

OPERATOR

Company: Bickle Energies, LLC
 Address: P.O. Box 816
 Hays, KS 67601

Contact Geologist: Matt Bickle
 Contact Phone Nbr: 785-639-1681
 Well Name: Kuhl - Hart Unit 26-1
 Location: Sec. 26 - T12S - R33W
 API: 15-109-21508-0000
 Pool:
 State: Kansas

Field: Wildcat
 Country: USA



"THE NEXT GENERATION OF ENERGY"

Scale 1:240 Imperial

Well Name: Kuhl - Hart Unit 26-1
 Surface Location: Sec. 26 - T12S - R33W
 Bottom Location:
 API: 15-109-21508-0000
 License Number: 34917
 Spud Date: 6/22/2017 Time: 1:30 PM
 Region: Logan County Time: 8:00 AM
 Drilling Completed: 6/30/2017
 Surface Coordinates: 280' FSL & 1430' FWL
 Bottom Hole Coordinates:
 Ground Elevation: 3104.00ft
 K.B. Elevation: 3109.00ft
 Logged Interval: 3760.00ft To: 4770.00ft
 Total Depth: 4770.00ft
 Formation: Mississippian
 Drilling Fluid Type: Chemical/Fresh Water Gel

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude:
 Latitude:
 N/S Co-ord: 280' FSL
 E/W Co-ord: 1430' FWL

LOGGED BY

Keith Reavis
Consulting Geologist

Company: Keith Reavis, Inc.
 Address: 3420 22nd Street
 Great Bend, KS 67530

Phone Nbr: 620-617-4091
 Logged By: KLG #136

Name: Keith Reavis

CONTRACTOR

Contractor: WW Drilling, LLC
 Rig #: 10
 Rig Type: mud rotary
 Spud Date: 6/22/2017
 TD Date: 6/30/2017
 Rig Release:

Time: 1:30 PM
 Time: 8:00 AM
 Time:

ELEVATIONS

K.B. Elevation: 3109.00ft
K.B. to Ground: 5.00ft

Ground Elevation: 3104.00ft

NOTES

Due to negative results of drill stem testing and subsequent log analysis, it was determined that Kuhl-Hart Unit would prove non-commercial and was therefore abandoned as a dry test.

A Bloodhound gas detection system operated by Bluestem Labs was employed during the drilling of this well. ROP and gas data were imported into this report.

Samples were saved will be available for review at the Kansas Geological Survey Well Sample Library located in Wichita, KS.

Respectfully submitted,
Keith Reavis

daily drilling report

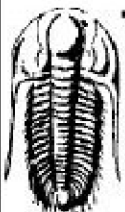
DATE	7:00 AM DEPTH	REMARKS
06/25/2017		Geologist Keith Reavis on location @ 0840 hrs, 3702 ft, drilling ahead Topeka, Heebner, Toronto, Lansing
06/26/2017	4173	conduct and complete wiper trip, resume drilling, Lansing, Muncie Creek, Stark Shale, show and gas kick in K zone warrants test, hole starting out with bit, short trip 15 stds, ctch, TOH w/bit
06/27/2017	4336	TIH w/tools, conduct and complete DST #1, successful test, TIH w/bit, ctch, resume drilling, I zone, BKC, Pleasanton, Marmaton, cfs all Altamont benches, run short trip prior to condemnation test - DST #2
06/28/2017	4504	complete short trip, ctch, TOH w/bit and in w/tools, conduct DST #2 complete DST #2, successful test, TIH w/bit, resume drilling, Pawnee, Ft. Scott, Cherokee, Johnson
06/28/2017	4673	show and gas kicks in Johnson warrant test, TOH w/bit, in w/tools, conducting and complete DST #3, TIH w/bit, resume drilling, Morrow and Mississippian, show and gas kick in Morrow Sand warrants test, TOH w/bit and in w/tools, conducting DST #4
06/30/2017	4754	complete DST #4, TIH w/bit, rathole ahead to TD of 4770, reached At 0800, ctch, TOH, conduct logging operations, geologist off of Location @ 1640 hrs

well comparison sheet

DRILLING WELL					COMPARISON WELL				COMPARISON WELL			
Kuhl - Hart Unit 26-1					Russell - Joseph 35-1				Bickle - Shallow River			
280' FSL & 1430' FWL					1880' FSL & 340' FWL				2190' FNL & 2020' FWL			
Sec 26-T12S-R33W					Sec 35-T12S-R33W				Sec 26-T12S-R33W			
3109KB					3095KB		Structural Relationship		3093KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Topeka	3827	-718	3828	-719	3799	-704	-14	-15	3800	-707	-11	-12
Heebner	4039	-930	4040	-931	4008	-913	-17	-18	4009	-916	-14	-15
Toronto	4064	-955	4068	-959	4032	-937	-18	-22	4038	-945	-10	-14
Lansing	4082	-973	4084	-975	4050	-955	-18	-20	4053	-960	-13	-15
Muncie Creek	4228	-1119	4230	-1121	4196	-1101	-18	-20	4203	-1110	-9	-11
Stark	4309	-1200	4310	-1201	4284	-1189	-11	-12	4284	-1191	-9	-10
Base KC	4374	-1265	4376	-1267	4345	-1250	-15	-17	4346	-1253	-12	-14
Marmaton	4415	-1306	4422	-1313	4388	-1293	-13	-20	4395	-1302	-4	-11
Pawnee	4505	-1396	4508	-1399	4482	-1387	-9	-12	4476	-1383	-13	-16
Ft. Scott	4564	-1455	4567	-1458	4538	-1443	-12	-15	4532	-1439	-16	-19
Cherokee	4592	-1483	4594	-1485	4565	-1470	-13	-15	4560	-1467	-16	-18
Johnson	4635	-1526	4638	-1529	4608	-1513	-13	-16	4603	-1510	-16	-19
Morrow	4671	-1562	4673	-1564	4642	-1547	-15	-17	4637	-1544	-18	-20
Mississippi	4717	-1608	4721	-1612	4678	-1583	-25	-29	4660	-1567	-41	-45
Total Depth	4770	-1661	4772	-1663	4727	-1632	-29	-31	4740	-1647	-14	-16
COMPARISON WELL					COMPARISON WELL				COMPARISON WELL			
Davis - #1-35 Wasse Miller					Davis - Wasse Miller #1				Olympic - #1 Bob Clark			
C N/2 SW NE					C SW NW				C SW NE			
Sec 35-T12S-R33W					Sec 35-T12S-R33W				Sec 26-T12S-R33W			
3107KB		Structural Relationship			3090KB		Structural Relationship		3080KB		Structural Relationship	
Formation	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Topeka									3793	-713	-5	-6
Heebner	4028	-921	-9	-10	4021	-931	1	0	4000	-920	-10	-11

Toronto	4055	-948	-7	-11	4045	-955	0	-4	4025	-945	-10	-14
Lansing	4074	-967	-6	-8	4064	-974	1	-1	4043	-963	-10	-12
Muncie Creek	4224	-1117	-2	-4					4192	-1112	-7	-9
Stark	4302	-1195	-5	-6	4292	-1202	2	1	4278	-1198	-2	-3
Base KC	4370	-1263	-2	-4	4358	-1268	3	1	4340	-1260	-5	-7
Marmaton	4412	-1305	-1	-8	4399	-1309	3	-4	4386	-1306	0	-7
Pawnee	4504	-1397	1	-2	4500	-1410	14	11	4467	-1387	-9	-12
Ft. Scott	4560	-1453	-2	-5	4557	-1467	12	9	4527	-1447	-8	-11
Cherokee	4586	-1479	-4	-6					4554	-1474	-9	-11
Johnson					4622	-1532	6	3	4600	-1520	-6	-9
Morrow									4632	-1552	-10	-12
Mississippi	4701	-1594	-14	-18	4722	-1632	24	20	4664	-1584	-24	-28
Total Depth	4740	-1633	-28	-30	4740	-1650	-11	-13	4726	-1646	-15	-17

Drill Stem Test 1

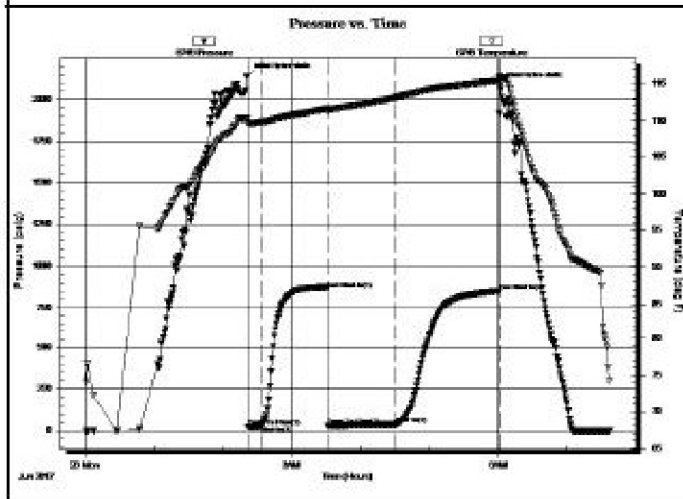
 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT	
	Bicke Energies Inc. P.O. Box 816 Hays KS 67601 ATTN: Keith Reavis	26-12-33w Logan Co. KS Kuhl-Hart Unit 26-1 Job Ticket: 63748 DST#: 1 Test Start: 2017.06.26 @ 00:01:15

GENERAL INFORMATION:

Formation: K	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock: ft (KB)	Tester: Mike Roberts
Time Tool Opened: 02:22:00	Unit No: 81
Time Test Ended: 07:37:15	
Interval: 4308.00 ft (KB) To 4336.00 ft (KB) (TVD)	Reference Elevations: 3109.00 ft (KB)
Total Depth: 4336.00 ft (KB) (TVD)	3104.00 ft (CF)
Hole Diameter: 7.88 inches -hole Condition: Fair	KB to GR/CF: 5.00 ft

Serial #: 6749	Outside		
Press@RunDepth: 37.96 psig @ 4309.00 ft (KB)	Capacity: 8000.00 psig		
Start Date: 2017.06.26	End Date: 2017.06.26	Last Calb.: 2017.06.27	
Start Time: 00:01:15	End Time: 07:37:15	Time On Btm: 2017.06.26 @ 02:21:45	
		Time Off Btm: 2017.06.26 @ 06:02:00	

TEST COMMENT: IF: Built to weak surface blow
 IS: No return blow
 FF: Built to 1/4" blow
 FS: No return blow




PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2137.61	110.31	Initial Hydro-static
1	24.32	109.59	Open To Flow (1)
12	27.04	109.75	Shut-In (1)
70	863.48	111.60	End Shut-In (1)
70	29.44	111.25	Open To Flow (2)
130	37.96	113.15	Shut-In (2)
220	850.99	115.39	End Shut-In (2)
221	2083.75	118.05	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
30.00	ocm 10% @ 90% m	0.15

Gas Rates			
	Choke (Inches)	Pressure (psig)	Gas Rate (MDD)

Drill Stem Test 2

	DRILL STEM TEST REPORT	
	Bicke Energies Inc. P.O. Box 816 Hays KS 67601 ATTN: Keith Reavis	26-12-33w Logan Co. KS Kuhl-Hart Unit 26-1 Job Ticket: 63749 DST#: 2 Test Start: 2017.06.28 @ 03:05:15

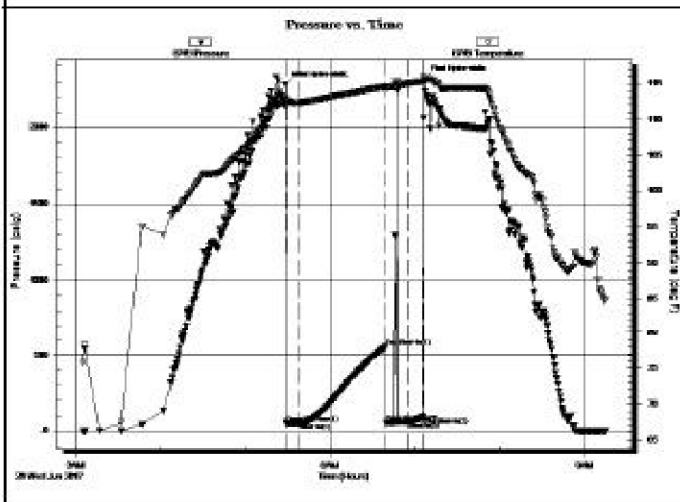
GENERAL INFORMATION:

Formation: Marmaton	Test Type: Conventional Bottom Hole (Reset)
Deviated: No Whipstock: ft (KB)	Tester: Mike Roberts
Time Tool Opened: 05:28:15	Unit No: 81
Time Test Ended: 09:14:15	Reference Elevations: 3109.00 ft (KB)
Interval: 4424.00 ft (KB) To 4504.00 ft (KB) (TVD)	3104.00 ft (CF)
Total Depth: 4504.00 ft (KB) (TVD)	KB to GR/CF: 5.00 ft
Hole Diameter: 7.88 inches hole Condition: Fair	

Serial #: 6749 Outside

Press@RunDepth: 60.90 psig @ 4499.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2017.06.28	End Date: 2017.06.28
Start Time: 03:05:15	End Time: 09:14:15
	Last Calib.: 2017.06.28
	Time On Btm: 2017.06.28 @ 05:28:00
	Time Off Btm: 2017.06.28 @ 07:06:15

TEST COMMENT: IF: Built to weak surface bbw
 IS: No return blow
 FF: No bbw --- flushed tool --- weak surface blow died in 30 seconds.
 FS: No return blow




PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2279.02	112.95	Initial Hydro-static
1	52.51	111.77	Open To Flow (1)
11	53.10	112.33	Shut-In(1)
71	553.20	114.61	End Shut-In(1)
71	53.57	114.43	Open To Flow (2)
87	60.90	115.04	Shut-In(2)
96	90.89	115.33	End Shut-In(2)
99	2316.50	115.50	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
5.00	w cm 2%w 98%w	0.02

* Recovery from multiple tests

Gas Rates			
	Choke (Inches)	Pressure (psig)	Gas Rate (Mcf/d)

Drill Stem Test 3

	DRILL STEM TEST REPORT	
	Bicke Energies Inc. P.O. Box 816 Hays KS 67601 ATTN: Keith Reavis	26-12-33w Logan Co. KS Kuhl-Hart Unit 26-1 Job Ticket: 63750 DST#: 3 Test Start: 2017.06.28 @ 03:05:15

GENERAL INFORMATION:

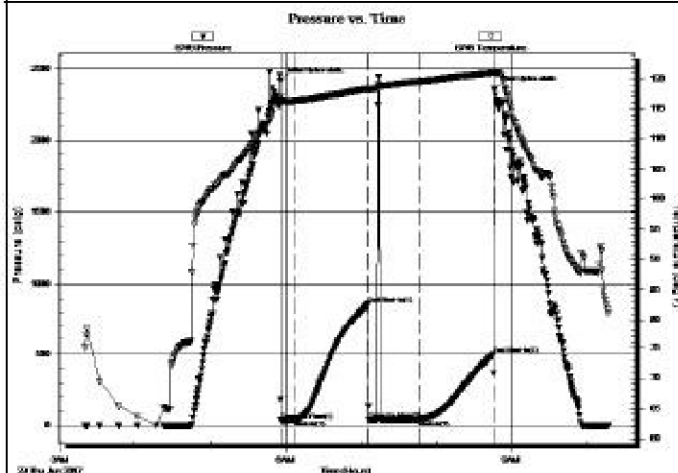
Formation: **Johnson**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 05:56:30
 Time Test Ended: 10:17:45
 Interval: **4614.00 ft (KB) To 4673.00 ft (KB) (TVD)**
 Total Depth: **4673.00 ft (KB) (TVD)**
 Hole Diameter: **7.88 inches** -hole Condition: Fair

Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 81
 Reference Elevations: 3109.00 ft (KB)
 3104.00 ft (CF)
 KB to GR/CF: 5.00 ft.

Serial #: 6749**Outside**

Press@RunDepth: 43.24 psig @ 4668.00 ft (KB)
 Start Date: 2017.06.29 End Date: 2017.06.29
 Start Time: 03:20:15 End Time: 10:17:45
 Capacity: 8000.00 psig
 Last Calib.: 2017.06.29
 Time On Btm: 2017.06.29 @ 05:56:00
 Time Off Btm: 2017.06.29 @ 08:46:15

TEST COMMENT: IF: Built to 1/8" blow
 IS: No return blow
 FF: No blow
 FS: No return blow

**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2418.84	116.87	Initial Hydro-static
1	36.50	116.32	Open To Flow (1)
11	37.91	116.24	Shut-In(1)
70	860.85	118.30	End Shut-In(1)
71	37.87	118.09	Open To Flow (2)
110	43.24	119.50	Shut-In(2)
170	499.81	121.00	End Shut-In(2)
171	2358.35	121.20	Final Hydro-static

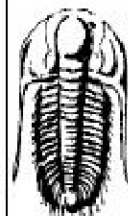
Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100%rn	0.02

* Recovery from multiple tests

Gas Rates

	Choke (Inches)	Pressure (psig)	Gas Rate (Mcf/D)

Drill Stem Test 4

**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Bickle Energies Inc.

26-12-33w Logan Co. KS

P.O. Box 816
Hays KS 67601

Kuhl-Hart Unit 26-1

ATTN: Keith Reavis

Job Ticket: 63826

DST#: 4

Test Start: 2017.06.29 @ 18:25:15

GENERAL INFORMATION:

Formation: **Morrow**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 20:18:15
 Time Test Ended: 00:44:00
 Interval: **4669.00 ft (KB) To 4719.00 ft (KB) (TVD)**
 Total Depth: **4719.00 ft (KB) (TVD)**
 Hole Diameter: **7.88 inches** -hole Condition: Fair

Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 81
 Reference Elevations: 3109.00 ft (KB)
 3104.00 ft (CF)
 KB to GR/CF: 5.00 ft.

Serial #: 6749

Outside

Press@RunDepth: 48.76 psig @ 4714.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.06.29 End Date: 2017.06.30

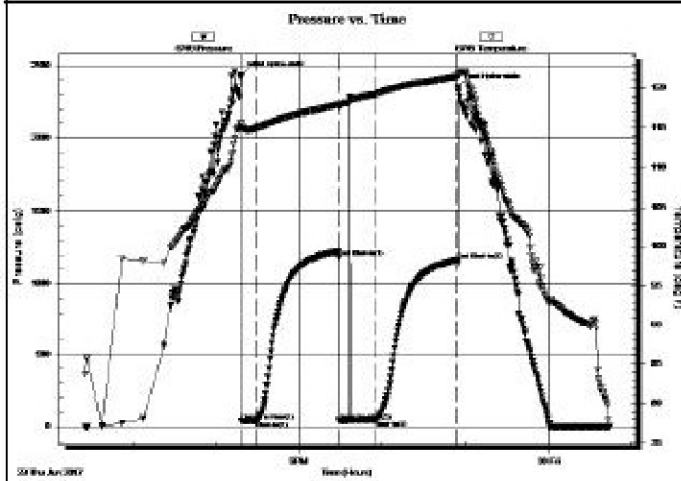
Last Calib.: 2017.06.30

Start Time: 18:25:15 End Time: 00:44:00

Time On Btm: 2017.06.29 @ 20:18:00

Time Off Btm: 2017.06.29 @ 22:55:00

TEST COMMENT: IF: Built to weak surface bbw
IS: No return blow
FF: No bbw --- flushed tool --- no blow
FS: No return blow



PRESSURE SUMMARY

Table with 4 columns: Time (Min.), Pressure (psig), Temp (deg F), and Annotation. It lists key pressure events such as Initial Hydro-static, Open To Flow, Shut-In, and Final Hydro-static.

Recovery

Table with 3 columns: Length (ft), Description, and Volume (bbl). It shows a recovery of 0.02 bbl for a 5.00 ft length of ocm 1% @ 99% m.

Gas Rates

Table with 4 columns: C hole (inches), Pressure (psig), and Gas Rate (MDD). It is currently empty.

* Recovery from multiple tests

ROCK TYPES

Legend for rock types including Dolprim, Dolsec, sdylmst, Lmst fw<7, Lmst fw>7, shale, gry, Carbon Sh, shale, red, Ss, and Siltst.

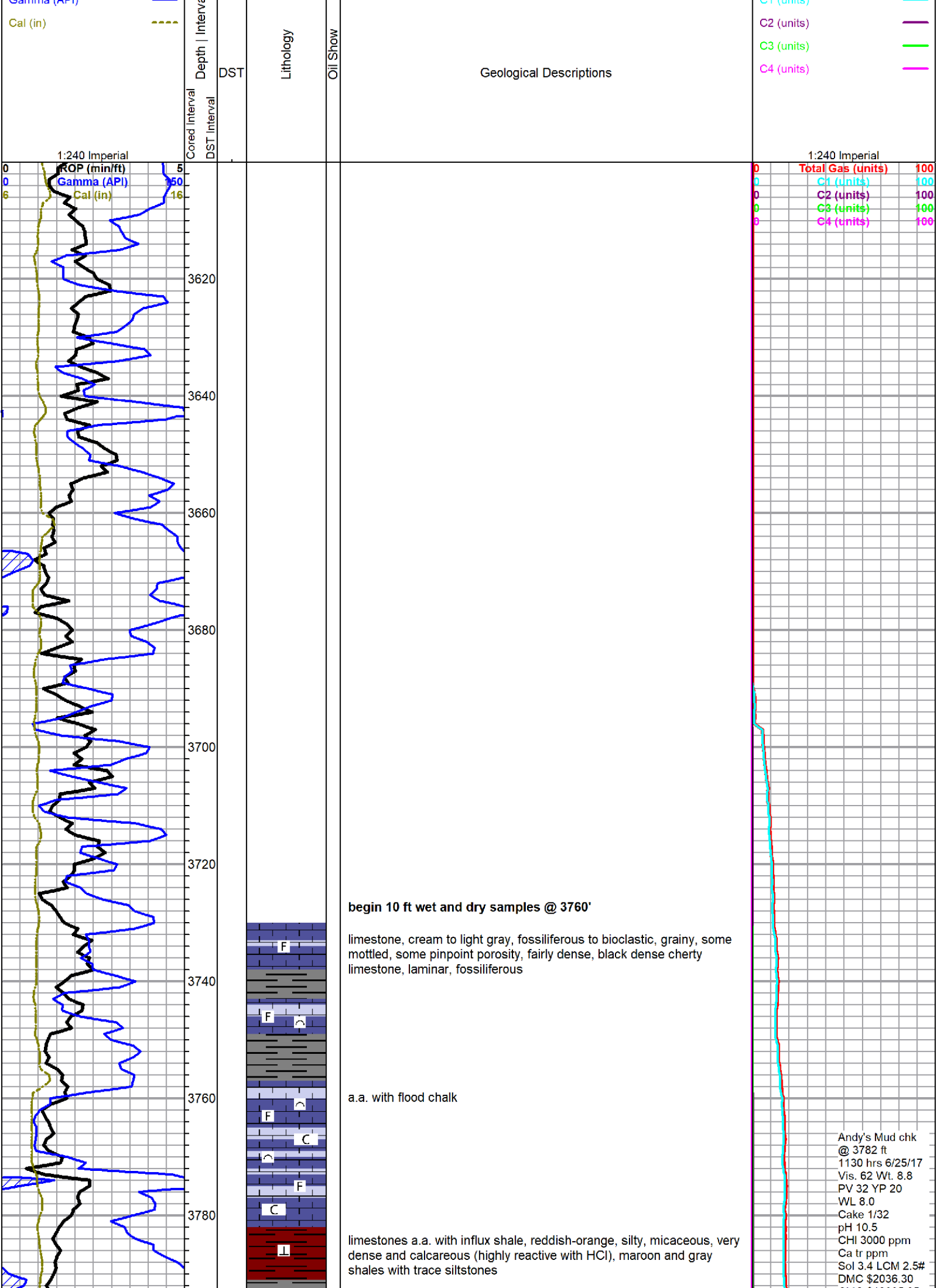
ACCESSORIES

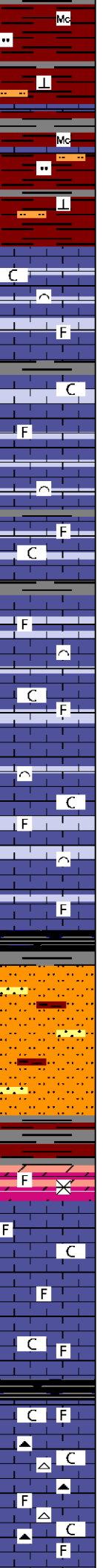
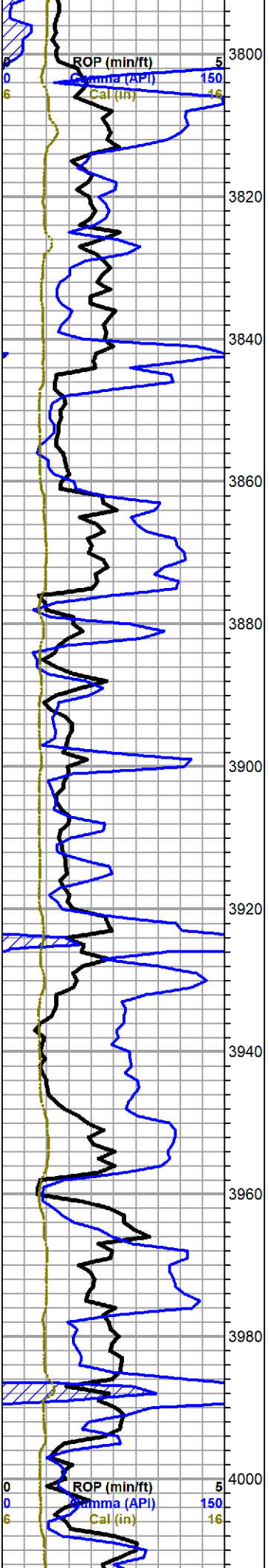
Legend for accessories including MINERAL (Argillaceous, Calcareous, etc.), FOSSIL (Bioclastic, Fossils < 20%, etc.), STRINGER (Sandstone, Siltstone, etc.), and TEXTURE (Chalky, Cryptocrystalline, etc.).

OTHER SYMBOLS

Legend for other symbols including Oil Show (Good Show, Fair Show, etc.) and DST (DST Int, DST alt, Core, tail pipe).

Table for Curve Track #1 showing ROP (min/ft), Gamma (API), and Total Gas (units) for TG, C1-C5.





Topeka 3827 -718

limestone, light gray, cream, white, microcrystalline, fossiliferous, bioclastic, poor visible porosity, chalky in part, no shows, abundant chalk

a.a. with trace pinpoint porosity

a.a. with some darker gray limestone, larger clasts

limestone, cream, micro-cryptocrystalline, fossiliferous to bioclastic, poor visible porosity, dense, abundant chalk, no shows

as above with influx dark gray mottled fossiliferous limestone, trace orange chert

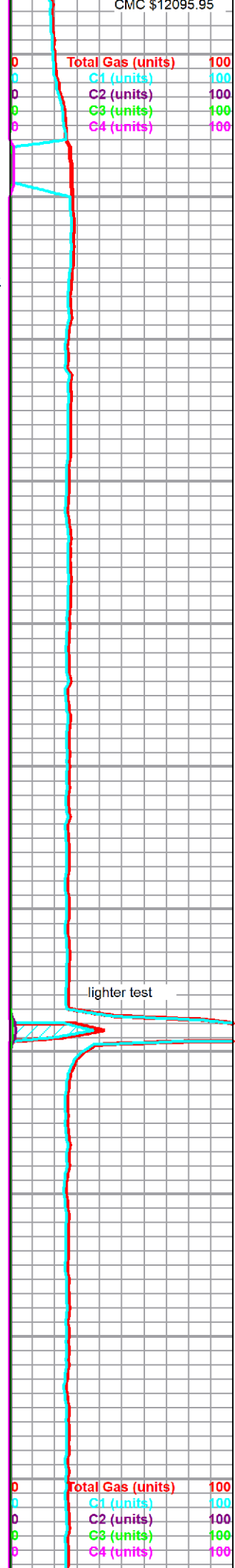
siltstone and very fine grain sandstone, light gray to reddish-brown, sandstone is well sorted, clayey in part, some silty shales

lighter test

dolomite to dolomitic limestone, white to cream, micro-fine crystalline, secondary crystals, re-crystallized fossil frags, poor visible porosity, no shows

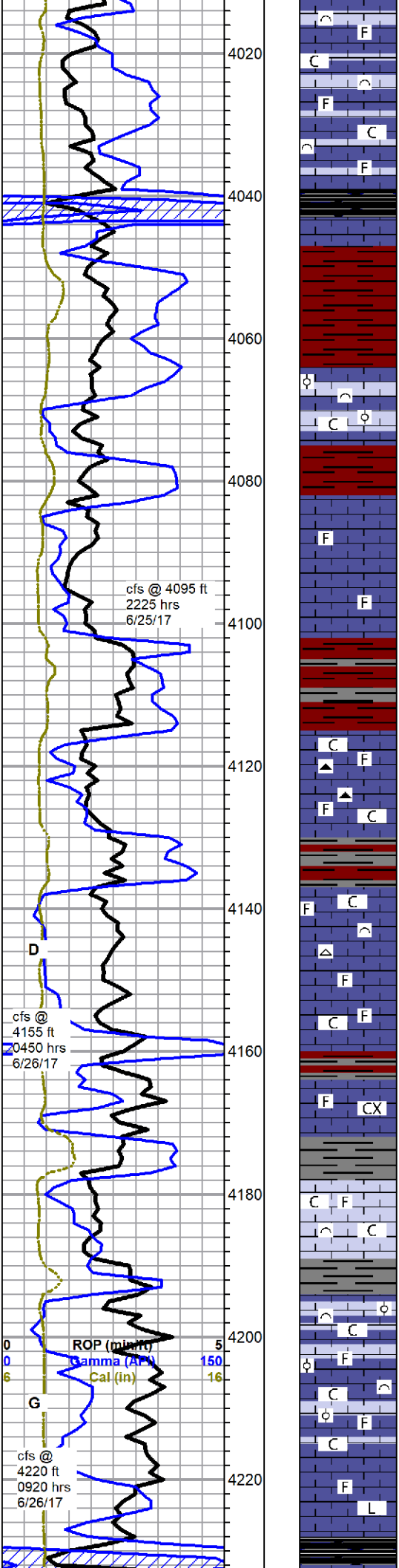
limestone, light gray, microcrystalline, grainy fossiliferous, fairly dense, some chalk, some gray to tan limestone, dense cryptocrystalline, lithographic, no shows

limestone a.a., flood gray to light gray and frosted cherts, fossiliferous, sharp, fresh, no shows, moderate chalk



Total Gas (units)	100
C1 (units)	100
C2 (units)	100
C3 (units)	100
C4 (units)	100

Total Gas (units)	100
C1 (units)	100
C2 (units)	100
C3 (units)	100
C4 (units)	100



limestone, light gray, some white, microcrystalline, fossiliferous to bioclastic, some scattered pin-point porosity, abundant chalk, no shows

Heebner 4039 -930

shale, black carbonaceous

Toronto 4064 -955

limestone, white to light gray, fine oolitic to bioclastic, some pin-point porosity, fairly dense, abundant chalk, no shows

Lansing 4082 -973

limestone, light gray, some pale green tint, micro-cryptocrystalline, fossiliferous, some secondary calcite crystals, poor visible porosity, no shows

limestone, light gray, cryptocrystalline, fossiliferous, grainy in part, poor visible porosity, with gray and orange cherts, very abundant chalk, no shows

limestone, light gray, cryptocrystalline, fossiliferous, chalky, some grainy bioclastic, poor visible porosity, trace gray chert, very abundant chalk, no shows

limestone, gray, cryptocrystalline, fossiliferous, mostly recrystallized, some calcite seams, dense, no shows

limestone, light gray to cream, grainy fossiliferous to bioclastic, chalky, poor visible porosity, abundant chalk, no shows

limestone, light gray to cream, grainy fossiliferous to bioclastic, some scattered fine oolitic, poor visible porosity with influx gray cryptocrystalline, fossiliferous limestone deeper in bench, abundant chalk, no shows

a.a. with light blue/gray limestone, cryptocrystalline, lithographic to slightly fossiliferous, no shows

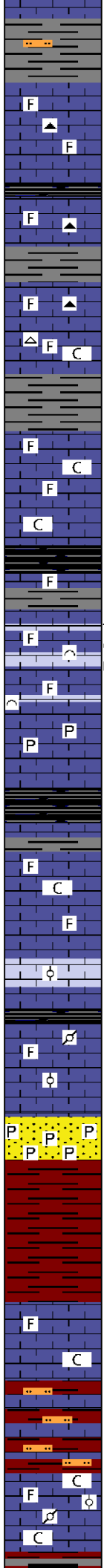
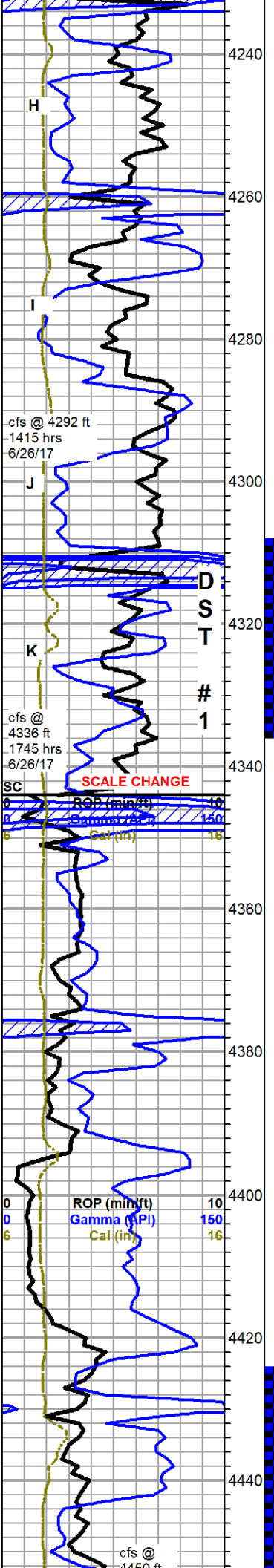
Muncie Creek 4228 -1119

shale, black carbonaceous

after CFS ran
35 stand short
trip @ 4095'

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100

Andy's Mud chk
@ 4221 ft
1030 hrs 6/26/17
Vis. 51 Wt. 9.1
PV 19 YP 12



gray shale with some light gray siltstone

limestone, mixed gray, blue/gray, fossiliferous, grainy, chalky, with tan and brown, cryptocrystalline, fossiliferous, dense, trace pyritic, chert, white/tan, fossiliferous & pale gray, translucent to opaque, slightly fossiliferous, fresh, sharp, some chalk, no shows

limestone, cream to light gray, micro-cryptocrystalline, fossiliferous, mixed grainy/chalky to dense, with some brown cryptocrystalline limestone, fossiliferous with some large clasts, some gray chert, opaque, fossiliferous, sharp, fresh, no shows

a.a. with influx white chert and chalk, no shows

limestone, light gray to blue/gray, mostly cryptocrystalline, fossiliferous, chalky in part, poor visible porosity, abundant chalk, no shows

Stark Shale 4309 -1200

4330 sample, flood shale, black carbonaceous, with limestone, brown, cryptocrystalline, fossiliferous, large clasts, dense

limestone, cream to light gray, fossiliferous to bioclastic, fair interclast porosity with good framework, lightly stained, gassy, bleeding some free oil, fair show free oil on break, strong sweet odor, fair pale green fluorescence, excellent cut

resume drilling after DST 1025 hrs 6/27/17

4350 sample - flood pyrite in tray

limestone, tan to brown and gray, crypto-microcrystalline, fossiliferous, some large clasts, fairly dense, grades to:
limestone, variable grays, mostly cryptocrystalline, fossiliferous to lithographic, dense, moderate chalk in samples, no shows

a.a. w/some chalky flattened oolitic

Base KC 4374 -1265

limestones, mixed, tan to gray to brown, fossiliferous to flattened oolitic to pelletal, chalky to dense, poor visible porosity, no shows

starting 4410 sample, flood pyrite, sandy to pock-marked, no sand clusters present

red, orange and maroon shales, silty

Marmaton 4415 -1306

limestone, light gray to gray, olive gray to brown, mixed chalky to dense fossiliferous, some large clasts

4450 sample, flood brown and gray siltstones

limestone, gray to olive/tan, cryptocrystalline, fossiliferous, some large clasts, some pelletal, some grainy fossiliferous and flattened oolitic, abundant chalk, trace gray chert, poor visible porosity but rocks fractured, no shows

4457 cfs and 4460 samples, LS a.a. with flood soft lavender and red

WL 7.6
Cake 1/32
pH 10.0
CHI 8000 ppm
Ca 96 ppm
Sol 4.8 LCM 2#
DMC \$0
CMC \$12101.75

47 unit total kick
strap 1.36' STB deviation 3/4 deg.

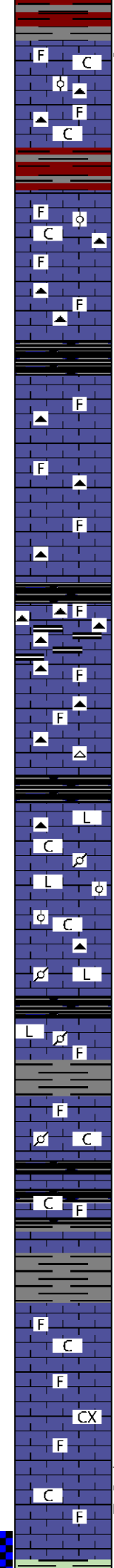
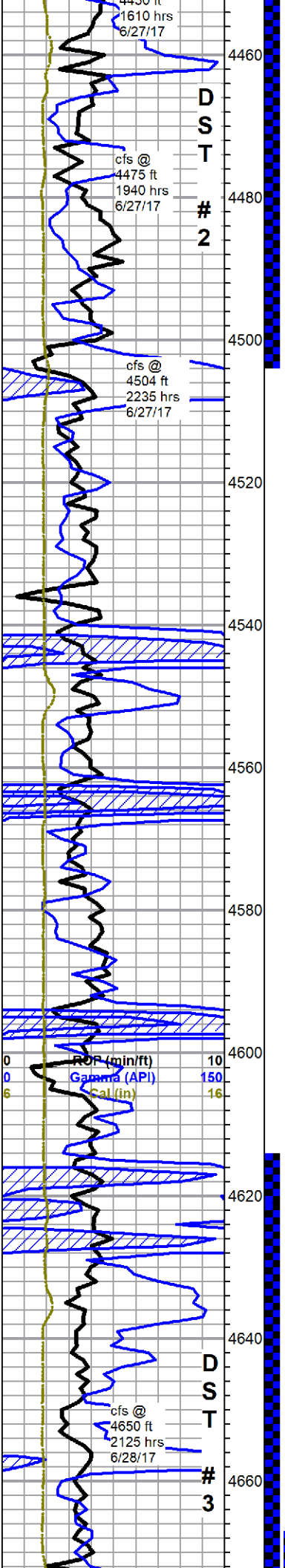
Andy's Mud chk @ 4364 ft
1145 hrs 6/27/17
Vis. 46 Wt. 9.0
PV 15 YP 10
WL 8.0
Cake 1/32
pH 9.5
CHI 9500 ppm
Ca 96 ppm
Sol 4.1 LCM 2#
DMC \$0
CMC \$12101.75

Total Gas (units) 100
C1 (units) 100
C2 (units) 100
C3 (units) 100
C4 (units) 100

added pre-mix

gas flat to open air flow, found flowline disconnected, reconnected at depth of 4473'

pull up and circ @ 4457' for 30 min, light plant still down and backup power



shales, marked increases in chalk from above

4470 sample faint odor, limestones a.a., no shows noted

4475 30 min sample, limestone, white to light gray, mostly cryptocrystalline, fossiliferous, some oolitic, dense to very chalky, poor visible porosity, with orange oolitic/foss chert and orange and white coral fans replaced with chert, abundant chalk, scaley sheen on water in tray, 60 min a.a. fleeting odor

as above with some yellow/olive/gray limestone, fossiliferous, dense, still much chalk

a.a. with influx limestone, dark gray, cryptocrystalline, fossiliferous to lithographic, dense, smokey gray cherts, less chalk, no shows

resume drilling after DST #2 1150 hrs 6/28/17

shale, black carbonaceous

Pawnee 4505 -1396

limestone, cream to light gray, microcrystalline, fossiliferous, chalky in part, poor visible porosity, chert, mottled fossiliferous and smokey gray, mostly sharp and fresh, no shows

grades to brown and gray mottled limestones, micro-cryptocrystalline, fossiliferous, dense, cherts as above, no shows

4550 sample, flood gassy black carbonaceous shale with dark gray and black fossiliferous chert, black obsidian like chert, limestone, gray, mottled, fossiliferous, large clasts, chalky, poor visible porosity, no shows

limestone and chert a.a. with influx brown limestone, mottled, fossiliferous, large clasts, some arenaceous, dense, still carrying abundant black and black carbonaceous shale, no shows

dark cherts drop out, influx smokey gray chert

Fort Scott 4564 -1455

limestone, light gray, cryptocrystalline, lithographic, with limestone, gray mottled to brown, oolitic to pelletal, dense and cherty to chalky, with: chert, frosted to smokey grays, fossiliferous to oolitic, abundant chalk, no shows

Cherokee 4592 -1483

shale, black carbonaceous

limestone, gray, cryptocrystalline, lithographic, limestone, white to cream, chalky, with dark fossil frags and pellets, very chalky, limestone, light gray to cream, fossiliferous, chalky in part, poor visible porosity, abundant chalk, no shows

NOTE: a.a. poor sample recovery at sample box 4620-4650 cfs ran caustic sweep prior to resuming drilling at 4650'. samples improved

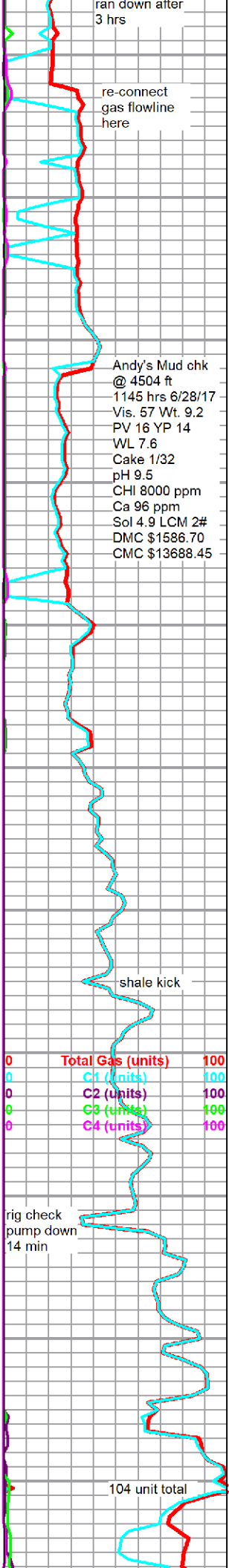
Johnson Zone 4635 -1526

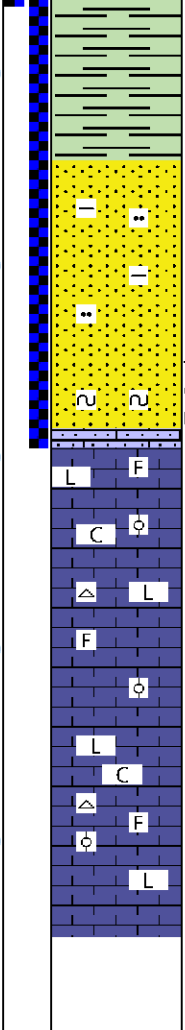
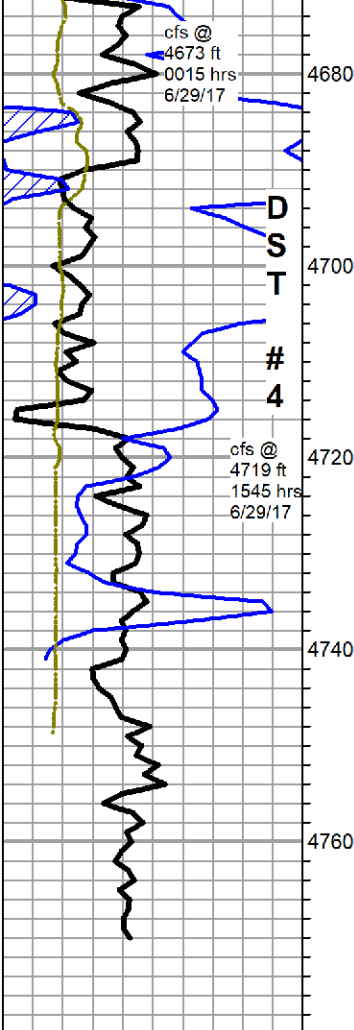
limestones, light gray to gray, cryptocrystalline, lithographic to fossiliferous, dense, - cream, light gray and white, microcrystalline, very chalky, fossiliferous, poor visible porosity, - brown cryptocrystalline, fossiliferous, some large clasts and secondary calcite, dense, some chalk, no shows, pale green fluor. - fleeting odor in 4650 sample

see NOTE above

4670 sample, a.a. with influx cream to gray, fossiliferous, grainy, sub-chalky, barren

4673 cfs samples, limestones a.a. with some limestone, light gray grainy fossiliferous, fair pinpoint interclast porosity, very light interclast stain, bleeding some gassy oil, good fluorescence, free oil droplets in trays, no odor in wet cups, slow bright steaming cut





Morrow Shale 4671 -1562

shales, mixed, red, maroon, gray, and green/olive mottled, some gray very silty

Morrow Sand 4689 -1580

sandstone, gray to white to pale green, very fine grain, argillaceous, silty, fair to poor sorting, fair rounding, well to poorly cemented, poor visible porosity, no shows

lower sand: sandstone, quartz, pale gray to blue/gray to white, fine grain, sub-rounded, fair sorting, friable to med. cemented, good intergranular porosity, glauconitic, light stain, slight show free oil, slight bleeding, good show gassy oil on break, no odor in wet cup, good fluorescence, excellent cut

Mississippian 4717 -1608

limestone, light gray to tan, fossiliferous to flattened oolitic, dense to chalky, some sandy, no shows

limestones, mixed, gray to light gray, cryptocrystalline, lithographic, dense, gray to cream, fossiliferous to oolitic, chalky to dense, oolitic, flattened and chalky, abundant chalk, trace chert, no shows

limestone, a.a., slight increase in oolitic, no shows

Rotary TD 4770 ft 0800 hrs 6/30/17
Gemini Log TD 4772 ft
Complete Logging Operations 1600 hrs 6/30/17

