

MORNING DRILLING REPORT

For: H&D Exploration

SOUTHWIND DRILLING, INC.

RIG No. 2

Well Name: Kirkpatrick #1
 Location: 1722' FSL & 330' FEL
 Section: 34-24S-13W
 County: Stafford
 API: 15-185-23885-00-00

Elevation: GL 1923'
 KB 1932'
 Est. TD: 4200'

Rig No. 2 (Pusher Bill Sanders) 620-617-0708
 Rig No. 2 (Dophauser) 620-617-5921
 Southwind Drilling Office 620-564-3800



Surface Casing: Ran 18 joints of used 2 3/8", 8 5/8" casing, Tally @ 757', Set @ 768', used 450 sacks of 80/40 Poz, 3% cc, 2% gel, 1/2# Flo-Seal, cement circulated, by Quality (Ticket #614), plug down @ 1:45 am on 8.20.14.

Plugging Info: Plugged well with 210 sacks of 80/40 Poz, 4% gel, 1st plug @ 4210' w. 50 sacks, 2nd plug @ 810' w/ 50 sacks, 3rd plug @ 240' w/ 40 sacks, 4th plug @ 60' w/ 20 sacks, 30 sacks for Rat hole, 20 sacks for Mouse hole, cemented, by Quality (Ticket #335), job complete @ 10:30 pm on 08.27.14.

Rotary Total Depth: 4258'
 Log Total Depth: 4258'

Geologist: Jim Musgrove

7:00 A.M. Depth: 4258'

7:00 A.M. Current Operation: DRILLING

Spud Date & Time:	08/19/14	08/20/14	08/21/14	08/22/14	08/23/14	08/24/14	08/25/14	08/26/14	08/27/14	08/28/14	Total
8/19/14 @ 12:45pm	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	
Total Depth (7:00am)	0	770	1865	2565	3250	3785	3875	4115	4258	4258	4258
Daily Progress	770	1095	700	695	535	90	240	143	0	0	
Fl. Per Hr.	181.18	85.88	39.44	33.01	25.78	21.18	14.33	15.46	0.00	#DIV/0!	39.89
Current Operation (7:00am)	Rig Up	WOC	Drilling	Drilling	Drilling	Drilling	TIWT	Drilling	Drilling	Tear Down	
Formation	Surface	Red Bed	Lime / Shale	Lime / Shale	Lime / Shale	Lime / Shale	Lime / Shale	Lime / Shale	Simpson Sand		
Fuel Used (34.5 Gall/inch)	207.00	345.00	483.00	448.50	483.00	276.00	345.00	310.50	120.75		3018.75
Survey (degree & depth)	1' @ 770'					1' @ 3840'					
Mud Cost	\$0.00	\$0.00	\$2,214.80	\$3,932.65	\$1,728.45	\$291.25	\$622.10	\$1,387.85	\$0.00		\$10,376.90
Weight (# / Gal)							9.3				
Via (Funnel)							49				
Water Loss (cc)							8.8				
Bit #1											
Bit Make / Type	JZ RT										
Bit Size	12 1/4										
Bit Hours	4.25										4.25
Bit #2											
Bit Make / Type		JZ HA20Q	JZ HA20Q								
Bit Size		7 7/8	7 7/8								
Bit Hours		12.75	0.50								13.25
Bit #3											
Bit Make / Type			Reed R24A	Reed R24A	Reed R24A	Reed R24A					
Bit Size			7 7/8	7 7/8	7 7/8	7 7/8					
Bit Hours			17.25	20.75	20.75	4.25					0.00
Bit #4											
Bit Make / Type							Reed R24 A	Reed R24 A	Reed R24 A		
Bit Size							7 7/8	7 7/8	7 7/8		
Bit Hours							16.75	9.25	0.25		0.00
Bit Cumulative Hours	4.25	12.75	17.75	20.75	26.75	4.25	16.75	9.25	0.25	0.00	106.75
Weight on Bit (WOB)	15,000	15,000	25,000	30,000	30,000	30,000	35,000	35,000	35,000		
RPM	100	80	80	80	80	80	80	80	80		
Pump Pressure	750	850	800	750	850	750	800	800	800		
Drilling (Rotating) Hours	4.25	12.75	17.75	20.75	20.75	4.25	16.75	9.25	0.25	0.00	106.75
Daywork Hrs. (Operator's time)											
Rat Hole (>.75 Hrs)											0.00
Wait on Cement	5.25	6.75									12.00
Trips						10.25	3.00	8.25	3.25		22.75
Circulate					1.00	5.00	0.50	4.00	1.00		11.50
Tool						1.25	0.50	1.00			2.75
Testing						2.00	2.00	2.00			6.00
Clean Floor after DST											0.00
Wait on Orders											0.00
Logging											0.00
Nipple Down / Jol Clear									4.50		4.50
LDDP / LDDC / Plug well											0.00
Run Casing / Circ / Cement	4.00								6.25		6.25
Set Slips											4.00
Wait on Loggers											0.00
Lost Circulation (> 2 hrs)											0.00
Billable Hours	9.25	6.75	9.00	9.00	1.00	18.50	6.00	13.25	15.00	0.00	69.75
Non-Billable Hours (Southwind's time)											
Rig Up / Tear Down	5.25								8.50		13.75
Wait on Cement (NB)											0.00
Drill Rat Hole (<.75 hrs)	0.50										0.50
Drill Plug		0.75									0.75
Circulate / Trip (Surface)	1.50										1.50
Rig Repair											0.25
Connections	2.75	2.25	2.00	1.75	1.50	0.25	0.75	0.50			11.75
Jol/Displace	0.25	1.00	1.00	0.75		0.25		0.25			3.50
Surveys	0.25					0.25			0.25		0.75
Rig Check		0.50	0.50	0.75	0.75	0.50	0.50	0.50	0.25		4.00
Lost Circulation (< 2 hrs)											0.00
Lay Down Kelly / MH & RH											0.00
Bit Trip			2.25								2.25
Circulate (NB)			0.50								0.50
Non-Billable Hrs.	10.50	4.50	6.25	3.25	2.25	1.25	1.25	1.50	6.75	0.00	39.50
Footage Cost	\$ 10,780.00	\$ 15,330.00	\$ 9,800.00	\$ 9,590.00	\$ 7,490.00	\$ 1,260.00	\$ 3,360.00	\$ 2,002.00	\$ -	\$ -	\$ 59,612.00
Daywork Cost	\$ 3,237.50	\$ 2,362.50	\$ -	\$ -	\$ 350.00	\$ 6,475.00	\$ 2,100.00	\$ 4,637.50	\$ 5,250.00	\$ -	\$ 24,412.50
Combined Est. Cost*	\$ 14,017.50	\$ 17,692.50	\$ 9,800.00	\$ 9,590.00	\$ 7,840.00	\$ 7,735.00	\$ 5,460.00	\$ 6,639.50	\$ 5,250.00	\$ -	\$ 84,024.50
*Please note that this is estimated footage & daywork cost only. Additional charges will apply on invoice (fuel surcharge, water transfer pump, etc)											
DST #1 Info -			DST #2 Info -			DST #3 Info -			DST #4 Info -		
Footage Interval: 3815' - 3840'			Footage Interval: 3855' - 3875'			Footage Interval: 4125' - 4170'			Footage Interval:		
Recovery: 15' Mud			Recovery: 10' Mud			Recovery: 20' Mud			Recovery:		
Lansing "X"			"Lower KC"			"Simpson Sand"					

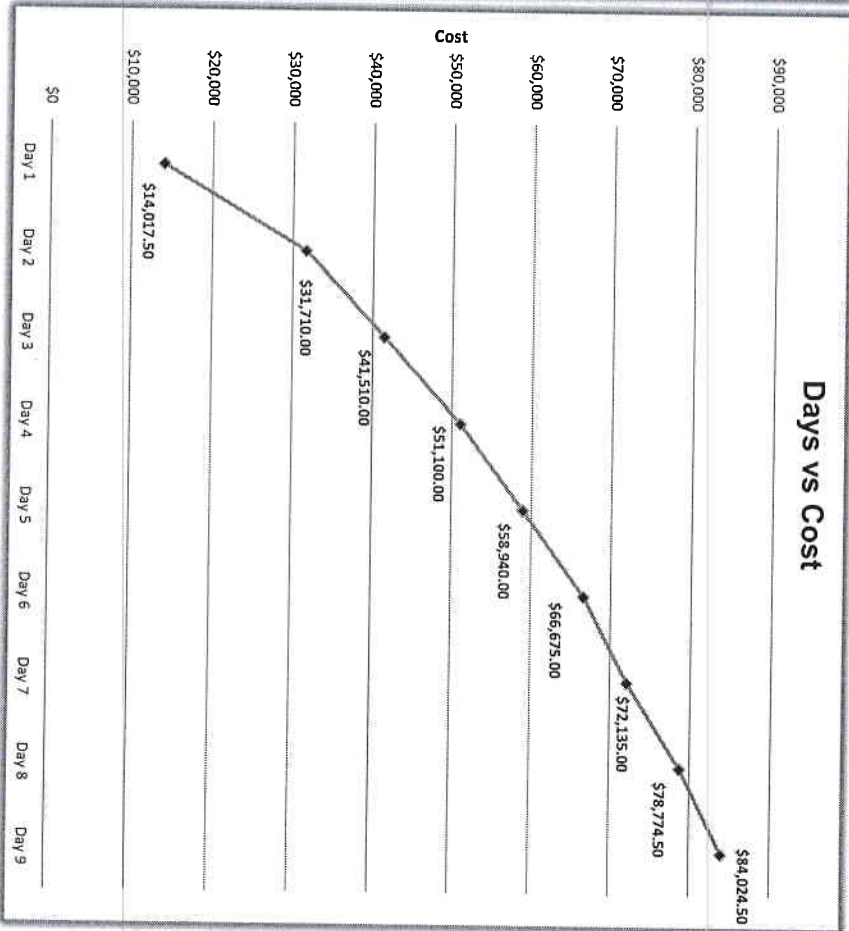
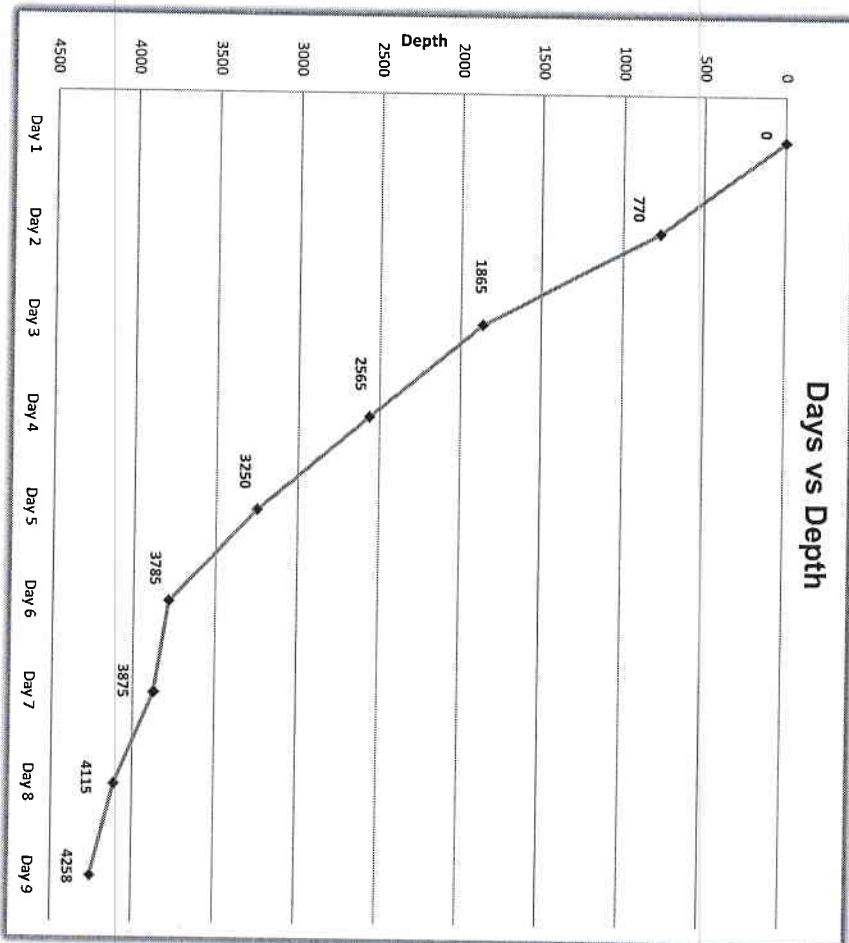
Anhydrite @ 847'

Displaced @



Job Summary Graphical Report

Southwind Rig No. 2
Kirkpatrick #1



QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 336
10.30pm

Date	8-27-14	Sec.	34	Twp.	24	Range	13	County	Stafford	State	KS	On Location	5.30pm	Finish	7.00
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Lease Kirkpatrick Well No. 1 Location 281 + 50 Hwy 35 NE Owner AN Wntc

Contractor South well 2 To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Type Job Plugs Charge To HD Exploration
Hole Size 7 7/8 T.D. 4258
Csg. Pill pipe Depth _____ Street _____
Tbg. Size _____ Depth _____ City _____ State _____

Tool _____ Depth _____ The above was done to satisfaction and supervision of owner agent or contractor.
Cement Left in Csg. _____ Shoe Joint _____ Cement Amount Ordered 210 6/40 40/8 gal
Meas Line _____ Displace 1/4 flo seal

EQUIPMENT

Pumptrk	20	No.	Cementor	<u>2785</u>	Common	<u>126</u>
			Helper		Poz. Mix	<u>84</u>
Bulktrk	15	No.	Driver	<u>Nick</u>	Gel.	<u>7</u>
			Driver		Calcium	
Bulktrk	90	No.	Driver	<u>Ryan</u>	Hulls	
			Driver		Salt	

JOB SERVICES & REMARKS

Remarks: _____
Rat Hole 30 5/16 Flowseal 50#
Mouse Hole 40 5/16 Kol-Seal _____
Centralizers _____ Mud CLR 48 _____
Baskets _____ CFL-117 or CD110 CAF 38 _____
DV or Port Collar _____ Sand _____
Handling 217 _____
Mileage _____

FLOAT EQUIPMENT

2nd	810	50 5/16	Guide Shoe
3rd	240	40 5/16	Centralizer
4th	60	20 5/16	Baskets
			AFU Inserts
			Float Shoe
			Latch Down

Pumptrk Charge plug
Mileage 20

Signature William [unclear]

Tax _____
Discount _____
Total Charge _____



Mudgrove

**PETROLEUM
CORPORATION**
Clafin, Kansas

COMPANY: H&D Exploration LLC

LEASE: Kirkpatrick #1

FIELD: Halley East

LOCATION: N2-Se-Ne-Se (1722' FSL & 330' FEL)

SEC: 34 TWSP: 24s RGE: 13w

COUNTY: Stafford STATE: Kansas

KB: 1932' GL: 1923'

API # 15-185-23885-00-00

CONTRACTOR: Southwind Drilling Company (Rig#2)

Spud: 08/20/2014 Comp: 08/27/2014

RTD: 4258' LTD: 4258'

Mud Up: 2900' Type Mud: Chemical was displaced

Samples Saved From: 3000' to RTD

Drilling Time Kept From: 3000' to RTD

Samples Examined From: 3000' to RTD

Geological Supervision From: 3000' to RTD

Geologist on Well: Josh Austin

Surface Casing: 8 5/8" @768'

Production Casing: none

Electronic Surveys: By Pioneer Energy Services

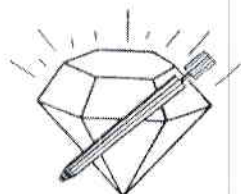
NOTES

On the basis of the negative drill stem test and after reviewing the electric logs, it was recommended by all parties involved that the Kirkpatrick #1 be plugged and abandoned at the rotary total depth 4258'.

H&D Exploration, LLC well comparison sheet

DRILLING WELL	COMPARISON WELL	COMPARISON WELL	COMPARISON WELL
Kirkpatrick 1	Keller 'E' 1 Se-Sw-Ne	C.E. Kirkpatrick #1 Sw-Sw-Se	Halley "A" 1 Sw-Se-Sw

Formation	1932 KB				1932 KB				Structural Relationship		1939 KB				Structural Relationship		1939 KB				Structural Relationship			
	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Anhydrite			803	1129	793	1139	-1139	-10																
Heebner	3447	-1515	3446	-1514	3448	-1516	1	2			3494	-1555	40	41										
Toronto	3461	-1529	3461	-1529	3471	-1539	10	10			3511	-1572	43	43			3461	-1522	7	8				
Douglas	3482	-1550	3478	-1546	3485	-1553	3	7			3532	-1593	43	47										
Brown Lime	3594	-1662	3593	-1661	3597	-1665	3	4			3641	-1702	40	41			3609	-1670	8	9				
Lansing	3617	-1685	3617	-1685	3624	-1692	7	7			3664	-1725	40	40			3633	-1694	9	9				
BKC	3893	-1961	3889	-1957							3946	-2007	46	50			3913	-1974	13	17				
Mississippi	3910	-1978	3909	-1977	3909	-1977	-1	0									4033	-2094	116	117				
Viola	4011	-2079	4009	-2077	4012	-2080	1	3																
Simpson Sand	4153	-2221	4152	-2220	4144	-2212	-9	-8																
Arbuckle	4210	-2278	4208	-2276	4197	-2265	-13	-11									4166	-2227	6	7				
Total Depth	4258	-2326	4258	-2326	4250	-2318					3963	-2024					4227	-2288	10	12				
																	4264	-2325						



DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313
DRILL-STEM TEST TICKET
FILE: STC/Kirkpatrick1dst1

TIME ON: 17:30 8/24/2014

TIME OFF: 23:00 8/24/2014

Company H+D EXPLORATION LLC Lease & Well No. KIRKPATRICK #1
Contractor SOUTHWIND DRILLING RIG #2 Charge to H+D EXPLORATION LLC
Elevation 1932 K.B Formation Lansing "J" Effective Pay _____ Ft. Ticket No. J3277
Date 8/24/14 Sec. 34 Twp. 24 S Range 13 W County STAFFORD State KANSAS
Test Approved By JOSH AUSTIN Diamond Representative JOHN RIEDL

Formation Test No. 1 Interval Tested from 3815 ft. to 3840 ft. Total Depth 3840 ft.
Packer Depth 3810 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
Packer Depth 3815 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.

Depth of Selective Zone Set _____

Top Recorder Depth (Inside) 3818 ft. Recorder Number 30046 Cap. 6000 P.S.I.
Bottom Recorder Depth (Outside) 3837 ft. Recorder Number 13498 Cap. 6000 P.S.I.
Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.

Mud Type CHEMICAL Viscosity 48 Drill Collar Length 0 ft. I.D. 2 1/4 in.
Weight 9.4 Water Loss 10.2 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.
Chlorides 6,300 P.P.M. Drill Pipe Length 3795 ft. I.D. 3 1/2 in.

Jars: Make STERLING Serial Number NOT REQUESTED Test Tool Length 20 ft. Tool Size 3 1/2-4F in.
Did Well Flow? NO Reversed Out NO Anchor Length 25 ft. Size 4 1/2-FH in.
Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: WEAK DEAD 2 MINUTES

2nd Open: NO BLOW; FLUSHED TOOL AND RECEIVED WEAK SURGE

Recovered 15 ft. of DRILLING MUD

Recovered _____ ft. of _____

Recovered _____ ft. of _____

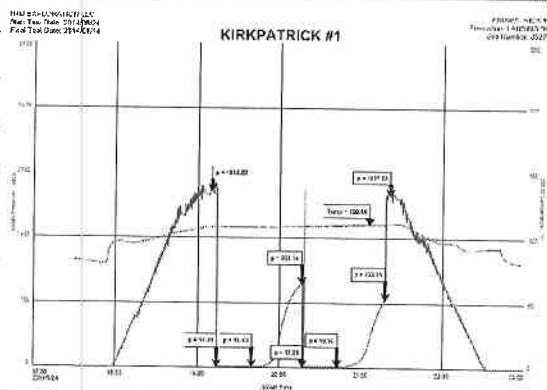
Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Remarks: TOTAL FLUID REC: 15' IN DRILL PIPE

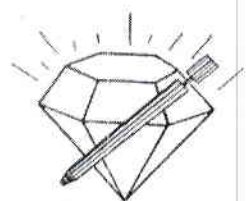
TOOLSAMPLE GRINDOUT: (100% MUD)



Time Set Packer(s) 7:15 P.M. ^{A.M.}/_{P.M.} Time Started Off Bottom 9:15 P.M. ^{A.M.}/_{P.M.} Maximum Temperature 110

Initial Hydrostatic Pressure..... (A) 1905 P.S.I.
 Initial Flow Period..... Minutes 30 (B) 14 P.S.I. to (C) 17 P.S.I.
 Initial Closed In Period..... Minutes 30 (D) 901 P.S.I.
 Final Flow Period..... Minutes 30 (E) 17 P.S.I. to (F) 19 P.S.I.
 Final Closed In Period..... Minutes 30 (G) 733 P.S.I.
 Final Hydrostatic Pressure..... (H) 1858 P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personal of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



DIAMOND TESTING
 P.O. Box 157
HOISINGTON, KANSAS 67544
 (800) 542-7313
DRILL-STEM TEST TICKET
 FILE: STC/Kirkpatrick1dst2

TIME ON: 05:50 8/25/2014
 TIME OFF: 10:30 8/25/2014

Company H+D EXPLORATION LLC Lease & Well No. KIRKPATRICK #1
 Contractor SOUTHWIND DRILLING RIG #2 Charge to H+D EXPLORATION LLC
 Elevation 1932 K.B Formation LANSING "K" Effective Pay _____ Ft. Ticket No. J3278
 Date 8/25/14 Sec. 34 Twp. 24 S Range 13 W County STAFFORD State KANSAS
 Test Approved By JOSH AUSTIN Diamond Representative JOHN RIEDL

Formation Test No. 2 Interval Tested from 3855 ft. to 3875 ft. Total Depth 3875 ft.
 Packer Depth 3850 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
 Packer Depth 3855 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
 Depth of Selective Zone Set _____

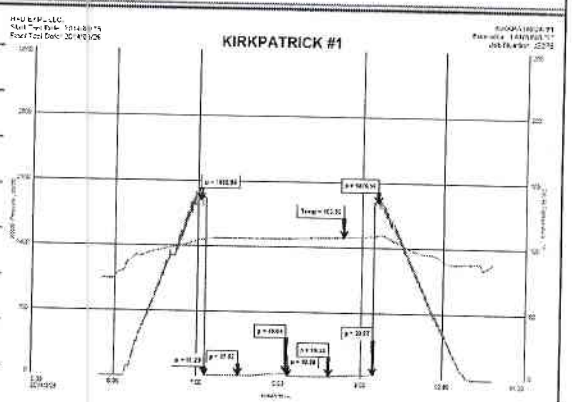
Top Recorder Depth (inside) 3858 ft. Recorder Number 30046 Cap. 6000 P.S.I.
 Bottom Recorder Depth (Outside) 3872 ft. Recorder Number 13498 Cap. 6000 P.S.I.
 Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.

Mud Type CHEMICAL Viscosity 48 Drill Collar Length 0 ft. I.D. 2 1/4 in.
 Weight 9.4 Water Loss 10.2 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.
 Chlorides 6,300 P.P.M. Drill Pipe Length 3835 ft. I.D. 3 1/2 in.
 Jars: Make STERLING Serial Number NOT REQUESTED Test Tool Length 20 ft. Tool Size 3 1/2-IF in.
 Did Well Flow? NO Reversed Out NO Anchor Length 20 ft. Size 4 1/2-FH in.
 Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: VERY WEAK DEAD 10 MIN.
 2nd Open: NO BLOW

Recovered 10 ft. of OIL SPECKED MUD
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____

Remarks: TOTAL FLUID REC: 10' IN DRILL PIPE
TOOLSAMPLE GRINDOUT: (100% MUD)



Time Set Packer(s) 7:00 A.M. A.M. P.M. Time Started Off Bottom 9:00 A.M. A.M. P.M. Maximum Temperature 108

Initial Hydrostatic Pressure..... (A) 1893 P.S.I.

Initial Flow Period..... Minutes 30 (B) 15 P.S.I. to (C) 19 P.S.I.

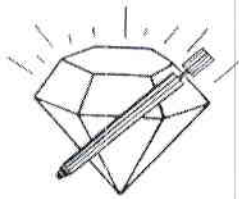
Initial Closed In Period..... Minutes 30 (D) 49 P.S.I.

Final Flow Period..... Minutes 30 (E) 19 P.S.I. to (F) 19 P.S.I.

Final Closed In Period..... Minutes 30 (G) 39 P.S.I.

Final Hydrostatic Pressure..... (H) 1877 P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313
DRILL-STEM TEST TICKET
FILE: STC/Kirkpatrick1dst3

TIME ON: 15:00 8/26/2014
TIME OFF: 21:00 8/26/2014

Company H+D EXPLORATION LLC Lease & Well No. KIRKPATRICK #1

Contractor SOUTHWIND DRILLING RIG #2 Charge to H+D EXPLORATION LLC

Elevation 1932 K.B Formation SIMPSON SAND Effective Pay _____ Ft. Ticket No. J3279

Date 8/26/14 Sec. 34 Twp. 24 S Range 13 W County STAFFORD State KANSAS

Test Approved By JOSH AUSTIN Diamond Representative JOHN RIEDL

Formation Test No. 3 Interval Tested from 4125 ft. to 4170 ft. Total Depth 4170 ft.

Packer Depth 4120 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.

Packer Depth 4125 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.

Depth of Selective Zone Set _____

Top Recorder Depth (Inside) 4128 ft. Recorder Number 30046 Cap. 6000 P.S.I.

Bottom Recorder Depth (Outside) 4167 ft. Recorder Number 13498 Cap. 6000 P.S.I.

Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.

Mud Type CHEMICAL Viscosity 53 Drill Collar Length 0 ft. I.D. 2 1/4 in.

Weight 9.3 Water Loss 10.2 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.

Chlorides 6,500 P.P.M. Drill Pipe Length 4121 ft. I.D. 3 1/2 in.

Jars: Make STERLING Serial Number NOT REQUESTED Test Tool Length 326 ft. Tool Size 3 1/2-IF in.

Did Well Flow? NO Reversed Out NO Anchor Length 20 ft. Size 4 1/2-FH in.

Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: weak "1" " DEAD IN 20 MIN.
2nd Open: NO BLOW FLUSHED TOOL AND PROVED TOOL WASN'T PLUGGED

Recovered 20 ft. of DRILLING MUD

Recovered _____ ft. of _____

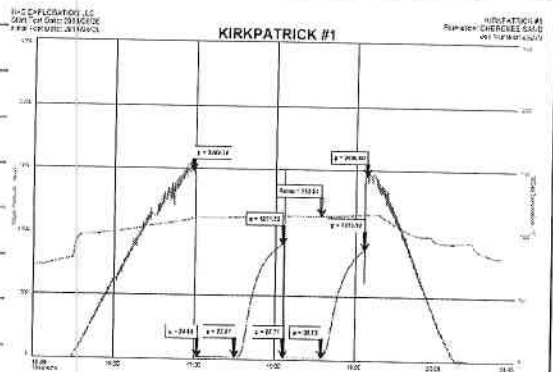
Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Remarks: TOTAL FLUID REC: 20' IN DRILL PIPE
TOOLSAMPLE GRINDOUT: (100% MUD)

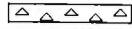











Time Set Packer(s) 5:00 P.M. A.M. P.M. Time Started Off Bottom 7:00 P.M. A.M. P.M. Maximum Temperature 114

Initial Hydrostatic Pressure..... (A) 2083 P.S.I.
 Initial Flow Period..... Minutes 30 (B) 24 P.S.I. to (C) 28 P.S.I.
 Initial Closed In Period..... Minutes 30 (D) 1271 P.S.I.
 Final Flow Period..... Minutes 30 (E) 28 P.S.I. to (F) 30 P.S.I.
 Final Closed In Period..... Minutes 30 (G) 1216 P.S.I.
 Final Hydrostatic Pressure..... (H) 2057 P.S.I.

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ROCK TYPES

 Cht
 Congl
 Dolsec
 Lmst fw7>
 shale, grn
 shale, gry
 Carbon Sh
 shale, red
 Ss
 Silst





ACCESSORIES

MINERAL

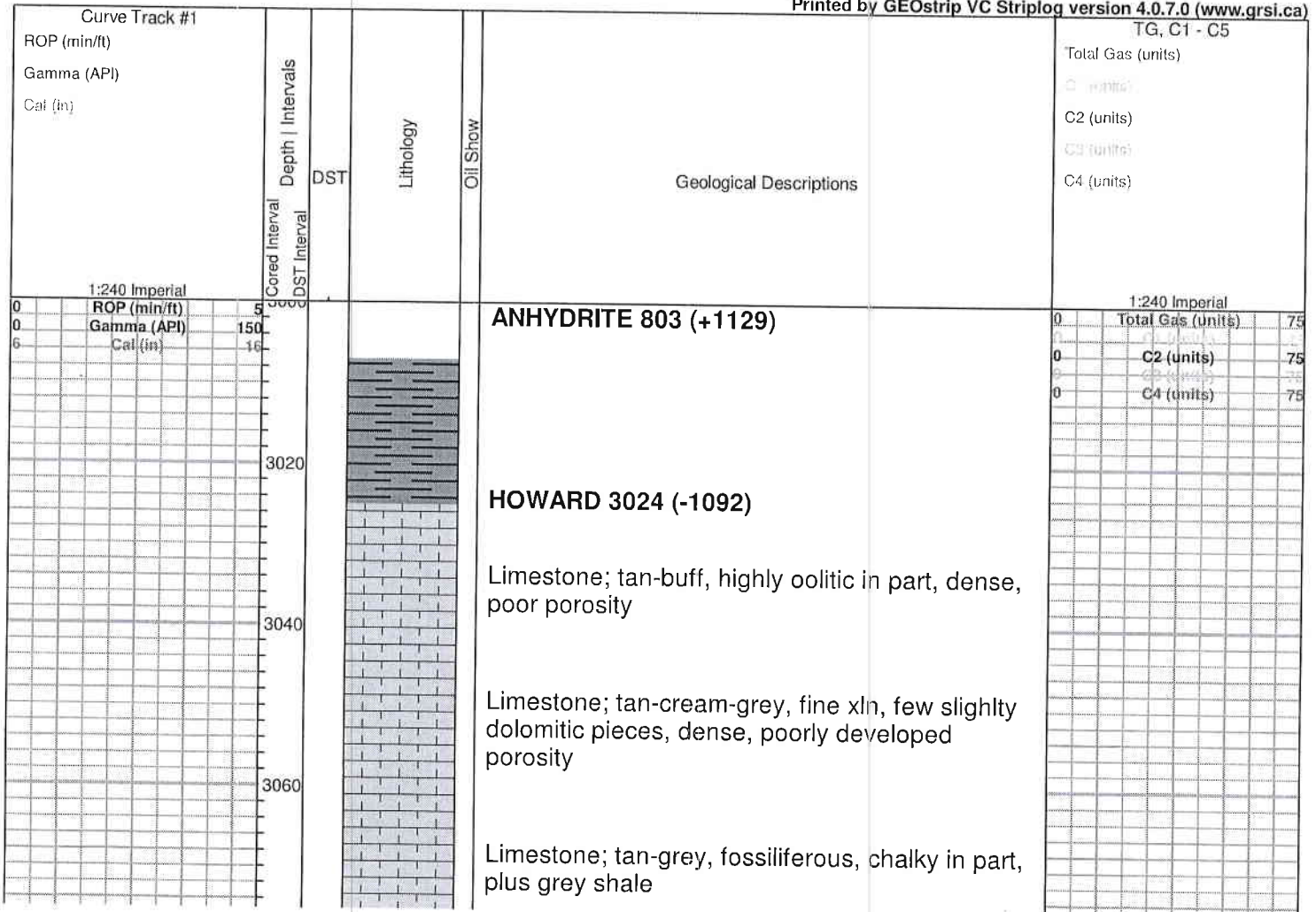
Chert, tripolitic
 Chert White

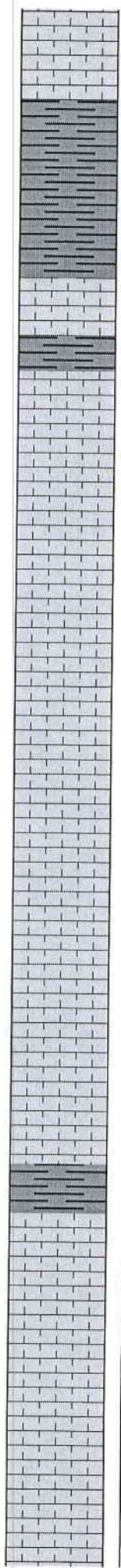
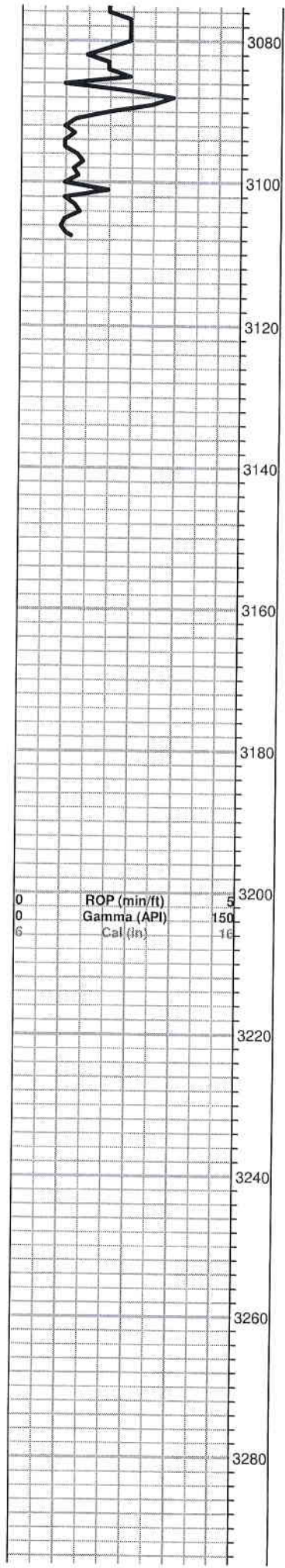
OTHER SYMBOLS

DST

 DST Int
 DST all
 Core
 tail pipe

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)





Limestone; as above

Shale; grey-greish green, micaceous in part, few siltstone pieces, greysis green, micaceous

TOPEKA 3116 (-1184)

Limestone; cream-lt. grey, fine xln, fossiliferous in part, dense, poor visible porosity, no shows

Limestone; tan-cream, finexln, fossiliferous in part, dense, cherty, no shows

Limestone; cream-white, fine-medium xln, slightly dolomitic, few granular pieces, scattered porosity in part, no shows

Limestone; as above

Limestone; cream, fine xln, chalky, granular, fossiliferous, scattered porosity, no shows

Limestone; as above plus white chalk

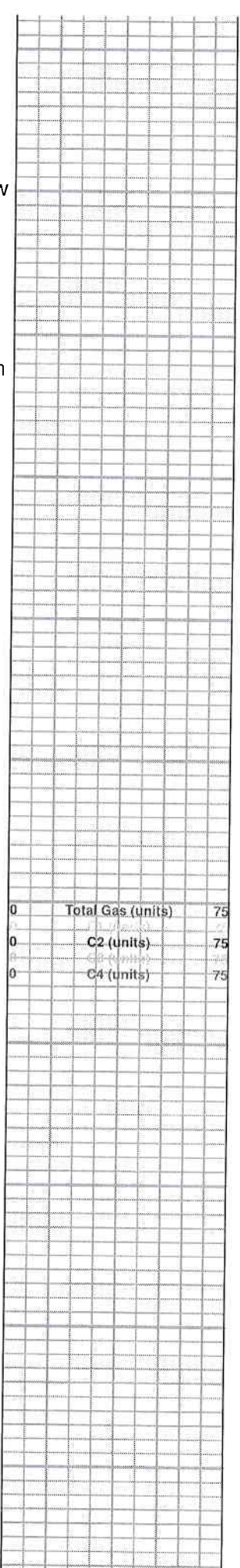
Limestone; cream-buff, fine-medium xln, dense, fossiliferous in part, slightly cherty, poorly developed porosity, plus grey-white Chert

grey-black shale

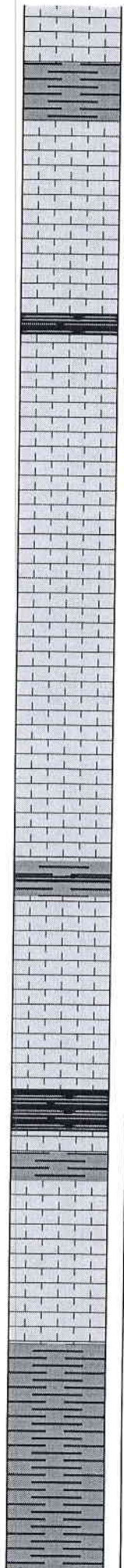
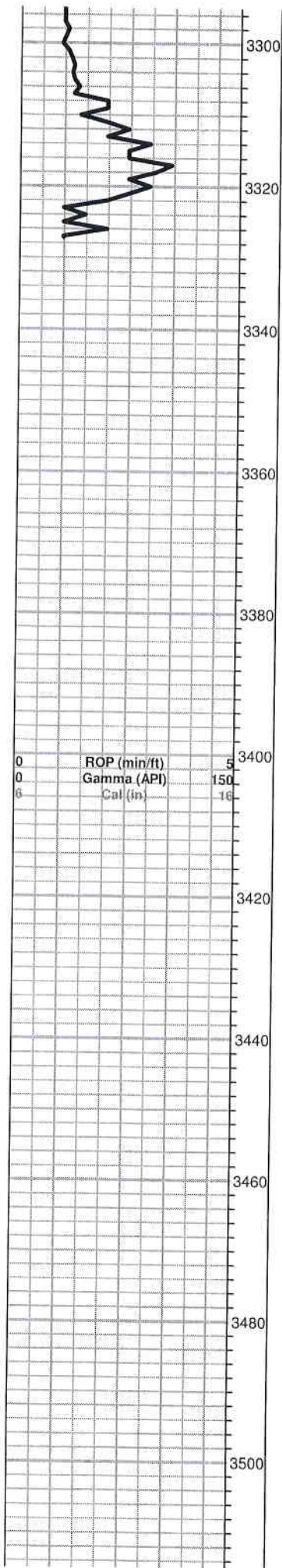
Limestone, cream, fine xln, chalky, dense, few sparry calcite crystals, no shows

Limestone; cream-buff, fine xln, fossiliferous, cherty in part, few granular pieces, plus grey-white-opaque Chert

Limestone; cream, granular in part, fossiliferous,



0	Total Gas (units)	75
0	C2 (units)	75
0	C4 (units)	75



dense

grey shale

Limestone; cream-lt. grey, fine xln, fossiliferous, mottled in part, few inter xln porosity, no shows

Black carboniferous shale

Limestone; grey-tan, fossiliferous, fine-medium xln, dense, poor visible porosity, no shows

Limestone; cream-tan, fossiliferous, dense, chalky in part, plus lt grey Chert

Limestone as above

Limestone; cream, fossiliferous, granular in part, few scattered porosity, no shows

black-grey-green shale

Limestone; cream, fine xln, chalky in part, fossiliferous, poor visible porosity, cherty in part, no shows

HEEBNER 3447 (-1515)

black carboniferous shale

TORONTO 3461 (-1529)

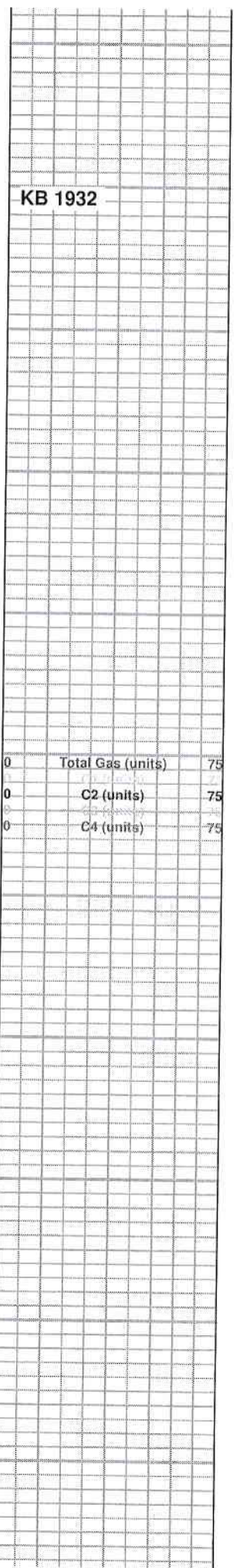
Limestone; cream-lt. grey, fine xln, sparry calcite in part, slightly dolomitic, few scattered porosity, no shows

plus white chalk

DOUGLAS 3482 (-1550)

grey-green-maroon-rusty brown, soft, Shale

Shale; as above, plus siltstone; grey-greyish green. micaceous in part



green, micaceous in part

as above

Sand; grey-greyish green, very fine grained, micaceous, no shows

Shale; grey-dark grey-greyish green, soft, silty in part, few micaceous pieces

Shale as above

BROWN LIME 3594 (-1662)

Limestone; grey-buff, fine xln, dense, cherty

Shale; grey-green-maroon

LANSING 3617 (-1685)

Limestone; tan-cream, fine xln, fossiliferous, poor visible porosity, cherty in part, dense, no shows

Limestone; cream-lt. grey, fine xln, fossiliferous, dense, poor porosity, no shows

Limestone; cream, white, fine xln, chalky, sparry calcite inclusions, poorly developed porosity, when sample broke trace spotty SFO and faint-fair odor

Limestone; lt. grey-cream, granular in part, few scattered vuggy porosity "tight", questionable trace free oil, odor when sample broke

Limestone; buff-grey, fine-medium xln, dense, slightly cherty, poor visible porosity, slightly fossiliferous, questionable trace black staining, NSFO, no odor plus grey boney Chert

Limestone, cream, chalky in part, highly oolitic/fossiliferous, scattered porosity, lt. grey Chert, no shows

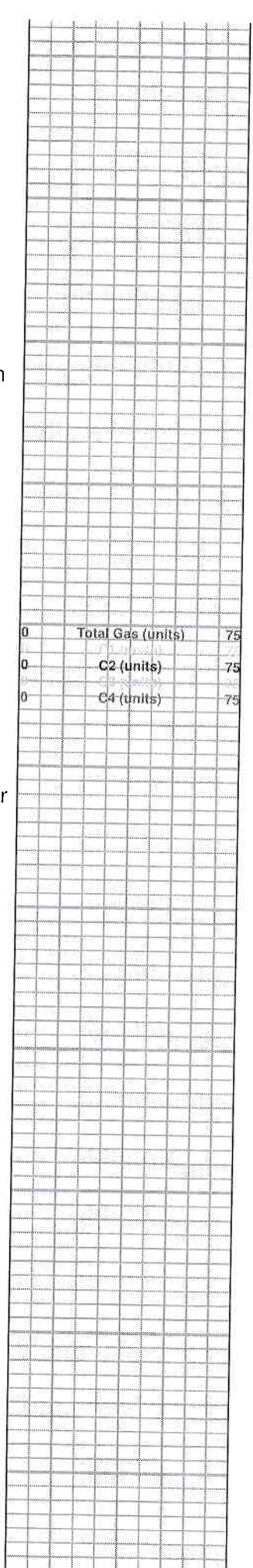
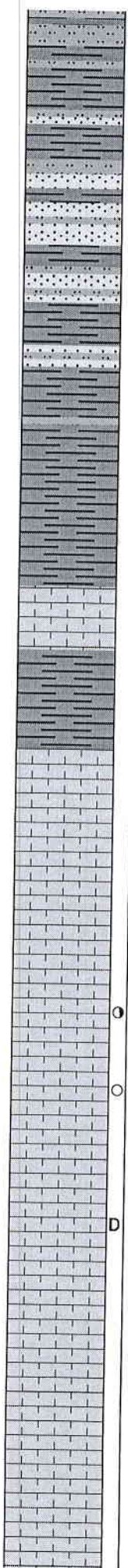
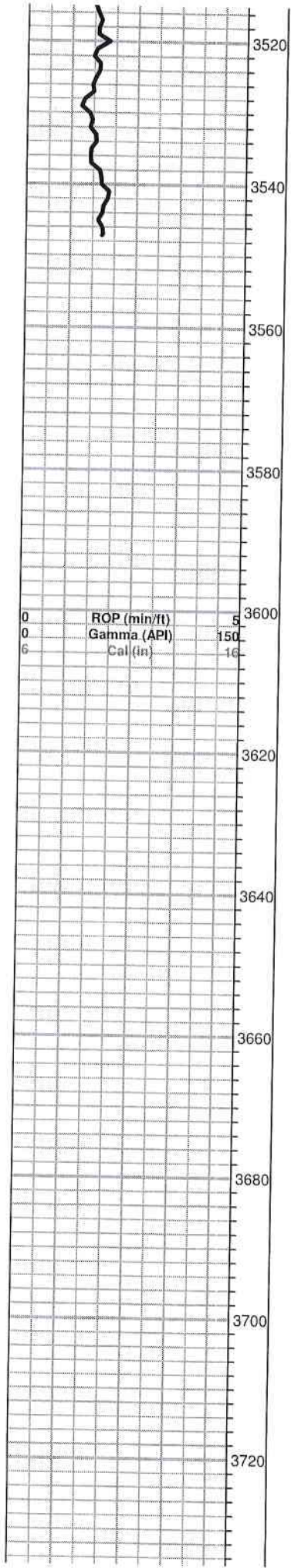
Limestone and Chert as above

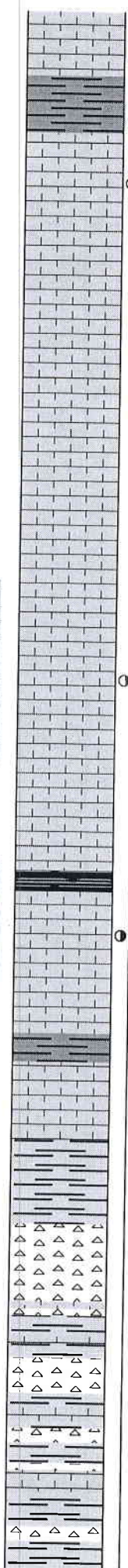
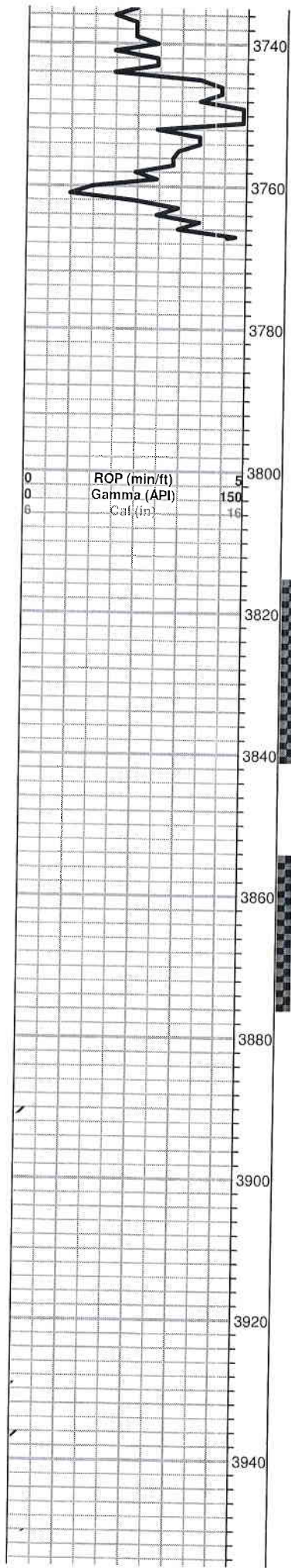
Limestone; cream-grey, fine xln, slightly fossiliferous, chalky in part, dense, poorly developed porosity, plus grey-white tan honey

3520
3540
3560
3580
3600
3620
3640
3660
3680
3700
3720

ROP (min/ft) 5
Gamma (API) 150
Cal (in) 16

Total Gas (units) 75
C2 (units) 75
C4 (units) 75





developed porosity, plus grey-white-tan, boney Chert

grey-black shale

Limestone; cream, oomoldic, chalky, oolitic in part, good oomoldic porosity, grey stain, SFO, faint odor

Limestone; cream-lt. grey, fine xln, highly oolitic in part, dense, poor porosity, no shows

Limestone; as above no shows

Limestone; white-cream, highly oomoldic-oolitic, good oomoldic porosity (Barren)

Limestone; tan-cream, fine xln, oolitic, dense, no shows, plus amber-cream boney Chert

Limestone; cream, fine xln, poorly developed inter xln type porosity, brown stain, spotty SFO, fair odor when sample broke

Limestone; cream, fine xln, dense, cherty poor visible porosity

black shale

Limestone; cream, lt. grey, fine xln, fair inter xln-fossil cast porosity, brown stain, SFO, fair odor

black shale

Limestone; cream-grey, fine xln, chalky in part, dense, poor porosity, cherty in part

BASE KANSAS CITY 3893 (-1961)

grey-green, Shale

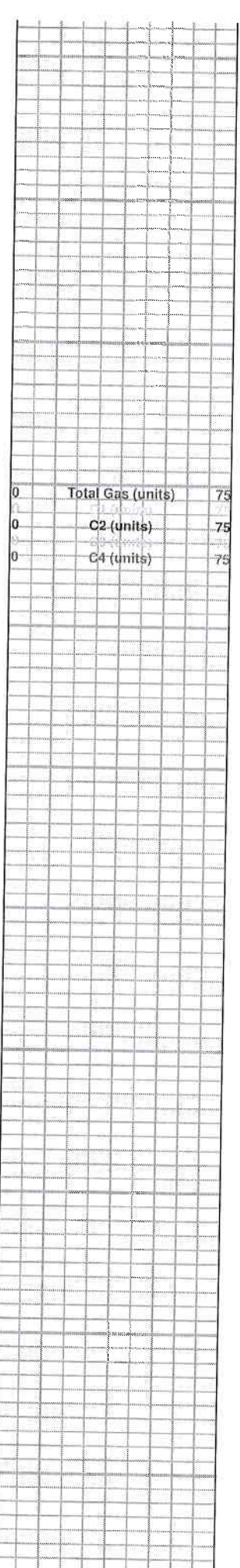
MISSISSIPPI 3910 (-1978)

Chert; white-lt. grey, boney, black, stain, questionable trace spotty free oil, no odor

Chert as above plus Shale; grey-green

Limestone; cream-lime green, chalky in part, slightly cherty, black-brown stain, plus orange-yellow Chert

as above plus Shale; variety of color



CONGLOMERATE 3963 (-2031)

Limestone; cream-white, chalky, FeS2 inclusions, Shale; grey-rusty brown, Chert; cream, weathered in part, brown stain, NSFO, no odor

KINDERHOOK 3986 (-2054)

Shale; grey-green-maroon, silty in part, few fissile pieces

Shale as above slightly dolomitic

VIOLA 4011 (-2079)

Chert; white, cream, boney, semi tripolitic, brown edge staining, NSFO, no odor

as above

Limestone; cream-white, fine xln, dense, cherty, plus white, boney Chert, few black-brown edge staining, NSFO, no odor

Limestone; cream, fine xln, dense, cherty, few dolomitic pieces, plus white-cream Chert, no shows

Limestone and Chert as above

Limestone; grey-cream, fine xln, dense, chalky in part, few scattered porosity, cherty, plus lt. grey-white-cream, boney Chert

Chert; white, tripolitic, boney, no shows

SIMPSON SHALE

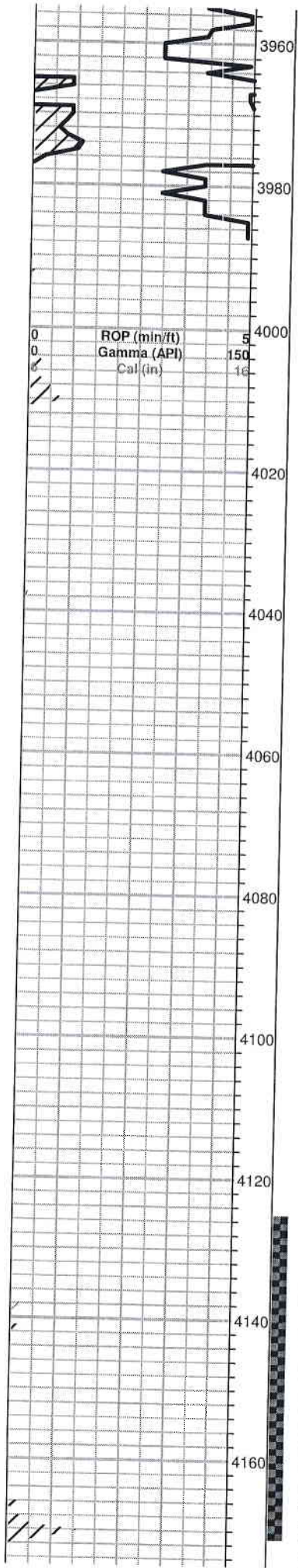
Shale; grey-green, soft, silty in part

Shale as above plus Sand; white, fine-medium grained, glauconitic in part, friable, no shows

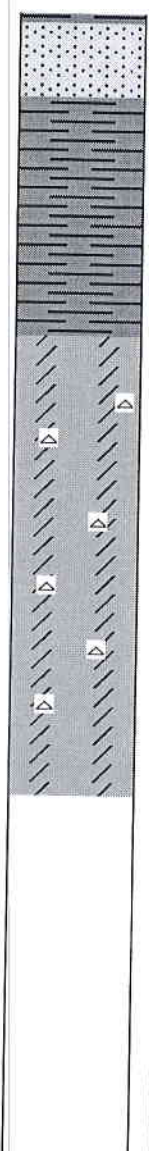
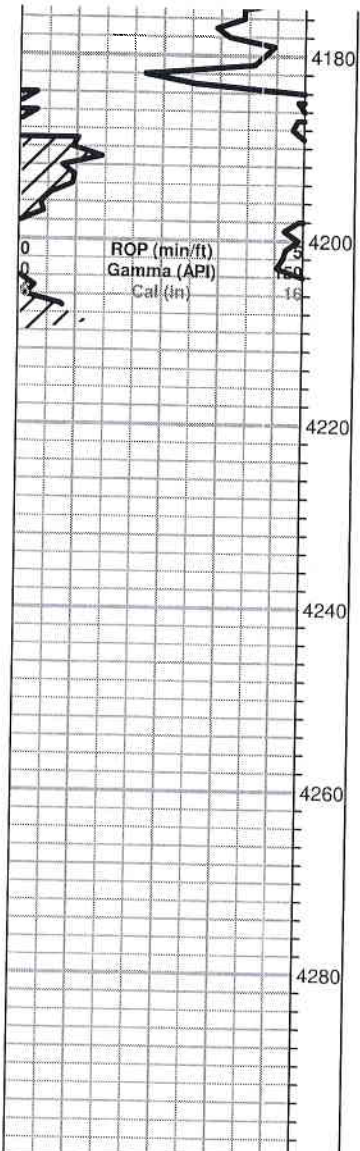
SIMPSON SAND

Sand; grey, clear, medium grained, sub rounded, sub angular, friable, good inter granular porosity, brown stain, SFO, fair-good odor
grey-dark grey shale

Sand; grey-clear, angular, dense, bitite



0	Total Gas (units)	75
0	C2 (units)	75
0	C4 (units)	75



Sand, grey-clear, angular, dense, brittle inclusions, shaley in part, poor-no porosity, no shows, few pieces Quartzite; grey

Sand and Quartzite as above

Shale; grey-dark grey

ARBUCKLE 4210 (-2278)

Dolomite; tan-cream, fine xln, dense, few scattered finely vuggy porosity, no shows plus tan, boney Chert

Dolomite; tan, sandy, highly oolitic in part, fair vuggy porosity, no shows

Dolomite; grey-buff, highly oolitic, dense, scattered vuggy porosity, no shows, plus grey - white Chert

ROTARY TOTAL DEPTH 4258

0	Total Gas (units)	75
0	C2 (units)	75
0	C4 (units)	75