GM 14.11 ???

Copy to Alex, Neil

N. J. STEFANIDES

AUG 9 1984

PHILLIPS PETROLEUM COMPANY
SALT LAKE CITY, UTAH 84107
655 EAST 4500 SOUTH PHONE: 801 268-3120

MINERALS GROUP
Geothermal and
Strategic Minerals Division

R. F. DONDANVILLE

AUG 0 6 1984

July 31, 1984

Re: Perforation of Medicine Lake strat tests 65-26, 54-19, 75-6, 36-28, and 57-13

Mr. Richard F. Dondanville
Union Oil, Geothermal Division
P.O. Box 6854
Santa Rosa, California 95406

Dear Mr. Dondanville:

On July 24-26, 1984, three Union strat tests and two Phillips strat tests were perforated and water level data obtained for the Medicine Lake area, California. All wells were perforated close to lithologically interpreted permeable zones. Table 1 summarizes the information obtained. Perforation and water level measurements were obtained by Phillips Petroleum personnel utilizing the services of Pruett Industries, Inc. of Bakersfield, California.

Perforation Procedure

All wells were perforated at a target depth (Table 1) with an explosive charge. The charge consisted of approximately twelve to fourteen feet of RDX-80 nylon primacord evenly wrapped in a single layer on a half-inch diameter steel bar. The charge was suspended in the well to the target depth from a quarter-inch steel electrical cable, the charge being connected to a one-inch diameter overhead suppression bar which was supported by a 20 inch long, half-inch diameter cable head section. Detonation was by means of a surface controlled electrical cap primer.

After perforation, all wells were depth checked to within six feet of the target depth by a wireline probe and found to have no adverse downhole obstructions. Approximate depths to water before and after detonation were recorded (see Table 1). Perforated zone selection for Union wells was coordinated with Alex Schriener.

Water Level/Pressure Measurements

All wells had pressure measurements taken at a minimum of three points below the inferred groundwater level by a Custer Pressure Element provided by Pruett Industries, Inc. Water level data was extrapolated from the linear

depth vs. pressure plots for each well. These data appear as "Pressure Measured W.L." (water levels) in Column 7 of Table 1. Approximate water level elevations based on estimated ground elevation at the wellhead for each well are given below.

Well I.D.	Depth to Water (ft)	Map-Estimated Ground Elevation (ft, msl)	Water Level Elevation (ft, msl)
Union 65-26	1,570	6,360	4,790
Union 54-19	1,020	6,080	5,060
Union 75-6	810	6,740	5,930
Phillips 36-28	765	6,700	5,935
Phillips 57-13	710	6,130	5,420

These data represent water levels one to two days after disturbance and are considered near equilibrium. Further, the data suggest a southeast trending gradient to the groundwater surface south of Medicine Lake.

If you have any questions regarding these data, please do not hesitate to call.

Sincerely,

Bobby L. Gaddis
Senior Hydrologist

BLG:sdm
cc: R.C. Lenzer
J.J. Beall
K.W. Smith

TABLE 1

Perforation and Water Level Data Collected July 24-26, 1984
Union and Phillips Strat Tests
Medicine Lake, California

Well I.D.	Total Depth* (ft)	Perforated Target Depth* (ft)	Date/Time Perforated (mo/day/yr) [24-hr time]	Est. W.L. before Perforation* (ft) [time]	Est. W.L. after Perforation* (ft) [time]	Pressure Measured W.L.* (ft) [date-time]	Measuring Time Since Perforation (hours)	Depth Checked to (ft)
Union 65-26	2,180	1,926	07/24/84 [1435]	442 [0911]	438 [1445]	1,570 [7/26-1135]	45	1,920 o.k.
Union 54-19	2,198	1,650	07/24/84 [1656]	550 [1600]	630 [1710]	1,020 [7/26-1320]	44	1,645 o.k.
Union 75-6	1,997	1,652	07/24/84 [1910]	817 [1800]	825 [1930]	810 [7/26-1650]	46	1,652 o.k.
Phillips 36-28	2,138	1,728	07/25/84 [0953]	73 [0910]	780 [1026]	765 [7/26-1540]	29	1,730 o.k.
Phillips 57-13	2,968	2,961	07/25/84 [2021]	10 [1800]	700 [2050]	710 [7/26-1756]	22	2,960 o.k.

*All depths measured from ground level