

Location ID: BLM-18-430 Field Representative(s): G. ContaldoNorthing: 231671.53 Easting: 405970.80Date Started: 08/29/89 Date Completed: 09/19/89Drilling Method: Mud/Air-Foam Rotary Drilling Contractor: LarjonDriller: T. CrawfordTotal Depth Borehole: 500.0' Total Depth Well Casing: 456.1'Total Depth Surface Casing: 70"Diameter Well Casing: 4" Diameter Surface Casing: 10"Length of Bottom Blank: 5.3'Type of Screen: 20' extra strength 0.02 slotScreen Interval: 430.0' to 450.8'Water First Detected: not detected during drilling Water Level Open Borehole: 368.64' (T.O.C. 09/13/89)Water Level Cased Borehole: 369.1' (09/14/89)

Bentonite Gel Use: 10 bags

Quik-Foam Use: 10 gallons

Estimated Water Use: 4,700 gal. - Used during drilling
 -4,188 gal. - Recovered in pit
 512 gal. - Introduced to formation during drilling

Well Casing:

4in x 3ft SCD 40 PVC:	0	stock SS centralizers:	0
4in x 5ft SCD 40 PVC:	0	custom SS centralizers:	1
4in x 10ft SCD 40 PVC:	0	4"x2' SS locking riser:	1
4in x 20ft SCD 40 PVC:	0	4" SS locking cap:	1
Total SCD 40 PVC pipe:	0 ft	4" SS female cap:	1
4in x 3ft SCD 5 SS pipe:	1		
4in x 5ft SCD 5 SS pipe:	1	4in x 5ft SCD 10 SS pipe:	3
4in x 10ft SCD 5 SS pipe:	1	4in x 10ft SCD 10 SS pipe:	0
4in x 20ft SCD 5 SS pipe:	19	4in x 20ft SCD 10 SS pipe:	1
Total SCD 5 SS pipe:	398 ft	Total SCD 10 SS pipe:	35 ft
		4in x 10ft extra strength screen:	2

Well Completion:

100# bags 16/40 sand:	17.5 bags
100# bags 10/20 sand:	0 bags
100# bags 8/14 sand:	0 bags
100# bags 8/20 sand:	24 bags
94# bags cement:	140 bags
5 gal. buckets bentonite:	0 buckets
50# bentonite powder:	14 bags
Benseal:	0.5 bags

Surface Casing:

94# bags cement:	35 bags
50# bags bentonite powder:	4 bags
Grout:	0 bags

Pertinent Field Notes:

08/29/89 Drilled from 0'-25' using mud rotary with 12 1/4" bit. - Contaldo

08/30/89 Drilled from 25'-70' using mud rotary with 12 1/4" bit, reamed to 70' with 16" bit. Set 10" surface casing to 70'. - Contaldo

08/31/89 Grouted surface casing to ground surface. - Contaldo

09/01/89 Set up to drill with air-foam rotary; visually inspected air filters, filters OK. Drilled from 70'-235', 9 7/8" bit, through clay rich alluvium with gravel to cobble lenses. Used 800 gallons of water for drilling. - Cooper

09/05/89 Drilled from 235'-395' using air-foam rotary with 9 7/8" bit. Visually inspected air filters, filters look clean. Encountered bedrock (Air-fall Tuff) at 375'. No visible indications of groundwater to 395'. Used 800 gallons of water. - Contaldo

09/06/89 Measured water level in open borehole at 367' (0930). Drilled from 395'-500' using air-foam rotary with 9 7/8" bit. No visible indications of groundwater while drilling to 500'. Used 1100 gallons of water. - Contaldo

09/07/89 Measured water level in open borehole at 358.80' (1020). - Contaldo

- 09/08/89 Measured water level in open borehole at 368.65' (1100). - Egan
- 09/09/89 Conducted downhole geophysical survey (full suite of logs plus drift). - Contaldo
- 09/11/89 Measured water level in open borehole at 368.55' (0910). - Kirby
- 09/13/89 Measured water level in open borehole at 368.64' (1020). Sounded bottom of borehole at 460.19'. Installed well; screened interval 430.0'-450.8' (extra strength screen), total well depth 456.1', benseal plug 406.8'-419.0', gravel pack (8/20 sand) 424.0'-455.8'. - Contaldo
- 09/14/89 Measured water level in cased borehole at 369.10 (0920) from ground surface. Installed filler sand (8/20 & 16/40 mix) from 360.6' - 406.8'. Bailed five times (discharged \approx 30 gallons), measured water level at 372.5' (1430), 372.4' (1432), 371.3' (1441), 371.1' (1450), 370.85' (1505) to ensure hydraulic communication with aquifer. - Egan
- 09/15/89 Install first load of grout to secure well casing. Mix 70 bags cement and 4 bags gel in 592 gallons water (specs). Bail well once after grout is installed to check for any grout invasion. Water from bailer contains no grout. - Egan
- 09/18/89 Sounded grout at 183' (1 bag cement yielded 2.6 linear feet). Calculated 51 bags needed with 5% bentonite. Mixed 70 bags cement and 7 bags gel. Mixture just enough to bring grout to surface and install 6" x 5' guard pipe. - Cooper
- 09/19/89 Start development of well by surging with surge block and bailing. Well recovered \approx 56' in 1.5 hours. Set 1½ hp submersible pump at \approx 445' (pump intake). Pour concrete well pad and set brass cap. - Cooper
- 09/20/89 Portable generator brought to well site and the well pumped. Well is producing less than 1 gpm, probably between 0.25 to 0.5 gpm. See development sheet for details. - Cooper
- 09/21/89 Further development. See development sheet for details. - Cooper
- 10/16/89 Development complete after pumping 1361 gallons. Pulled pump and secure well. - Egan