

GEOTECHNICAL • MATERIALS • TESTING LABORATORY

Ph: (505) 523-7674 • FAX: (505) 523-7248

FAX TRANSMITTAL FORM

TO: Lynn Shelton
Giant Refining Co.
Route 3 Box 7
Galup NM 87301

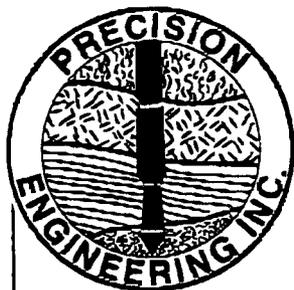
DATE: Oct. 25, 1995
 FAX #: 722-0210
 OUR FILE #: 95-111

RE: Well smw-6 Replacement

Original will follow in the mail.

WE ARE TRANSMITTING 3 PAGES (INCLUDING THIS PAGE).

FROM: Bill Kingsley / TM

**GEOTECHNICAL • MATERIALS • TESTING LABORATORY**

Ph: (505) 523-7674 • FAX: (505) 523-7248

October 23, 1995

Lynn Shelton
Giant Refining Company
Ciniza Refinery
Route 3, Box 7
Gallup, New Mexico 87301

Re: Shallow Monitoring Well 6 (SMW-6) Replacement

Dear Lynn,

Attached is a completion diagram for the replacement well known as SMW-6. As we discussed since water was not encountered in the boring SMW-6A the existing well was over drilled. The well was over drilled to its reported total depth prior to pulling the casing. The existing stainless steel casing was removed and a new PVC well was installed. The condition of the existing well is summarized below.

When the casing protector and pad were pulled an open annulus around the well casing was observed. During the over drilling the cuttings were observed to be clays and silty clays. The cuttings were wet and soft. The bentonite plug reported to be located near the surface was not observed during the drilling. Because of the nature of auger drilling, the bentonite plug could have become masked by the cuttings brought up the auger flights. Drilling proceeded to the total depth without difficulty.

The stainless steel casing was found to be separated at a depth of seven feet below the top of the well and required an extraction tool to pull the rest of the string. Although the rest of the string was intact the coupling at a depth of thirty seven (37) feet below the surface was holding by two threads and would most likely leak if exposed to water. Over drilling would not cause this condition as the drilling would tend to tighten the joints if the casing became wedged in the auger.

A bentonite plug approximately two feet in thickness was encountered near the top and the bottom of the screened portion of the well. Again no plug was observed in the cuttings, however, the bentonite was observed adhering to the well materials after removal. It was observed that the top of the upper bentonite seal was twelve (12) inches below the top of the screen.

SMW-6
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After the old well materials were removed new PVC materials were installed. Very little water was observed in the newly completed well. The well was flushed with clean water, surged and pumped. Approximately forty (40) gallons of water was used during the flushing process. Water from the flushing process was observed to accumulate in boring SMW-6A located twenty (20) feet to the north. The boring was not grouted at the time of flushing as it was desired to observe any water accumulation in the boring. All grouting was delayed until exploratory work was completed. As soon as water was removed from the well, however, the water in SMW-6A also dropped. The conclusion made at the time was that there was hydraulic communication between the borings and the sand was simply not producing native water at the rate recorded in the past. It is possible this may be a seasonal function, however, and continued monitoring of water levels in the well should be maintained.

If you have any questions concerning our observations please contact our office.

Sincerely,
Precision Engineering, Inc.



William H. Kingsley, P.E.