Request for Additional Information

Comment:

It is not clear that monitoring well 54-SC is screened across the Upper Sand and Main Sand aquifers. Please provide additional information justifying the screening interval for well 54-SC and its aquifer placement.

Basis:

U.S. Department of Energy (DOE) letter dated March 17, 2010.

Discussion:

By letter dated March 17, 2010, the DOE stated that well 54-SC is continuously screened across both the Upper Sand and Main Sand aquifers. Accordingly, the concern is that well 54-SC may be cross-contaminating the aquifers and that decommissioning of the well is necessary.

In review of the September 10, 1996 ACL application (ML081020013), and documents provided by the DOE (ML1013802801; ML101380276), well 54-SC appears to be completed and screened within the Upper Sand Aquifer (USA). The base of the USA was calculated to be 214 feet (ft) below the land surface datum (LSD) according to Table 4-1 in Appendix E of the Petrotomics report (ML081020013).

A discrepancy in the borehole data for the perforated interval exists for well 54-SC. According to Table 4-1 in Appendix E of the Petrotomics report (ML081020013), the perforated interval is from 168.8 ft to 208.8 ft below the LSD; whereas, the Petrotomics drilling log reported that the perforated interval was 175 ft – 215 ft below the LSD (ML101380276). These intervals are depicted on page 3. The Petrotomics drilling log also indicated that the clay was present down to a depth of 220 ft below the LSD. It is not clear that the clay layer separating the Upper Sand and the Main Sand aquifers was fully penetrated or if the screening interval is yielding groundwater from the Main Sand aquifer.

As well 54-SC does not appear to be screened across both the Upper and Main Sand aquifers, NRC staff does not believe decommissioning of this well is required. However, please provide any information that may indicate that well 54-SC is producing water from the Main Sand aquifer.

Comment:

Well 101-SC does not appear to be screened across the entire USA. Please provide additional information justifying why well 101-SC would be an adequate replacement for well 54-SC.

Basis:

DOE letter dated March 17, 2010.

Discussion:

Well 101-SC was drilled to a depth of 193 ft below the LSD according to the DOE monitoring well completion log for 101-SC (ML101380291). However, in the vicinity of well 101-SC the bottom of the USA appears to be at a depth of approximately 213 ft to 214 ft below the LSD at well 54-SC (ML081020013; ML101380276).

At well 54-SC, the USA bifurcates in the interval of 193 ft to 197 ft below LSD (ML101380276; ML101380280). This divided USA is also evident at nearby borehole C24H10, as shown on page 4. Accordingly, it appears that well 54-SC is completed through multiple sands in the USA and well 101-SC is completed in the upper portion of the USA.

BOREHOLE LOG SBS01-54-SC

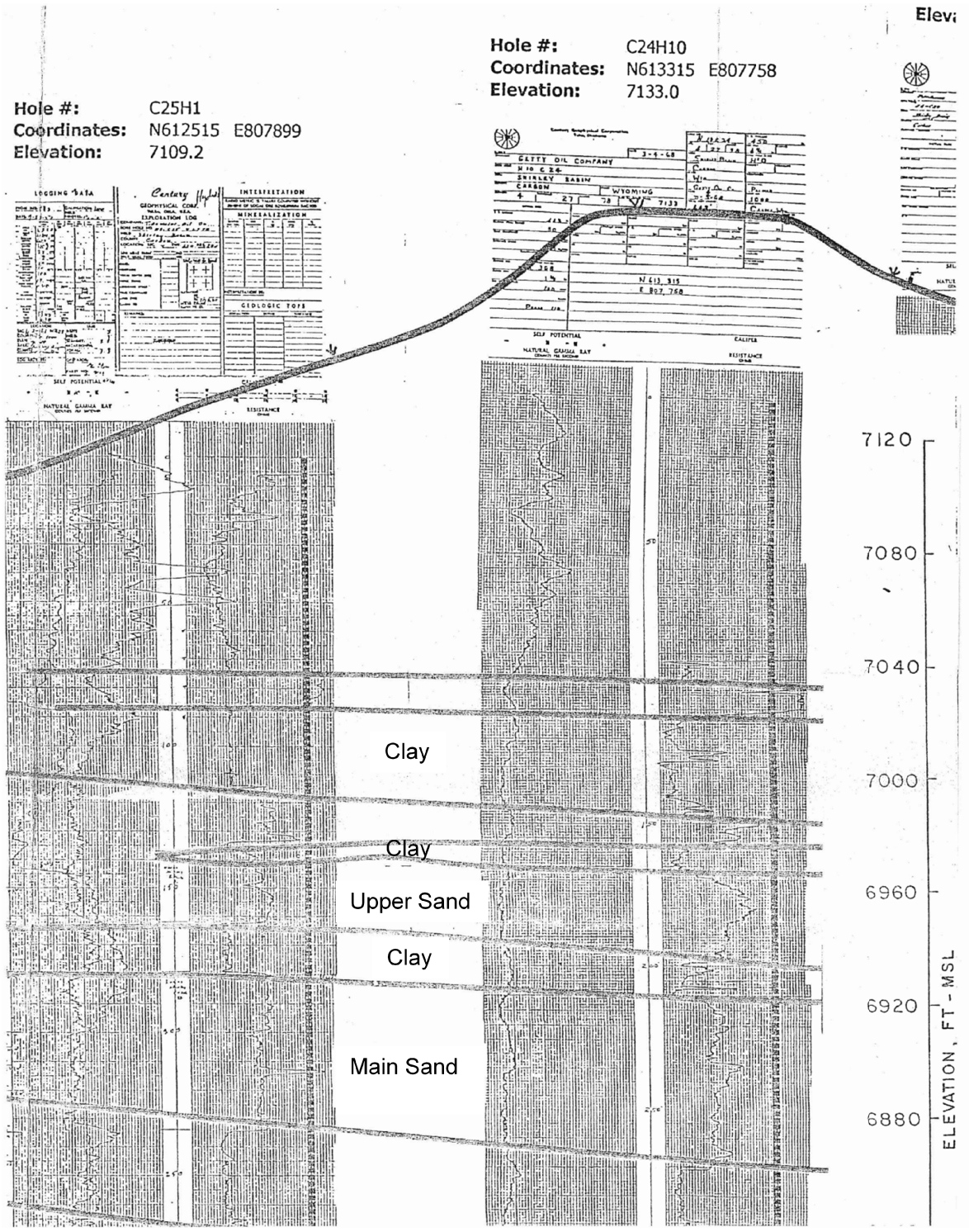
PROJECT LTSM **BOREHOLE NUMBER** 54-SC
SITE SHIRLEY BASIN SOUTH (PETROTOMICS) **DATES DRILLED** 06/17/1986

Continued from Previous Page

DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
130						125.0-132.0 ft. SAND (SP); very coarse grained , gray.
	7020					132.0-135.0 ft. CLAYSTONE; gray with some silt.
140						135.0-150.0 ft. CLAY (CL); green clay.
	7010					
150						150.0-155.0 ft. CLAYSTONE; gray, with some silt.
	7000					155.0-163.0 ft. CLAY (CL); fine grained.
160						
	6990					163.0-193.0 ft. SAND (SP); gray coarse grained sand.
170						
	6980					
180						
	6970					
190						
	6960					193.0-197.0 ft. SILTSTONE; gray calcite siltstone, very hard.
						197.0-213.0 ft. SAND (SP); fine to coarse grained sand, gray.
200						
	6950					
210						
	6940					213.0-220.0 ft. CLAY (CL); gray.
220						Total Depth 220.2 ft.
	6930					
230						
	6920					
240						
	6910					
250						
	6900					
260						

Perforated Interval

mactec-ers **U.S. DEPARTMENT OF ENERGY**
GRAND JUNCTION OFFICE, COLORADO


Elev
Hole #: C24H10
Coordinates: N613315 E807758
Elevation: 7133.0
Hole #: C25H1
Coordinates: N612515 E807899
Elevation: 7109.2
Clay
Clay
Upper Sand
Clay
Main Sand
7120
7080
7040
7000
6960
6920
6880
ELEVATION, FT - MSL