

INTER-OFFICE MEMORANDUM

SUBJECT: Summary and Conclusions of the Exploration October 29, 1982
 and Evaluation of the Topaz Geothermal Project.

TO: H. J. Olson, H. D. Pilkington

FROM: J. E. Deymonaz

The following is a brief summary of a report that will be completed when and if I return from the Alum, Nevada drilling project.

Summary and Conclusions

Voluminous amounts of temperature gradient and hydrogeochemical data have been accumulated on the project area in the past year. Resistivity and geological data has also been acquired. Nothing collected thus far provides definitive evidence for a high temperature reservoir existing in the area!

The series of shallow heatflow anomalies in the Topaz project area are likely the result of moderate to deep circulation of fluids along at least two major structural zones. This is evidenced by heatflow patterns, gradients measured in shallow aquifers, water chemistry and the results of a resistivity survey. The maximum bottom hole temperature thus far measured was 41.8°C at 109 meters.

The shear size of the heatflow anomaly (minimum 25 miles north-south and 16 miles east-west), intermittent large scale intermediate to silica volcanism in the area from 42-7 million years B.P., and the presence of several large ring like features enhance the possibility of the existence of a high temperature heat source in the area. Warm waters sampled to date may be either mixed or from convective systems not in direct contact with a high temperature reservoir.

If a high temperature reservoir does exist, it does not appear to lie beneath the narrow zone of east-west trending high heatflow where the 1,500 foot test hole (1198-128) was drilled. Possible deep heat sources

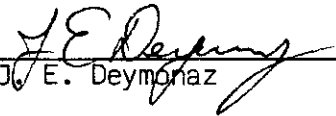
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are beneath Spor Mountain, the southern Thomas Range area, or the Drum Mountains in the Phillips Geothermal Unit. The majority of these areas are not situated within the Brush geothermal lease area. Additional heatflow information can be collected from existing mineral drill holes to hopefully outline the extent of the shallow heatflow anomalies. Deeper information, however, will be required to determine the possible existence of a high temperature reservoir. The cost of intermediate depth holes over such a large area would be prohibitive (\$80,000-\$120,000/hole), therefore, if exploration is to be continued in the area I would recommend a detailed MT survey similar in scope to those run at Fish Lake and Alum. If the MT results can be combined with the heatflow and geologic data into a realistic model and target areas defined, one or two intermediate depth holes could then be drilled.


J. E. Deymonaz

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