

WELL SUMMARY

Location ID: 100-C-365 Field Representative(s): Jack Kirbv, Greg Contaldo

Northing: 220524.21 Easting: 414724.78

Date Started: 07/17/89 Date Completed: 09/18/89

Drilling Method: Mud Rotary (0-75'1, Air-Foam (75'-TD) Drilling Contractor: Larjon Drilling

Driller: Jim Gower/Tommy Crawford

Total Depth Borehole: 400 ft. Total Depth Well Casing: 390.8'

Total Depth Surface Casing: 78'

Diameter Well Casing: 4" Diameter Surface Casing: 10"

Length of Bottom Blank: 5.0'

Type of Screen: 20' Reg. Strength 0.02 slot

Screen Interval: 365.0' to 385.8'

Water First Detected: Not Detected Water Level Open Borehole: 321.75' (T.S.C.)

Water Level Cased Borehole: 310.7' (9/11/89)

Quik-Foam Use: 7.5 gallons foam and 1 gallon EZ mud.

Estimated Water Use: 5700 gallons used during drilling
~~-5000~~ gallons recirculated
 700 gallons introduced to borehole 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: | 0 | | |
| 4in x 5ft SCD 5 SS pipe: | 2 | 4in x 5ft SCD 10 SS pipe: | 0 |
| 4in x 10ft SCD 5 SS pipe: | 0 | 4in x 10ft SCD 10 SS pipe: | 0 |
| 4in x 20ft SCD 5 SS pipe: | 18 | 4in x 20ft SCD 10 SS pipe: | 0 |
| Total SCD 5 SS pipe: | 370 ft | Total SCD 10 SS pipe: | 0 ft |

20' Regular strength screen

Well Completion:

100# bags 16/40 sand: 8 bags
100# bags 10/20 sand: 0 bags
100# bags 8/14 sand: 0 bags
100# bags 8/20 sand: 15 bags

94# bags cement: 90 bags

5 gal. buckets bentonite: 2 buckets

50# bentonite powder: 9 bags

Surface Casing:

94# bags cement: 35 bags

50# bags bentonite powder: 14 bags

Pertinent Field Notes:

07/17/89 Spud 100-C and drill 0'-75' ; mud rotary, 12 3/4" bit. - Kirby
07/18/89 Ream borehole to 16" via mud rotary (0'-75'). Install 10" x 78' steel surface casing. - Kirby
07/19/89 Remove mud drilling equipment from well site. Mobilize **BE** drilling rig to well site. - Kirby
07/20/89 Replace both main and auxiliary canister air filters on **BE** rig. Drill 78'-200' via 9 7/8" air-foam rotary. - Kirby
07/21/89 Drill 200' to 240.5' via 9 7/8" air-foam rotary bit. Contact andesitic bedrock at 232'. - Kirby
07/24/89 Drill 240.5' to 275' via 9" air-foam rotary hammer. No water bearing zones encountered. - Kirby
07/25/89 Take **9:00** a.m. static at 269'. Fluid is relict from drilling, not formation water. Drill 275' to 347' via 9" air-foam rotary hammer. No water bearing zones encountered. - Kirby
07/26/89 Take **9:00** a.m. static at 342.5'. Fluid is relict from drilling. Drill 347' to 400' via 9" air-foam rotary hammer. No water bearing zones encountered. Stop drilling at 400' and monitor any possible groundwater recovery. If water recovers, borehole will be completed as a monitor well. - Kirby

07/27/89 Take 8:00 a.m. static at 393.5'. - Kirby

07/28/89 Take 9:00 a.m. static at 387'. - Kirby

07/31/89 Take 9:00 a.m. static at 373.5'. - Egan/Kirby

08/04/89 Take static at 355'. Sound bottom of borehole at 396'. - Kirby

08/08/89 Water level at 341.05' (1433). - Egan

08/16/89 Measured water level at 323.50' from ground surface (1000). - Contaldo

08/21/89 Fluid level at 315.68'. Measurement taken from top of surface casing at 1215. - Kirby

08/22/89 Fluid level at 314.25'. Measurement taken from top of surface casing at 1517. - Kirby

08/24/89 Fluid level at 312.25'. Measurement taken from top of surface casing at 0940. - Kirby

08/25/89 Fluid level at 311.15'. Measurement taken from top of surface casing at 1110. Bailed total of 23 times, fluid level at 388.71'. Measurement taken from top of surface casing at 1235 (see field notebook for additional notes and fluid level measurements during recovery). - Contaldo

08/28/89 Fluid level at 337.86'. Measurement taken from top of surface casing at 0845. - Contaldo

08/29/89 Fluid level at 327.79'. Measurement taken from top of surface casing at 1155. - Contaldo

08/31/89 Fluid level at 318.52'. Measurement taken from top of surface casing at 0945. Bailed total of 18 times, fluid level at 387.95'. Measurement taken from top of surface casing at 1117 (see field notebook for additional notes and fluid level measurements during recovery). - Contaldo

09/01/89 Measured water level in open borehole at 357.72' from top of surface casing. Lockheed sampled well for EPA Method 601. - Cooper & Contaldo

09/05/89 Measured water level in open borehole at 321.75' (1240) from top of surface casing. - Egan

- 09/08/89 Installed well. Screened interval from 365.0'-385.8'. Installed upper plug using bentonite pellets (see Well Completion Diagram for details). - Contaldo
- 09/11/89 Sounded top of plug at 297.3'. Added filler sand (8/20 + 16/40 mix) to 275.0'. Installed first load of grout. Used 60 bags cement, 6 bags bentonite gel, and 510 gallons of water mixed. Measured water level in cased borehole at 310.66' (T.O.C.). - Contaldo
- 09/12/89 Sounded top of first load of grout at 124' (top of surface casing). Installed second load of grout to ground surface. Used 30 bags cement, 3 bags bentonite gel, 254 gallons of water mixed. Protective outer casing installed. - Contaldo
- 09/15/89 SWL at 311.0' (from ground level, used probe #2). Began development with 3 cycles of surging and bailing (surged 15 times, bailed). On last bailing event well was bailed dry. Development water turbid, containing sand and silt. Bailed well dry in \approx 84 gallons (bailed 14 times). - Egan
- 09/16/89 SWL = 354.28' (T.I.C.) at 120 (used probe #2). - Kirby
- 09/17/89 SWL = 330.50' (T.I.C.) at 1520 (used probe #2). - Kirby
- 09/18/89 Surged and bailed well dry. The water was still very turbid. Poured concrete pad and set the brass cap. - Cooper
- 09/21/89 WL = 320.71' at 0710 (I.C.) probe #2. - Cooper
- 10/17/89 Install submersible pump. Intake at 380' (screen interval is 365' - 385'). Begin development with pump. (See development sheet for details.) - Egan
- 11/16/89 Finished development and pulled submersible pump. Informed Lockheed well was ready for sampling. - Cooper