



Shot: 250 lbs  
 depth: 78' → 70'  
 casing: 6"

water: 68'

CLIENT: U.S. Geological Survey/ S.C.E.C.  
 PROJECT: SSIP  
 CLIENT REP: Liz Rose

Thurs.		Date: 10/14/10	Hole # 4003a	Rig # 1	Driller: Sam Crum	Supervisor: Fuis
TIME	LOG #	FOOTAGE	REMARKS			LOG REFERENCE #
8:45	1/14		on site - had to water down the entrance - trucks got stuck			1. Crew Travel To Site
10:00	2					2. Rig Up
10:45	4/8	- 19'				3. Reenter Hole
10:52	4/8	- 20'	Boulders			4. Drilling
11:05	16	- 35'	Very rocky & rough; Slow			5. Pull Pipe
12:00	4/8		2nd steel (+ bit)			6. Mix Mud & Fill
12:10	4/8	- 55'	Rocky			7. Coring
			gravel & sand have been coming out the whole time			8. Install Casing/Pipe
12:20	4	70'	Really rough - boulders/rock			9. Cementing
12:37	8/4	- 75'	lots of gravel			10. Rig Down
12:45	4	- 80'				11. Move Rig To New Site
12:50	5					12. Maintenance
1:35	14	CASING ↓	Begin welding <del>up</del> lower casing section			13. Standby (Explain)
2:00	14		3rd section welded			14. Other (Explain)
2:20			*Cased to "69' → 70' depth			15. Logging
			-sam thinks boulders must have rolled in on the hole; The whole well was bouldery & so they cut the casing 1/10' short of 80' → 69' or 70' deep			16. Water Trip
2:26	10					MATERIALS USED
3:00	11		OFF TO 4022b			Mud _____ sacks
						LC _____ Type _____
						_____ sacks
						_____ sacks
						_____ sacks
						Viscose _____
						Cement _____
						Diesel _____
						Foamer _____
						Detergent _____
						Other _____
						CREW HOURS
						Driller _____ / _____
						Helper _____ / _____
						Helper _____ / _____

Footage: FROM \_\_\_\_\_ TO \_\_\_\_\_ TOTAL FOOTAGE 70'  
 Bit 7/8" changed at \_\_\_\_\_ Size \_\_\_\_\_  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_  
 Approved \_\_\_\_\_

SANDY got stuck at entrance

10/8/10  
 Hole depth: 78'  
 Shot size: 250'  
 6" casing

CLIENT: U.S. Geological Survey/ S.C.E.C.  
 PROJECT: SSIP  
 CLIENT REP: LIZ ROSE

Date: 10/8/10		Hole # 4010b		Rig # 1	Driller: Sam Crum	Supervisor: Fuis
TIME	LOG #	FOOTAGE	REMARKS		LOG REFERENCE #	
10:45	1/2		Sam's crew had to re-install hoses		1. Crew Travel To Site	
	1		Alex & I get to site		2. Rig Up	
	13		- neighbors need to be given info; were surprised we were here / curious		3. Reenter Hole	
10:56	1		Gabriel arrived (supposed to start at 10:30)		4. Drilling	
11:10	14		spoke w/ neighbors, gave info sheets		5. Pull Pipe	
11:17	4	- 0 -	started drilling w/ Gabriel's permission - he went to get water		6. Mix Mud & Fill	
11:22	4	15'	Add steel #2		7. Coring	
11:20	14		Vance welds casing notches while others drill		8. Install Casing/Pipe	
11:24	4	20'	Boulder or hard section		9. Cementing	
11:28	4	30-35'	Softens a bit for faster drilling		10. Rig Down	
11:31	4		steel #3 added		11. Move Rig To New Site	
			A little harder - slower than first 20'		12. Maintenance	
11:35	4	50'	WATER		13. Standby (Explain)	
11:37	4	55'	steel #4 added		14. Other (Explain)	
		60'	Harder to get through - slower drilling		15. Logging	
11:46	14		Gabriel returned		16. Water Trip	
11:48	4	75'	Steel #5 added			
11:51	4	80'	Boulder (?) at n 80'			
11:55	5		Pull out drill pipe			
		CASING	Gabriel left			
12:10	14		Sam's welding a cap onto casing section 1			
12:56	8	78'	Water runs clear at the top			
1 pm	8		Pushed top to surface level			
1:02	10/13		Clean up			

AM

PM

MATERIALS USED

Mud 3 sacks  
 LC \_\_\_\_\_ Type \_\_\_\_\_  
 \_\_\_\_\_ sacks  
 \_\_\_\_\_ sacks  
 \_\_\_\_\_ sacks  
 Viscose \_\_\_\_\_  
 Cement \_\_\_\_\_  
 Diesel \_\_\_\_\_  
 Foamer \_\_\_\_\_  
 Detergent \_\_\_\_\_  
 Other \_\_\_\_\_

CREW HOURS

Driller 1  
 Helper 1  
 Helper 1

Footage: FROM \_\_\_\_\_ TO \_\_\_\_\_ TOTAL FOOTAGE \_\_\_\_\_

Bit 7 7/8" changed at \_\_\_\_\_ Size \_\_\_\_\_  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_

Approved \_\_\_\_\_

Soft, but didn't get stuck



4011b

target 250 lbs  
78' 6"

water?  
w/10'

CLIENT: U.S. Geological Survey/ S.C.E.C.  
PROJECT: SSIP  
CLIENT REP: Liz Rose

Date: <u>Wed. Feb. 16</u> Hole # <u>4011b</u> Rig # <u>2-6KD</u> Driller: <u>Sam Crum</u> Supervisor: <u>Fuis</u>				
TIME	LOG #	FOOTAGE	REMARKS	LOG REFERENCE #
pm 2:30	1/2		met Larry Strausbaugh to agree on a location	1. Crew Travel To Site
5:15	2		set up rig on road/berm above dry pond - Rig sunk too far into the old pond	2. Rig Up
				3. Reenter Hole
				4. Drilling
				5. Pull Pipe
				6. Mix Mud & Fill
				7. Coring
				8. Install Casing/Pipe
				9. Cementing
				10. Rig Down
				11. Move Rig To New Site
				12. Maintenance
				13. Standby (Explain)
				14. Other (Explain)
				15. Logging
				16. Water Trip
<b>THURS. Feb 17</b>				
9:15	3			
10:15	4	0		
10:50	8	12'	put on drill collar	
11:15		30'	course sand w/10-30'	
pm 1:10		80'	waiting for dawl to get casing	
3:50	8	CASING ↓		
3:40		78'	cut off last section of casing	
4:25	10		leaving equipment over night except generator & water trailer	
<b>Fri Feb. 18<sup>th</sup></b>				
9:00			Moving rig & shaker off site to 116822	
				Mud _____ sacks
				LC _____ Type _____
				_____ sacks
				_____ sacks
				_____ sacks
				Viscose _____
				Cement _____
				Diesel _____
				Foamer _____
				Detergent _____
				Other _____
<b>CREW HOURS</b>				
				Driller _____ / _____
				Helper _____ / _____
				Helper _____ / _____

Footage: FROM \_\_\_\_\_ ' TO \_\_\_\_\_ ' TOTAL FOOTAGE \_\_\_\_\_'  
 Bit 7 1/8" changed at \_\_\_\_\_ ' Size \_\_\_\_\_"  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ ' Size \_\_\_\_\_"  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ ' Size \_\_\_\_\_"

Approved \_\_\_\_\_

4014  
100 feet  
8'

CLIENT: U.S. Geological Survey/ S.C.E.C.  
PROJECT: SSIP  
CLIENT REP: Cye

Date: 2/17/11		Hole # 4014		Rig # ①	Driller: Sam Crum	Supervisor: G.W.S
TIME	LOG #	FOOTAGE	REMARKS	LOG REFERENCE #		
10:30			ON SITE	1. Crew Travel To Site		
11am			water trip	2. Rig Up		
11:20			Fixing R.I.S	3. Reenter Hole		
11:46			TOOL UP	4. Drilling		
12:13	4	0'	Drilling + water trip	5. Pull Pipe		
12:18	2	15'	1st pipe added	6. Mix Mud & Fill		
12:21		20'	Sample taken SAND Grity Polym	7. Coring		
12:23	3	35'	2nd pipe added	8. Install Casing/Pipe		
12:30		40'	Sample taken SAND	9. Cementing		
12:35	6	55'	3rd pipe added	10. Rig Down		
12:38		60'	Sample taken SAND	11. Move Rig To New Site		
12:42	3	75'	4th pipe added	12. Maintenance		
12:47		80'	Sample taken SAND	13. Standby (Explain)		
1pm	3	95'	5th pipe added	14. Other (Explain)		
1:04		100'	Sample taken SAND	15. Logging		
1:11	5		Removing pipe	16. Water Trip		
1:21	5		All pipe and bit out to ground	MATERIALS USED		
1:39	8		Casing the hole 1st one down	Mud _____ sacks		
1:41	8		2nd casing added	LC _____ Type _____		
1:52	4		3rd casing added	_____ sacks		
2:02	3		4th casing added	_____ sacks		
2:12	3		5th casing added	_____ sacks		
2:22	3		6th casing added	Viscose _____		
2:34	3		7th casing added	Cement _____		
2:45	2		Don't casing hold	Diesel _____		
				Foamer _____		
				Detergent _____		
				Other _____		
				CREW HOURS		
				Driller _____ / _____		
				Helper _____ / _____		
				Helper _____ / _____		

Footage: FROM \_\_\_\_\_ ' TO \_\_\_\_\_ ' TOTAL FOOTAGE \_\_\_\_\_'  
 Bit 9 7/8 changed at \_\_\_\_\_ ' Size \_\_\_\_\_"  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ ' Size \_\_\_\_\_"  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ ' Size \_\_\_\_\_"

Approved \_\_\_\_\_

77-4020a  
 - shot size: 250 lbs  
 - depth: 78'  
 - casing: 6"

CLIENT: U.S. Geological Survey/ S.C.E.C.  
 PROJECT: **SSIP**  
 CLIENT REP: Liz Rose

Fri.  
 Date: 10/8/10 Hole # 4020a Rig # 1 Driller: Sam Crum Supervisor: Fuis

TIME	LOG #	FOOTAGE	REMARKS	LOG REFERENCE #
2:07	1		Called Gabriel to come over...	1. Crew Travel To Site
2:30	2		hoping he can make it	2. Rig Up
2:40	4	- 0 -	drilling - Gabriel gave OK on the phone & will be here soon	3. Reenter Hole
2:48	4	- 15 -	next steel (#2)	4. Drilling
	6			5. Pull Pipe
2:49	4	16'	Harder to drill through - slow	6. Mix Mud & Fill
3:09	4	50'	3 <sup>rd</sup> steel in - still hard rock	7. Coring
3:12	4	55'	still hard - gravel coming out of shaker	8. Install Casing/Pipe
3:15	8		next steel (#4)	9. Cementing
3:24	4	65'	Still hard to drill through; clottings are very coarse gravel	10. Rig Down
3:27	4/8	75'	Add 5 <sup>th</sup> steel Hard Gravel	11. Move Rig To New Site
3:50	14/5	80'	Gabriel arrived	12. Maintenance
4:00	14		Gabriel left; pulled pipe	13. Standby (Explain)
4:10	14	CASING	Pump Water Saw welded cap onto bottom & is beginning to drop casing into hole	14. Other (Explain)
4:50	8		Cased to the bottom	15. Logging
5:15	10		leaving rig here for the night then onto 4021a tomorrow morning	16. Water Trip
				<b>MATERIALS USED</b>
				Mud _____ sacks
				LC _____ Type _____
				_____ sacks
				_____ sacks
				_____ sacks
				Viscose _____
				Cement _____
				Diesel _____
				Foamer _____
				Detergent _____
				Other _____
				<b>CREW HOURS</b>
				Driller _____ / _____
				Helper _____ / _____
				Helper _____ / _____

Footage: FROM \_\_\_\_\_ ' TO \_\_\_\_\_ ' TOTAL FOOTAGE 80'

Bit 7-1/8" changed at \_\_\_\_\_ ' Size \_\_\_\_\_ "  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ ' Size \_\_\_\_\_ "  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ ' Size \_\_\_\_\_ "

Approved \_\_\_\_\_

easy to drive on

4021a

depth: 78'  
 shot: 250 lbs  
 casing: 6"

CLIENT: U.S. Geological Survey/ S.C.E.C.

PROJECT: SSIP

CLIENT REP: Liz Rose

Sat. Date: 10/9/10		Hole # 4021a Rig # 1		Driller: Sam Crum	Supervisor: FUIS
TIME	LOG #	FOOTAGE	REMARKS	LOG REFERENCE #	
8:29	1/14		Sam & crew got water & moved rig from 4020a to 4021a All crew on site Gabriel is not here yet however	1. Crew Travel To Site 2. Rig Up 3. Reenter Hole 4. Drilling	
8:50	2/14		Called Gabriel - No Answer Waiting for SW drilling yard to open so we can get casing	5. Pull Pipe 6. Mix Mud & Fill	
9:20			Drill is up, Travis left to pick up casing	7. Coring 8. Install Casing/Pipe	
10:00	16		Sam & I pumped from reservation w/ Debbi's permission	9. Cementing 10. Rig Down	
11:07	14		Gabriel finally answered & gave us the OK to go ahead	11. Move Rig To New Site 12. Maintenance	
11:18	4/8	0	Slower drilling; med. coarse gravel cuttings	13. Standby (Explain) 14. Other (Explain)	
11:22	4/8	19'	Add 2nd steel	15. Logging 16. Water Trip	
11:24	4/8	20'	Boulder or hard section		
11:30	4/8	35'	2nd steel added		
11:35	4	35' +	Hard rock - very coarse gravel & pebbles on shaker		
11:46	4	55'			
11:50	4/8		4th steel added		
11:57	4	72'	Boulders or harder rock		
12:01	4	75'			
12:03	8		6th steel pipe added		
12:10	4	80'			
12:24	5		All drill pipe pulled; casing prep.		
1:00	8	CASING	4th casing pipe being welded casing at the bottom		
1:19	8				
1:35	14		Hole capped at surface level		
2:35			stuck in sand/pulling out trucks for hours (I felt like hours...)		

MATERIALS USED

- Mud \_\_\_\_\_ sacks
- LC \_\_\_\_\_ Type \_\_\_\_\_
- \_\_\_\_\_ sacks
- \_\_\_\_\_ sacks
- \_\_\_\_\_ sacks
- Viscose \_\_\_\_\_
- Cement \_\_\_\_\_
- Diesel \_\_\_\_\_
- Foamer \_\_\_\_\_
- Detergent \_\_\_\_\_
- Other \_\_\_\_\_

CREW HOURS

- Driller \_\_\_\_\_ / \_\_\_\_\_
- Helper \_\_\_\_\_ / \_\_\_\_\_
- Helper \_\_\_\_\_ / \_\_\_\_\_

Footage: FROM \_\_\_\_\_ TO \_\_\_\_\_ TOTAL FOOTAGE 80'  
 Bit 7 7/8" changed at \_\_\_\_\_ Size \_\_\_\_\_"  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_"  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_"

Approved \_\_\_\_\_

sandy, soft → trucks stuck

70226

1000 lb shot  
100' hole  
8" casing

water = 50'

CLIENT: U.S. Geological Survey/ S.C.E.C.

PROJECT: SSIP

CLIENT REP: HZ ROSE

Date: 10/14/10		Hole # 40226 Rig # 1		Driller: Sam Crum	Supervisor: FUIS
TIME	LOG #	FOOTAGE	REMARKS		LOG REFERENCE #
4:00 PM	16		Vince, Dustin, & I went to Torres-Martinez reservation to pump from road w/ Debbi Livesay's permission		1. Crew Travel To Site
	2				2. Rig Up
4:15	1/2		All crew on site		3. Reenter Hole
4:35	1/4		Unloaded casing with as minimal damage as possible		4. Drilling
5:00	1/4		Went back home to the hotel & left everything set-up for tomorrow		5. Pull Pipe
					6. Mix Mud & Fill
					7. Coring
					8. Install Casing/Pipe
					9. Cementing
					10. Rig Down
					11. Move Rig To New Site
					12. Maintenance
					13. Standby (Explain)
					14. Other (Explain)
					15. Logging
					16. Water Trip
<b>Fri. 10/15/10</b>					
8:30 AM	1		I arrived on site		
8:45					
9:00	4	0	Boulders		
9:10	4	5'	ROCKY/Boulders -> ~25'		
9:20	8	15'			
9:30	4		Still rocky; not as much as at 15-20'		
9:40	4	35'	gravel & rocks		
9:44	8		fixing something on the driver's side of the rig		
	12				
10:05	4				
10:10	4	50'	Hit water		
10:16	4	55'			
10:20	8		4" steel		
10:27	4	60'	spill course sand, small gravel		
10:30	4	70'	course, angular gravel, subangular ~ 1 in diameter		
10:48	4	80'	Slower drilling through hard sandstone?		
11:07	4	85'	Boulders/rocks		
11:22		100'	ROCKY at 100'		
11:27	15		Same sand/gravel in the hole almost all the way through - esp. 60, 80, 100' all same material		
11:33	5				
11:44	5/14		All pipe is out		
11:55	8	CASING			
	8				
12:55	6	100'	Cased to 100'		
1:07	10				
1:37	11		Off site; well covered; tracks trampled/smoothed over		
			Hole plug used		

**MATERIALS USED**

Mud 26 sacks

LC \_\_\_\_\_ Type \_\_\_\_\_

\_\_\_\_\_ sacks

\_\_\_\_\_ sacks

\_\_\_\_\_ sacks

Viscose \_\_\_\_\_

Cement \_\_\_\_\_

Diesel \_\_\_\_\_

Foamer \_\_\_\_\_

Detergent \_\_\_\_\_

Other \_\_\_\_\_

**CREW HOURS**

Driller 1

Helper 1

Helper 1

Footage: FROM \_\_\_\_\_ TO \_\_\_\_\_ TOTAL FOOTAGE 100'

Bit 9 7/8" changed at \_\_\_\_\_ Size \_\_\_\_\_

Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_

Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_

Approved \_\_\_\_\_

Trucks got stuck on sandy bermis

\*Air

4024a  
250 lb shot  
78' deep  
6" casing

NO water  
at 80'

CLIENT: U.S. Geological Survey/ S.C.E.C.  
PROJECT: SSIP  
CLIENT REP: Liz Rose

Fri. 10/15/10		Hole # 4024a	Rig # 1	Driller: Sam Crum	Supervisor: FUIS
TIME	LOG #	FOOTAGE	REMARKS		LOG REFERENCE #
1:40 pm	1		All crew on site; Sam, Travis, Dustin and I		1. Crew Travel To Site
2:15	14		Need to get different casing & water from Torres-Marminez (w/ permission from Ricardo) for foam air to work.		2. Rig Up
3:50	2				3. Reenter Hole
4:10	4	0	Had to put 8" casing into hole for drill bit & foam to go into		4. Drilling
4:15	4	5'	A little bit rocky so I fear		5. Pull Pipe
4:21	4	10'	Smooth drilling		6. Mix Mud & Fill
4:25	8	15'	A little slower than <20'		7. Coring
4:31	4/8	35'	Smooth drilling - mud or sandstone		8. Install Casing/Pipe
4:42	4/8	55'	Sam thinks after ~15'		9. Cementing
4:53		78'			10. Rig Down
5:04	B	CASING	No cap welded to bottom; 6" casing fit inside the 8" section used for foam(?)		11. Move Rig To New Site
5:32	8				12. Maintenance
6:04			open hole; measured to 77'		13. Standby (Explain)
6:20	10		Tower down for the night		14. Other (Explain)
6:40	14		leaving site		15. Logging
			* No water, no hole plug drilled through bedrock (~10' 8" casing + 40' 6" casing & it would not drop down any further so they measured it w/string & tape measurer)		16. Water Trip
					MATERIALS USED
					Mud _____ sacks
					LC _____ Type _____
					_____ sacks
					_____ sacks
					_____ sacks
					Viscose _____
					Cement _____
					Diesel _____
					Foamer <u>1.5-2 gal</u>
					Detergent _____
					Other _____
					CREW HOURS
					Driller <u>1</u>
					Helper <u>1</u>
					Helper <u>1</u>

Footage: FROM \_\_\_\_\_ TO \_\_\_\_\_ TOTAL FOOTAGE 77'  
 Bit 7 7/8" changed at \_\_\_\_\_ Size \_\_\_\_\_  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_

Approved \_\_\_\_\_

easy to drive on roads

Mud

4026a

250 lb shot  
78' hole  
6" casing

water: ?  
couldn't tell.

CLIENT: U.S. Geological Survey/ S.C.E.C.

PROJECT: SSIP

CLIENT REP: Liz Rose

Sect. Date: 10/16/10		Hole # 4026a Rig # 1		Driller: Sam Crum	Supervisor: FUIS
TIME	LOG #	FOOTAGE	REMARKS	LOG REFERENCE #	
8:00 AM	1		get shaker from 4022b & rig from 4024a	1. Crew Travel To Site	
10:03	1		All on site at 4026a	2. Rig Up	
10:27	2			3. Reenter Hole	
10:51	4 1/8	0		4. Drilling	
10:54	4 1/8	15'	A little rocks at 15'	5. Pull Pipe	
			Rocky at 20' to 25'	6. Mix Mud & Fill	
			Smoothed to 35'	7. Coring	
11:00	16	35'	Sam & Travis went to Coachella VWD canal	8. Install Casing/Pipe	
12:26	14		Trucks back, ready	9. Cementing	
12:42	4			10. Rig Down	
12:45	8	25'	Rocky at 36'	11. Move Rig To New Site	
			lots of gravel on shaker	12. Maintenance	
			after in 36'; slower drilling	13. Standby (Explain)	
1:00	4	55'		14. Other (Explain)	
1:03	8			15. Logging	
1:25	4/8	75'	Rocky at ~76	16. Water Trip	
				<b>MATERIALS USED</b>	
1:30	8	89' CASING	hole plug in bottom	Mud 1-2 sacks <small>used mud from yesterday</small>	
3:00	8		cased to 82'	LC _____ Type _____	
			ran clean water into it	_____ sacks	
3:17	10		covered hole, kicked tracks out, rig & all went back to SWD drilling until Tues. morning or Mon. night	_____ sacks	
				_____ sacks	
				Viscose _____	
				Cement _____	
				Diesel _____	
				Foamer _____	
				Detergent _____	
				Other _____	
				<b>CREW HOURS</b>	
				Driller / _____	
				Helper / _____	
				Helper / _____	

Footage: FROM \_\_\_\_\_ TO \_\_\_\_\_ TOTAL FOOTAGE 82'

Bit 7 7/8" changed at \_\_\_\_\_ Size \_\_\_\_\_

Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_

Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_

Approved \_\_\_\_\_



4-20-2  
 Target shot size = 250 lbs  
 hole depth = 78' → 79'  
 casing diameter = 6"

water?  
 don't know

CLIENT: U.S. Geological Survey/ S.C.E.C.

PROJECT: SSIP

CLIENT REP: LIZ ROSE

Date: 10/25/10		Hole # 40286		Rig # 1	Driller: Sam Crum	Supervisor: FUIS
TIME	LOG #	FOOTAGE	REMARKS		LOG REFERENCE #	
1:37	1/2					
	14		work rocks were stuck at 4028a		1. Crew Travel To Site	
2:45	2				2. Rig Up	
3:21	4	0			3. Reenter Hole	
3:24	12		Something on the shaker has to be tightened & therefore taken apart first		4. Drilling	
					5. Pull Pipe	
4:15	4				6. Mix Mud & Fill	
4:28	5	5'			7. Coring	
4:45	4		Hit a big boulder at ~ 22'		8. Install Casing/Pipe	
			→ slower drilling		9. Cementing	
			Rocky ~ 25'		10. Rig Down	
			→ very slow drilling		11. Move Rig To New Site	
			shaker: dark, migmatite probably		12. Maintenance	
			or an intruded schist		13. Standby (Explain)	
			(mica, qtz, mafics)		14. Other (Explain)	
5:12	4/16	25'	Vance & Travis went for more water		15. Logging	
5:17	5	25'	3" steel added		16. Water Trip	
5:20	4	30'	crack in rock took up mud			
5:30	4	35'	re-crystallized limestone? green/white??			
6:00	5	45'				
6:20	4	65'				
	5		pulled steel out			
6:30	10		left for the night			
Tues. 10/26/10						
8:00 AM	1/2		overnight, the mud seeped into rock			
8:30	4/8	65-70'	Hard, Rocky			
9:15	4/8	70'				
			still super hard & rocky, slow drilling			
9:30	4	~75'			Viscose _____	
9:45	4	~80'			Cement _____	
	5				Diesel _____	
9:55	8		Cased to 79' & full of water		Foamer _____	
10:45	8	79'			Detergent _____	
10:51	10		welded cap on bottom		Other _____	
11:20	11					
11:30	11					
			The mud was sucked out at about 30-40' but it could have been the water table or cracks - no way to really tell Sam says			
						CREW HOURS
						Driller / _____
						Helper / _____
						Helper / _____

MATERIALS USED

Mud \_\_\_\_\_ sacks

LC \_\_\_\_\_ Type \_\_\_\_\_

\_\_\_\_\_ sacks

\_\_\_\_\_ sacks

\_\_\_\_\_ sacks

Viscose \_\_\_\_\_

Cement \_\_\_\_\_

Diesel \_\_\_\_\_

Foamer \_\_\_\_\_

Detergent \_\_\_\_\_

Other \_\_\_\_\_

Footage: FROM \_\_\_\_\_ TO \_\_\_\_\_ TOTAL FOOTAGE 79'

Bit 7 7/8" changed at \_\_\_\_\_ Size \_\_\_\_\_

Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_

Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_

Approved \_\_\_\_\_

A little soft on the berms along the road but OK

4030a

250 lb shot  
78' target depth  
6" casing

Water?  
~40-45'

CLIENT: U.S. Geological Survey/ S.C.E.C.

PROJECT: SSIP

CLIENT REP: Liz Rose

Tues.		Date: Oct. 19, 2010		Hole #	Rig #	Driller:	Supervisor:
TIME	LOG #	FOOTAGE	REMARKS			LOG REFERENCE #	
10 AM	1		Sam, Travis, & Dustin				
11:10			I got to site			1. Crew Travel To Site	
11:25	16		Sam, Travis, & Dustin went to canal			2. Rig Up	
	14		It's POURING rain... but otherwise			3. Reenter Hole	
			I'm pretty sure we'd get stuck			4. Drilling	
			in the deep-ish sand			5. Pull Pipe	
	13/14		Roads flooded - I had to drive			6. Mix Mud & Fill	
			up the hill to not get			7. Coring	
			caught in the drainage			8. Install Casing/Pipe	
			Sam & helpers stuck down -			9. Cementing	
			catchment surely on the			10. Rig Down	
			road somewhere - waiting to			11. Move Rig To New Site	
			get through flooded/washed			12. Maintenance	
			out road			13. Standby (Explain)	
						14. Other (Explain)	
						15. Logging	
						16. Water Trip	
Wed. 10/20/10							
8:00am	1/2		It's sunny again!				
8:30am	1		Crew on site with am				
8:30	4	0	I got there, mostly set up from yesterday			MATERIALS USED	
8:48	8	15'	Rocky start but lots of sand			Mud _____ sacks	
9:05	4	35'	Large gravel after			LC _____ Type _____	
9:08	8	45'	Sandstone				
	4	50'	3rd steel rods				
9:28	4	50'	ROCKY/Boulder				
9:41	8	55'	4th 20' section added			_____ sacks	
9:45	4	70'	Hard rock / coarse sandstone			_____ sacks	
			w/lot				
10:06	4	75'	black sand - schist?			_____ sacks	
10:10	8		5th added				
10:12	4	79'?				Viscose _____	
10:20	5					Cement _____	
10:44	8	CASING	welding casing			Diesel _____	
						Foamer _____	
11:24	8	82'	cased to 82' w/Bentonite hole plugs			Detergent _____	
			Water to the top is clear			Other _____	
11:25	10					CREW HOURS	
12:01	11		Rig/sam left for SW Drilling yard			Driller <u>1</u>	
						Helper <u>1</u>	
						Helper <u>1</u>	

Footage: FROM \_\_\_\_\_ TO \_\_\_\_\_ TOTAL FOOTAGE \_\_\_\_\_

Bit 7/8" changed at \_\_\_\_\_ Size \_\_\_\_\_

Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_

Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_

Approved \_\_\_\_\_

sand is wet from rain,  
w/4x4 12' 00" driving

4052b

Water?

Target shot = 250 lbs

depth = 78'

Casing = 6"

80'

don't know

CLIENT: U.S. Geological Survey/ S.C.E.C.

PROJECT: SSIP

CLIENT REP: Jiz Rose

Tues. 10/26/10

Date: 10/26/10 Hole # 4032b Rig # 1

Driller: Sam Crum

Supervisor: Fuis

TIME	LOG #	FOOTAGE	REMARKS	LOG REFERENCE #
11:35 am	2			1. Crew Travel To Site
12:09	4	0		2. Rig Up
12:18	8	10'	Gravel + sand on shaker	3. Reenter Hole
12:27	4	20'	ROCKY	4. Drilling
	4/8	30'	Mostly compacted sed; boulders; no	5. Pull Pipe
	4/8	30'	cracks to suck up the mud	6. Mix Mud & Fill
1:30	4	65-70'	softened - faster drilling	7. Coring
1:34	8	70'		8. Install Casing/Pipe
1:45	4/5	78'	Begin welding & casing while	9. Cementing
1:50	18	CASING	vance & Dustin went to	10. Rig Down
			pulling more water from	11. Move Rig To New Site
			canal	12. Maintenance
2:40	8	80'	welded cap, filled w/water	13. Standby (Explain)
			& cased to 80'	14. Other (Explain)
			cap flush w/surface level	15. Logging
3:10	11		All off site	16. Water Trip
				MATERIALS USED
				Mud _____ sacks
				LC _____ Type _____
				_____ sacks
				_____ sacks
				_____ sacks
				Viscose _____
				Cement _____
				Diesel _____
				Foamer _____
				Detergent _____
				Other _____
				CREW HOURS
				Driller / _____
				Helper / _____
				Helper / _____

Footage: FROM \_\_\_\_\_ TO \_\_\_\_\_ TOTAL FOOTAGE 80'

Bit 7/8 changed at \_\_\_\_\_ Size \_\_\_\_\_

Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_

Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_

Approved \_\_\_\_\_

Easy to drive on

4036a  
 Target shot - 250 lbs  
 depth - 78'  
 casing - 6"

water?  
 40' ?  
 maybe

CLIENT: U.S. Geological Survey/ S.C.E.C.  
 PROJECT: SSIP  
 CLIENT REP: Liz Rose

Tues. 10/26/10 Date: 10/26/10 Hole # 4036a Rig # 1 Driller: Sam Crum Supervisor: Fuis

TIME	LOG #	FOOTAGE	REMARKS	LOG REFERENCE #
3:15pm	1/2		Close to drill at old stake	1. Crew Travel To Site
4:20	10		Set up rig & shaker and went home for the night	2. Rig Up
4:30	14		All off site; though we were blocking the road	3. Reenter Hole
Wed 10/27/10				
8:00 AM	1		Vance & Sam got there first	4. Drilling
8:45	1/2		I arrived on site with Dustin & Travis ~15 min behind me	5. Pull Pipe
8:45	4	0		6. Mix Mud & Fill
8:55	8	10'	(drill bit = 15') Add 1 <sup>st</sup> steel	7. Coring
9:18	4/8	30'	2 <sup>nd</sup> steel	8. Install Casing/Pipe
9:25	4	40'	lost mud - probably hit water	9. Cementing
9:32	4/8	50'		10. Rig Down
MATERIALS USED				
9:44	4	65'	Fast drilling compared to yesterday;	Mud _____ sacks
9:52	8	70'		LC _____ Type _____
10:10	4	78'	Mud disappeared again??	_____ sacks
10:12	5			_____ sacks
10:17	8	CASING		_____ sacks
		↓	cased to 78'	_____ sacks
11:08	10	78'		Viscose _____
11:30	11		All off site	Cement _____
CREW HOURS				
				Driller / _____
				Helper / _____
				Helper / _____

Footage: FROM \_\_\_\_\_ TO \_\_\_\_\_ TOTAL FOOTAGE \_\_\_\_\_

Bit 7 7/8" changed at \_\_\_\_\_ Size \_\_\_\_\_"  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_"  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_"

Approved \_\_\_\_\_

Desert Pavement → Easy Driving

4040a

2000 lb shot  
140' hole  
8" casing

water?  
hit gravel: softened  
at 60' but maybe, may  
not have had water in it

CLIENT: U.S. Geological Survey/ S.C.E.C.  
PROJECT: SSIP  
CLIENT REP: LIZ ROSE

Wed

Date: 10/27/10 Hole # 4040a Rig # 1 Driller: Sam Crum Supervisor: Fuis

TIME	LOG #	FOOTAGE	REMARKS	LOG REFERENCE #
11:40 am	1			
	2			
12:25	4	0		1. Crew Travel To Site
12:35	4	15'	(20' drill bit)	2. Rig Up
12:38	8	15'	1st steel added	3. Reenter Hole
12:50	4	35'	Pretty smooth drilling; a little rocky	4. Drilling
12:54	8	35'	2nd steel	5. Pull Pipe
			(→ conference call)	6. Mix Mud & Fill
1:2 pm		100'		7. Coring
2:10	12		Something on the shaker needs fixing - had to weld some stuff together	8. Install Casing/Pipe
				9. Cementing
3:10	4	100		10. Rig Down
				11. Move Rig To New Site
4:15	4	115'	NOT super rocky, but consistently hard	12. Maintenance
4:17	8		Add drill steel	13. Standby (Explain)
4:24	4	120'		14. Other (Explain)
5:07	4	135'	slower drilling; hard packed or sandstone	15. Logging
5:26	5			16. Water Trip
5:40	9/8	CASING	All steel out, drill bit out; begin casing	MATERIALS USED
5:48	14		Sunset; kept casing/welding	Mud _____ sacks
6:45	10		Cased, but needs to be pushed down a couple feet so we will finish quickly in the morning.	LC _____ Type _____
		138'		_____ sacks
Thurs 10/28/10				_____ sacks
7:00 am	10		Pushed casing down, covered hole cleaned up	Viscose _____
9:45	11		Next: Line 7	Cement _____
				Diesel _____
				Foamer _____
				Detergent _____
				Other _____
				CREW HOURS
				Driller _____ / _____
				Helper _____ / _____
				Helper _____ / _____

Footage: FROM \_\_\_\_\_ TO \_\_\_\_\_ TOTAL FOOTAGE 138'  
 Bit 12" changed at \_\_\_\_\_ Size \_\_\_\_\_"  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_"  
 Bit \_\_\_\_\_ changed at \_\_\_\_\_ Size \_\_\_\_\_"

Approved \_\_\_\_\_

Didn't get stuck