

A.P.T. # 15-109-20997-00-00

GEOLOGICAL REPORT
DRILLING TIME AND SAMPLE LOG

COMPANY Shakespeare Oil Company, Inc
 LEASE Peterson #1-8
 FIELD Stratford West
 LOCATION 1950' E 31 & 1655' F W 1
 SEC 8 TWSP 13S RGE 32W
 COUNTY Logan STATE Kansas

ELEVATION
 KB 2970'
 DF 2968'
 GL 2965'
 Depths Measured Fro
 Log KB Drilling KA

CONTRACTOR W/W Drilling Rig #2
 SPUD 6-20-11 COMP 6-30-11
 SAMPLES SAVED FROM 3700' TO R.T.D.

CASING
 Surface 8 7/8" @ 219'
 Production 5 1/2" @ 46'
 ELECTRIC LOGS
 Weatherford

FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE	E. LOG	DATUM	A	B	C	D
				●	Δ		
Base Anhydrite	2483	2482	+ 488	+ 487	+ 490		
Heebner	3910	3908	- 938	- 942	- 937		
Lansing	3959	3957	- 987	- 989	- 981		
Muncie Creek Sh.	4109	4107	- 1137	- 1128	- 1126		
Stack Shale	4192	4190	- 1220	- 1212	- 1210		
Mushpuckney Sh.	4223	4221	- 1251	- 1248	- 1245		
Base Kansas City	4268	4266	- 1296	- 1292	- 1285		
Pawnee	4387	4385	- 1415	- 1413	- 1411		
Cherokee Shale	4470	4468	- 1498	- 1495	- 1495		
Johnson Zone	4513	4511	- 1541	- 1538	- 1538		
Morrow Sand	4551	4549	- 1579				
Mississippian	4576	4575	- 1605	- 1575	- 1585		
Total Depth	4660	4658	- 1688	- 1636	- 2171		

REFERENCE WELLS

- A. Shakespeare Oil Co. Inc. Campbell #1-8, 850' E 31 & 1400' F W 1 Sec. 8-13S-32
- B. Shakespeare Oil Co. Inc. Campbell #2-B, 2590' E 31 & 1800' F W 1 Sec. 8-13S-32
- C
- D

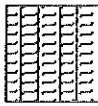
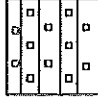


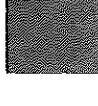
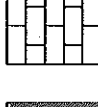
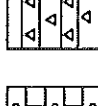
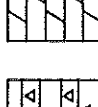
REMARKS

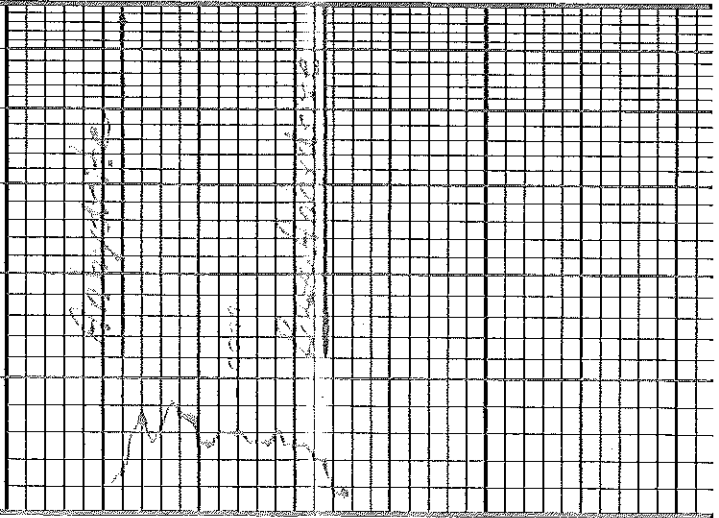

This well can be approximately compared to the reference wells, Fairview No. 5, T. and No. 200 taking down. We noted the cementing of production casing to a level just to the well. The following zones should be tested; 4557'-4569'; 4515'-4517'; 4511'-4513' and 4222'-4232'.

Richard H. Bell
6-30-11

7502

LEGEND

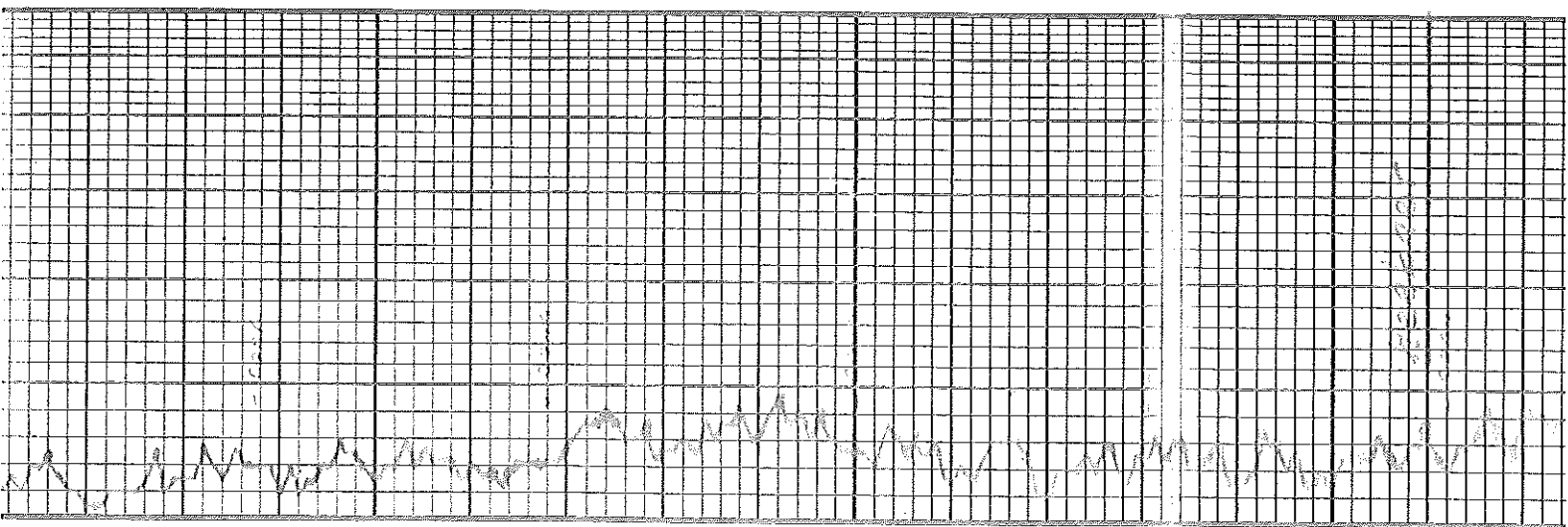
- 
 Anhydrite
- 
 Salt
- 
 Sandstone
- 
 Shale
- 
 Carb sh
- 
 Limestone
- 
 Ool. Lime
- 
 Chert
- 
 Dolomite

DRILLING TIME IN MINUTES PER FOOT Rate of Penetration Decreases	DEPTH	LITHOLOGY	SAMPLE DESCRIPTIONS	OIL SHOWS	REMARKS
	2460 70 80 2410		(Empty)	(Empty)	(Empty)

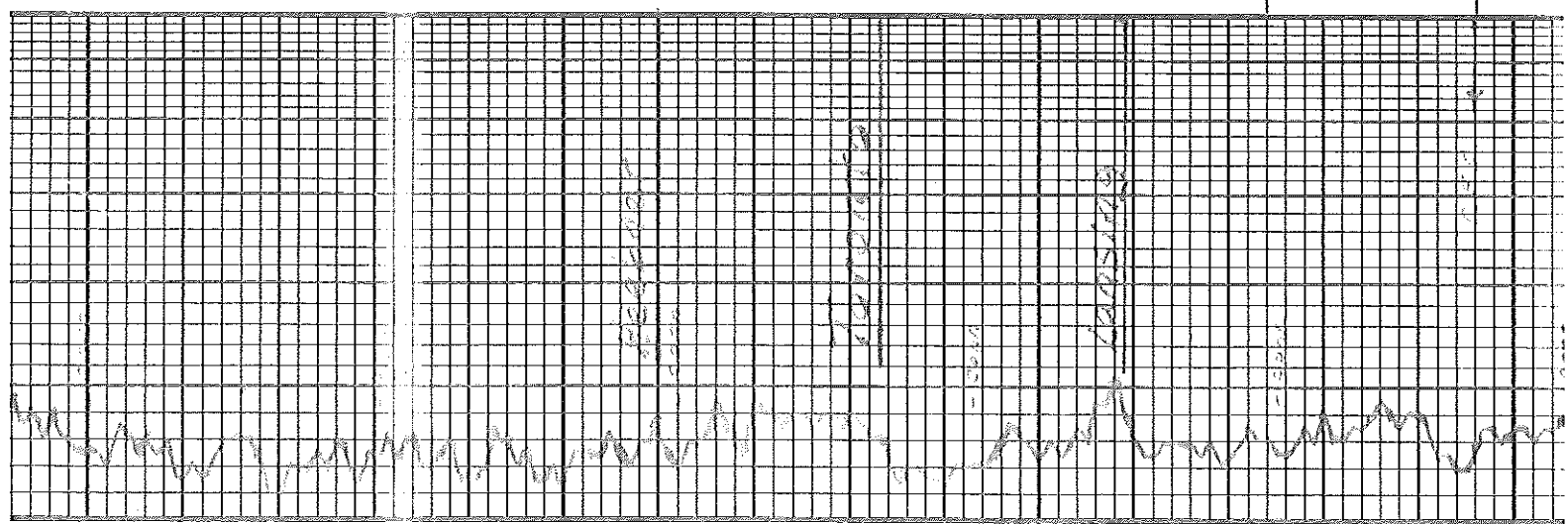
LOG 7710

REMARKS	S	SAMPLE DESCRIPTIONS
Samples are logged good samples		
		L5: wh-to chx-fs 1/4 dms N.S.O.
		L5: wh-to chx-fs 1/4 dms foss. incl. dms N.S.O.
		chx-gry L5: wh-gry fs 1/4 dms
		chx-gry chx-gry





LS: white congl. fahn falyool ppp - 10 20 40 10-20-0.	30
LS: white Tr. clay. fahn sli. oil glass in cl. f. dns Tr. white	3300
LS: m. incr. clay Tr. blk carb. sh.	20
LS: m. gry mild fs/f dns St. stone: gry sh: brn	40
St. stone: gry, sh: brn	60
LS: m. gry fahn dns	80
LS: white sli. clay fahn sli. foss. incl. dns	3900
St. stone: gry	20
LS: m. gry blk dns	40
Tr. blk carb sh.	60
LS: white sli. clay fahn sub. oil dns 10-20-0.	80
LS: m. fahn dns No. 10-20-0. Tr. brn blk aspx 0-5m good cut Tr. sli. gry. fahn f. frag. ppd Tr. blk. f. frag. 0-5m	3900
St. stone: gry	20
LS: white clay fahn ppd blk Tr. blk thick 0-5m	40
LS: white sli. clay - fahn mostly dns	60
Sh: blk carb LS: m. fs/f dns.	80
Sh: brn sli. gry, gry sli.	3900
20	



60	LS: wh-tn clay-feln ds	LS: wh-tn clay-feln ds
30	Tr. blk carb sh.	Tr. blk carb sh.
3900	LS: wh-tn clay-feln ds sub. soil ds NSQ	LS: wh-tn clay-feln ds sub. soil ds NSQ
20	LS: wh-tn clay-feln ds good cut	LS: wh-tn clay-feln ds good cut
40	Tr. blk carb sh.	Tr. blk carb sh.
60	Sh: BIR carb	Sh: BIR carb
80	LS: wh-tn clay-feln ds on crushing No odor	LS: wh-tn clay-feln ds on crushing No odor
80	Sh: blk carb	Sh: blk carb
4000	LS: wh-tn clay-feln ds sub. soil ds NSQ	LS: wh-tn clay-feln ds sub. soil ds NSQ

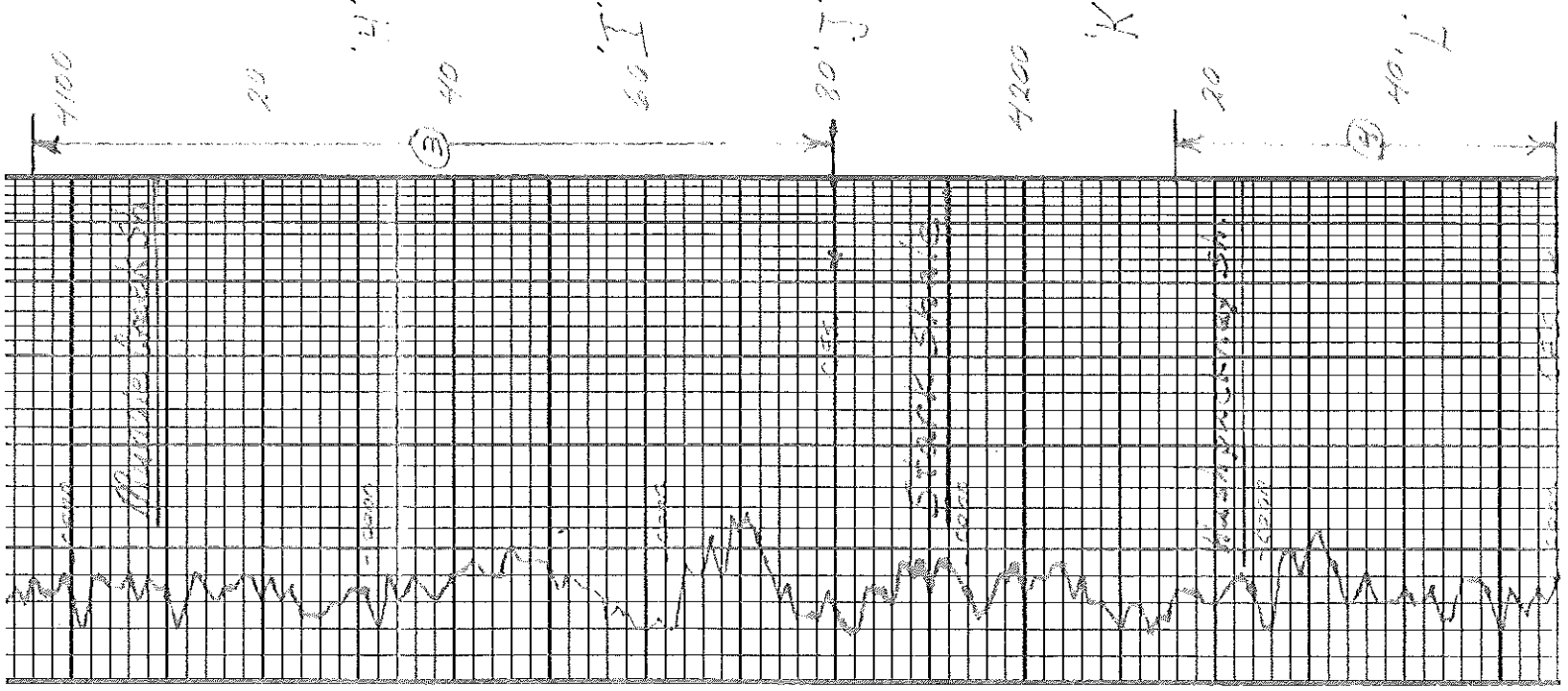
Board 3975.02
 Strap 3974.87
 Diff. 0.15
 Incline @ 3996 = 1/2°
 Trilobite Testing Inc.
 DST # 1 3974-3996'
 30-30-30-30
 FF: Surface blow
 FF: No blow
 Recovery: 10' Total
 1' MO. 80% M, 20% M
 4' MO. 10% M, 90% M
 HMA: 1904-1947
 FP: 13-23 / 25-26



Feln sub soil RT. pppp
 N.S.O. No cont
 15: tan incr. cky Tr. d. wk -
 Lt. gry
 Sh. tan, Tr. blk carb
 15: whit. slicky - feln. sli. oil
 pr. pp. Tr. Lt. O Str
 pp. F.B. on crushing
 No odor
 Sh: brn
 15: whit. fxl. Tr. fxl. oil
 pp. F.B. on crushing
 Shly: brn, gry
 15: whit. cky - fxl. dns
 N.S.O. Tr. d. wk
 15: whit. slicky - fxl. dns
 Sh: brn, gry
 15: tan. fxl. slicky - fxl. dns
 Sh: oik carb.
 15: gry fxl. dns
 A gr. brn, blk
 Sh: blk carb.
 15: whit. - brn fxl. sli. fxl.
 Tr. pp. Tr. d. wk
 RT. pp. F.B. on crushing
 15: tan - gry fxl. dns
 Sh: brn, gry
 15: tan - Lt. gry fxl. N.S.O.
 Sh: blk carb
 N.S.O.
 Sh: brn, gry
 15: whit. - Lt. tan. Tr. d. wk - S. l.

DST# 2 4023-4057
 30-50-30-30
 IF: 11 min. Surface blow
 FF: No blow
 Recovery: 3 Mud
 Hyd: 2031-1965 #
 FP: 14-21 / 24-25 #
 BHP: 824-641 #
 BH Temp: 113°F.

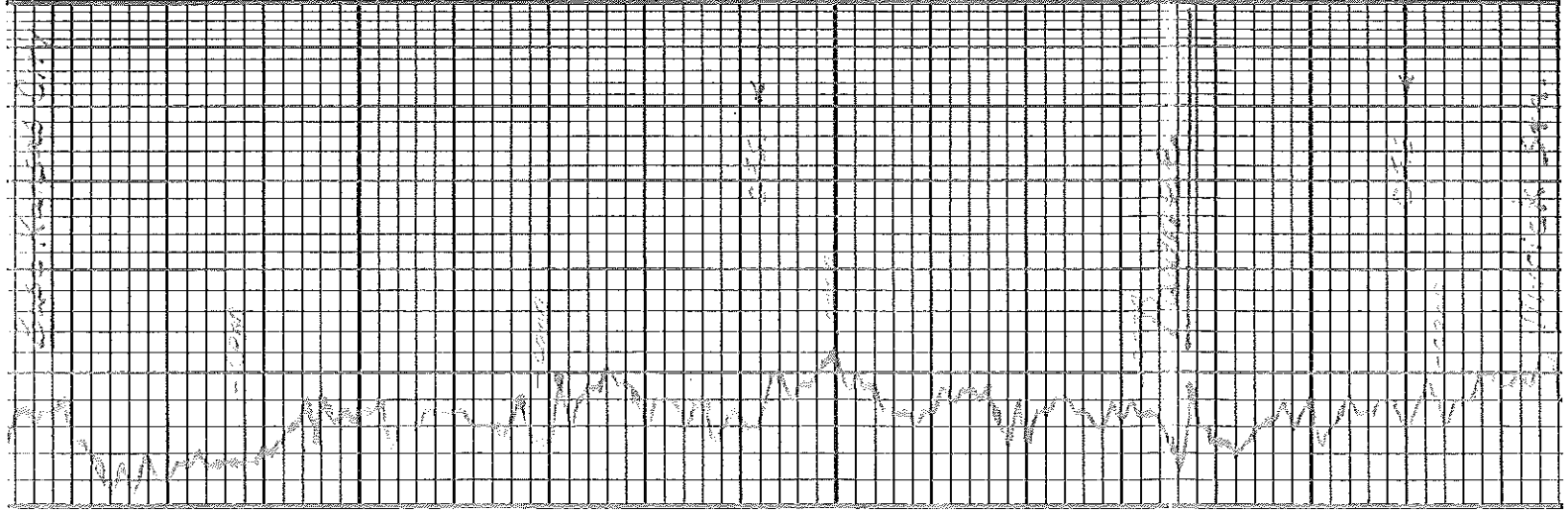
DST# 3 4096-4180
 30-30-45-60
 IF: 16 blow incr. to 6"
 ISI: No blow
 FF: wk blow incr. to 5"
 ISI: No blow
 Recovery: 190 Total
 1' F.O.
 60' Mud 100% M
 129' MW 50% W 50% M
 Hyd: 2103-2016 #
 FP: 53-112 / 117-147 #
 BHP: 1133-1153 #
 BH Temp: 114°F.



Sh: brn, gry LS: wk to silty clay - silty ds	Sh: blk carb.	LS: gry fsln ds Δ gry, brn, blk	Sh: blk carb.	LS: wk to brn fsln - silty fsln Total pp pp @ 14.5% R.T. pp F.B. on bedding	LS: tn - gry fsln ds	Sh: brn, gry	LS: tn - Lt. gry fsln No 113 @ gry - Lt. gry 11.5%	Sh: brn, gry	LS: wk to Lt. gry clay - fsln pp pp @ 14.5% Lt. clay n.p.v.	Sh: blk carb LS: tn - gry fsln ds	Sh: gry fsln	LS: wk to gry fsln to pp pp @ 14.5% fsln	M.F.O. fr. odor	Sh: blk carb LS: tn mtd fsln ds	LS: tn oil pp @ + 1/2% Lt rainbow s.o. pp F.O. on crushing	LS: a mostly ds
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30-30-42-40
IF: wk blow incr. to 6"
ISI: No blow
FF: wk blow incr. to 5"
FSI: No blow
Recovery: 190 Total
1" F.O.
60' MW 100% M
129' MW 50% w/ 50% M
HY: 2103 - 2016 #
FP: 53-112 / 117-147 #
BHP: 1133 - 1153 #
BH Temp: 114 °F

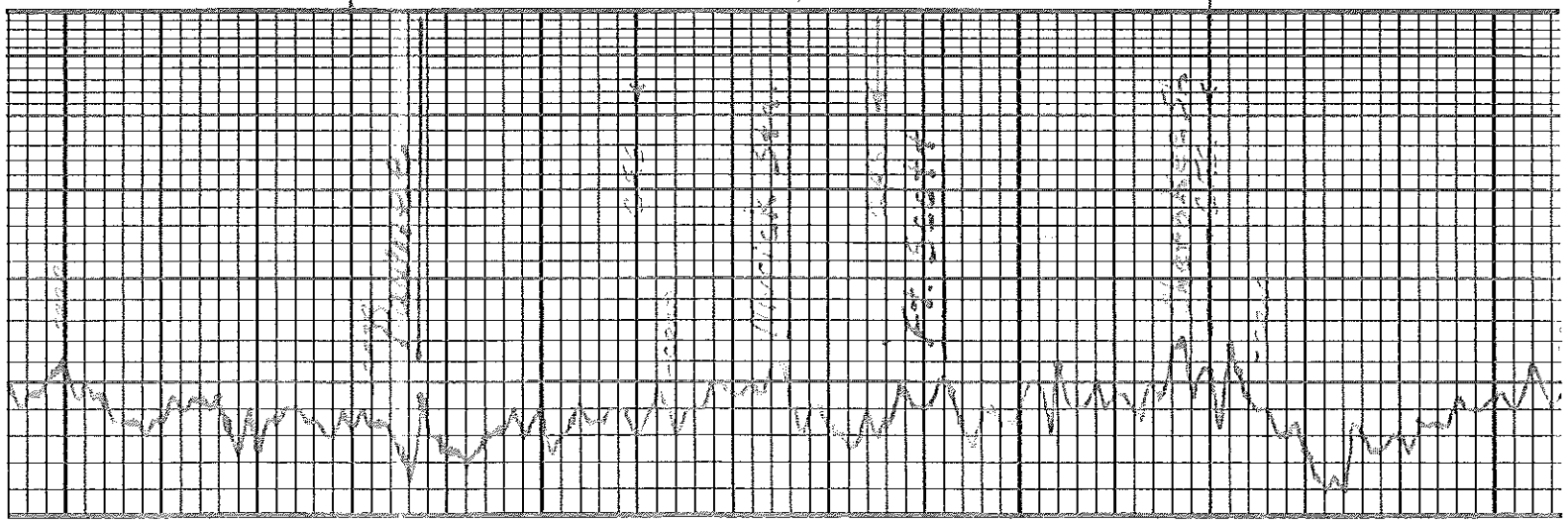
DST # 4 4216 - 4256
30-30-45-60
IF: wk blow incr. to 6"
ISI: No blow
FF: O.B. in 15 min.
FSI: 8 min Surface blow
Recovery: 300 G.I.P.
155' Total Fluid
95' MCO 50% w/ 50% M
60' GOCM 207.2, 2080
HY: 2149 - 2050 #
FP: 17-50 / 51-71 #
BHP: 1216 - 1239 #
BH Temp: 117 °F



LS: wh-gry with fs/dns	85
Shibon, gry	
5 ft stone: gry	
a.a.	
LS: wh-gry - 20' clay-fine sh.	4300
Shibik Carb	
Shibon, gry	20
LS: wh-gry - 20' clay-fine sh.	
H.S.O. - No' CNT	40
Shibon, gry	
LS: wh-gry - 20' clay-fine sh.	
sub 20' det 10' det	30
Sptd 0.5 ft N.F.C.	
LS: wh-gry - 20' clay-fine sh.	
det 10' det 0.5 ft	80
N.F.C. 10' cut	
Shibik Carb	
LS: wh-gry - 20' clay-fine sh.	
det 10' det 0.5 ft	4400
Tree E.O. an. crushing	
Det 10' wh-gry	
LS: a.a.	
Shibik Carb.	
LS: br-gry fs/dns	20

D.S.T. # 5 4380-4400
 30-30-30-30
 IF: 13 min. wk. blow
 FF: No blow
 Recovery: 10' / 11 min
 H/d: 2342-2236 #
 FP: 19-24 / 27-29 #
 BHP: 485-218 #
 B/Temp: 1140F.





Shib. gey	LS: wh-tr. cky-faln Tr. 0.01 Sptd 0.5 in N.F.G.
LS: wh-tr. faln sub 0.01 dns Lt. Sptd 0.5 in N.F.G.	
Shib. Carb.	LS: wh-tr. slicky-faln Tr. 0.01 pp. friable Lt. 0.5 in Tr. 0.01 N.F.G.
LS: aa.	LS: wh-gry
Shib. Carb.	LS: brn-gry f5/f dns Shib. Carb.
LS: wh-tr. cky-faln Tr. 0.01 Rt. Sptd 0.5 in Tr. floating N.O. Tr. odor Δ wh-gry/bn	LS: tr-brn f5/f dns Shib. Carb.
LS: wh-tr. faln Tr. 0.01 Rt. Sptd 0.5 in Tr. 0.01 N.F.G.	LS: wh-tr. faln dns N.S.O. Shib. Carb.
LS: tr-brn f5/f dns Shib. Carb.	LS: wh-gry faln Tr. 0.01 Rt. Sptd 0.5 in Tr. 0.01 N.F.G.
LS: tr-brn f5/f dns Shib. Carb.	LS: tr-brn f5/f dns Shib. Carb.

✓ D.S.T. # 5 4390: 4470
 30-30-30-30
 IF: 13 min. wk. blow
 FF: No blow
 Recovery: 10' 11" 40'
 Hyd: 2342-2234 #
 FP: 19-24/27-29 #
 BHP: 485-218 #
 BHTemp: 114°F.

✓ D.S.T. # 6 4424: 4537
 30-30-45-90
 IF: 1" blow
 ISI: No blow
 FF: 1/2" blow
 FSI: No blow
 Recovery: 75' mud
 51: 5: 0.
 Hyd: 2292-2240 #
 FP: 25-35/42-52 #
 BHP: 1033-1107 #
 BHTemp: 117°F.

	<p style="text-align: center;">DEPTH</p>	<p style="text-align: center;">LITHOLOGY</p>	<p style="text-align: center;">SAMPLE DESCRIPTIONS</p>	<p style="text-align: center;">OIL SHOWS</p>	<p style="text-align: center;">REMARKS</p>
<p> CONTRACTOR <u>W.W. Drilling Rig # 2</u> LEASE <u>Peterson #1-2</u> IP <u> </u> ELEVATION <u>2970' SB</u> RTD <u>4660'</u> </p> <p style="text-align: right;"> LOCATION <u>1950' E 1/4 16.55 FWL SW 1/4</u> SEC <u>8</u> TWP <u>13S</u> RNG <u>37W</u> COUNTY <u>Logan</u> STATE <u>Kansas</u> </p>					