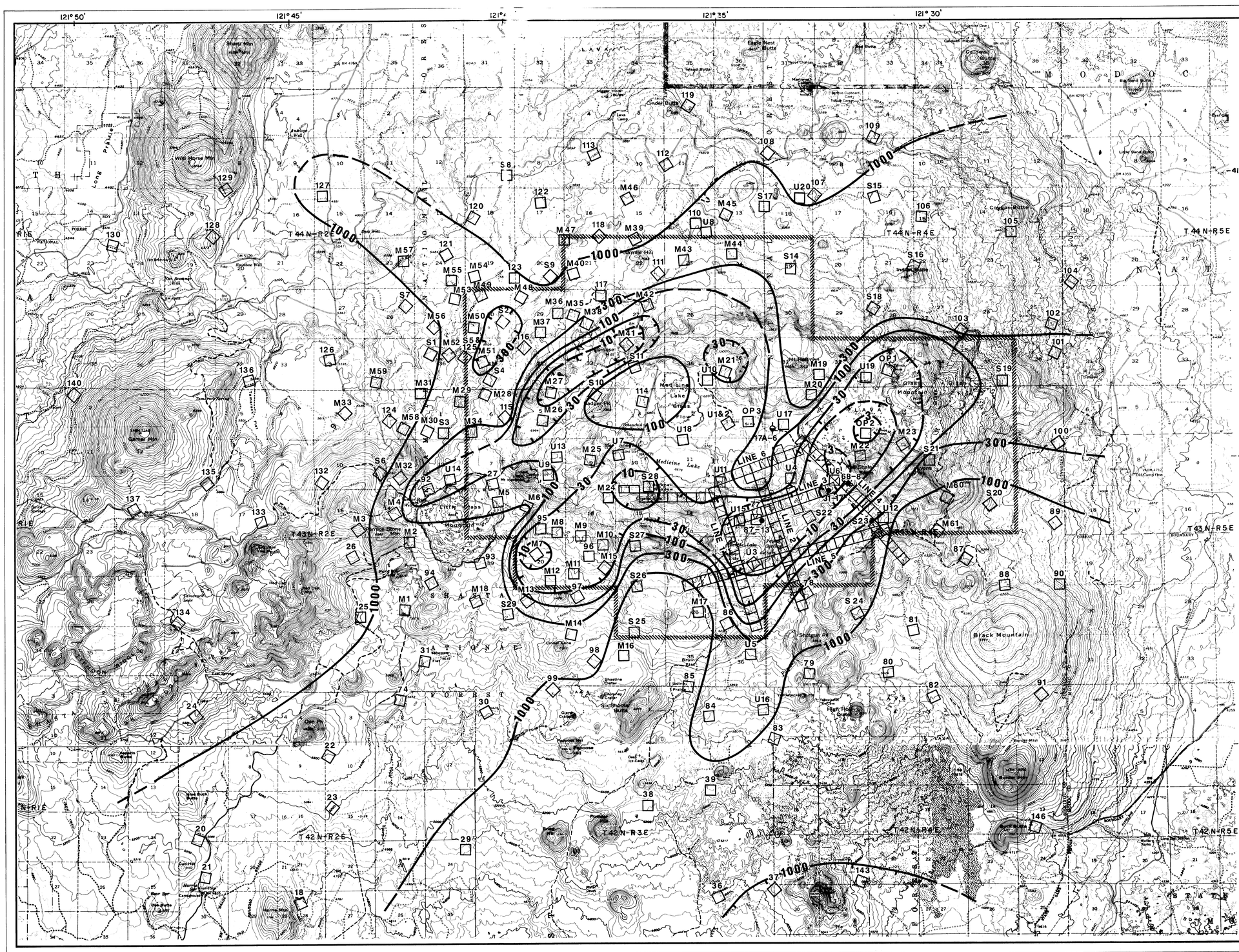
# GLASS MOUNTAIN

## TDEM APPARENT RESISTIVITY AT 2.22 MILLISEC

| PREPARED BY | DATE | SCALE | GRID SIZE |
|---|---|---|---|
| D.A. WHEELER | MAY 20, 1985 | 1:62,500 | .5 INCH |
| CONTOUR INTERVAL | DATA TYPE | | |
| LOGARITHMIC | TIME-DOMAIN EM | | |

EXPRESS > 12:14 MAY 20, 1985

UCA GM 38M 1:62500




1 1/2 0 1 2 MILES

SCALE 1:62,500

| REVISED | UNOCAL |
|---|---|
| CONTOURS ADDED 12/89 | UNOCAL CORPORATION–GEOTHERMAL DIVISION |

# GLASS MOUNTAIN PROSPECT

## TIME-DOMAIN ELECTOMAGNETIC STATION LOCATIONS
## BOSTICK RESISTIVITIES AT A DEPTH OF 1500 FEET
## (CONTOURS IN OHM-M)

TDEM STN.

| | |
|---|---|
| OP1 | EM SURVEYS, 1982 |
| U2 | USGS, 1983 |
| 2 | EM SURVEYS, 1983 |
| S2 | EM SURVEYS, 1984 |
| LINE 2 | EARTH TECH., 1985 |
| M2 | EARTH TECH., 1986 |

Plate 1
UCA07.3308 6/90

SISKIYOU & MODOC COUNTIES, CALIFORNIA

SCALE 1:62,500 G.A.N. OCTOBER, 1989