



TOTAL LENGTH  
OF CASING AND SCREEN (FT) 1018.8

DEPTH TO WATER  
FOLLOWING DRILLING (FT BGS) 868.4

DIAMETER OF BOREHOLE  
16.75 (IN) FROM 0.0 TO 314.7 (FT BGS)  
15.88 (IN) FROM 314.7 TO 762.8 (FT BGS)  
12.75 (IN) FROM 762.8 TO 1057.2 (FT BGS)

**SURFACE COMPLETION**  
PROTECTIVE CASING  
TYPE STEEL SIZE (IN) 10  
PROTECTIVE POSTS INSTALLED YES  
SURFACE SEAL AND PAD  
CHECK FOR SETTLEMENT YES  
PAD MATERIAL CONCRETE  
REINFORCED STEEL MESH  
PAD DIMENSIONS (FT) 10 (L) 10 (W) 0.5 (H)

**SURFACE SEAL** 3.0 TO 299.4 (FT BGS)

**HYDRATED BENTONITE CHIP SEAL** 299.4 TO 872.7 (FT BGS)

**FINE SAND COLLAR** 872.7 TO 874.8 (FT BGS)

**FILTER PACK** 874.8 TO 895.6 (FT BGS)

**SCREENED INTERVAL** 880.0 TO 890.0 (FT BGS)

**BENTONITE SEAL** 895.6 TO 964.9 (FT BGS)

**FINE SAND COLLAR** 964.9 TO 969.0 (FT BGS)

**FILTER PACK** 969.0 TO 1000.3 (FT BGS)

**SCREENED INTERVAL** 974.9 TO 994.9 (FT BGS)

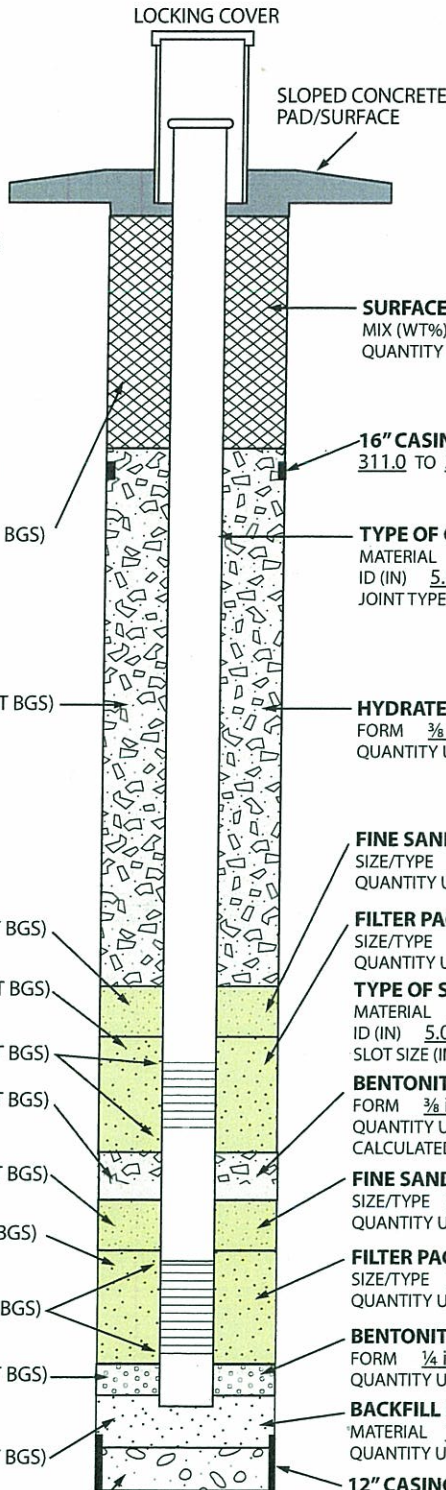
**BENTONITE SEAL** 1000.3 TO 1011.2 (FT BGS)

**BOTTOM OF CASING** 1016.0 (FT BGS)

**BACKFILL MATERIAL** 1011.2 TO 1050.8 (FT BGS)

**SLOUGH** 1050.8 TO 1057.2 (FT BGS)

**BOTTOM OF BORING** 1057.2 (FT BGS)



**WELL COMPLETION BEGAN**  
DATE 01/13/09 TIME 1018  
**WELL COMPLETION FINISHED**  
DATE 01/24/09 TIME 1330

**ELEVATIONS (FT AMSL)**  
WELL CAP 6706.88  
PROTECTIVE CASING 6707.57  
GROUND SURFACE 6704.25  
MONUMENT MARKER 6704.02

**SURFACE SEAL**  
MIX (WT%) CEMENT 97-98 BENTONITE 2-3  
QUANTITY USED 617.9 ft<sup>3</sup> CALCULATED 406.1 ft<sup>3</sup>

**16" CASING AND SHOE**  
311.0 TO 314.7 FT BGS

**TYPE OF CASING**  
MATERIAL STAINLESS-STEEL  
ID (IN) 5.00 OD (IN) 5.56 (5%)  
JOINT TYPE FLUSH WELDED

**HYDRATED BENTONITE SEAL**  
FORM 3/8 in CHIP  
QUANTITY USED 577.2 ft<sup>3</sup> CALCULATED 636.7 ft<sup>3</sup>

**FINE SAND COLLAR**  
SIZE/TYPE 20/40 SILICA SAND  
QUANTITY USED 2.0 ft<sup>3</sup> CALCULATED 1.5 ft<sup>3</sup>

**FILTER PACK SAND**  
SIZE/TYPE 10/20 SILICA SAND  
QUANTITY USED 23.8 ft<sup>3</sup> CALCULATED 14.8 ft<sup>3</sup>

**TYPE OF SCREENS**  
MATERIAL STAINLESS-STEEL  
ID (IN) 5.00 OD (IN) 5.88 (5%)  
SLOT SIZE (IN) 0.020 JOINT TYPE FLUSH WELDED

**BENTONITE SEAL**  
FORM 3/8 in CHIP/1/4 in PELLET  
QUANTITY USED 59.6 (19.4/40.2) ft<sup>3</sup>  
CALCULATED 49.2 ft<sup>3</sup>

**FINE SAND COLLAR**  
SIZE/TYPE 20/40 SILICA w/ SLOUGH  
QUANTITY USED 1.5 ft<sup>3</sup> CALCULATED 2.9 ft<sup>3</sup>

**FILTER PACK SAND**  
SIZE/TYPE 10/20 SILICA SAND  
QUANTITY USED 28.5 ft<sup>3</sup> CALCULATED 22.2 ft<sup>3</sup>

**BENTONITE SEAL**  
FORM 1/4 in PELLET  
QUANTITY USED 3.4 ft<sup>3</sup> CALCULATED 7.7 ft<sup>3</sup>

**BACKFILL MATERIAL**  
MATERIAL 10/20 SILICA SAND  
QUANTITY USED 27.5 ft<sup>3</sup> CALCULATED 31.7 ft<sup>3</sup>

**12" CASING AND SHOE**  
1025.0 TO 1057.2 FT BGS

**STAINLESS-STEEL CENTRALIZERS**  
USED YES AT 2.0 ft ABOVE AND  
BELOW WELL SCREENS

**TerranearPMC**

Drafted By: TPMC  
Project Number: 88100

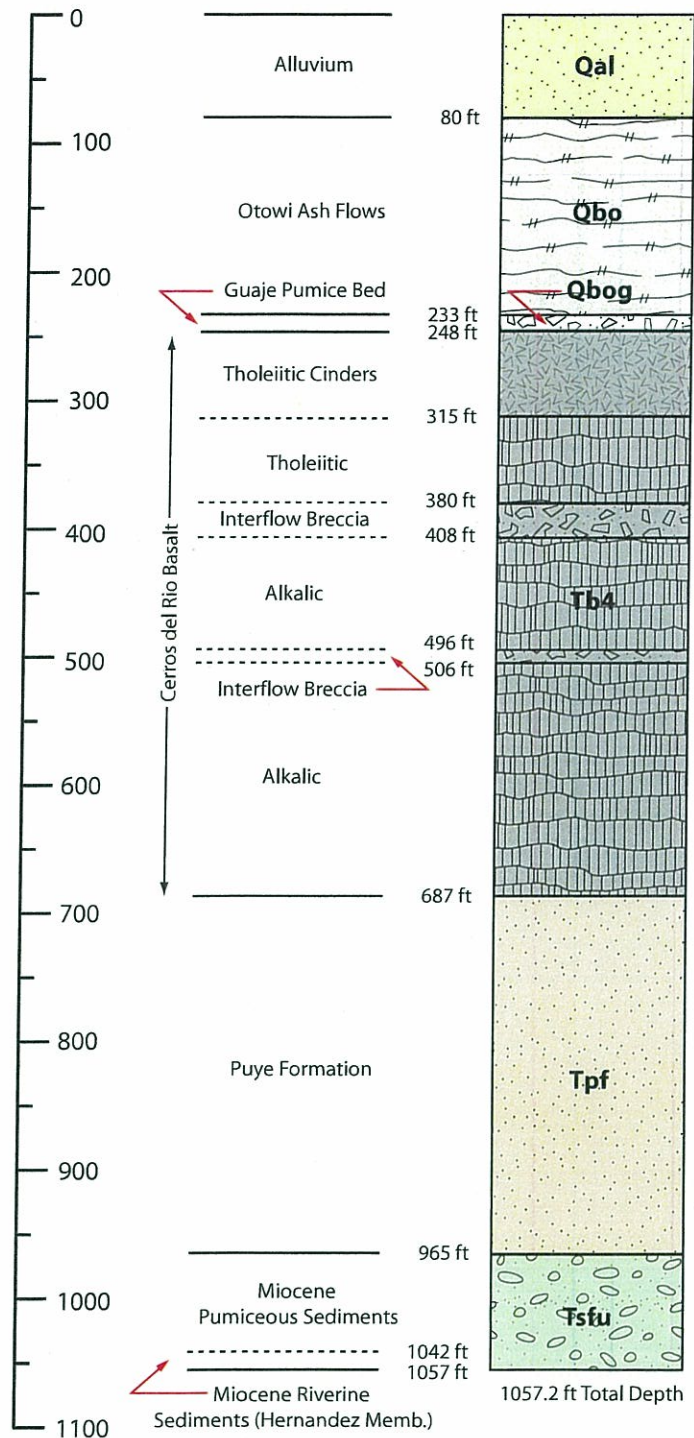
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**R-45 AS-BUILT WELL CONSTRUCTION DIAGRAM**  
Mortandad Canyon  
Los Alamos National Laboratory  
Los Alamos, New Mexico

**FACT SHEET**

NOT TO SCALE

DEPTH (FT BGS)



**DRILLING INFORMATION**

**DRILLING COMPANY/PERSONNEL:**

Boart Longyear  
J. Staloch, E. Johnson

**DRILL RIG:** Foremost DR-24HD

**DRILLING METHOD:**

DUAL ROTARY

**DRILLING FLUID TYPE:**

0-762.8 ft bgs                      762.8-1057.2 ft bgs

WATER                                       WATER

AIR     AIR

AQF-2 FOAMING AGENT

**DRILLING START/FINISH:**

DATE: 11/25/2008    TIME: 0901

DATE: 01/08/2009    TIME: 1650

▼ 868.4 ft bgs (01/09/09)  
(post drilling, composite  
2-screen water level)