



PHILLIPS OIL COMPANY

A SUBSIDIARY OF PHILLIPS PETROLEUM COMPANY

DENVER, COLORADO 80237-2898
8055 EAST TUFTS AVENUE PARKWAY

CONFIDENTIAL INFORMATION

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GEOLOGICAL WELL REPORT

PHILLIPS OIL COMPANY

SAN JUAN DEEP 30-6 #112Y

26-30N-6W

RIO ARRIBA, NEW MEXICO

Report by: J. Grannis, T. Cloud, E. Mason
Geologists
Phillips Oil Company
8055 E. Tufts Avenue Parkway
Denver, CO 80237
December 28, 1984

EM10.1284.23

WELL DATA

OPERATOR: Phillips Oil Company
WELL NAME: San Juan 30-6 112Y
LOCATION: NE, NE Sec 26-30N-6W
COUNTY & STATE: Rio Arriba, New Mexico
ELEVATION: GL-6676'; KB - 6703'
GEOLOGIST(S): J. Grannis, T. A. Cloud, E. Mason
ENGINEER(S):
DRILLING SUPERINTENDENT(S): R. C. Piernick, A. L. Michaelis
COMMENCED DRILLING: August 6, 1984
CEASED DRILLING: November 17, 1984
CONTRACTOR: Nicor Drilling Co. Rig #41
TOOL PUSHER: H. W. Partridge, N. Oberhansly
DRILLING FLUID: Water and Gel
SURFACE CASING: 20" @ 532'; 13 3/8" @ 4140'; 9 7/8" @ 8105'
BIT SIZE: 8 1/2"
SAMPLES: 8115 - T.D.
MUD LOGGING: Analex
MUD LOGGER(S): Michael R. Fisher, Catherine V. Woldow
LOGGING: Gearhart
LOGGING ENGINEER(S): Gillingham, Campau, Pressley
TOTAL DEPTH: 14,030
STATUS: Waiting on completion

MUD RECORD

<u>DATE</u>	<u>TIME</u>	<u>DEPTH</u>	<u>WT.</u>	<u>VIS</u>	<u>PH</u>	<u>WL</u>	<u>CL</u>	<u>COMMENTS</u>	<u>CUM COST</u>
10-6	1:00 a.m.	8354	8.8+	38	11.0	7.2	300		\$64,928
10-7	8:00 p.m.	8516	8.8	37	11.0	6.4	300		65,209
10-8	6:00 p.m.	8643	8.8+	36	10.8	8.2	275		65,867
10-9	7:00 p.m.	8643	8.8+	36	10.8	8.2	275		66,267
10-10	5:00 p.m.	8756	8.8	34	11.0	8.0	275		66,578
10-11	10:00 p.m.	8910	8.8+	36	11.0	7.6	300		67,880
10-12	2:00	8925	8.8	38	11.0	7.4	300		67,880
10-13	7:00 a.m.	9065	8.7+	60	9.5	8.4	300		69,475
	7:00 p.m.	9140	8.7+	51	10.5	9.8	300		69,475
10-14	6:00 p.m.	9152	8.9+	40	10.9	7.2	300		70,765
10-15	7:00 p.m.	9152	9.0	42	11.0	8.0	300		70,787
10-16	5:30 p.m.	9221	8.9	40	10.8	9.2	300		71,274
10-17	8:00 p.m.	9343	8.7	37	11.5	10.4	350		71,814
10-19	1:00 a.m.	9476	8.9	40	11.5	7.8	300		73,053
10-20	7:00 p.m.	9836	9.0	37	10.9	8.8	300		73,212
10-21		9962	9.0	36	10.0	7.6	300		73,873
10-22	5:00 p.m.	10025	9.0	42	11.2	7.6	325		74,534
10-23	7:00 p.m.	10287	9.0	38	10.9	9.4	325		74,693
10-24	7:00 p.m.	10508	9.1	37	10.2	9.8	400		75,028
10-25	6:30 p.m.	10667	9.1	38	10.8	9.0	400		76,962
10-26	7:30 p.m.	10763	9.0	45	10.2	7.2	400		77,417
10-27	8:00 p.m.	10937	9.0	44	10.0	8.4	380		79,063
10-28	2:00 p.m.	11088	9.2	43	10.3	8.8	430		79,671
10-29	6:00 p.m.	11282	9.1	42	11.0	8.4	400		81,117
10-30	5:00 p.m.	11304	9.1	43	11.1	8.4	375		82,048
10-31	6:00 a.m.	11304	9.1	43	11.1	8.4	375		82,048
11-1	6:00 a.m.	11442	9.1	40	10.9	8.4	375		
11-2	6:00 a.m.	11669	9.1	38	10.0	8.8	400		83,533
11-3	6:00 a.m.	11941	9.2	38	9.8	8.8	400		
11-4	6:00 a.m.	12041	9.2	38	9.0	8.0	425		
11-5	7:00 p.m.	12448	9.1	49	9.5	6.6	600		88,197
11-6	4:00 p.m.	12649	9.1	39	9.0	7.8	600		89,855
11-7	6:00 p.m.	12807	9.4	42	10.5	8.0	550		92,720
11-8	9:30 a.m.	12807	9.7	44	9.5	7.6	600		103,372
11-9	3:30 a.m.	12808	9.7	50	9.5	6.4	600		103,512
11-10	2:00 p.m.	12831	9.7	48	9.9	7.8	650		103,872
11-11	3:00 p.m.	12840	9.8	53	9.0	9.0	700		104,816
11-12	4:00 p.m.	13080	9.8	45	10.5	8.0	600		108,897
11-13	5:30 p.m.	13335	9.8	45	9.5	8.2	700		111,100
11-14	2:00 p.m.	13534	9.8	42	10.0	6.8	650		113,554
11-15	6:00 p.m.	13780	10.0	44	10.5	8.0	650		118,293
11-16	3:00 p.m.	13,970	10.1	45	10.5	5.9	700		121,153
11-17	8:00 p.m.	14,030	10.1	45	10.0	6.8	650		125,055
11-18	9:00 p.m.	14,030	10.3	45	9.2	6.4	750		
11-19	4:00 a.m.	14,030	10.4	44	9.8	6.4	750		130,954
11-20	8:00 p.m.	14,030	10.3	51	9.8	6.0	750		134,590

DEVIATIONS

<u>DEPTH</u>	<u>DEGREE</u>
8115	3/4
8296	1/2
8585	1/2
8917	0
9152	1/8
9433	1/2
10058	1
10667	1
11304	3/4
12800	3/4

WELL HISTORY

<u>DATE</u>	<u>TIME</u>	<u>DEPTH</u>	<u>OPERATION</u>
10-3	0600	8115	Survey, TOH
10-4	0600	8115	Fishing
10-5	0600	8223	Drilling
10-6	0600	8332	Drilling
10-7	0600	8422	Drilling, TIH w/bit #15
10-8	0600	8577	Drilling
10-9	0600	8644	TIH w/bit #16
10-10	0600	8682	Drilling
10-11	0600	8822	Drilling
10-12	0600	8917	TIH W/bit #17
10-13	0600	9053	Drilling
10-14	0600	9152	Fishing
10-15	0600	9152	Fishing
10-16	0600	9152	Fishing, TIH w/bit #18
10-17	0600	9280	Drlg
10-18	0600	9389	Drlg
10-19	0600	9433	TIH w/bit #19
10-20	0600	9671	Drlg
10-21	0600	9914	Drlg
10-22	0600	10025	TIH w/bit #20
10-23	0600	10130	Drlg
10-24	0600	10371	Drlg
10-25	0600	10595	Drlg
10-26	0600	10667	TIH w/bit #21
10-27	0600	10836	Drlg
10-28	0600	11032	Drlg
10-29	0600	11200	Drlg
10-30	0600	11304	TOH w/bit #21
10-31	0600	11361	Drlg
11-1	0600	11553	Drlg
11-2	0600	11762	Drlg
11-3	0600	11941	Drlg
11-4	0600	12041	Trip for Bit #23, Drilling
11-5	0600	12295	Drlg
11-6	0600	12553	Drlg
11-7	0600	12800	Drlg
11-8	0600	12806	Drlg, circulate drlg weight up mud.
11-9	0600	12806	Circulating, attmpt to get well under control
11-10	0600	12806	Circulating, TOH for core, trip in hole w/barrel, cut core
11-11	0600	12837	Cut core #1, TOH W/core trip in hole w/bit #25
11-12	0600	12979	Drilling
11-13	0600	13216	Drilling
11-14	0600	13455	Drilling
11-15	0600	13695	Drilling
11-16	0600	13888	Drilling
11-17	0600	13970	TIH w/bit #26
11-18	0600	14030	TOH to log
11-19	0600	14030	Log Dil & Sonic Circ
11-20	0600	14030	Circ
11-21	0600	14030	Circ
11-21	0600	14030	Log Den/Neu, Circ

BIT RECORD

NO.	MFGR	SIZE	TYPE	DEPTH OUT FOOTAGE	HRS RUN	1000# WT.	RPM	PUMP PSI
1	HTC	26	05C3A	540 540	57 3/4			
2	STC	17 1/2	D6-J	549 9	3 1/4			
3	HTC	17 1/2	X-11	1282 642	29 1/4			
4	HTC	12 1/4	J-2	927 297	15 1/2			Sidetrack
5	HTC	12 1/4	R-1	1192 265	10 3/4			
6	HTC	17 1/2	X3A	1402 575	33	30	70/80	1900
7	STC	17 1/2	D6-J	1496 94	9 1/2			
8	HTC	17 1/2	X-11	2958 1462	118 1/4	45	70/80	2000
9	Hughs	17 1/2	X-22	4040 1182				
10	Smith	12 1/4	SVH	4050 10				
11	Smith	12 1/4	F-4	5350 1300	37 3/4	5/10	55/60	190
12	STC	12 1/4	F5	8110 2760				
13	Smith	8 1/2	V2HJ	8115 5	5			
14	STC	8 1/2	F-5	8354 239	38 1/4	40/50	50/55	2000
15	STC	8 1/2	F-3	8644 289	40 3/4	40/50	45/50	2000
16	STC	8 1/2	F-4	8917 274	48 3/4	40/50	50/55	1800
17	Reed	8 1/2	HPMHJ	9152 235	31 1/2	45	60	1750
18	STC	8 1/2	F-7	9433 284	55	48	55	2100
19	STC	8 1/2	F-4	10025 596	57 1/2	55	50	2100
20	STC	8 1/2	F-4	10667 642	65	50	50	2000
21	STC	8 1/2	F-4	11304 637	89	50	50	2000
22	RTC	8 1/2	HPSM	11952 648	81 1/4	45/50	50	1700
23	RTC	8 1/2	HPSM	12806 855	79 1/2	50	50	1700
24	CD	8 1/2	M-20	12837 30	7 1/4	10-25	50	1800
25	STC	8 1/2	F-3	13970 1133	108 3/4	45-55	50	1800
26	STC	8 1/2	F-3	14030 60	8 1/4	45-55	50	1800

FORMATION TOPS

<u>FORMATION</u>	<u>ELECTRIC LOG</u>	<u>DATUM (K.B.)</u>	<u>SAMPLES</u>
Mesa Verde	5,549	+1054'	5,500
Pt. Lookout	5,803	+800'	5,805
Mancos	6,096	-93'	6,100
Gallup	6,893	-187'	6,930
Greenhorn	7,796	-1093'	7,805
Graneros	7,852	-1149'	7,855
Dakota	7,972	-1269	7,967
Todilto	8,954	-2254'	8,965
Entrada	9,020	-2320'	9,030
Chinle	9,242	-2542'	9,252
Shinarump	9,782	-3082'	9,798
Cuttler	10,186	-3486	10,180
Hermosa	12,178	-5475	12,170
Ismay	12,336	-5633	12,335
Desert Ck	12,594	-5891	12,595
Akah	12,704	-6001	12,705
Barker Creek	13,088	-6385	N.P.
Alkali Gulch	13,442	-6739	N.P.
Pinkerton Trail	13,646	-6943	N.P.
Molas	13,770	-7067	13,790
Leadville	13,910	-7207	13,880
Ouray	13,971	-7268	N.P.
Pre Cambrian	13,988	-7285	13,980

ELECTRIC LOG CALCULATIONS

<u>Formation</u>	<u>Depth</u>	<u>RW</u>	<u>RT</u>	<u>Neutron Porosity</u>	<u>Density Porosity</u>	<u>Avg. Porosity</u>	<u>SW</u>	<u>Remarks</u>
Entrada	9030'	.07	15	1	7	4	100%	Interdune (F.T. = 200 ⁰)
Akah	12804'	.025	5	11	18	14	47%	Channel Sand
Barker Ck.	13122'	.025	17	3	10	7	53%	Sandstone
Barker Ck.	13144'	.025	12	8	8	8	54%	Sandstone
Barker Ck.	13198'	.025	9	7	11	9	56%	Sandstone
Molas	13786'	.025	15	6	10	8	50%	Sandstone
Ouray	13987'	.016	7	4	12	8	56%	Dolomite

DEPTH	SAMPLE DESCRIPTIONS
0 - 8110	Drilled with gas, no samples.
8110 - 8220	70% SS: Qtz, loose, m-cg, lt gry, subang-rnd, p sort. 20% SLTST: Gry, occ pyr. 10% ANHY: Wh, soft. 10% CHERT: Pink, purple, gry, tan.
8220 - 8280	80% MDSTN: Lt gry-pastels, soft-sl firm, tr silty, pyr. 20% SS: Clr, lt grn-wh, p-mod ind, vf-fg, subang-subrnd, w sort, p Ø. TR ANHY: Wh-lt grn.
8280 - 8320	50% MDSTN: Lt grn-gy A/A. 50% SS: Lt grn-clr-wh A/A. TR ANHY: A/A
8320 - 8350	50-70% SS: Clr-wh, m-cg, subang-rnd, p-mod sort, silic cmt, fair Ø. 30-50% MDSTN: Lt grn-gy A/A.
8350 - 8400	80% MDSTN: Lt grn-gy A/A. 10-20% SS: Clr-org, vf-mg, mod ind, p Ø.
8400 - 8450	50-70% SS: Clr-pink-rd brn, m-cg, p-mod ind, subang, mod sort, silic cmt. TR mica. pØ.
8450 - 8490	50-80% SS: Clr-wh-org-pink, f-mg, p-mod ind, subang-subrnd, silic, pØ. 10-20% MDSTN: Lt gry-grn A/A. TR-5% ANHY.
8490 - 8500	60% MDSTN: Lt gry-grn A/A. 40% SS: A/A. TR ANHY.
8500 - 8560	80% SS: A/A 20% MDSTN A/A.
8560 - 8570	50% SS: Clr-pink A/A. 50% MDSTN A/A.
8570 - 8640	70-80% SS: Clr-wh, tr pink, f-mg, mod ind, subang-subrnd, mod sort, tr calc, pØ. 20-30% MDSTN: Lt gry-grn A/A. TR-5% ANHY. TR Coal.
8640 - 8660	40-60% SS: Clr-wh-pink A/A 20-40% SLTST: Rd brn, sndy, shly, mod calc. 20% MDSTN: Lt gry-grn A/A.

DEPTH	SAMPLE DESCRIPTIONS
8660 - 8670	90% SS: Clr-wh A/A. 10% MDSTN: A/A .TR SLTST, Coal
8670 - 8700	80% SH: Rd brn, Slty, Mod-ury calc. 10% SS: Clr-wh-pink A/A. 10% MDSTN: Lt gry-grn A/A.
8700 - 8880	70-90% SS: Clr-wh-pink A/A. 0-20% MDSTN: Lt gry-grn A/A. 0-10% SH: Rd brn, A/A. TR-10% ANHY.
8880 - 8960	90% SLTST: Rd brn, sndy, mod calc. 0-10% SS: A/A. 0-10% MDSTN A/A. TR-5% ANHY.
8960 - 8970	40% SS: Lt-m gry, f-mg, w sort, sl-mod calc. 30% SLTST: A/A. 30% MDSTN: A/A. TR-5% ANHY.
8970 - 8980	80% ANHY. 20% SLTST A/A, SS A/A and MDSTN A/A.
8980 - 9030	50-90% LS: Dk gry-blk, f xtln. 10-40% ANHY. TR-10% SS, MDSTN, SLTST A/A.
9030 - 9050	50-60% SS: Lt-m gry, f-mg, subang, p-mod ind, mod-w sort, v calc, pØ. 50% LS: A/A. TR Coal, ANHY.
9050 - 9130	50-70% SS: Lt-m gry-clr A/A. 10-40% ANHY. 5-10% SH: Rd brn - lt org, slty, sl calc. 0-10% LS: wh-gry mot w/blk, m xtln.
10-18-84	
9150 - 9160	30% Anhyd, wht, plty, sft, occ lt gry blue. 50% SS, wht-clr, vf grn, rd-subsd. mod indur, calc cmt 20% Slstst, maroon, hd, n calc, sme poss clyst, subblky
9160 - 9170	A/A
9170 - 9180	60% SS A/A but sli dol, occ sli purple, occ blaue 20% Anhyd A/A occ tr pyr. 20% Slstst. A/A
9180 - 9190	80% SS A/A 10% Anhyd A/A 10% Slstst, maroon, occ rd-orng,subblky, occ cylindrical, hd, TR loose grains, clear, Rd, occ subang, f grn.

DEPTH	SAMPLE DESCRIPTIONS
9190 - 9200	50% SS A/A occ lt. brn-yell color 30% Anhyd A/A only Tr w/lt blue 20% Sltst, md brn, hd, plty, occ dk maroon
9200 - 9210	5% SS A/A TR loose qtz grns, f-coarse, frosted 10% Clayst, orang, plty, sft, calc cmt. 85% Siltst, red-maroon, subblky, mod hd, sil dol.
9210 - 9220	5% SS A/A 5% Clayst, lt gry-grn sft, angular TR Anhyd. 90% Sltst, occ wht-rd, orng-rd, plty, subblky, calc cmt.
9220 - 9230	5% Clayst, orng, plty, sft Rst A/A
9230 - 9240	30% Clayst, orng, A/A 20% Clayst, lt gry, A/A occ slty 40% Sltst, Rd-maroon, occ orng, mod hd. 10% SS, clear, frosted, vf grn, sub ord, calc cmt.
9240 - 9250	20% SS, grains, A/A clean, Sli frost, rd-subrd, rd stn, sli dol cmt. 30% Clayst, lt blue-gry, sft, sub plty, occ v. pyritic, 20% Clayst, orng, A/A 30% Sltst A/A
9250 - 9260	5% Clayst orng A/A 5% Clayst lt gry-blue A/A 70% Sltst A/A
9260 - 9270	A/A
9270 - 9280	20% SS, wht-clear well srt A/A occ orng A/A 30% Sltst, orng-rd A/A 45% Clayst, A/A orng 5% Clayst A/A, lt gry.
9280 - 9290	10% SS, wht-clear, pr srt, vf-coarse, sub rd, sft occ well set, 10% SS, orng, A/A 60% Sltst orng A/A 10% Clayst lt gry A/A

DEPTH	SAMPLE DESCRIPTIONS
9290 - 9300	5% Clayst orng A/A 20% Clayst lt gry A/A 5% SS wht A/A 70% Sltst A/A orng.
9300 - 9310	90% SS, wht lt yell clear, vf grn, subrd-rd, well srt, mod indur 5% Anlyd, wht, sft, blk 5% Sltst, maroon, subblky, sft
9310 - 9320	A/A w/tr lt gry sltst. A/A
9320 - 9330	10% Sltst lt gry A/A 5% Anhyd A/A 80% Sd A/A occ maroon 5% Sltst A/A maroon
9330 - 9340	20% Anhyd A/A 60% SS A/A Rest A/A
9340 - 9350	90% SS, Clear, lt yell, vf grn, mod well set, subrd, mod well indur, calc cmt Tr qtz grn, clear, ang, coarse 5% Sltst, maroon A/A 5% Sltst, lt gr A/A TR Analyd A/A
9350 - 9360	70% Clayst-sltst orang, plty, subblky sft, 10% SS, A/A 20% Clayst lt gry A/A
9360 - 9370	A/A
9370 - 9380	10% Clayst orng A/A 70% Sltst orng A/A 10% SS A/A 10% Clayst lt gry A/A
9380 - 9390	A/A
9390 - 9400	A/A

DEPTH	SAMPLE DESCRIPTIONS
9400 - 9410	TR Clayst orng A/A 45% Sltst orng A/A 45% Clayst lt gry A/A 20% SS, wht-clear, subang, mod well set, occ pr srt, vf grn, occ F grn, occ slty, kaol cmt(?) 10% Sltst lt gry TR qtz grns, coarse, clear, subang
9410 - 9420	75% Sltst, orng-rd, plty, subblky-blky, 20% Clayst lt gry A/A TR qtz grn A/A 5% SS, wht, pr set, slty-vf grn, subrd
10-19-84	
9420 - 9430	5% SS, wht, mod srt, vf grn, subrd, well indur, silica cmt TR dol, lt. brn., mic x l, hd, no vis Ø
9430 - 9440	70% Sltst occ maroon orng-rd, plty, subblky, frm modcalc, 15% SS, wlct, subang, pr srt, vf grn-f grn n-vpØ, kaol cmt 15% Sltst, lt gry, occ n gry, blky, occ pyrite cubes
9440 - 9450	85% Sltst, orng-rd 5% SS, A/A 5% Sltst, lt gry, A/A 5% qtz grns, clear f-c grn, subang
9450 - 9460	A/A
9460 - 9470	90% Sltst, org-rd, A/A 5% Clayst, org, plty 5% Sltst, lt gry, A/A TR qtz grn & SS A/A
9470 - 9490	A/A occ maroon Sltst, sli calc
9490 - 9500	90% Sltst, orng A/A 5% SS, A/A 5% Sltst, lt gry, A/A
9500 - 9510	94% Sltst, A/A, orng-rd 3% SS, A/A 3% Sltst, lt gry, A/A
9510 - 9520	A/A Sltst, sli calc, A/A 3% SS, A/A 3% Sltst, lt gry, A/A TR Clayst orng pty, sft

Phillips Oil Company

DEPTH	SAMPLE DESCRIPTIONS
9520 - 9530	70% Sltst, maroon, occ orng, subblky, mod calc 25% Clayst, A/A 5% Sltst, lt gry, A/A TR SS A/A
9530 - 9540	50% Sltst, maroon A/A 30% Clayst A/A 15% Sltst, lt gry, occ m gry A/A 5% SS A/A TR qtz grn, coarse, clear, angular, concidal frac
9540 - 9550	A/A
9550 - 9560	70% Sltst A/A maroon, occ orng-rd 10% Clayst orng A/A Rest A/A, qtz grns, occ chert
9560 - 9570	A/A w/sltst, orng-maroon, occ wht
9570 - 9580	A/A w/ SS to 7% from 5 @ expense of sltst
9580 - 9590	10% Clayst, orng, plty, sft, occ lt pink 50% Sltst, maroon, occ orng-rd, occ lt pink, occ mottled 15% Ls, v lt brn-wht, cryptoxl, no Ø, frm 15% Sltst, ltgy, A/A 10% SS, A/A
9590 - 9600	A/A
9600 - 9610	A/A
9610 - 9620	80% Sltst, maroon-m brn, occ orng-rd, subblky, mod calc, frm 10% Ls A/A 10% Sltst, lt gry A/A TR SS A/A
9620 - 9630	20% Clayst, lt-m brn, plty, sli cac1 60% Sltst, lt-m brn, occ maroon, orng, sli-m calc 20% Sltst, lt grn-m gr, subblky-blky occ plty TR SS A/A
9630 - 9640	60% Sltst, lt gry-mgry A/A 20% Sltst, maroon-orng A/A 20% Clayst, lt-mgy A/A

DEPTH	SAMPLE DESCRIPTIONS
9640 - 9650	40% Sltst, maroon A/A 40% Sltst, lt gry 20% Clayst, lt gry TR SS, A/A w/pyrite
9650 - 9660	80% Sltst maroon A/A 10% Clayst, orng A/A 10% Sltst, lt gry A/A
9660 - 9670	A/A W/TR SS A/A w/pyrite
10-21-84	
9670 - 9680	15% SS, wt, occ m gry-brn, vf grn, sft, sub rd, well srt, calc cmt. 5% Clayst, orng, plty sft 70% Sltst, maroon, orng, v. calc 10% Sltst, lt gry, sft-frm, occ m brn, n calc
9680 - 9690	TR ls, crm, sft, amorphous, slty 70% Sltst A/A, maroon Rest A/A
9690 - 9700	A/A
9700 - 9710	5% Clayst A/A 75% Sltst, maroon, orng A/A 10% Sltst, lt gry A/A 10% SS, sh-lt gry-brn, mod well srt, sub rd, no vis Ø, n-sli calc, kaol cnt.
9710 - 9720	85% Sltst, orng, rd, maroon, subblky-blky, m calc 5% Clayst, orng, A/A 5% Sltst, lt gry A/A 5% SS A/A
9720 - 9730	60% Sltst A/A w/orng 35% Sltst A/A w/slt gry 5% SS A/A TR qtz grs TR ls, wht, sft frm, amorphous, sli slty
9730 - 9740	50% Sltst, orng A/A 45% Sltst, lt gry A/A 5% SS A/A
9740 - 9750	80% Sltst, lt gry A/A 10% Clayst, lt gry A/A 5% Sltst, orng A/A 5% SS A/A

DEPTH	SAMPLE DESCRIPTIONS
9750 - 9760	5% ls, A/A 60% Sltst, maroon, rd subblky, v calc 30% Sltst, lt gry, A/A 5% SS A/A
9760 - 9770	45% Sltst, maroon ck A/A 55% Sltst, lt gry A/A TR SS A/A TR Chert, grns
9770 - 9780	50% Sltst, m brn-lt brn, occ maroon orng 20% Sltst, lt pnk 25% Sltst, lt gry 5% SS A/A TR qtz & chert grns
9780 - 9790	5% SS, wht-clr, subrd, occ rd, f-vf grn, well srt, n-vp $\emptyset$ silica amt 70% Sltst, m brn, A/A 15% Sltst, lt brn, pnk, A/A 10% Sltst, lt gry A/A
9790 - 9800	20% Sltst, m brn A/A 20% Sltst, lt pnk A/A 50% Sltst, lt gry A/A 10% SS clear, occ wht, subrd, well srt, vf grn, no vis $\emptyset$, silic cmt, occ chert (?) blk TR SS, pnk, subang-ang, vf grn, mod well srt, no vis $\emptyset$, silica cmt.
9800 - 9810	85% SS, wht-clear, occ ltgy, vf grn, pr srt, occ mod well srt, subrd-subang, n vis $\emptyset$, sli calc, occ v sm amt chert, NSFOC 5% Sltst pnk A/A 5% clayst orng A/A 5% Sltst, maroon-m brn, A/A
9810 - 9820	A/A w/tr Ls, wht-crm, v sft, amorphous, slty
9820 - 9830	15% Ls, lt gry, occ crm, cryptoxl no vis $\emptyset$, NSFOC 15% Sltst, orng, maroon, A/A subblky, occ splintery 60% SS, A/A w/sli increase in chert content 10% Sltst, lt gry, occ turquoise A/A occ sndy

DEPTH	SAMPLE DESCRIPTIONS
9830 - 9840	5% Ls, A/A 10% qtz grans, clear, irreg shapes, coarse grnd, conchoid fract common 10% Sltst, orng, maroon A/A 20% SS A/A 10% Sltst lt grn A/A
9840 - 9850	30% Sltst, orng maroon A/A v. calc 15% Sltst, lt gry-lt blue, subblky, occ sndy, sft 30% SS, A/A calcite cmt 25% Ls A/A, occ v. sli slty
9850 - 9860	60% Sltst, orng, maroon A/A 5% Sltst, crm, v. calc, v. sft, pttty 15% SS, clear, lt yell, subrd, mod well srt, occ mod pr srt, sli calc, silica cmt, no vis Ø 20% Sltst lt gry, occ lt brn, occ sndy
9860 - 9870	70% Sltst, orng, maroon, occ rd-wht, blkly-subblky 10% Sltst, lt gry, pty, sft 10% LS, A/A 10% SS, clear, subrd-suborng, mod well srt, occ v. sli calc, silica cmt, no vis Ø
9870 - 9880	15 SS A/A TR sltst, md brn, angular, blockey, v. hd, sli calc 55% Sltst, orng, maroon A/A 15% SS, v lt brn-yell, ex fine grn, almost slty, well srt, pr Ø, NSF0C 15% sltst, lt gry, occ sndy
9880 - 9890	50% SS + qtz grn from it, clear, angular, m-coarse grn, pr srt, friable, occ grn-wht 30% Sltst, orng, maroon A/A 15% Sltst, lt-m gy, subblky 5% Sltst, yell-brn, v hd, blkly
9890 - 9900	A/A w tr anhyd(?), lt gry-wht, mottled, med hd
9900 - 9910	60% Sltst, maroon, orng A/A occ wht-orng 20% SS A/A 10% Sltst, lt gry A/A 10% Anhyd, wht, occ bndd, med hd, amorph
10-22-84	
9910 - 9920	20% Sltst, orng A/A 45% SS A/A 25% Sltst, lt gy A/A 10% Anhyd A/A(?)

DEPTH	SAMPLE DESCRIPTIONS
9920 - 9930	40% Sltst A/A orng 20% SS A/A 15% Anhyd A/A 25% Sltst, lt gry, lt blue, blocky, hd, occ pyrite, n calc
9930 - 9940	70% SS A/A mainly in form of individual grns 20% Sltst orng A/A 5% Sltst, lt gy-blue A/A 5% Anhyd A/A
9940 - 9950	40% SS A/A, mostly individual grns, clear, sm concoid fract, f-c grn, subang-ang. 30% Sltst, orng, maroon subblky, mod frm, sli calc 10% Sltst, lt gy, plty, hd n-calc 10% SS, lt gy, sub rd, mod pr srt, friable, occ slty-v. slty 10% Anhyd, A/A
9950 - 9960	60% SS, clear A/A 25% Sltst, orng etc A/A 5% Sltst, lt gy A/A 5% SS, lt gy A/A 5% Anhyd A/A
9960 - 9970	90% SS, (individual grns), occ mlky, clear, angular, occ suborg, m-c grn, med pr srt, sm concoidal fract 5% Sltst, orng A/A 5% chert, wht angular (individual grns), m-c grn, med well srt
9970 - 9980	30% SS clear A/A 50% Sltst, orny A/A 10% Sltst, lt gy A/A in (9950-60) 10% SS, lt gy A/A TR Anhyd, A/A
9980 - 9990	20% SS clear A/A 60% Sltst, orng A/A occ motled w/rd & wht 10% SS, lt gy A/A 10% Sltst, lt gy A/A TR Anhyd A/A
9990 - 10000	A/A w/Sltst, lt gy occ calc

DEPTH	SAMPLE DESCRIPTIONS
10000 - 10010	70% Sltst, orng A/A 10% SS, clear A/A 10% Sltst, lt gy A/A 10% SS, lt gy A/A TR LS, lt gy-wht, occ lt yell, cryptoxl frm, blk, mod slty, no vis Ø
10010 - 10020	50% Sltst orng A/A, mod calc 25% Sltst, lt gy A/A, mod calc 10% SS, clear, A/A 15% LS, AA
10-23-84	
10020 - 10030	80%: Sltst, orng, maroon, subblk-plty, only orng is mod calc, maroon isn't, both mod sft, 10%: Anhyd, crm-wlt, wht occ mottled, sft 5%: Sltst, lt gy, blk, sft 5%: SS, wht, sme unconsol, angular, occ subang, vf-m grn, pr srt, no vis Ø, sme calc cmt.
10030 - 10040	AA, lt gy Sltst occ v. sndy and occ crm
10040 - 10050	70%: Sltst, orng, maroon A/A 5%: SS A/A 15%: Sltst, lt gy, lt blue, plty, sft, n calc, occ sndy 10%: Anhyd A/A
10050 - 10060	65%: Sltst, orng, maroon A/A 10%: Anhyd A/A, mottling on most pieces-chicken wire type restructure 10%: Sltst, lt gy - lt blue A/A occ pyr 10%: SS, salt & pepper, slty-v f grn, mod well srt, sub rd, sft, no vis Ø, kaol cmt 5%: SS, A/A (unconsol, clr)
10060 - 10070	A/A
10070 - 10080	A/A, w/5% ss, clear A/A w/grn f-c grn, ang, commonly unconsol
10080 - 10090	A/A
10090 - 10100	60%: Sltst, orng, maroon A/A 20%: Sltst, lt gy A/A, occ v. calc 5%: Anhyd A/A 5%: SS A/A (clr-unconsol) 10%: SS, S&P A/A
10010 - 10110	30%: Sltst A/A orng-maroon 25%: SS, rd, clr, v. pr srt, sli calc, ang. occ subang, argill cmt, fe stned, slty-c grn, almost conglomeratic 5%: Anhyd A/A 10%: Sltst, lt gy A/A 10%: SS, A/A clr 20%: Sltst, lt gy, blk, v. sndy

DEPTH	SAMPLE DESCRIPTIONS (Continued)
10110 - 10120	30%: Sltst, orng, maroon, A/A 15%: SS, unconsol, clr, ang. A/A 10%: Anhyd, wht, rd mottling, blk 10%: Sltst, lt gy, not sndy 10%: SS, lt gy, m grn, subang, mod well srt 15%: SS, A/A 10%: SS, lt brn, v f grn, subang, occ cht, occ argil, well srt, mod calc, v p. Ø
10120 - 10130	60%: Unconsol qtr grn, ang-subang 20%: SS, rd-clr, A/A 10%: Anhyd A/A 10%: Sltst, orng A/A TR: Sltst, lt gy
10-24-84	
10130 - 10140	20%: Sltst, orng A/A 30%: Unconsol qtz grn A/A (may be from the 40% rd SS below) 10%: Sltst, lt gy A/A TR: Anhyd A/A 40%: SS, rd, clr, A/A
10140 - 10150	5%: Anhyd A/A 10%: Sltst, orng A/A 10%: Sltst, lt gy A/A 40%: Unconsol qty A/A 35%: SS, rr A/A
10150 - 10160	20%: Sltst, orng A/A 15%: Sltst, lt gy A/A w/occ sndy 40%: Unconsol qty A/A 25%: SS, rd clr A/A
10160 - 10170	50%: Sltst, orng A/A 15%: Anhyd, wht-crm, mottled maroon 20%: Sltst, lt gy A/A occ m gy 5%: Unconsol qty A/A 5%: SS, rd, vf-sltgy grn, pr srt, argill (finer than above), ang-subang no vis Ø 5%: SS, lt brn, v f grn, mod well srt, sli calc, v pr Ø, subrd, frm
10170 - 10180	10%: Sltst, ang A/A 60%: SS, rd A/A 10%: Anhyd A/A occ mottled 15%: Sltst, lt gy A/A 5%: Unconsol qtz grns

DEPTH	SAMPLE DESCRIPTIONS (Continued)
10180 - 10190	20%: Sltst lt gy A/A 20%: Sltst orng A/A 5%: Unconsol qtz TR: Anhyd A/A 5%: SS, lt brn A/A 50%: SS, rd clr A/A
10190 - 10200	50%: Sltst, orng A/A 5%: Anhyd A/A, occ mottled 30%: Sltst lt gy A/A occ sndy, occ md gy, occ pyr. TR: SS lt brn, A/A 15%: SS, rd clr A/A
10200 - 10210	5%: Unconsol qty A/A 10%: SS, clr, v f grn, mod well srt, sub ang 20%: Sltst, orn A/A 30%: SS, rd A/A 15%: Anhyd, wht, mottled w/purple chicken wire type structure 20%: Sltst, lt gy, A/A occ pyr
10210 - 10220	20%: Sltst, orng A/A TR: Unconsol qtz A/A 30%: Sltst, lt gy, A/A occ sndy, occ pyr v abundant 45%: SS, rd, A/A 5%: Anhyd A/A
10220 - 10230	10%: Anhyd A/A 5%: SS, clr, (as in 10200-210) 20%: Sltst, orng A/A 30%: Sltst lt gy A/A 35%: SS, rd A/A
10230 - 12040	5%: SS, clr A/A 5%: SS, lt brn lt gy, vf grn, well srt, sub rd, mod indur., mod calc, occ cht, silica cmt, n-vp Ø 15%: Sltst, ang A/A 30%: Sltst, lt gy A/A 10%: Anhyd, wht, hd, blk 35%: SS, rd A/A
10240 - 10250	5%: Anhyd A/A 15%: Sltst orng A/A 35%: Sltst, lt gy, occ v sndy A/A TR: SS, clr A/A TR: Unconsol qtz A/A 45%: SS, rd A/A

DEPTH	SAMPLE DESCRIPTIONS (Continued)
10250 - 10260	5%: Anhyd, wh, occ mottled w/maroon, mod sft 20%: Sltst, orng A/A 30%: SS, rd, occ mottled w/wh v f grn well srt, subrd v. argill. v calc 5%: SS, clr A/A 30%: Sltst, lt grn A/A TR: LS, lt-m brn cryptoxl, hd, blk no vis $\emptyset$, sli slty 10%: SS, m brn, slty-v f grn, mod well & srt, sub rd ?, occ v. sli calc, v pr $\emptyset$
10260 - 10270	TR: Unconsol qtz, A/A occ w/pyr inclus REST: A/A
10270 - 10280	A/A
10280 - 10290	25%: Sltst, orng A/A 40%: Sltst, lt gy A/A 10%: Anhy A/A 5%: SS, lt brn (as in 10230-40) 20%: SS, rd A/A
10290 - 10300	A/A
10300 - 10310	TR: Ls, A/A TR: Unconsol qtz Rest A/A
10310 - 10320	35%: SS, rd, mottled A/A 5%: Ls, lt, lt gy-blk, hd, subblk no vis $\emptyset$ 5%: Anhy A/A 5%: Unconsol qtz. 5%: SS, also from qty 30%: Sltst, lt gy, occ v. sndy 5%: SS lt brn A/A (in 10230-40) 10%: Sltst, orng A/A
10320 - 10330	TR: LS A/A Rest A/A
10330 - 10340	10%: Anhy, wht, mottled A/A Rest: A/A
10340 - 10350	TR: Sltst, orng A/A 15%: Sltst, m brn, subplty, frm, n-calc, occ w/v.f. cht inclusions 5%: LS, A/A

SAMPLE DESCRIPTIONS (Continued)

10440 - 10450 20%: Sltest orng maroon A/A
60%: SS, rd A/A almost slty
5%: SS, clr unconsol grns

DEPTH SAMPLE DESCRIPTIONS (Continued)

	5%: Anhyd A/A
	10%: Sltst, lt gy A/A
10450 - 10460	40%: Sltst orng maroon A/A
	40%: SS, rd, slty A/A
	Rest A/A
10460 - 10470	75%: Unconsol qtz, clr, (as in 10430-40)
	15%: Anhy, wht, fe stn, frm
	10%: Sltst, orng & lt gy A/A
10470 - 10480	No sample, rip in screen
10480 - 10490	20%: Anhy A/A, occ mottled, occ v. fe stnd
	40%: Sltst, maroon, Tr orng
	20%: qtz grns A/A
	5%: SS, rd A/A
	10%: Sltst, lt gy A/A
	5%: Sltst, lt rd-pnk, blk
10490 - 10500	70%: Sltst, orng A/A
	5%: Sltst, lt rd A/A
	5%: SS, rd A/A
	10%: SS, clr & unconsol grns A/A
	5%: Sltst, lt gy A/A
	5%: Anhy A/A
10500 - 10510	15%: Clayst, orng, plty, v. sft
	5%: Sltst, orng, maroon A/A
	20%: Sltst, lt gy A/A
	10%: Anhy A/A
	5%: Unconsol qty A/A
10510 - 10520	A/A
10520 - 10530	A/A
10530 - 10540	30%: Sltst lt gy A/A
	TR: Clayst orng A/A
	Rest A/A
10540 - 10550	A/A
10550 - 10560	20%: Unconsol qty A/A
	20%: Anhy, wht, fe stnd
	30%: Sltst, orng maroon
	20%: Sltst lt gy
	10%: SS, rd A/A v. slty, vf-slty grn

DEPTH	SAMPLE DESCRIPTIONS (Continued)
10560 - 10570	40%: SS, rd, v. pr srt 5%: Qtz A/A 10%: Anhy A/A 30%: Sltst, maroon, orng A/A 15%: Sltst, lt gy A/A
10570 - 10580	30%: Sltst, lt gy occ v. sndy 15%: Qtz grn A/A 35% SS, rd A/A 5%: Sltst, lt gy A/A 5%: Clayst, orng
10580 - 10590	30%: Anhy, wh, heavily fe stnd Rest A/A
10-26-84	
10590 - 10600	30%: Unconsol qtz A/A ang, f-m grn, occ pyrite, fe stn 30%: SS, rd, vf-f, occ m grn, heavily fe stn, pr srt, mod calc, subang, occ ang, argill, no vis Ø 20%: Sltst, orng, maroon, plty-subblky, n calc, frm 10%: Sltst, lt gy, sft, n-calc, 0cc sli slty 5%: SS, lt gy wht, vf grn, sub rd, mod well srt, mod sft 5%: Anhy, wht, occ lt gy mottled rd, sft
10600 - 10610	60%: Sltst, orng, occ maroon, plty, v calc 20%: SS, rd A/A 15%: Sltst, lt gy A/A 5%: SS, from unconsol grns A/A TR: Anhy A/A
10610 - 10620	80%: Sltst, orng, occ vf grn, plty, mod calc 5%: Sltst, lt gy A/A 10%: SS, rd 5%: SS, wht, clr, from unconsol grns A/A TR: Anhy A/A
10620 - 10630	90%: Sltst, orng A/A TR: SS, rd A/A Rest A/A
10630 - 10640	A/A, Sltst lt gy occ v. sndy
10640 - 10650	5%: SS, lt gy wh (as in 10590-600) 75%: Sltst orng A/A

DEPTH	SAMPLE DESCRIPTIONS (Continued)
10640 - 10650	10%: Sltst, lt gy A/A 5%: Anhy A/A 5%: SS, rd A/A mottled w/wht
10650 - 10660	50%: Sltst orng A/A 10%: Sltst, lt gy 20%: SS, lt gy wh A/A, occ f gn, no vis Ø 15%: Marlst, rd-wht, plty, mod rd 5%: SS, rd A/A, vf-sltty
10-27-84	
10660 - 10670	80%: Sltst, orng, maroon, lt gy, occ wht, plty-subblky, n-calc, occ vf grn, frm 5%: Qtz grn, subrd-rd, Anhy cmt on grns 5%: SS, lt gy-wht, vf grn, sub rd, well srt, no vis Ø-UA Ø, mod calc 5%: Anhy A/A occ sli mottled 5%: Marlst, A/A
10670 - 10680	75%: Sltst, A/A 5%: LS, wht, blk, frm, crytox1, no vis Ø
10680 - 10690	A/A
10690 - 10700	A/A
10700 - 10710	85%: Sltst w/lt gy portion occ banded no Marlst or LS Rest A/A
10710 - 10720	5%: Sltst, lt gy-wht, fe stnd 85%: Sltst orng, v. calc. TR: Clayst, orng, v. plty, sft. v calc Rest A/A
10720 - 10730	75%: Sltst, lt m brn, maroon only tr orng 10%: Clayst A/A TR: Sltst, blk & wht, mottled, n calc sli frm 5%: Qtz A/A 5%: SS, lt gy wht A/A 5%: Anhy A/A
10730 - 10740	85%: Sltst, lt-m tan, lt gy A/A 5%: Clayst A/A 5%: Qtz A/A 5%: SS A/A
10740 - 10750	TR: Sltst blk & wht (as in 10720-30) TR: Clayst A/A

DEPTH	SAMPLE DESCRIPTIONS (Continued)
10740 - 10750 (Con't.)	90%: Sltst A/A 5%: Qtz & SS 5: Anhyd
10750 - 10760	A/A
10760 - 10770	A/A w/Sltst lt gy, occ v. sndy w/vf-f grn, subrd & pr srt
10770 - 10780	10%: SS, lt brn-lt gy, occ sli wht, occ cht, frm-hd, subblky-plty, no vis Ø 5%: Unconsol qtz 5%: Anhyd, wht, mottled w/blk chicken wire struct Rest Sltst A/A
10780 - 10790	Sltst orng & maroon, rest A/A
10790 - 10800	85%: Unconsol qtz w/occ qtz SS, sub rd-ang, vf-m grn, pr srt, no Ø fe stnd 5%: SS, lt gy lt brn A/A 5%: Anhy A/A 5%: Sltst A/A
10800 - 10810	60%: Qtz A/A 30%: Sltst A/A Rest A/A
10810 - 10820	20%: Qtz A/A 40%: Sltst A/A 20%: SS, rd, A/A 10%: SS, lt gy lt brn A/A 5%: Marlst A/A 5%: Anhy A/A
10820 - 10830	60%: Unconsol qtz A/A 15%: Sltst orng lt gy maroon A/A 15%: SS, rd A/A TR: Marlst. A/A 5%: Anhy A/A 5%: SS, lt gy, A/A
10-28-84	
10830 - 10840	No sample
10840 - 10850	5%: SS, wh, occ v lt brn, subrd, occ sub ang, v f grn, well srt, occ chrt, friab. pr Ø mod calc 5%: Clayst, orng, plty sft TR Anhy, wht, blk 90%: Sltst, orng, maroon, lt gy, subplty, calc

DEPTH	SAMPLE DESCRIPTIONS (Continued)
10850 - 10860	80%: Qtz grns, vf-f grn, occ m grn, ang-subrd, pr sort, occ fe stn no vis Ø 5%: Anhy, wht, blk, sli calc 15%: Sltst, A/A occ sme sndy
10860 - 10870	85%: Sltst A/A 5%: Anhy, A/A 10%: SS, (as in 10840-50) occ m grn
10870 - 10880	90%: Sltst 5%: SS A/A 5%: Anhy A/A
10880 - 10890	No sample
10-29-84	
11030 - 11040	90%: Sltst, orng, maroon, lt gy A/A occ dk gy, occ sndy TR: LS, m dk gy, occ m brn, cryptoxl, hd, no vis Ø 5%: SS, A/A w/TR qtz grns 5%: Anhy A/A
11040 - 11050	TR: Clayst orng, plty, sft, v calc 90%: Sltst A/A 5%: SS AA 5%: Anhy A/A
11050 - 11060	60%: Unconsol qty A/A 40%: Sltst A/A TR: Anhy A/A
11060 - 11070	95%: Unconsol qtz grns A/A v lt pnk 5%: Sltst A/A
11070 - 11080	80%: Unconsol qtz, clr, tr pnk 20%: Sltst A/A
11080 - 11090	30%: Unconsol qtz A/A 70%: Sltst A/A
11090 - 11100	90%: Unconsol qtz A/A 5%: Sltst A/A 5%: Anhy, wht, sft
11100 - 11110	90%: SS, clr, v f grn, subang, occ sub rd, mod well srt, argill, sli fe stnd no vis Ø 10%: Sltst A/A

DEPTH	SAMPLE DESCRIPTIONS (Continued)
11110 - 11120	70%: SS, A/A 30%: Sltst A/A
11120 - 11130	40%: SS & qtz A/A 55%: Sltst A/A 5%: Anhy A/A w/fe motting
11130 - 11140	20%: Unconsol qtz A/A 10%: Marst, wht-rd, sft, v calc 70%: Sltst A/A w/occ blk-dk gy
11140 - 11150	TR: LS, wht, cryptoxl, frm 5%: Marlst A/A 20%: SS & qtz grns A/A 75%: Sltst A/A
11150 - 11160	30%: SS & qtz A/A 65%: Sltst A/A Rest A/A
11160 - 11170	90%: Sltst A/A 5%: SS & qtz A/A 5%: Anhyd, lt gy mottled w/blk strips
11170 - 11180	35%: SS qtz A/A 5%: Anhy A/A 60%: Sltst A/A
11180 - 11190	10%: SS qtz A/A TR: Anhyd A/A 90%: Sltst A/A
11190 - 11200	10%: SS qtz A/A 5%: Anhy A/A 85%: Sltst A/A
10-30-84	
11200 - 11210	70%: Sltst, A/A orng, maroon, lt gy, occ v sndy, occ sli mod calc 15%: SS, occ lt brn clr, subang, occ ang, vf-f grn mod well srt, silica cmt, no vis Ø, occ kaol cmt NSF0C 15%: SS, lt rd, wht, occ feldsp ar, sli calc, v f grn no Ø TR: LS, lt brn, cryptoxl, blk, hd TR: Marlst A/A
11210 - 11220	80%: Qtz grns, clr, occ lt pnk, v f grn, occ f grn, mod w srt, sub rd-sub ang no Ø

DEPTH	SAMPLE DESCRIPTIONS (Continued)
11210 - 11220 (Con't.)	20%: Sltst A/A TR: Anhy A/A
11220 - 11230	A/A w/qtz being occ m grn and occ angular
11230 - 11240	40%: Qtz grns A/A 55%: Sltst A/A 5%: Anhyd, wht, plty, frm
11240 - 11250	20%: Qtz grns & SS from it A/A 80%: Sltst A/A TR: Anhyd A/A
11250 - 11260	90%: Sltst A/A 10%: Qtz & SS A/A TR: Anhy A/A
11260 - 11270	TR: Marlst 80%: Sltst A/A 20%: SS & qtz A/A
11270 - 11280	40%: SS & qtz A/A 60%: Sltst A/A TR: Anhy, wh w/blk chicken wire structure
11280 - 11290	5%: LS, dk gy, cryptoxl, blk, hd, mod argill TR: Anhyd, wht, frm 50%: Sltst A/A 45%: SS & qtz A/A
11290 - 11300	5%: LS, lt brn, cryptoxl, blk, hd 5%: SS A/A 90%: Sltst A/A
10-31-84	
11300 - 11310	TR: LS, lt brn m brn, hd cryptoxl, no vis Ø blk 5%: SS, wht, lt gy, lt pnk, v f grn, occ f grn, occ calc cmt, subang, mod w sort, frm, no vis Ø 95%: Sltst, orng lt gy, maroon, blk, occ plty, occ v. sli calc, occ sndy TR: Anhy, wht occ mottled, frm
11310 - 11320	90%: Sltst A/A 5%: SS & qtz grns A/A 5%: Anhy A/A

DEPTH	SAMPLE DESCRIPTIONS (Continued)
11320 - 11330	10%: Anhy A/A TR: SS, rd, sub ang, occ ang, vf m grn, occ argill, occ feldsp, sli calc, no vis Ø 5%: SS & qtz A/A 85%: Sltst A/A
11330 - 11340	A/A w/no rd SS & Sltst occ v. sndy
11340 - 11350	10%: Anhy A/A 60%: Sltst A/A w/occ vf f grns 30%: SS, A/A occ cht, occ pr srt, occ tr glauc, calc cmt no vis Ø
11350 - 11360	10%: Anhy A/A 10%: SS A/A 80%: Sltst A/A
11360 - 11370	40%: Shale red, silty, soft 60%: Sandstone, clear to wh, med. grnd, subrounded poorly cons.
11370 - 11380	40%: Shale A/A 50%: Sandstone A/A 10%: Anhydrite, whitish to green, soft
11380 - 11390	40%: Shale A/A 60%: Sandstone A/A
11390 - 11400	70%: Shale A/A 10%: Anhydrite A/A 20%: Limestone, tan to brown, microcrystalline, tr clay
11400 - 11430	70%: Shale A/A 5%: Sandstone, clear to white, fine to med. grained, uncons. 10%: Shale, green to gray soft 10%: Limestone A/A
11430 - 11440	60%: Sandstone A/A 25%: Shale red A/A 10%: Anhydrite white to green, soft 5%: Shale, green, soft
11440 - 11460	45%: Sandstone A/A 40%: Red Shale A/A 10%: Anhydrite A/A 5%: Green Shale A/A

DEPTH	SAMPLE DESCRIPTIONS (Continued)
11460 - 11470	80%: Sandstone A/A 10%: Anhydrite A/A 10%: Red Shale A/A
11470 - 11480	65%: Sandstone A/A 10%: Anhydrite A/A 25%: Shale, red A/A
11480 - 11500	45%: Red Shale A/A 25%: Sandstone gray to brown, med to fine-grained, silty 20%: Green Shale A/A 10%: Anhydrite A/A tr Limestone, brown to buff, microcrystalline
11500 - 11510	50%: Sandstone gray, vf to fine-grained, mod srt 10%: Red Shale A/A 25%: Siltstone gray, sandy, clay matrix tight 10%: Anhydrite A/A
11510 - 11540	20%: Shale red A/A 30%: Siltstone gray to brown, sandy, micaceous, tight 20%: Shale green, A/A 15%: Anhydrite A/A 15%: Sandstone A/A
11540 - 11580	70%: Shale red A/A 10%: Sandstone clear, medium to fine grained, mod srt, poorly consolidated 10%: Anhydrite A/A 10%: Shale green A/A
11580 - 11600	70%: Sandstone A/A 20%: Siltstone brown to orange, calcareous, Anhydritic 10%: Shale green to gray, micaceous
11600 - 11610	50% Shale red, silty 40%: Sandstone A/A 10%: Anhydrite
11610 - 11620	90%: Shale red, silty 10%: Sandstone A/A
11620 - 11650	70%: Sandstone A/A 20%: Shale red, silty 10%: Anhydrite

DEPTH	SAMPLE DESCRIPTIONS (Continued)
11650 - 11660	85%: Shale red, silty 10%: Limestone cream to buff, microcrystalline 5%: Anhydrite
11660 - 11700	45%: Sandstone A/A 50%: Shale red silty 10%: Anhydrite
11700 - 11710	70%: Sandstone A/A 20%: Shale A/A 10%: Anhydrite
11710 - 11760	40%: Shale red, silty 30%: Shale gray, micaceous 10%: Sandstone A/A 10% Anhydrite
11760 - 11770	35%: Shale red, silty, blocky 45%: Sandstone white to gray, fine-grained, glaucinitic, subangular 10%: Shale green to gray, soft 10%: Anhydrite
11770 - 11790	50%: Shale red A/A 10%: Sandstone A/A 20%: Siltstone grey, sandy, micaceous, tight 10%: Anhydrite 10: Shale gray to green, soft
11790 - 11800	45%: Shale red A/A 50%: Shale green to gray, soft 5%: Sandstone A/A
11800 - 11820	60%: Sandstone white to clear, fine-grained, glaucinitic 20%: Shale red, A/A 10%: Anhydrite 10%: Green Shale A/A
11820 - 11880	70%: Red Shale A/A 10%: Gray to green Shale A/A 10%: Anhydrite 10%: Sandstone A/A
11880 - 11900	40%: Red Shale A/A 40%: Green Shale A/A 10%: Anhydrite 10%: Sandstone white to clear, fine grained, glaucinitic, silica cement

DEPTH	SAMPLE DESCRIPTIONS (Continued)
11900 - 11940	50%: Shale red, silty 30%: Shale green to gray soft 10%: Anhydrite 10%: Sandstone A/A
11940 - 11980	60%: Shale red, silty 20%: Shale green, waxy, soft 10%: Siltstone gray, sandy, tight 5%: Sandstone white, fine-grained
11980 - 11990	45%: Shale red, silty 10%: Shale green, waxy 10%: Anhydrite 40%: Sandstone white to clear, fine-grained, subangular, poor porosity 5%: Siltstone gray, tight
11990 - 12010	75%: Sandstone white to greenish, fine-grained, subrounded, poorly consolidated 20%: Shale red, silty 5%: Shale green, waxy
12010 - 12030	50%: Sandstone A/A 30%: Shale red, silty 10%: Shale green, waxy 5%: Anhydrite 5%: Siltstone gray, tight
12030 - 12040	65% Shale red, silty 15%: Sandstone A/A 15%: Shale green, waxy 5%: Anhydrite
12040 - 12060	60%: Shale red, silty 10%: Sandstone white to green, fine-grained, subangular, poor porosity 25%: Shale gray to green, waxy 5%: Anhydrite
12060 - 12070	60%: Sandstone A/A 25%: Shale red, silty 10%: Anhydrite 5%: Gray to green Shale
12070 - 12090	80%: Shale red, silty 10%: Anhydrite 5%: Sandstone A/A 5%: Shale gray to green

DEPTH	SAMPLE DESCRIPTIONS (Continued)
12090 - 12110	80%: Sandstone white, some greenish, fine-grained, glauconitic, friable 10%: Shale red, silty 5%: Anhydrite
12110 - 12170	80%: Sandstone A/A 10%: Shale red, silty, tr to 10%: Limestone gray, cryptocrystalline, argillaceous
12170 - 12190	40%: Sandstone gray to green fine to medium grained, glauconitic poor porosity 25%: Shale red-brown silty 35%: Limestone white to gray, microcrystalline, sandy IP
12190 - 12200	80%: Sandstone white to green fine-grained, glauconite 10%: Shale red, silty 5%: Anhydrite 5%: Limestone gray to brown, microcrystalline
12200 - 12210	20%: Shale red, silty 10%: Anhydrite 30%: Sandstone white to green, fine-grained 25%: Shale green to gray 15%: Limestone gray to brown, microcrystalline
12210 - 12220	75%: Shale red, silty 10%: Shale green 10%: Anhydrite tr Limestone, A/A
12220 - 12230	75%: Limestone gray to buff, microcrystalline, poor porosity 15%: Shale red, slity 5%: Shale green 10%: Anhydrite
12230 - 12250	75%: Shale red, silty 10%: Anhydrite 5%: Shale green, waxy 5%: Sandstone white to green, fine grained tr Limestone, buff, microcrystalline
12250 - 12260	40%: Sandstone white to gray, fine grained, micaceous, glauconitic, poor porosity 10%: Shale red-brown, silty 40%: Siltstone gray to brown, micaceous, tight 10%: Anhydrite

DEPTH	SAMPLE DESCRIPTIONS (Continued)
12260 - 12280	80%: Sandstone white to brownish, some green, finegrained, micaceous, poor porosity 5%: Shale red 10%: Anhydrite 5%: Shale green
12280 - 12290	80%: Sandstone white to green, fine grained, micaceous 10%: Shale red, silty 10%: Anhydrite tr Shale, black, micaceous, silty
12290 - 12300	60%: Shale black, platy, silty, micaceous 10%: Sandstone A/A 10%: Shale red, silty 10%: Shale green, waxy 50%: Anhydrite 5%: Limestone gray to brown, microcrystalline
12300 - 12320	60%: Limestone gray to brown, finely crystalline, oolitic in part 10%: Shale red, silty 10%: Sandstone A/A 5%: Shale green 5%: Shale black A/A 5%: Anhydrite
12320 - 12330	90%: Sandstone white to clear, fine grained, subangular, quartz OG, poor porosity 5%: Shale red, silty 5%: Limestone A/A
12330 - 12340	40%: Shale red, silty 30%: Shale green 20%: Sandstone brown, fine-grained, arkosic, poor porosity 5%: Anhydrite 5%: Limestone brown, microcrystalline
12340 - 12350	80%: Sandstone A/A 10%: Shale red, silty 5%: Shale green 5%: Anhydrite
12350 - 12390	70%: Sandstone wh to clear & light green, fine grained glauconitic, micaceous 10%: Anhydrite 10%: Limestone to gray to cream, microcrystalline 5%: Shale red, silty 5%: Shale green

DEPTH	SAMPLE DESCRIPTIONS (Continued)
12390 - 12430	50%: Shale red, silty 15%: Shale green, waxy 10%: Anhydrite 15%: Sandstone wh to green, fine-grained, subrounded, glauconitic 10%: Limestone gray to cream, microcrystalline
12430 - 12440	20%: Shale red, silty 40%: Limestone white to cream, microcrystalline 30%: Sandstone wh to reddish, fine grained subangular, arkosic, poor porosity 5%: Anhydrite 5%: Green Shale
12440 - 12460	50%: Shale red, silty 25%: Sandstone white to brown fine grained, subangular, poorly cemented 5%: Anhydrite 5%: Limestone cream to brown, microcrystalline
12460 - 12490	65%: Shale red to brown, silty 15%: Shale green 5%: Anhydrite 15%: Sandstone white to green, fine-grained, subangular, glauconitic, tr Limestone A/A
12490 - 12500	40%: Sandstone A/A 40%: Shale red, silty 5%: Anhydrite 10%: Green Shale tr Limestone A/A
12500 - 12510	95%: Limestone white to gray, microcrystalline 5%: Shale red, silty
12510 - 12530	45%: Shale red, silty 20%: Shale green, soft 10%: Sandstone white to green, fine-grained, subangular 20%: Limestone A/A 5%: Anhydrite
12530 - 12550	45%: Shale red, silty 35%: Sandstone white to reddish, fine-grained, poorly cons 5%: Shale green 5%: Limestone A/A

DEPTH	SAMPLE DESCRIPTIONS (Continued)
12550 - 12560	60%: Shale red, silty 15%: Shale green, soft 10%: Sandstone white, fine-grained, subangular, mod srt 5%: Anhydrite 10%: Limestone, gray to buff, microcrystalline
12560 - 12580	70%: Sandstone white to clear, fine grained, glauconitic, mod srt, fair porosity 15%: Shale red, silty 5%: Limestone AA 10%: Shale green
12580 - 12600	60%: Shale red, silty 15%: Limestone gray to buff, microcrystalline, tight 20%: Shale gray to black, micaceous, silty 5%: Sandstone wh to gray, fine-grained, glauconitic, micaceous, fair porosity
12600 - 12630	35%: Limestone gray to buff, microcrystalline, tight 40%: Shale red, silty 15%: Sandstone white to green, fine-grained, subangular, poor to fair porosity 10%: Shale green, soft, waxy
12630 - 12640	70%: Limestone white to gray, microcrystalline, tight 20%: Shale red, silty 5%: Shale green, soft 5%: Sandstone AA
12640 - 12670	No sample, bypass shaker
12670 - 12680	45%: Limestone gray to white, microcrystalline 30%: Sandstone white to green, fine-grained, glauconitic 15%: Shale red, silty 5%: Anhydrite 5%: Shale gray to black, silty
12680 - 12710	70%: Siltstone gray to black, micaceous, carbanaceous, sandy 10%: Shale red, silty 20%: Sandstone gray, silty, fine to medium-grained poorly sorted, poor porosity

DEPTH	SAMPLE DESCRIPTIONS (Continued)
12710 - 12720	50%: Sandstone white to brown, fine to medium-grained, subrounded, glauconitic 40%: Limestone gray to buff, microcrystalline 5%: Green Shale 5%: Shale red
12720 - 12740	70%: Limestone gray to brown, microcrystalline, tight 5%: Shale red, silty 10%: Siltstone green, sandy, glauconitic 10%: Sandstone white to green, fine-grained, glauconitic 5%: Anhydrite Tr Shale black, silty, mic, carbonaceous
12740 - 12770	80%: Sandstone white to green, fine-grained, glauconitic, fair porosity 10%: Shale red, silty 10%: Limestone gray, microcrystalline
12770 - 12780	50%: Sandstone AA 20%: Shale red, silty 15%: Siltstone gray, sandy, micaceous, tight 5%: Anhydrite 10%: Shale green, soft
12780 - 12790	60%: Sandstone AA 20%: Limestone gray, microcrystalline 15%: Shale red, silty 5%: Shale green, soft
12790 - 12800	80%: Sandstone white to green, fine-grained, mod srt, glauconitic lp, silica cement, fair porosity 10%: Limestone AA 5%: Shale green, soft 5%: Shale red, silty
12800 - 12807	90%: Sandstone AA 5%: Siltstone gray, micaceous, tight 5%: Shale red, silty
12807 - 12837	Core: See core description
12840 - 12870	75%: Shale gry to black, silty 20%: Siltstone gray, sandy, tight 5%: Sandstone white to clear, fine-grained, subrounded, poorly consolidated.

DEPTH	SAMPLE DESCRIPTIONS (Continued)
12870 - 12880	40%: Siltstone AA 35%: Sandstone gray to white, fine-grained, subangular, mod srt, clayey, calcite cement, poor porosity 5%: Limestone white to gray, microcrystalline
12880 - 12890	80%: Sandstone white to gray, fine to medium-grained, subangular, tr, mica, calcite cement, poor porosity 5%: Shale red, silty 10%: Limestone gray to brown, microcrystalline, pelleted in part 5%: Shale green, soft
12890 - 12910	40%: Sandstone AA 50%: Limestone gray, microcrystalline, slightly silty, pelleted & fossiliferous in part 5%: Shale black, silty 5%: Shale red, silty
12910 - 12930	15%: Sandstone AA 40%: Limestone AA 40%: Limestone white, microcrystalline, soft, clayey, no porosity 5%: Shale black AA
12930 - 12960	40%: Limestone white, AA 40%: Limestone gray to black 15%: Shale black, silty, hard 5%: Sandstone AA
12960 - 12980	30%: Limestone white, AA 30%: Limestone gray, AA 10%: Siltstone gray, tight, clayey 15%: Sandstone white, fine-grained, prsrt, subangular, well cemented w calcite, poor porosity 15%: Shale black, silty
12980 - 13010	80%: Sandstone white to lt gray, fine to medium-grained, subangular, calcite cement, good porosity 10%: Siltstone gray, argillaceous, sandy, pyritic 10%: Anhyd
13010 - 13030	25%: Siltstone dark gray to black, sandy, clayey, micaceous, tight 60%: Sandstone AA 15%: Limestone light gray to black, microcrystalline, poor porosity

DEPTH	SAMPLE DESCRIPTIONS (Continued)
13030 - 13050	75%: Limestone light gray to black, microcrystalline trace clay 15%: Sandstone AA 10%: Siltstone AA
13050 - 13070	90%: Limestone light gray to black, microcrystalline, Mudstone 5%: Sandstone AA 5%: Siltstone AA
13070 - 13080	85%: Sandstone AA 15%: Limestone AA
13090 - 13100	75%: Limestone light to dark gray, microcrystalline, light gray is Mudstone, dk gray is Packstone w fossils, possible ooids, fair porosity 25%: Sandstone AA
13100 - 13120	95%: Limestone AA 5%: Sandstone AA
13120 - 13150	60%: Sandstone white to clear, fine to medium grained subangular, mod srt, calcite & silica cement, poor to fair porosity 40%: Limestone AA
13150 - 13190	95%: Limestone AA 5%: Sandstone AA
13190 - 13210	95%: Sandstone clr, medium-grained, ang-subang, poorly srt, fair porosity 5%: Shale red, silty
13210 - 13220	70%: Limestone cream, microcrystalline 25%: Sandstone AA 5%: Shale AA
13220 - 13250	35%: Sandstone white to clear, fine to med. grained, subang, poorly consolidated 25%: Siltstone gray to black, sandy, micaceous, clayey 40%: Limestone light gray to white, microcrystalline, poor porosity
13250 - 13270	60%: Sandstone AA 10%: Siltstone AA 30%: Limestone AA

DEPTH	SAMPLE DESCRIPTIONS (Continued)
13270 - 13280	15%: Sandstone AA 10%: Siltstone AA 75%: Limestone AA
13280 - 13320	25%: Limestone lt gy to white, microcrystalline 40%: Limestone dk gray to black, microcrystalline 20%: Siltstone AA 15%: Sandstone AA
13320 - 13340	85%: Limestone light gray to white, microcrystalline, poor porosity 15%: Sandstone white to clear, fine-grained subangular, calcite cement, poor porosity
13340 - 13350	50%: Limestone AA 45%: Sandstone white to clear, fine-grained, subangular, calcite and silica cement, poor porosity
13350 - 13380	90%: Limestone AA 10%: Sandstone AA
13380 - 13390	100%: Limestone lt gray to white microcrystalline, common fossil grains
13390 - 13400	95%: Limestone AA 5%: Sandstone AA
13400 - 13440	95%: Limestone AA 5%: Sandstone AA
13430 - 13530	95%: LS, crm-lt m gry, m xtln, tr oolites & fossil frag, p Ø. 5%-TR: SS clr-wh, subang, v calc, fr, p ind, mod sort 5%-TR: SH blk-gry, occ mica
13530 - 13640	90%: LS crm-wh, lt-m gry, A/A 5%-TR: Anhy wh-lt grn, soft 5%-TR: SS clr-grn mot, vf-fg, p sort TR Sltst rd brn
13640 - 13650	45%: LS A/A 35%: SS clr-grn-wh, vf-fg, mod ind. 20%: Anhy A/A TR Sltst A/A

DEPTH	SAMPLE DESCRIPTIONS (Continued)
13650 - 13780	50-90%: LS crm-lt gry, m xtlr, sl argil, tr fossil frag. 50%-TR: SS clr, m-cg, ang-subang, p sort, uncon. 10%-TR: Anhy 10%-TR: SH blk-lt gry, tr lt grn
13780 - 13790	80% SS A/A 10%: LS A/A 5-10%: SH blk dk gry, slty, sl mica
13790 - 13890	60-80%: LS A/A 0-20%: SS clr A/A 20-40%: SH lt-dk gry, tr lt grn, waxy 0-20%: Sltst rd-brn, org, sndy, tr calc, occ intbd w/Anhy
13890 - 13970	75%: LS milky-m gry, occ soft A/A 10%: SH dk gry A/A 10%: SS clr A/A 5%-TR: Sltst rd brn
13970 - 13980	70%: LS crm-m gry A/A 20%: SH dk gry A/A 10%: SS gry-pink, sl calc-dol, f-mg, w ind-qtzitic, w sort, p Ø
13980 - 14030	50-70%: SS qtzitic, clr-wh, non-calc, m-cg, p Ø 10-30%: SH m gry, pyr 20%: LS A/A

DEPTH

SAMPLE DESCRIPTIONS (Continued)

Core Description: Core #1

12807' to 12837'6"

12807' to 12807'5"

Sandstone: gy to wh, medium-grained, subangular to subrounded, poorly sorted dominantly silica w tr calcite cement poor to fair porosity, massive to horizontally laminated, common deformed Shale and Siltstone pebbles.

12807'5" to 12810'10"

Sandstone: grey, very fine-grained, very silty and shaley, poorly sorted, subangular, numerous thin Shale partings, poor porosity.

12810'10" to 12812'6"

Shale: black, slightly silty, calcareous, carbonaceous, horizontally laminated w rare burrows, common 1 to 5 mm-thick Siltstone laminae and Shale partings, common plant fragments.

12812'6" to 12817'6"

Shale: black, slightly silty and calcareous, finely laminated, rare burrows, common mm scale silt laminae.

12817'6" to 12818'4"

Siltstone: gray, poorly sorted, shaley, thin mm scale shale partings, no visible porosity.

12818'4" to 12837'6"

Shale: Black, pokerchip, finely laminated, rare burrows, common mm scale silt laminae.