

Scale 1:240 Imperial

Well Name: Palkowitsh #1-2
Surface Location: 970' FNL _1296' FEL Sec 2-18S-34W
Bottom Location:
API: 15-171-21028-00-00
License Number:
Spud Date: 2/12/2014 Time: 15:00
Region: Scott County
Drilling Completed: 2/22/2014 Time: 08:48
Surface Coordinates:
Bottom Hole Coordinates:
Ground Elevation: 3097.00ft
K.B. Elevation: 3106.00ft
Logged Interval: To: 5000.00ft
Total Depth: 5000.00ft
Formation: Mississippian
Drilling Fluid Type: Chemical/Fresh Water Gel

OPERATOR

Company: American Warrior
Address: 3118 Cummings Rd
Garden City, KS

Contact Geologist: Kevin Wiles
Contact Phone Nbr: 620-275-2963 x 306
Well Name: Palkowitsh #1-2
Location: 970' FNL _1296' FEL Sec 2-18S-34W API: 15-171-21028-00-00
Pool: Field: Wildcat
State: Kansas Country: USA

LOGGED BY



Company: Shelby Resources, LLC
Address: 445 UNION BLVD. Suite 208
LAKEWOOD, CO. 80228

Phone Nbr: 203-671-6034
Logged By: Geologist Name: Jeremy Schwartz

NOTES

The American Warrior Palkowitsh #1-2 was drilled to a total depth of 5000', bottoming in the Mississippian.

Three DST's were conducted in the Marmaton/Pawnee, Cherokee, and Johnson zones. The DST reports can be found at the top of this log.

Due to the DST results, sample shows, and log analysis it was determined to set 5 1/2" production casing and further test the Marmaton through perforations and stimulation. It should also be noted that log analysis of the Lansing "J" warrants testing before well abandonment. The dry samples were saved and will be available for further review at the Kansas Geological Society Well Sample Library, located in Wichita, KS.

Respectfully Submitted,
Jeremy Schwartz/Macklin Armstrong
Geologists

CONTRACTOR

Contractor: Duke Drilling Co.
Rig #: 4
Rig Type: mud rotary
Spud Date: 2/12/2014 Time: 15:00
TD Date: 2/22/2014 Time: 08:48
Rig Release: Time:

ELEVATIONS

K.B. Elevation: 3106.00ft
K.B. to Ground: 9.00ft

Ground Elevation: 3097.00ft

American Warrior

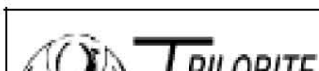
Daily Drilling Report

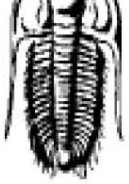
DATE	7:00 AM DEPTH	REMARKS
02/17/2014	3950'	Geologist Jeremy Schwartz on location @ 0530hrs, ~3920', DRLG ahead through Heebner, Toronto, Lansing, Muncie Creek, Lansing "H", Stark Shale, Hushpuckney,
02/18/2014	4420'	DRLG ahead through Base KC, Marmaton, CFS @ 4540', Resume DRLG, CFS @ 4576', Resume DRLG, CFS @ 4615', Short trip, strap out, drop survey, Conduct DST #1 across Marmaton/Pawnee formations
02/19/2014	4615'	Successful test, CTCH 1hour, DRLG ahead through Ft. Scott, Cherokee, CFS @ 4700', Conduct DST #2 in Cherokee,
02/20/2014	4700'	Successful test, CTCH 1hour, DRLG Ahead through Johnson, CFS @ 4795',
02/21/2014	4795'	Conduct DST #3 in Johnson, DRLG ahead, CFS @ 4824', Geologist Mac Armstrong on location ~ 1745hrs, DRLG ahead through Morrow, CFS @ 4850', CFS @ 4867', CFS @ 4880', DRLG ahead through Mississippian,
02/22/2014		Geologist Jeremy Schwartz off location @ 0030hrs, DRLG ahead through Mississippian to TD @ 5000', Conduct Logging Operations

American Warrior

Well Comparison Sheet

DRILLING WELL					COMPARISON WELL				COMPARISON WELL			
Palkowitsh #1-2 NW SW NE NE Sec. 2-T18S-R34W 3106 KB					Parker O - Franklin #1 C NW NE Sec. 3-T18S-R34W 3120 KB				New Gulf - Brothers #1 SE SW NE SW Sec. 34-T17S-R34W 3134 KB			
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Heebner	4011	-905	4011	-905	4007	-887	-18	-18	4012	-878	-27	-27
Toronto	4030	-924	4028	-922	4024	-904	-20	-18	4030	-896	-28	-26
Lansing	4058	-952	4058	-952	4054	-934	-18	-18	4058	-924	-28	-28
Muncie Creek	4246	-1140	4244	-1138	4249	-1129	-11	-9	4247	-1113	-27	-25
Lansing "H"	4258	-1152	4255	-1149	4268	-1148	-4	-1	4261	-1127	-25	-22
Stark Shale	4348	-1242	4350	-1244	4358	-1238	-4	-6	4352	-1218	-24	-26
Hushpuckney	4391	-1285	4394	-1288	4404	-1284	-1	-4	4395	-1261	-24	-27
Base KC	4470	-1364	4470	-1364	4484	-1364	0	0	4475	-1341	-23	-23
Marmaton	4507	-1401	4504	-1398	4517	-1397	-4	-1	4508	-1374	-27	-24
Pawnee	4586	-1480	4586	-1480	4597	-1477	-3	-3	4588	-1454	-26	-26
FT Scott	4615	-1509	4614	-1508	4629	-1509	0	1	4615	-1481	-28	-27
Cherokee	4625	-1519	4623	-1517	4638	-1518	-1	1	4623	-1489	-30	-28
Johnson	4712	-1606	4709	-1603	4731	-1611	5	8	4714	-1580	-26	-23
Morrow	4785	-1679	4783	-1677	4806	-1686	7	9	4798	-1664	-15	-13
Mississippian	4864	-1758	4862	-1756	Not Reached				4854	-1720	-38	-36
Total Depth	4999	-1893	5000	-1894	4892	-1772	-121	-122	4950	-1816	-77	-78





TRILOBITE TESTING, INC.

American Warrior
3118 Cummings Rd.
P.O. Box 399
Garden City KS 67846
ATTN: Jeremy Schwartz

2-18s-34w Scott Co KS

Palkowitsh 1 2

Job Ticket: 56747 **DST#: 1**

Test Start: 2014.02.19 @ 04:28:15

GENERAL INFORMATION:

Formation: **Marmaton-Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:56:30

Time Test Ended: 12:42:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Mike Roberts

Unit No: 65

Interval: **4460.00 ft (KB) To 4615.00 ft (KB) (TVD)**

Reference Elevations: 3102.00 ft (KB)

Total Depth: 4615.00 ft (KB) (TVD)

3097.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8846 Inside

Press@RunDepth: 201.10 psig @ 4466.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.02.19

End Date: 2014.02.19

Last Calib.: 2014.02.19

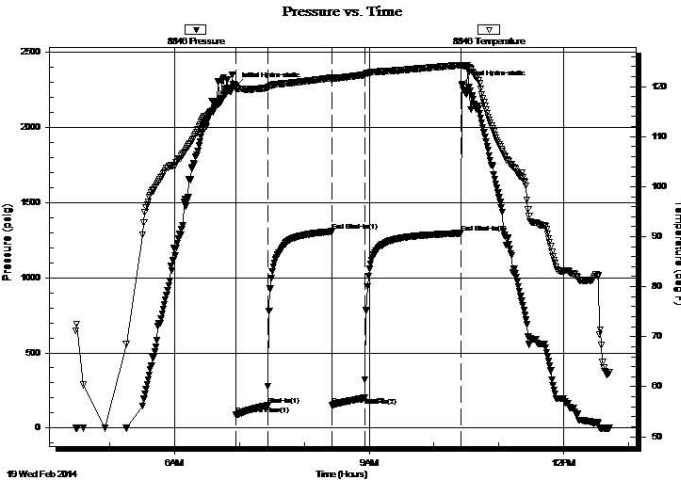
Start Time: 04:28:15

End Time: 12:42:45

Time On Btm: 2014.02.19 @ 06:56:15

Time Off Btm: 2014.02.19 @ 10:26:00

TEST COMMENT: IF: Built to 1/2" blow
IS: No return blow
FF: Built to 1" blow
FS: No return blow



PRESSURE SUMMARY

Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	2274.11	120.02	Initial Hydro-static
1	88.34	119.45	Open To Flow (1)
30	150.04	119.76	Shut-In(1)
90	1308.88	121.73	End Shut-In(1)
90	153.31	121.24	Open To Flow (2)
120	201.10	122.34	Shut-In(2)
209	1297.70	124.28	End Shut-In(2)
210	2285.47	124.22	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	ocm 30% m 70% o	0.87
124.00	ocm 20% o 80% m	1.74
62.00	w com 5% w 25% o 75% m	0.87

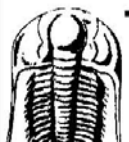
Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (MMcf/d)

Trilobite Testing, Inc

Ref. No: 56747

Printed: 2014.02.19 @ 13:22:13



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

American Warrior
3118 Cummings Rd.
P.O. Box 399

2-18s-34w Scott Co KS

Palkowitsh 1 2

Job Ticket: 56748

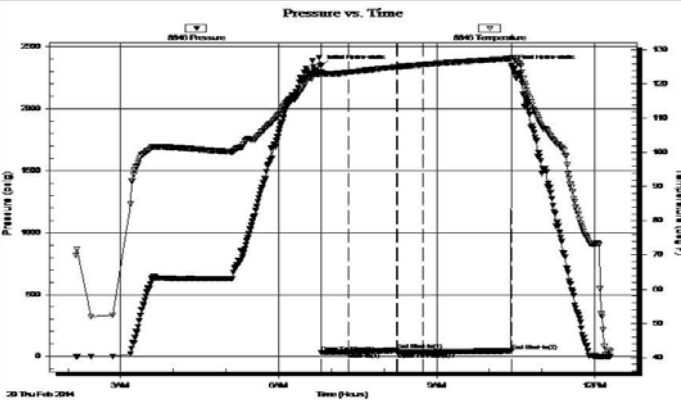
DST#: 2

GENERAL INFORMATION:

Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:48:45
 Time Test Ended: 12:18:00
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 65
 Interval: **4640.00 ft (KB) To 4700.00 ft (KB) (TVD)**
 Total Depth: 4640.00 ft (KB) (TVD)
 Reference Elevations: 3102.00 ft (KB)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 KB to GR/CF: 5.00 ft
 3097.00 ft (CF)

Serial #: 8846 Inside
 Press@RunDepth: 37.51 psig @ 4645.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.20 End Date: 2014.02.20 Last Calib.: 2014.02.20
 Start Time: 02:09:15 End Time: 12:18:00 Time On Btm: 2014.02.20 @ 06:48:30
 Time Off Btm: 2014.02.20 @ 10:25:45

TEST COMMENT: IF: Built to weak surface blow that died in 20 min.
 IS: No return blow
 FF: No blow
 FS: No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2348.27	123.55	Initial Hydro-static
1	34.70	123.02	Open To Flow (1)
31	36.00	123.43	Shut-In(1)
86	51.21	125.03	End Shut-In(1)
87	35.46	125.03	Open To Flow (2)
116	37.51	125.72	Shut-In(2)
217	44.74	127.50	End Shut-In(2)
218	2348.42	127.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud with oil spots 100% m	0.07

* Recovery from multiple tests

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (MMc/d)

Trilobite Testing, Inc

Ref. No: 56748

Printed: 2014.02.20 @ 12:58:14



DRILL STEM TEST REPORT

American Warrior
 3118 Cummings Rd.
 P.O. Box 399
 Garden City KS 67846
 ATTN: Jeremy Schwartz

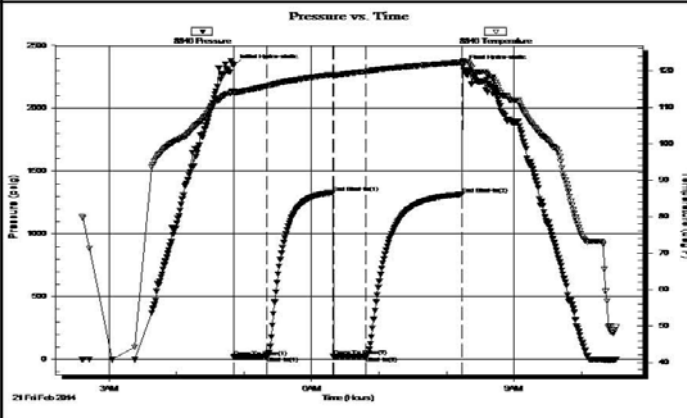
2-18s-34w Scott Co KS
Palkowitsh 1 2
 Job Ticket: 56749 **DST#: 3**
 Test Start: 2014.02.21 @ 02:36:15

GENERAL INFORMATION:

Formation: **Johnson**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:51:15
 Time Test Ended: 10:30:45
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 65
 Interval: **4720.00 ft (KB) To 4795.00 ft (KB) (TVD)**
 Total Depth: 4795.00 ft (KB) (TVD)
 Reference Elevations: 3106.00 ft (KB)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 KB to GR/CF: 5.00 ft
 3101.00 ft (CF)

Serial #: 8846 Inside
 Press@RunDepth: 27.02 psig @ 4725.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.21 End Date: 2014.02.21 Last Calib.: 2014.02.21
 Start Time: 02:36:15 End Time: 10:30:45 Time On Btm: 2014.02.21 @ 04:51:00
 Time Off Btm: 2014.02.21 @ 08:14:15

TEST COMMENT: IF: Built to 1/2" blow
 IS: No return blow
 FF: No blow
 FS: No return blow



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2344.76	114.37	Initial Hydro-static
1	22.08	113.86	Open To Flow (1)
30	24.74	115.76	Shut-In(1)
88	1331.05	118.91	End Shut-In(1)
89	23.98	118.22	Open To Flow (2)
117	27.02	119.71	Shut-In(2)
203	1316.17	122.25	End Shut-In(2)
204	2336.02	122.72	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbt)
20.00	mud 100% m	0.28

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (MMcf/d)

Trilobite Testing, Inc

Ref. No: 56749

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ROCK TYPES

	Lmst fw<7		shale, gm		Carbon Sh		Shcol
	Lmst fw>7		shale, gry		shale, red		Ss

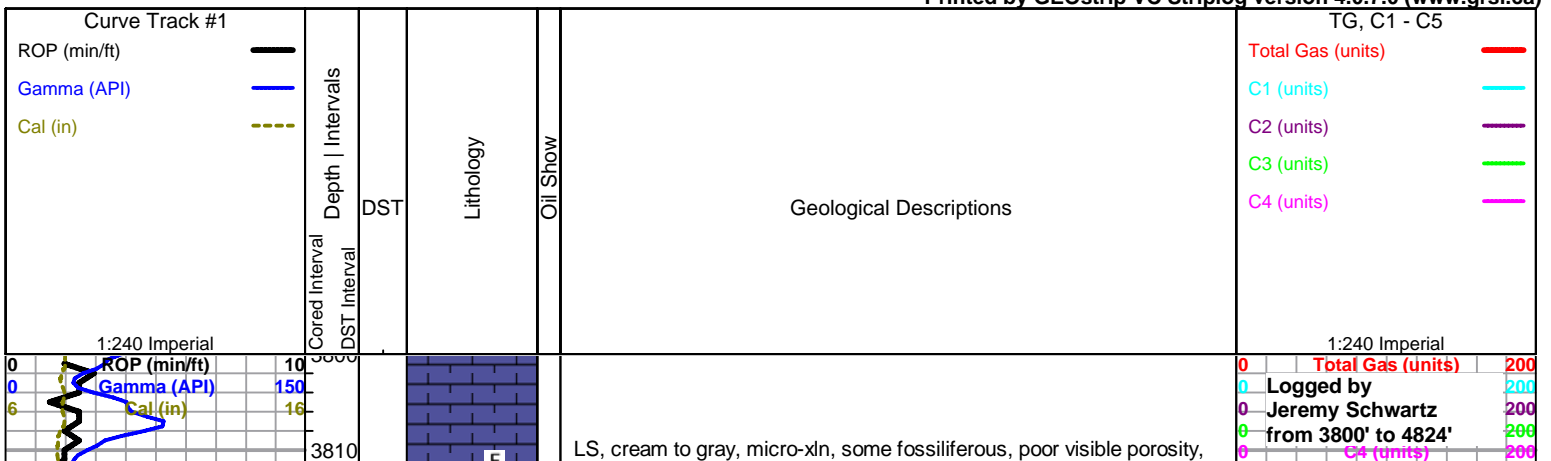
ACCESSORIES

FOSSIL F Fossils < 20% P Pellets	STRINGER ~ Chert S Siltstone	TEXTURE C Chalky
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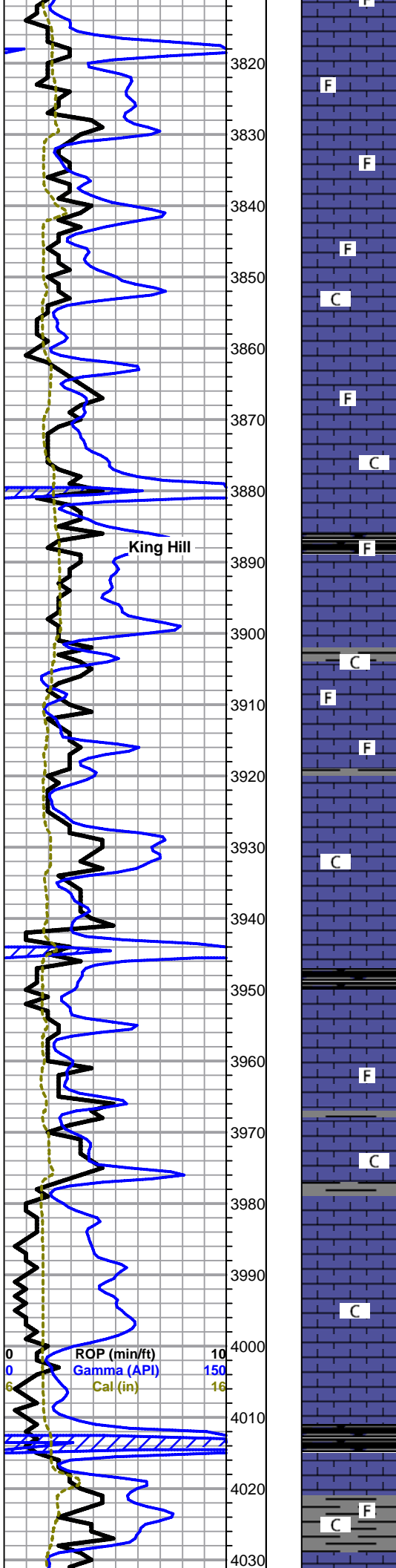
OTHER SYMBOLS

Oil Show ● Good Show ● Fair Show ● Poor show ○ Spotted or Trace ○ Questionable Stn D Dead Oil Stn ■ Fluorescence * Gas	DST ■ DST Int ■ DST alt
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LS, cream to gray, micro-xln, some fossiliferous, poor visible porosity,



also with some scattered red shale, no shows or odor

As above

LS, cream to gray, micro-xln, some fossiliferous, poor visible porosity, no shows or odor

As above

LS, cream to gray, micro-xln, some fossiliferous, poor visible porosity, slightly chalky, no shows or odor

LS, cream to gray with some gray mottled, micro-xln, some scattered with slightly re-crystalized edges, poor visible porosity, no shows or odor

LS, as above, some very scattered fossiliferous, slightly chalky, no shows or odor

As above, also with some scattered gray and black shale, mostly soft and waxy, some blocky and dense, no shows or odor

King Hill

LS, mostly cream with some gray, micro-xln, some with slight edge re-crystalization, some scattered fossiliferous, dense with poor visible porosity, no shows or odor

LS, mostly cream with some scattered gray and trace brown, micro-xln, mostly dense with poor visible porosity, no shows or odor

As above, slightly chalky, no shows or odor

LS, mostly cream with some scattered gray, micro-xln, some scattered fossiliferous, mostly dense with poor visible porosity, no shows or odor

LS, cream to tan, micro-xln, some soft and chalky, some hard and dense with poor visible porosity, slightly chalky sample, no shows or odor

LS as above, also with trace black shale

LS, cream to tan with some light gray, micro-xln, some soft and chalky, some hard and dense with poor visible porosity, also with some very scattered black shale, no shows or odor

LS, cream, micro-xln, some scattered fossiliferous, mostly hard and dense with poor visible porosity, no shows or odor

LS, cream, micro-xln, some soft and chalky, some hard and dense with poor visible porosity, slightly chalky sample, no shows or odor

As above

LS, cream, micro-xln, some soft and chalky, some hard and dense with poor visible porosity, slightly chalky sample, no shows or odor

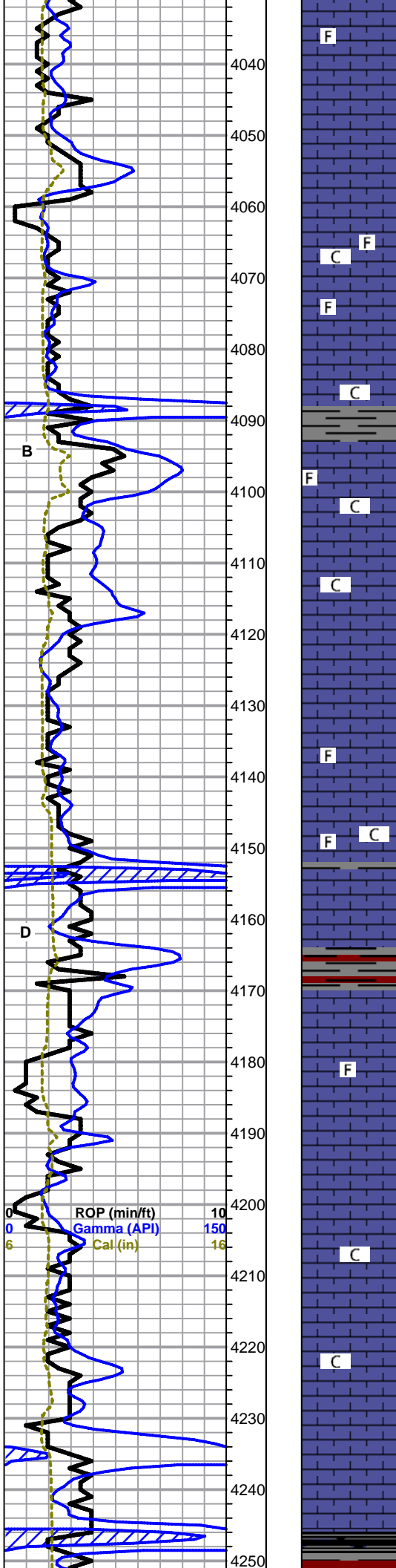
Heebner 4011 (-905)

Shale, black carbonaceous, soft and waxy

Toronto 4030 (-924)

LS, cream with some scattered light gray, micro-xln, some scattered

0	Total Gas (units)	200
0	C1 (units)	200
0	C2 (units)	200
0	C3 (units)	200
0	C4 (units)	200



LS, cream with some scattered light gray, micro-xln, some scattered slightly fossiliferous, hard and dense with poor visible porosity, also with some soft and chalky, slightly chalky sample, no shows or odor

LS, cream to light gray with some scattered off-white, micro-xln, some scattered slightly fossiliferous, overall poor visible porosity, no shows or odor

Lansing 4058 (-946)

LS, cream to gray with some scattered white to off-white, micro-xln, some slightly fossiliferous, poor visible porosity, slightly chalky, no shows or odor

LS, mostly cream to tan with some scattered gray and off-white, micro-xln, some slightly fossiliferous, mostly hard and dense with poor visible porosity, also with some very scattered white to tan and opaque chert, one piece oolitic, no shows or odor

LS as above, cherts appear to be dropping out, slightly chalky, no shows or odor

LS, cream to tan, micro-xln, trace very slightly sub-oomoldic, dense with poor to no visible oomold porosity, also with some scattered gray fossiliferous, dense with poor visible porosity, slightly chalky, no shows or odor

LS, cream, micro-xln, some scattered sub-oolitic to sub-oomoldic with poor visible oomold porosity, dense, also with some soft and chalky, no shows or odor

LS as above, mix of soft and chalky and hard and dense, trace sub-oolitic to sub-oomoldic, also with some scattered gray shale, no shows or odor

LS, cream to white, micro-xln, mostly lithographic, some scattered slightly fossiliferous, no shows or odor

LS, cream with some scattered white and gray, some scattered slightly fossiliferous, mostly hard and dense with poor visible porosity, slightly chalky, no shows or odor

LS as above, also with some scattered gray and maroon shale and trace red and black, soft and waxy, no shows or odor

As above, with influx of shales, gray and maroon with trace red and black, mostly soft and waxy, no shows or odor

LS, cream with some scattered gray fossiliferous, mostly dense with poor visible porosity, some scattered re-crystallization, some soft and chalky, also with trace brown to tan/opaque chert, fresh and sharp, no shows or odor

LS, cream, micro-xln, some soft and chalky, some hard and dense with poor visible porosity, also with some scattered gray, micro-xln, some slightly fossiliferous, no shows or odor

LS, cream, micro-xln, mostly soft and chalky, lithographic, some scattered hard and dense, poor visible porosity, also with trace brown to tan and white/opaque chert, fresh and sharp, no shows or odor

LS as above, also with some scattered cream, micro-xln, slightly re-crystallized, sub-oolitic to sub-oomoldic with poor to fair oomold porosity, barren, slightly chalky sample, no odor

LS, cream, micro-xln, some soft and chalky, some hard and dense, mostly lithographic, slightly chalky, no shows or odor

As above, with slight influx of gray and red shale, trace black

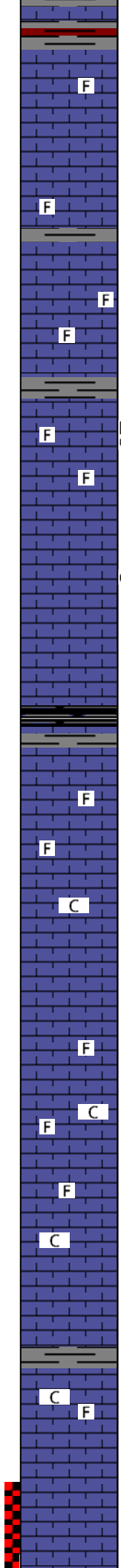
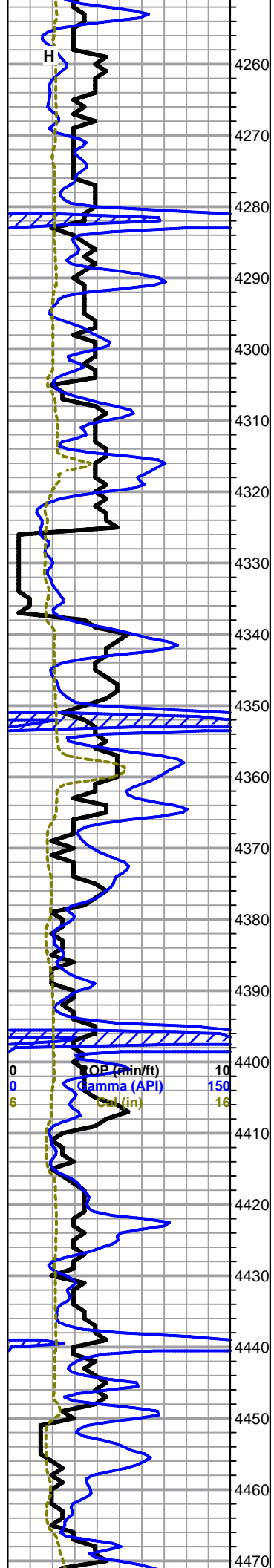
LS, cream to light gray, micro-xln, mostly hard and dense with poor visible porosity, also with some scattered gray shale with trace red, mostly soft and waxy, some scattered blocky and dense, no shows or odor

Muncie Creek 4246 (-1140)

Shale, black carbonaceous, mostly soft and waxy

Shale, mostly gray with some maroon and trace red, also with some LS

0	Total Gas (units)	200
0	C1 (units)	200
0	C2 (units)	200
0	C3 (units)	200
0	C4 (units)	200



Shale, mostly gray with some maroon and trace red, also with some LS, cream, micro-xln, hard and dense with poor visible porosity

4260 F LS, cream, micro-xln, some soft and chalky, some hard and dense with poor visible porosity, very scattered slightly fossiliferous, no shows or odor

4270 LS as above

4280 F

4290 F LS, cream, micro-xln, some hard and dense, some soft and brittle, also with some scattered light gray to light brown, some fossiliferous, hard and dense with poor visible porosity, slightly chalky, no shows or odor

4300 F

4310 F D LS, mostly same as above, found 2 chips cream, micro-xln, sub-oolitic with poor visible porosity, with very scattered trace dead black residual to tarry, wet black stain, very slow weak to no cut with dull fluorescence, no odor in cup

4320 F LS, cream with some scattered light gray and light brown, some fossiliferous, hard and dense with poor visible porosity, no shows or odor

4330 LS, cream, micro-xln, oomoldic, some dense, some brittle, with poor visible inter-oomold porosity, mostly barren, few chips with scattered tarry, clingy, wet black stain in oomolds, and slight black stain on edges in some, fair cut with dull fluorescence, slight show free oil in tray, poor fleeting odor in cup

4340

Stark Shale 4348 (-1242)

4350 Shale, black carbonaceous, blocky and dense, some soft and waxy

4360 F LS, cream to gray with some brown, micro-xln, some oomoldic with poor visible oomold porosity, some fossiliferous, hard and dense with poor visible porosity, no shows or odor

4370 F

4380 C LS, cream to light gray with some scattered brown, micro-xln, mostly hard and dense with poor visible porosity, some scattered soft and chalky, slightly chalky sample, no shows or odor

4390

Hushpuckney 4391 (-1285)

4400 F Shale, black carbonaceous, soft

4410 F C LS, cream with some scattered light gray, micro-xln, some soft and chalky, some fossiliferous, hard and dense with poor visible porosity, no shows or odor

4420 F LS as above, slightly chalky sample, no shows or odor

4430 C LS, cream with some gray and brown, some fossiliferous, mostly hard and dense with poor visible porosity, some very scattered with slightly re-crystallized edges, some soft and chalky, no shows or odor

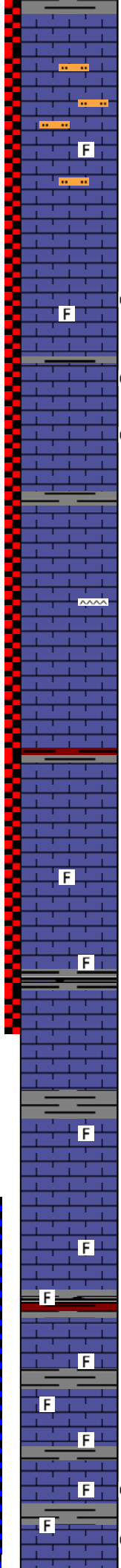
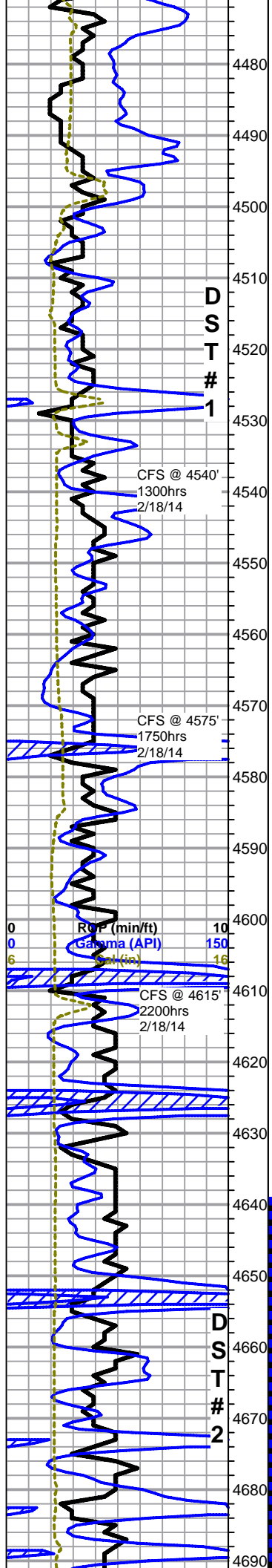
4440 As above, with trace white to opaque chert, fresh and sharp, no shows or odor

4450 C F LS, cream with some gray and brown, some slightly fossiliferous, mostly hard and dense with poor visible porosity, some soft and chalky, slightly chalky sample, no shows or odor

4460 LS as above, also with some scattered gray and maroon shale

Base KC 4470 (-1364)

0	Total Gas (units)	200
0	C1 (units)	200
0	C2 (units)	200
0	C3 (units)	200
0	C4 (units)	200



LS, mix of cream, gray, and brown, mostly hard and dense with poor visible porosity, some soft and chalky, also with gray and maroon shale as above with trace red, no shows or odor

Mixed LS and shales as above, also with influx of gray siltstone, no shows or odor

Mixed LS, shales, and siltstone as above, with slight influx of cream to tan LS, micro-crypto xln, some slightly fossiliferous, mostly hard and dense with some scattered soft and chalky, no shows or odor

Marmaton 4507 (-1401)

LS, cream to tan, micro-xln, mostly hard and dense, barren, few chips sub-oolitic with very scattered brown to black inter-oolite staining and slight visible inter-oolite porosity, also with some scattered shale as above, no odor in cup

LS, cream to tan with some scattered light brown, micro-xln, some scattered sub-oolitic to oolitic and some fossiliferous, mostly hard and dense with poor visible porosity, found one chip cream, hard and dense with several small vugs, and slightly vuggy edge porosity with brown to black stain in vugs and partly in matrix as well, very slow cut with dull fluorescence, NSFO, no odor in cup

4540' 30" LS, cream, micro-xln, some sub-oolitic to oolitic, some slightly fossiliferous as well (fossil frags mixed in with oolites), mostly barren, few chips with several very scattered small edge vugs and slight brown to black stain on edge only, no fluorescence in tray, no odor

60" LS, cream to tan with some scattered light gray to brown, micro-crypto xln, mostly dense with poor visible porosity, some soft and chalky, chalky sample, no shows or odor

As above, also with trace brown to tan chert, no shows or odor

4575' 30" LS, gray, micro-xln, fossiliferous, hard and dense with poor visible porosity, no shows or odor

60" Same as above

LS, cream with some gray and brown, some fossiliferous, hard and dense with poor visible porosity, some scattered soft and chalky, also with trace tan to brown chert and abundant gray and maroon shale with trace red, no shows or odor

Pawnee 4586 (-1480)

LS, cream, micro-xln, some scattered slightly fossiliferous, mostly dense with poor visible porosity, few chips vf-xln with vf scattered pinpoint porosity, barren, no cut, no shows or odor

4615' 30" LS, cream to light gray, some scattered slightly fossiliferous, dense with poor visible porosity, few scattered chips cream, with scattered vf pinpoint porosity, barren, no cut or fluorescence, no odor in cup

4615' 60" same as above, with influx of gray shale with trace black

Fort Scott 4615 (-1509)

LS, cream, micro-xln, some scattered fossiliferous, mostly dense with poor visible porosity, some very scattered with trace vf pinpoint porosity, barren, also with abundant gray, maroon, and red shale

Cherokee Shale 4625 (-1519)

LS, cream with some light gray, micro-xln, some scattered fossiliferous, mostly lithographic, dense with poor visible porosity, no shows or odor

LS as above, with abundant gray and red shale with trace maroon, also some very scattered tan to brown chert, some fossiliferous, no shows or odor

LS, gray to cream with some brown, some fossiliferous, mostly dense with poor visible porosity, some brittle, also with some very scattered chert as above, no shows or odor

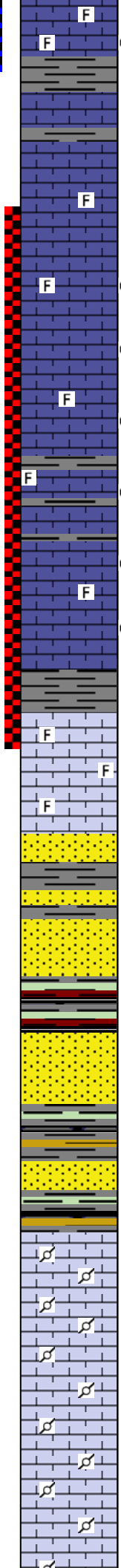
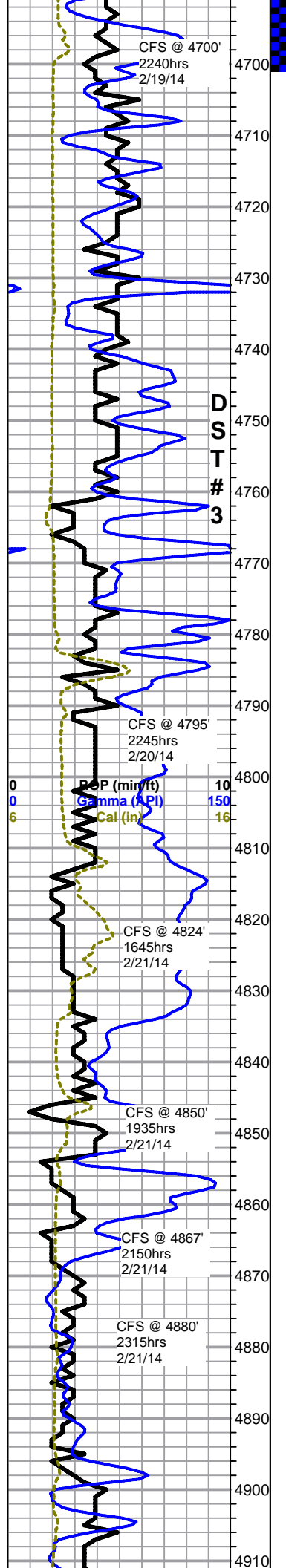
LS as above, also with some gray and black shale with trace maroon and red, slightly chalky, no shows or odor

LS, gray to cream with some brown, micro-xln, some fossiliferous, mostly hard and dense with poor visible porosity, some scattered lithographic, slightly chalky, no shows or odor

LS as above, fossiliferous, mostly hard and dense with poor visible porosity, found few chips cream, micro-xln, dense with poor visible porosity with slightly re-crystallized edges and one to two small edge vugs with tarry, wet black stain in vugs only, slow streaming cut with bright white fluorescence, NSFO, no odor in cup

LS, gray to cream with some brown, micro-xln, fossiliferous, mostly hard and dense with poor visible porosity, found one chip cream to white, soft and chalky in part, with scattered dead black stain, upon break chip falls apart and has slight show tarry, wet black stain, no odor in cup

0	Total Gas (units)	200
0	C1 (units)	200
0	C2 (units)	200
0	C3 (units)	200
0	C4 (units)	200



4700' 30" LS, gray to cream with some brown micro-xln, fossiliferous, hard and dense with poor visible porosity, found one chip cream, with slightly re-crystallized edge and several small edge vugs with brown stain in vugs and partly in matrix as well, slow streaming cut with dull milky white fluorescence, no odor in cup

60" LS as above, found one chip with one small vug and tarry, wet black stain in vug, slow cut from vug only with dull fluorescence, no odor in cup

Johnson 4712 (-1606)

LS, cream with some gray, micro-xln, some fossiliferous, mostly hard and dense with poor visible porosity, also with trace tan to brown chert and pyrite, no shows or odor

LS, cream, micro-xln with some very scattered crypto-xln, mostly lithographic and dense with poor visible porosity, some scattered fossiliferous, few chips with slightly re-crystallized edges, one small chip with slightly vuggy edge and very scattered vf pinpoint porosity, with brown edge stain and partly in matrix as well, slow streaming cut with milky white fluorescence, no odor in cup

LS as above, found one small chip white, micro-xln, with very small scattered edge vugs with very slight brown edge stain in and around vugs only, upon break chip shows fair to good inter-xln prosity, no odor in cup

Mostly same as above, with few chips white, micro-xln with scattered vf pinpoint porosity and scattered light golden brown to brown stain (mostly visible when chips dried out), very friable, upon break chips show poor to fair inter-xln porosity with scattered stain in matrix as above, one chip more dense with fair to good visible pinpoint porosity and few scattered small vugs and saturated brown stain, fair to good streaming cut with bright white fluorescence, SSFO in tray, poor fleeting odor in cup

LS, cream, micro-xln, some fossiliferous, mostly dense with poor visible porosity, few very scattered chips dense with scattered vf pinpoint porosity and one to two small vugs with scattered light brown stain, upon break chips have increase in odor with fair to good show free oil and mostly saturated to saturated matrix, poor fleeting odor in cup

Morrow 4785 (-1679)

Shale, gray to dark gray

LS, cream, micro-xln, some fossiliferous, mostly dense with poor visible porosity

LS as above

LS as above

Sandstone white to light gray, fine grained sub angular tightly cemented

Shale, gray, dark gray

Sandstone as above

Shale, gray, dark gray

Sandstone, white to light gray, fine grained sub angular tightly cemented

Sandstone, white to light gray, fine grained sub angular, tightly cemented

Shale, gray, gray green, red, and black

Sandstone, light gray to light green fine grained sub angular tightly cemented slightly glauconitic nsfo

Sandstone, white to light gray, medium grained, sub angular to sub rounded slightly friable to tightly cemented nsfo

Shale, gray, dark gray, gray green, black, and some yellow

Sandstone, white to light gray fine to medium grained sub angular to sub rounded slightly glauconitic slightly friable to tightly cemented nsfo

Shale, gray, dark gray, gray green, black, and some yellow

Mississippi 4864 (-1758)

LS, tan to light gray, meduim-xln to pelletal, medium hard no visible porosity

LS, tan to light gray, granular to pelletal, medium hard, no visible porosity

LS as above

LS, tan to gray, granular to pelletal, medium hard, no visible porosity

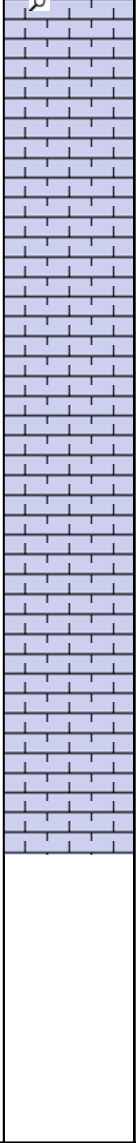
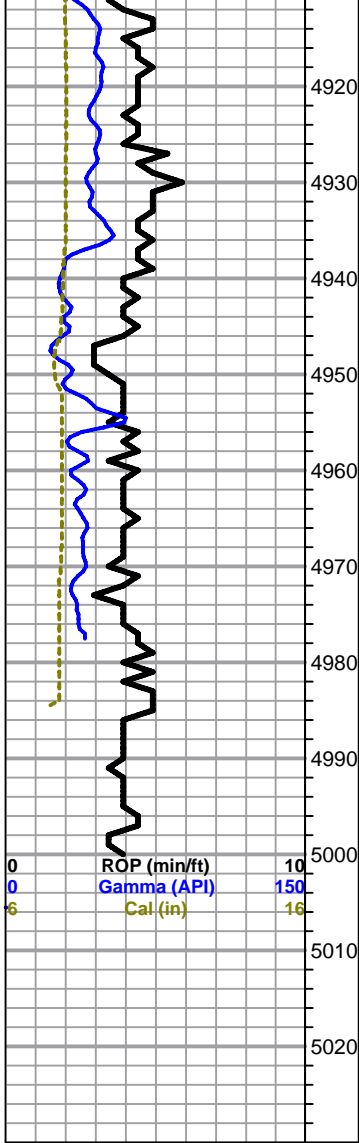
LS as above

LS, gray, granular to pelletal, dense, no visible porosity

LS as above

0	Total Gas (units)	200
0	C1 (units)	200
0	C2 (units)	200
0	C3 (units)	200
0	C4 (units)	200

Logged by
Macklin Armstrong
from 4824' to 4980'



LS, tan to cream, coarse grain to granular, dense, no visible porosity

LS as above

LS as above

LS, cream, medium to coarse grained, dense, no visible porosity

LS as above

LS as above

LS, cream, medium grained, dense, slightly chalky, no visible porosity

LS as above

LS, cream to light gray, medium grained, dense slightly chalky, no porosity

LS as above

LS as above

RDT 5000 (-1894)

Finished drilling at 8:48 am on 2-22-14. Circulated for log 90 minutes.

0	Total Gas (units)	200
0	C1 (units)	200
0	C2 (units)	200
0	C3 (units)	200
0	C4 (units)	200

0	ROP (min/ft)	10
0	Gamma (API)	150
6	Cal (in)	16