

GEOLOGICAL REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY Great Plains Energy, Inc.
 LEASE Colleen Ball Trust #1-10
 FIELD Wildcat
 LOCATION 280' FSL + 550' FWL
 SEC 10 TWSP 65 RGE 36W
 COUNTY Thomas STATE Kansas

ELEVATION
 KB 3380
 DF 3378
 GL 3369
 Depths Measured From
 Log KB Drilling KB

CONTRACTOR Murkin Drilling Co Rig # 22
 SPUD 11-18-14 COMP 11-26-14
 SAMPLES SAVED FROM 3700' TO R.T.D.

CASING
 Surface 8 7/8" @ 266
 Production none
 ELECTRIC LOGS
Nabors

FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE	E. LOG	DATUM	A	B	C	D
				-0-	-0-		
Anhydrite		3013	+ 367	+ 384	+ 373		
Base Anhydrite		3033	+ 347	+ 349	+ 337		
Wabawunsee	3802	3804	- 424	- 420	- 426		
Topeka	4034	4035	- 655	- 665	- 671		
Heebner	4180	4183	- 803	- 802	- 811		
Toronto	4212	4215	- 835	- 835	- 845		
Lansing	4230	4233	- 853	- 849	- 861		
Base Kansas City	4483	4486	- 1106	- 1101	- 1113		
Marmaton	4521	4525	- 1145	- 1134	- 1150		
Pawnee	4603	4606	- 1226	- 1121	- 1226		
Cherokee Shale	4693	4696	- 1316	- 1306	- 1319		
Mississippian	4861	4865	- 1485		- 1477		
Total Depth	4963	4967	- 1587	- 1488	- 1505		

REFERENCE WELLS

A G.P.E.: Luckert #1-15, SW-NE-SW Sec. 15-65-36W
 B G.P.E.: James #1-16, 1700' FSL + 450' FEL Sec. 16-65-36W
 C
 D

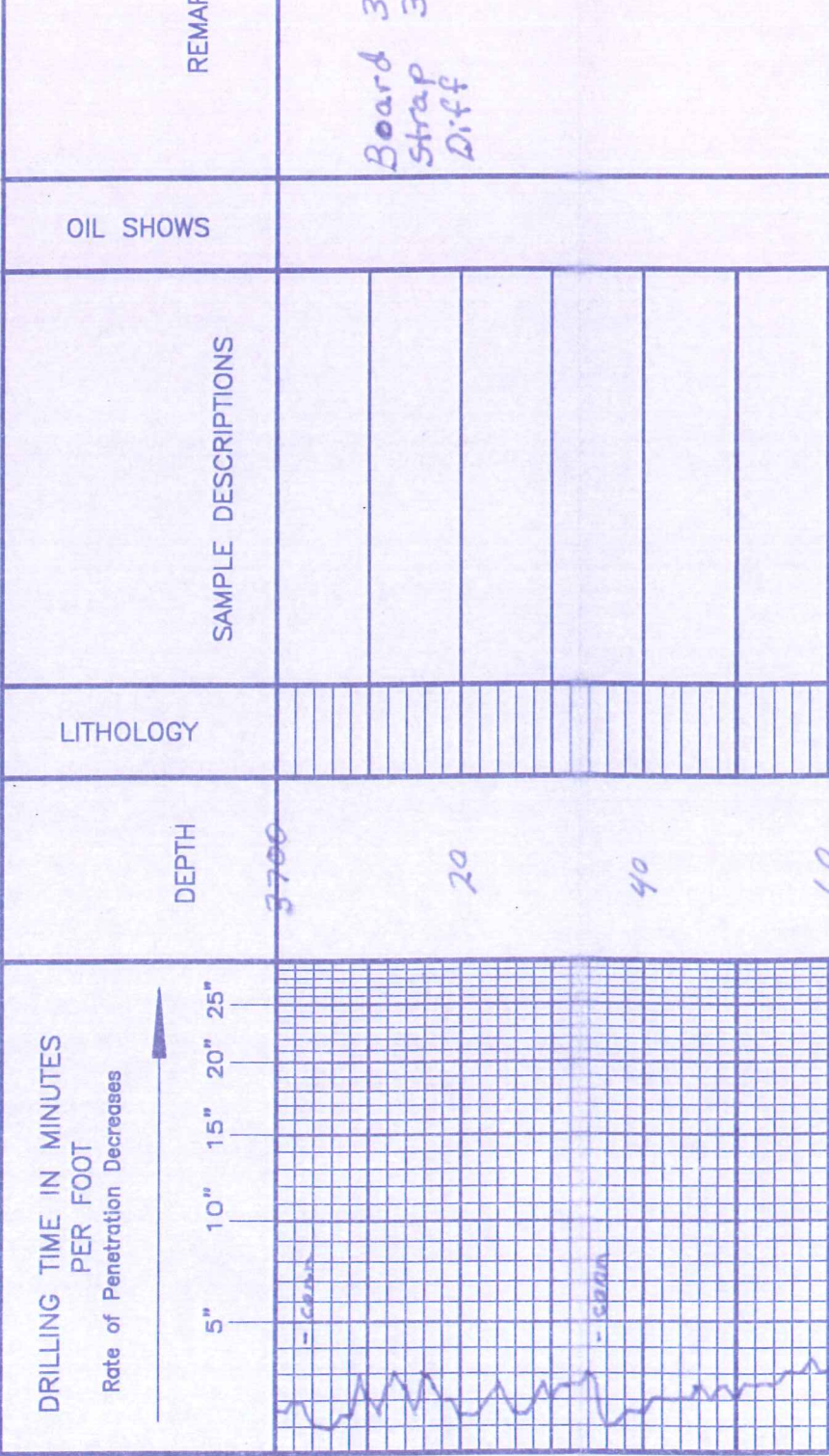
REMARKS

This well ran 4 feet lower to 8 feet higher on the lapsing top than the reference wells. After considering all pertinent information it was decided no further testing was warranted. The well was plugged and abandoned.

Richard B. Ball
11-28-14

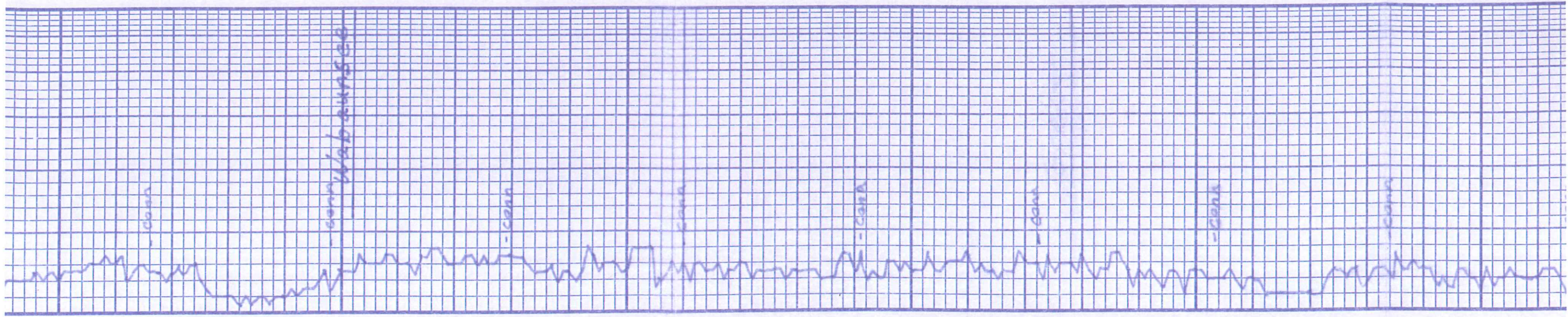
LEGEND

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

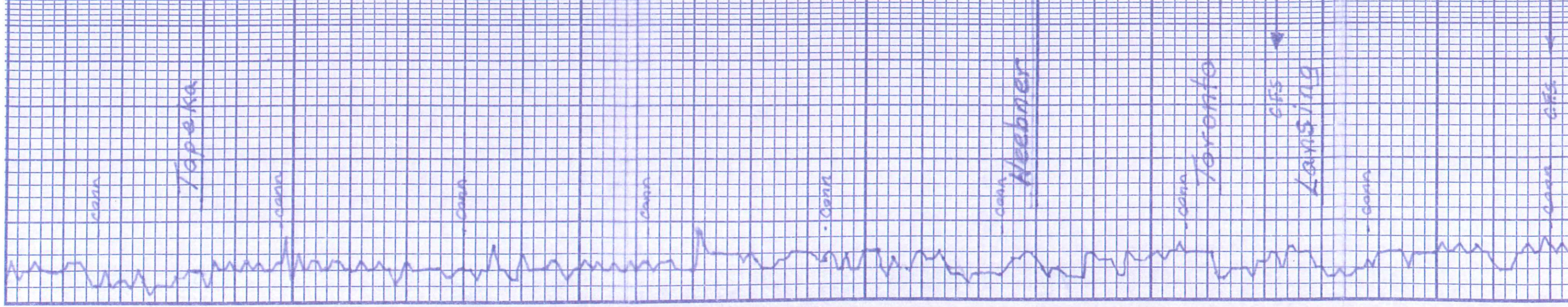


Samples ar
good sampl
until 4700

60 80 3800 20 40 60 80 3900 20 40 60 80 4000

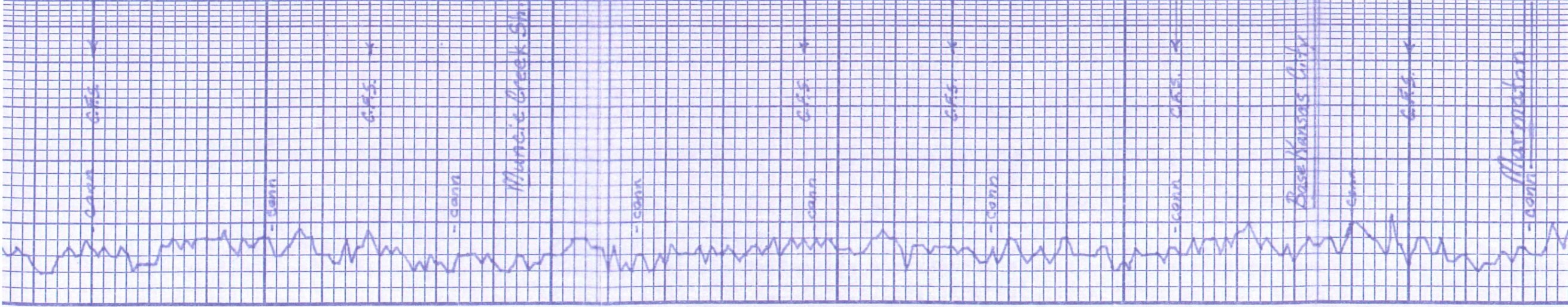


LS: wh-tn slicky-fs/f pr.
ppp N.S.O.
sh: gry + brn
LS: tn-gry fs/f dns
st: stone: brn
LS: brn fkn dns
st: stone: brn
LS: tn-gry fs/f dns
a.e. inor. st: stone: brn
st: stone: brn + gry
LS: tn-gry mtd fs/f dns
LS: tn fs/f dns ht. sptd
ht. cut on crushing
N.E.O. No odor ✓
LS: tn-gry-ye! fs/f dns
LS: tn-fsh sli. oö! dns
N.S.O. No cut ✓
LS: wh-tn slicky-fs/f dns
Tr. ht. sptd 0 stn ht. cut
N.F.O. No odor ✓
LS: wh-tn v. cky-fs/f Tr.
Vgy p Tr. ht. sptd 0 stn
Tr. pp floating F.O. No odor ✓
st: stone: brn
LS: wh-tn cky-fs/f ppp ft.
Sptd 0 stn p.p.f.o. or
Crushing No odor ✓
LS: wh-tn fkn dns
sh: brn, gry, grn
LS: wh-tn-gry slicky-fkn
dns
st: stone: brn + gry
LS: wh-tn cky-fs/f ppp
asph spts 110. No odor
sh: brn + gry ✓
LS: wh-tn cky-fkn dns



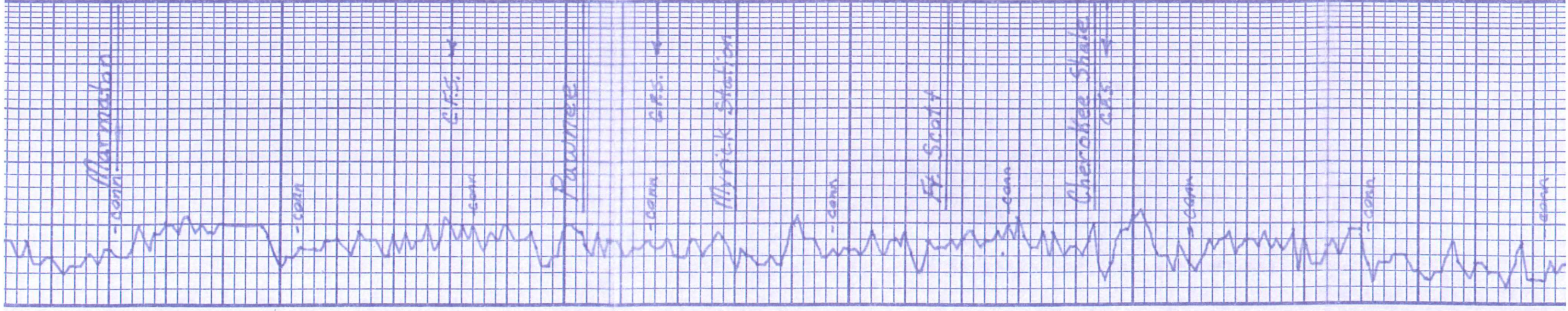
7000		asph spks 1 ft. No odor sh: brn + gry
20		LS: wh-tn cky-fxln dns
		a.a.
		sh: brn
40		LS: wh-tn sli-cky-fxln dns
		"
60		LS: tn fsif dns
		sltstone: brn
80		LS: wh-tn cky-fxln-sli-fsif Tr. pp @ N.S.O.
4100		LS: wh-tn cky-fxln-Tr sli. F.H. Tr. pp @ VRT asph spks K.R.T. sli. spt @ stn V.R.T. pp F.O. on crushing No odor
20		LS: wh-tn-lt. gry-fxln-Tr sli. fsif dns N.S.O.
		LS: aa
40		Sh: blk Carb.
		LS: tn - gry fsif dns
60		LS: wh-tn fxln Tr. Kgyφ N.S.O.
		LS: wh-tn cky-fxln RT oolc N.S.O.
80		Sh: blk Carb.
		LS: tn fsif dns
4200		Sh: blk brn + gr. SS: v-fn. grn. consol. ingrand N.S.O.
		Sh: brn + gry pyrite
20		LS: wh-tn cky-fxln ool- Sub ool pp @ N.S.O.
		Sh: brn + gry
40		LS: wh-tn fxln Tr. ool pp in part φ Tr. thick drk brn O.stn Tr asph stn No odor
		Sh: brn, gry, grn
60		LS: wh-brn-cky-fxln sli ool- Sub ool pp @ sct pcs w/ Thick Tar F.O. Tr. asph stn fr odor

Trilobite 7



Sh: brn, gry, grn
 Ls: wh-tn-cky-fxln sli oel-Sub ool pp p. sct p.c.s w/ Thick Tary F.O. Tr. asph stn fr odor
 Ls: wh-tn-ht. gry sli. cky-fsif pr. pp p. Tr. sptd o stn Tr. pp F.O. on crushing No odor Δ ty tn-gry
 Ls: wh-tn fsif pp p. ht. sptd o stn No odor Tr. pp F.O.
 Ls: wh-tn sli. cky-fxln-sli. ool w/ foss incl. as pp p. ht. sptd o stn V. ht. o set pp F.O. on crushing V. sft. odor
 Ls: pl-tn cky-fxln Tr. sli. oel-Sub. ool pr. pp p. Tr. No odor
 Ls: wh-tn sli. cky-fxln sli. fsif dns A tn-gry Sh: blk carb Ls: tn-gry fsif dns Sh: brn & gry pyrit Shly: a.a
 Ls: wh-tn-gry sli. cky-fsif dns R.T. asph stn N.F.O.
 Sh: gry, brn, grn Ls: tn-ht. gry fxln-Tr. sli. BIF dns N.S.O.
 Ls: wh-tn fxln-sli-fsif pr. pp p. ht. sptd o stn ht. o set floating F.O. No odor Δ gry
 Sh: brn, gry, grn Ls: wh-tn sli. cky-fxln dns Tr. pr. pp p. ht. sptd o stn Tr. asph stn Tr. pptd. on crushing No odor Δ gry
 Sh: brn, gry, grn Ls: wh-tn-gry sli. cky-fxln dns ht. pr. sptd o stn N.F.O. No odor Δ tn Sh: brn Ls: tn fxln-Sub ool w/ foss incl. as dns ht. o set pp F.O. on crushing No odor Sh: gry & brn Ls: wh-tn-gry fxln dns Tr. fsif dns R.T. pr. ht o stn

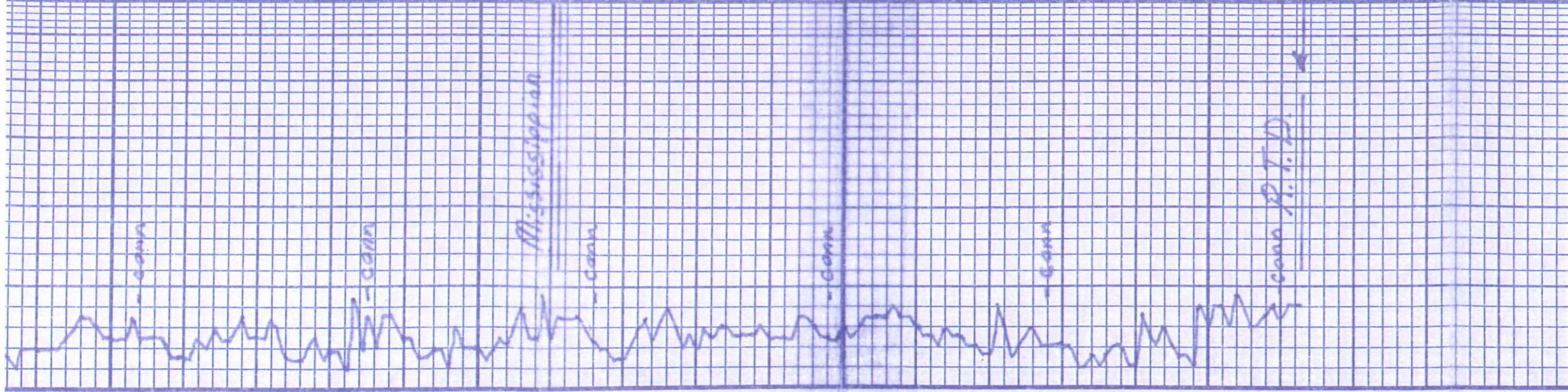
Trilobite 7
 DST #1 42
 30-60-30
 IF: wk blow in
 FF: No blow
 Recovery: 1
 2' F.O.
 13' OCM 20%
 Hyd: 2304-
 FP: 15-20/
 BHP: 1277-
 BH Temp: 125
 Incline @ 43
 DST #2 43
 30-60-30
 IF: 44" blow
 FF: No blow
 Recovery: 5
 Hyd: 2251-
 FP: 33-58/
 BHP: 479-
 BH Temp: 12
 Straddle 7
 DST #4 44
 30-60-30
 IF: B.O.B. in 4
 ISI: V. wk bla
 FF: B.O.B. in
 ISI: No blow
 Recovery: 1
 1' C.O.
 198' OS MW
 882' OS MW 95
 Hyd: 2327-
 FP: 53-323/
 BHP: 1307-
 BH Temp: 13
 Chlorides: 4
 DST #3 44
 30-60-30
 IF: B.O.B. in
 ISI: No blow
 FF: B.O.B. in
 FSI: No blow
 Recovery: 6
 347' OS MW 14



sh: gry + brn	LS: wh-tn-gry fxl n dns Tr. fslf dns R.T. pr. at Osh N.F.O.
sh: brn, gry, grn	
LS: tn fslf dns - Tr. pr. pp & Lt. spid O sh ppfo. ancrushing Tr. Ugy & No odor	
sh: brn, gry + grn	
LS: tn - gry fxl n dns N.S.O.	
LS: tn - gry fxl n dns	
shly: gry, brn, grn	
LS: tn fxl n dns Tr. ht. spid O sh Tr. ppfo. No odor A wh-t. gry	
LS: wh-gry fxl n - sli. fslf dns N.S.O.	
LS: wh-tn - ht. gry sli. cky- fxln dns N.S.O.	
LS: wh-tn - gry sli. cky - fxl pr. pp & N.S.O. Tr. A tn - gry fslf	
sh: blk Carb	
LS: wh-ta fxl n pr. pp & N.S.O.	
LS: tn fxl n dns N.S.O.	
sh: blk Carb	
LS: tn fxl n dns	
LS: tn fxl n dns lot of sh: gry, grn	
LS: tn fxl n dns lot sh: brn, gry, grn	
sh: brn, gry	
R.T. dtz sd sub rnd - ang fracted w/ asph Tr. SS: tn grn consol ingan & pr O sat N.F.O. No odor	
sh: brn, gry, grn	
Rt Tr. dtz Coars unconsol Consol. sub rnd	

30-60-30
 IF: 8.0.B.in
 ISI: No blow
 FF: 8.0.B.in
 FSI: No blow
 Recovery: 6
 347' OSWIM 1
 347' OSWIM 7
 HYD: 2376
 FP: 23-215/
 BHP: 1408-1
 BHTemp: 13
 Chlorides: 30

Poor Sam
 from 4700
 add mud-
 but sample
 very shly



DEPTH	LITHOLOGY
4800	Sh: brn slty
20	Sh: wh-tkcky-fsln dns
40	Sh: brn + gry
60	V. shly samples
80	Tr. SS: md gn unconsl. frosted sub rnd N.S.O. R.T. SS: fn-gp. Consol Cfr-frosted ingran ϕ pct. ϕ str.
9900	V. shly: md gn unconsl. sl: rnd-ang N.S.O. Shly: samples: brn, gry, gn +yel. Tr. SS: fn-gp. Consol ingran ϕ N.S.O.
20	Shly: a.a.
40	R.T. Dol: wh-tkcky-fsln dns mostly Sh: brn, gry, grn +yel
60	Shly: a.a. R.T. Dol: wh-gry fsln dns N.S.O.
80	Sh: a.a. Tr. Dol: a.a. Δ wh
20	V. Shly a.a.
40	R.T. Dol: fsln Tr. Vgy ϕ N.S.O.
60	a.a. lot of pyrite
80	Shly: brn + gry
9900	Tr. Qtz ang coarse unconsl Δ wh
20	Sh: brn, gry, grn Tr. Qtz a.a. inc Δ wh-tkcky
40	R.T. Dol: a.a.

SAMPLE DESCRIPTIONS	OIL SHOWS	REMARK
Sh: brn slty		
Sh: wh-tkcky-fsln dns		
Sh: brn + gry		
V. shly samples		
Tr. SS: md gn unconsl. frosted sub rnd N.S.O. R.T. SS: fn-gp. Consol Cfr-frosted ingran ϕ pct. ϕ str.		
V. shly: md gn unconsl. sl: rnd-ang N.S.O. Shly: samples: brn, gry, gn +yel. Tr. SS: fn-gp. Consol ingran ϕ N.S.O.		
Shly: a.a.		
R.T. Dol: wh-tkcky-fsln dns mostly Sh: brn, gry, grn +yel		
Shly: a.a. R.T. Dol: wh-gry fsln dns N.S.O.		
Sh: a.a. Tr. Dol: a.a. Δ wh		
V. Shly a.a.		
R.T. Dol: fsln Tr. Vgy ϕ N.S.O.		
a.a. lot of pyrite		
Shly: brn + gry		
Tr. Qtz ang coarse unconsl Δ wh		
Sh: brn, gry, grn Tr. Qtz a.a. inc Δ wh-tkcky		
R.T. Dol: a.a.		

DRILLING TIME Minutes/Foot
 Rate of Penetration Decreases

CONTRACTOR _____ LOCATION _____
 LEASE _____ SEC. _____ TWP _____ RNG _____
 ELEVATION _____ RTD _____ COUNTY _____ STATE _____