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MEMORANDUM

TO: State Coupled Group
FROM: Duncan Foley
RE: Trip Report - ODGAMI
SUBJECT: Experience in map-making

Attendees: Joe Riccio, Don Hull - ODGAMI
Duncan Foley - ESL/UURI

Oregon Department of Geology and Mineral Industries (ODGAMI) is intending to publish a preliminary geothermal map soon--probably during February. ESL visited Portland to find out what lessons they had learned that we could apply to Idaho, Nevada, Utah, and Colorado, as these 4 states enter map production processes early in 1979.

The Oregon map will be a mix of data sets from the eventual "user" and "scientific" maps. Production of their preliminary map will be entirely within ODGAMI; they welcome, however, the involvement of NOAA in the later publication of the "final" maps. Any of the data sets could be shipped to NOAA within a couple of months, if desired.

On the various data sets:

- Simplified geology is being taken from the USGS 1:500,000 scale map of Oregon. Only Pleistocene and Holocene basalts are going to be depicted, older units will not be shown. The igneous rocks will be broken into three units: extrusives, intrusives, and pyroclastics. Volcanic centers may be also shown.
- Faults are being taken from the same geologic map.
- Selected linements will be shown on the map. Where linements duplicate faults, the faults will be shown. Many of the linements either extend mapped faults, or are in conjugate sets with mapped faults.
- A new heat flow map is being prepared by Blackwell, Bowen, and Hull;

contours from this map will also be on the preliminary map.

- Earthquake epicenters will be shown. Some are apparently related to geothermal sites, some are not.
- "Sammel-Foley" areas from Circular 790 will be shown. Some shortcomings of these areas were discussed, and slight changes made after last summer's meeting were pointed out. In eastern Oregon, the "Sammel-Foley" areas overlap areas with concentrations of faults and linements, while on the western side of the Cascades the areas overlap an area with a large increase in heat flow.
- Some deep wells will be shown.
- A new map of hot springs and thermal wells will be available in about 10 days. These data will be shown on the preliminary map as points, without any further data (Temp., tds., etc.) being shown.
- No relation between Hg deposits and present hydrothermal systems has been noted.

At Timberline Lodge drilling

- Once again, a driller bid on a project beyond the rig's capability. The hole was once 1380', but has now collapsed back and is cased to 730'.
- temperature logs are being run
- the total drill string weight may have exceeded the lifting capability of the rig. This isn't known since the drill string sheared off twice during drilling.
- cementing was done through the bit, which then cemented the bit, and this had to be broken
- the water looks chemically intriguing--there may be mixing at depth
- cement and casing cost a lot

At Old Maid Flat


- temperatures look good but productivity is unknown
- a second well is being drilled

- The gradient hole drilling will be finished before Christmas

On other topics:

- ODGAMI has been contacting oil companies about data release--and so far is getting favorable responses *well data?*
- Revisions in Oregon geothermal laws are slated for the upcoming session of the Oregon legislature--one will extend thermal gradient drilling to 2000' from the present limit of 500' *tax credits?*

- Ground water in the Columbia River Basalts has not been dated, so it is unknown if recharge is fast (implying vertical permeability through the basalts, a concept not now in vogue) or slow
- Water circulation systems in the Cascades are still poorly defined; is the recharge from the range tops or through circulation systems on the low flanks?
- A complete set of colored separates on acetate or mylar of data from the preliminary map could be prepared at a cost of about \$200 for labor and \$30 for each separate. These might be useful for display to other state groups and general audiences, to illustrate the relations between various geologic parameters and geothermal resources
- ODGAMI intends to stay away from Klamath Falls during Phase II activities
- ODGAMI plans to make Oregon GEOTHERM data available as an open-file report



Duncan Foley

DF/smk