

OPERATOR

Company: MULL DRILLING COMPANY, INC.
 Address: 1700 N WATERFRONT PKWY
 BLDG 1200
 WICHITA, KS 67206-6637
 Contact Geologist: TOBY ECK
 Contact Phone Nbr: 316-264-6366
 Well Name: BYRD #1-23
 Location: NW NW SE NE S23 T19S 23W
 Pool: _____
 State: KANSAS
 API: 15-135-25758
 Field: PFAFF
 Country: USA

Scale 1:240 Imperial

Well Name: BYRD #1-23
 Surface Location: NW NW SE NE S23 T19S 23W
 Bottom Location: _____
 API: 15-135-25758
 License Number: 5144
 Spud Date: 4/7/2014
 Region: NESS COUNTY
 Drilling Completed: _____
 Surface Coordinates: 1568 FNL & 1307 FEL
 Bottom Hole Coordinates: _____
 Ground Elevation: 2212.00ft
 K.B. Elevation: 2217.00ft
 Logged Interval: 0.00ft
 Total Depth: 0.00ft
 Formation: CHEROKEE SAND
 Drilling Fluid Type: FRESH WATER / CHEMICAL GEL
 Time: 2:45 PM
 Time: _____
 To: 0.00ft

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: _____ Latitude: _____
 N/S Co-ord: 1568 FNL
 E/W Co-ord: 1307 FEL

LOGGED BY

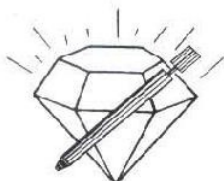
Company: SOLUTIONS CONSULTING, INC.
 Address: 108 W 35TH
 HAYS, KS 67601
 Phone Nbr: (785) 639-1337
 Logged By: Geologist
 Name: STEVE REED / HERB DEINES

CONTRACTOR

Contractor: WW DRILLING
 Rig #: 10
 Rig Type: MUD ROTARY
 Spud Date: 4/7/2014
 TD Date: _____
 Rig Release: _____
 Time: 2:45 PM
 Time: _____
 Time: _____

ELEVATIONS

K.B. Elevation: 2217.00ft
 K.B. to Ground: 5.00ft
 Ground Elevation: 2212.00ft

NOTES**FORMATION TOPS AND DAILY ACTIVITIES SUMMARY****DST # 1 SUMMARY**

DIAMOND TESTING
 P.O. Box 157
 HOISINGTON, KANSAS 67544
 (800) 542-7313
DRILL-STEM TEST TICKET
 FILE: byrd1dst1

TIME ON: 7:33 AM
 TIME OFF: 2:58 PM

Company Mull Drilling Company, Inc Lease & Well No. Byrd #1-23
 Contractor WW Drilling #10 Charge to Mull Drilling Company, Inc
 Elevation KB 2217 Formation Cherokee Sand Effective Pay _____ Ft. Ticket No. K116
 Date 4-12-14 Sec. 23 Twp. 19 S Range 23 W County Ness State KANSAS
 Test Approved By Steve Reed Diamond Representative Jason McLemore
 Formation Test No. 1 Interval Tested from 4259 ft. to 4350 ft. Total Depth 4350 ft.
 Packer Depth 4254 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
 Packer Depth 4259 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
 Depth of Selective Zone Set _____
 Top Recorder Depth (Inside) 4240 ft. Recorder Number 5513 Cap. 5000 P.S.I.
 Bottom Recorder Depth (Outside) 4241 ft. Recorder Number 5588 Cap. 6000 P.S.I.
 Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.
 Mud Type Chemical Viscosity 50 Drill Collar Length 122 ft. I.D. 2 1/4 in.
 Weight 9.2 Water Loss 8.8 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.
 Chlorides 5500 P.P.M. Drill Pipe Length 4104 ft. I.D. 3 1/2 in.
 Jars: Make STERLING Serial Number _____ Jars & Joint Test Tool Length 33 ft. Tool Size 3 1/2-IF in.
 Did Well Flow? No Reversed Out No Anchor Length 91 ft. Size 4 1/2-FH in.
 Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. 63' DP in Anchor Surface Choke Size 1 in. Bottom Choke Size 5/8 in.
 Blow: 1st Open: Built to 3-1/4", No Blowback
 2nd Open: Built to ROB in 21 Min. No Blowback

Company Mull Drilling Company, Inc Lease & Well No. Byrd #1-23
 Contractor WW Drilling #10 Charge to Mull Drilling Company, Inc
 Elevation KB 2217 Formation Cherokee Sand Effective Pay _____ Ft. Ticket No. K117
 Date 4-12-14 Sec. 23 Twp. 19 S Range 23 W County Ness State KANSAS
 Test Approved By Steve Reed Diamond Representative Jason McLemore

Formation Test No. 2 Interval Tested from 4259 ft. to 4355 ft. Total Depth 4355 ft.
 Packer Depth 4254 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
 Packer Depth 4259 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.

Depth of Selective Zone Set
 Top Recorder Depth (Inside) 4240 ft. Recorder Number 5513 Cap. 5000 P.S.I.
 Bottom Recorder Depth (Outside) 4241 ft. Recorder Number 5588 Cap. 6000 P.S.I.
 Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.
 Mud Type Chemical Viscosity 50 Drill Collar Length 122 ft. I.D. 2 1/4 in.
 Weight 9.2 Water Loss 8.8 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.
 Chlorides 5500 P.P.M. Drill Pipe Length 4104 ft. I.D. 3 1/2 in.
 Jars: Make STERLING Serial Number _____ Jars & Joint _____ Test Tool Length 33 ft. Tool Size 3 1/2-IF in.
 Did Well Flow? No Reversed Out No Anchor Length 96 ft. Size 4 1/2-FH in.
 Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. 6' DP in Anchor Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

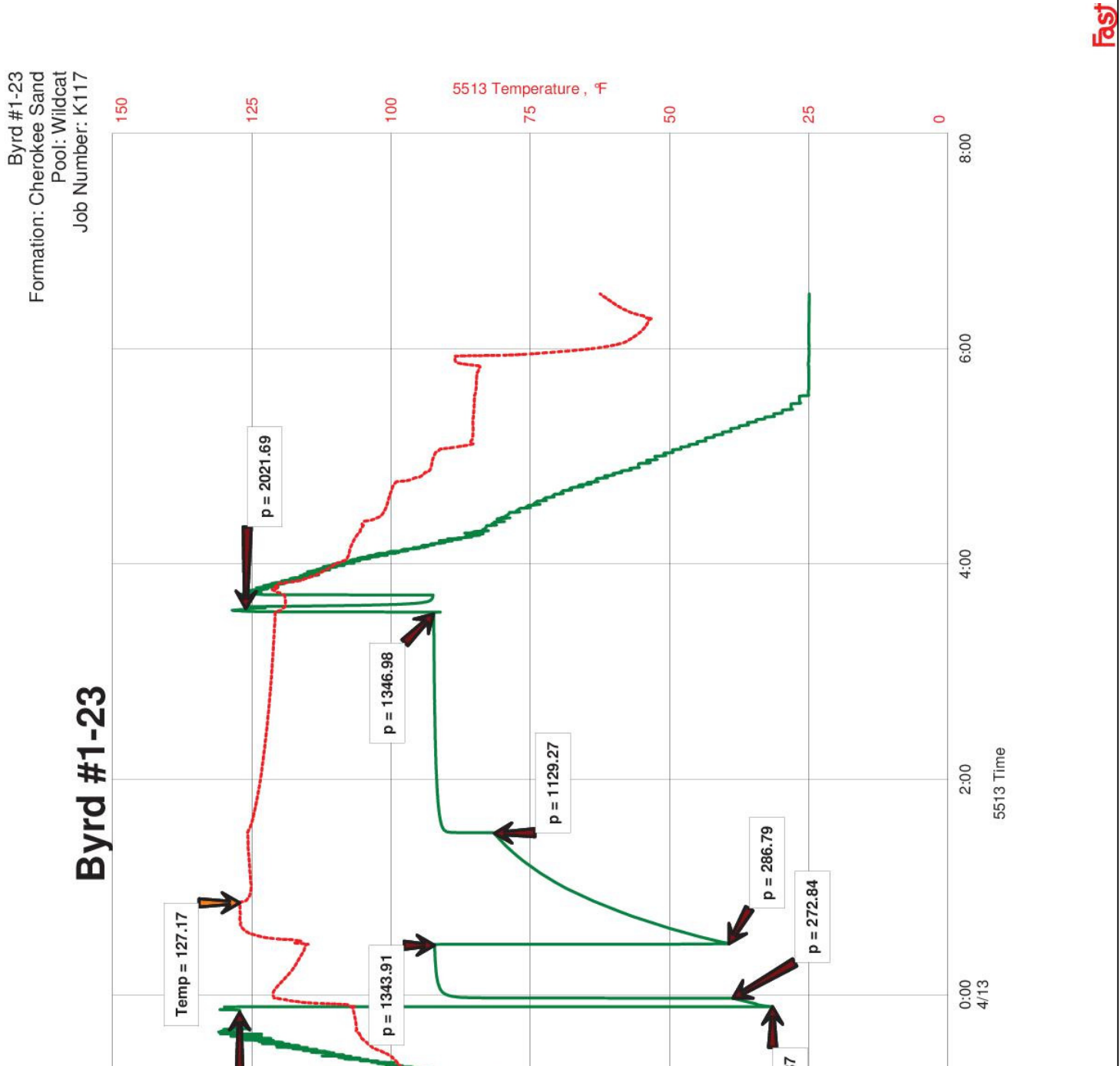
Blow: 1st Open: Strong, BOB in 1 Min., Weak Surface Blowback
 2nd Open: Strong, BOB in 1 Min., No Blowback

Recovered 2450 ft. of VSOCMW, 3% Oil, 87% Water, 10% Mud
 Recovered 2450 ft. of TOTAL FLUID
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Remarks: CHLORIDES: 34,000
PH: 7

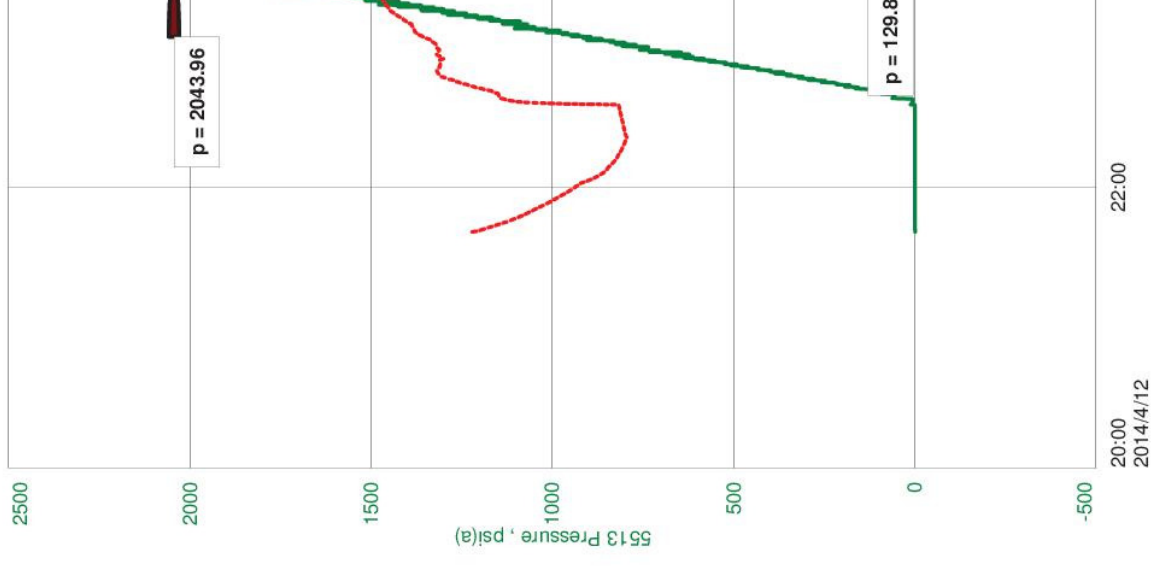
Time Set Packer(s) <u>11:54 PM</u> A.M. P.M.	Time Started Off Bottom <u>3:29 AM</u> A.M. P.M.	Maximum Temperature <u>127</u>
Initial Hydrostatic Pressure..... (A) <u>2044</u> P.S.I.		
Initial Flow Period..... Minutes <u>5</u> (B) <u>129</u> P.S.I. to (C) <u>273</u> P.S.I.		
Initial Closed In Period..... Minutes <u>30</u> (D) <u>1344</u> P.S.I.		
Final Flow Period..... Minutes <u>60</u> (E) <u>287</u> P.S.I. to (F) <u>1129</u> P.S.I.		
Final Closed In Period..... Minutes <u>120</u> (G) <u>1347</u> P.S.I.		
Final Hydrostatic Pressure..... (H) <u>2022</u> 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.

DST #2 TIME VS PRESSURE CHART

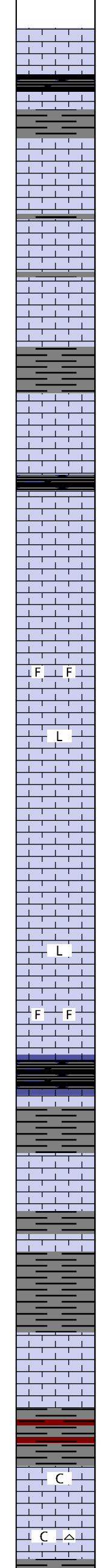
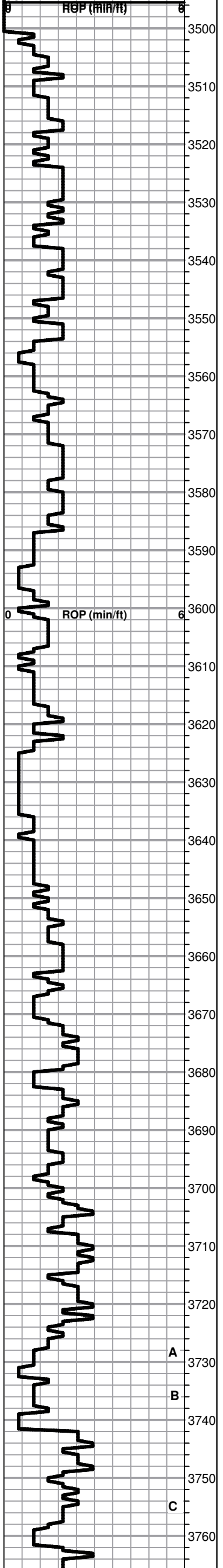


Mull Drilling Company, Inc
 DST #2 Cherokee Sand 4259-4355
 Start Test Date: 2014/04/12
 Final Test Date: 2014/04/13



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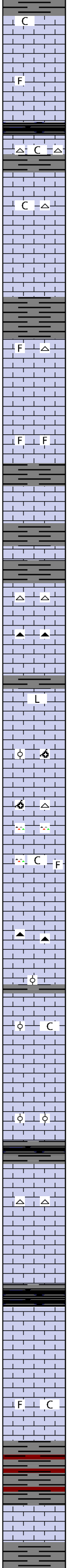
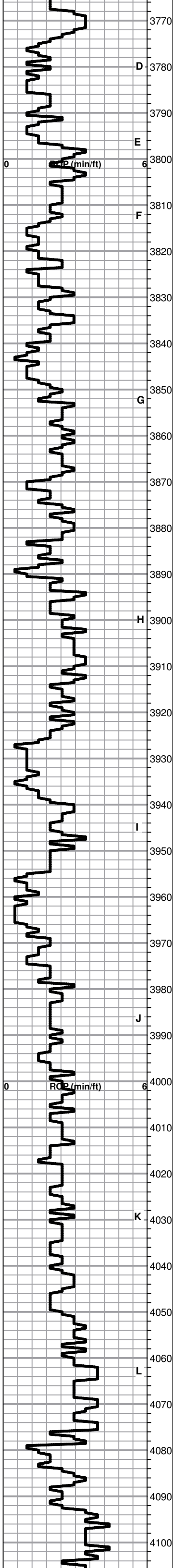


ANHYDRITE TOP SPL 1528 (+689) ELOG (-)
ANHYDRITE BASE SPL 1540 (+677) ELOG (-)

BEGIN 1' DRILL TIME @ 3500'
 BEGIN 10' SAMPLES (WET AND SACKED) @ 3600'

8 5/8" SURFACE CASING SET
 @ 214' W/ 150 SXS COMMON,
 3% CC, 2% GEL

- Lm - tan, granular, firm, brittle
- QUEEN HILL Sh** - black carbonaceous, waxy
- Lm - light brown, fnxn, dense, hard
- Lm - cream, granular, friable
- Lm - cream, medxn, brittle, bedded chalk in part
- Lm - cream-tan, fossiliferous, fn-medxn, hard, brittle
- Lm - light-medium brown, fnxn, some lithographic, hard, brittle
- Lm - cream, fnxn, dense, hard
- Lm - cream, lithographic, hard, brittle
- Lm - tan, medxn, fossiliferous, fusilinids, brittle
- HEEBNER SPL 3678 (-1461) ELOG (-)**
- Sh - black, carbonaceous, waxy
- Sh - dove gray, soft, blocky
- TORONTO SPL 3693 (-1476) ELOG (-)**
- Lm - cream, fnxn, dense, hard
- Sh - medium gray, soft, very sticky
- Lm - cream, fnxn, hard, brittle
- Sh - light gray, soft, fissile
- LKC SPL 3724 (-1507) ELOG (-)**
- Lm - tan, fn-medxn, brittle, bedded chalk in part
- Sh - light gray, soft, blocky, with maroon sticky clumps
- Lm - tan, vf-fnxn, dense, hard, slightly chalky
- Lm - cream, medxn, brittle, chalky, cherty



C Lm - medium brown, fnxn, dense, brittle, sticky chalk

F Lm - light brown-cream, granular, slightly fossiliferous, friable

Sh - black carbonaceous, waxy

E Lm - cream-light brown, vf-fnxn, hard, white sticky chalk clusters, cherty

F Lm - cream, fossiliferous, brittle, cherty, chalky

Lm - tan, fnxn, dense, hard, bedded chalk in some

Lm - cream, granular, friable, bedded chalk

F Lm - cream-tan, granular, friable, slightly fossiliferous, bedded chalk in part, white chert

G Lm - cream-light brown, oolitic, poor development, granular, friable, clean, barren

F Lm - cream, fossiliferous, well cemented, hard

Sh - medium gray, soft, fissile

Lm - cream, fnxn, dense, hard

Sh - medium gray, soft, fissile

Lm - tan, fnxn, dense, hard, clean, barren, cherty

H Lm - cream-tan, medxn, hard, brown opaque chert

L Lm - tan, lithographic, dense, brittle

Lm - cream, fn-medxn, brittle

Lm - tan, oolitic / oomoldic, clean and barren, friable

Lm - light brown, oomoldic, poor development, very hard, light gray chert

I Lm - cream, fnxn, dense, hard, cherty

Lm - cream, fnxn, hard, cherty, slightly fossiliferous, chalk in part

Lm - tan, oolitic / oomoldic, poorly developed, hard, brown chert

Lm - cream, oolitic, hard, barren
Sh - light gray, soft sticky clumps

J Lm - cream-tan, fnxn, slightly oomoldic, chalky in part

Lm - tan, fnxn, dense, very hard, bedded chalk in some

Lm - medium brown, oolitic, poorly developed, hard, barren

STARK SPL 4013 (-1796) ELOG (-)
Sh - dark gray- black carbonaceous, fissile

Lm - medium brown, fnxn, dense, very hard, light gray chert

Lm - A/A

Sh - black carbonaceous, fissile

Lm - cream, fn-medxn, dense, hard, barren

Lm - medium brown, fnxn, brittle, slightly fossiliferous, slightly chalky

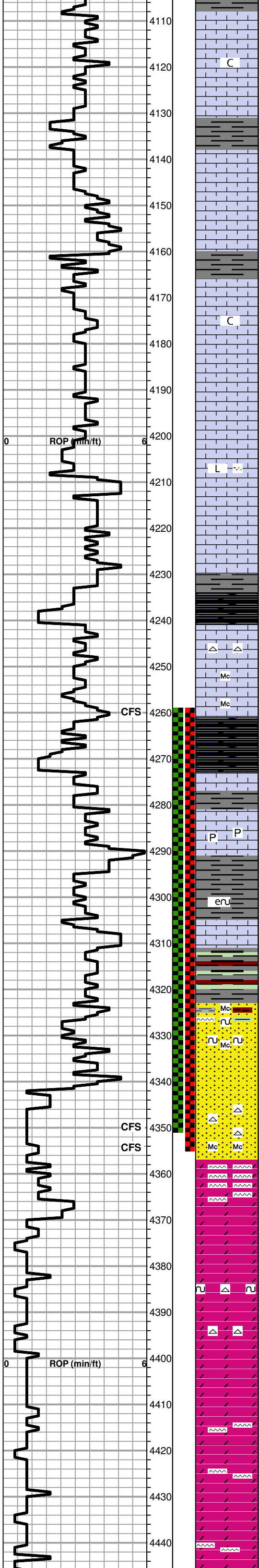
BKC SPL 4078 (-1861) ELOG (-)

Sh - light gray / maroon, soft, blocky

MARMATON SPL 4091 (-1874) ELOG (-)

Lm - cream-tan, granular, hard

Sh - light-dark gray, soft, fissile



Sh - light dark gray, soft, fissile

Lm - cream-tan, fnxn, dense, brittle, chalky in part

Lm - tan-light brown, vf-fnxn, dense, hard

Sh - light gray / brown, firm, fissile

Lm - light brown, microxn, dense, hard

Lm - tan-light brown, vf-fnxn, dense, brittle

Sh - dark gray, firm, blocky

Lm - cream-tan, fnxn to lithographic in some, slightly chalky

Lm - tan, vf-fnxn, dense, very hard, some brittle, slightly chalky,

Lm - tan, fnxn, brittle

Lm - light-medium brown, lithographic, dense, very hard, cherty

Lm - medium brown, fnxn, dense, very hard

Lm - A/A

Sh - dark gray-black carbonaceous, firm, fissile

FORT SCOTT SPL 4240 (-2023) ELOG (-)

Lm - cream, granular, brittle, white chert

Lm - cream, medxn, micaceous, dense, brittle

Lm - tan, fn-medxn, micaceous, bedded chalk in part

CHEROKEE SH SPL 4261 (-2044) ELOG (-)

Sh - black carbonaceous, firm, fissile

Sh - light gray, extremely sticky clumps

Lm - tan, fnxn, brittle, bedded chalk, pyrite clusters

Sh - light gray soft and sticky

Sh - medium-dark brown, earthy, gritty, friable, glauconite specks

Lm - light brown, microxn, dense, very hard

Sh - Various colored, gray, green, maroon, firm, fissile

CHEROKEE SD SPL 4324 (-2107) ELOG (-)

Ss - white, fine grained, well sorted, well rounded, well cemented, hard, orange, white chert, various colored shales, micaceous & glauconite specks

Ss - A/A with glauconite specks throughout

Ss - light-dark brown stained, fine-grained, angular, NSFO, no odor, slight fluorescence under UV light

Ss - dark brown stained, fine-grained, angular, SFO, good odor, wet cut under UV light, clean white tripolitic chert with scattered stain

Ss - black, fine-grained, heavily micaceous, SFO upon crush, good odor

MISSISSIPPIAN SPL 4357 (-2140) ELOG (-)

Dolo - cream/orange, vfxn, clean, barren, very cherty

Dolo - cream vfxn, very hard, clean, barren

Dolo - tan, fnxn, brittle upon crush

Dolo - tan, fn-medxn, glauconitic, clean, barren, white chert

Dolo - offwhite, clean, fnxn, chalky, friable, bright white chert

Dolo - buff, granular, brittle, slightly chalky

Dolo - bright white, granular, slight vuggy porosity, no stain, no odor, cherty

Dolo - cream, fnxn, brittle, clean, barren, cherty

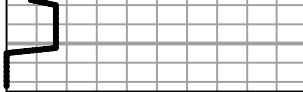
Dolo - offwhite, fn-medxn, brittle

Dolo - A/A with large amount of bright white chert

DST #1 4259 TO 4350 SEE HEADER FOR TEST SUMMARY

DST #2 4259 TO 4355 SEE HEADER FOR TEST SUMMARY

NOTE: LARGE AMOUNTS OF SHALE CARRYOVER IN THE SAMPLES



4450



Dolo - buff, medxn, brittle
RTD 4450 (-2233) LTD (-)