



FIELD WORK VARIANCE

Project Name/Number 140705
Contract No. USACE Contract No. W912DY-10-D-0014 Delivery Order 0002
Applicable Document(s) KAFB Groundwater Investigation Work Plan Bulk Fuels Facility Spill Solid Waste Management Units ST-106 and SS-111 Date 06/23/11

Problem Description:
The wells installed at Groundwater Cluster 5 (KAFB-106041, -106042, and -106043) were installed such that the tops of screen are too shallow. As a result, the water table well (KAFB-106041) is dry and the intermediate well (KAFB-106042) and deep well (KAFB-106043) do not meet work plan requirements.

Recommended solution:
Redrill and install the water table well to meet Work Plan requirements. Leave the intermediate and deep wells as is.

Impact on present and completed work:
Impact to project cost and schedule is unknown.

Requested by:
Recommended solution/disposition:

Clarification [] Minor Change [] Major Change []

Signature _____ Date _____
Technical Reviewer

Shaw Environmental Inc, Approvals: If Major Change:

Signature Dale J. Flores Date 6/24/2011 Signature _____ Date _____
Project/Task Manager Sr. Project Manager

Signature _____ Date _____
Project QC System Manager

USACE Approval: If Major Change:

Approved [] Rejected [] Signature _____ Date _____
USACE PM or COR

Final Description
Signature _____ Date _____
Field Work Variance, 08/10/11

FIELD WORK VARIANCE CONTINUATION SHEET

Continue FWV discussions below by noting section title(s) to be continued (i.e., Problem Description, Solution/disposition, Final Disposition, etc). Use additional continuation sheets as needed.

PROBLEM DESCRIPTION:

During well development, the depth to groundwater recorded at the water table well at NMED Location 5 (KAFB-106041) was recorded at 472.43 ft below top of casing (BTOC) which is below the bottom of the screened interval for this well. The groundwater level at the intermediate well KAFB-106042 was recorded at 468.9 ft BTOC. The top of screen in the intermediate well is 469 feet therefore, the water level in the intermediate well is approximately at the same elevation as the top of screen and not 15 feet above the top of screen as per the groundwater work plan. The geologist set the screens in all three wells based on the erroneous water level measurement causing the screen placements to be off by approximately 12 to 15 feet. Shaw believes that the error was due to formation material coming up in the 9-5/8 drive casing forming a “plug” in the bottom of the drive casing. The plug holds water in the casing causing an erroneous water level measurement. Based on water level measurements collected on June 20, 2011 the screened intervals, relative to the water table, as installed versus planned at cluster No. 5 are as follows:

Well ID	Water Level (ft BTOC)	Plan Requirements for screened interval Depth	Height of Water and screen as installed (ft)	Screened Interval (ft BTOC)
KAFB-106041 (water table well)	472.43	Top of screen 5 ft above water level; 15 ft below water table	Dry, water level below bottom of screen	449-469
KAFB-106042 (intermediate well)	468.93	Top of screen 15 ft below water table	Top of screen 0.07 below water table.	469-483.5
KAFB-106043 (deep well)	468.90	Top of screen 85 ft below water table	Top of screen 74.1 feet below water table	543-557.3

RECOMMENDED SOLUTION:

The Shaw technical team recommends collecting a minimum of one quarter of monitoring data from the 5 closest groundwater monitoring well clusters: GWM-8, GWM-8, GWM-10, and GWM-28. This will allow Shaw to determine the data gap/need present at GWM-5 and to determine if additional well(s) are required. As an alternate proposed solution, Shaw suggest redrilling the water table well in order to provide the third data point in profiling the vertical gradient at this location. Shaw does not believe that the intermediate or deep wells require replacement/reinstallation because they are at differing depths, providing data on the vertical gradient. Additionally, the Shaw technical team believes that as the water table continues to rise in response to the Albuquerque Bernalillo County Water Utility Authority’s decreased withdrawals on the aquifer will not negatively impact the data provided by monitoring these two wells.

As a corrective measure, all project geologists have been instructed to measure water level measurements through

the well casing, rather than the drive casing, so that the plug will drop out and a more accurate groundwater measurement can be obtained. Water level measurements will be repeated, in the well casing, until it is believed that the water level has stabilized and is representative of the actual condition. Additionally, the geologists will measure the depth to water in the existing wells at a given location, if present, or the nearest groundwater monitoring well location.

Attachments:

None

References:

Shaw Environmental, Inc. (Shaw), 2010. Final Work Plan, Groundwater Investigation Work Plan, Part I: Field Investigation Activities, Bulk Fuels Facility Spill, Solid Waste Management Units ST-106 and SS-111; November.
