Lower Klamath Lake Valley
Terramagnetic Survey: Interpretation

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WHAT IS A TERRAMAGNETIC SURVEY?

A Magnetic Survey acquired from a land vehicle moving across the Earth’s surface.
WHY A TERRAMAGNETIC SURVEY?

QUALITY
COST
TERRAIN
OBJECTIVES
LOWER KLAMATH LAKE
GEOPHYSICAL INTERPRETATION
KLAMATH COUNTY, OREGON

TERRAMAGNETIC
SURVEY MAP
TERRAMAGNETIC SURVEY
OBJECTIVES

• Map The General Area of Major Fault Zones In
  The Lower Klamath Lake Valley.

• Provide a Guide to help determine the location
  for detailed seismic/gravity/magnetic profiles.
SURVEY VEHICLE

TERRAMAGNETIC SURVEY VEHICLE SCHEMATIC

FRONT SEATS: DRIVER & LAPTOP OPERATOR

BACK SEAT: GPS CONTROL UNITS & MAG SWITCH

LIGHT BAR MOUNTED ON DASH

GPS ANTENNA

MAGNETOMETER CONTROL UNIT

MAGNETOMETER CABLE RUNS THROUGH PVC PIPE

MAGNETOMETER SENSOR

LOWER KLAMATH LAKE VALLEY
KLAMATH COUNTY, OREGON
Acquisition & Processing Flowchart

1. **Acquisition**
   - Magnetic Field Stations
   - Magnetic Base Stations
   - GPS Positions

2. **Processing**
   - Spike Filter
   - Dropout Filter
   - Base Station Corrections
   - Destripe Filter
   - Preliminary Total Magnetic Stations

3. **Magnetic and Time Bias Corrections**
   - Combine Mag with GPS Data

4. **Editing**
   - Convert to UTM
   - Edit Locations
   - Elevation Corrections

5. **Gridding/Contouring**
   - Total Magnetic Intensity Map
Magnetic Profiles

RAW PROFILE

FINAL PROFILE
LOWE R KLAMATH LAKE VALLEY
KLAMATH COUNTY, OREG ON

TOTAL MAGNETIC INTENSITY MAP
(CONTOUR INTERVAL = 25 nT)
INTERPRETATION

Two-dimensional

GRADIENT
GEOPHYSICS
MAGCAD

Depths to Magnetic Basement

Three-dimensional

USGS BOUNDARY
USGS GI3

Edges of Magnetic Bodies

Magnetic Basement Shape Map
CONCLUSIONS

• OBJECTIVES ACCOMPLISHED; THE APPROXIMATE LOCATIONS OF MAJOR FAULT ZONES WERE MAPPED IN THE LKL VALLEY.

• TERRAMAGNETIC SURVEYS ARE A VIABLE WAY TO CONDUCT LOW QUALITY MAGNETIC SURVEYS.