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Aerojet Nuclear Company

Interoffice Correspondence

March 24, 1975

To: Distribution

RAFT RIVER TECHNICAL MEETING OF MARCH 18, 1975 - Kun-171-75

The following briefly summarizes the condition of the well at the time it was restored to the original total depth of 4650 ft.

On the morning of March 15, (1:00 AM) the original total depth of 4645 ft was reached (the 5 ft discrepancy is in part accounted for by an extra 3 ft elongation of the drill stem due to the higher temperature now present in the hole). In attempting to clean up the bottom of the hole, very significant resistance was encountered by the standard 12-1/4 in. rock bit. Less than 4 in. of apparent drilling progress was made over a 2 hour period. Frequently the drill string would torque up to the full available torque of the engines. In moving up and down with the drill string in order to help flush metal pieces into the junk sub behind the drill bit, the drill string often hung up, to the extent of 50,000 lbs both up or down. Upon bringing the bit out of the hole, the bit was found to have little apparent damage. The junk sub had however gathered a number of metal particles plus a number of bolts that had fallen out of the rotating head rubber stripper. During this operation, large leaks developed in the rotating head stripper rubber resulting in the drilling platform being bathed in steam. The subsequent trip out of the hole required approximately 12 hours, involving repeated applications of cold water both to the annulus and to the drill string in order to minimize the possibility of scalding the drilling crew personnel.


The large quantity of water required for the above operation overflowed the reserve pit resulting in complete saturation of the ground underneath the drilling rig. The hook was then 28 in. away from the centerline of the well. By March 17, the drill rig had further sunk, with the hoist position being 33 in. off from the well center. An emergency call was made to A. K. Dunn, Enforcement Officer for the State Department of Water Resources requesting permission to ditch the reserve pit capacity into neighboring borrowpits along the dirt roads in the area. Permission was given by the State as a temporary measure for getting rid of the excess water. ANC, REECO, and NVOO personnel at the drill site discussed the situation among themselves and with REECO and NVOO management in Nevada. ANC personnel reviewed the situation with the State Water Resources Department and with J. L. Griffith, ID and L. B. Werner, ERDA-Washington. Drill site management concluded that it was imprudent to carry out presently laid plans to drill deeper at this time, pending further consideration at a meeting to be held at the Raft River Coop. building March 18, to discuss the situation. Because of the commitments already made and the equipment on site,

rental and lead time expenses amounting to several thousand dollars a day were being incurred during the interim period. Therefore, all rental equipment was immediately returned, Core Lab was informed to turn around and not bring their monitoring equipment onto the site, and Christiansen Coring Service was cancelled. Well testing was conducted on March 16, 17, and 18.

On March 18, a meeting was held among numerous technical and managerial people involved in the Raft River Geothermal Program. A list of the attendees is attached. Other attachments also delineate the items of discussion and the information presented. With the possible exception of the USGS Denver Representative, Paul Williams, the consensus appeared to be that the prudent position to take at this time was to go to a new drill site and obtain the extra depth and geological information from the new drill site. The many various alternatives were thoroughly considered and discussed. We could not quantitatively identify either the risk or the time and cost involved in continuing with the drilling in the present hole. A second hole site was selected, and the location of it seemed to be largely independent of any information which would be obtained at the bottom of the present hole (except possibly for a variation of the order of 500 ft east or west in the depth to the Paleozoic). Such a variation was not critical about finding the resource, but merely pertaining to the depth at which the resource might be encountered at a fault plain.

Subsequent discussions between Skalka and Griffith with Washington ERDA personnel resulted in a reversal of the decision made on March 18. The drilling crew was therefore immediately directed to proceed with the levelling of the rig and then the former plan for drilling deeper. The undersigned informed the State of Idaho on March 19 of the decision and had several discussions both with Washington and the State concerning the matter on March 20. It was agreed that the drilling would proceed very prudently without any particular depth objective. Geological information as it became available would be examined and subsequent action would be determined by field personnel. The risk would be carefully evaluated every step of the way, and operations within the well would be terminated at a moment's notice if there was indication of the serious probability of the drill stem being jammed in the hole.

Meanwhile, the site for the second drill hole would be prepared post haste, at the location agreed upon in the March 18 meeting. This location would be approximately 3,000 to 3,500 ft due northeast of the present drill site. Whether the well would be sited on the public side of the fence or the private side of the fence as yet to be determined.


J. F. Kunze, Manager
Geothermal Projects

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Attachments

cc: JLGriffith - ID ERDA
RKHigginson - IDWR
LGMiller
ECSchlender - Raft River

MSkalka - Wash. ERDA
RCStoker
File