

3/23/81

Subj: Evaluation of the Geophysics in the
Wendell KGRA, California

The gravity data shown on Fig. 6 as well as the Bouguer Gravity obtained by the California Department of Water Resources appear to be of good quality. These data cover the area in a regional sense and do not lend themselves to as detailed an interpretation as they have been subjected to by Electrodynae Surveys. The gravity coverage is adequate however to define general structural trends and sub-alluvial valley geometry.

I disagree with Coethemex's conclusion that the Litchfield fault is hypothetical. There is no doubt in my mind that this fault "system" exists. There is evidence for more than one fault which is also shown on Fig. 6 in addition to being reported on page 22 of the Coethemex report. The Litchfield "faults" clearly extend from about 4 miles NW of Litchfield to well beyond the SE side of Honey Lake. Where the various branches go however,

can not be conclusively determined with the present data coverage. Nor would additional detail coverage likely yield further information regarding the Geothermal reservoir. Computer modeling of these data, both 2-D or 3-D, could be undertaken but again it is doubtful if any greater understanding of the reservoir would be gained. If the reservoir is strongly fault controlled, then perhaps detailed gravity profiling would contribute.

The ground magnetic data do not contribute to the general understanding of the Geothermal potential of the area in any way. The magnetic field variations mapped can easily be explained by man-made cultural features. These data were acquired along the existing roads allowing for the greatest possible contamination from power lines, buried water lines, fences etc.

Most disturbing is the general geophysical data package supplied by Electrodynic Surveys exclusive of the raw gravity data. The electrical methods employed are not at all in common usage within the geophysical community. The strong discontinuity noted

in the calculated apparent resistivities obtained by the various techniques can only lead to the conclusion of a strong ambiguity among the methods employed. I strongly question the validity of the interpretations presented by Electrodynne based upon these geophysical data package. It is only necessary to look at the quality of the data presented, i.e. error bars, large data gaps, poor model fits etc, to conclude that a lot of wishful thinking is contained within Electrodynne report. Their report might make a good start to a ~~series~~^{written} report.

Based upon what appears to be a reasonable and fairly straightforward geologic picture, I would concur with the proposed drill sites. I don't know of any geophysical technique short of reflection seismic surveying that could resolve depth to reservoir or structural attitudes. Dipole-Dipole resistivity has been successfully utilized in other areas with excellent results to depths of 3-4 thousand feet. The high clay content along with the salinity of the lake beds makes this technique } questionable. I would like to evaluate the Gulf Oil Company resistivity data before making out entirely the dipole-dipole method however.