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ES-22

DATE	DEPTH															COMMENTS									
		MUD 20G	QUIK 20G	FOAM	PORTLAND	CMC (CELLEX)	H4 SEAL	FIBRETEX	KWIK SEAL	CC-16	SODA ASH	CALCIUM CHLORIDE	FANU	MUD SEAL	PENELOUX 460		PLASTER	MUD FIBER	CAUSTIC	ROD LUBE	LAST CIRCULATION	CEMENTING	WATER		
3/19	D 1775																						1	8 HRS REPAIR	
	S 1775-1805	30	20				2			2					3	1								(4)	TRIP IN, 2 HRS WASHING
	N 1805-1820	15	20							1					2	2								(5)	
3/20	D 1820-1850	30	14							3			2		3	1								(3)	ROUND TRIP FOR BIT
	S 1850-1870	20	27				2			6			3		10	2						4		(7)	
3/21	D 1870-1885	15	8										1		3							5		(4)	1 HR REPAIR
	S 1885-1915	30	9												1									(2)	3 HR REPAIR
	N 1915-1960	45	10												1									(3)	
3/22	D 1960-1985	25	23				1								9	1								(4)	
	S -																								LAY DOWN PIPE, ETC
	N -																								" " "
3/23	D -						40																	(4)	8 HRS CASING + CEMENTED
3/24	D -																								8 HRS CASING - HAULING GRE RODS
3/26	D -		6																					8 1/2	MAKE UP STRING - DRILL CEMENT
3/27	D 1985-2030	45	2							1						2								(2)	
3/28	D 2030-2060	30	8										2		4									(3)	
	S 2060-2086	26	6				1																	(2)	
3/29	D 2086-2110	24	5										1	1							1			(3)	
	S 2110-2145	35	12										1											(2)	
3/30	D 2145-2148	3											1											(2)	PULLED FOR BIT, HAULED SUPPLIES
	S 2148-2168	20	6				1						1			5								(2)	WENT IN WITH NEW BIT
3/31	D 2168-2173	5	2										1			1								(2)	ROUND TRIP FOR BIT
	S 2173-2198	25	6																					(2)	
	N 2198-2203	5	13				2																	(4)	
4/2	D 2203-2240	37	6										1											(3)	
	S 2240-2280	40	16				1									1								(5)	
4/3	D 2280-2310	30	1																					(4)	
	S 2310-2334	24	9																					(5)	
4/4	D 2334-2355	21	3				1									1					1			(5)	
	S 2355-2390	35	6													1								2	
4/5	D 2390-2402	12	1																					2	TRIP FOR BIT, 2 HRS REPAIR
	S 2402-2435	33	3																					(3)	RUN RODS IN HOLE
4/6	D 2435-2455	20	3				1																	(3)	1 HR REPAIR
	S 2455-2482	27	4																					(3)	
4/7	D 2482-2500	18	3																					(3)	2 HRS START LAYING DOWN RODS
	S -																								8 HRS TEAR DOWN
		297	55				3			1			1			3							1		



ES-20  
KIM #1

COLLARED: 1) 12-15-73  
2) 1-2-73  
COMPLETED: 3-29-73

DATE	DEPTH	MUD 20G	QUICK FOAM	PORTLAND	CMC	HY-SEAL	FIBRETEX	KWIK SEAL	CC-16	SODA ASH	CALCIUM CHLORIDE	FONDUE 460	MUD SEAL	PLASTER	CEMENTING WATER	COMMENTS
12-15	D 0-15 + 0-25	5							3							5 HRS STANDBY, 3 HRS <sup>STANDBY</sup> SET UP, 2 HRS DRILLING
12/16	D															8 HRS STANDBY
12/17																16 HRS STANDBY
12/18																16 HRS STANDBY
12/19																16 HRS STANDBY
12/20																16 HRS STANDBY
12/21	MOVED TO ES-10															8 HRS STANDBY
RELOCATED ON ES-20 1-2-73																
1/2	S 0-30	10														1
	D SET UP															
1/3	D 30-100	15									1					1
	S 100-120	5	10										2	7		3 HRS CASING, 4 HRS CEMENTING; Cased 110 FEET OF 6"
	N 120-430	20														2
1/4	D 410-565	15											1			1 2 HRS REPAIR
	S 565-700	20											1			3 HRS STANDBY FOR PIT
	N 700-															1 8 HRS STANDBY FOR PIT
1/5	D 700-															8 HRS " " "
	S -	16		1												5 1 HR STANDBY; 7 HRS CIRCULATION; MUDDING UP
	N -	12														4 8 HRS CIRCULATION
1/6	D 700-725	12					2						1			1 6 HRS CIRCULATION
	S 725-740	2					2						2			2 DRILLED UP CORE CUTTER FROM OTHER BIT
	N 740-	6											2			2 8 HRS CIRCULATION
1/8	D 740-845	18											3			3 4 HRS CIRCULATION
	S 845-950	6						1					1			1 PULLED FOR BIT @ 920
1/9	D 950-1010	21					10	1					3			6 3 HRS LOST CIRCULATION
	S 1010-1085	15					6						3			4 3 HRS LOST CIRCULATION
1/10	D 1085-1100	22					2	1					1			6 9 HRS " " TRIP FOR BIT
	S 1100-1220	8					2						4			2 1 " " "
1/11	D 1220-1310	22					3						1	2		6 3 HRS " "
	S 1310-1355	11					4						1			3 4 HRS " " PULLED FOR BIT
1/12	D 1355-1415	7														2
	S 1415-1460	6					2									2 TRIP FOR BIT
1/15	D 1460-1505	14		1			2						1			3 TRIP IN
	S 1505-1580	4														1
	N 1580-1625	15					4									4 4 HRS LOST CIRCULATION

12 HR SHIFTS ON BOWLES

ES-20

DATE	DEPTH	MATERIALS												COMMENTS							
		MUD 20G	QUICK FOAM	PORTLAND	CMC	H4 SEAL	FIBERTEX	KWIK SEAL	CC-16	SODA ASH	CALCIUM CHLORIDE	PENESVIK 460	MVD SEAL		PLASTER	CELLEX	MUD FIBER	CEMENTING WATER			
1/16	D 1625-1670	3		1													1				
	S 1670-1730	6																			
	N -			1														4 HRS REPAIR, TRIP FOR BIT			
1/17	D 1730-1790	2																			
	S 1790-1850	12					1										2	1 HR LOST CIRCULATION, 1 HR REPAIR			
	N 1850-1895	9															2	2 HRS " "			
1/18	D 1895-1940	3		1														2	TRIP OUT FOR BIT		
	S 1940-1985																		TRIP IN WITH BIT		
1/19	N 1985-2030	3																	1		
	D 2030-2075	3																	1		
	S 2075-2120																				
	N 2120-2135	5																	1	ROUND TRIP FOR BIT	
1/20	D 2135-2180																			3 HRS REPAIR	
	S 2180-2195																			3 HRS REPAIR	
	N 2195-2210																			TRIP OUT FOR BIT, 4 HRS REPAIR	
1/22	D -																			2 HRS REPAIR, REAMED 300', PULLED OUT OVERSIZE BIT	
	S 2210-2225																			2 HRS REPAIR, TRIP IN WITH BIT	
	N 2225-2270																				
1/23	D 2270-2315																			1	
	S 2315-2345																			2	
	N 2345-2360																			1	PULLED RODS FOR NEW BIT
1/24	D 2360-2405																			1	LOWERED RODS
	S 2405-2450																			1	2 HRS REPAIR
	N 2450-2465 (70?)																			1	
1/25	D -																			8	8 HRS CASING, LAYING DOWN RODS
	S -	15	85																	8	CASED 3 1/2" TO 5-25
1/26	D -	15	85																	11	11 HRS CASING
	N -																			8	4 CEMENT SETTING UP, SITE CLEANUP
1/27	D -																			8	" " "
	S -																			8	" " "
	N -																			8	" " "
1/30	D -	6		1																1	3 HR REPAIR SABOTAGE, DRILL OUT PLUG
	S 2470-2485	2		1																1	
	N 2485-2502																				
1/31	D 2502-2528	2		2				1												1	2 HRS REPAIR
	S 2528-2547																				
	N -																				TRIP FOR MISLATCH

C'mon you guys!

ES-20

DATE	DEPTH	MATERIALS											COMMENTS					
		MUD 2QG	QUIK FOAM	PORTLAND	CMC	HY SEAL	FIBERTEX	KWIK SEAL	CC-16	SODA ASH	CALCIUM CHLOR	PENQUIK 460		MUD SEAL	PLASTER	CELLEY	MUD FIBER	CEMENTING WATER
2/1	D 2547-2557	3		1				1									1	TRIP RODS
	S 2557-2560																	TRIP FOR BIT
	N 2560-2570																	SHORT RUNS
2/2	D 2570-2594	1																1 HR REPAIR, SHORT RUNS
	S 2594-2601																	
	N 2601-2628																	
2/3	D 2628-2642																	FINALLY BROKE THROUGH MUD RINGS
																		4 HR REPAIR ON GEAR BOX
																		REPLACED GEAR BOX, WAS REBUILT(?) IN PHOENIX
2/7	D 2642-2655																	2 HRS REPAIR
	S 2655-2675																	
	N 2675-2695																	
2/8	D 2695-2710																	2 HRS REPAIR, ROUND TRIP FOR BIT
	S 2710-2734																	
	N 2734-2751																	
2/9	D 2751-2794	2		1														
	S 2794-2839	2																
	N 2839-2869																	
2/10	D 2869-2900																	1 HR REPAIR
	S 2900-2948																	TRIP FOR BIT AT 3005
	N 2948-3005																	
2/11	S 3005-3015																	2 HRS REPAIR
	N 3015-3054																	
2/12	D 3054-3090	3		1														1 2 HRS REPAIR WIRELINE
	S 3090-3130																	
	N 3130-3170																	
2/13	D 3170-3210	2		1														1 HR REPAIR WIRELINE; TRIP FOR BIT
	S 3210-3220																	
	N 3220-3245																	
2/14	D 3245-3285																	1 HR REPAIR, NEW WIRELINE
	S 3285-3318																	
	N 3318-3342																	2 HR REPAIR
2/15	D 3342-3380	2		1														
	S 3380-3419			1														
	N 3419-3455																	
2/16	D																	7 HRS REPAIR, SERVICED RIS, ETC
	S 3455-3471																	

KMDC  
1

KMDC  
1

KMDC  
1

GREEN  
15 GAL  
LUBE  
5

MBS  
5 GAL  
MVD  
LUBE  
1

MVD  
LUBE  
1

CAUSTIC  
1

GREEN  
10

ES-20

DATE	DEPTH	MUD 20G	QUIK FOAM	PORTLAND	CMC	HY SEAL	FIBERTEX	KWIK SEAL	CC-16	SODA ASH	CALCIUM CHLOR	PENEQUIK 460	MUD SEAL	PLASTER	CELLEX	MUD FIBER	CEMENTING WATER	COMMENTS
2/16	N 3471-3510																	
2/17	D 3510-3550	2		1														
	S 3550-3580																	
	N 3580-3593																	TRIP FOR MISLATCH, CHANGED BIT
2/20	D 3593-3611																	
	S 3611-3640																	
	N 3640-3679																	
2/21	D 3679-3719									4#								1 HR REPAIR
	S 3719-3749																	
	N 3749-3779																	
2/22	D 3779-3809	2		1														1 PULLED FOR BIT CHANGE
	S -																	RAN PIPE IN HOLE
	N 3809-3849																	
2/23	D 3849-3879	2																
	S 3879-3909																	
	N 3909-3939																	
2/24	D 3939-3969																	LOST WATER 3968
	S 3969-3979	2		1		2				1								3 PULLED OUT FOR BIT
2/26	D -	6		1		2				1								1 4 HRS REPAIR
	S -																	RAN IN 1500 FT OF RODS
	N -																	TRIP TO CLEAN BIT
2/27	D -	6		1		2												
	N -																	ROUND TRIP
2/28	D 3979-3999	8		2		2												3 ROUND TRIP TO UNPLUG CORE BARREL
	N 3999-4039	4				1												3
3/1	D 4039-4089	8		2		2				2								3 2 HRS REPAIR W/L
	N 4089-4095	3																1 ROUND TRIP FOR BIT
3/2	D 4095-4135	9		2		1				2								4 4 HRS REPAIR
	N 4135-4183	4				1				1								2
3/3	D 4183	4		1						1								TRIPPED OUT AND BACK IN TO CASING
	D -																	5 HRS WELDING CAPS ON OLD HOLES
3/5	D 4183-4192	12	15	1		2				4						10	3	16 HR SHIFT
3/6	D -	8								10								9
3/7	D -																	8 HAULING WATER, WELDING HOLES
3/8	D 4192-4215	8		2		2					3							4 3 HRS LOST CIRCULATION
3/9	D 4215-4255	10		1		1					3							4 NO CIRCULATION
	S 4255-4284	10 76	15	10		9				10	2 78					37	36	



ES-20

DATE	DEPTH	MATERIALS											COMMENTS						
		MUD LOG	QUICK FOAM	PORTLAND	CMC (CELLEY)	HYSEAL	FIBERTEX	KWIK SEAL	CC-16	SODA ASH	CALCIUM CHLOR	RENEAVIK 460		MUD SEAL PLASTER					
3/28	D 4878-4880	2	6			1												3	2 HRS REPAIR, 2 HR. WATER DELAY ???
	S 4880-4910	30	10															3	
	N 4910-4930	20	13			1												4	
3/29	D 4930-4960	30	15			1												3	1 HR STANDBY
	BOTTOM OF HOLE																		
			44			3												12	ELECTRODE LOWERED TO BOTTOM AND SECURED AT COLLAR; APPROXIMATELY 8400 FT OF WIRE ON ELECTRODE
3/29	S	—																	LAI D DOWN RODS
3/30	D	—																	8 HRS STANDBY MOVING ON AND OFF KIM 2

ES-19

TRACT 37

12/15

0-15

Hole collapsed at 7:15 AM on Tract 37 approximately 250 FEET  
northeast of ES-14. Drill forced to withdraw by P-D personnel



ES-17

COLLARED :  
COMPLETED:

DATE		DEPTH	MUD 2QG	QUICK FOAM	PORTLAND CEMENT	CMC	HV-SEAL	FIBERTEX	KWIK SEAL	CC-16	SODA-ASH	CALCIUM CHLORIDE	TENEQUIK 480	FONDVE	MUD SEAL	PLASTER			CEMENTING WATER	COMMENTS	
12-8	N	0-20	1																1	3 HRS SET UP SET 20 FT COLLAR PIPE	
12/9	D	20-35																	2	SET COLLAP PIPE	
	S	35-155	1																		
12/10	D	155-275	20																1	NO AIR RETURN	
	S	275-335	20	1										4					4	2 CEMENTED HOLE	
12/11	D	335-440	1	25							145. 4								3	4 HRS STANDBY WAITING ON FOAM	
	S	-		15															8	4	1 WASHED HOLE, LAID DOWN RODS, CASED & CEMENTED 3 1/2 IN TO 440
12/12	D																			8	8 HRS STANDBY - NO PITS
12/13	D		12		1														2	4	6 HRS STANDBY FOR WATER, DRILLED CEMENT
12/14	D	440-452	8	9	1										3				2	5 HRS LOST CIRC., CEMENTED	
	S	452-462	1	4		1			1										4	DRILLED CEMENT, TRIP FOR BIT, CORED, CEMENTED	
12/15	D	462-471	8	12											6				8	2	CEMENTED 3 TIMES
12/16	D	471-490	8																5	3	DRILLED CEMENT, GREASED RODS
	S	490-529	1																	1	
12/18	D	529-579	12																	4	
	S	579-629	7		1														1	1	ROUND TRIP 8/0 WIRELINE
12/19	D	629-679	12																	5	TRIP OUT RODS
	S	679-729	10																	3	WENT IN WITH RODS

ES-16

COLLARED: 12-8-72  
COMPLETED: 12-13-72

DATE	DEPTH	MUD 206	QUIK FOAM	PORTLAND CMT	CMC	HY-SEAL	FIBERTEX	KWIK SEAL	CC-16	SODA ASH	CALCIUM CHLORIDE	FENOVIK 460	FONDUVE	MUD SEAL	PLASTER	CEMENTING WATER	COMMENTS
12/8	D SET UP	5 GAL														1	9 HRS STAND BY
	S 0-80	5															
12/9	D 80-110	5															
	S 110-180	5															
12/10	D 180-250	6															
	S 250-360	10															
12/11	D 360-435	1 9															
	S 435-515	10															
12/12	D 515-560	3 5															
	S —	34		2				1									
12/13	D 560-604																
	S —																
12/14	D —																
	S —																
12/15	D —																
	S —																
12/16	D —																
	S —																

REST INH.  
5 GAL

FRA  
1

CAUSTIC  
1

CASING  
9-1 1

12

12 HR SHIFTS

ES-14

COLLARED: 12-6-72

COMPLETED: 12-13-72

DATE	DEPTH	MUD	QUICK	CMC	HY-SEAL	FIBRETEX	KWIK-SEAL	CC-16	SODA ASH	CALCIUM CHLORIDE	PENEQIK 460	FONDUE	MUD SEAL	PLASTER	PORTLAND	CEMENTING	WATER	COMMENTS
12/6	D SET UP 8 HRS	GAL.																
	S 0-100	7																
12/7	D 100-265												4	2				1 SET 100 FT OF 6 IN CASING
	S 265'-490	6																1
	N -																	1
12/8	D -																	80 WATER SWIVEL
12/9	D -																	8 HRS REPAIR ENGINE
12/12	D 550-650	2	1					1										8 HRS " " # WATER SWIVEL
	S																	1 WATER COURSE AT 600 FEET
12/13	D																	8 HRS CASING, 3 1/2" TO 500 FT.
																		CASING 3 2 4 HRS MOVING, EASED 3 1/2" TO 650 FEET

METLER BROS.

QUICK THICK

**ES-12**

12/1	0-120	1
12/2	120-375	
12/3	375-450	

**ES-13**

12/4	0-35				
12/5	35-70				
12/6	70-160				
12/7	160-260		5 1/2 hrs	compressor time	
12/8	260-335		7 hrs	"	"

very poor circulation

**ES-15**

12/9	0-120		10 hrs	compressor time	
12/10	120-280	3	10 1/2 "	"	"
12/11	280-380		7 1/2 hrs	"	"
12/12	380-424		5 hrs	"	"

left bit & 8 inches of sub in hole



ES-10

START: 11-6-72  
 FINISH 11-25-72  
 TOTAL SHIFTS:

DATE	DEPTH	MUD 298	QUICK FOAM	PORTLAND CEMENT	CMC	HY-SEAL	FIBERTEX	KWIK SEAL	CC-16	SODA ASH	CALCIUM CHLORIDE	TENERIK	FONDV 460	MUD SEAL	GEL	FRA	CEMENTING	WATER	COMMENTS
M 11/6	D																		SET UP
T 11/7	D	0-55																	
	S	55-160																	6" CASING TO 53 FEET
	N	160-285																	
W 11/8	D	285-460																	
	S	460-670																	
	N	670-700																	STUCK RODS @ 700 FEET
Th 11/9	D	700-	6		1				1										3 WORKE RODS OUT, MIXING MVD
	N	-																	
FR 11/10	D	-	22		4														4 MIX MVD + CIRCULATION MATERIAL
	S	700-765	10		1	1	3												3 8 HRS CIRCULATING
	N	765-815	6																
SAT 11/11	D	815-885																	
	S	885-965																	TRIP FOR BIT
	N	965-1025																	
SUN 11/12	D	1025-1125																	1 TRIP OUT FOR BIT
	S	1125-1210																	TRIP IN WITH BIT
	N	1210-1240																	TRIP FOR BIT
11/13	D	1240-1305																	1
	S	1305-1365																	PULLED FOR BIT
	N	1365-1425																	TO BOTTOM WITH BIT
11/14	D	1425-1470																	1
	S	1470-1530																	
	N	1530-1570																	1 PULLED FOR BIT
11/15	D	1570-1590																	
	S	1590-1600																	TRIP FOR BIT
	N	1600-1635																	ROCK VERY HARD
11/16	D	1635-1660																	TO BOTTOM WITH BIT
	S	1660-	12		1														PULL FOR BIT, START CHANGING MUD
	N	1660-1690																	4
11/17	D	1690-1730																	1 TO BOTTOM WITH BIT
	S	1730-1770																	TRIP OUT FOR BIT
	N	1770-1780																	IN WITH BIT
11/18	D	1780-																	ROUND TRIP FOR BIT

ES-10

DATE	DEPTH	MUD 2QG	QUICK FOAM	PORTLAND CEMENT	CMC	HY-SEAL	FIBERTEX	KWIK SEAL	CC-16	SODA ASH	CALCIUM CHLORIDE	FENEQUIR 460	FONDU	MUD SEAL	GEL	FRA	CEMENTING WATER	COMMENTS
11/20	D 1780-1815																	
	S 1815-1830																	PULLED OUT FOR BIT
	N 1830-1845																	1 TRIP IN 4" BIT
11/21	D 1845-1875																	1
	S 1875-1905																	PULL FOR BIT
11/22	D 1905-1920																	2 IN 4" BIT
	S 1920-1960																	
	N 1960-1965																	PULL FOR BIT 5 HRS REPAIR
11/24	D 1965-1980																	1 IN 4" BIT
	S 1980-1995																	1 BROKE OUT RODS, STARTED CASING
11/25	D		25															5 CASING 2 CASING 5 CEMENTING 1 3 1/2" CASING TO 1995'
CORE																		
12/21	D 1985 (?)	4	1					1										3 SETTING UP
12/26	D -																	SET UP
	S 1985-1996	2						1										2 3 HR WASHING, 1 HR MIX MUD
12/27	D 1996-2020																	1 HR REPAIR, 3 MISLATCHES, 6 ROUND UP CORE
	S 2020-2038																	MISLATCH " " "
12/28	D 2038-2055	1	1															1 LOWERED RODS
	S 2055-2062																	PULLED OUT RODS
12/29	D 2062-2080																	LOWERED RODS
	S 2080-2109																	
1/2	D 2119-2137	5	1			1												2 1 HR REPAIR (10' discrepancy may be correction factor !!)
	S 2137-2162	2																
1/3	D 2162-2172	4	1			1												1 PULLED FOR BIT, 2 HRS REPAIR
	S 2172-2202																	
1/4	D 2202-2237	3	1															1
	S 2237-2267	1																
	N 2267-2297	1																
1/5	D 2297-2327	1																
	S 2327-2357																	
	N 2357-2387																	1 HR REPAIR
1/6	D 2387-2417																	
	S 2417-2447																	
	N 2447-2480																	PULLED BACK TO CASING









ES-9

COLLA

DATE	DEPTH	9	MUD 20G	QUICK FOAM	PORTLAND	CMC	HY-SEAL	FIBRETEX	KWIK SEAL	CC-16	SODA ASH	CALCIUM CHLOR.	FONDU	MUD SEAL	PENEQVIK 460	PLASTER	GEL	CEMENT & WATER		COMMENTS
																		CEMENT	WATER	
12/12	N 1396-1448	9																2	1	1 HR LOST CIRCULATION
12/13	D 1448-1495	8																1	1	
	S 1495-1540	3																1	1	
	N 1540-1570	7																1	1	
12/14	D -	4																2	2	1 HR REPAIR ROUND TRIP
	S 1570-1590	10			*	1												1	2	2 HR "
	N 1590-1648	3																2	2	
12/15	D 1648-1694	6			*	1												2	2	
	S 1694-1724	5			*	1												1	2	2 HRS PUTTING UP SHACK
	N 1724-1730	2																1	2	1 HR WATER DELAY
12/16	D -																	1	1	8 HRS CLEANING SUMP, HAULING TANKS, FIXING HOSES
	S 1730-1758	6																1	1	2 HRS CIRCULATION - MIXING NEW MUD
12/18	D 1758-1781	3																1	1	3 HRS REPAIR
	S 1781-1822	6																1	1	
	N 1822-1857	3																1	1	
12/19	D 1857-1885	4																1	1	PULLED FOR BIT
	S 1885-1919	8																1	1	LOWERED RODS
<del>12/20</del>	<del>D 1919-1953</del>	<del>5</del>																1	1	
12/20	D 1953-1984	4																1	1	
	S 1984-2030	5																1	2	
	N 2030-2068	3																1	1	
12/21	D 2068-2106	3																1	1	
	S 2106-2155	7			*	1												1	1	
	N 2155-2173	3																1	1	2 HRS REPAIR
12/22	D 2173-2190	3																1	1	4 HRS REPAIR
	S 2190-2201																	1	1	TRIP FOR MISLATCH, 2 HRS REPAIR
	N 2201-2218	1																1	1	LOWERED RODS
12/23	D 2218-2235	2																1	1	
	S 2235-2262	4																1	1	
	N 2262-2270	1																1	1	SHUT DOWN FOR HOLIDAY
12/26	D 2270-2289	6																1	1	2 HRS REPAIR
	S 2289-2315	4																1	2	
	N 2315-2342	3																1	1	
12/27	D 2342-2378	8																1	2	
	S 2378-2390	2																1	1	
	N 2390-2394	2																1	1	LOWERED RODS, DRILLED BRIDGES

ES-9

DATE	DEPTH	MVD 29G	QUICK FOAM	PORTLAND	CMC	HY-SEAL	FIBERTEX	KWIK-SEAL	CC-16	SODA-ASH	CALCIUM CHLORIDE	FONDU	MUD SEAL	RENEOVIK 410	PLASTER	GEL	CEMENTING	WATER	
12/28	D 2394-2445	9							1								LUBE	1	3
	S 2445-2495	3															CLX	1	1
12/29	D 2495-2520	6																1	2
	S 2520-2539	3										1						1	2
	N 2539-2559	2																1	1
12/30	D 2559-2577	4																	2
1/2	D <del>2577-2595</del>	5																	1
	S 2577-2595	2																	2
	N 2595-2616	2																	1
1/3	D 2616-2633	2															CAUSTIC LUBE	1	2
	S -																		8
	N -																		8
1/4	D -	7	20														LIME	1	8
	S -																		8
	N -																		8
1/5	D -	6															SPERSENE	1	8
	S -	5		1															8
	N -																		8
1/6	D 2633-2645	3															CAUSTIC LUBE	1	4
	S 2645-2663	1															LUBE	1	1
	N 2663-2697	4		1													LUBE	1	1
1/7	D 2697-2740	2															SPERSENE	1	1
	S 2740-2780																		1
	N 2780-2820	1																	
1/8	D 2820-2848	1															LUBE	1	1
	S 2848-2878																LUBE	1	
	N 2878-2900																LUBE	1	
1/9	D 2900-2925	6		1													CAUSTIC LUBE	1	2
	S 2925-																		8
1/10	D -																		8
	S -																		8
	N -																		8
1/11	D -																1/2 SALT	20	8
	S -	4		10															8
	N -																		8

2 HRS REPAIR

GOING IN HOLE; 3 HRS REPAIR

2 HRS DRILLING CAVE

PULLED RODS TO CEMENT, 2 HRS REPAIR

PREPARING TO CEMENT

WASHING & DRILLING CEMENT

DRILLED CEMENT & PULLED RODS

DRILLED & WASHED CEMENT CAVE

(4 HRS DRILLING CAVE ISN'T CEMENT TIME !!)

PULLED RODS TO CEMENT (TRIP FOR BIT !!)

TRYING TO GET BARREL TO BOTTOM

HOLE BLOCKED @ 2500, PULLED & PUT ON WASH ROD

DOING WHAT?

" "

GOT WASH ROD TO 2506

PULLED RODS, WASHED ROCK BIT TO 2000

DOING WHAT





ES-9

DATE	DEPTH	MVD 206	QUICK FOAM	PORTLAND CEMENT	CMC	HY SEAL	FIBERTEX	KWIK SEAL	CC-16	CALCIUM CHLOR	MUD SEAL	PENEGUIC 460	PLASTER GEL	CAUSTIC BIT LUBE	CEMENTING WATER	COMMENTS
2/15	S 3758-3768	2									1				1	LOWERED REMAINING RODS, BROKE WIRELINE
	N 3768-3777															FINISHED TRIPPING RODS
2/16	D 3777-3791	5		1					1		2#				2	4 HRS REPAIR
	S 3791-3810	4		1		1					1				3	
	N —								3					BENTONITE 5	3	6 HRS LOST CIRCULATION
2/17	D —	3														8 HRS LOST CIRCULATION (OR CEMENTING)
	S —		15												8	
	N —	3									1				8	
2/20	D —	2		1										15 GAL GREASE	8	1 HIT CEMENT 596' OFF BOTTOM
	S —	2		1											8	1 DRILLED CEMENT 3250-3568
	N —	4		1							1			6	8	1 DRILLED 287' CEMENT - LOST CIRCULATION SAME PLACE
2/21	D —	6			1	1									8	2 WASHING TO BOTTOM, PUMPED LOST CIRCULATION MATERIAL
	S —	6		1											3	3 PULLED RODS BACK TO CEMENT AGAIN, NUMEROUS MECHANICAL FAILURES
2/22	D DID NOT WORK	4		10											8	1 CEMENTED
	S —	2													8	1
	N —														8	
2/23	D —	7		1							2#				8	1 LOWERED TO 3570
	S —	1													8	1 WASHED & DRILLED TO 30' OFF BOTTOM
	N 3810-3815	10							1	3#				2	5	2 LOST CIRCULATION BOTTOM OF HOLE
2/24	D 3815-3831	8		1					1	2#				1	3	NO RETURN
	S 3831-3843	6		1							3			1	2	"
	N 3843-3853	4							1	2					1	"
2/26	D —	8		1		3			2	4				1	5	3 REPAIR 1HR 7 HRS LOST CIRCULATION
	S 3853-3863	15		1						2				1	4	4 HRS LOST CIRCULATION
	N 3863-3880	10		1						4				1	4	
2/27	D 3880-3881	9	15	1											5	1 CEMENTED
	S —	9													8	1 WASHED AT 3280 TILL MVD RETURNED
	N —	2		1											8	1 STARTED WASHING TO BOTTOM
2/28	D —	2												2	8	1 WASHED & CHOPPED CEMENT TO 3770
	S —														8	1 TRYING TO PULL RODS STUCK ON PREVIOUS SHIFT
3/1	D —															UNSTUCK RODS, SERVICED EQUIP
	S —															WET PULL OUT; SAND IN CORE BARREL
3/2	D —	3													2	2 LOWERED RODS, SAND IN HOLE
	S —	15		1											1	1 DRILLED AND WASHED TO 3716
	N —	7							1	1					3	3 DRILLED SAND AND HIT CEMENT
		25		1					1	1					6	





# ES-8

DATE	DEPTH	MUD 200G	QUICK FOAM	PORTLAND CEMENT	CMC	HV-SEAL	FIBERTEX	KWIK SEAL	CC-16	SODA ASH	CALCIUM CHLORIDE	FONEQUIK 460	MUD SEAL	PLASTER	GEL	FRA	CEMENTING WATER	COMMENTS
F 11/10	D 1173-1183	15		1	1	*	4										4	6 HRS LOST CIRCULATION
	S 1183-1214	11															2	2 HRS " "
	N 1214-1241	10		1	1												2	2 " " "
SAT 11/11	D 1246-1268	7				1											3	2 HRS LOST CIRCULATION
	S 1268-1295	9				1		1									1	2 HRS " "
SUN 11/12	N 1295-1324	10															1	2 HRS " "
	D 1324	8	8	*													8	1
	S																8	WAITING FOR CEMENT TO SET
	N																8	
M 11/13	D	6		1													8	1 DRILLING & WASHING CEMENT
	S	4															8	1 " " "
	N 1324-1354	8															2	1 " " "
TU 11/14	D 1354-1383	8				2											1	3
	S 1383-1423	4															1	1 HR LOST CIRC.
	N 1423-1459	3															1	
W 11/15	D 1459-1483	5				2						1					2	1 HR LOST CIRC.
	S 1483-1522	7		1													1	1 HR " "
	N 1522-1560	4				1						1					1	1 HR " "
Th 11/16	D 1560-1590	5				1						1					2	
	S 1591-1610	4		1				1									1	1 HR LOST CIRC.
	N 1610-1633	7										1					1	1 HR " " TRIP FOR BIT
FR 11/17	D 1628-1645	5		1													2	TRIP FOR PLUGGED BIT
	S 1645-1665	3															1	
	1665-1690	5															2	
SAT 11/18	1690-1714	8															2	1 HR LOST CIRC.
MON 11/20	D 1714-1726	6				1						1					2	3 HR LOST CIRC.
	S 1726-1738	2		1														MISLATCH - TRIPPED OUT - PUT ON NEW BIT
	N 1738-1760	7				1											1	2 HR LOST CIRC.
TUE 11/21	D 1760-1778	8				1						1					2	2 HR LOST CIRC.
	S 1778-1811	3															2	8 HRS DRILLING
	N 1811-1835	6															1	1 HR LOST CIRC.
WED 11/22	D 1835-1842	9		1		1											2	1 HR LOST CIRC
	S 1842-1868	3																8 HRS DRILLING
	N 1868-1888																	8 HRS DRILLING
11/23 TO 11/26	OFF FOR HOLIDAYS																	

# ES-8

DATE	DEPTH	MUD 206	QUICK FOAM	PORTLAND CEMENT	CMS	HY-SEAL	FIBERTEX	KWIK SEAL	CC-16	SODA ASH	CALCIUM GILLOIDE	PENECUIK 460	MUD SEAL	PLASTER GEL	FRA	CEMENTING WATER	
NOV 11/27	D 1888-1885	6															2 CLAIMS 6 HR LOST CIRC.
	S 1895-1935	4				1											2 9 HOURS DRILLING
NOV 11/28	D 1935-1961	7				1						1					1 1 HR LOST CIRC
	S 1961-1978	4															1 8 HRS DRILLING
11/29	D 1978-1997	11				1						1					2 2 HRS CIRCULATION DELAY
	S 1997-2045	7															2 2 HRS LOST CIRCULATION
11/30	D 2045-2095	12	1			2											2 2 HRS LOST CIRCULATION
	S 2095-2145	8										1					3
12/1	D 2145-2201	9				1						1					3 LOST ALL RETURN @ 2193
	S 2201-2206	8				1											1 6 HRS LOST CIRCULATION, TRIP FOR PLUGGED BIT
12/2	D 2206-2214	7										1					1 2 HRS LOST CIRC.; MISLATCH
12/4	D 2214-2216	7															1 3 HRS LOST CIRC, TRIP FOR MISLATCH
	S 2216-2234	8	1														3 2 HRS
12/5	D 2234-2236	8				1											2 6 HRS LOST CIRC.
	S 2236-2268	7	1														3
	N 2268-2289	11										1					2 2 HRS LOST CIRC
12/6	D 2289-2313	11	1			1											2
	S 2313-2358	7	1														3 1 HR LOST CIRC @ 2354
	N 2358-2361	13				1						1					3 4 HRS LOST CIRC.
12/7	D 2361-2391	12										1					2
	S 2391-2411	7	1			1											3
	N 2411-2420	4															1 LOST WATER @ 2418
12/8	D	5				1											1 8 HRS LOST CIRCULATION
12/9	D																SHUT DOWN FROM NOON 12/8 TO 10 AM 12/9
12/11	D 2420-2437	8										1					1 4 HRS TO BOTTOM, FLUSHING, REGAINING CIRCULATION
	S 2437-2447	3										1					1 7 HRS STANDBY
CREW MOBILIZED OTHER LONGYEAR 44 FROM TOWN AND MOVED TO ES-9 ON FRI 12/8 NOT 12/11 BUT PART																	
HEDES CLAIMS 24 HR STANDBY STARTING MIDNIGHT 12/11 THROUGH MIDNIGHT 12/16 OF CREW RETURNED TO ES-8 UNTIL 12/11																	
WHEN SWITCHOVER WAS COMPLETE																	
12-29 WILL PAY 8 HRS / DAY THROUGH 12-16 FOR STANDBY																	

# ES-7

BOYLES BROS.

COLLARED: 9-25-72  
 COMPLETED: 10-16-72  
 TOTAL SHIFTS: ~~36~~ 16 72

DATE	DEPTH	MUD 29G	QUICK FOAM	PORTLAND CEMENT	CMC	H <sub>2</sub> -SEAL	FIBERTEX	KWIK-SEAL	CC-16	SODA-ASH	CALCIUM ASH	PENNEK CHLORIDE	FONDUE 460	MUD SEAL	PLASTER	GEL	FRA	(CASING) CEMENTING	WATER LOADS	COMMENTS
M 9/25	D 0-20	5																		1 5 HRS SET UP
	S 20-70	2																		1
Tu 9/26	D 70-115	6	5																	BEDROCK 100 FEET; 6" CASING TO 115'
	S 115-125	1																		DRILLER QUIT AFTER 4 HRS.
W 9/27	D 125-275	6							1											1
	S 275-335	4																		TRIP FOR BIT
Th 9/28	D 335-435	4																		1
	S 435-520	4																		
F 9/29	D 520-595	5																		TRIP FOR BIT
	S 520-595	1																		PUT HAMMER ON
S 9/30	D 595-625			1					1					4						2 HIT WATER - GOING TO MUD
	S	15			3	2								4						2 8 HRS LOST CIRCULATION
M 10/2	D	24		1	4	2								4						6 10 HRS LOST CIRCULATION 12 HR SHIFTS
Tu 10/3	D 625-655			1	4	4								4						3 3 HRS LOST CIRCULATION
	S 655-670	24		1	5									1						4 9 HRS LOST CIRCULATION
W 10/4	D 670-760	21		2	4	2	4													5 2HR CIRCULATION
	S 760-780		1										3							2 TRIP FOR CEMENT JOB 3 HRS CIRCULATION
Th 10/5	D	13	4	1		2				1	6			1						4 3 4 HRS CIRCULATION
	S 780-880	2			1					1				1						3 1
F 10/6	D 880-960	15			2	1														3 4 HRS CIRCULATION
	S 960-1000	21		1	3					1										4 8 HRS CIRCULATION
S 10/7	D	15	5	1	1															3 5 HRS CIRCULATION
	S	10											6							3 2 HRS CIRCULATION
M 10/9	D 1000-1090	21		1	1															3 3 HRS CIRCULATION
	S 1090-1165	5																		TI
Tu 10/10	D 1165-1195	3																		TRIP FOR BIT
	S 1195-1255	6																		1
W 10/11	D 1255-1305	2					1													TRIP FOR BIT
	S 1305-1330	5																		TWISTED OFF NEAR BOTTOM, CAUGHT FISH
Th 10/12	D 1330-1350	26		1		2														5 CLEANED PIT
	S 1350-1380	10		1																1 HARD ROCK
F 10/13	D 1380-1405	1																		TRIP FOR BIT 2 HRS REPAIR
	S 1405-1435	22				3				1										3 4 HRS LOST CIRCULATION @ 1421, HARD ROCK
10/14	D 1435-1450																			TWISTED PIPE OFF
	S 1450-																			FISHED ROVS OUT. GETTING READY TO CASE.
M 10/16			30																	12 1 CASING TO 1450 4 IN AND 3 1/2 IN.

# ES-6

BOYLES BROS

COLLARED 9-8-72

1/3

DATE	DEPTH	MUD 2QG	QUICK FOAM	PORTLAND CEMENT	CMC	HY-SEAL	FIBERTEX	KWIK-SEAL	CC-16	SODA-ASH	CALCIUM CHLORIDE	FONDU 460	MUD SEAL	PLASTER	GEL	FRA	CEMENTING WATER	COMMENTS	11-4-72	
FR 9-8	D 0-20	4 GAL															1	1	7 HRS SET UP	
	S 20-60	5															2		6" CASING TO 60', CASING 1 HR	
SAT 9-9	D 60-90																			
	S 90-135	3																		
	N 135-170	3																	BIT CHANGE	
Mon 9-11	D 170-245	4																1		
	S 245-355	5																		
	N	1		1															HAMMER PLUGGED, SANDED IN	
Tu 9-12	D																		PULLED OUT, GOING TO ROCK BIT	
	S 355-370	2	2															1	3 HRS REAMING	
	N 370-415	5																		
W 9-13	D 415-565	6	5	1					1									3		
	S 565-655	4	4															2	TRIP FOR BIT	
	N 655-755	6																		
Th 9-14	D 755-865	13		1	1	1												2	CHANGED TO MUD	
	S	10		1	1	1												3	8 HRS. CIRCULATION	
FR 9-15	D	3/13		2	1													2	5 HRS CIRC.	
	S 865-920	33		1	2	2												7	10 HRS CIRC.	
SAT 9-16	D 920-935	5	1			3							6					3	2	5 HRS CIRC.
M 9-18	D 935-	21	4	2	2	3							6					4	4	4 HRS CIRC.
	S 935-1010	27		1	4	1	3						1					4		
T 9-19	D 1010-1085	5		1	1	2	2						5					2		CASED TO 1085 - 4 INCH
	S																	1		BROKE OUT RODS
W 9-20	D		25																	HAULED AND SET CASING
Th 9-21	D																			12 HRS SET UP + TEAR DOWN - MOVED TO NEW SITE
W 10-4	D	5							1									6	1	DRILLED CEMENT, TRIP TO CHANGE TO CORE BIT
	S 1085-1095																			
	N 1095-1119	3																		
Th 10-5	D 1119-1128	6																	3	
	S 1128-1158	1		1																
	N 1158-1194	1																		
FR 10-6	D 1194-1214	2																		
	S 1214-1240	1																		
	N 1240-1275	7																		
		26		1					1									13	7	





ES-5

Boyles Bros

COLLARED: 9-1-72  
 COMPLETED: 11-25-72

1/5

DATE	DEPTH	MATERIALS														COMMENTS			
		MUD 2QG	QUICK FOAM	PORTLAND CEMENT	CMC	HY-SEAL	FIBERTEX	KWIK SEAL	CC-16	SODA ASH	CALCIUM CHLORIDE	PENNAK 460	MUD SEAL	PLASTER	GEL		FRA	CEMENTING WATER	
FRI 9-1	D 0-10	10															4		
	S 10-90	80															1		
9-2	D 90-140	50	1															1	
9-5	D 140-145	5	1											PLASTER	3	5	1	CEMENTING CAVING HOLE	
	S 145-		1											PLASTER	4	8			
9-6	D 145-160	15	2											CAL SEAL	3	4	1		
	S 160-295	135																	
9-7	D 295-460	165	2															1	
	S 460-610	150	1															1	
FR 9-8	D 610-720	110	2			1												1	AIR WATER @ 650
	S 720-745	25																1	WORKING HAMMER OUT OF HOLE
SAT 9-9	D 745-		9			1												4	MIXING MUD
	S 745-		26					7										2	MIXING MUD & CIRCULATING
MON 9-11	D 745-760	15	22			1		1	4									3	LOST CIRCULATION
	S 760-780	20	38															4	NO RETURN
TU 9-12	D 780-835	55	31			1	1		8									5	3 HRS ON CIRCULATION
	S 835-905	70	15			1	1		2									3	
W 9-13	D 905-930	25	23						10									3	1 HR CIRCULATION
	S 930-1005	75	28			1			9									4	2 HRS CIRCULATION
Th 9-14	D 1005-1060	55	14			1	4	3										2	
	S 1060-1100	40	12			1	2											2	
	N 1100-1130	30	21				5	2										2	1 HR CIRCULATION
FR 9-15	D 1130-1140	10	12			1	2	1										2	
	S 1140-1185	45	18			1	2	1										2	
	N 1185-1210	25	30			1	4											4	3 HRS CIRCULATION
SAT 9-16	D 1210-		16																4 HRS CIRCULATION, 4 HRS REPAIR
	S 1210-1230	20	10					1	1									1	3 HRS CIRCULATION
	N 1230-1245	15	6			1	1											1	1 HR CIRC. BIT CHANGE
M 9-18	D -		12			1	3	2	2									2	7 HR. REPAIR
	S 1245-1270	25	12			1	1	1	2									2	1 HR. CIRC.
	N 1270-1330	60	20			2	3	4										2	
TU 9-19	D 1330-1370	40	16			1	4	3										3	
	S 1370-1395	25	24			1		2										3	1 HR CIRC.
	N 1395-1440	45	21			1	5	6										2	TRIP FOR BIT







ES-5

DATE	DEPTH	MUD LOG	QUICK FOAM	PORTLAND CEMENT	CMC	HY SEAL	FIBERTEX	KWIK SEAL	CC-16	SODA ASH	CALCIUM CHLORIDE	FOMBIK 460	MUD SEAL	PLASTER	CAUSTIC SODA	CEMENTING WATER	COMMENTS	
11/10	D 3990-4030	12		1								1				2		
	S 4030-4047																TRIP FOR BIT	
11/11	D 4047-4054	5		1		1												
11/12	S 4054-4081	5																
11/13	D 4081-4120	7				1												
11/13	S 4120-4161	4																
11/14	D 4161-4201	4				1							1					
	S 4201-4231	3															PULLED FOR BIT	
11/15	D 4231-4240	2															1	TRIP IN 1/2 BIT
	S 4240-4280	2		1													1	TRIP FOR BROKEN WIRELINE
11/16	D 4280-4310																	
	S 4310-4350																1	
11/17	D 4350-4380	3		2				1					1	1			3	
	S 4380-4403																	PULLED FOR BIT
11/18	D 4403-4421																	LOWER RODS
	S 4421-4451																1	
11/20	D 4451-4481	2		1		1						1					1	
	S 4481-4501	1																
11/21	D 4501-4531	1												1				
	S 4531-4557																	PULLED FOR BIT
WED 11/22	D 4557-4581			1													1	NEW CABLE - HIT BRIDGE AT 3950'
	S 4581-4617																	12 HRS DRILLING
FRI 11/24	D 4617-4647			1				1										12 HRS DRILLING
	S 4647-4667																1	" " "
11-25	D 4667-4675																	8 HRS DRILLING - END OF HOLE





DATE	DEPTH	ADDITIVES	CEMENT TIME	LOADS WATER	REMARKS
M 19 N	1408-1448				TRIP FOR BIT CHANGE
Tu 20 D					
3 S	1478-1528			1	PULLED RODS
4 N	1528-1573				MUD PUMP BROKE DOWN
W 21 D					
6 S	} WAITING FOR PARTS				
7 N					
Th 22 D	} OVERHAULING PUMP				
9 S					
10 N	1573-1588				NEW BIT
Fr 23 D	1588-1618	1 Kwik Seal, 1 Mud Seal, 1 Celloy		3	
17 S	1618-1663	4 Q-Gel, 1 Fibertex		1	
13 N	1663-1713				
SAT (24 S)	1713-1753	15 Gel, 3 Fibertex, 2 HySeal		4	TWISTED OFF 3 HRS FISHING
12 HR SUNDAY	N 1753- <del>1803</del>	(10 Gel, 1 Soda Ash, 2 HySeal, 1 Fibertex		3	WELD ON TAP BROKE, DROPPED RODS, 12 HRS FISHING
SUN (25 S)	1753-1773	12 Q-Gel, 4 Quick Seal, 1 HySeal, 1 Fibertex		3	BROKE OUT 300' BENT RODS, NEW BIT
17 N	1773-1823	1 HySeal			
Mon 26 D	1823-1833	3 HySeal, 4 Walnut flour		1	PULL FOR BIT CHANGE, 2 HRS CIRCULATING
19 S	1833-1848			1	3 HRS REPAIR
20 N	1848-1893				TABLE CLUTCH WENT OUT
Tu 27 D					
22 S	} 3 SHIFTS REPAIRING CLUTCH AND DRILLING STEEL OUT OF HOLE				
23 N					
W 28 D	1893-1918	2 HySeal, 1 Fibertex, 1 Celloy		2	
25 S	1918-1953			1	TRIP FOR BIT CHANGE
26 N	1953-1978				
Th 29 D	1978-2023	1 HySeal, 1 Fibertex, 1 Disperse		2	
28 S	2023-2048			1	TRIP FOR BIT
29 N	2048-2068				
Fr 30 D	2068-2113	1 HySeal, 1 Fibertex		1	
31 S	2113-2156	12-206		1	

ES-3

3

DATE	DEPTH	MUD LOG	QUICK FOAM	PORTLAND CEMENT	CMC	H4 seal	Fibertex	Kwik Seal	Dispersal	CC-16	SODA ASH	CAUSTIC SODA	CALCIUM CHL.	OTHER	CEMENT TIME	WATER	
<del>30-N</del>	30-N																BROKE OUT ROTARY RODS
S <sub>2</sub>	7 D																WAITING FOR CASING
3	S			40													CASED + CEMENTED 12 HRS CASING
W	5 D																SETTING UP FOR CORE
5	S																WASHED CEMENT
6	N 2150 - 2167																
Th	6 D 2167 - 2190																
8	S 2190 - 2227																TRIP FOR MISLATCH, SERVICED RIG
9	N 2227 - 2275																
F <sub>10</sub>	7 D 2275 - 2300																
11	S 2300 - 2340																
12	N 2340 - 2380																
S <sub>13</sub>	8 D 2380 - 2390																
14	S																
15	N																
M <sub>16</sub>	10 D 2390 - 2414																
17	S 2414 - 2458																
Th <sub>18</sub>	11 D 2458 - 2485																
19	S 2485 - 2510																
W	12 D 2510 - 2539																
21	S 2539 - 2555																
Th	13 D 2555 - 2575																
23	S 2575 - 2595																
F <sub>24</sub>	14 D 2595 - 2602																
25	S 2602 - 2625																
26	N 2625 - 2649																
S <sub>27</sub>	15 D 2649 - 2663																
28	S 2663 - 2676																
29	N 2676 - 2698																
M <sub>30</sub>	17 D 2691 - 2715																
31	S 2715 - 2734																
	N 2734 - 2755																
		50	44	3											25		1 HR REPAIR

BROKE OUT ROTARY RODS  
 WAITING FOR CASING \*  
 CASED + CEMENTED 12 HRS CASING  
 SETTING UP FOR CORE  
 WASHED CEMENT  
 TRIP FOR MISLATCH, SERVICED RIG  
 PENEQUIK 460 PULLED RODS - MISLATCH  
 CEMENTED BAD SPOT 2370  
 CHECKING CEMENT !!!  
 WAITING FOR CEMENT  
 DRILLED 40' CEMENT  
 TRIP FOR BIT  
 2 HRS REPAIR  
 CAVE @ 2482  
 1 HR REPAIR

DATE	DEPTH	MUD 296	QUIK	FOAM	FOULING CEMENT	CMC	HY SEAL	FIBRETEX	KWIK SEAL	DISPERSE	CC-76	SODIUM ASH	CALSTIC	CALCIUM OIL	PENNERVIX	OTHER	CEMENTING WATER	COMMENTS
T 18 D	2755-2785	8															1	
	S 2785-2815																1	
	N 2815-2830																	
W 19 D	2830-2860	5															1	3 HRS REPAIR
	S 2860-2870	3																
	N 2890-2920																	
Th 20 D	2920-2950																	
	S 2950-2980																	
	N 2980-3000																	
F 21 D	3000-3010	12															4	2 HRS REPAIR
	S 3010-3020	3															1	TRIP FOR BIT
	N 3020-3040																	
S 22 D	3040-3050																	
	S 3050-3069																	
	N 3069-3089	1																
M 24 D	3089-	7																
	S -																	
	N 3090-3100	7																
Tu 25 D	3100-3120	3																
	S 3120-3140	2																
	S 3140-3165																	
W 26 D	3165-3190	2																
	S 3190-3215	1																
	N 3215-3240																	
Th 27 D	3240-3265																	
	S 3265-3276	6																
	N -																	
F 28 D	3296-3295	8																
	S 3295-3325																	
	N 3325-3345	4																
S 29 D	3345-3385	3																
		75																

DICKS  
2 Mud Seal

1 Cell Ex

1 Cell Ex

BIT  
2 LUBE

BIT  
3 LUBE

MUD  
1 SEAL  
3 SEAL

ES-3

5/

DATE	DEPTH	MUD 200G	QUICK FOAM	PORTLAND CEMENT	CMC	HYSEAL	FIBERTEX	KWIK SEAL	DISPERSE	CC-16	SODA ASH	CAUSTIC SODA	CALCIUM CHLORIDE	PENETRANT 460	OTHER	CEMENTING TIME	WATER	
1 S 29 S	3385 - 3390	2														1		TROUBLE PULLING TUBE, RODS DRAGGING BACK TO 2700 FEET
2 N	-																	
3 Sun 30 D															10 <sup>SX</sup> Fondur	8	3	CEMENTED AT 2750
4 M 31 D																8		TRIP RODS, PUT ON CORE BARREL
5 S		8			1											8		WASHED CEMENT TO 2760, NOT SET, PULLED TO RECEMENT
6 N		10			1										10 Fondur	8	4	CEMENTED AT 2770
7 Tu Aug 1 D																8		WAITING ON CEMENT
8 S																8		WASHED CEMENT TO 2660; STARTED OUT W/ RODS
9 N																8		WASHED AND DRILLED TO 2700
10 W 2 D		8														8	2	DRILLED CEMENT
11 S		8			1											8		WASHED & DRILLED TO 3030
12 N																8		WASHED & DRILLED TO 3420 - BOTTOM
13 Th 3 D		5														8	1	LOST CIRCULATION, VIBRATING, PULLED TO CEMENT
14 S			8													8	1	CEMENTED
15 Fr 4 D		6													2 Mud Seal	4	2	4 HRS DRILLING CEMENT TO 3425?, 4 HRS REPAIR
16 S	3390 - 3430	4			1													
17 N	3430 - 3450																	
18 SAT 5 D	3450 - 3486	6															1	
19 S																		12 HRS REPAIR ON W/S
20 M 7 D	3486 - 3510	7																REAMED TO BOTTOM
21 S	3510 - 3552																	
22 N	3552 - 3579																	
23 Tu 8 D	3579 - 3599	6															1	
24 S	3599 - 3610																	PULLED FOR BIT *
25 N																		RAN IN NEW BIT, DRILLED OUT 20' CAVE IN BOTTOM
26 Wed 9 D	3610 - 3635																	2 HRS REPAIR
27 S	3635 - 3655																	
28 N	3655 - 3685																	
29 Th 10 D	3685 - 3704																	4 HRS REPAIR HYDR. PUMP
30 S	3704 - 3714																	1 STARTED OUT FOR BIT CHANGE
31 N																		TRIPPING FOR BIT



SAFFORD PROPERTY - LONE STAR DISTRICT - GRAHAM COUNTY - ARIZONA

JOY MANUFACTURING COMPANY - JAK SHIPLEY, LEAD DRILLER (1-3 SHIFT)

COLLAR ELEV. APPROX 3800

STARTED: AUGUST 25, 1971 VERTICAL JOY 22 HD (TRUCK)

COMPLETED: NOV. 26, 1971 (SW 1/4 NE 1/4 SW 1/4 SEC. 34) T.D. - 3281'  
T.S.S.; R. 26E

DATE	SHIFT	DEPTH INTERVAL	NO. FEET	SIZE HOLE	ADDITIVES	CEMENT TIME	REAMING	ETC.	LOADS WATER	REMARKS
WED 8/25	D	0 - 10		RB 6 1/2	3 MUD - 1 FLO SEAL					
2		10 - 20 (20)	20'		1 SODA ASH - 1 C/G 10	2 HOURS		1 HOUR MIXING MUD 1 (20 MILE AROUND TRIP)		MOVE IN - 4 MEN SET RIG ON DAY SHIFT 8/24, CHANGED 1 LOAD WATER
3	N	20 - 30		RB 4 1/2	5 MUD			3 HOURS CASING		5 HOURS DRILLING 5" STAND PIPE (19') - SET SLUDGE BOX - 11 HOURS
4		30 - 40								8 HOURS DRILLING
5		40 - 50								
6		50 - 56 (56)	36'	"						
THUR 8/26	D	56 - 60								8 HOURS DRILLING
8		60 - 70								
9		70 - 80								
10		80 - 90								
11		90 - 100								
12	N	100 - 110 (106)	50'	"	4 MUD	1 HOUR				8 HOURS DRILLING
13		110 - 120			1 CASTING PLASTER					CEMENTED 6" CASING AROUND TOP - 7 HOURS DRILLING (CHANGED BIT AT 115')
14		120 - 130								
15		130 - 140 (141)	35'							
FRI 8/27	D	140 - 150		"	7 MUD			1 HOUR MIXING MUD 1 LOAD WATER	7 HOURS DRILLING	
17		150 - 160								
18		160 - 170								
19		170 - 180								
20		180 - 190 (191)	50'							
21	N	190 - 200		"	2 QUICK SEAL 1 CAL SEAL 13 MUD 10 MUD 4 PORTLAND CEMENT	5 HOURS		1 LOAD WATER	3 HOURS DRILLING - LOST RETURN AT 199'	
22		- (203)	12'							NO SAMPLE RETURN (200 - 203)
SAT 8/28	D/N	203 - 208	5'			4 HOURS 8 HOURS		2 LOADS WATER	4 HOURS DRILLING - CHANGED OIL & FILTERS - LOST RETURN 5 TIMES	
SUN 9/30	D	208 - 220				1 HOUR		1 HOUR MIX MUD 1 LOAD WATER	(8/29 SUNDAY BOTH SHIFTS OFF) - 6 HOURS DRILLING - (NEW BIT 208)	
25		220 - 230			9 MUD					DRILLED OUT CEMENT AND LOST RETURN AT 240'
26		230 - 240								
27		- (251)	43'							
TUE 8/31	D	251 - 287	36'	"	15 MUD			2 HOURS MIX MUD 3 LOADS WATER	NO SAMPLE RETURN (240 - 330)	6 HOURS DRILLING
29	N	287 - 326	39'	"	9 MUD			1 HOUR MIX MUD		7 HOURS DRILLING
WED 9/1	D	326 - 330	4'	"	14 MUD FIBERTEX			4 HOURS MIX MUD 3 LOADS WATER		2 HOURS DRILLING
31	N	330 - 335	5'	"				1 HOUR MIX MUD	4 HOURS FOR DRILL REPAIR	3 HOURS DRILLING
THUR 9/2	D	335 - 340		"	13 MUD			2 HOURS MIX MUD 2 LOADS WATER	NO SAMPLE RETURN (335 - 340)	6 HOURS DRILLING



DATE	SHIFT	DEPTH INTERVAL	NO. FEET	SIZE HOLE ADDITIVES	CEMENT TIME	REMAINING	ETC.	LOADS WATER	REMARKS
8/8	D	670-682 (682)	43'	RB 4 1/2"					NO ROCK BIT SAMPLES (670-735)
(CONT.)									
	N	682-712 (712)	30'	" 18 MUD-FIBERTEX				2 HOURS MIX MUD 3 LOADS WATER 6 HOURS DRILLING	
TRW 9/9	D	712-735	23'	" 16 MUD-FIBERTEX				2 HOURS MIX MUD 3 LOADS WATER 6 HOURS DRILLING	
	N	735-745	10'	" 6 MUD				6 HOURS CASING 2 HOURS DRILLING SAMPLE RETURN (735-745)	
									PLACED 745' NX CASING IN HOLE
SUMMARY (0-745') 21 HOURS CEMENTING @ 16 1/2" HF 336 253 50 16 BAGS MUD @ 2.60/BAG 657.80									
									5 BAGS FIBERTEX
									2 BAGS HY SEAL
									2 BAGS SODA ASH
									1 BAG FLO SEAL
									1 BAG CG 16
									1 BAG CASTING PLASTER
									2 BAGS QUICK SEAL
									1 BAG CAL SEAL
									4 BAGS PORTLAND CEMENT
									35 LOADS WATER @ 20 mile ROUND TRIP
BEGIN CORING N XE (5 FOOT CORE BARREL) 9/10/71 @ 745' IN GREEN MOTTLED VOLCANIC AGGLOMERATE WITH ABUNDANT EPIDOTE									
DATE	SHIFT	DEPTH INTERVAL	NO. FEET (CORING)	SIZE HOLE ADDITIVES	CEMENT TIME	REMAINING	ETC.	LOADS WATER	REMARKS
9/10	D	745-750	5' (100%)	N XE 3 MUD				1 LOAD WATER	8 HOURS DRILLING 5' N XE (WL) CORE BARREL
		750-755	5' (100%)						
		755-760	5' (100%)						
		760-765	5' (100%)						
		765-771	6 (26) (100%)						
	N	771-776	5' (100%)	"					
		776-778	2' (100%)						
		778-786	2' (100%)						
		780-781	1' (70%)						

DATE	SHIFT	DEPTH INTERVAL	No. FEET	(% REC)	SIZE ADDITIVES	CEMENT TIME	ACAMIN 6	ECC.	LOADS WATER	REMARKS
		781 - 785	4'	(100%)						
		785 - 790	5'	(100%)						
		790 - 794	4' (23)	(100%)						
SAT 9/11	D	794 - 799	5'	(100%)	N/AE 8' MUD				2 LOADS WATER	8 HOURS DRILLING; 30% WATER RETURN
		799 - 804	5'	(100%)	1 SODI ASH					
		804 - 809	5'	(100%)						
		809 - 814	5'	(100%)						
		814 - 819	5'	(100%)						
		819 - 824	5'	(100%)						
		824 - 829	5'	(100%)						ADD EXCESS 1 1/2'
		829 - 834	5' (40)	(100%)						
SAT	N	834 - 839	5'	(100%)	" 10 MUD				2 LOADS WATER	8 HOURS DRILLING; 30% WATER RETURN
		839 - 844	5'	(100%)						
		844 - 849	5'	(100%)						
		849 - 854	5'	(100%)						
		854 - 859	5'	(100%)						
		859 - 863	4'	(100%)						
		863 - 868	5'	(100%)						
		868 - 873	5' (45)	(100%)						
		873 - 879	5'	100%						
21	SUNDAY NO DRILLING									
Mon 9/13	D	879 - 884	5'	100%	" 11 BAGS MUD				2 LOADS WATER	7 HOURS DRILLING
		884 - 889	5'	"	1 QUIK SEAL					
		889 - 894	5'	"						
		894 - 899	5'	"						
		899 - 904	5'	"						
		904 - 909	5' (30)	"						
	N	909 - 914	5'	100%	" 9 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING
		914 - 919	5'	100%						WATER RETURN ERRATIC
		919 - 922.5	3.5'	90%						
		922.5 - 927.5	5'	100%						

11 BAGS MUD 11 SODI ASH

29/4

						1	2	3	4	5	6	7	8	9	10
DATE	SHIFT	DEPTH INTERVAL	NO. FEET	% REC.	SIZE HOLE	ADDITIVES	CEMENT	TIME	REMAINING	ETC.	LOADS	WATER	REMARKS		
9/13	N	929.5 - 932.5	5'	100%	N/A										
(CONT.)		932.5 - 937.5	5'	100%											
		937.5 - 943	5'	100%											
		943 - 948	5'	100%											
		948 - 953	5'	(44) 80%											
Tue 9/14	D	953 - 958	5'	100%	"	6 BAGS MUD					2 LOADS	8 HOURS	DRILLING		
		958 - 963	5'	100%											
		963 - 971	8'	(18) 90%											
	N	971 - 976	5'	30%	"	12 BAGS MUD				1 HOUR MIXING MUD	1 LOAD	7 HOURS	DRILLING - CHANGED TO 10' CORE BARREL		
		976 - 980	4'	80%											
		980 - 988	8'	90%											
		988 - 998	10'	(27) 100%											
Wed 9/15	D	998 - 1008	10'	100%	"	5 BAGS MUD					1 LOAD	8 HOURS	DRILLING		
		1008 - 1016.5	8.5'	100%											
		1016.5 - 1027	10.5'	(24) 100%											
		NO NIGHT SHIFT													
Thurs 9/16	D	1027 - 1037	10'	80%	N/A	7 BAGS MUD					2 LOADS	8 HOURS	DRILLING		
		1037 - 1041	5'	100%											
		1041 - 1044.6	3.6'	100%											
		1044.6 - 1049	4.4'	100%											
		1049 - 1054	5'	90%											
		1054 - 1060	6'	(33) 100%											
	N	1060 - 1063	3'	100%	"	11 BAGS MUD					2 LOADS	4 HOURS	DRILLING		
		1063 - 1067	4'	100%											
		1067 - 1073	6'	100%											
		1073 - 1083	10'	100%											
		1083 - 1091	8'	100%											
		1091 - 1096.5	5.5'	100%											
		1096.5 - 1102	5.5'	(42) 100%											
Fri 9/19	D	1102 - 1107	5'	100%	"	9 BAGS MUD				1 HOUR DRILLING MUD	2 LOADS	7 HOURS	DRILLING - (CHANGED BITS)		
		1107 - 1109	2'	100%											

50

10 LOADS WATER

			1	2	3	4	5	6	7	8	9	10	
DATE	SHIFT	DEPTH INTERNAL	No. FEET	% REC.	SIZE HOLE	ADDITIVES	CEMENT TIME	REAMING	ETC.	LOADS WATER	REMARKS		
1	9/18 (cont.)	D	1109-1113	4'	100%	NRE						1	
2			1113-1116	3' (14)	100%							2	
3		N	1116-1122	6'	100%	" 11 BAGS MUD			1 HOUR REAMING MUD	2 LOADS WATER	8 HOURS DRILLING	3	
4			1122-1125	3'	100%							4	
5			1125-1135	10'	100%							5	
6			1135-1140	5'	100%							6	
7			1140-1143	3'	100%							7	
8			1143-1148	5' (32)	80%							8	
SAT 9/18		D	1148-1151	3'	100%	" 4 BAGS MUD				3 LOADS WATER	8 HOURS DRILLING	9	
10			1151-1161	10'	100%	1 BAG CELEX						10	
11			1161-1169	8'	100%	1 BAG FLUORAL						11	
12			1169-1179	10'	100%							12	
13			1179-1189	10' (41)	100%							13	
14		N	1189-1199	10'	100%	" 3 BAGS MUD				3 LOADS WATER	13 HOURS DRILLING	14	
15			1199-1209	10'	100%							15	
16			1209-1219	10'	100%							16	
17			1219-1229	10'	100%							17	
18			1229-1237	8'	100%							18	
19			1237-1247	10'	100%							19	
20			1247-1257	10'	100%							20	
21			1257-1265	8' (46)	100%							21	
SUN 9/20			NO DRILLING			NRE						22	
MON 9/20		D	1265-1275	10'	100%	"				3 LOADS WATER	8 HOURS DRILLING	23	
24			1275-1280	5'	"							24	
25			1280-1287	7'	"							25	
26			1287-1297	10'	"							26	
27			1297-1302	5'	"							27	
28			1302-1311	9' (46)	"							28	
29		N	1311-1319	8'	100%	NRE				2 LOADS WATER	1 1/2 HOURS DRILLING	1/2 HOUR REPAIRS	29
30			1319-1329	10'	"							30	
31			1329-1339	10'	"							31	

113 MUD 11 CELER  
117 FLOS. A.

113 MUD 11 CELER

			1	2	3	4	5	6	7	8	9	10	
DATE	SHAFT	DEPTH INTERVAL	No. FEET	% RENEWABLE	SIZE ADDITIVES	CEMENT TIME	REPAIRS	ETC.	LOADS WATER	REMARKS			
MAY 1/20	N	1339-1344	5'	100%						(GROUND BADLY BROKEN)		1	
(CONT.)		1344-1350	6'	90%								2	
		1350-1354	4'	80%								3	
Tue 9/21	D	1354-1358	4'	100%	NIE 10 BAGS MUD			1 HOUR MIX MUD	2 LOADS WATER	6 HOURS DRILLING	1 HOUR REPAIRS	(GROUND BROKEN)	4
5		1358-1364	6'	100%								5	
6		1364-1370	6'	100%								6	
7	N	1370-1372	2'	100%	6 BAGS MUD			1 HOUR MIX MUD	1 LOAD WATER	7 HOURS DRILLING		(GROUND BROKEN)	7
8		1372-1374	2'	100%	1 BAG SODA ASH							8	
9		1374-1376	2'	100%						CHANGED BIT 1379	PUT ON 5' CORE BARREL	9	
10		1376-1378	2'	100%								10	
11		1378-1379	1'	100%								11	
12		1379-1380	1'	100%								12	
13		1380-1385	5'	100%								13	
WED 9/22	D	1385-1390	5'	100%	10 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING		(GROUND BROKEN)	14
15		1390-1392	2'	80%								15	
16		1392-1397	5'	80%								16	
17		1397-1399	2'	90%								17	
18		1399-1402	3'	90%								18	
19		1402-1405	3'	150%								19	
20		1405-1407	2'	80%								20	
21		1407-1408	1'	50%								21	
22	N	1408-1410	2'	75%	6 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING		22	
23		1410-1411	1'	90%								23	
24		1411-1416	5'	90%								24	
25		1416-1421	5'	100%								25	
26		1421-1426	5'	100%								26	
27		1426-1431	5'	100%								27	
28		1431-1436	5'	90%								28	
29		1436-1441	5'	90%								29	
30		1441-1444	3'	100%								30	
THURS 9/23	D	1444-1447.5	3.5	50%	11 BAGS MUD 43 MUD 11 SOD ASH				2 LOADS WATER	8 HOURS DRILLING		31	

DATE	SHA	DEPTH INTERVAL	No. FEET	% CORE	SIZE	ADDITIONS	CEMENT	TIME	REMARKS	LOADS WATER	REMARKS
9/23	D	1447.5 - 1449	1.5	40%							
2	(Cont)	1449 - 1450	1.0	90%							
3		1450 - 1451	1.0	100%							
4		1451 - 1456	5.0	90%							
5		1456 - 1461	5.0	95%							
6		1461 - 1464	3.0	20'							
7	N	1464 - 1466	2.0	100%		NRE 3 BAGS MUD				1 LOAD WATER	3 HOURS DRILLING 5 HOURS REPAIRS (CLUTCH)
8		1466 - 1468	2.0	100%							
9		1468 - 1473	5.0	9'							
9/24	D	1473 -								1 LOAD WATER	2 HOURS DRILLING 6 HOURS REPAIRS
11	N	1473 - 1478	5'	100%		12 BAGS MUD			1 HOUR MIX MUD	2 LOADS WATER	7 HOURS DRILLING
12		1478 - 1483	5'	100%							
13		1483 - 1488	5'	95%							
14		1488 - 1493	5'	100%							
15		1493 - 1498	5'	95%							
16		1498 - 1503	5'	85%							
17		1503 - 1507	4'	34'							
9/25	D	1507 - 1512	5'	100%		9 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING DRILLED OUT BRIDGES @ 1350
19		1512 - 1517	5'	100%							
20		1517 - 1522	5'	100%							
21		1522 - 1527	5'	100%							
22		1527 - 1530.5	3.5'	100%							
23		1530.5 - 1535.5	5'	28.5'							
24	N	1535.5 - 1539	3.5'	80%		1 BAG SODA ASH			1 HOUR MIX MUD	1 LOAD WATER	7 HOURS DRILLING
25		1539 - 1543	4.0'	100%		9 BAGS MUD					
26		1543 - 1548	5.0'	100%							
27		1548 - 1553	5'	100%							
28		1553 - 1558	5'	100%							
29		1558 - 1563	5'	100%							
30		1563 - 1568	5'	100%							
31		1568 - 1573	5'	38'							

33 MUD / SODA ASH

7 WATER

		1	2	3	4	5	6	7	8	9	10	
DATE	SH. / D	DEPTH INTERVAL	NO. FEET	% REC.	SIZE HOLE	ADDITIVES	CEMENT TIME	REAMING	ETC	LOADS WATER	REMARKS	
SUN	9/26	NO DRILLING										
MON	9/27	D	1573 - 1585	2'	100%	NXE 6 BAGS MUD			1 HOUR REAMING MUD	2 LOADS WATER	8 HOURS DRILLING	
	3		1575 - 1580	5'	100%							
	4		1580 - 1583	3'	90%							
	5		1583 - 1585	2'	50%	(12)						
	6	N	NO RECOVERY (NO DRILLING)									NO DRILLING TIME - PULLED RODS FOR BIT CHANGE - CORE BARREL BACK OFF AT BOTTOM OF LATCH -
	7											
	8											
TUE	9/28	D	NO RECOVERY (NO DRILLING)			NXE 6 BAGS MUD				1 LOAD WATER	WASHED HOLE - CHOPPED + WASHED ON BRIDGE AT 1350'	
	10											PULLED RODS - CORE BARREL FAILED TO COME UP
	11	N	NO RECOVERY (NO DRILLING)			NXE 6 BAGS MUD					- STRUNG DOUBLE CABLE - WASHED HOLE - PUT RODS	
	12											BACK IN HOLE - PULLED RODS - COULD NOT GET BARREL
WED	9/29	D	NO RECOVERY (NO DRILLING)			NXE 6 BAGS MUD				2 LOADS OF WATER	RAN TAP IN HOLE - WASHED HOLE - RECOVERED	
	14											CORE BARREL
	15	N	1585 - 1590	5'	80%	NXE 8 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING	
	16		1590 - 1595	5'	40%							
	17		1595 - 1600	5'	100%							
	18		1600 - 1605	5'	100%							
	19		1605 - 1610	5'	100%	(25)						
THUR	9/30	D	1610 - 1612.5	80%		NXE 7 BAGS MUD				2 LOADS WATER	TRIPPED RODS TO GET TUBE - PUT ON 10' CORE BARREL	
	21		1612.5 - 1617.5	80%								
	22		1617.5 - 1622	100%								
	23		1622 - 1628	100%								
	24		1628 - 1629	100%		(19)						
	25	N	1629 - 1639	100%		1 BAG SODA ASH				1 LOAD WATER	8 HOURS DRILLING	
	26		1639 - 1649	100%		10 BAGS MUD						
	27		1649 - 1658	100%								
	28		1658 - 1668	100%								
	29		1668 - 1678	100%		(49)						
FRI	10/1	D	1678 - 1688	100%		NXE 8 BAGS MUD				3 LOADS WATER	8 HOURS DRILLING	
	31		1688 - 1695	100%								

(58) MUD (1) SODA ASH

(12) LOADS WATER

	DATE	SH	DEPTH INTERVAL	NO. FEET	REL. SIZE	ADDITIVES	CEMENT TIME	REMAINING	ETC.	LOADS WATER	REMARKS		
FRI	10/11	D	1695 - 1702	100%								1	
2	(CONT)		1702 - 1705	100%								2	
3			1705 - 1707	100%								3	
4		N	1707 - 1710	100%		9 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING	4	
5			1710 - 1715	100%								5	
6			1715 - 1719	100%								6	
7			1719 - 1723	100%								7	
8			1723 - 1726	100%								8	
9			1726 - 1734	100%								9	
10			1734 - 1739	100%								10	
SAT	10/12	D	1739 - 1745	100%		WE 5 BAGS MUD				2 LOADS WATER	WIRELINE CABLE BREAK - PULLED RODS - CHANGED BIT	11	
12		N	1745 - 1746.5	100%		8 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING	12	
13			1746.5 - 1749	80%								13	
14			1749 - 1753.5	80%								14	
15			1753.5 - 1759	60%								15	
16			1759 - 1760.5	50%								16	
17			1760.5 - 1765	100%								17	
18			1765 - 1770	100%								18	
19			1770 - 1779	100%								19	
SUN	10/13		NO DRILLING										20
MON	10/14	D	1779 - 1789	10'	100%	NX 10 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING	21	
22			1789 - 1799	10'	100%							22	
23			1799 - 1809	10'	100%							23	
24			1809 - 1816	7'	100%							24	
25			1816 - 1826	10'	100%							25	
26		N	1826 - 1832	6'	75%	4 BAGS MUD				1 LOAD WATER	MISLATCH - PULLED RODS - CHANGED BIT - DRILLED OUT CAUSE BRIDGES	26	
TUE	10/15	D	1832 - 1836	4'	90%	NX 10 BAGS MUD				2 LOAD WATER	8 HOURS DRILLING	27	
28			1836 - 1846	10'	100%	1 SODA ASH						28	
29			1846 - 1847	1'	30%							29	
30			1847 - 1851	4'	90%							30	
31			1851 - 1853.5	2.5'	80%							31	

(46) BAGS MUD (1) BAG SODA ASH

9 LOADS WATER

4910 - Buff  
8910 - Green  
4210 - White

	DATE	TIME	DEPTH INTERVAL	NO. FEET	% REL	SIZE HOLE	ADDITIVES	CEMENT TIME	REMAINING	ETC.	LOADS WATER	REMARKS	
Tues	10/5	D	1853.5 - 1863	9.5'	100%	(31)	NXE						1
2	(CONT)												2
3		N	1863-1869	6'	100%		6 BAGS MUD				2 LOADS WATER	MIS BATCH - PULLED RODS TO RECOVER CORE	3
4			1869-1879	10'	100%								4
5			1879-1889	10'	100%								5
6			1889-1894	5'	80%	(31)							6
WED	10/6	D	1894-1900	6'	100%		NXE 6 BAGS MUD				1 LOAD WATER	REPAIRED FAST HEAD - RUN RODS IN HOLE	7
8			1900-1909	9'	80%								8
9			1909-1916	7'	100%	(22)							9
10		N	1916-1926	10'	100%		7 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING	10
11			1926-1936	10'	100%								11
12			1936-1939	3'	80%								12
13			1939-1943	4'	90%								13
14			1943-1946	3'	100%								14
15			1946-1953	7'	100%	(37)							15
THUR	10/7	D	1953-1963	10'	100%		NXE 8 BAGS MUD				3 LOADS WATER	8 HOURS DRILLING	16
17			1963-1972	9'	100%								17
18			1972-1975	3'	80%								18
19			1975-1983	8'	100%	(30)							19
20		N	1983-1993	10'	70%		6 BAGS MUD				1 LOAD WATER	PULLED RODS - CHANGED BIT AT 1999	20
21			1993-1999	6'	40%	(16)							21
FRI	10/8	D	1999-2002	3'	100%		NXE 4 BAGS MUD				2 LOADS WATER	RUN RODS IN GROUND - GREASED - HELPER STUNG BY SCORPION - TOOK TO DOCTOR.	22
23			2002-2010	8'	80%								23
24			2010-2020	10'	85%	(21)							24
25		N	2020-2025	5'	80%		4 BAGS MUD					TRIPED RODS - TO GET TUBE - SHAFT PIN BROKE	25
26			2025-2027	2'	50%	(7)							26
SAT	10/9	D	2027-2030	3'	80%		NXE 9 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING	27
28			2030-2034	4'	75%								28
29			2034-2041	7'	70%								29
30			2041-2043	2'	50%	(16)							30
31		N	NO DRILLING										31

(50) BAGS MUD

(13) LOADS WATER

Avg FOOTAGE PER SHIFT - (27.6)

DATE	SHIFT	DEPTH INTERVAL	NO FEET PER HOLE	SIZE ADDITIVES	CEMENT TIME	REMAINING	ETC	LOADS WATER	REMARKS
SUN 10/10		NO DRILLING							
MON 10/11	D	2043 - 2045 - 2'	30%	NX 4 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING
3		2045 - 2049 - 4'	80%						
4		2049 - 2052 - 3'	100%						
5		2052 - 2059.5 - 7.5'	100%	(16)					
6	N	2059.5 - 2064 - 4.5'	80%	3 BAGS MUD				2 LOADS WATER	FISHED OUT BROKEN KELLY ROD IN HOLE
7		2064 - 2069 - 5'	50%						
8		2069 - 2071 - 2'	50%						
9		2071 - 2075 - 4'	80%	(16)					
TUES 10/12	D	2075 - 2083 - 8'	90%	(8) NX 4 BAGS MUD				1 LOAD WATER	TUBE HUNG IN LATCH - WIRE LINE BROKE 4 TIMES PULLED REAS TO GET TUBE - DOUBLE LINE PULLY CAME LOOSE - DROPPED REAS IN HOLE - (135') - FISHED OUT
11									
12	N	NO DRILLING							
13									
WED 10/13	D	2083 - 2085 - 2'	(2)	NX 3 BAGS MUD				1 LOAD WATER	RAN RODS BACK IN HOLE - PUT ON 2000' WIRE LINE
15	N	2085 - 2090 - 5'	50%	NX 9 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING
16		2090 - 2091.5 - 1 1/2'	75%						
17		2091.5 - 2097 - 5 1/2'	60%						
18		2097 - 2100 - 3'	80%						
19		2100 - 2102.5 - 2 1/2'	100%	(11)					
THUR 10/14	D	2102 - 2105 - 3'	50%	NX 7 BAGS MUD				1 LOAD WATER	12 FEET OF CAVE IN HOLE START OF SHIFT.
21		2105 - 2106 - 1'	80%						
22		2106 - 2107 - 1'	80%	(3)					
23	N	2107 - 2111 - 4'	75%	NX 7 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING
24		2111 - 2115 - 4'	75%						
25		2115 - 2120.5 - 5 1/2'	100%						
26		2120.5 - 2129 - 8 1/2'	100%						
27		2129 - 2137 - 8'	100%	(30)					
FRI 10/15	D	NO DRILLING							
29	N	NO DRILLING							
SAT 10/16	D	NO DRILLING							
31	N	NO DRILLING							

(37) BAGS MUD

(10) LOADS WATER

		1	2	3	4	5	6	7	8	9	10
DATE	SHIFT	DEPTH INTERVAL	No. FEET	% REC	SIZE hole	ADDITIVES	CEMENT TIME	REPAIRING	ETC.	LOADS WATER	REMARKS
SUN	10-17	NO DRILLING			ØXNL						
MON	10-18 D	2137-2139	2'	100%	Bx	NO MUD				1 LOAD WATER	STARTED DRILLING WITH BX - PULLED RODS TO GET CORE OUT OF BIT - 7 HOURS DRILLING - 1 HOUR REPAIR
	3	2139-2144	5'	100%							
	4	2144-2148	4'	37%							
	5	N 2148-2150	2'	75%		NO MUD				NO WATER	RUN RODS IN HOLE - 8 HOURS DRILLING
	6	2150-2159	9'	100%							
	7	2159-2163	4'	90%							
	8	2163-2166	3'	65%							
	9	2166-2168	2'	100%							
TUES	10-19 D	2168-2171	3'	85%	Bx	3 BAGS MUD					8 HOURS DRILLING
	11	2171-2174	3'	33%							
	12	2174-2176	2'	12%							
	13	2176-2177	1'	40%							
	14	N 2177-2178	1'	50%							TRIPPED RODS FOR BIT CHANGE AT 2180' PUT ON 5' CORE BARREL
	15	2178-2180	2'	50%							
	16	2180-2184	4'	35%							
	17	2184-2189	5'	75%							
						AVE. FOOTAGE PER SHIFT: 25.8 (OVERALL AVE: 21.6)					
WED	10-20 D	2189-2190.5	1 1/2'	95%	Bx					1 LOAD WATER	8 HOURS DRILLING
	19	2190.5-2195	4 1/2'	85%							
	20	2195-2200.5	5 1/2'	75%							
	21	2200.5-2201	1/2'	50%							
	22	N 2201-2202	1'	65%		2 BAGS MUD					LOST 50% WATER RETURN AT 2208' 8 HOURS DRILLING
	23	2202-2206	4'	95%							
	24	2206-2208	2'	50%							
	25	2208-2211	3'	90%							
	26	2211-2216	5'	100%							
	27	2216-2221	5'	100%							
THUR	10-21 D	2221-2222	1'	15%	Bx	2 BAG MUD					3 FEET OF CAVE START OF SHIFT - LOST ALL RETURN AT 2222' PUT IN FLO SEAL - GOT IT BACK - REPAIRED FOR COUPLING
	29	2222-2225	3'	70%		1 BAG FLO SEAL					
	30	2225-2227	2'	100%							
	31	2227-2229	2'	90%						2 LOADS WATER	
						5 BAG MUD 1 FLO SEAL					

	DATE	SH	DEPTH INTERVAL	NO. FEET	% REC.	ADDITIVES	CEMENT TIME REMAINING	FT	LOADS WATER	REMARKS
THUR	10-21	N	2229-2234	5'	100%	5 BAGS MUD			2 LOADS WATER - 8 HOURS	DRILLING
2	(CONT)		2234-2239	5'	100%					
3			2239-2242	3'	100%					
4			2242-2245	3'	100%					
5			2245-2250	5'	100%					
6			2250-2255	5'	100%					
7			2255-2260	5'	95%					(31)
FRI	10-22	D	2260-2262.5	2½'	85%	6 BAGS MUD			1 LOAD WATER 8 HOURS	DRILLING
9			2262.5-2267	4½'	85%					
10			2267-2269	2'	100%					
11			2269-2272	3'	100%					
12			2272-2277	5'	100%					
13			2277-2280	3'	95%					
14			2280-2285	5'	100%					(25)
15		N	2285-2290	5'	80%	7 BAGS MUD			1 LOAD WATER 8 HOURS	DRILLING
16			2290-2295	0'	0%					
17			2295-2297	2'	75%					
18			2297-2302	5'	90%					
19			2302-2307	5'	100%					
20			2307-2311.5	4½'	100%					
21			2311.5-2315	3½'	90%					(30)
SAT	10-23	D	2315-2317	2'	50%	8 BAGS MUD			2 LOADS WATER - 8 HOURS	DRILLING - 50% WATER RETURN
23			2317-2322	5'	100%					
24			2322-2326	4'	100%					
25			2326-2331	5'	100%					
26			2331-2336	5'	90%					
27			2336-2341	5'	80%					
28			2341-2343	2'	100%					(28)
29		N	2343-2346	3'	100%	7 BAGS MUD			1 LOAD WATER 8 HOURS	DRILLING
30			2346-2351	5'	100%					
31			2351-2356	5'	90%					

(33) BAGS MUD

(7) LOADS WATER

		1	2	3	4	5	6	7	8	9	10
DATE	Shift	DEPTH INTERVAL	HEIGHT	% REC	SIZE Hole	ADDITIVES	CEMENT TIME	REMAINING	ETC	LOADS WATER	REMARKS
SAT 10-23	N	2356 - 2361 - 5'		100%	Bx						
2	(CONT.)	2361 - 2366 - 5'		100%							
3		2366 - 2370 - 4'		100%							
4		2370 - 2374.5 - 4 1/2'		80%	(31)						
SUN 10-24	D	2374.5 - 2378.5 - 4'		100%	Bx	9 BAGS MUD				2 LOADS WATER	2 HOURS DRILLING OUT BRIDGE - 8' CAVE - PULLING RODS FOR BIT CHANGE AT 2387 - DRILLED SUNDAY TO MAKE UP SHIFT OF 10-29.
6		2378.5 - 2380.5 - 2'		100%							
7		2380.5 - 2384.5 - 4'		100%							
8		2384.5 - 2385 - 1/2'		60%							
9		2385 - 2387 - 2'		100%	(13)						
10	N	NO DRILLING									
MON 10-25	D	2387 - 2388 - 1'		100%	Bx	2 BAGS MUD					PULLED RODS - CHANGED BIT - GREASED RODS - DRILLED OUT BRIDGE - WASHED OUT HOLE
12		2388 - 2391 - 3'		100%	(4)						
13	N	2391 - 2393 - 2'		100%	Bx	4 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING
14		2393 - 2397 - 4'		100%							
15		2397 - 2400 - 3'		80%							
16		2400 - 2405 - 5'		75%							
17		2405 - 2409 - 4'		75%							
18		2409 - 2413 - 4'		100%							
19		2413 - 2417 - 4'		75%							
20		2417 - 2421.5 - 4 1/2'		100%	(30)						
TUES 10-26	D	2421.5 - 2426.5 - 5'		100%	Bx	6 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING
22		2426.5 - 2431.5 - 5'		100%							
23		2431.5 - 2436.5 - 5'		100%							
24		2436.5 - 2440 - 3 1/2'		100%							
25		2440 - 2445 - 5'		100%							
26		2445 - 2446 - 1'		80%							
27		2446 - 2449 - 3'		80%	(28)						
28	N	2449 - 2452 - 3'		80%	Bx	7 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING
29		2452 - 2457 - 5'		80%							
30		2457 - 2461 - 4'		100%							
31		2461 - 2465 - 4'		100%							

(25) BAGS MUD

(8) LOADS WATER

DATE	SHIFT	DEPTH INTERVAL	No. FEET	% REC	SIZE HOLE	ADDITIVES	CEMENT TIME	REAMING	ETC.	LOADS WATER	REMARKS
TUES 10-26	N	2465 - 2466.5	- 1 1/2'	- 75%							
2	(CONT)	2466.5 - 2469	- 2 1/2'	- 100%							
3		2469 - 2472	- 3'	- 100%							
4		2472 - 2474	- 2'	- 100%	(25)						
WED 10-27	D	2474 - 2477.5	- 3 1/2'	- 100%		BX 2 BAGS MUD				1 LOAD WATER	POT KWICK SEAL IN HOLE - GOT 90% WATER RETURN
6		2477.5 - 2480	- 2 1/2'	- 30%		1 BAG KWICK SEAL					
7		2480 - 2483	- 3'	- 100%	(9)						
8	N	2483 - 2486	- 3'	- 100%		BX 3 BAGS MUD					PULLED RODS FOR BIT CHANGE AT 2496'
9		2486 - 2491	- 5'	- 100%							
10		2491 - 2492	- 1'	- 50%							
11		2492 - 2496	- 4'	- 100%	(13)						
THU 10-28	D	2496 - 2502	- 2'	- 50%		BX 2 BAGS MUD					FINISHED PULLING RODS - CHANGED BIT - GREASED RODS
13		2502 - 2503	- 5'	- 100%	(1)						
14	N	2503 - 2508	- 5'	- 50%		BX 2 BAGS MUD					3' OF CLAY & GOUGE WASHED AWAY
15		2508 - 2510	- 2'	- 80%							
16		2510 - 2515	- 5'	- 95%							
17		2515 - 2519	- 4'	- 70%							
18		2519 - 2520	- 1'	- 50%							
19		2520 - 2525	- 5'	- 60%							
20		2525 - 2530	- 5'	- 100%	(27)						AVE FOOTAGE PER SHIFT: 25.9 - AVE PER DAY 42.5
FRI 10-29	D	2530 - 2535	- 5'	- 80%		BX 3 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING - POT MATERIAL IN HOLE FOR WATER LOSS
22		2535 - 2539	- 4'	- 75%							
23		2539 - 2544	- 5'	- 100%	(14)						
24	N	NO NIGHT SHIFT									
SAT 10-30	D	2544 - 2547	- 3'	- 100%		BX 6 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING
26		2547 - 2552	- 5'	- 90%							
27		2552 - 2555	- 3'	- 100%							
28		2555 - 2560	- 5'	- 80%							
29		2560 - 2565	- 5'	- 100%							
30		2565 - 2570	- 5'	- 100%	(26)						
31	N	NO NIGHT SHIFT									

(19) BAGS MUD (1) BAG KWICK SEAL

(3) LOADS WATER

	DATE	SH	DEPTH INTERVAL	NO. FEET	% RC	SIZE HOLE	ADDITIVES	CEMENT TIME	REMAINING	ECT	LOADS WATER	REMARKS		
SUN	10/31		NO DRILLING											1
MON	11/1	D	2570 - 2574	4'	90%		BX 6 BAGS MUD				2 LOADS WATER	HELPER DID NOT SHOW UP FOR WORK - PUMPED QUICK SEAL DRAIN HOLE FOR WATER LESS	2	
			2574 - 2579	5'	60%								3	
			2579 - 2583	4'	50%								4	
			2583 - 2586	3'	50%								5	
			2586 - 2587	1'	100%								6	
		N	NO DRILLING											7
TUES	11/2	D	2587 - 2588	1'	20%		BX					PULLED RODS - CHANGED BIT - GREASED ALL RODS DRILLED OUT 6' CASE	8	
			2588 - 2590	2'	100%								9	
		N	2590 - 2593	3'	50%		BX 2 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING -	10	
			2593 - 2595	2'	50%								11	
			2595 - 2600	5'	100%								12	
			2600 - 2605	5'	100%								13	
			2605 - 2608	3'	50%								14	
			2608 - 2610	2'	50%								15	
			2610 - 2614	4'	100%								16	
WED	11/3	D	2614 - 2618	4'	80%		BX 4 BAGS MUD					NO OIL PRESSURE ON DRILL MOTOR - STARTED TO PULL RODS -	17	
			2618 - 2623	5'	95%								18	
			2623 - 2628	5'	95%								19	
		N	2628 - 2633	5'	100%		5 BAGS MUD				1 LOAD WATER	RODS SLIPPED THROUGH CLAMP - TAPPED & BROUGHT RODS UP -	20	
			2633 - 2638	5'	100%								21	
			2638 - 2641	3'	90%								22	
THUR	11/4	D	2641 - 2642	1'	20%		BX 2 BAGS MUD				1 LOAD WATER	OIL PUMP WENT OUT - REPAIRED - 5 HOURS REPAIR - 3 HOURS DRILLING	23	
			2642 - 2644	2'	65%								24	
		N	2644 - 2648	4'	65%		5 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING -	25	
			2648 - 2652	4'	65%								26	
			2652 - 2657	5'	95%								27	
			2657 - 2662	5'	100%								28	
			2662 - 2664	2'	90%								29	
			2664 - 2669	5'	100%								30	
			2669 - 2673	4'	100%								31	

24 BAGS MUD

6 LOADS WATER

	DATE	SHIF	DEPTH INTERVAL	No. FEET	% REC	SIZE HOLE ADDITIVES	CEMENT TIME REMAINING	ECT.	LOADS WATER	REMARKS	
FRI	11/5	D	2673-2675	2'	100%	BX 2 BAGS MUD			1 LOAD WATER	PULLED RODS - CHANGED BIT AT 2683'	
			2675-2679	4'	100%						
			2679-2683	4'	100%	(10)					
		N	2683-2688	5'	100%	BX 4 BAGS MUD				RAN RODS IN HOLE AT 2683 -	
			2688-2692	4'	100%						
			2692-2696	4'	90%						
			2696-2701	5'	100%						
			2701-2706	5'	110%	(26)					
SAT	11/6	D	2706-2710	4'	100%	BX 9 BAGS MUD			2 LOADS WATER	POT. KWIK SEAL IN HOLE FOR WATER LOSS - HELPER TOOK DAY OFF TO MOVE - NO NIGHT SHIFT	
			2710-2715	5'	100%						
			2715-2717.5	2 1/2'	50%						
			2717.5-2720	2 1/2'	85%						
			2720-2723.5	3 1/2'	85%						
			2723.5-2726	2 1/2'	100%						
			2726-2728.5	2 1/2'	100%						
			2728.5-2733.5	5'	100%	(27)					
		N	NO SHIFT								
SUN	11/7	NO SHIFT									
MON	11/8	D	2733.5-2739	5 1/2'	90%	BX 3 BAGS MUD			2 LOADS WATER	6 HOURS DRILLING - 2 HOURS REPAIR (CHANGED MOTOR ON DRILL)	
			2739-2743	4'	90%	1 BAG CAUSTIC SODA					
			2743-2745	2'	90%						
			2745-2750	5'	100%	(17)					
		N	2750-2754	4'	100%	BX 4 BAGS MUD			1 LOAD WATER	8 HOURS DRILLING	
			2754-2759	5'	100%						
			2759-2764	5'	100%						
			2764-2769	5'	90%						
			2769-2774	5'	100%						
			2774-2779	5'	95%	(29)					
TUES	11/9	D	2779-2784	5'	100%	BX 4 BAGS MUD			2 LOADS WATER	8 HOURS DRILLING	
			2784-2789	5'	100%						
			2789-2794	5'	100%						

(27) MUD (1) CAUSTIC SODA

(8) LOADS WATER

	DATE	SHIFT	DEPTH INTERVAL - No. FEET	% REC	SIZE HWE	ADDITIVES	CEMENT TIME REMAINING	ECT	LEADS WATER	REMARKS
Tues	11/9	D	2794-2799-5'	100%	Bx					
2	(Cont)		2799-2804-5'	90%						
3			2804-2807-3'	50%	(28)					
4		N	NO DRILLING							CHANGED TO 10' CORE BARREL - LEFT SPACER OFF - PULLED RODS TO POT ON SPACER - CHANGED BITS AT 2807'
5										
6	Wed	11/10	2807-2811-4'	90%	Bx	6 BAGS MUD			2 LEADS WATER	LOST ALL CIRCULATION AT 2827'
7			2811-2814-3'	80%						
8			2814-2816-2'	100%						
9			2816-2822-6'	90%						
10			2822-2826-4'	75%						
11			2826-2827-1'	100%	(20)					
12		N	2827-2830-2 1/2'	50%	Bx	3 BAGS MUD				DRILLED 3' - STARTED TO PULL UP KELLY RODS - BIT STUCK ON BOTTOM - SPENT REST OF SHIFT TRYING TO GET RODS UNSTUCK
13					(3)					TRYING TO GET RODS UNSTUCK
14										Got rods loose - PULLED RODS - CHANGED BIT
15	THUR	11/10	2830 (NO DRILLING)							CHANGED TO 5' CORE BARREL - GREASED RODS
16		N	NO DRILLING							1 LOAD WATER CLEANED OUT HOLE - PUMPED IN KWICK SEAL - TRYING TO GET WATER RETURN - BROKE BOLTS IN GEAR
17										2 LEADS WATER REPLACED BOLTS IN BULL GEAR - 1 HOUR REPAIR - 7 HOURS DRILLING
18	FRI	11/12	2830-2835-5'	100%	Bx	7 BAGS MUD				
19					(5)	1 BAG CAUSTIC SODA				
20		N	2835-2840-5'	100%	Bx	6 BAGS MUD				
21			2840-2845-5'	80%		1 BAG KWICK SEAL				
22			2845-2847-5'	75%						
23			2847-2851-4'	75%						
24			2851-2853-2'	100%						
25			2853-2856-3'	90%	(31)					
26	SAT	11/13	2856-2859-3'	80%	Bx	8 BAGS MUD			2 LEADS WATER	8 HOURS DRILLING
27			2859-2862-3'	100%						
28			2862-2865-3'	100%						
29			2865-2869.5-4 1/2'	80%						
30			2869.5-2873-3 1/2'	100%	(17)					
31		N	NO SHIFT							SUCCESS IN FAMILY - NIGHT DRILLER TOOK DAY OFF

(32) BAGS MUD (1) BAG CAUSTIC SODA (1) BAG KWICK SEAL (7) LEADS WATER

DATE	SHIF	DEPTH INTERVAL	No. Feet	% REC	SIZE HOLE	ADDITIVES	CEMENT	TIME REMAINING	ESCT.	LOADS WATER	REMARKS
SUN 11/14		NO DRILLING									
MON 11/15	D	2873-2876.5	2 1/2'	100%	BX	7 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING - 30% WATER RETURN
3		2875.5-2883.5	5'	100%							
4		2883.5-2888.5	5'	100%							
5		2888.5-2891	2 1/2'	100%							
6		2891-2897	6'	95%							(24)
7	N	2897-2902	5'	100%	BX	6 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING
8		2902-2907	5'	100%							
9		2907-2910	3'	75%							
10		2910-2915	5'	100%							
11		2915-2920	5'	100%							
12		2920-2924	4'	100%							(27)
TUES 11/16	D	2924-2926	2'	100%	BX	5 BAGS MUD				1 LOAD WATER	DOUBLE LINE HOISTING CABLE BRAKE - WENT TO POWER RIG FOR SPARE - STARTED PULLING RODS FOR BIT CHANGE
14		2926-2931	5'	15%							
15		2931-2932	1'	50%							(8)
16	N	NO DRILLING (REPAIR) BX									
17											
WED 11/17	D	2924-2926	2'	100%	BX	5 BAGS MUD				1 LOAD WATER	
19		2926-2931	5'	15%							
20		2931-2932	1'	50%							(8)
WED 11/17	D	2932-2936	4'	100%	BX	7 BAGS MUD				2 LOADS WATER	RAN REST OF RODS IN HOLE - PUT KWICK SEAL FOR WATER RETURN - 8 HOURS DRILLING
22		2936-2941	5'	100%							
23		2941-2944.5	3 1/2'	100%							
24		2944.5-2949	4 1/2'	100%							
25		2949-2953.5	4 1/2'	80%							
26		2953.5-2956	2 1/2'	60%							(24)
27	N	2956-2958	2'	100%	BX	6 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING
28		2958-2961	3'	100%		1 BAG KWICK SEAL					
29		2961-2964	3'	50%		1 BAG CAUSTIC SODA					
30		2964-2968	4'	100%							
31		2968-2972	4'	75%							

(3) BAGS MUD (1) BAG KWICK SEAL (1) BAG CAUSTIC SODA (8) LOADS WATER

			1	2	3	4	5	6	7	8	9	10
DATE	SH	DEPTH INTERVAL - No FEET - % R <sub>h</sub>	SIZE HOLE	ADDITIVES	CEMENT TIME	REMAINING	ECT.	LOADS WATER	REMARKS			
1	11/17	N 2972 - 2977 - 5' - 80%	Bx									1
2	(CONT)	2977 - 2982 - 5' - 80% (20)										2
THUR	11-18	D 2982 - 2983 - 1' - 20%	Bx	7 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING			3
4		2983 - 2986 - 3' - 60%										4
5		2986 - 2989 - 3' - 95%										5
6		2989 - 2991 - 2' - 70%										6
7		2991 - 2996 - 5' - 95%										7
8		2996 - 2999 - 3' - 70%										8
9		2999 - 3000 - 1' - 90% (18)										9
10	N	3000 - 3009 - 4' - 90%	Bx	7 BAGS MUD				2 LOADS WATER	PULLING TUBE, CORE DROPPED IN BIT. PULLING RODS AT 3017'			10
11		3009 - 3008 - 4' - 75%										11
12		3008 - 3007 - 1' - 50%										12
13		3009 - 3013 - 4' - 55%										13
14		3013 - 3017 - 4' - 25% (17)										14
FRI	11-19	D 3017 - 3018 - 1' - 70%	Bx	2 BAGS MUD					FINISHED PULLING RODS - CHANGED BIT AT 3017' - GREASED R.O.D.S			15
16		3018 - 3021 - 3' - 100% (4)										16
17	N	3021 - 3024 - 3' - 100%	Bx	6 BAGS MUD				2 LOADS WATER	8 HOURS DRILLING			17
18		3024 - 3027 - 3' - 100%										18
19		3027 - 3032 - 5' - 100%										19
20		3032 - 3034 - 2' - 75%										20
21		3034 - 3039 - 5' - 100%										21
22		3039 - 3044 - 5' - 100% (23)										22
SAT	11-20	D 3044 - 3049 - 5' - 100%	Bx	7 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING			23
24		3049 - 3054 - 5' - 100%										24
25		3054 - 3059 - 5' - 60%										25
26		3059 - 3062 - 3' - 100%										26
27		3062 - 3064 - 2' - 75% (20)										27
28	N	3064 - 3069 - 5' - 100%	Bx	1 BAG MUD				1 LOAD WATER	TRIPPED RODS FOR BIT CHANGE AT 3069' - GREASED BOTTOM RODS.			28
29		3069 - 3072.5 - 100% (8)										29
30	11-21	SUNDAY - NO DRILLING										30
31												31

(30) BAGS MUD

(8) LOADS WATER

	DATE	SHIFT	DEPTH INTERVAL - No. FEET. % REC	SIZE HOLE	ADDITIVES	CEMENT TIME	REMAINING	ECT.	LOADS WATER	REMARKS
Mon	11-22	D	3072.5 - 3077.5 - 5' - 100%	BX						8 Hours DRILLING
2			3077.5 - 3083 - 5.5' - 100%							
3			3083 - 3088 - 5' - 100%							
4			3088 - 3092 - 4' - 90%							
5			3092 - 3096.5 - 4 1/2' - 100%							
6			3096.5 - 3100 - 3 1/2' - 85%							
7			3100 - 3103 - 3' - 100%	(3)						
8		N	3103 - 3107 - 4' - 8%	BX 4 BAGS MUD					2 LOADS WATER	8 Hours DRILLING
9			3107 - 3109 - 2' - 100%							
10			3109 - 3114 - 5' - 100%							
11			3114 - 3116 - 2' - 100%							
12			3116 - 3120 - 4' - 100%							
13			3120 - 3125 - 5' - 100%							
14			3125 - 3130 - 5' - 100%	(2)						
Tues	11-23	D	3130 - 3135 - 5' - 100%	BX 7 BAGS MUD						
16			3135 - 3138 - 3' - 100%	1 BAG CAUSTIC SODA					1 LOAD WATER	8 Hours DRILLING
17			3138 - 3143.5 - 5 1/2' - 100%							
18			3143.5 - 3153.5 - 10' - 100%							
19			3153.5 - 3159 - 5 1/2' - 100%	(2)						
20		N	3159 - 3164 - 5' - 100%	BX 6 BAGS MUD					2 LOADS WATER	8 Hours DRILLING
21			3164 - 3169 - 5' - 100%							
22			3169 - 3174 - 5' - 100%							
23			3174 - 3179 - 5' - 100%							
24			3179 - 3184 - 5' - 100%							
25			3184 - 3190 - 6' - 100%	(3)						
AVE FOOTAGE PER SHIFT: 23.5 AVE PER DAY: 38.8										
Wed	11-24	D	3190 - 3192.5 - 2 1/2' - 100%	BX 4 BAGS MUD						1 LOAD WATER 7 Hours DRILLING - 1 Hour REPAIR - REPLACED FRICTION BAND ON DRILL
27			3192.5 - 3197.5 - 5' - 100%							
28			3197.5 - 3202 - 4 1/2' - 100%							
29			3202 - 3205 - 3' - 100%							
30			3205 - 3210 - 5' - 100%							
31			3210 - 3215 - 5' - 100%	(2)						

(2) BAGS MUD (1) BAG CAUSTIC SODA

(6) LOADS WATER

	DATE	SHIFT	DEPTH INTERVAL - No FEET. % REC	SIZE HOLE	ADDITIVES	REMAINING	CEMENT TIME	EFT	LOADS WATER	REMARKS		
1	WED	11/24	N	3215 - 3220 - 5' - 100%	BX 6 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING	1	
2		(CONT)		3220 - 3225 - 5' - 100%							2	
3				3225 - 3230 - 5' - 100%							3	
4				3230 - 3235 - 5' - 100%							4	
5				3235 - 3240 - 5' - 100%							5	
6				3240 - 3245 - 5' - 100% (30)							6	
7	THUR	11/25		NO DRILLING (THANKSGIVING)								7
8	FRI	11/26	D	3245 - 3250 - 5' - 100%	BX 7 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING	8	
9				3250 - 3255 - 5' - 100%							9	
10				3255 - 3260 - 5' - 100%							10	
11				3260 - 3263 - 3' - 100%							11	
12				3263 - 3268 - 5' - 100%							12	
13				3268 - 3273 - 5' - 100% (28)							13	
14			N	3273 - 3278 - 5' - 100%	BX 4 BAGS MUD				1 LOAD WATER	STOPPED HOLE AT 3281' BECAUSE BIT WORE OUT -	14	
15				3278 - 3281 - 3' - 94% (8)		3281' END OF HOLE				BREAKING OUT RODS IN 10' SECTIONS	15	
16	SAT	11/27	D	BROKE OUT BX RODS IN 10'S		(9) BAGS MUD			(3) LOADS OF WATER		16	
17				WORKING ON BX CASING - STUCK							17	
18				TIGHT -							18	
19			N	WORKING ON CASING		2 BAGS MUD				SUMMARY: 745' - 3281' - STARTED: 9/10 ENDED: 11/26	19	
20	SUN	11/28		DAY OFF						NX HOLE: 745' - 2137' 9/10 TO 10/14	20	
21	MON	11/29	D	HAULED 3500 FT BX RODS TO POWER RIG - UNLOADED 2000' LEFT						BX HOLE: 2137' - 3281' 10/18 TO 11/26	21	
22				HANDLED RODS						64 BAGS OF MUD (50 LBS) @ 200/BAG	22	
23				8 HOURS CASING WORK						3 " KWICK SEAL	23	
24										9 " SODA ASH	24	
25	TUES	11/30	D	1180' BX CASING IN HOLE BEE OF SHIFT - 30' OUT - 1180' STILL IN HOLE						1 " CELEX	25	
26			N	1130' IN HOLE 1058' OUT - 1080' IN HOLE (50')						2 " FLO SEAL	26	
27	WED	12/1	D	1080' IN HOLE - 1137' OUT - 1000' IN HOLE (80')						148 LOADS OF WATER @ 20 MILES PER ROUND TRIP	27	
28			N	1000' IN HOLE - 1227' OUT - 910' IN HOLE (90')						630' BX CASING LEFT IN HOLE	28	
29	THUR	12/2	D	910' IN HOLE - 1297' OUT - 840' IN HOLE (70')						190' NX CASING LEFT IN HOLE	29	
30			N	840' IN HOLE - 1377' OUT - 760' IN HOLE (70')							30	
31						(14) BAG MUD			(3) LOADS WATER	over	31	



SAFFORD PROPERTY - LONG STAR DISTRICT - GRAHAM COUNTY - ARIZONA

STARTED: DEC 9, 1971

VERTICAL JOY 22 HD (TRUCK)

JOY MANUFACTURING Co. JACK SHIPLEY, LEAD DRILLER (7-3 SHIFT)

COMPLETED: 3/3/72

TD 3265'

COLLAR ELEV: APPROX 3800'

DATE	SH	DEPTH INTERVAL	No FEET	SIZE RB 1/2"	ADDITIVES	CEMENT TIME	REMAINING	ETC.	LOADS WATER	REMARKS
THUR 12/9	D	0 - 5	5'	"	4 MUD				1 LOAD WATER	WATER TRUCK STUCK ON HILL - GOT CHAINS FROM TUCSON
	N	5 - 20	15'	"					1 LOAD WATER	WORKING OUT HOLE
FRI 12/10	D	20 - 55	35'	4 1/2"						8 HOURS DRILLING
	N	55 - 101	46'	"	3 MUD					CHANNEL OUT MUD TANKS
					1 CASTING PLASTER	1/2 HOUR				CEMENTED TOP OF 5' PIPE & DITCH
SAT 12/11	D	101 - 157	56'	"	4 MUD					POT NEW SWABS IN PUMP
	N	157 - 218	61'	"						8 HOURS DRILLING
SUN 12/12		DAY OFF								
MON 12/13	D	218 - 267	49'	"	1 BAG CC-16				1 LOAD WATER	8 HOURS DRILLING
	N	267 - 305	38'	"						
TUES 12/14	D	305 - 342	37'	"	4 BAGS MUD					CLEANED TANKS - MIXED NEW MUD
	N	342 - 372	30'	"						8 HOURS DRILLING
WED 12/15	D	372 - 404	32'	"	6 BAGS MUD				1 LOAD WATER	7 HOURS DRILLING - 1 HOUR MIXING MUD
					1 BAG CAUSTIC SODA					
	N	404 - 463	59'	"						8 HOURS DRILLING
THUR 12/16	D	463 - 499	36'	"					1 LOAD WATER	8 HOURS DRILLING
	N	493 - 523	30'	"						8 HOURS DRILLING
FRI 12/17	D	523 - 534	11'	"						POLLED OUT - CHANGED B.T. - TOOK OFF 5' OF DRILL COLLAR
	N	534 - 564	30'	"					1 LOAD WATER	8 HOURS DRILLING
SAT 12/18	D	564 - 600	36'	"	6 BAGS MUD				1 LOAD WATER	CLEANED TANK - MIXED NEW MUD
	N	600 - 654	54'	"						POT ON NEW B.T.
SUN 12/19	D	654 - 679	25'	"						8 HOURS DRILLING
	N	679 - 715	36'	"						8 HOURS DRILLING - POT ON NEW SWABS IN PUMP
MON 12/20	D	715 - 755	40'	"	3 BAGS MUD				1 LOAD WATER	CLEANED TANKS + MIXED NEW MUD
	N	755 - 790	35'	"						8 HOURS DRILLING
TUES 12/21	D	790 - 805	15'	"	3 BAGS MUD				1 LOAD WATER	CLEANED MUD TANKS, MIXED MUD
	N	805 - 836	31'	"						CHANGED OIL IN PUMP & DRILL MOTOR'S
										8 HOURS DRILLING

③ MUD ① CC-16 ① CASTING PLASTER

④ LOADS WATER

DATE	SHIFT	DEPTH INTERVAL	NO. FEET	SIZE HOLE	ADDITIVES	CEMENT TIME	REMAINING	ETC.	LOADS WATER	REMARKS	
WED 12/22	D	836 - 870	34'	4 1/2"	3 BAGS MUD				1 LOAD WATER	CLEANED TANKS - MIXED MUD	
	N	870 - 940	70'	20"						8 HOURS DRILLING	
THUR 12/23	D	940 - 976	36'	4 1/2"	3 BAGS MUD				1 LOAD WATER	CLEANED TANKS - CHANGE BIT - MIXED MUD	
	N	976 - 1017	41'	"							
FRI 12/24		HOLIDAY - NO DRILLING									
SAT 12/25		"									
SUN 12/26		"									
MON 12/27	D	1017 - 1062	45'	"	2 BAGS MUD				1 LOAD WATER	WASHED OUT HEAVY MUD IN HOLE	
	N	NO NIGHT SHIFT									
TUE 12/28	D	1062 - 1092	30'	"	2 BAGS MUD				1 LOAD WATER	WASHED OUT HOLE	
	N	1092 - 1101	9'	"						BACKED OUT 1100' OF BACK BIT RODS OUT OF HOLE	
										STARTED NXE CASING IN HOLE	

**SUMMARY: (0-1100) RB**  
 44 50 LB BAGS MUD @ 260/BAG  
 1 " CASTING MASTER  
 1 " CC-14 @ \$1200/BAG  
 1 " CAUSTIC SODA @ \$1000/BAG  
 13 LOADS WATER @ 20 MILES / ROUND TRIP (1.5¢ PER MILE)  
 1/2 HOUR CEMENT TIME @ \$1600/HOUR (~~1.5¢ PER MILE~~)

**DRILLING COSTS:**  
 0-500 / 4.40 = \$2200.00 (500')  
 500-1000 / 4.80 = 2400.00 (500')  
 1000-1500 / 5.40 = 545.00 (101')  
**\$5145.00**

BEGAN CORING NXE (5' CORE BARREL) 12/29/71 @ 1101' IN KAL

DATE	SHIFT	DEPTH INTERVAL	NO. FEET	% REC	SIZE HOLE	ADDITIVES	CEMENT TIME	REMAINING	ETC.	LOADS WATER	REMARKS
WED 12/29	D					NX 2 BAGS SF-100					PUTTING IN NXE CASING - 8 HOURS CASING
	N	1101' - 1106'	5'	100%	"					1 LOAD WATER	FINISHED SETTING NX CASING IN HOLE. MADE UP
		1106' - 1108'	2'	100%	(1)						1120' OF NX RODS IN 10'S
THUR 12/30	D	1108 - 1113	5'	100%	"					1 LOAD WATER	8 HOURS DRILLING
		1113 - 1118	5'	100%							
		1118 - 1123	5'	100%							
		1123 - 1128	5'	100%							
		1128 - 1133	5'	100%	(2.5)						

(2) BAGS SF-100

(2) LOADS WATER

DATE	SW	DEPTH INTERVAL	No. FEET	% REC	ADDITIVES	PERCENT TIME	REAMING	ETC	LOADS WATER	REMARKS	
THUR 12/30	N	1133-1138	5'	100%							
(CON)		1138-1143	5'	100%						8 HOURS DRILLING - 1 HOUR REPAIR - REPAIRED BROKEN HYD HOSE	
		1143-1148	5'	100%							
		1148-1153	5'	100%							
		1153-1158	5'	100%						(25)	
FRI 12/31	D	1158-1163	5'	90%	2 BAGS MUD					8 HOURS DRILLING	
		1163-1168	5'	90%							
		1168-1173	5'	100%							
		1173-1178	5'	100%							
		1178-1183	5'	100%							
		1183-1188	5'	100%						(30)	
	N	NO NIGHT SHIFT									
SAT 1/1		HOLIDAY - NO DRILLING									
SUN 1/2		" " "									
MON 1/3	D	1188-1193	5'	95%	1 BAG MUD				1 LOAD WATER	REPAIRED STARTER ON PUMP ENGINE - 1 HOUR LEVELING DRILL	
		1193-1198	5'	100%	1 BAG CELLEX					1 HOUR REPAIR - 6 HOURS DRILLING	
		1198-1203	5'	100%						(35)	
	N	1203-1208	5'	100%						8 HOURS DRILLING	
		1208-1213	5'	100%							
		1213-1218	5'	100%							
		1218-1223	5'	90%							
		1223-1228	5'	100%							
		1228-1233	5'	100%							
		1233-1238	5'	100%							
		1238-1243	5'	100%						(40)	
TUE 1/4	D	1243-1248	5'	100%							
		1248-1253	5'	100%						8 HOURS DRILLING	
		1253-1258	5'	100%							
		1258-1263	5'	100%						(20)	
	N	1263-1268	5'	100%							
		1268-1273	5'	100%							

(2) BAGS MUD (1) BAG CELLEX

(1) LOAD WATER

TUES	DATE	SHA	DEPTH INTERVAL	NO. FEET	% PREC HOLE	SIZE	ADDITIVES	CEMENT TIME	REAMING	ETC.	LOADS WATER	REMARKS	
1	1/4	N	1273 - 1278	5'	100%	NK						8 HOURS DRILLING	
2	(CONT)		1278 - 1283	5'	100%								
3			1283 - 1288	5'	100%								
4			1288 - 1292	4.5'	100%	(29)							
5	1/5	D	1292 - 1297	5'	100%					1 LOAD WATER		8 HOURS DRILLING	
6			1297 - 1302	5'	100%								
7			1302 - 1307	5'	100%								
8			1307 - 1312	5'	100%								
9			1312 - 1317	5'	95%	(25)							
10		N	1317 - 1322	5'	100%							8 HOURS DRILLING	
11			1322 - 1327	4.5'	100%								
12			1327 - 1332	5'	95%								
13			1332 - 1337	5'	100%								
14			1337 - 1342	5'	100%								
15			1342 - 1347	5'	100%								
16			1347 - 1352	5'	100%	(35)							
17	1/6	D	1352 - 1357	5'	100%							8 HOURS DRILLING	
18			1357 - 1362	5'	100%								
19			1362 - 1367	5'	100%								
20			1367 - 1372	5'	100%								
21			1372 - 1377	5'	100%	(24)							
22		N	1377 - 1382	5'	100%							8 HOURS DRILLING	
23			1382 - 1387	5'	100%								
24			1387 - 1391	5'	100%								
25			1391 - 1396	5'	100%								
26			1396 - 1401	5'	100%	(25)							
								AVG PER SHIFT: 25.6'		AVG PER DAY: 42.9'			
27	1/7	D	1401 - 1406	5'	100%							1 LOAD WATER 8 HOURS DRILLING	
28			1406 - 1411	5'	100%								
29			1411 - 1416	5'	100%								
30			1416 - 1421	5'	100%								
31			1421 - 1424	3'	100%	(23)							

(2) LOADS WATER

			1	2	3	4	5	6	7	8	9	10	
DATE	SHEET	DEPTH INTERVAL	NO. FEET	% R.C.C.	SIZE HOLE	ADDITIVES	CEMENT TIME	REMAINING	ETC.	LOADS WATER	REMARKS		
FRI	1/7	N	1424-1429	5'	100%	NY 4 BAGS MUD					8 HOURS DRILLING	1	
			1429-1434	5'	100%							2	
			1434-1439	5'	100%							3	
			1439-1444	5'	90%							4	
			1444-1449	5'	75%							5	
			1449-1454	5'	100%							6	
SAT	1/8	D	1454-1454.5	1/2'	90%	4 BAGS MUD				1 LOAD WATER	TRAPPED RODS FOR BIT CHANGE	7	
			1454.5-1459.5	5'	95%							8	
			1459.5-1464.5	5'	100%							9	
		N	1464.5-1469	4 1/2'	100%	5 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING	10	
			1469-1474	5'	100%							11	
			1474-1479	5'	100%							12	
			1479-1484	5'	100%							13	
			1484-1489	5'	100%							14	
			1489-1494	5'	100%							15	
SUN	1/9		DAY OFF										16
MON	1/10	D	1494-1499	5'	100%	2 BAGS MUD				1 LOAD WATER	5 HOURS DRILLING - 3 HOURS REPAIR - CHANGED OIL + FILTER	17	
			1499-1504	5'	100%						P.T. NEW CLUTCH AND THREW OUT REMAINING IN DRILL	18	
			1504-1509	5'	100%							19	
		N	1509-1511	2'	80%	4 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING	20	
			1511-1516	5'	100%							21	
			1516-1521	5'	100%							22	
			1521-1526	5'	100%							23	
			1526-1531	5'	100%							24	
			1531-1536	5'	100%							25	
			1536-1541	5'	100%							26	
TUE	1/11	D	1541-1546	5'	100%	3 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING	27	
			1546-1551	5'	100%							28	
			1551-1556	5'	100%							29	
			1556-1561	5'	100%							30	
			1561-1566	5'	100%							31	
						5 BAGS MUD				5 LOADS WATER			

	DATE	TIME	DEPTH INTERVAL	NO. FEET	% REC.	SIZE HOLE	ADDITIVES	DEPART TIME	RETURNING	ETC	LOADS WATER	REMARKS		
TUES	1/11	D	1566 - 1571	5'	100%	(30) NX								
2	(CONT)	N	1571 - 1576	5'	100%		4 BAGS MUD					8 HOURS DRILLING		
3			1576 - 1581	5'	95%									
4			1581 - 1585	4'	100%									
5			1585 - 1590	5'	100%									
6			1590 - 1595	5'	100%									
7			1595 - 1600	5'	100%									
8			1600 - 1604	4'	100%	(33)								
WED	1/12	D	1604 - 1609	5'	100%		1 BAG MUD				1 LOAD WATER	8 HOURS DRILLING		
10			1609 - 1614	5'	100%									
11			1614 - 1619	5'	100%									
12			1619 - 1624	5'	100%									
13			1624 - 1629	5'	100%									
14			1629 - 1634	5'	100%	(30)								
15		N	1634 - 1639	5'	100%		2 BAGS MUD					8 HOURS DRILLING		
16			1639 - 1643	4'	100%									
17			1643 - 1648	5'	100%									
18			1648 - 1653	5'	100%									
19			1653 - 1656	3'	100%									
20			1656 - 1661	5'	100%									
21			1661 - 1666	5'	100%	(32)								
THUR	1/13	D	1666 - 1671	5'	100%						1 LOAD WATER	PUT ON DOUBLE LINE		
23			1671 - 1676	5'	100%									
24			1676 - 1681	5'	100%									
25			1681 - 1686	5'	100%									
26			1686 - 1691	5'	100%									
27			1691 - 1696	5'	100%	(30)								
28		N	1696 - 1701	5'	100%		2 BAGS MUD					FISHED OUT BROKEN KELLY ROD		
29			1701 - 1706	5'	100%		1 BAG CAUSTIC SODA							
30			1706 - 1711	5'	100%									
31			1711 - 1716	5'	100%									

(9) BAGS MUD (1) BAG CAUSTIC SODA

(2) LOADS WATER

		1	2	3	4	5	6	7	8	9	10
THUR	DATE SH/PT	DEPTH INTERVAL	NO. FEET	% REC	SIZE HOLE	ADDITIVES	CEMENT TIME	REMAINING	ETC.	LOADS WATER	REMARKS
	1/13 N	1716 - 1721 - 5'	100%		NX						
2	(Cont)	1721 - 1726 - 5'	100%	(30)							
FRI	1/14 D	1726 - 1731 - 5'	100%		NX					8 HOURS DRILLING	
4		1731 - 1736 - 5'	100%								
5		1736 - 1741 - 5'	100%								
6		1741 - 1746 - 5'	100%								
7		1746 - 1751 - 5'	100%								
8		1751 - 1756 - 5'	100%	(30)							
9	N	1756 - 1761 - 5'	100%		NX	1 BAG MUD				1 LOAD WATER	8 HOURS DRILLING
10		1761 - 1766 - 5'	100%								
11		1766 - 1770 - 4'	100%								
12		1770 - 1775 - 5'	100%								
13		1775 - 1780 - 5'	100%								
14		1780 - 1785 - 5'	100%								
15		1785 - 1786 - 1'	100%	(30)							
SAT	1/15 D	1786 - 1790 - 4'	96%								8 HOURS DRILLING
17		1790 - 1795 - 5'	100%								
18		1795 - 1800 - 5'	100%								
19		1800 - 1804 - 4'	100%								
20		1804 - 1809 - 5'	100%								
21		1809 - 1814 - 5'	100%	(28)							
22	N	1814 - 1819 - 5'	100%								8 HOURS DRILLING
23		1819 - 1824 - 5'	100%								
24		1824 - 1829 - 5'	100%								
25		1829 - 1834 - 5'	100%								
26		1834 - 1839 - 5'	100%								
27		1839 - 1844 - 5'	100%	(30)							
SUN	1/16	DAY OFF									
MON	1/17 D	1844 - 1849 - 5'	100%			1 BAG MUD				1 LOAD WATER	2 HOURS WASHING OUT HOLE
30		1849 - 1854 - 5'	100%			1 BAG FLO SOL					6 HOURS DRILLING
31		1854 - 1859 - 5'	100%	(15)							

(2) BAGS MUD (1) FLO SOL

(2) LOADS WATER

DATE	SHIF	DEPTH INTERVAL	NO. FEET	% RC	SIZE HOLE	ADDITIVES	CEMENT TIME	BEAMING	GTC	LOADS WATER	REMARKS
MON 1/17	N	1859 - 1864	5'	100%	NX						8 HOURS DRILLING
2	(CAST)	1864 - 1869	5'	100%							
3		1869 - 1874	5'	100%							
4		1874 - 1879	5'	100%							
5		1879 - 1884	5'	100%							
6		1884 - 1888	4'	100%	(29)						
TUE 1/18	D	1888 - 1893	5'	100%							2 HOURS HAULING NXWL RODS FROM OTHER RIG
8		1893 - 1896	3'	100%							6 HOURS DRILLING
9		1896 - 1900.5	4.5'	95%							
10		1900.5 - 1902	1.5'	100%	(14)						
11	N	1902 - 1904	2'	100%							
12		1904 - 1909	5'	100%							
13		1909 - 1914	5'	100%							
14		1914 - 1919	5'	100%							
15		1919 - 1923	4'	100%							
16		1923 - 1928	5'	100%	(26)						
WED 1/19	D	1928 - 1930	2'	100%	NX	2 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING - WASHED OUT HOLE
18		1930 - 1935	5'	100%							
19		1935 - 1940	5'	100%							
20		1940 - 1945	5'	100%							
21		1945 - 1949	4'	100%	(21)						
22		1949 - 1954	5'	100%		2 BAGS MUD					FISHED OUT BROKEN KELLY ROD
23		1954 - 1959	5'	100%							
24		1959 - 1964	5'	100%							
25		1964 - 1968	4'	100%							
26		1968 - 1973	5'	100%							
27		1973 - 1978	5'	100%	(29)						
THUR 1/20	D	NO DRILLING				4 BAGS MUD			55 GALS DIESEL OIL	1 LOAD WATER	WASHING OUT HOLE - RODS GOT STUCK
29											PUMPED 55 GALS DIESEL OIL IN HOLE
30	N	1978 - 1981	3'	100%	(3)						WASHING + DRILLING OUT BRIDGE TO GET TO BOTTOM

(8) BAGS MUD

(55) GALS DIESEL OIL (2) LOADS WATER

AVERAGE FOOTAGE PER SHIFT: 26.6  
" " " DAY: 48.7



DATE	SH	DEPTH	INTERVAL	NO. FEET	% RC	SIZE HOLE	ADDITIVES	CEMENT	TIME	READING	ETC	LOADS WATER	REMARKS
WED 1/26	D	NO DRILLING				NX	7 BAGS MUD					1 LOAD WATER	STARTING WASHING + DRILLING 300' OFF BOTTOM
2							1 BAG FLO SEAL - 1 BAG CAUSTIC SODA						GOT DOWN TO 190' FROM BOTTOM
3	N	NO DRILLING					3 BAGS MUD					1 LOAD WATER	DRILLING + WASHING HOLE - GOT WITHIN 120' OF BOTTOM
4													WASHING + DRILLING OUT HOLE - GOT TO BOTTOM OF HOLE 2062'
THUR 1/27	D	NO DRILLING										1 LOAD WATER	CHANGED OIL FILTERS - BROKE OUT 1000' OF NX RODS IN 10'(S) PREPARING TO CASE HOLE
6													
7	D	2062	2062.5	1 1/2'	100%								
8		2063.5	2068.5	5'	100%								
9		2068.5	2072	3.5'	100%	(10)	END OF NX						
10	N	NO DRILLING											PULLED 1000' OF NX RODS IN 30 (3) MADE UP 1000' OF BX CASING IN TENS.
11													PUMPED 110 GAL BLACK OIL INTO 2 DRUMS IN TOWN
FRI 1/28	D	NO DRILLING					2 BAGS MUD						BROUGHT TO RIG TO PUMP BACK OF CASING - WASHING + DRILLING CASING DOWN - GOT TO 210' OF BOTTOM
13													DRILLED + WASHED CASING TO BOTTOM OF HOLE - PUMPED 140 GAL OF BLACK OIL
14	N	NO DRILLING					2 BAGS MUD						1 LOAD WATER
15													DAY HELPER SICK - BROUGHT OUT PM CREW - RAN 2070' OF BX RODS IN 10 (3). GREASED RODS - WASHED HEAVY MUD OUT OF BOTTOM OF HOLE - PUT IN 10' CORE BARREL
SAT 1/29	D	2072	2075	3'	100%	(3)	BX						
18		NO PM SHIFT											
SUN 1/30	DAY OFF												
MON 1/31	D	2075	2080	5'	100%		BX						STARTER ON PUMP WENT BAD - PUT ON NEW ONE
22		2080	2089	9'	100%								REPAIRED WATER SWIVEL HERE - NEW HELPER -
23		2089	2094	5'	90%	(19)							
24	N	2094	2101	7'	100%								8 HOURS DRILLING - PM HELPER QUIT.
25		2101	2107	6'	83%								
26		2107	2117	10'	100%								
27		2117	2127	10'	100%								
28		2127	2136	9'	100%	(42)							
TUE 2/1	D	2136	2146	10'	95%		BX	1 BAG QUICK SEAL					8 HOURS DRILLING -
30		2146	2153	7'	100%								

(4) BAGS MUD (1) BAG FLO SEAL (1) BAG CAUSTIC SODA (1) BAG QUICK SEAL (4) LOADS WATER

		1	2	3	4	5	6	7	8	9	10
DATE	SH	DEPTH INTERVAL	NO FEET	% RC	ADDITIVES	CEMENT	TIRE	REPAIRING	ETC	LOADS WATER	REMARKS
TUES	2/1	D	2153 - 2159	6' - 100%	BR						
		(CONT.)	2159 - 2166	7' - 100%	(26)						
		N	2166 - 2171	5' - 100%	2 BAGS MUD					← 8 HOURS DRILLING	
			2171 - 2175	4' - 90%							
			2175 - 2184	9' - 100%							
			2184 - 2189	5' - 100%							
			2189 - 2199	10' - 100%							
			2199 - 2204	5' - 100%	(30)						
WED	2/2	D	2204 - 2205.5	1.5' - 100%	5 BAGS MUD					2 LOADS WATER 8 HOURS DRILLING	
			2205.5 - 2207	1.5' - 100%							
			2207 - 2209	2' - 100%							
			2209 - 2217	8' - 100%							
			2217 - 2225	8' - 100%							
			2225 - 2231	6' - 100%	(27)						
		N	2231 - 2233	2' - 90%	4 BAGS MUD					1 LOAD WATER 8 HOURS DRILLING	
			2233 - 2236	3' - 90%	1 BAG QUICK SEAL						
			2236 - 2240	4' - 100%							
			2240 - 2244	4' - 100%							
			2244 - 2252	8' - 100%							
			2252 - 2262	10' - 100%	(31)						
THUR	2/3	D	2262 - 2272	10' - 100%	(16)	2 BAGS MUD				1 LOAD WATER TRIPPED RODS AT 2262' FOR BIT CHANGE	
		N	2272 - 2279	7' - 100%	4 BAGS MUD					1 LOAD WATER 8 HOURS DRILLING	
			2279 - 2289	10' - 100%							
			2289 - 2294	5' - 100%							
			2294 - 2302	8' - 100%							
			2302 - 2309	7' - 100%							
			2309 - 2316	7' - 100%	(44)						
					AVE PER SHIFT: 26.7 AVE PER DAY: 48.2						
FRI	2/4	D	2316 - 2326	10' - 100%	4 BAGS MUD					2 LOADS WATER 8 HOURS DRILLING	
			2326 - 2331	5' - 100%	1 BAG (100 LB)						
			2331 - 2338	7' - 100%	WHEAT BRAN						
			2338 - 2339	1' - 100%							

(21) BAGS MUD (1) BAG QUICK SEAL (1) BAG WHEAT BRAN (7) LOADS WATER

	DATE	SHIFT	DEPTH INTERVAL	NO. FEET	% REC	SIZE HOLE	ADDITIVES	CEMENT TIME	REAMING	ETC	LOADS WATER	REMARKS
FRI	2/4	D	2339 - 2346	7'	100%							
	2	(CONT)	2346 - 2350	4'	100%	(34)						
	3	N	2350 - 2351	5'	100%		5 BAGS MUD					BACK OFF KELLY ROD - HELPER QUIT.
	4		2351 - 2356	4'	100%							
	5		2356 - 2359	3'	50%							
	6		2359 - 2362	3'	75%							
	7		2362 - 2364	2'	80%							
	8		2364 - 2367	3'	75%							
	9		2367 - 2371	4'	50%	(21)						
SAT	2/5	D	2371 - 2374	3'	90%		4 BAGS MUD				1 LOAD WATER	8 HOURS DRILLER - NO NIGHT SHIFT
	11		2374 - 2379	5'	100%							
	12		2379 - 2385	6'	100%							
	13		2385 - 2388	3'	100%	(17)						
	14	N	NO NIGHT SHIFT									
SUN	2/6	DAY OFF										
MON	2/7	D	2388 - 2392	4'	90%		2 BAGS MUD				1 LOAD WATER	PULLING RODS FOR BIT CHANGE
	17		2392 - 2394.5	2.5'	100%							
	18		2394.5 - 2398	3.5'	100%							
	19		2398 - 2401	3'	100%							
	20		2401 - 2405	4'	100%	(17)						
	21	N	2405 - 2412	7'	100%		2 BAGS MUD					FINISHED PULLING RODS - RAN NEW BIT BACK AT 2405'
	22		2412 - 2418	6'	100%							
	23		2418 - 2423	5'	90%	(18)						
TUE	2/8	D	2423 - 2431	8'	100%						1 LOAD WATER	8 HOURS DRILLING
	25		2431 - 2435	4'	100%							
	26		2435 - 2438	3'	100%							
	27		2438 - 2441	3'	100%							
	28		2441 - 2448	7'	100%							
	29		2448 - 2451	3'	100%							
	30		2451 - 2457	6'	100%	(34)						
	31	N	2457 - 2467	10'	100%		2 BAGS MUD				1 LOAD WATER	(15) BAGS MUD (14) LOADS WATER

			1	2	3	4	5	6	7	8	9	10
DATE	TIME	DEPTH INTERVAL	NO. FEET	% REC	SIZE	ADDITIVES	CEMENT TIME	REMAINING	ETC.	LOADS WATER	REMARKS	
TUES	2/8	N	2467 - 2474	- 7'	- 100%							1
	(CONT)		2474 - 2484	- 10'	- 100%						RODS BROKE 620' FROM TOP OF HOLE - RAN TAP IN AND RECOVERED BROKEN RODS.	2
WED	2/9	D	2484 - 2494	- 10'	- 100%					1 LOAD WATER	8 HOURS DRILLING	3
			2494 - 2504	- 10'	- 100%							4
			2504 - 2512	- 8'	- 87%							5
			2512 - 2520	- 8'	- 100%							6
			2520 - 2524	- 4'	- 100%							7
		N	2524 - 2529	- 5'	- 100%					1 LOAD WATER	8 HOURS DRILLING	8
			2529 - 2535	- 6'	- 100%							9
			2535 - 2545	- 10'	- 100%							10
			2545 - 2555	- 10'	- 100%							11
			2555 - 2561	- 6'	- 100%							12
			2561 - 2568	- 7'	- 100%							13
THUR	2/10	D	2568 - 2578	- 10'	- 100%						TRIPPED RODS FOR BIT CHANGE - GREASED RODS	14
			2578 - 2585	- 7'	- 100%							15
		N	2588 - 2598	- 10'	- 100%					1 LOAD WATER	8 HOURS DRILLING	16
			2598 - 2605	- 7'	- 100%							17
			2605 - 2614	- 9'	- 100%							18
			2614 - 2618	- 4'	- 75%							19
			2618 - 2621	- 3'	- 100%							20
FRI	2/11	D	2621 - 2627	- 6'	- 86%					1 LOAD WATER	8 HOURS DRILLING	21
			2627 - 2633	- 6'	- 100%							22
			2633 - 2640	- 7'	- 100%							23
			2640 - 2650	- 10'	- 100%							24
			2650 - 2659	- 9'	- 100%							25
		N	2659 - 2669	- 10'	- 100%					1 LOAD WATER	8 HOURS DRILLING	26
			2669 - 2675	- 6'	- 90%							27
			2675 - 2678	- 3'	- 80%							28
			2678 - 2680	- 2'	- 70%							29
			2680 - 2683	- 3'	- 100%							30
												31

⑤ LOADS WATER

	DATE	SHIF	DEPTH INTERVAL	NO. FEET	% REC	SIZE	ADDITIVES	CONCRETE TIME	ETC	REMAINING	LOAD WATER	REMARKS	
FRI	2/11	N	2683 - 2686	3'	100%	BX							1
2	(CONT)		2686 - 2689	3'	100%	(30)							2
SAT	2/12	D	2689 - 2697	8'	100%						1 LOAD WATER	8 HOURS DRILLING	3
4			2697 - 2703	6'	100%								4
5			2703 - 2710	7'	100%								5
6			2710 - 2720	10'	100%								6
7			2720 - 2730	10'	100%	(41)							7
8		N	2730 - 2740	10'	100%							POT NEW HYD CHAIN ON - 3' OF CORE IN RODS	8
9			2740 - 2750	10'	100%							STARTED PULLING RODS.	9
10			2750 - 2760	10'	100%								16
11			2760 - 2768	8'	100%	(38)							11
SUN	2/13		DAY OFF										12
MON	2/14	D	2768 - 2776	8'	90%						1 LOAD WATER	TRIPPED RODS START OF SHIFT. PUT ON NEW BIT.	13
14			2776 - 2786	10'	100%	(18)						WIRE LINE BROKE	14
15		N	2786 - 2790	4'	100%						1 LOAD WATER	TRIPPED RODS TO GET TUBE OUT.	15
16			2790 - 2794	4'	100%								16
17			2794 - 2800	6'	100%	(14)							17
TUE	2/15	D	2810 - 2805	5' - 5.5'	100%							WIRE LINE BROKE 90' ABOVE OVERSHOT - PULLED RODS	18
19			2805.5 - 2814	8.5'	100%							TO GET TUBE - RAN RODS BACK IN.	19
20			2814 - 2817	3'	100%	(17)							20
21		N	2817 - 2821	4'	75%		2 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING	21
22			2821 - 2830	9'	100%								22
23			2830 - 2838	8'	100%								23
24			2838 - 2847	9'	100%								24
25			2847 - 2857	10'	100%	(40)							25
WED	2/16	D	2857 - 2864	7'	100%		3 BAGS MUD				1 LOAD WATER	8 HOURS DRILLING	26
27			2864 - 2873	9'	100%								27
28			2873 - 2880	7'	100%								28
29			2880 - 2886	6'	100%								29
30			2886 - 2893	7'	50%	(36)							30
31		N	2893 - 2896	3'	50%		(5) BAGS MUD				1 LOAD WATER	WIRE LINE BROKE - PULLED 270' OF RODS -	31
											(6) LOADS WATER		

			1	2	3	4	5	6	7	8	9	10
DATE	TIME	DEPTH INTERVAL	NO. FEET	% REC	SIZE HOLE	ADDITIVES	CEMENT TIME	REMAINING	ETC	LOADS WATER	REMARKS	
WED	2/16	N	2896 - 2901	3'	60%							1
	(Cont)		2901 - 2904	3'	40%							2
			2904 - 2909	5'	70%							3
			2909 - 2912	3'	(19)							4
THUR	2/17	D	2912 - 2913	1'	100%					1 LOAD WATER	PULLED RODS TO CHANGE BIT. PUT ON 5' CORE BARRELL	5
			2913 - 2915	2'	100%							6
			2915 - 2917	2'	50%							7
		N	2917 - 2920	3'	85%						BIDDING + CARING	8
			2920 - 2925	5'	100%							9
			2925 - 2928	3'	85%							10
			2928 - 2932	4'	75%	(20)						11
FRI	2/18	D	2932 - 2937	5'	100%	10 MUD				1 LOAD	MIXING MUD	12
			2937 - 2942	5'	100%	1 CAUSTIC						13
			2942 - 2946	4'	80%	1 CELLEX						14
		N	2946 - 2950	4'	5%	6 MUD				1 LOAD		15
			2950 - 2952	2'	25%							16
			2952 - 2956	4'	75%							17
			2956 - 2961	5'	90%							18
			2961 - 2965	4'	65%	(33)						19
SAT	2/19	D	2965 - 2970	5'	60%					1 LOAD		20
			2970 - 2972	2'	100%							21
			2972 - 2974	2'	80%							22
			2974 - 2976	2'	75%							23
		N	2976 - 2978	2'	40%	2 MUD					PULLED RODS FOR BIT AT 2976	24
			2978 - 2981	3'	70%							25
			2981 - 2984	3'	100%							26
			2984 - 2986	2'	60%							27
MON	2/21	D	2986 - 2990	4'	100%	6 MUD				1 LOAD		28
			2990 - 2994	4'	100%							29
			2994 - 2998	4'	100%							30
		N										31

(24) MUD (P) CAUSTIC (1) CELLEX

(5) WATER

TRIP TO TOWN FOR PARTS  
CHANGE BIT 2998

			ADDITIVES	CEMENT TIME	REMAINING	ETC	WATER	REMARKS		
TUE	2/22	D	2998-3003-5'-100%	4 MUD			1 LOAD			1
			3003-3008-5'-95%							2
			3008-3012-4'-75%							3
			3012-3014-2'-40%							4
		N	3014-3018-4'-50%	4 MUD			1 LOAD			5
			3018-3020-2'-60%							6
			3020-3022-2'-35%							7
			3022-3027-5'-10%							8
			3027-3031-4'-65%							9
			3031-3034-3'-85%							10
WED	2/23	D	3034-3035-1'-50%					PULLED FOR BIT 3035		11
		N	3035-3038-3'-100%	4 MUD			1 LOAD			12
			3038-3043-5'-100%							13
			3043-3046-3'-85%							14
			3046-3048-2'-70%							15
			3048-3050-2'-90%							16
THUR	2/24	D	3050-3051-1'-50%							17
			3051-3054-3'-10%							18
			3054-3058-4'-75%							19
			3058-3060-2'-95%							20
			3060-3064-4'-90%							21
			3064-3067-3'-95%							22
		N	3067-3072-5'-100%							23
			3072-3076-4'-100%	4 MUD			1 LOAD			24
			3076-3081-5'-100%							25
			3081-3083-2'-60%							26
			3083-3086-3'-70%							27
			3086-3088-2'-75%							28
			3088-3091-3'-100%							29
			3091-3095-4'-95%							30
FRI	2/25	D	3095-3099-4'-95%	6 MUD ② MUD			1 LOAD ⑤ WATER	PULLED FOR BIT 3101		31

	1	2	3	4	5	6	7	8	9	10
	ADDITIVES CEMENTING			REAMING	ETC	WATER	REMARKS			
1	3099-3100 <sup>3</sup>	- 1 <sup>5</sup>	- 90%							
2	3100 <sup>5</sup>	- 3101	- 5	- 90%						
3	N 3101-3106	- 5'	- 100%							
4	3106-3108	- 2'	- 65%							
5	3108-3109	- 1'	- 95%							
6	3109-3112	- 3'	- 100%							
7	3112-3117	- 5'	- 80%							
SAT 2-26 D	3117-3121	- 4'	- 100%	4 MUD						
9	3121-3126	- 5'	- 100%							
10	3126-3130	- 4'	- 100%							
11	3130-3131 <sup>5</sup>	- 1 <sup>5</sup>	- 70%							
12	3131 <sup>5</sup> -3134 <sup>5</sup>	- 3'	- 100%							
13	N 3134 <sup>5</sup> -3137 <sup>5</sup>	- 3'	- 100%	5 MUD		1 LOAD				
14	3137 <sup>5</sup> -3142	- 4 <sup>5</sup>	- 95%							
15	3142-3144	- 2'	- 65%							
16	3144-3146	- 2'	- 55%							
17	3146-3147	- 1'	- 100%							
18	3147-3149	- 2'	- 50%							
19	3149-3152	- 3'	- 100%							
SUN 2-28 D	3152-3156	- 4'	- 95%	3 MUD		1 LOAD				
21	3156-3160	- 4'	- 100%							
22	3160-3164	- 4'	- 95%							
23	3164-3168	- 4'	- 100%							
24	N 3168-3170	- 2'	- 60%	2 MUD					CHANGE BIT <del>3168</del> 3168	
TUE 2-29 D	3170-3173	- 3'	- 40%			1 LOAD			REPLACED WIRELINE	
26	3173-3175	- 2'	- 90%							
27	N 3175-3176	- 1'	- 60%	2 MUD						
28	3176-3179	- 3'	- 55%							
29	3179-3181	- 2'	- 90%							
<del>TUE 3-1 D</del>	3181-3182	- 1'	- 100%						NEW BIT 3182	
Wed 3-1 D	3182-3184	- 2'	- 40%	(17) MUD		(3) WATER			FISHED OUT <del>BROKEN</del> OVERSHOT & TUBE AFTER WIRELINE BROKE	

			ADDITIVES	CEMENTING	REAMING	ETC	WATER	REMARKS		
1		3184-3186 - 2' - 85%								
2	N	3186-3188 - 2' - 80%	6 MUD				1 LOAD			
3		3188-3190 - 2' - 80%								
4		3190-3192 - 2' - 50%								
5		3192-3195 - 3' - 95%								
6		3195-3198 - 3' - 97%								
7		3198-3201 - 3' - 65%								
8	THUR 3-2 D	3201-3204 - 3' - 100%	5 MUD				1 LOAD			
9		3204-3207 - 3' - 100%								
10		3207-3210 <sup>5</sup> - 3 <sup>5</sup> - 85%								
11		3210 <sup>2</sup> - 3215 - 4 <sup>5</sup> - 100%								
12		3215-3220 - 5' - 100%								
13	N	3220-3223 - 3' - 100%	2 MUD							
14		3223-3225 - 2' - 60%								
15		3225-3228 - 3' - 60%								
16		3228-3230 <sup>2</sup> - 2 <sup>5</sup> - 80%								
17		3230 <sup>3</sup> - 3233 <sup>5</sup> - 3' - 30%								
18		3233 <sup>3</sup> - 3235 <sup>5</sup> - 1 <sup>5</sup> - 85%								
19		3235-3240 - 5' - 35%								
20	FRI 3-3 D	3240-3242 <sup>5</sup> - 2 <sup>5</sup> - 75%	4 MUD				1 LOAD			
21		3242 <sup>2</sup> - 3246 - 3 <sup>5</sup> - 30%								
22		3246-3249 - 3' - 100%								
23		3249-3252 - 3' - 100%								
24	N	3252-3254 <sup>5</sup> - 2 <sup>5</sup> - 55%	4 MUD							
25		3254 <sup>5</sup> - 3256 - 1 <sup>5</sup> - 100%								
26		3256-3258 - 2' - 100%								
27		3258-3260 - 2' - 60%								
28		3260-3263 - 3' - 50%								
29		3263-3265 <sup>5</sup> - 2 <sup>5</sup> - 80%								
30		END OF HOLE								
31	SAT 3-4 D		(2) MUD				(3) WATER	BROKE OUT BX STRING		



1973

HOLE	DATE	LOCATION	DEPTH	DRILLING COSTS
ES-24	7-11-73	BLUE BELL 1	65	432 <sup>50</sup>
ES-25	7-12-73 7-16-73	BIG BEN 21	1) 120 2) 130	1796 <u>25</u>
ES-26	7-17-73 <del>LEAD HILL 2</del>	LEAD HILL 2	80	542 <sup>50</sup>
→ ES-27	7-18-73 7-21-73	BLUE BIRD <sup>101</sup> <del>3</del>	260	1822 <sup>50</sup>
→ ES-28	7-23-73 7-25-73	BLUE BIRD 1	600	3656 <u>25</u>
ES-29	8-15-73 8-16-73	COPPER FLAT 13	500	2491 <sup>50</sup>
ES-30	8-17-73 8-21-73	BIG BIRD 18	500	2416 <sup>50</sup>
→ ES-4	7-13-73 7-26-73	SAN JUAN	1071-1361	4145 <sup>10</sup>
ES-9			2577-4037 <del>4</del>	39371 <u>32</u>
ES-10			2119-3855	29431 <sup>15</sup>
ES-20			0-4960 <del>4960</del>	73425 <sup>11</sup>
ES-22	FEB, MAR 1973		965-2500	27171 <sup>45</sup>
ES-23	JAN 1973		265-350	745 <sup>65</sup>

HOLE NO.	CONTRACTOR	ROTARY DEPTH TYPE OF DRILL	NX CORE TYPE OF DRILL	TOTAL DEPTH	TOTAL COST	COST PER FOOT
ES-3	BOYLES	FAHLING 1500 2147	2147 - 4000	4000	47,400.01	11.85
ES-4	"	FAHLING 1500 0 - 1080		1080	8,187.80	7.58
ES-5	"	FAHLING 1500 0 - 1930	FAHLING 1500 1930 - 4675	4675	63,128.52	13.50
ES-6	"	FAHLING 1500 0 - 1085	LONG YEAR 44 1085 - 2958	2958	35,920.74	12.14
ES-7	"	FAHLING 1500 0 - 1440		1440	13,628.94	9.46
ES-8	"	FAHLING 1500 0 - 1066	LONG YEAR 44 1066 -	2447	33,123.57	13.54
ES-9	"	FAHLING 1500 0 - 1220	LONG YEAR 44 1220 - 4037	4037	66,080.60	16.37
ES-10	"	FAHLING 1500 0 - 1985	FAHLING 1500 1985 - 3855	3855	51,031.42	13.24
ES-11	"	FAHLING 1500 0 - 760		760	4,341.56	5.71
ES-12	METLER	PORTA DRILL 0 - 460		460	2,531.57	5.50
ES-13	METLER	PORTA DRILL 0 - 335		335	1,956.51	5.84
ES-14	BOYLES	FAHLING 1500 0 - 650		650	4,657.18	7.16
ES-15	METLER	PORTA DRILL 0 - 420		424	2,401.51	5.72
ES-16	BOYLES	PORTA DRILL 0 - 604		604	6,265.57	10.37
ES-17	"	FAHLING 1500 0 - 440	FAHLING 1500 440 - 739	739	7,229.11	9.78
ES-18	"	FAHLING 1500 0 - 400		400	2,102.74	5.26
ES-20	"	FAHLING 1500 0 - 2470	FAHLING 1500 2470 - 4960	4960	72,906.83	14.70
ES-21	"	PORTA DRILL 0 - 325		325	1,604.75	4.94
ES-22	"	FAHLING 1500 0 - 1985	FAHLING 1500 1985 - 2500	2500	34,703.43	13.88
ES-23	"	PORTA DRILL 0 - 350		350	2,230.64	6.37

3281  
3265  
43,541

ES-1  
ES-2

# SAYFORD PROJECT

<u>Job No.</u>	<u>START</u>	<u>COMPLETED</u>
ES-1	Aug 25, 1971	Nov 26, 1971
ES-2	Dec 9, 1971	Mar 3, 1972
ES-3	June 6, 1972	Aug 16, 1972
ES-4	Aug 22, 1972	Sept 2, 1972
ES-5	Sept 1, 1972	Nov 25, 1972
ES-6	Sept 8, 1972	Sept 21, 1972
	Oct 4, 1972	Nov 4, 1972
ES-7	Sept 25, 1972	Oct 16, 1972
ES-8	Oct 17, 1972	Nov 4, 1972
	Nov 7, 1972	Dec 11, 1972
ES-9	Nov 27, 1972	Dec 5, 1972
	Dec 8, 1972	April 6, 1973
ES-10	Nov 6, 1972	Nov 25, 1972
	Dec 21, 1972	Feb 24, 1973
ES-11	Nov 29, 1972	Dec 6, 1972
ES-12	Dec 1, 1972	Dec 3, 1972
ES-13	Dec 4, 1972	Dec 8, 1972
ES-14	Dec 6, 1972	Dec 13, 1972
ES-15	Dec 9, 1972	Dec 12, 1972
ES-16	Dec 8, 1972	Dec 16, 1972
ES-17	Dec 8, 1972	Dec 19, 1972
ES-18	Dec 13, 1972	Dec 14, 1972
ES-19	Dec 15, 1972	—
ES-19A	Dec 15, 1972	Dec 21, 1972
ES-20	Jan 2, 1973	Mar 29, 1973

<u>Well No</u>	<u>START</u>	<u>COMPLETED</u>
ES-21	Dec 16, 1972	Dec 27, 1972
ES-22	Dec 20, 1972	Dec 28, 1972
	Mar 1, 1973	April 7, 1973
ES-23	Dec 28, 1972	Jan 3, 1973

GEOPHYSICAL SURVEY

Aug 16, 1972 — Sept 12, 1972  
Dec 7, 1972 — Dec 9, 1972

ES-5

NX CASING TO 1930  
DRILLED NX TO 4675  
HOLE LATER TESTED WITH DEADWEIGHT  
AND APPEARED TO BE CLOSED AT  
APPROXIMATELY 2200 FEET

ES-9

NX CASING TO 1220  
BX CASING TO 3884  
BX CASING CUT AT 3440  
612 FEET BX RODS, ETC LEFT IN HOLE  
BELOW APPROXIMATELY 3400  
HOLE VERY BAD!  
TOTAL DEPTH NX TO 4047'

ES-20

NX CASING TO 2465  
DRILLED NX TO 4960 FEET  
ELECTRODE PLACED ON BOTTOM 3/29/73

## SUMMARY OF SAFFORD PROJECT

Essex International Inc.

Essex entered the Lone Star Mining District north of Safford, Arizona in the summer of 1971 by optioning 211 claims (Figure 1). Most of these claims comprised one large block referred to here as the Bohemia Group. The Bohemia Group is situated south and southwest of the Phelps-Dodge and San Juan copper deposits. Other small non-contiguous groups of claims are east of the San Juan deposit and south of the Kennecott deposit (Figure 2).

Essex was preceded in the district by Kennecott in 1955 who discovered a relatively large low-grade deposit of about 400 million tons at +0.4% copper which is still sub-economic. Kennecott was followed shortly by Phelps-Dodge Corp. which discovered a 250 million ton ore body containing 0.92% copper. Also Inspiration Consolidated Copper later discovered their Sanchez deposit with tonnages and grade possibly comparable to the Kennecott discovery. However, the Inspiration deposit can be mined by open pit methods whereas the Kennecott deposit requires underground mining with the attendant higher costs. All these companies were well established in the district before the arrival of Essex.

Essex geologists had a specific target in mind when they acquired the Bohemia Group. It was known that a major structure, the Butte Fault, was very close to and possibly displaced part of the PD deposit. The fault was believed to be a normal fault dipping south with an apparent displacement of at least 2000

feet. Accordingly, the plan was to test the northern edge of the Bohemia Group where Essex property was within 2000 feet of the PD ore body to ascertain if the mineralized zone extended or had been faulted south onto the Bohemia Group. Drilling was started in August 1971 and completed in April 1973 after a total of 23 holes and 43,541 feet of combined rotary and core drilling. Much of the drilling was done to test other areas of the property.

It was not until hole ES-5 was drilled to 4675 feet that significant copper mineralization was encountered. This hole averaged 0.45% copper from 3947 to the bottom and the mineralized zone was not penetrated. Subsequently holes ES-9, and ES-20 were drilled deep to try and extend the mineralized zone. ES-20 encountered copper mineralization averaging 0.48% from approximately 3360 to 3611. Mineralization gradually tapered off below until it was barely averaging 0.2% by the bottom of the hole at 4960. ES-9 was drilled to 4037 feet where difficult drilling forced abandonment of the hole. Copper assays were lower and very erratic due in part to oxidation along a fault zone.

The deep copper mineralization roughly outlined in these three drill holes is interpreted as being peripheral to the PD ore body and clearly indicating that a part of the PD ore body may be downfault into an area known as Tract 37. The mineralization on Essex property can not be mined by itself under present conditions but it does have economic potential for two reasons. It could ultimately be mined as part of the PD ore body or current research could develop a viable method of leaching lower grade deposits in situ.

IP and ground magnetic surveys were completed in 1972. Several holes were drilled to test anomalies and some areas of interesting mineralization noted in old drill hole logs. Locally strong pyrite was encountered but no other holes on the Bohemia Group showed significant copper mineralization.

Most of Phelps-Dodge property is patented claims except for a roughly triangular area identified by the BLM as Tract 37. Figure 2 shows the location of Tract 37 immediately adjacent to Essex property on the north side. Its proximity to the PD ore body is obvious. The BLM refused a PD patent application on Tract 37 in 1967. In September of 1972 Essex became aware that PD was attempting to obtain ownership of Tract 37 by declaring it to be non-mineral in character and thus eligible for land exchange. On the basis of the copper mineralization discovered in hole ES-5, Essex concluded that Tract 37 was indeed "mineral in character" and therefore protested the land exchange in December 1972. Subsequent to contesting the proposed exchange, Essex attempted to prospect "public domain" by moving a drill onto Tract 37. PD countered by using a bulldozer to force the Essex drill out of Tract 37. This confrontation resulted in legal action by both parties and a hearing before a federal judge. Essex is presently enjoined from further activity on Tract 37 but the basic issue is still unresolved, pending a BLM hearing on Essex protest of the land exchange. The results of the hearing will determine the alternatives available to Essex as regards Tract 37.

Section 32 lies immediately west of Essex' Bohemia Group and west-southwest of the PD ore body. PD acquired this section from the State of Arizona in a land exchange. PD has plans to build part of their physical plant and sink their first production shaft on Section 32. However, the state retained mineral rights and PD has now brought suit against the state charging the mineral rights should have transferred with the property ownership. Essex wants to prospect on Section 32 and has joined with the State of Arizona against Phelps-Dodge.

The San Juan mine is a small, low-grade, copper oxide deposit with no significant production history until approximately four years ago when Producers Minerals Corporation of El Paso, Texas leased the property and started a sulfuric acid leaching operation. Early in 1972 the owners of the San Juan mine invited Essex to become a part owner and Essex subsequently acquired approximately 7 3/4 per cent ownership in the 84 claims adjoining the Bohemia Group on the northeast (Figure 2). Ten of these claims covering the deposit are patented. Essex later joined the other owners in bringing suit against PMC charging failure to comply with the terms of the lease. This suit is now scheduled for public hearing in late February 1974.

To date Essex has conducted no exploration on the property except for geologic mapping and drilling a few short assessment holes deemed necessary to protect the unpatented claims. Virtually all the drill core from the San Juan property became available to Essex in February 1973. Examination of this core assaying of available samples indicates there is a good chance of developing 20 million tons of +0.4% copper despite PMC

having removed approximately 5 million tons of high grade. A  
drilling program to prove tonnage will be initiated when PMC has  
been removed from the property.

## SAFFORD PROJECT

### 1973 Summary

Bohemia Claim Group The drilling phase of exploration on Essex' Safford property was completed in April. A total of 43,541 feet of rotary and core drilling was done over a period of twenty months commencing in August of 1971. A discussion and interpretation of the geologic data is contained in a report dated June, 1973.

A zone of deep copper mineralization was roughly outlined on the northern edge of Essex property next to Tract 37. The significance and economic potential of this mineralization was clearly discussed by J. K. Jones in a report dated May 1973.

#### Tract 37 Legal Status

Attempts by Essex to locate open claim fractions within their property but adjacent to Tract 37 have led directly to two physical confrontations with Phelps-Dodge. In both instances Phelps-Dodge threatened to use a bulldozer to push over drills employed by Essex. The issues resulting in these encounters have yet to be resolved.

#### Section 32 Legal Status

Phelps-Dodge has drilled one deep hole and several shallow holes in Section 32 to test the proposed site of their initial production shaft. Apparently PD encountered only moderate difficulties with their test cave block. Presumably a decision to start production awaits assimilation of data and favorable settlement of the legal problems with Tract 37 and Section 32.

San Juan Property Essex initiated a daily surveillance program of the San Juan mine on March 1, 1973 to observe activities of interest to the owners and of potential value in the lawsuit. Surveillance was discontinued October 8 at the request of Judge Mahoney.

In January 1973 Essex was notified that all the drill core and rotary cuttings from the San Juan property were sitting on the ground in a field west of Safford completely unprotected. Acting on behalf of the owners to protect valuable information, Essex obtained the core and cuttings and moved them to storage. Information obtained from the San Juan drill holes is being compiled for evaluation of the deposit and planning a drilling program. Producers Minerals Corp. has recently filed suit against Essex charging them with illegally obtaining the core.

San Juan Legal Status

Other Essex Property Essex maintained their options on several smaller, noncontiguous claims groups in 1973. In addition Essex purchased part ownership in one of these, the Copper Chief Group.