

OPERATOR

Company: OUTLAW WELL SERVICE, LLC
 Address: 1408 WEST 42ND
 HAYS, KS 67601

Contact Geologist: PRESTON WOLF
 Contact Phone Nbr: 785-650-2399
 Well Name: WOLF #1
 Location: NW NE SW NW S8 T11S R24W
 API: 15-195-22950-00-00
 Pool:
 State: KANSAS

Field: TIDBALL EAST
 Country: USA

Scale 1:240 Imperial

Well Name: WOLF #1
 Surface Location: NW NE SW NW S8 T11S R24W
 Bottom Location:
 API: 15-195-22950-00-00
 License Number: 34272
 Spud Date: 5/28/2014 Time: 1:45 PM
 Region: TREGO COUNTY
 Drilling Completed: 6/2/2014 Time: 1:00 AM
 Surface Coordinates: 1400 FNL & 692 FWL
 Bottom Hole Coordinates:
 Ground Elevation: 2317.00ft
 K.B. Elevation: 2322.00ft
 Logged Interval: 3300.00ft To: 4000.00ft
 Total Depth: 4000.00ft
 Formation: LANSING / KANSAS CITY
 Drilling Fluid Type: CHEMICAL / FRESH WATER GEL

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: -100.0153605
 Latitude: 39.1135503
 N/S Co-ord: 1400 FNL
 E/W Co-ord: 692 FWL

LOGGED BY

Company: SOLUTIONS CONSULTING, INC.
 Address: 108 W 35TH
 HAYS, KS 67601

Phone Nbr: (785) 639-1337
 Logged By: GEOLOGIST

Name: STEVE REED / HERB DEINES

CONTRACTOR

Contractor: WW DRILLING, LLC
 Rig #: 6
 Rig Type: MUD ROTARY
 Spud Date: 5/28/2014 Time: 1:45 PM
 TD Date: 6/2/2014 Time: 1:00 AM
 Rig Release: 6/2/2014 Time: 2:00 PM

ELEVATIONS

K.B. Elevation: 2322.00ft Ground Elevation: 2317.00ft
 K.B. to Ground: 5.00ft

NOTES

DUE TO LOW STRUCTURAL POSITION OF THE WOLF #1 COMPARED TO SURROUNDING WELLS, COMBINED WITH LACK OF SIGNIFICANT SHOWS AND CHALKY NATURE OF PRIMARY ZONES LKC "I, J, K". THE DECISION WAS MADE TO PLUG AND ABANDON WELL.

OPEN HOLE LOGGING PROVIDED BY: PIONEER ENERGY SERVICES
 LOGGING WAS ATTEMPTED, BUT TOOL WAS STUCK AT A DEPTH OF 3814 FEET, DECISION
 WAS MADE TO
 ABORT LOGGING OPERATION DUE TO ADDED TIME TO RECONDITION HOLE.

DRILL STEM TESTING PROVIDED BY: TRILOBITE TESTING, INC:
 ONE (1) CONVENTIONAL DRILL STEM TEST WAS PERFORMED, BUT PACKER FAILURE LEAD TO
 MISRUN


FORMATION TOPS SUMMARY AND CHRONOLOGY OF DAILY ACTIVITY

	WELL NAME	COMPARISON WELL	COMPARISON WELL	COMPARISON WELL
	WOLF #1	GARRETT #2	ROSA GARRETT #1	MARY #1-7
	API: 15-195-22950	API: 15-195-21011	API: 15-195-20427	API: 15-195-22901
FORMATION	SAMPLE TOPS	LOG TOPS (DATUM)	LOG TOPS (DATUM)	LOG TOPS (DATUM)
ANHYDRITE	1939' (+383)	+390	NA	+391
TOPEKA	3410' (-1088')	-1079'	NA	-1071'
HEEBNER	3626' (-1304')	-1296'	-1298'	-1289'
TORONTO	3652' (-1330')	NA	NA	-1313'
LKC	3664' (-1342')	-1334'	-1334'	-1328'
BKC	3904' (-1582')	-1567	-1574'	-1562'
MARMATON	3950' (-1628')	NA	NA	-1607'
RTD	4000' (-1678')	-1613'	-1594	-1675'

SUMMARY OF DAILY ACTIVITY

- 5-28-14** R.U., spud @ 1:45pm, 8 5/8" surface casing set at 216' w/150 sxs common, 2% gel, 3% cc, plug down @ 5:45pm, WOC, drill plug @ 1:45am
- 5-29-14** 704', drilling
- 5-30-14** 2560', drilling
- 5-31-14** 3430', drilling, CFS @ 3590, short trip (22 stands), CTCH, CFS @ 3700, CFS @3815, CFS @3835
- 6-1-14** 3845', drilling, CFS @ 3877', mini trip (12 stands), CTCH, TOWB, survey 1°, DST #1 3839 to 3877, mis-run, packer failure, TD 4000 @ 1:00am, CTCH, out for logs
- 6-2-14** logging, log tool stuck in hole, worked 45 minutes to free, decision to end log, prepare to plug, plug down @2:15pm, release rig @ 4:15pm

DST #1 SUMMARY

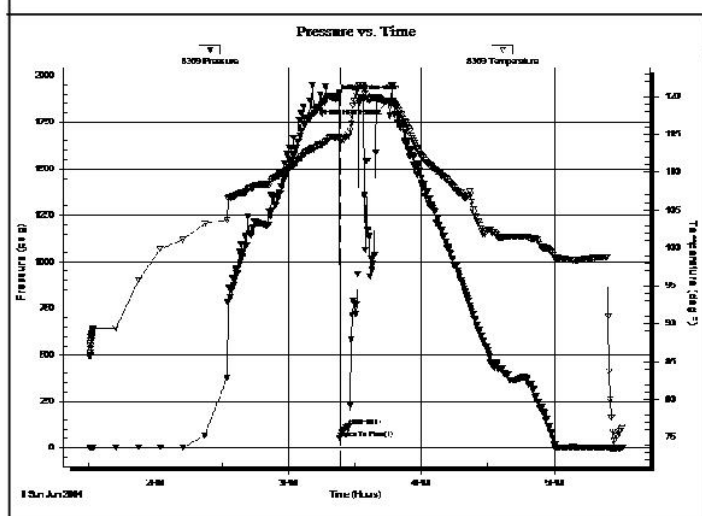
	DRILL STEM TEST REPORT	
	Outlaw Well Services LLC 1408 West 42nd Hays Ks 67601 ATTN: Preston Wolf, Steve	8-11s-24w Trego Wolf #1 Job Ticket: 59305 DST#:1 Test Start: 2014.06.01 @ 13:30:23

GENERAL INFORMATION:

Formation: LKC J-K	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock: ft (KB)	Tester: Ray Schwager
Time Tool Opened: 15:23:18	Unit No: 70
Time Test Ended: 17:30:48	
Interval: 3839.00 ft (KB) To 3877.00 ft (KB) (TVD)	Reference Elevations: 2322.00 ft (KB)
Total Depth: 3877.00 ft (KB) (TVD)	2317.00 ft (CF)
Hole Diameter: 7.87 inches Hole Condition: Fair	KB to GR/CF: 5.00 ft

Serial #: 8369 Inside	Capacity: 8000.00 psig
Press@RunDepth: psig @ 3843.00 ft (KB)	Last Calib.: 2014.06.01
Start Date: 2014.06.01 End Date: 2014.06.01	Time On Btm: 2014.06.01 @ 15:21:18
Start Time: 13:30:23 End Time: 17:30:48	Time Off Btm: 2014.06.01 @ 15:44:48

TEST COMMENT: IFP-w k to strg in 4min , lost packer seat pulled tool



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1875.80	114.59	Initial Hydro-static
2	51.21	114.21	Open To Flow (1)
6	119.83	114.95	Shut-In(1)
24	1862.59	119.32	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
1200.00	Mud	15.74

Gas Rates			
	Chole (inches)	Pressure (psig)	Gas Rate (Mcf/d)

DST #1 PRESSURE VS TIME CHART

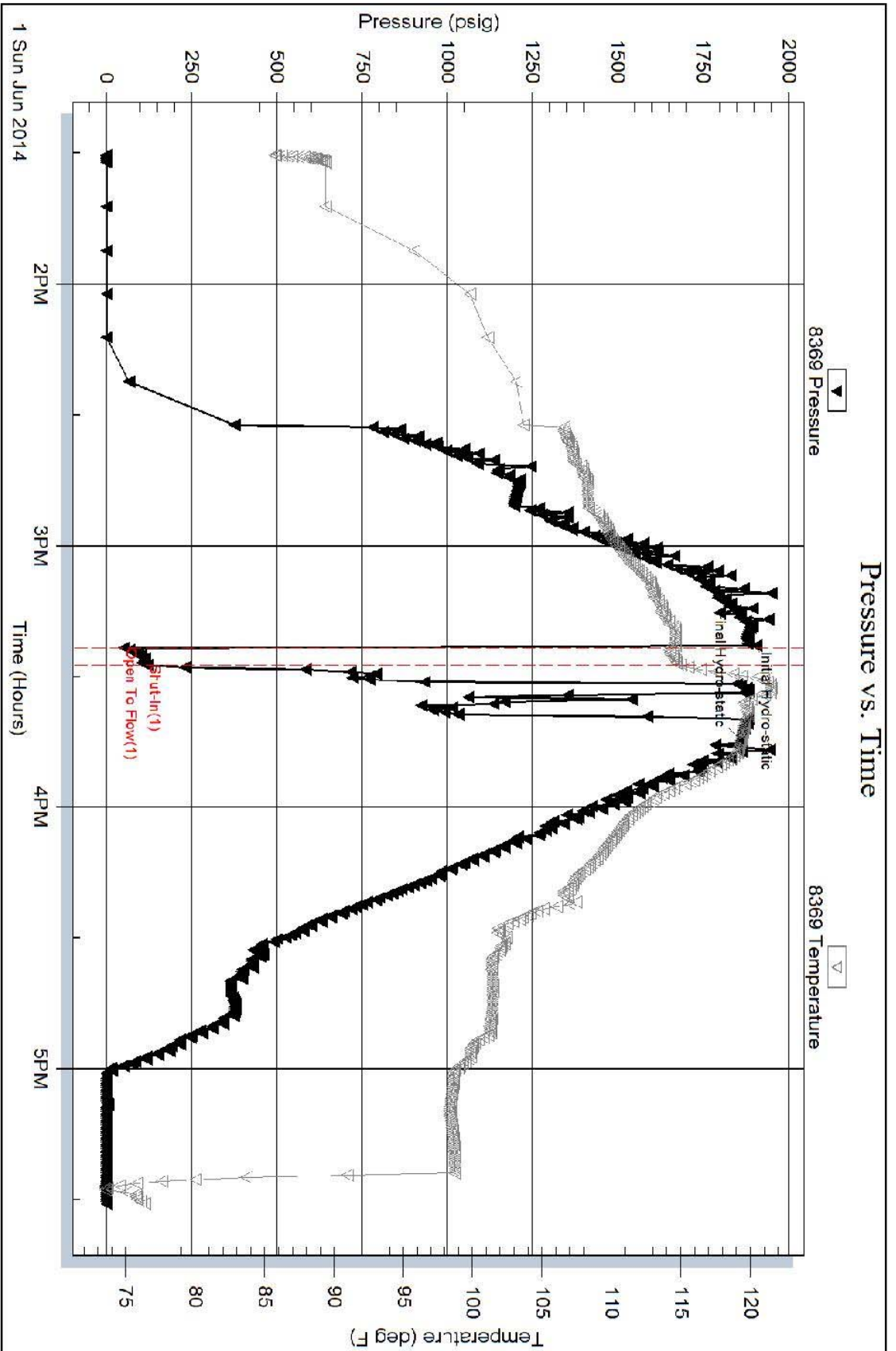
Serial #: 8369

Inside

Outlaw Well Services LLC

Well #1

DST Test Number: 1



Trilobite Testing, Inc

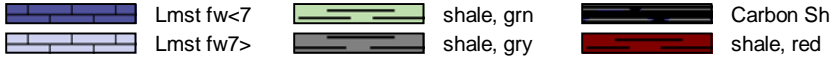
Ref. No: 59305

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Image Header 04

Image Header 05

ROCK TYPES



ACCESSORIES

MINERAL

P Pyrite

FOSSIL

F Fossils < 20%
 ♀ Oolite

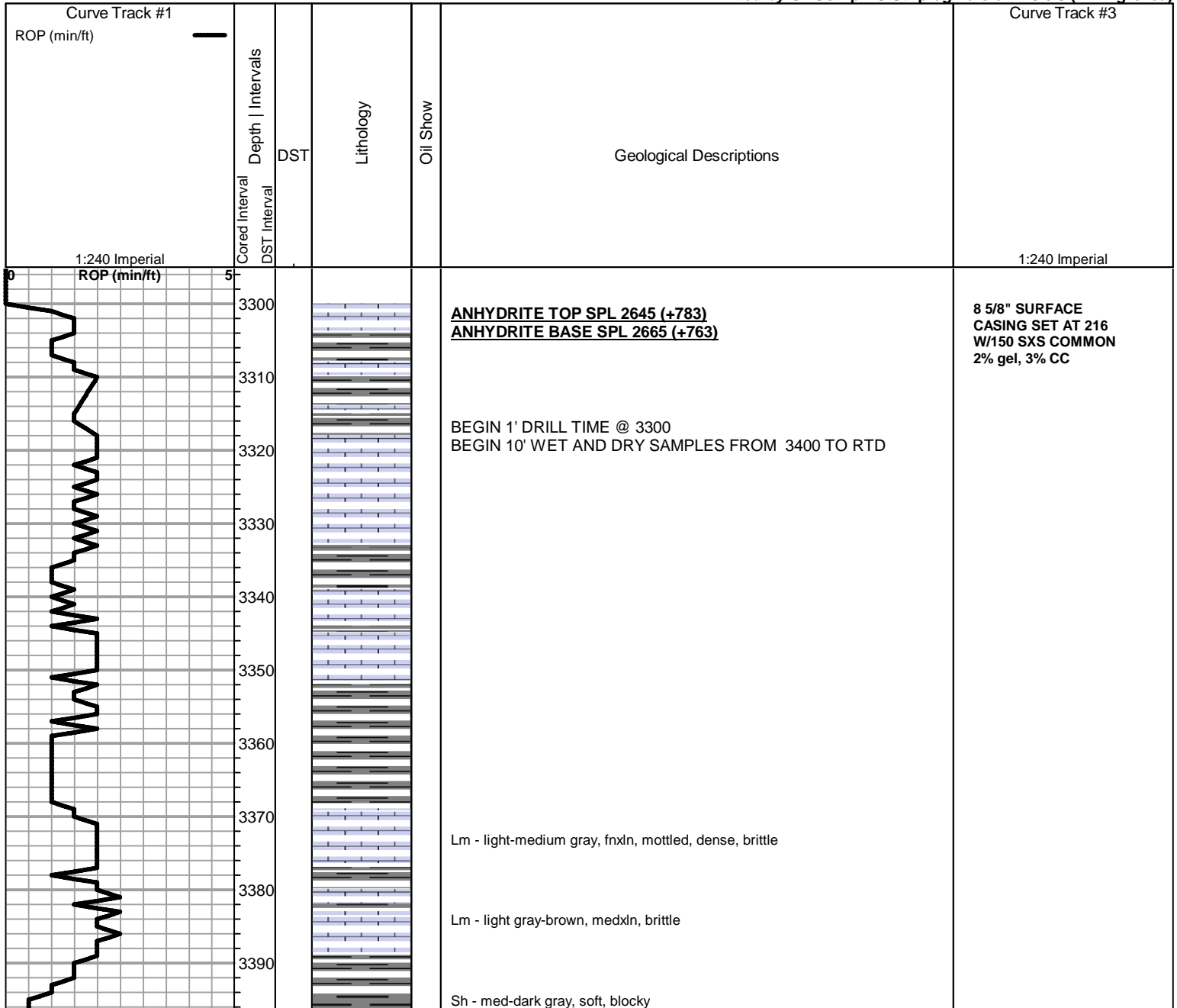
STRINGER

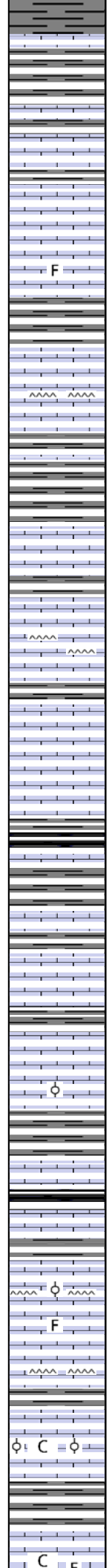
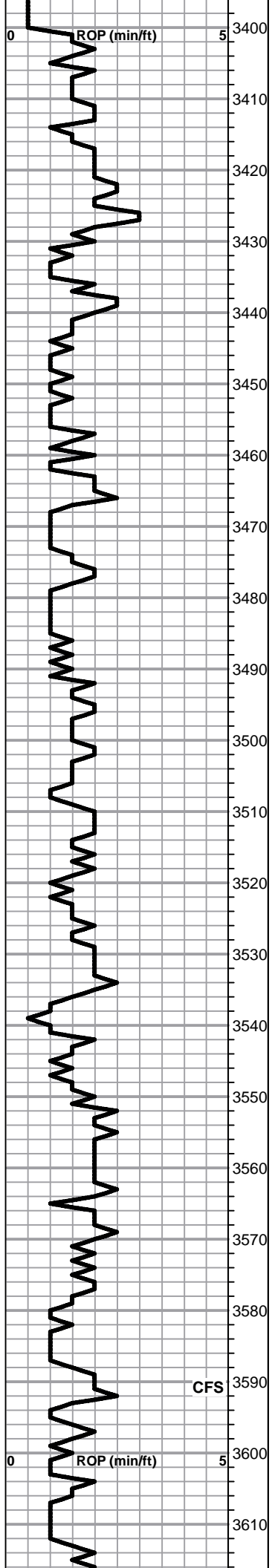
~~~~ Chert  
 ■ red shale

TEXTURE

C Chalky  
 CX Cryptocrystalline  
 L Lithogr

Printed by GEOstrip VC Striplog version 4.0.8.9 (www.grsi.ca)

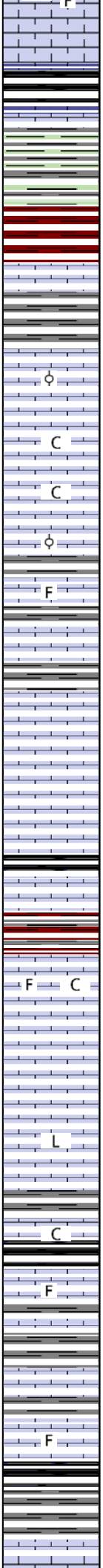
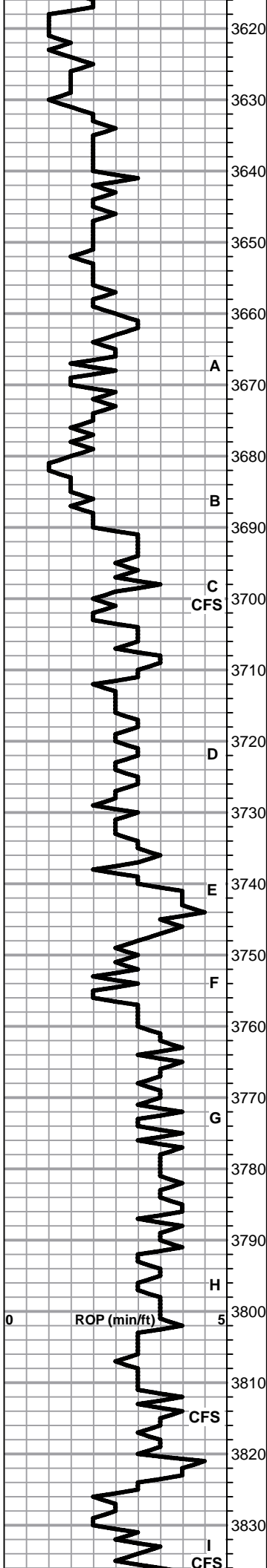




**TOPEKA SPL 3410 (-1088)**

- Lm - cream, vfxln, hard, brittle, barren and clean
- Lm - cream, fine interxln porosity, dense, hard
- Lm - cream-tan, fossiliferous with vfxln matrix, brittle
- Sh - dark brown/medium gray, soft, gritty, fissile
- Lm - cream, scattered fine pinpoint porosity, granular, friable, no shows, cherty
- Sh - light-medium gray, soft, blocky
- Lm - buff, slightly fossiliferous with medxln matrix, hard, brittle
- Lm - tan, fnxln, dense, brittle, cherty
- Lm - cream-light brown, fnxln, moderately hard, brittle
- Sh - dark gray-black, carboniferous, soft, waxy
- Sh - light-medium gray, soft, fissile
- Lm - tan, fnxln, dense, brittle
- Lm - cream-tan, granular, friable
- Lm - cream, oolitic, scattered vuggy porosity, friable, no shows
- Lm - tan, vfxln to lithographic, hard, no visible porosity, clean and barren
- Sh - black, carbonaceous, firm, fissile
- Lm - cream-light brown, slightly fossiliferous, fine interxln porosity, hard, brittle, no shows, cherty
- Lm - cream, fossiliferous, granular, easily crushed, dark organic residue, NSFO, no odor, no fluorescence
- Lm - light brown, fn-medxln, dense, hard, cherty
- Lm - light brown, oolitic with very small oolites, fine interxln porosity, dense, hard, extremely chalky, white wash
- Lm - light brown, slightly fossiliferous with fnxln matrix, hard, brittle, white sticky shells, alumina

**SHORT TRIP**



**HEEBNER SPL 3626 (-1304)**

Sh - black, carbonaceous, waxy  
 Sh - greenish / gray, soft, blocky, forming sticky clumps  
 Sh - maroon, soft, very sticky

**TORONTO SPL 3652 (-1330)**

Lm - bright white, granular, moderate hardness, brittle  
 Sh - medium gray, soft sticky

**LKC SPL 3664 (-1342)**

Lm - tan, oolitic, poor development, fine interxn porosity, dense, hard, brittle, no shows  
 Lm - cream-tan, cryptoxn, dense, hard, brittle, chalky, no shows  
 Lm - cream, fnxn to granular, friable, chalky in part, no shows  
 Lm - tan, oolites in fnxn matrix, dense, very hard, clean and barren

**O** Lm - tan, slightly fossiliferous, bedded chalk in part, one chip with fine pinpoint porosity and oil specks released with acid. no odor  
 Lm - tan, fnxn, dense, brittle

**D** Lm - cream, slightly oolitic, vfxn, dense, hard, some with interxn porosity and scatered vuggy porosity, dark brown gilsonitic stain, NSFO, no odor

Lm - cream, fnxn, dense, hard, bedded chalk

Sh - black, carbonaceous, soft, fissile

Sh - light gray / maroon, soft, extremely sticky clumps

Lm - offwhite, fnxn, clean and bright, some slightly fossiliferous with fine pinpoint porosity, black gilsonitic stain, slight SFO upon crush, very chalky

Lm - buff, fn-medxn, dense, hard, bedded chalk in part, clean and barren

Lm - buff, vfxn to lithographic, dense, hard, brittle, clean and barren

Lm - cream-light gray, fine interxn porosity, dense, very hard, chalky

Sh - black, carbonaceous, waxy

Lm - tan-light brown, fnxn, slightly fossiliferous, brittle, bedded chalk

Lm - A/A

Lm - cream, fnxn, dense, hard, clean and barren, bedded chalk

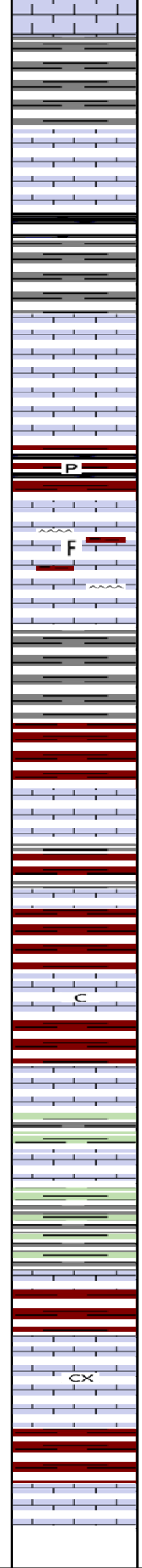
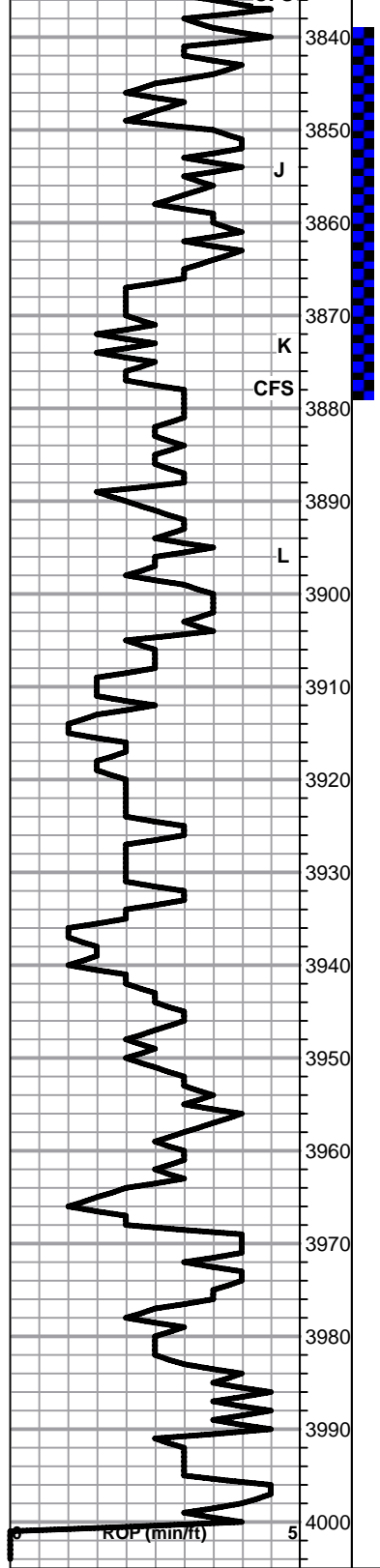
Lm - light brown, fossiliferous with medxn matrix, friable, no shows

Sh - dark gray / black, carbonaceous, firm, blocky, forming sticky clumps in part

**O** Lm - cream-light brown, fine pinpoint porosity, scattered light brown stain, NSFO, no odor

**MUD WT. 8.9  
 VIS. 59  
 LCM 2#**

good odor, excess sticky white chalk, SFO with acid, UV fluorescence



Sh - medium grain, soft, blocky, some sticky clumps

① Lm - buff, oolitic, scattered interxn porosity with slight vugs, dark brown stain, SFO upon crush, faint odor, streaming wet cut under UV light

Sh - dark gray, some black carbonaceous, soft, fissile, sticky in part

① Lm - buff, fine pinpoint porosity, scattered dark brown stain, SFO upon crush, slightly chalky

Sh - dark gray / maroon, soft, blocky, pyrite

Lm - cream-tan, slightly fossiliferous, fine interxn porosity, dense, hard, orange chert and shales

**BKC SPL 3904 (-1582)**

Sh - medium brown / gray, soft blocky, some extremely sticky

Sh - maroon, soft very sticky

Lm - buff, fnxln, dense, hard, clean and barren

Sh - maroon / gray, soft extremely sticky clumps

Sh - maroon / brown, soft fissile, forming sticky clumps

Lm - cream, fine interxn porosity, brittle, chalky

Sh - maroon, soft very sticky

**MARMATON SPL 3950 (-1628)**

Lm - cream - light gray, gritty, granular, dense, hard, no shows, no development

Sh - medium gray / green / brown, fissile, soft, sticky in part

Sh - orange / maroon, soft, extremely sticky

Lm - tan, cryptoxln, dense, very hard, bedded chalk in part

Sh - maroon / brown, soft fissile, extremely sticky clumps

**RTD 4000 (-1678)**

DST #1 3839 TO 3877

MISRUN: SEE HEADER FOR CHART

MUD WT. 9.5  
VIS. 58  
LCM 2#