

REFERENCE WELL FOR STRUCTURE
DEARK ENTERPRISES - DEMUTH # 5
 SE NE SW, SEC 2D-T55-R20W, PHILLIPS CO, KS

FORMATION	SAMPLE TOP	ELECTRIC LOG TOP	SUR-SEA POSITION
TOPEKA	3086	3090	- 894
HEERBER	3282	3282	- 1086
TORONTO	3305	3306	- 1110
LANSING	3321	3322	- 1126
BKG	3518	3517	- 1321
ARBUCLE	3601	3604	- 1408
TOTAL DEPTH	3660	3661	- 1465
ANHYDRITE - TOP	1699	1700	+ 496
ANHYDRITE - BASE	1777	1726	+ 470

FORMATION TOPS & STRUCTURAL POSITION

GORE OIL CO.
 WELL: **DEMUTH # 9**
 FIELD: **RAY**
 LOCATION: **2300' FSL 1750' FWL**
 GEO: **22** TRSP: **55** RCE: **20W**
 COUNTY: **PHILLIPS**
 STATE: **KANSAS**

PRODUCTION:
 ELEVATION: 2196
 DATE RECORDED FROM: 2188 KB

MUD ROOM: **MUD/CD/SERVICE MUD**
 OPERATOR: **MAVERICK DRILLING CO RIG # 108**

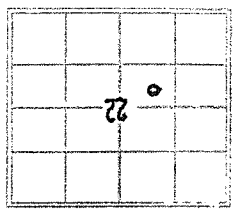
LOGGING RECORDS:
 SERVICE: **8 3/8 @ 262'**
 TOTAL DEPTH: **3660'**
 TOTAL TEST LOG: **3661'**

DEPT. HEADS:
TRILOBITE TESTING INC
PIONEER ENERGY SER
DIL
CNL/CDL
MEL

DATE RECORDED FROM: 2188 KB

CHARLES SCHMALTZ
 CONSULTING GEOLOGIST
 WICHITA, KANSAS

GEOLOGIC REPORT LOG



NO	SIZE	NAME	TYPE	DEPTH OUT	FEET	HOURS
1	12 1/4	RR		262'	262'	2 1/2
2	7 7/8	JZ		3660'	3398'	50 1/2

DEVIATION SURVEYS:
 @ 3317: 0.61 SHORT
 @ 262': 3/4"
 @ 3317: 1/4"
 @ 3660: 1/2"

PIPE STRAPS & DEV. SURVEYS

PIPE STRAPS:
 @ 3317: 0.61 SHORT
 @ 262': 3/4"
 @ 3317: 1/4"
 @ 3660: 1/2"

MUD RECORD

DAILY PENETRATION

NO. DIE: 5-23
 MIRT & SPUD

NO	DIE	DEPTH	ASST	NO	SIZE	FEET	HOURS
3	5-26	3100'	DRLG	8.1	59	6.8	18
4	5-27	3317'	DST #1	9.0	48	7.2	28
5	5-28	3414'	DST #2	8.9	54	6.8	24
6	5-29	3524'	DRLG	8.9	52	NR	15
7	5-30	3610'	DST #5	9.1	54	7.6	23

NO. DIE: 5-30
 3520'
 3414'
 3317'
 3294'
 2024'
 262'










NO. DIE: 5-30
 3520'
 3414'
 3317'
 3294'
 2024'
 262'

DRILL STEM TESTS

LEGEND

Antiferrous
 Gault
 Sandstone
 Shale
 Conch sh
 Limestone
 Coll. Lime
 Chert
 Dolomite

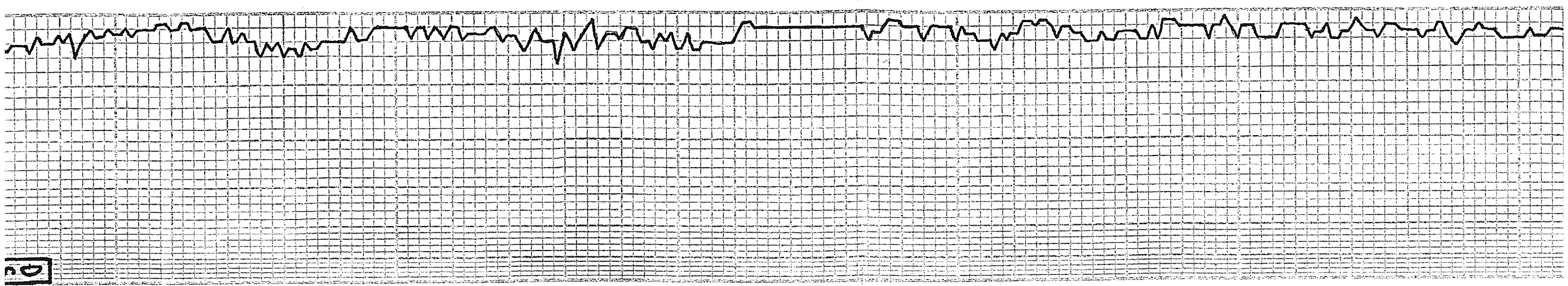
LEGEND

-  Anhydrite
-  Salt
-  Sandstone
-  Shale
-  Carb. sh.
-  Limestone
-  Ool. Lime
-  Chert
-  Dolomite

DRILLING TIME IN MINUTES PER FOOT Rate of Penetration Decreases	DEPTH	LITHOLOGY	SAMPLE DESCRIPTIONS	OR SHOWS	REMARKS
5" 10" 15" 20" 25"	1650	[Anhydrite]			
	60	[Anhydrite]			
	70	[Anhydrite]			
	80	[Anhydrite]			
	90	[Anhydrite]			
	1700	[Anhydrite]			ANHYDRITE - TOP 1699 (+497)
	10	[Anhydrite]			
	20	[Anhydrite]			
	30	[Anhydrite]			
	40	[Anhydrite]			
	1750	[Anhydrite]			ANHYDRITE - BASE 1727 (+469)

DRILLING TIME IN MINUTES PER FOOT Rate of Penetration Decreases	DEPTH	LITHOLOGY	SAMPLE DESCRIPTIONS	OR SHOWS	REMARKS
	2900	[Anhydrite]			
	10	[Anhydrite]			
	20	[Anhydrite]			
	30	[Anhydrite]			
	40	[Anhydrite]			
	2950	[Anhydrite]			
	60	[Anhydrite]			
	10	[Anhydrite]			

D



2950

60

70

80

90

3000

10

20

30

40

3050

60

70

80

90

3100

10

20

30

40

3150

60

70

80

90

3200

10

20

sh: grey, calc; some green, brown

sh: as above; w/ ls: tan, fr-med xthin, foss in part, scat pr ppt & fine vuggy ϕ ; no show

ls: as above; w/ ls: grey, fr-med xthin, sil foss, mottled, no vis ϕ , NS sh: grey, pale green, brown, rust

ls: grey, brown-grey, micro - some med xthin, sil foss, dense, no vis ϕ , NS

ls: as above. dense

sh: grey, dk grey, dolomitic; few clusters ss: dk grey, fr grained calc, shaley, no vis ϕ , NS; w/ ls: tan, grey, fr-med xthin, dense

sh: lt grey, green; w/ ss: wh, lt grey, vfm - fragmented, well-sorted, firm - friable, calc, shaley in part, no vis ϕ , no show

sh & ss: as above

ls: tan, fr-med xthin, scat pr interxthin vuggy ϕ no show

ls: grey, brown, micro - some med xthin, sil foss, dense

sh: grey, dolomitic w/ foss & ls frags; ls: grey, fr-med xthin, sil foss dense

ls: as above; w/ ls: off-wh, tan, fr xthin, sil foss, chalky in part, no vis ϕ , NS sh: lt grey, grey, some calc

ls: tan, brown, fr-med xthin, foss, no vis ϕ , no show; ls: off-wh, fr xthin, sil chalky

sh: lt. grey, grey, w/ ls fragments; w/ sh: brown

ls: tan, fr-med xthin, sil foss, calcitic, chalky in part, scat pr interxthin ϕ no fluv, st, or odor; NSD

ls: as above; no show few pcs grey, calc, sh

ls: off-wh, tan, vfm - fr xthin, no vis ϕ ; w/ considerable Δ ; tan, lt grey, fresh, semi-trans; no show

ls: as above; no vis ϕ ; Δ as above

ls: tan, fr xthin, scat red shale. contact; sh: rust, red, calc in part few pcs grey, fr xthin ls; dolomitic, shaley

ls: tan, fr xthin, considerable inter-bedded rust sh; sh: rust, pale grey

ls: tan, grey, brown, fr-med xthin, no vis ϕ ; no show sh: grey

ls: tan, grey, fr-med xthin, sil foss, calcitic in part; no vis ϕ , no show

PRIDE TO DST #1 PULLED
25 STAND SHOULD TRIP. HIT
BRIDGE W/ TEST TOOL @ 1200.
60 IN W/ BIT, REAM, CRCH.

DST #1
(3234-3317)

PRIOR TO DST #1 PULLED
25' STAND SHORT TRAP HIT
BRIDGE W/ TEST TOOL @ 1200'
60 IN W/ BIT, REAM, CTRH.

DST # 1
(3234 - 3317)
30" - 60" - 30" - 60"
LFP: 1/4" BLOW BLDG TO 1"
FPP: NO BLOW
RECOVERED:
25' MUD w/ OIL SPOTS
HSP: 1587# - 1558#
FPP: 15-20# / 21-25#
SIP: 1100# - 1058#
BHT: 99° F

HEEBNER
3282 (-1086)

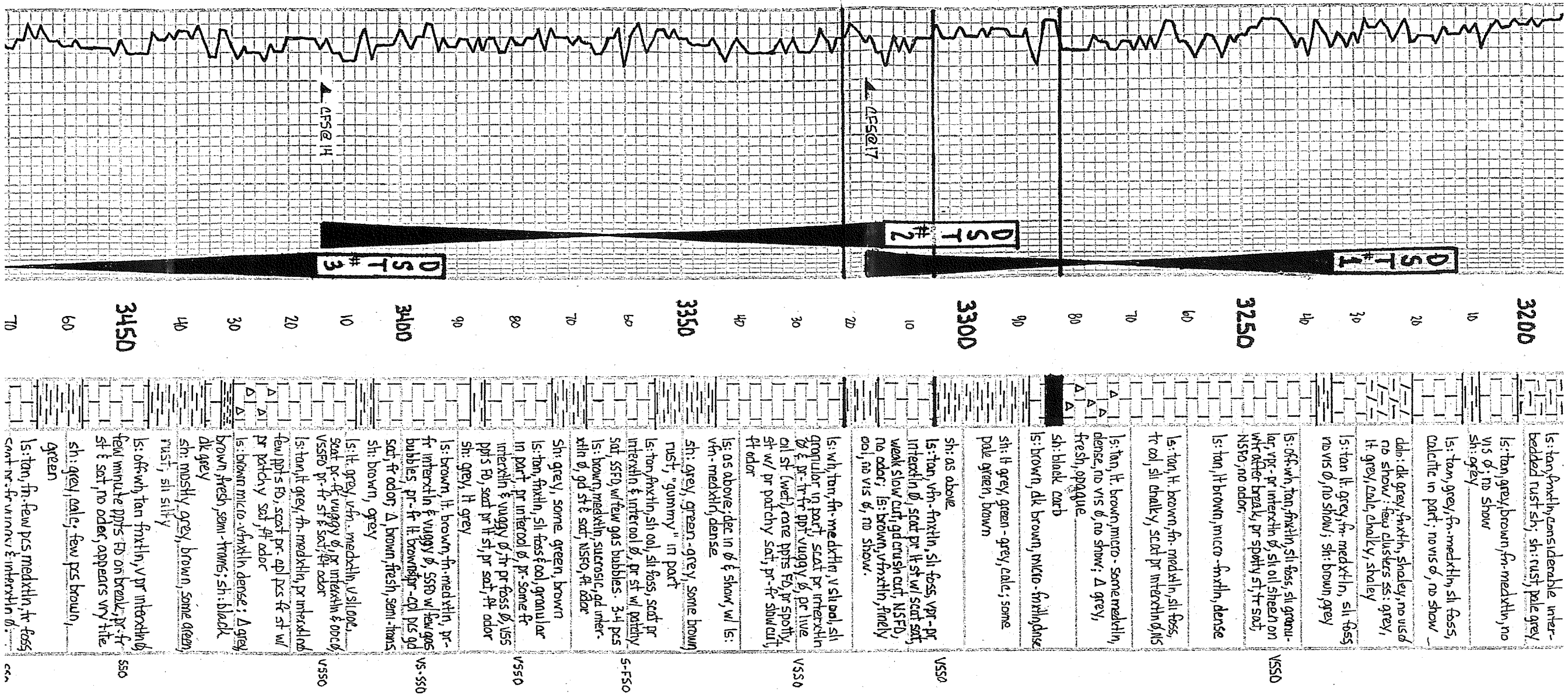
TORONTO
3305 (-1109)

LANSING
3321 (-1125)

HIT BRIDGE @ 1200' G/H W/
DST #2, PULL TEST TOOL, 60
IN W/ BIT (HIT ABRADING) CTRH

DST # 2
(3314 - 3414)
30" - 60" - 60" - 90"
LFP: BDB IN 21"
(SIP: NO BLOW)
FPP: 1508 IN 30"
FSP: NO BLOW
RECOVERED:
5' CD (GR 35°)
156' SMCW w/ OIL SPOTS
(10%/w, 90%/m)
189' MCW w/ OIL SPOTS
(30%/w, 70%/m)
CALL: 30000 PPM SVS: 700 PPM
HSP: 1626 - 1599
FPP: 18-82 / 85 - 176
SIP: 438 - 432
BHT: 101° F

DST # 3
(3415 - 3520)
30" - 60" - 30" - 60"
LFP: 1/8" BLOW DIED IN 9"
LSP: NO BLOW
FPP: NO BLOW
FSP: NO BLOW
RECOVERED:
10' SOCM
(2% G, 11% O, 87% M)
HSP: 1702# - 1641#
FPP: 20-25# / 27-29#



ESIP: ND BLDW
 RECOVERED:
 10' SOCM
 (2% G, 11% O, 87% OM)
 HSP: 1762# - 1641#
 FP: 20'-25' / 27' - 29'
 SIP: 558# - 373#
 BHT: 101' F

BKC
 3518 (-1322)

DST # 4
 (3514 - 3594)
 30" - 60" - 30" - 60"
 IFP: 1/2" BLDW DIED IN 2D"
 FFP: ND BLDW
 RECOVERED:
 20' VS G & DC M
 (2% G, 51% O, 93% OM)
 HSP: 1783# - 1749#
 FP: 20'-26' / 28' - 30'
 SIP: 371# - 238#
 BHT: 100' F

ARBuckle
 3601 (-1405)

DST # 5
 (3588 - 3610)
 30" - 60" - 60" - 90"
 IFP: 2" BLDW TO B08 IN 3D"
 ISIP: ND BLDW
 FFP: 1/2" BLDW TO B08 IN 60"
 ESIP: ND BLDW
 RECOVERED:
 30' GIP
 31' VS G & MCO - 6e 31°
 (2% G, 2% O, 96% OM)
 20' SW & MCO
 (7% W, 8% OM, 85% O)
 43' 50' & WCM
 (15% O, 20% W, 65% OM)
 126' 50' & GCMW
 (5% G, 6% O, 35% M, 54% W)
 CHL: 36DDO PPM SYS: 1300 PPM
 HSP: 1825# - 1797#
 FP: 41' - 57' / 77' - 111'
 SIP: 982# - 1049#
 BHT: 101' F

DEPTH	PHOTOLOGY	SAMPLE DESCRIPTIONS	CP ZONES	REMARKS
3450		ls: off-wh tan frxthin, v pr interxthin few minute pps. FD on break; pr-fr st & sat, no odor, appears very lite	SSO	
60		sh: grey calc; few pcs brown, green		
70		ls: tan, fr-few pcs medxthin, fr-foss scat pr-fr wuggy & interxthin @ SSFO on break, scat pr spotty-fr-st & sat, no odor. small % of spl w show sh: grey	VSSO	
80		ls: off-wh tan, mostly fr-some med xthin, rare ppt FD on break, scat pr- spotty-st & sat, no odor (4.5 pshony)	VSSO	
90		sh: grey, some brown, sil silty, few pcs green, rust		
3500		ls: wh, frxthin,ool w/ pr interxthin @, most calcite filled, few ppt FD on brk, pr-fr st & sat, st odor after break	VSSO	
10		sh: grey ls: lt brown, lt grey, fr-med xthin, no vis @, no show		
20		sh: grey, sil silty; lt grey, sandy, v fr-grained; sh: brown, rust, ss; wh v fr-grained; grey, v fr-grained shaley, no vis @.		
30		sh: grey, lt grey, brown, rust, green silty in part, some calc. few clinkers lt grey siltstone, shaley, sil chalky.		
3550		mostly shale: grey, brown, calc. some grey dolomitic sh; ls: wh, tan, lt grey, wh-frxthin, dense ls: tan, grey, mico - frxthin, no vis @, no show		
60		sh: dk grey, calc → dk grey ls shaley, sh: brown, few pcs silt- stone, lt grey, no vis @ no show		
70		ls: tan, lt grey, micro-frxthin, some wh, ppt sh stain & interbedded rust sh.		
80		sh: grey, brown, some green, calc dolo: mostly, tan, grey, some pink, wh-frxthin, dense, lt pr st, NSFO, scat pcs grey, fr-med xthin, rhombo pr-fr interxthin @, s-F50, pr-fr-st and sat, fr odor. @ CFS - 3594	5-F50	
90		dolo: tan, lt grey, wh-frxthin, tr pr tr pr st in vpr interxthin @ NSFO, med xthin, pr-few ppt interxthin @ P-few DLS F5FO, pr-scatter-st & sat, fr odor	P-F50 3507	
3600		dolo: wh-fr-med xthin, rhombic, in pt v. sandy & glauconitic, pr-some fr interxthin @ pr scat & SF0, pr-fr-st & sat, fr- pr odor @ CFS - 3610	P-F50 CFS @ 3610	
10		dolo: Some as above, show as above fr odor	P-F50	
30		dolo: Some as above, show A.A. fider	P-F50	
3650		dolo: wh, tan, fr-med xthin, sandy glauconitic, pr-fr interxthin @, P-F50, pr-scatter-st, stain, fr odor dolo: wh, tan, fr-med xthin, sandy glauconitic, few pcs w/ SSFO, scat pr-fr-st stain, fr odor dolo: wh, tan, fr-med xthin, pr-fr interxthin @, VSFO in few pcs, scat pr-st, no odor	P-F50 SSO VSSO	
60				
70				
80				
90				
3650				
3660 (-1465)				
RTD 3660 (-1464)				

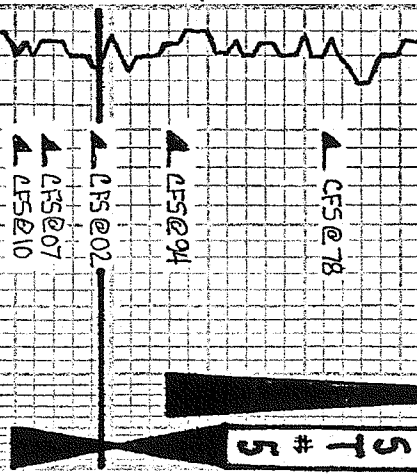
Rate of Penetration Decreases
 DRILLING TIME Minutes/Foot
 5" 10" 15" 20" 25"

FP: 20'-26'/28'-30'
 SIP: 371# - 238#
 BHT: 100° F

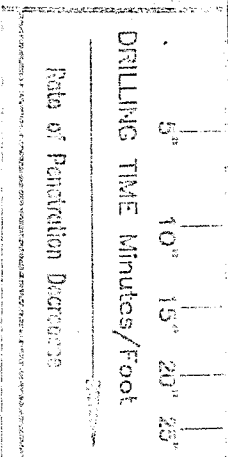
ARBuckle
 3601 (-14105)

DST # 5
 (3588 - 3610)
 30" - 60" - 60" - 90"
 1SP: 2' GLDW TO BOB IN 30"
 1SIP: NO BLDW
 FFP: 1/2" GLDW TO BOB IN 60"
 FSP: NO BLDW
RECOVERED:
 30' GIP
 31' VSG & MCO - 6e 31°
 (2% G, 2% oil 9.6% oil)
 20' SW & MCO
 (7% W, 8% M, 85% oil)
 43' 50' WCM
 (15% oil, 20% W, 65% M)
 126' 50' & GCMW
 (5% G, 6% oil, 35% M, 54% oil W)
 CHL: 36,000 PPM SVS: 1300 PPM
 HSP: 1815# - 1797#
 FP: 41# - 677# - 77# - 111#
 SIP: 982# - 1049#
 BHT: 101° F

DEPTH	LITHOLOGY	SAMPLE DESCRIPTIONS	CL SHOWS	REMARKS
70		ls: tan, lt grey, micro-fxth, some w/ rust sh stain & interbedded rust sh.		
60		sh: grey, brown, some green, calc.	5-FSD	
50		dblo: mostly, tan grey, some blk, wh - fxth, dense, tr pr st, NCFD, scat gas grey, fr-med xth, rhmb, dr-fr interxth @ 5-FSD, pr-fr st and scat, fr odor. @ CFS - 3594	@ CFS 3607	
40		dblo: tan, lt grey, wh - fxth, tr pr fr pr st in vpr interxth @ NCFD, med.	P-FSD	
30		dblo: tan, some, lt grey, fr - scat med xth, pr - few bdr interxth @ P - few DCS FSD, pr - scat tr st & scat, fr odor @ CFS 3610	P-FSD @ CFS 3610	
20		dblo: wh, fr - med xth, rhombic, in pt v. sandy & glauconitic, pr - some fr interxth @ pr - scat fr - FSD, pr - fr st & scat, fr - pr odor @ CFS - 3610	CFS @ 3610	
10		fr odor dblo: some as above, show as above	P-FSD	
3600		dblo: wh, tan, fr - med xth, sandy glauconitic, dr - fr interxth @, P-FSD, pr - scat fr stain, fr odor	P-FSD	
3650		dblo: wh, tan, fr - med xth, sandy glauconitic, few dr w/ sscf, scat dr - fr stain, fr odor	SSO	
3660		dblo: wh, tan, fr - med xth, dr - fr interxth @ VSSFO in few DCS, scat pr st, no odor	VSSO	



LTD 3661 (-1465)
 RTD 3660 (-1464)



DEPTH	LITHOLOGY	SAMPLE DESCRIPTIONS	CL SHOWS	REMARKS
3660				