Scale 1:240 Imperial

Well Name:	Boye #1-16		
Surface Location:	Sec. 16 - T16S - R10W / SE NW SW NW		
Bottom Location:			
API:	15-053-21326-0000		
License Number:	33483		
Spud Date:	6/8/2015	Time:	5:15 PM
Region:	Ellsworth Co., KS		
Drilling Completed:	6/15/2015	Time:	2:00 AM
Surface Coordinates:	1800' FNL & 430' FWL		
Bottom Hole Coordinates:			
Ground Elevation:	1874.00ft		
K.B. Elevation:	1884.00ft		
Logged Interval:	2600.00ft	To:	3450.00ft
Total Depth:	3450.00ft		
Formation:	Arbuckle		
Drilling Fluid Type:	Chemical/Fresh Water Gel		

OPERATOR

Company:	Valhalla Exploration LLC		
Address:	8100 E 22nd St. N Building 1800-2 Wichita, KS 67226		
Contact Geologist:	Adam T. Kennedy		
Contact Phone Nbr:	316.558.5202		
Well Name:	Boye #1-16		
Location:	Sec. 16 - T16S - R10W / SE NW SW NW	API:	15-053-21326-0000
Pool:		Field:	Stoltenberg
State:	Kansas	Country:	USA

LOGGED BY

Company:	Valhalla Exploration, LLC		
Address:	8100 E. 22nd St. North Building 1800-2 Wichita, KS 67226		
Phone Nbr:	316.210.1295		
Logged By:	Geologist	Name:	Adam G. Nighswonger

REMARKS

After review of the geologic log, sample descriptions, DST results, and open hole electric logs of the Boye #1-16, the decision was made by operator to run 5 1/2" production casing for further evaluation of the Arbuckle section of said well.

NOTE: The drilling time and gas curves from 2600' to 3200' have been shifted 3' deeper/lower to correspond with electric log curves. All connection and circulation points in said interval have also been adjusted to match the overall shift. No such adjustments were made to the data 3201' to total depth 3450'.

The well samples were saved, submitted, and will be available for review at the Kansas Geologic Survey's Well Sample Library located in Wichita, KS.

Respectfully Submitted,

Adam G. Nighswonger

GENERAL INFORMATION

Service Companies

Drilling Contractor: Southwind Drilling - Rig #1
Tool Pusher: Larry Beavers
Daylight Driller: Derek Petz
Evening Driller: Gary Ledbetter
Morning Driller: Ken Thompson
Relief Driller:

Gas Detector: Bluestem Environmental
Engineer: Keith Reevis
Unit: 5279
Operational By: 2000'

Drilling Fluid: Mud-Co/Service Mud Inc.
Engineer: Gary Schmidtberger

Logging Company: Nabors Completion Service
Engineer: Blake Waggoner
Logs Ran: DIL, DUCP, MEL, BHCS

Testing Company: Eagle Testers LLC
Tester: Gene Budig

Deviation Survey	
Depth	Survey
394'	1/4°
3353'	3/4°
RTD 3450'	1°

Pipe Strap	
Depth	Pipe Strap
3353'	2.94 short to board

Bit Record								
Bit #	Size	Make	Type	Serial Number	Depth In	Depth Out	Feet	Hours
1	12 1/4"	Smith	RT	RR	0	394'	394	4
2	7 7/8"	Varel	HE-21	1346929	394'	3353'	2959	68
3	7 7/8"	Reed	J22	RR	3353'	3450'	97	3 1/2

Surface Casing	
6/9/2015	Ran 9 joints of new 23#, 8 5/8" surface casing, Tally @ 380', Set @ 392'. Used 325 sacks of Common, cement did circulate, by Basic (#12323), plug down @ 0600 hrs on 06.09.15.

Production Casing	
6/15/2015	Ran 82 joints of new 15.5#, 5 1/2" production casing, Tally @ 3439', Set @ 3448'. Used 155 sacks total: 30 sacks 60/60 Poz, 125 sacks Econo Bond, 30 sacks for Rat hole, 20 sacks for Mouse hole; cement did circulate, by Basic (ticket # N/A), job completed 2100 hrs 06.15.15.

DAILY DRILLING REPORT

Date	0700 Hrs Depth	Previous 24 Hours of Operations
6/12/2015	3035'	Drilling and connections Topeka. Geologist Adam G. Nighswonger on location 1720 hrs 06.11.15 drilling @ 2775'. Drilling and connections Topeka, Heebner, Douglas, Brown Lime, and into Lansing zones. Down for pump repairs @ 3035'. Made 620' in past 24 hrs of operations. DMC: $905.23 CMC: $6,080.40 WOB: 32,000 RPM: 80 PP: 950
6/13/2015	3353'	Resume drilling 0800 hrs 06.12.15. Drilling and connections Lansing zones. CFS @ 3070' (LKC B'). Drilling and connections Lansing zones and into basal Pennsylvanian. Stop and CTCH @ 3330'; conduct short trip for XX stands. Back to bottom and CTCH; resume drilling 0500 hrs 06.13.15. Drilling and connections basal Pennsylvanian, Simpson, and into Arbuckle. CFS @ 3353' (ARB). Made 318' in past 24 hrs of operations. DMC: $1,300.26 CMC: $7,380.66
6/14/2015	3361'	Shows warrant test. CTCH, drop survey and strap out for DST #1. TIH with tool and conduct test; test successful. TOH with tool and back to bottom with bit, CTCH; resume drilling 2100 hrs 06.13.15. Drilling Arbuckle. CFS @ 3361' (ARB). Shows warrant test. CTCH and TOH for DST #2. TIH with tool and conduct test; test successful. TOH with tool and back to bottom with bit. Made 8' in past 24 hrs of operations. DMC: $160.33 CMC: $7,540.99
6/15/2015	RTD 3450'	CTCH; resume drilling 0930 hrs 06.14.15. Drilling and connections Arbuckle. CFS @ 3369' & 3376' (ARB). Shows warrant test. CTCH and TOH for DST #3. TIH with tool and conduct test; test successful. TOH with tool and back to bottom with bit, CTCH; resume drilling 2315 hrs 06.14.14. Drilling and connections Arbuckle. Rotary total depth 3450' reached 0200 hrs 06.15.15. CTCH, drop survey and TOH for logs. Commence open hole logging operations. Made 89' in past 24 hrs of operations. DMC: $333.80 CMC: $7,874.79
6/16/2015	RTD 3450'	Logging completed 1100 hrs 06.15.15. Geologist off location 1200 hrs.

WELL COMPARISON SHEET

	Drilling Well				Comparison Well				Comparison Well				Comparison Well			
	Valhalla Exploration - Boye #1-16 Sec. 16 - T16S - R10W 1800' FNL & 430' FWL 1884 KB				Cities Service Oil Co - Boye #4 Sec. 16 - T16S - R10W C W/2 W/2 NW Oil - Arb ('51) 1858 KB		Structural Relationship		Ind Terr Ill Oil Co - Boye #1 Sec. 16 - T16S - R10W C SW SW NW Oil - Arb ('38) 1885 KB		Structural Relationship		Bergman Oil Co. - Boye 'B' #1 Sec. 16 - T16S - R10W 915' FNL & 825' FWL Oil - Arb ('80) 1864 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Sample	Sub-Sea	Sample	Log	Sample	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Anhydrite	665	1219	670	1214					667	1218	1	-4	648	1216	3	-2
Topeka	2654	-770	2659	-775									2641	-777	7	2
Queen Hill Sh.	2825	-941	2828	-944									2812	-948	7	4
Heebner Shale	2910	-1026	2913	-1029									2894	-1030	4	1
Toronto Lms.	2929	-1045	2930	-1046									2914	-1050	5	4
Douglas	2938	-1054	2939	-1055									2923	-1059	5	4
Brown Lime	3012	-1128	3015	-1131									2998	-1134	6	3
Lansing-K.C.	3026	-1142	3033	-1149	2996	-1138	-4	-11	3025	-1140	-2	-9	3011	-1147	5	-2
LKC 'B'	3059	-1175	3061	-1177									3046	-1182	7	5
LKC 'F'	3108	-1224	3111	-1227									3092	-1228	4	1
Muncie Creek Sh.	3165	-1281	3167	-1283									3147	-1283	2	0
LKC 'H'	3182	-1298	3179	-1295									3162	-1298	0	3
LKC 'J'	3204	-1320	3208	-1324									3188	-1324	4	0
Stark Shale	3241	-1357	3241	-1357									3221	-1357	0	0
LKC 'K'	3247	-1363	3243	-1359									3224	-1360	-3	1
Hushpuckney Shale	3275	-1391	3274	-1390									3256	-1392	1	2
LKC 'L'	3282	-1398	3284	-1400									3265	-1401	3	1
Base-K.C.	3303	-1419	3303	-1419									3284	-1420	1	1
Simpson	3334	-1450	3334	-1450	3306	-1448	-2	-2					3320	-1456	6	6
Arbuckle	3346	-1462	3347	-1463	3319	-1461	-1	-2	3345	-1460	-2	-3	3334	-1470	8	7
Total Depth	3450	-1566	3451	-1567	3324	-1466			3353	-1468			3335	-1471		

ROCK TYPES

DOL2, LMST1, LMST2, LMST3, LMST4, SHALE CAR, SHALE GRN, SHALE GRA, SHALE RED

ACCESSORIES

MINERAL
- Argillaceous
- Calcareous
- Pyrite
- Sandy
- Silty
- Chert White

FOSSIL
- Bioclastic or Fragmental
- Cephalopod
- Crinoids
- Fossils < 20%
- Oolite
- Oomoldic

STRINGER
- Shale Green
- Shale Gray

TEXTURE
- C Chalky

OTHER SYMBOLS

MISC
- Daily Report
- Digital Photo
- Document
- Folder
- Link
- Vertical Log File
- Horizontal Log File
- Core Log File
- Drill Cuttings Rpt

DST
- DST1
- DST2
- DST3
- Core
- tail pipe

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

Curve Track #1
- ROP (min/ft)
- Gamma (API)
- Cal (in)

Depth | Intervals

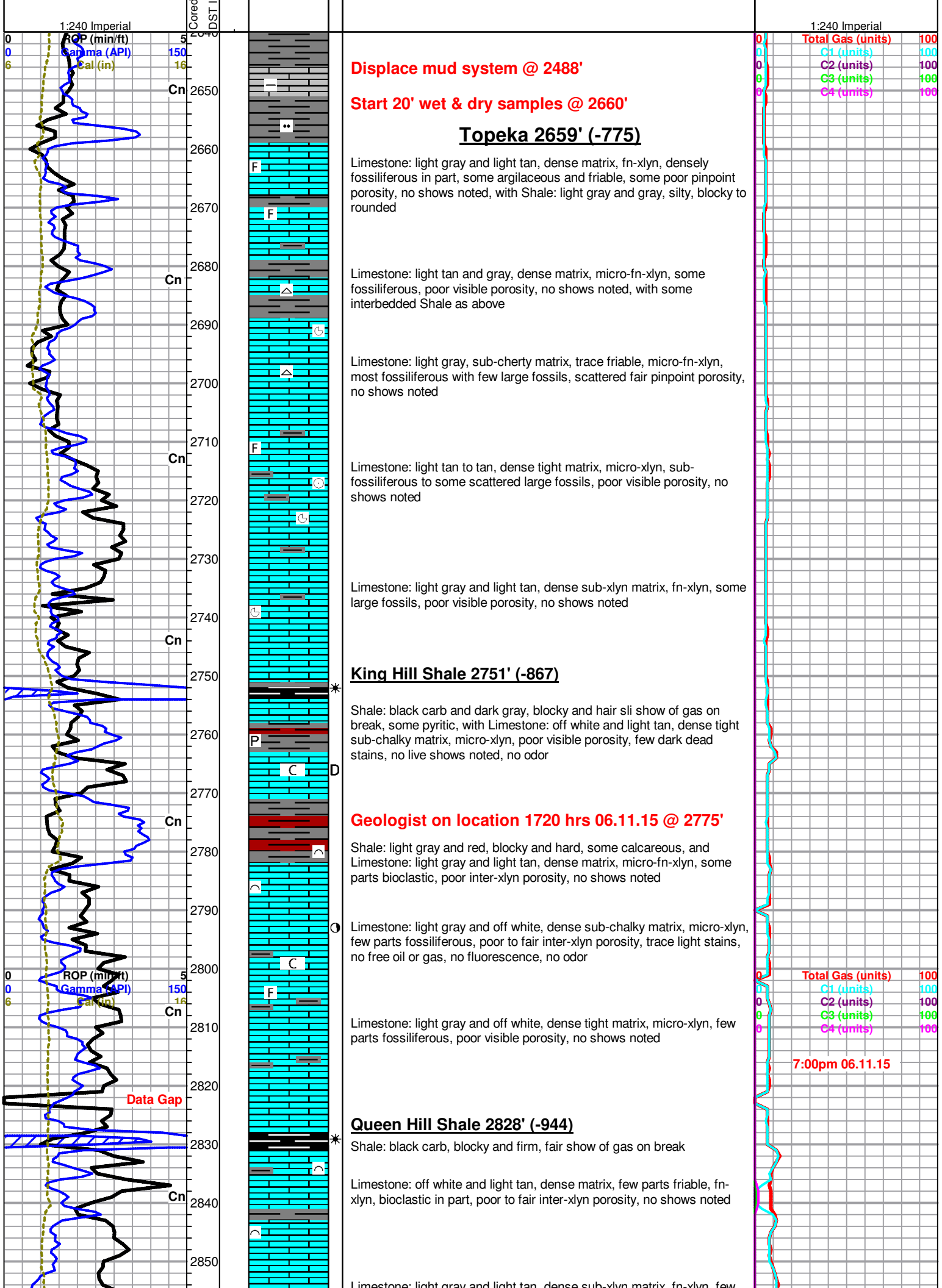
DST

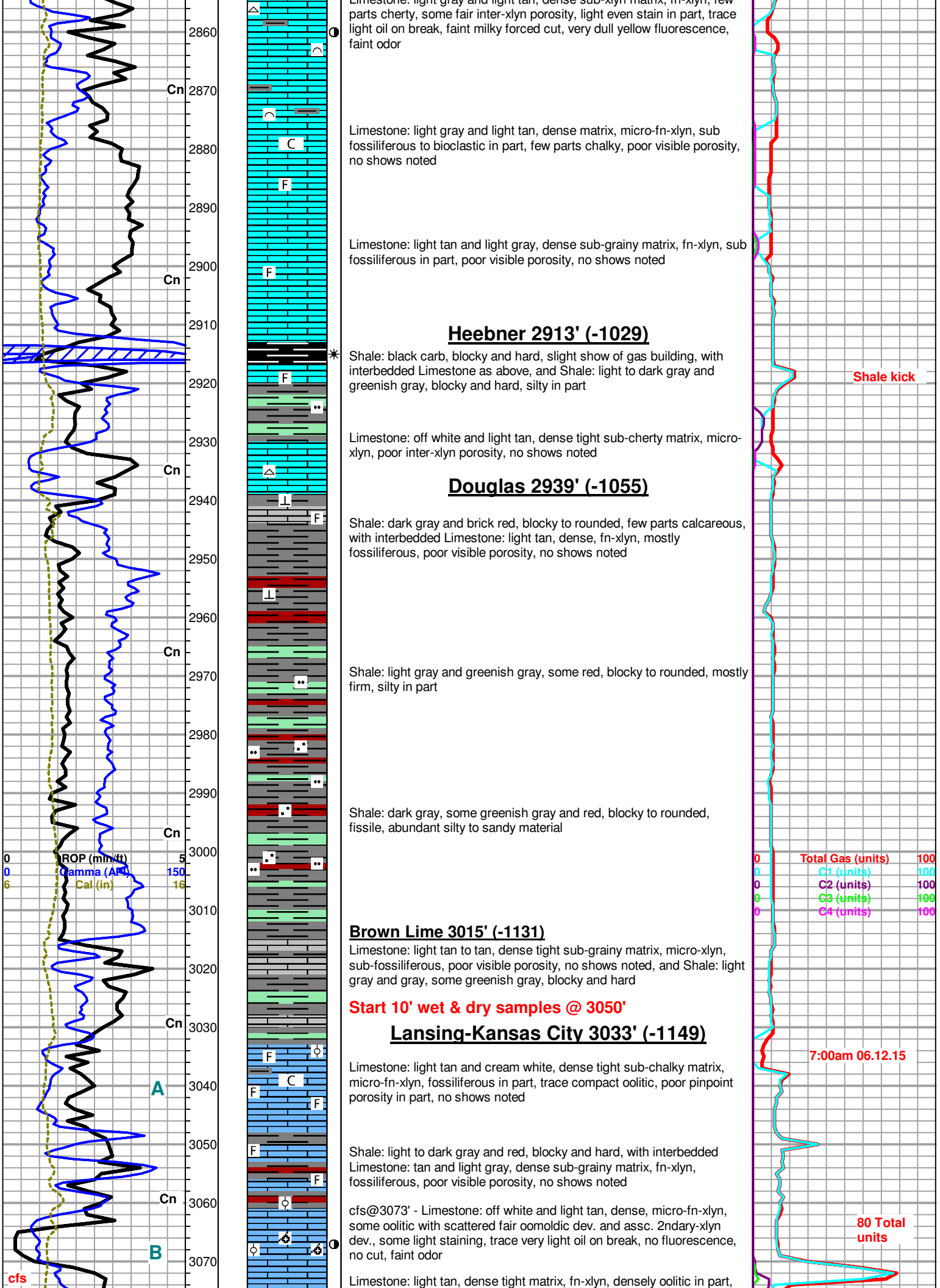
Lithology

Oil Show

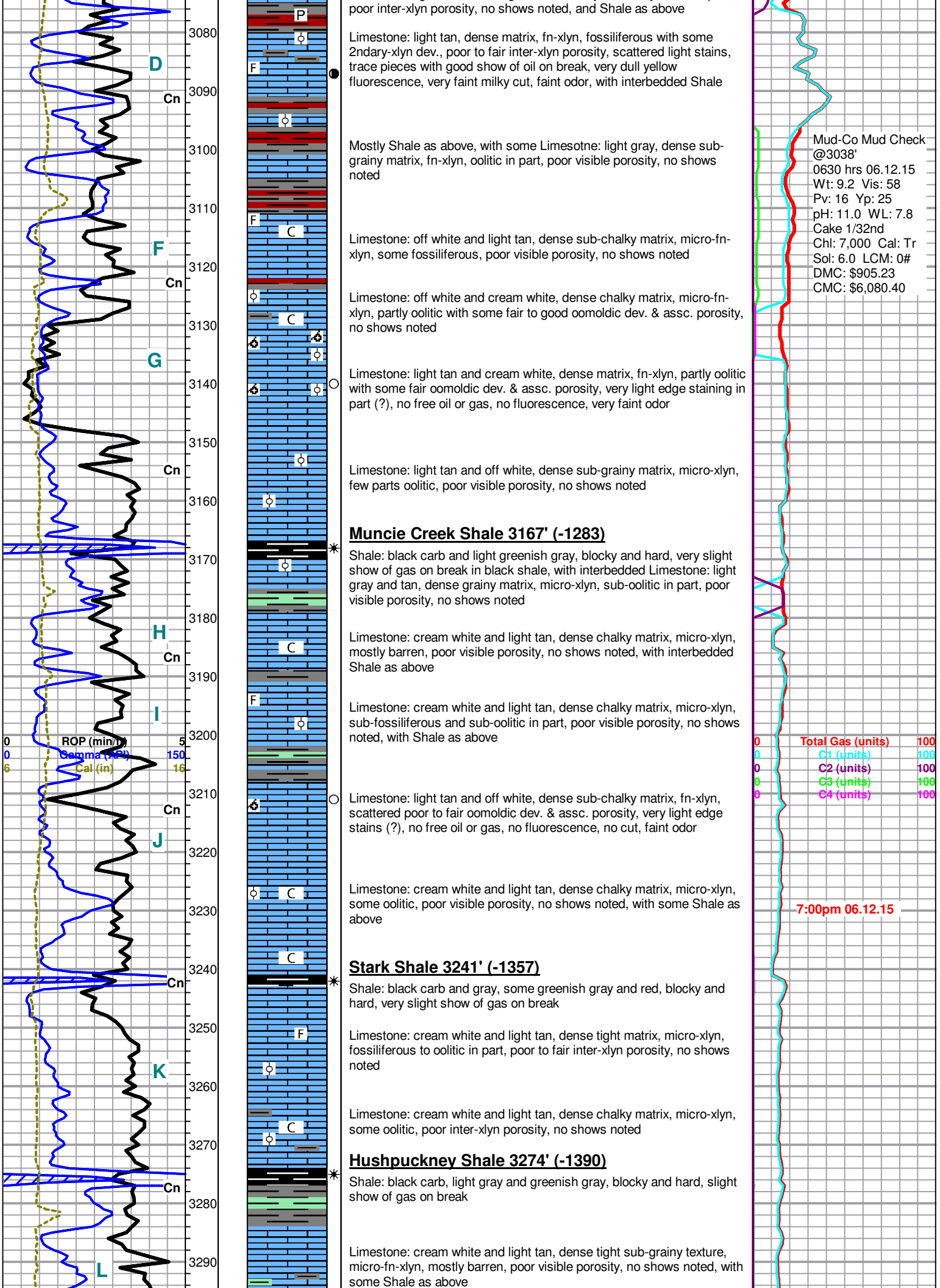
Geological Descriptions

TG, C1 - C5
- Total Gas (units)
- C1 (units)
- C2 (units)
- C3 (units)
- C4 (units)


1:240 Imperial
Cored
DST
0
ROP (min/ft)
5
0
Gamma (API)
150
6
Cal (in)
16
Cn
2650
2660
2670
2680
2690
2700
2710
2720
2730
2740
2750
2760
2770
2780
2790
2800
2810
2820
2830
2840
2850
Data Gap
F
P
C
D
1:240 Imperial
0
Total Gas (units)
100
C1 (units)
C2 (units)
C3 (units)
C4 (units)
Displace mud system @ 2488'
Start 20' wet & dry samples @ 2660'
Topeka 2659' (-775)
Limestone: light gray and light tan, dense matrix, fn-xlyn, densely fossiliferous in part, some argilaceous and friable, some poor pinpoint porosity, no shows noted, with Shale: light gray and gray, silty, blocky to rounded
Limestone: light tan and gray, dense matrix, micro-fn-xlyn, some fossiliferous, poor visible porosity, no shows noted, with some interbedded Shale as above
Limestone: light gray, sub-cherty matrix, trace friable, micro-fn-xlyn, most fossiliferous with few large fossils, scattered fair pinpoint porosity, no shows noted
Limestone: light tan to tan, dense tight matrix, micro-xlyn, sub-fossiliferous to some scattered large fossils, poor visible porosity, no shows noted
Limestone: light gray and light tan, dense sub-xlyn matrix, fn-xlyn, some large fossils, poor visible porosity, no shows noted
King Hill Shale 2751' (-867)
Shale: black carb and dark gray, blocky and hair sli show of gas on break, some pyritic, with Limestone: off white and light tan, dense tight sub-chalky matrix, micro-xlyn, poor visible porosity, few dark dead stains, no live shows noted, no odor
Geologist on location 1720 hrs 06.11.15 @ 2775'
Shale: light gray and red, blocky and hard, some calcareous, and Limestone: light gray and light tan, dense matrix, micro-fn-xlyn, some parts bioclastic, poor inter-xlyn porosity, no shows noted
Limestone: light gray and off white, dense sub-chalky matrix, micro-xlyn, few parts fossiliferous, poor to fair inter-xlyn porosity, trace light stains, no free oil or gas, no fluorescence, no odor
Limestone: light gray and off white, dense tight matrix, micro-xlyn, few parts fossiliferous, poor visible porosity, no shows noted
7:00pm 06.11.15
Queen Hill Shale 2828' (-944)
Shale: black carb, blocky and firm, fair show of gas on break
Limestone: off white and light tan, dense matrix, few parts friable, fn-xlyn, bioclastic in part, poor to fair inter-xlyn porosity, no shows noted



Limestone: light gray and light tan, dense sub-xlyn matrix, fn-xlyn, few parts cherty, some fair inter-xlyn porosity, light even stain in part, trace light oil on break, faint milky forced cut, very dull yellow fluorescence, faint odor



poor inter-xlyn porosity, no shows noted, and Shale as above

Limestone: light tan, dense matrix, fn-xlyn, fossiliferous with some 2ndary-xlyn dev., poor to fair inter-xlyn porosity, scattered light stains, trace pieces with good show of oil on break, very dull yellow fluorescence, very faint milky cut, faint odor, with interbedded Shale

Mostly Shale as above, with some Limesotne: light gray, dense sub-grainy matrix, fn-xlyn, oolitic in part, poor visible porosity, no shows noted

Limestone: off white and light tan, dense sub-chalky matrix, micro-fn-xlyn, some fossiliferous, poor visible porosity, no shows noted

Limestone: off white and cream white, dense chalky matrix, micro-fn-xlyn, partly oolitic with some fair to good oomoldic dev. & assc. porosity, no shows noted

Limestone: light tan and cream white, dense matrix, fn-xlyn, partly oolitic with some fair oomoldic dev. & assc. porosity, very light edge staining in part (?), no free oil or gas, no fluorescence, very faint odor

Limestone: light tan and off white, dense sub-grainy matrix, micro-xlyn, few parts oolitic, poor visible porosity, no shows noted

Muncie Creek Shale 3167' (-1283)

Shale: black carb and light greenish gray, blocky and hard, very slight show of gas on break in black shale, with interbedded Limestone: light gray and tan, dense grainy matrix, micro-xlyn, sub-oolitic in part, poor visible porosity, no shows noted

Limestone: cream white and light tan, dense chalky matrix, micro-xlyn, mostly barren, poor visible porosity, no shows noted, with interbedded Shale as above

Limestone: cream white and light tan, dense chalky matrix, micro-xlyn, sub-fossiliferous and sub-oolitic in part, poor visible porosity, no shows noted, with Shale as above

Limestone: light tan and off white, dense sub-chalky matrix, fn-xlyn, scattered poor to fair oomoldic dev. & assc. porosity, very light edge stains (?), no free oil or gas, no fluorescence, no cut, faint odor

Limestone: cream white and light tan, dense chalky matrix, micro-xlyn, some oolitic, poor visible porosity, no shows noted, with some Shale as above

Stark Shale 3241' (-1357)

Shale: black carb and gray, some greenish gray and red, blocky and hard, very slight show of gas on break

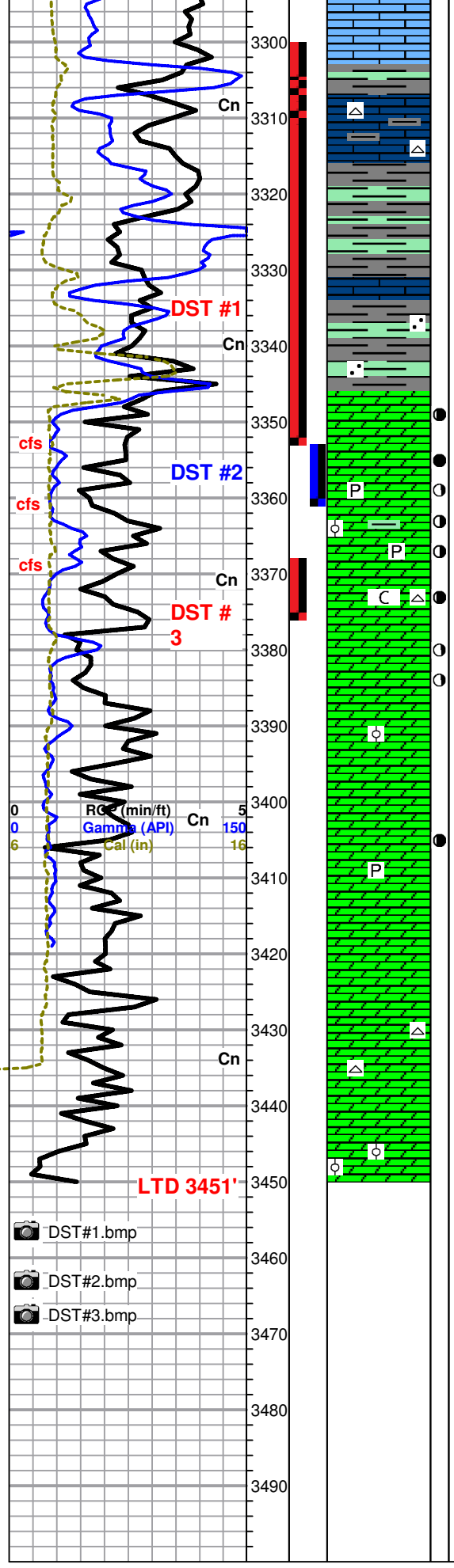
Limestone: cream white and light tan, dense tight matrix, micro-xlyn, fossiliferous to oolitic in part, poor to fair inter-xlyn porosity, no shows noted

Limestone: cream white and light tan, dense chalky matrix, micro-xlyn, some oolitic, poor inter-xlyn porosity, no shows noted

Hushpuckney Shale 3274' (-1390)

Shale: black carb, light gray and greenish gray, blocky and hard, slight show of gas on break

Limestone: cream white and light tan, dense tight sub-grainy texture, micro-fn-xlyn, mostly barren, poor visible porosity, no shows noted, with some Shale as above



Base Kansas City 3303' (-1419)

Shale: light to dark gray, some greenish gray and red, blocky and hard, some fissile, with interbedded Limestone: light gray and tan, dense tight sub-grainy matrix, fn-xlyn, sub-cherty in part, poor visible porosity, no shows noted

Mostly Shale with some Limestone as above

Short trip for 20 stands @ 3330'

Shale: light greenish gray and dark gray, blocky to rounded, mostly firm, sandy in part, with some Limestone as above

Arbuckle 3347' (-1463)

cfs@3353' - Dolomite: cream white and light tan, dense matrix, vf-xlyn, overall fair rhombic dev. & assc. porosity, scattered sucrosic material, fair show of light oil on break, scattered spotted stains, bright yellow fluorescence, faint milky forced cut, good odor

cfs@3361' - Dolomite: off white and light tan, dense matrix, vf-md-xlyn, fair to scattered good rhombic dev. & assc. porosity, few parts pyritic, fair show of light oil on break, even light staining in part, bright yellow fluorescence, faint milky cut, strong odor

cfs@3369' - Dolomite: light gray and light tan, dense matrix, vf-fn-xlyn, poor to fair rhombic dev. & assc. porosity, few parts oolitic, few parts pyritic, light edge staining, no free oil or gas, pale yellow fluorescence, no cut, good odor, with scattered Shale: light teal green, blocky and hard

cfs@3376' - Dolomite: off white and light tan, dense sub-chalky matrix, vf-xlyn, fair rhombic dev. & assc. porosity, cherty in part, scattered loose chalk, light edge staining, scattered fair show of light oil on break, pale yellow fluorescence, very faint milky forced cut, fair odor

(3377-88') Dolomite: light tan, dense matrix, fn-md-xlyn, fair to good rhombic dev. & assc. porosity, some light edge staining, no free oil or gas, pale green yellow fluorescence, no cut, good odor

(3389-95') Dolomite: light gray and light tan, dense tight matrix, poor rhombic dev. & assc. porosity, sub-oolitic in part, no visible shows noted, fair odor

(3396-3403') Dolomite: light tan, dense tight matrix, fn-md-xlyn, poor to fair rhombic dev. & poor porosity, some scattered fair vuggy porosity, no visible shows noted, fair odor

(3404-13') Dolomite: light tan, dense matrix, fn-md-xlyn, fair rhombic dev. & assc. porosity, few parts pyritic, scattered fair show of oil on break and assc. light edge staining, pale green yellow fluor., no cut, good odor

Rotary Total Depth 3450' (-1566)

Sample descriptions continued:

(3414-27') Dolomite: light tan, dense matrix, fn-md-xlyn, fair rhombic dev. & assc. porosity, no visible shows noted, fair odor

(3428-39') Dolomite: light tan and tan, dense matrix, fn-md-xlyn, fair rhombic dev. & poor porosity, few parts cherty, no visible shows noted, faint odor

(3440-50') Dolomite: light tan and tan, dense matrix, fn-xlyn, fair rhombic dev. & assc. porosity, oolitic in part, scattered fair vuggy porosity, no shows noted

Orders received to run 5 1/2" production casing

Respectfully submitted,

Adam G. Nighswonger

Mud-Co Mud Check
@3353'
0600 hrs 06.13.15
Wt: 9.4 Vis: 46
Pv: 19 Yp: 18
pH: 10.5 WL: 8.8
Cake 1/32nd
Chl: 7,400 Cal: 20
Sol: 7.4 LCM: Nil
DMC: $1,300.26
CMC: $7,380.66

Mud-Co Mud Check
@3361'
0635 hrs 06.14.15
Wt: 9.5 Vis: 51
Pv: 16 Yp: 23
pH: 10.5 WL: 8.0
Cake 1/32nd
Chl: 7,100 Cal: Tr
Sol: 8.1 LCM: 1#
DMC: $160.33
CMC: $7,540.99

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

Mud-Co Mud Check
@3450'
0640 hrs 06.15.15
Wt: 9.5 Vis: 56
Pv: 18 Yp: 25
pH: 10.0 WL: 8.8
Cake 1/32nd
Chl: 7,000 Cal: 20
Sol: 8.1 LCM: 2#
DMC: $333.80
CMC: $7,874.79

DST#1.bmp

DRILL STEM TEST REPORT

Valhalla Exploration llc

8100 East 22nd Street North Building 1800-2
Wichita,Kansas 67226

ATTN: Adam Nighsw onger

6-16s-10w Ellsworth

Boye 1-16

Job Ticket: 01037 **DST#:1**

Test Start: 2015.06.13 @ 00:00:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 00:00:00
Time Test Ended: 00:00:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 70

Interval: 3300.00 ft (KB) To 3353.00 ft (KB) (TVD)
Total Depth: 3553.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

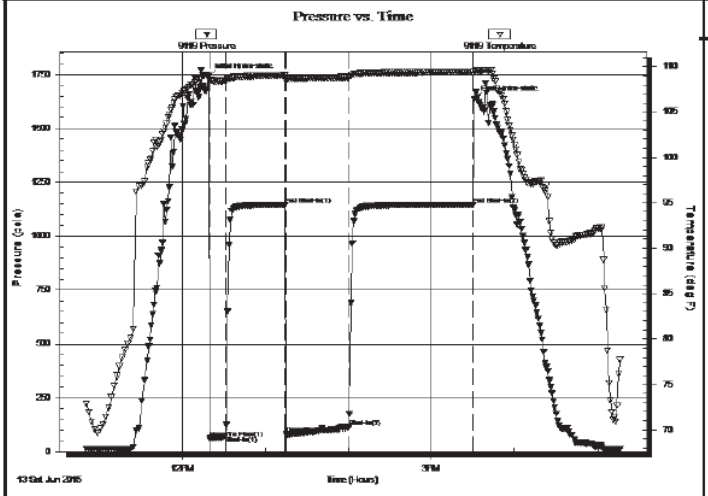
Reference Elevations: 1884.00 ft (KB)
1874.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 9119 **Inside**

Press@RunDepth: 1145.56 psia @ 3347.34 ft (KB)
Start Date: 2015.06.13 End Date: 2015.06.13
Start Time: 10:51:00 End Time: 17:16:00

Capacity: 5000.00 psia
Last Calib.: 1899.12.30
Time On Btm: 2015.06.13 @ 12:19:30
Time Off Btm: 2015.06.13 @ 15:31:00

TEST COMMENT: 1ST OPENING 10 MINUTES WEAK BLOW BUILT TO 4 INCHES INTO THE WATER
1ST SHUT-IN 45 MINUTES-NO BLOW Back
2ND OPENING 45 MINUTES FAIR BLOW BUILT TO THE BOTTOM OF 5 GALLON BUCKET IN 22 MINUTES
2ND SHUT-IN 90 MINUTES-NO BLOW BACK



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1742.06	109.00	Initial Hydro-static
1	60.60	108.56	Open To Flow (1)
12	72.82	108.44	Shut-In(1)
55	1145.37	109.02	End Shut-In(1)
56	82.92	108.39	Open To Flow (2)
101	113.15	108.83	Shut-In(2)
191	1145.56	109.38	End Shut-In(2)
192	1634.20	109.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	120 GAS IN THE PIPE	0.00
140.00	CLEAN GASSY OIL 40 GAS 60 OIL	1.96
40.00	OIL AND GAS CUT MUD	0.56
0.00	10 GAS 20 OIL 70 MUD	0.00
0.00	GRAVITY 44 CORRECTED	0.00

Gas Rates

	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)

DST#2.bmp

DRILL STEM TEST REPORT

Valhalla Exploration llc

8100 East 22nd Street North Building 1800-2
Wichita,Kansas 67226

ATTN: Adam Nighswonger

16-16s-10w Ellsworth

Boye 1-16

Job Ticket: 01038 **DST#: 2**

Test Start: 2015.06.14 @ 00:00:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 00:00:00
Time Test Ended: 00:00:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No:

Interval: 3353.00 ft (KB) To 3361.00 ft (KB) (TVD)
Total Depth: 3361.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

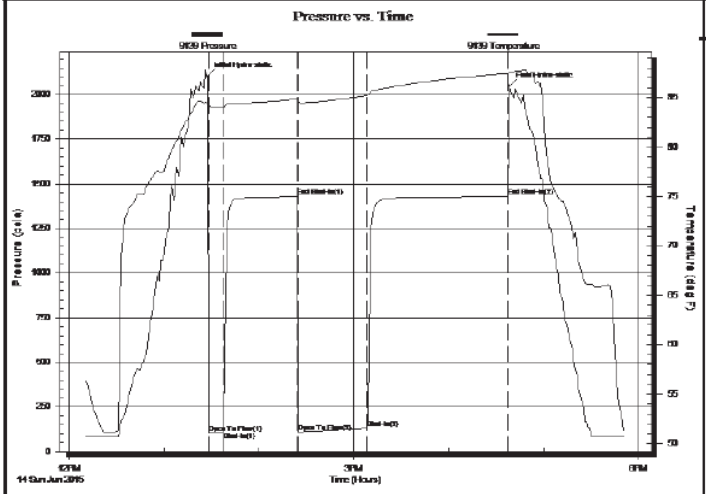
Reference Elevations: 1884.00 ft (KB)
1874.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 9139 **Outside**

Press@RunDepth: 1427.50 psia @ 3356.00 ft (KB)
Start Date: 2015.06.14 End Date: 2015.06.14
Start Time: 12:10:00 End Time: 17:51:30

Capacity: 5000.00 psia
Last Calib.: 2015.06.14
Time On Btm: 2015.06.14 @ 13:27:30
Time Off Btm: 2015.06.14 @ 16:38:00

TEST COMMENT:
1st Opening 10 Minutes weak surface blow through out
1st Shut-in 45 Minutes
2nd Opening 45 Minutes-no blow for 7 minutes then very weak surface blow through out
2nd Shut-in 90 Minutes



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2103.39	84.39	Initial Hydro-static
1	105.81	83.90	Open To Flow (1)
10	109.08	84.01	Shut-In(1)
57	1427.35	84.85	End Shut-In(1)
57	110.07	84.50	Open To Flow (2)
101	129.59	85.23	Shut-In(2)
190	1427.50	87.44	End Shut-In(2)
191	2048.89	87.61	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	thick heavy mud	0.07
10.00	muddy water 20%mud 80%Water	0.14
	chlorides 12000	

Gas Rates

	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)

DST#3.bmp

DRILL STEM TEST REPORT

Valhalla Exploration llc

8100 East 22nd Street North Building 1800-2
Wichita,Kansas 67226

ATTN: Adam Nighswonger

16-16s-10w Ellsworth

Boye 1-16

Job Ticket: 01034 **DST#: 3**

Test Start: 2015.06.14 @ 00:00:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 00:00:00
Time Test Ended: 00:00:00

Test Type: Conventional Bottom Hole (Initial)
Tester: GENE BUDIG
Unit No:

Interval: 3368.00 ft (KB) To 3376.00 ft (KB) (TVD)
Total Depth: 3376.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

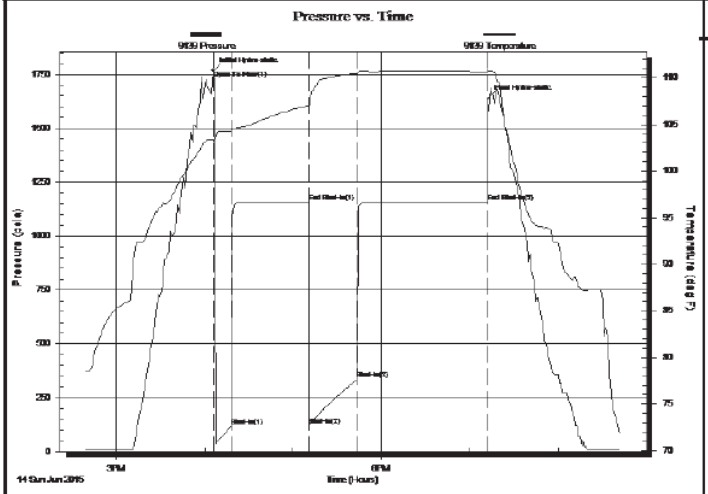
Reference Elevations: 1884.00 ft (KB)
1874.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 9139 **Outside**

Press@RunDepth: 1156.90 psia @ 3371.00 ft (KB)
Start Date: 2015.06.14 End Date: 2015.06.14
Start Time: 14:39:45 End Time: 20:41:45

Capacity: 5000.00 psia
Last Calib.: 2015.06.14
Time On Btm: 2015.06.14 @ 16:05:45
Time Off Btm: 2015.06.14 @ 19:12:15

TEST COMMENT:
1ST Opening 10 Minutes fair blow built to the bottom of a 5 gallon bucket in 5 minutes
1st Shut-In 45 Minutes-No blow back
2nd Opening 30 Minutes-Fair blow built to the bottom of a 5 gallon bucket in 7 minutes
2nd Shut-In 90 Minutes-no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1767.41	103.33	Initial Hydro-static
1	1731.48	103.29	Open To Flow (1)
13	118.10	104.26	Shut-In(1)
65	1156.67	107.00	End Shut-In(1)
65	122.65	106.82	Shut-In(2)
98	333.90	110.43	Shut-In(3)
186	1156.90	110.66	End Shut-In(2)
187	1637.93	110.85	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
675.00	water chlorides 12000	9.47

Gas Rates

	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)