

OPERATOR

Company: Murfin Drilling Company
 Address: 250 N. Water Suite 300
 Wichita, KS 67202
 Contact Geologist: Shauna Gunzelman
 Contact Phone Nbr: 316-267-3241
 Well Name: Ladenburger #1-6
 Location: Sec. 6 - T1S - R35W
 API: 15-153-21027-0000
 Pool: Kansas
 State: Kansas
 Field: Scoda
 Country: USA



Scale 1:240 Imperial

Well Name: Ladenburger #1-6
 Surface Location: Sec. 6 - T1S - R35W
 Bottom Location:
 API: 15-153-21027-0000
 License Number: 30606
 Spud Date: 6/18/2014
 Region: Rawlins County
 Drilling Completed: 6/26/2014
 Surface Coordinates: 2310' FNL & 330' FWL
 Bottom Hole Coordinates:
 Ground Elevation: 3180.00ft
 K.B. Elevation: 3185.00ft
 Logged Interval: 3520.00ft
 Total Depth: 4550.00ft
 Formation: Lansing - Kansas City
 Drilling Fluid Type: Chemical/Fresh Water Gel
 Time: 4:00 PM
 Time: 6:30 PM
 To: 4550.00ft

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude:
 Latitude:
 N/S Co-ord: 2310' FNL
 E/W Co-ord: 330' FWL

LOGGED BY



Company: Keith Reavis, Inc.
 Address: 3420 22nd Street
 Great Bend, KS 67530
 Phone Nbr: 620-617-4091
 Logged By: Keith Reavis and Logan Walker
 Name:

CONTRACTOR

Contractor: Murfin Drilling Company
 Rig #: 7
 Rig Type: mud rotary
 Spud Date: 6/18/2014
 TD Date: 6/26/2014
 Rig Release:
 Time: 4:00 PM
 Time: 6:30 PM
 Time:

ELEVATIONS

K.B. Elevation: 3185.00ft
 K.B. to Ground: 5.00ft
 Ground Elevation: 3180.00ft

NOTES

Due to favorable results of drill stem test #2, it was determined that 5 1/2" production casing be set and cemented and that the Ladenburger #1-6 be further tested through perforations and stimulation in the Lansing-Kansas City.

The samples were saved from this well and will be available for review at the Kansas Geological Survey Well Sample Library located in Wichita, KS.

Respectfully submitted
 Keith Reavis

Image Header 01

daily drilling report

DATE	7:00 AM DEPTH	REMARKS
06/20/2014		Geologist Keith Reavis and Logan Walker on location @ 1930 hrs, 3420 ft, bit change at 3480 ft, started drill time and sample collection at 3520 ft
06/21/2014	3577	Drilling ahead, Neva, Red Eagle, Foraker
06/22/2014	3926	drilling Stotler, show warrants test, short trip, TOH for DST #1, conduct DST #1, successful test, TIH w/bit, resume drilling Topeka
06/23/2014	4043	drilling ahead, Topeka, Oread, Lansing, shows in Lansing A-D warrant test, short trip, ctch, TOH for DST #2
06/24/2014	4232	conduct DST #2, successful test, TIH w/bit, resume drilling, shows in G zone warrant test, TOH for DST #3
06/25/2014	4320	conduct and complete DST #3, successful test, TIH w/bit, resume drilling, drilled H and J and conducting DST #4
06/26/2014	4404	complete DST #4, successful test, TIH w/bit, resume drilling, TD @ 4550 ft conduct logging operations
06/27/2014	4550	complete logging operations, off loc @ 0430 hrs

well comparison sheet

DRILLING WELL					COMPARISON WELL				COMPARISON WELL			
Ladenburger #1-6 2310' FNL & 330' FWL Sec 6-T1S-R35W					Walter Bros. #8-1 1320' FNL 330' FEL Sec 1-T1S-R36W				Downing #1-6 2150' FSL 2140' FWL Sec 6-T1S-R35W			
3210 KB					3201KB				3169 KB			
					Structural Relationship				Structural Relationship			
Formation	2	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Neva	3627	-417	3630	-420	3615	-414	-3	-6	3594	-425	8	5
Red Eagle	3695	-485	3694	-484	3679	-478	-7	-6	3658	-489	4	5
Foraker	3740	-530	3742	-532	3725	-524	-6	-8	3706	-537	7	5
Stotler	3885	-675	3881	-671	3871	-670	-5	-1	3854	-685	10	14
Topeka	3950	-740	3950	-740	3934	-733	-7	-7	3914	-745	5	5
Oread	4065	-855	4064	-854	4048	-847	-8	-7	4026	-857	2	3
Lansing	4170	-960	4167	-957	4149	-948	-12	-9	4134	-965	5	8
Lansing D	4222	-1012	4220	-1010	4200	-999	-13	-11	4185	-1016	4	6
Lansing H	4324	-1114	4322	-1112	4303	-1102	-12	-10	4291	-1122	8	10
Stark	4385	-1175	4378	-1168	4361	-1160	-15	-8	4347	-1178	3	10
BKC	4436	-1226	4431	-1221	4413	-1212	-14	-9	4398	-1229	3	8
Total Depth	4550	-1340	4550	-1340	4507	-1306	-34	-34	4500	-1331	-9	-9

Image Header 02

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc
 250 N Water STE 300
 Wichita KS 67202
 ATTN: Keith Reavis

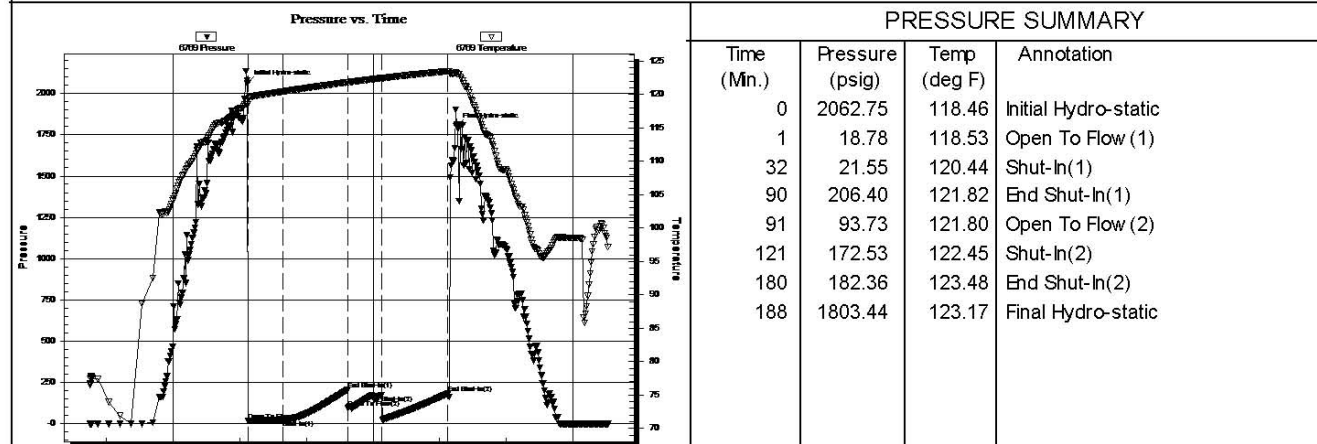
6-1s-35w Rawlins,KS
Ladenburger #1-6
 Job Ticket: 58798
 Test Start: 2014.06.22 @ 07:45:00
 DST#: 1

GENERAL INFORMATION:

Formation: **Stotler**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:07:30
 Time Test Ended: 15:32:00
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Robert Zodrow
 Unit No: 46
 Interval: **3819.00 ft (KB) To 3926.00 ft (KB) (TVD)**
 Total Depth: 3926.00 ft (KB) (TVD)
 Reference Elevations: 3210.00 ft (KB)
 3205.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 KB to GR/CF: 5.00 ft

Serial #: 6769 Outside
 Press@RunDepth: 172.53 psig @ 3820.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.06.22 End Date: 2014.06.22 Last Callb.: 2014.06.22
 Start Time: 07:45:05 End Time: 15:31:59 Time On Btm: 2014.06.22 @ 10:07:00
 Time Off Btm: 2014.06.22 @ 13:15:00

TEST COMMENT: 30-IF- Blow built to 1/8"
 60-ISI- No return
 30-FF- No blow
 60-FSI- No return



Recovery			Gas Rates		
Length (ft)	Description	Volume (bbl)	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
2.00	mud 100% _m	0.01			

Image Header 03


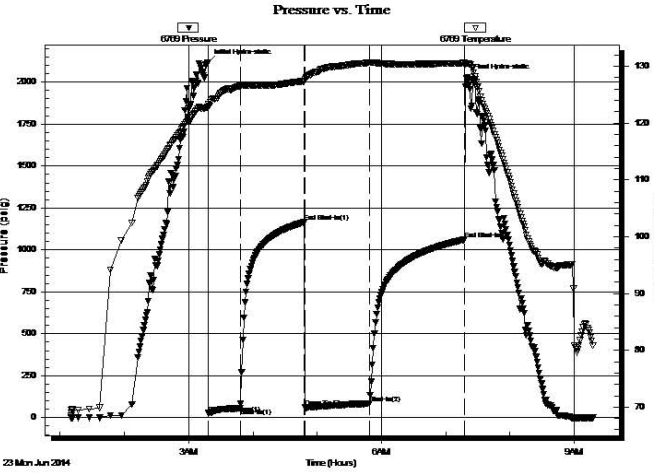
	DRILL STEM TEST REPORT																																					
	Murfin Drilling CO,INC 250 N Water STE 300 Wichita KS 67202 ATTN: Keith Reavis	6 1 35W Rawlins KS Ladenburger #1-6 Job Ticket: 58799 DST#: 2 Test Start: 2014.06.23 @ 01:10:00																																				
GENERAL INFORMATION: Formation: LKC "A-D" Deviated: No Whipstock: ft (KB) Time Tool Opened: 03:18:30 Time Test Ended: 09:18:00 Test Type: Conventional Bottom Hole (Reset) Tester: Robert Zodrow Unit No: 46 Interval: 4104.00 ft (KB) To 4232.00 ft (KB) (TVD) Total Depth: 4232.00 ft (KB) (TVD) Hole Diameter: 7.88 inches-Hole Condition: Fair Reference Elevations: 3210.00 ft (KB) 3205.00 ft (CF) KB to GR/CF: 5.00 ft																																						
Serial #: 6769 Outside Press@RunDepth: 84.56 psig @ 4105.00 ft (KB) Capacity: 8000.00 psig Start Date: 2014.06.23 End Date: 2014.06.23 Last Calib.: 2014.06.24 Start Time: 01:10:05 End Time: 09:17:59 Time On Btm: 2014.06.23 @ 03:18:00 Time Off Btm: 2014.06.23 @ 07:20:00																																						
TEST COMMENT: 30-IF-Blow built to 4" 60-ISI- No return 60-FF-Blow started in min built to 4 1/4" 90-FSI- Return built to real weak surface blow died in 38 mins																																						
	PRESSURE SUMMARY <table border="1"> <thead> <tr> <th>Time (Min.)</th> <th>Pressure (psig)</th> <th>Temp (deg F)</th> <th>Annotation</th> </tr> </thead> <tbody> <tr><td>0</td><td>2117.85</td><td>122.84</td><td>Initial Hydro-static</td></tr> <tr><td>1</td><td>26.55</td><td>123.40</td><td>Open To Flow (1)</td></tr> <tr><td>30</td><td>56.30</td><td>126.55</td><td>Shut-In(1)</td></tr> <tr><td>90</td><td>1164.27</td><td>127.36</td><td>End Shut-In(1)</td></tr> <tr><td>91</td><td>61.34</td><td>127.76</td><td>Open To Flow (2)</td></tr> <tr><td>151</td><td>84.56</td><td>130.64</td><td>Shut-In(2)</td></tr> <tr><td>240</td><td>1060.92</td><td>130.56</td><td>End Shut-In(2)</td></tr> <tr><td>242</td><td>2026.89</td><td>130.49</td><td>Final Hydro-static</td></tr> </tbody> </table>		Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation	0	2117.85	122.84	Initial Hydro-static	1	26.55	123.40	Open To Flow (1)	30	56.30	126.55	Shut-In(1)	90	1164.27	127.36	End Shut-In(1)	91	61.34	127.76	Open To Flow (2)	151	84.56	130.64	Shut-In(2)	240	1060.92	130.56	End Shut-In(2)	242	2026.89	130.49	Final Hydro-static
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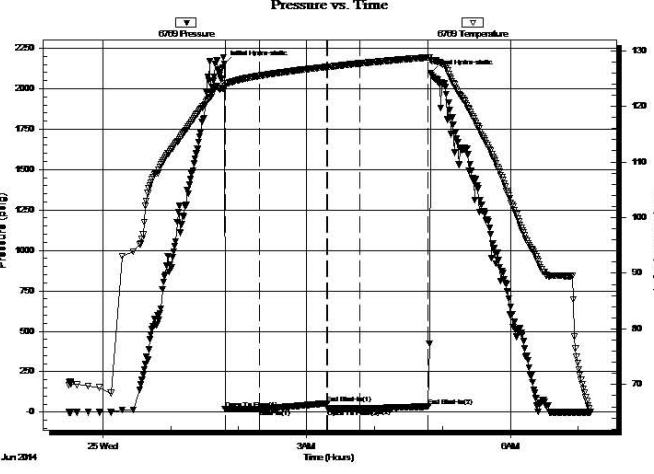

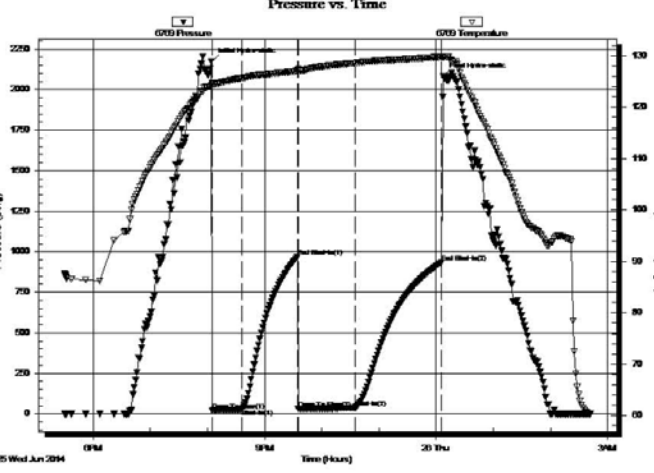
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	Murfin Drilling CO,INC 250 N Water STE 300 Wichita KS 67202 ATTN: Keith Reavis	6 1 35W Rawlins KS Ladenburger #1-6 Job Ticket: 58800 DST#: 3 Test Start: 2014.06.24 @ 23:30:00																																				
GENERAL INFORMATION: Formation: LKC "G" Deviated: No Whipstock: ft (KB) Time Tool Opened: 01:48:00 Time Test Ended: 07:10:30 Test Type: Conventional Bottom Hole (Reset) Tester: Robert Zodrow Unit No: 46 Interval: 4231.00 ft (KB) To 4320.00 ft (KB) (TVD) Total Depth: 4320.00 ft (KB) (TVD) Hole Diameter: 7.88 inches-Hole Condition: Fair Reference Elevations: 3210.00 ft (KB) 3205.00 ft (CF) KB to GR/CF: 5.00 ft																																						
Serial #: 6769 Outside Press@RunDepth: 22.65 psig @ 4232.00 ft (KB) Capacity: 8000.00 psig Start Date: 2014.06.24 End Date: 2014.06.25 Last Calib.: 2014.06.25 Start Time: 23:30:05 End Time: 07:10:29 Time On Btm: 2014.06.25 @ 01:47:30 Time Off Btm: 2014.06.25 @ 04:49:30																																						
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Image Header 05

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	Murfin Drilling CO,INC 250 N Water STE 300 Wichita KS 67202 ATTN: Keith Reavis	6 1 35W Rawlins KS Ladenburger #1-6 Job Ticket: 53690 DST#: 4 Test Start: 2014.06.25 @ 17:30:00																																				
GENERAL INFORMATION: Formation: LKC "H-J" Deviated: No Whipstock: ft (KB) Time Tool Opened: 20:05:00 Time Test Ended: 02:42:30 Test Type: Conventional Bottom Hole (Reset) Tester: Robert Zodrow Unit No: 46 Interval: 4286.00 ft (KB) To 4388.00 ft (KB) (TVD) Total Depth: 4388.00 ft (KB) (TVD) Hole Diameter: 7.88 inches-Hole Condition: Fair Reference Elevations: 3210.00 ft (KB) 3205.00 ft (CF) KB to GR/CF: 5.00 ft																																						
Serial #: 6769 Outside Press@RunDepth: 36.55 psig @ 4287.00 ft (KB) Capacity: 8000.00 psig Start Date: 2014.06.25 End Date: 2014.06.26 Last Calib.: 2014.06.26 Start Time: 17:30:05 End Time: 02:42:30 Time On Btm: 2014.06.25 @ 20:04:30 Time Off Btm: 2014.06.26 @ 00:07:30																																						
TEST COMMENT: 30-IF- Blow built to 1/4" 60-ISI- No return 60-FF- No blow 90-FSI- No return																																						
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ROCK TYPES

Lmst fw<7	shale, gry	shale, red	Sst
sdy lmsst	shale, grn	Ss	

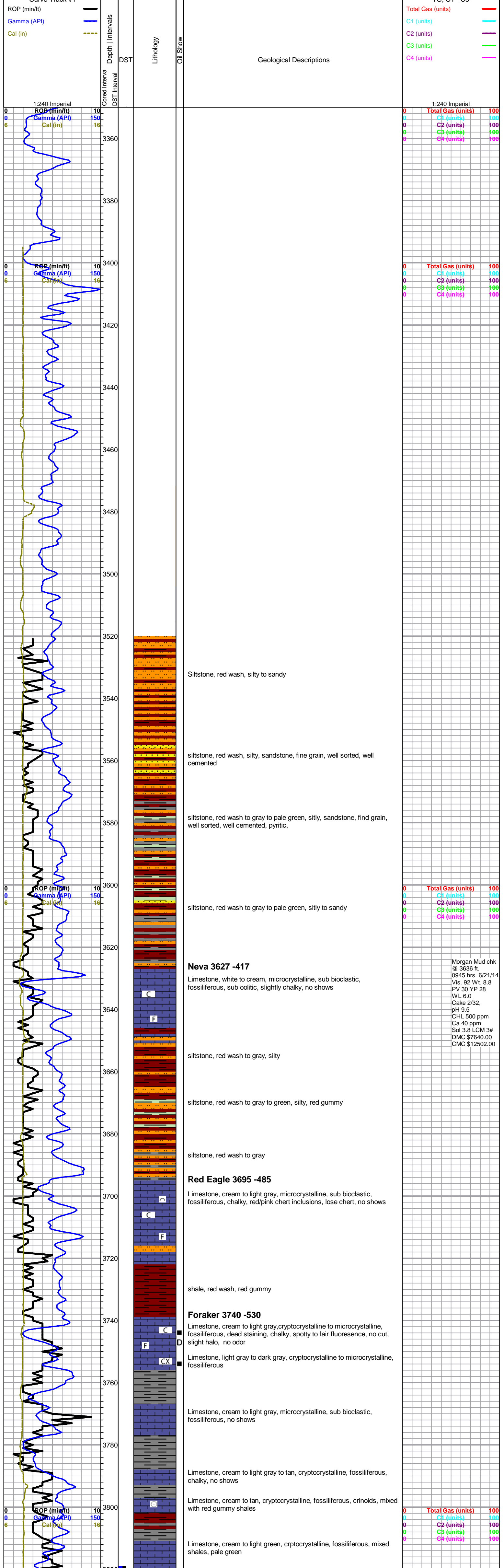
ACCESSORIES

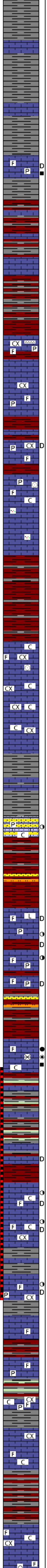
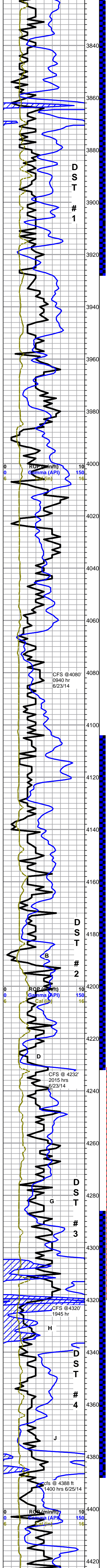
MINERAL Mineral Crystals Pyrite Varicolored chert	FOSSIL Bioclastic or Fragmental Crinoids Fossils < 20% Oolite	STRINGER Chert	TEXTURE Chalky Cryptocrystalline Lithogr
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OTHER SYMBOLS

MISC Daily Report Digital Photo Document Folder Link Vertical Log File Horizontal Log File Core Log File Drill Cuttings Rpt	Oil Show Good Show Fair Show Poor Show Spotted or Trace Questionable Stn Dead Oil Stn Fluorescence Gas	DST DST Int DST alt Core tail pipe
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Printed by GEOstrip VC Striplog version 4.0.8.9 (www.grsi.ca)





Shale, gray wash, gray gummy

shale, gray wash

Shale gray wash

Stotler 3885 -675
Limestone, cream to light gray, microcrystalline, fossiliferous, pyritic, dead black stain, no odor, fair fluorescence, fair cut, no free oil

Limestone stringer, pale green, soft

Shales, red to gray, gummy, sub silty

Limestone, white to cream to pale green, cryptocrystalline, recrystallized bioclastic, fossiliferous, chalky, no shows

shale, red wash to gray, silty

Topeka 3950 -740
Limestone, cream to light gray to pale green, cryptocrystalline to microcrystalline, fossiliferous, soft to dense, tan to yellow chert, dense, sub pyritic, no shows

Limestone, white, cryptocrystalline, fossiliferous, fractured red staining, no shows,

Limestone, white to cream, creptocrystalline, fossiliferous, pyritic, spotty dead black stain, slightly weathered, poor to no fluorescence, poor to no cut, no free oil

Limestone, white to cream to maroon, mircocrystalline, pyritic, fossiliferous, weathered, soft, sub chalky, yellow chert, dense, no shows

Limestone, maroon, sandy, soft, fine grain, no shows

Limestone, cream to maroon, microcrystalline, fossiliferous, soft, no shows

shale, red wash, silty

Oread 4066 -855
Limestone, cream to light gray, cryptocrystalline to microcrystalline, fossiliferous to lithographic, soft, fractures on break, pyritic, no shows

Limestone, cream to light gray, cryptocrystalline, fossiliferous to lithographic, chalky, dense no shows

Limestone, light gray, cryptographic, lithographic, chalky, no shows

Limestone, light gray to gray, cryptocrystalline to microcrystalline, fossiliferous to lithographic, chalky, dense, one spotty black stain, fleeting odor, no shows

Shale, gray wash, fleeting odor

Limestone shale mix, gray, cryptocrystalline, lithographic, spotty dead black staining on sand cluster, chalky, fleeting odor, no free oil

Sandy Limestone, gray, cryptocrystalline to microcrystalline, fossiliferous, pyritic, chalky sandstone, well sorted, well cemented, free oil on break

shale red wash to gray, silty, red gummy

Shale, red wash, silty, sandstone, fine grain, well cemented, well sorted, red gummy

Lansing 4170 -960
Limestone, cream to tan to light gray, cryptocrystalline, fossiliferous to lithographic, sub free oil to sub dense, spotted dead black stains, fractured to sharp edges, no free oil, no odor

Limestone, cream to tan, microcrystalline, fossiliferous, intercrystalline, weathered, surface etching, pyritic, chalky dead black stain, free oil on break, fair to poor fluorescence, good cut, no odor

B zone - Limestone, cream to tan, microcrystalline, fossiliferous, pyritic, weathered, vuggy pin hole porosity, spotty free oil in tray, free oil on break, fair black staining, fleeting odor

Limestone, cream to light gray, cryptocrystalline, fossiliferous, pyritic, spotty dead black stain, no shows

Shale, red to gray, silty, sandstone, fine grain, well sorted, well cemented

Limestone, white to cream, microcrystalline, fossiliferous, some secondary calcite, vuggy interclast and solution vug porosity, weathered, surface etching, bleeding gassy oil, good odor, good show free oil, good cut, good fluorescence, 30 min. sample heavy chalk

Shale, red to gray to green, silty

Limestone, white to cream to light gray, microcrystalline, fossiliferous, sub pale green pyritic, soft, dead black stain, slow poor cut, no shows

Limestone, white to cream, microcrystalline, sub bioclastic, fossiliferous, sub chalky, surface etching, abundant dead black staining, spotty free oil in tray, poor fluorescence, slow poor cut, good sheen on water, fleeting odor

Limestone, cream to light gray to pale green, cryptocrystalline, sub bioclastic, sub oolitic, fossiliferous to lithographic, sub weathered, sub chalky, spotty free oil in tray, abundant dead black staining, poor fluorescence, slow poor cut

Limestone, cream to light gray, cryptocrystalline, fossiliferous, recrystallized sub oolitic, pyritic, weathered, surface etching dense, sharp fractures, dead black staining, spotted free oil in tray, slow poor cut, poor fluorescence, fleeting odor

Limestone, white to cream pale green, microcrystalline, sub bioclastic, fossiliferous, sub chalky, no shows

Limestone, cream to light gray, microcrystalline, bioclastic, oolitic, fossiliferous, soft, pyritic, fleeting odor, no shows

Limestone, white, cryptocrystalline, fossiliferous, sub weathered, chalky, soft, pyritic, no shows

limestone, white to cream, mostly cryptocrystalline, fossiliferous, dense to chalky, 1 piece slight stain, no show free oil or odor, light fluorescence, abundant chalk

Stark 4385 -1175
Shale, red to gray, silty

Limestone, white to cream, cryptocrystalline, sub bioclastic, fossiliferous, sub chalky, no shows

Limestone, cream, microcrystalline, bioclastic, fossiliferous, recrystallized fossils, chert in part, denses, no shows

Ladenburger 1-6 dst 1 .pdf

Morgan Mud chk @ 3926 ft. 1000 hrs. 6/22/14 Vis. 57 Wt. 9.2 PV 18 YP 20 WL 6.0 Cake 2/32, pH 8.5 CHL 500 ppm Ca 40 ppm Sol 6.1 LCM 4# DMC \$2107 CMC \$14609

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

Morgan Mud chk @ 4077 ft. 0930 hrs. 6/23/14 Vis. 52 Wt. 9.2 PV 20 YP 14 WL 8.8 Cake 2/32, pH 8.0 CHL 700 ppm Ca 50 ppm Sol 6.5 LCM 4# DMC \$390 CMC \$14999

Ladenburger 1-6 dst 2 .pdf

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

Morgan Mud chk @ 4232 ft. 0945 hrs. 6/24/14 Vis. 52 Wt. 9.4 PV 16 YP 18 WL 9.2 Cake 2/32, pH 7.5 CHL 900 ppm Ca 60 ppm Sol 7.9 LCM 5# DMC \$1965 CMC \$16964

Ladenburger 1-6 dst 3 .pdf

Morgan Mud chk @ 4320 ft. 0915 hrs. 6/25/14 Vis. 116 Wt. 9.4 PV 32 YP 34 WL 7.6 Cake 2/32, pH 9.5 CHL 700 ppm Ca 40 ppm Sol 7.9 LCM 4# DMC \$-45 CMC \$16919

Ladenburger 1-6 dst 4 .pdf

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

recrystallized fossils, cherty in part, dense, no shows

BKC 4436 -1226

Limestone, cream to light gray, microcrystalline, bioclastic, fossiliferous, oolitic, sharp, sub chalky, dense, no shows

Shale, red to gray, red wash, silty

shale, red wash to pale green, silty, red gummy

Limestone, light gray, cryptocrystalline, bioclastic, fossiliferous, light brown chert, sharp, dense, no shows

Shale, red wash, gummy

Limestone, light gray, microcrystalline, bioclastic, fossiliferous, chalky, soft to dense, no shows

Shale, red wash, silty

Limestone, cream to light gray to gray, microcrystalline, fossiliferous, sub cherty, sub chalky, dense, fractures, no shows

Limestone, light gray, microcrystalline, fossiliferous, abundant chalky, no shows

Rotary TD 4550 ft @ 1830 hrs 6/26/14
Pioneer Log TD 4550 ft, logs complete 0345 hrs 6/27/14

Morgan Mud chk
@ 4440 ft.
0945 hrs. 6/26/14
Vis. 68 Wt. 9.4
PV 20 YP 28
WL 8.8
Cake 2/32,
pH 10
CHL 700 ppm
Ca 30 ppm
Sol 7.9 LCM 4#
DMC \$-60
CMC \$16979

cfs @ 4440 ft
1144 hrs 6/26/14

TD @4550 ft
1728hrs 6/26/14

