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COLO. OIL & GAS CONS. COMM.

BURTON & HAWKS, INC.

#16-1 State  
Northwest Southeast  
Section 16, Township 9 North, Range 81 West  
Jackson County, Colorado

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DVR	
FJP	
HHM	✓
JAM	✓
JJD	



00287227

STATISTICAL WELL DATA

OPERATOR	BURTON - HAWKS, INC.
Lease	#16-1 State
Location	NW SE Sec. 16, T9N, R81W
Elevation	8229 KB 8222 GR
Contractor	George McGee Drilling Company
Pusher	George McGee
Mud Company	
Pro Mud	
Engineer	Leon Ledbetter
Drilling Mud, Inc.	
Engineer	Allen Johnson
Surface Casing Set	10:15 A.M. 7/24/73
Under Surface	7:20 P.M. 11/3/73
Completed Drilling	9:20 A.M. 11/21/73
<u>Plugged</u>	<u>11/23/73</u>
Total Depth	4217'

CASING RECORD

Surface casing set, 8 5/8 (5 jts) @ 179' K.B. with 75 sx regular  
2% CaCl. 10:15 A.M. 7/24/73

BIT RECORD

No.	Make	Type	Depth In	Depth Out	Footage
1	IITC	OSC1G Retip	0	179	179
2	STC	DGT	179	857	678
3	STC	DGT	857	1764	907
4	STC	DGT	1764	2162	398
5	IITC	OSC1G	2162	2596	434
6	STC	DGT	2596	2983	387
7	IITC	OD4	2983	3300	317
8	STC	V1	3300	3745	445
9	REED	F52	3745	4106	361
10	IITC	OW4	4106	4207	101



# RECORD OF SURVEY

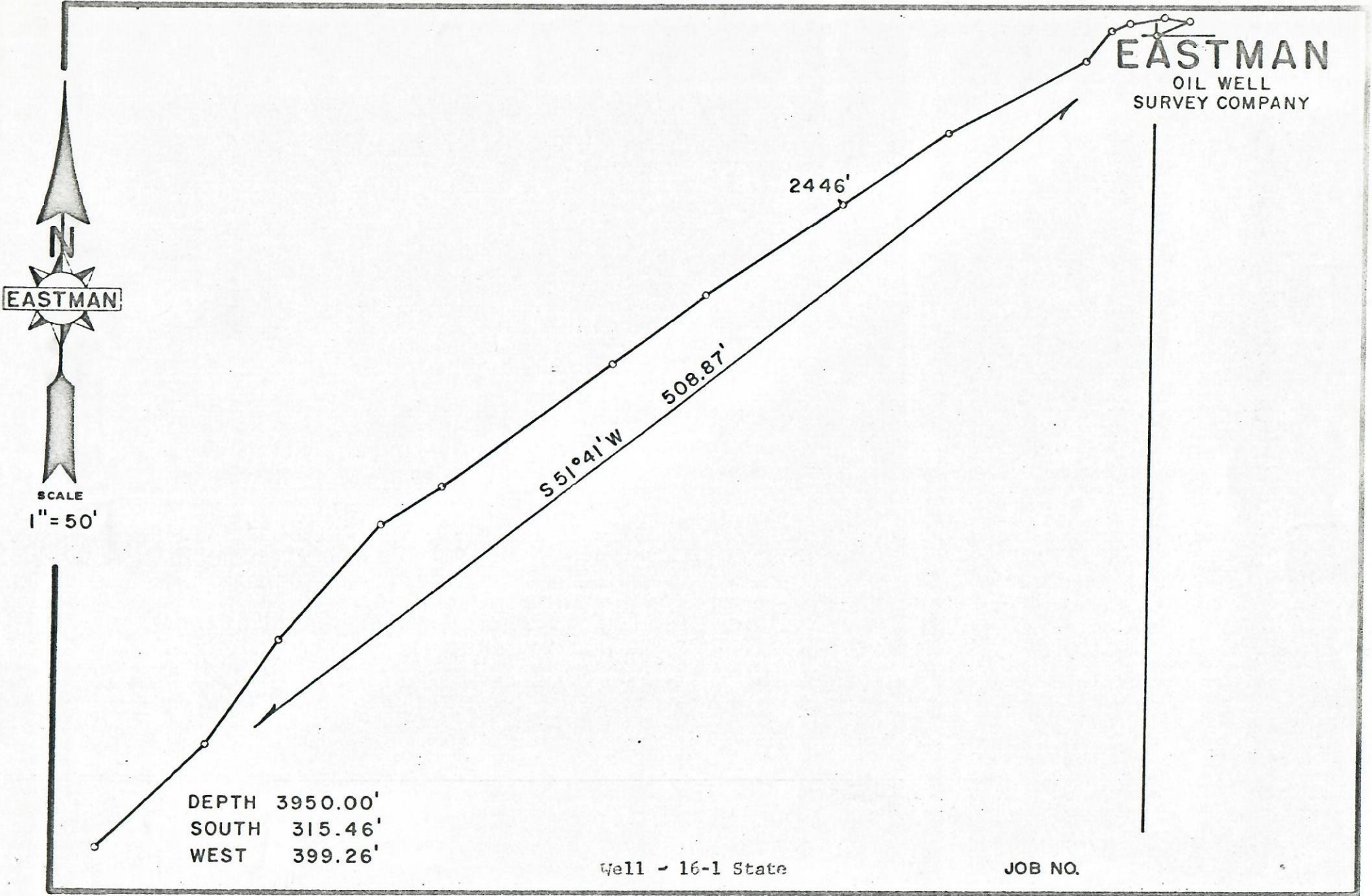
16-1 State

CHECKED BY \_\_\_\_\_

JOB NO. \_\_\_\_\_ DATE \_\_\_\_\_

STATION	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH		COURSE DEVIATION		DRIFT DIRECTION	RECTANGULAR COORDINATES					
								NORTH	SOUTH	EAST	WEST		
401		0°	401	00									
580		0°	580	00									
742		30'	742	00		54	N22E		50			20	
1253		1°30'	1252	85	13	39	N69E	5	30			12	56
1525		2°15'	1524	64	10	61	N84W	6	41			2	00
1702		4°	1701	21	12	35	S80W	4	27				10 16
1800		5°	1798	84	8	54	S70W	1	35				18 19
1906		7°45'	1903	88	14	30	S36W			10	22		26 60
2212		11°15'	2204	00	59	70	S61½W			38	25		79 31
2446		12°	2432	88	48	65	S56W			65	45		119 64
2689		15°	2667	59	62	91	S55W			101	53		171 18
2841		17°	2812	95	44	44	S53W			128	27		206 67
3182		13°30'	3144	54	79	59	S53W			176	17		270 23
3300		13°45'	3259	15	28	05	S57W			191	03		294 02
3534		14°	3486	20	57	61	S40W			235	16		331 05
3745		13°30'	3691	38	49	25	S35W			275	50		359 30
3950		16°	3888	45	56	50	S45W			315	46		399 26
								CLOSURE DIRECTION		S51°41'W			
								CLOSURE DISTANCE		508.87		feet	

PLAN



DAILY CHRONOLOGICAL REPORT

- 10/29/73 Moving rig and rigging up.
- 10/31/73 Rigging up.
- 11/1/73 Rig up.
- 11/2/73 Rig up. Nipple up. Wait on compressors.
- 11/3/73 Wait on fuel for compressors. Start compressors. Blow hole and rat hole. Trip and add collars and bumper sub. Drill to 401' @ 12:00 P.M.
- 11/4/73 Drill to 857' @ 12:00 A.M. Hole wet, trip, square collar off. Prepare to mist. Drilling 1202' @ 12:00 P.M.
- 11/5/73 Drill to 1525'. Hole loaded with water, trying to blow hole, too much water, prepare to mud up.
- 11/6/73 Mudding up. Pulled 11 stands, lost circulation. Change from Pro Mud to Drilling Mud, Inc. Waiting on mud 7:30 A.M. Condition hole and drilling fillup. Add 26 bbls oil @ 6:00 P.M. 2 joints off bottom.
- 11/7/73 Condition hole and drilling fillup. 2 joints off bottom. Viscosity 220. Add 100 sacks Bar. Condition hole. 2 joints off bottom @ 3:00 P.M. Pressured up, busted rotary hose. Replaced. Cleaned pits. Condition hole. 2 joints off bottom.
- 11/8/73 Condition hole. 35' off bottom @ 8:00 A.M. Make 1-2' circulate 30 minutes. Mud 9.7#, 152 Viscosity, 3.5 water loss. On bottom 7:00 P.M. Drill pipe stuck @ 1554'. Work 8 hours.
- 11/9/73 Drilling 1573' @ 7:30 A.M. 62 viscosity, weight 9.7. Trip for bit #4 @ 1764'. Pulled slightly tight to 1525. Free.
- 11/10/73 Ream to bottom 2 1/2 hours. Clean mud pit. Drilling 1:15 A.M. Drilling 1919' @ 7:45 A.M. Add 20 bbls oil @ 1764'. 7 3/4° S36W @ 1906'. Trip @ 2162. Bad hole @ 1525'. Two hours 1 joint. Niobrara @ 2100'.
- 11/11/73 Finish trip. Ream to bottom. On bottom @ 8:30 A.M. Drilling 2300' @ 4:00 P.M.

DAILY CHRONOLOGICAL REPORT (con't)

- 11/12/73 Drilling 2528' @ 7:30 A.M. Trip for bit #6 @ 2596'. Took survey @ 1702' on way in. Drilling @ 7:50 P.M. Had to ream to bottom.
- 11/13/73 Drilling 2796' @ 7:20 A.M. Trip for bit #7 @ 2983' @ 10:15 P.M. Pulled tight.
- 11/14/73 Trip in. Start reaming 23 stands off bottom. On bottom @ 3:05 P.M. Clean pits. Mix mud. Drilling 3042' @ 8:00 P.M.
- 11/15/73 Drilling 3215' @ 8:00 A.M. Shut down working on engines 8:00 A.M. Drilling @ 10:30 A.M. Shut down 11:45 A.M. working on pump engine. Drilling @ 1:30 P.M. Frontier @ 3180'. Trip for bit #8 @ 3300'.
- 11/16/73 Finish trip. Bridge 18 stands off bottom. On bottom @ 1:45 A.M. Fort Hayes @ 3342'. Drilling 3403' @ 8:00 A.M. Drilling 3575' @ 8:00 P.M.
- 11/17/73 Drilling 3743' @ 8:00 A.M. Mowry @ 3698'. Trip for bit #9. Change from 15.5# drill pipe to 13.3#.
- 11/18/73 On bottom drilling @ 3:55 A.M. Drilling 3785' @ 7:40 A.M.
- 11/19/73 Drilling 3950' @ 7:30 A.M.
- 11/20/73 Drilling 4101' @ 7:45 A.M. Dakota @ 4063'. Trip for bit #10 @ 4106'. Joints tight. Heat joints with torch.
- 11/21/73 Drilling 4181' @ 6:45 A.M. Lakota @ 4150'. No show. Drill to 4207' @ 9:20 A.M. Total depth. Condition hole for logs. Complete logging. Lay down collars. Shut down for Thanksgiving.
- 11/22/73 Plugged.

MUD PROGRAM

11/5/73	50 sx Gel
11/6/73	36 " Gel
	20 " Cedar Fiber
	14 " Pro Fiber
	3 " Soda Ash
	3 Drilling Detergent
	33 " Lignite 50#
	2 " Caustic 50#
	19 " Gel
	4 " Lenox
	1 " Cypan
	2 Drilling Detergent
	26 Bbls Oil
11/7/73	100 sx Bar 100#
	4 " Sultex 50#
	9 " Gel
	2 Drilling Detergent
	85 " Bar 100#
	7 " Soltex 50#
	8 " Gel
	1 " Cypan 50#
11/8/73	2 Drilling Detergent
	14 " Gel
	1 " Soda Ash 100#
	3 " Cypan 50#
	3 " Rayvan 50#
	1 " Lenox 50#
11/10/73	30 " Gel
	1 " Soda Ash 100#
	1 Drilling Detergent
	2 " Lignite 50#
	1 " Caustic 50#
	3 Drilling Detergent
11/11/73	26 " Gel
	2 " Lignite
	1 " Soda Ash
	2 " Cypan
	1 Drilling Detergent
	2 " Caustic
	2 " Cypan
	2 " Lenox 50#
	2 Drilling Detergent

MUD PROGRAM (con't)

11/12/73	2 sx Lignite 50#
	1 " Cyan 50#
	20 " Gel 50#
	10 " Bar 100#
	14 " Gel 50#
	1 Bbl Diesel
11/13/73	3 sx Cyan 50#
	2 Drilling Detergent
	1 sk Lignite 50#
	10 sx Gel 50#
	1 sk Caustic 100#
	1 " Soda Ash 100#
	2 sx Lenox 50#
	30 " Gel 50#
11/14/73	5 " Gel 50#
	4 " Caustic 50#
	2 " Soda Ash 100#
	4 " Lignite 50#
	2 " Cyan
	1 " Sodium Phosphate 100#
	8 Drilling Detergent
11/15/73	1 " Soda Ash 100#
	1 " Lignite 50#
	1 " Cyan 50#
	1 " Caustic 100#
	4 " Cyan 50#
	2 " Lignite 50#
	2 Drill Aid 50#
	9 " Gel 50#
	4 Drilling Detergent
11/16/73	10 " Gel 50#
	2 " Lignite 50#
	1 " Soda Ash 100#
	1 " Cyan 50#
	20 Bbls oil
	1 " Lignite 50#
	2 " Cyan 50#
	1 " Caustic 50#
	2 Drilling Detergent
11/17/73	5 " Gel 50#
	2 " Lignite
	1 sk Soda Ash
	1 " Cyan

MUD PROGRAM (con't)

11/18/73	21	sx	Gel 50#
	2	"	Lignite
	1	"	Soda Ash
	1	"	Cypan
	3	"	Lignite 50#
	1	"	Caustic 50#
	1	"	Cypan 50#
	1		Drilling Detergent
	10	"	Gel 50#
11/19/73	5	"	Gel 50#
	2	"	Lignite 50#
	1	"	Cypan 50#
11/20/73	1	"	Lenox 50#
11/21/73	107	"	Gel 50#

LOGGING PROGRAM

Schlumberger - Induction Electrical Log  
Compensated Formation Density Log  
Diameter

ELECTRIC LOG FORMATION TOPS

Niobrara	2047	+6182
Carlisle	2853	+5376
Frontier	3180	+5049
Fort Hays	3342	+4887
Mowry	3698	+4531
Dakota	4063	+4166
Lakota	4150	+4079

# Log Analysis

Schlumberger

COMPANY: **Burton-Hawks Exploration**

WELL: **State # 16-1**

FIELD: **Wildcat** COUNTY: **Jackson** STATE: **Colorado**

DEPTH						% water				% POROSITY	% WATER	REMARKS
						$R_w = .30$ (from SP)					$R_w = 5.0$	
4058 - 70						30% [considered optimistic]				11 ave.	100	
4070 - 80						35%				10	100	
4140 - 46												
4151 - 56										18	75	silty water
4156 - 60										20	70	water
4160 - 70										15	90	water
4170 - 74										16	95	water
4174 - 80										12	100	shaly
4180 - 90										14	100	water
4190 - 93						$R_w = 2.0$ from $F = R_o/R_w$				14	100	water

## SUMMARY

The 16-1 State was drilled to a total depth of 4207' at 7:20 A.M. 11/21/73. No significant hydrocarbon shows were encountered. The surface pipe was set in July, 1973. Drilling under surface did not commence until November 3, 1973.

Initial drilling was attempted with air. The first moisture was encountered at a depth of 857' where mist drilling was initiated and drilled to 1525'. At this depth the volume of water encountered precluded further air-mist drilling. Several attempts to blow the hole dry were unsuccessful and preparations were made to drill with mud.

After a substantial volume of mud was mixed and pumped into the hole approximately 100 barrels of fluid was lost. A new volume of mud was mixed and conditioning of the hole continued. Due to blowing the hole with a large volume of water, the hole was badly damaged and several days were required before normal drilling could resume.

At a depth of 3745' the drill pipe being used (15.5#/ft.) was layed down and was replaced with rented 13.3# pipe.

The hole was then drilled to a total depth of 4207', 57' into the Lakota Sand. No hydrocarbon shows were encountered and it was recommended the hole be plugged and abandoned.

### SAMPLE DESCRIPTION

600 - 1036	Shale, grey, soft with many thin silt laminations.
1036 - 1910	Shale as above. Silty in part, much mousey grey bentonite.
1910 - 2040	Shale as above. Slight trace grey shale with few foram fragments.
2040 - 2100	Shale, slight increase in foram fragments.
2100 - 2480	Shale, much shale with many foram fragments.
2480 - 2560	Shale, brown foram.
2560 - 2850	Shale as above.
2850 - 3170	Shale, grey, soft. No foram fragments. Trace silty shale.
3170 - 3180	Shale. Trace grey siltstone.
3180 - 3190	Shale as above. Increase in siltstone and silty shale. No show.
3190 - 3210	As above.
3210 - 3220	As above. Trace grey-light grey calcareous silt.
3220 - 3230	Siltstone as above. Trace chalky lime. No show.
3230 - 3240	Siltstone. Grey-light grey soft calcareous to very fine grain, grey, soft sand. No show.
3240 - 3250	As above. Some grey soft crystalline and tan crystalline lime.
3250 - 3260	Siltstone. Sparse specks fluorescence. No visible staining.
3260 - 3270	As above.
3270 - 3280	As above. Becoming darker grey, more shaley.
3280 - 3290	As above.
3290 - 3300	Siltstone, grey, hard. Sparse specks fluorescence.

SAMPLE DESCRIPTION (con't)

3300 - 3340	As above.
3340 - 3350	Decrease in siltstone.
3350 - 3360	As above. Grey silty shale.
3360 - 3390	As above.
3390 - 3400	Lime, cream, soft, spicular.
3400 - 3410	As above.
3410 - 3420	As above. Some dull grey micro-crystalline lime.
3420 - 3430	Shale, dark grey, soft, finely silty in part.
3430 - 3690	As above.
3690 - 3700	As above. Trace grey, firm siltstone.
3700 - 3720	As above.
3720 - 3730	Shale, hard, dark, silty in part. Trace hard, grey dark grey siltstone.
3730 - 3740	Trace shale as above. Hard, black siltstone. Hard grey siltstone.
3740 - 3760	As above.
3760 - 3770	Shale, dark, hard, very finely silty in part.
3770 - 3780	Shale. Trace yellowish bentonite with fine brown flecks.
3780 - 3820	As above.
3820 - 3830	Shale as above. Trace hard, dark grey to black siltstone. Silty shale. Trace silt with weak sparse specks of fluorescence.
3830 - 3840	As above. Increase in silt.
3840 - 3850	Siltstone. Grey-dark grey, hard, cream siltstone, chalk matrix, very slightly calcareous, very weak specks fluorescence.

SAMPLE DESCRIPTION (con't)

3850 - 3860	As above. Slight decrease in siltstone. Much pale greenish grey bentonite.
3860 - 3870	Shale, hard, dark grey siltstone, hard, grey-dark grey.
3870 - 3880	Shale. Trace specks fluorescence in silt.
3880 - 3910	As above.
3910 - 3920	Shale. Trace hard, dark spicular lime.
3920 - 3940	As above.
3940 - 3950	Shale, hard, black. Trace black, hard, silty shale.
3950 - 3970	As above.
3970 - 3980	Shale. Trace light grey siltstone.
3980 - 4000	As above.
4000 - 4010	Shale. Much yellow and grey bentonite. Trace chalky textured material. Slightly calcareous. Siltstone.
4010 - 4020	Siltstone, hard, grey, dark grey.
4020 - 4070	As above.
4070 - 4080	Sand, fine grain, hard, white, tight. Much white chalky textured siliceous clay. No show.
4080 - 4100	As above.
4100 - 4106	Trip. As above.
4106 - 4110	No sample.
4110 - 4120	No sample.
4120 - 4130	Shale. Grey, soft. Much grey, greenish-grey bentonite.
4130 - 4140	Trace variegated shales. Trace fine grain white, tight sand. White chalky textured siliceous material.
4140 - 4150	Trace white, unsorted sand, white siliceous material.
4150 - 4160	Sand, hard, white, fine grain. No show.

SAMPLE DESCRIPTION (con't)

- 4160 - 4170 As above.
- 4170 - 4180 Sand. Medium large grain unsorted clear sand. Some grey, white chert. Much soft, white siliceous clay. Trace green shale.
- 4180 - 4190 As above. Some variegated shale.
- 4190 - 4200 As above. Decrease in sand.
- 4200 - 4207 As above.