KOLAR Document ID: 1276627

Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1
November 2016
Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 33922
Name: Mustang Energy Corporation
Address 1: PO BOX 1121
Address 2:
City: HAYS State: KS Zip: 67601 + __ __ __ __
Contact Person: Rod Brin
Phone: (785) 623-0533
CONTRACTOR: License # 33575
Name: WW Drilling, LLC
Wellsite Geologist: Jeff Lawler
Purchaser:

Designate Type of Completion:
☑ New Well ☐ Re-Entry ☐ Workover

☐ Oil ☐ WSW ☐ SWD
☐ Gas ☑ DH ☐ EOR
☐ OG ☐ GSW
☐ CM *(Coal Bed Methane)*
☐ Cathodic ☐ Other *(Core, Expl., etc.)*:

If Workover/Re-entry: Old Well Info as follows:
Operator:
Well Name:
Original Comp. Date: Original Total Depth:

☐ Deepening ☐ Re-perf. ☐ Conv. to EOR ☐ Conv. to SWD
☐ Plug Back ☐ Liner ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ EOR Permit #:
☐ GSW Permit #:

11/04/2015	11/11/2015	11/13/2015
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No.: 15-063-22273-00-00
Spot Description:
SW - NE - NW - SW Sec. 25 Twp. 14 S. R. 30 ☐ East ☑ West
2300 Feet from ☐ North / ☑ South Line of Section
935 Feet from ☐ East / ☑ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☐ NW ☐ SE ☑ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Gove
Lease Name: Kuhn Well #: 1
Field Name:
Producing Formation: None
Elevation: Ground: 2687 Kelly Bushing: 2695
Total Vertical Depth: 4480 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 220 Feet
Multiple Stage Cementing Collar Used? ☐ Yes ☑ No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)

Chloride content: 41000 ppm Fluid volume: 320 bbls
Dewatering method used: Evaporated
Location of fluid disposal if hauled offsite:
Operator Name:
Lease Name: License #:
Quarter Sec. Twp. S. R. ☐ East ☐ West
County: Permit #:

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

☑ **Confidentiality Requested**
Date: 01/12/2016
☑ **Confidential Release Date:** 01/11/2018
☑ **Wireline Log Received** ☐ **Drill Stem Tests Received**
☑ **Geologist Report / Mud Logs Received**
☐ **UIC Distribution**
ALT ☐ I ☑ II ☐ III **Approved by:** NAOMI JAMES **Date:** 01/13/2016

Operator Name: Mustang Energy Corporation Lease Name: Kuhn Well #: 1

Sec. 25 Twp. 14 S. R. 30 ☐ East ☑ West County: Gove

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken *(Attach Additional Sheets)*	☑ Yes	☐ No
Samples Sent to Geological Survey	☐ Yes	☑ No
Cores Taken	☐ Yes	☑ No
Electric Log Run	☑ Yes	☐ No
Geolgist Report / Mud Logs	☐ Yes	☐ No

List All E. Logs Run:

Micro
Dual Induction
Neutron/Density

☐ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Anhydrite	2110	+579
Base	2130	+559
Heebner	3710	-1021
LKC	3749	-1060
BKC	4067	-1375
FT.Scott	4245	-1556
Mississippian	4343	-1654

CASING RECORD ☑ New ☐ Used

Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	25	.625	23	220	Common	150	3%cc2%gel

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
☐ Perforate ☐ Protect Casing ☐ Plug Back TD ☐ Plug Off Zone	-			
	-			

1. Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☑ No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☐ No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/ Injection:	Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS:	METHOD OF COMPLETION:	PRODUCTION INTERVAL:
☐ Vented ☐ Sold ☐ Used on Lease *(If vented, Submit ACO-18.)*	☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*	Top / Bottom

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record *(Amount and Kind of Material Used)*

TUBING RECORD: Size: Set At: Packer At:

Mail to: KCC - Conservation Division, 266 N. Main, Suite 220, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Mustang Energy Corporation
Well Name	Kuhn 1
Doc ID	1276627

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	25	.625	23	220	Common	150	3%cc2%gel

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Home Office P.O. Box 32 Russell, KS 67665

No. 1913

Phone 785-483-2025
Cell 785-324-1041

Date	Sec.	Twp.	Range	County	State	On Location	Finish
11-4-15	25	14	30	Gove	KS		8:00pm

Location Gove ... 6w to 32 Rd ...

Lease Kuhn Well No. 1

Owner

Contractor WW #12

To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Type Job Surface

Hole Size 12 1/4 T.D. 221

Charge To Mustang Energy

Csg. 8 5/8 Depth 220

Street

Tbg. Size Depth

City State

Tool Depth

The above was done to satisfaction and supervision of owner agent or contractor.

Cement Left in Csg. 15 Shoe Joint

Cement Amount Ordered 150 80/20 3%cc 2%Gel

Meas Line Displace 13BL

EQUIPMENT

Pumptrk 20	No.	Cementer Greg
		Helper
Bulktrk	No.	Driver Nick
		Driver
Bulktrk 14	No.	Driver
		Driver Doug

JOB SERVICES & REMARKS

Remarks:

Rat Hole

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

8 5/8 on bottom Est Circulation
Mix 150sk Displace
Cement Circulated

Common	
Poz. Mix	
Gel.	
Calcium	
Hulls	
Salt	
Flowseal	
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	
Mileage	

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
Pumptrk Charge	
Mileage	
Tax	
Discount	
Total Charge	

X
Signature

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 1918

Date	Sec.	Twp.	Range	County	State	On Location	Finish
11-13-15	25	14	30	Cove	KS		10:45 A.m.

Location Cove 10S 6W 1/2S E into

Lease Kuhn Well No. 1

Contractor WW #12

Type Job Rotary Dry

Hole Size 7 7/8 T.D. 4480

Csg. Depth

~~Tbg. Size~~ 4 1/2 X-H Depth

Tool Depth

Cement Left in Csg. Shoe Joint

Meas Line Displace

Owner
To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Charge To Mustang Energy

Street

City State

The above was done to satisfaction and supervision of owner agent or contractor.

Cement Amount Ordered 240 60/40 4%Gel 1/4#Flo

EQUIPMENT

Pumptrk 20	No.	Cementer	Craig
		Helper	
	No.	Driver	Brett
Bulktrk		Driver	
Bulktrk 15	No.	Driver	Nick
		Driver	

JOB SERVICES & REMARKS

Remarks:

Rat Hole 30SK

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

1st 2120 50SK

2nd 1210 100SK

3rd 270 50SK

5th 40 10SK

Common	142
Poz. Mix	96
Gel.	9
Calcium	
Hulls	
Salt	
Flowseal	60 #
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	249
Mileage	

FLOAT EQUIPMENT

Guide Shoe	
~~Centralizer~~	8 5/8 Dry hole plug
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
Pumptrk Charge	plug
Mileage 42	
Tax	
Discount	
Total Charge	

X Signature

PIONEER

Pioneer Energy Services

MICRORESISTIVITY LOG

Company MUSTANG ENERGY CORPORATION
Well KUHN #1
Field LUNGREN
County GOVE
State KANSAS

Company MUSTANG ENERGY CORPORATION
Well KUHN #1
Field LUNGREN
County GOVE State KANSAS

Location: API # : 15-063-22273-00-00
2300' FSL & 935' FWL
SEC 25 TWP 14S RGE 30W

Other Services
CNL/CDL
DIL

Permanent Datum GROUND LEVEL Elevation 2681
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2689
D.F. N/A
G.L. 2681

Date	11/11/2015			
Run Number	ONE			
Depth Driller	4480			
Depth Logger	4480			
Bottom Logged Interval	4479			
Top Log Interval	3500			
Casing Driller	8.625 @ 220			
Casing Logger	222			
Bit Size	7.875			
Type Fluid in Hole	CHEMICAL			
Salinity,ppm CL	1200			
Density / Viscosity	9.3 / 40			
pH / Fluid Loss	9.0 / 8.8			
Source of Sample	Flowline			
Rm @ Meas. Temp	0.90 @ 42			
Rmf @ Meas. Temp	0.68 @ 42			
Rmc @ Meas. Temp	1.22 @ 42			
Source of Rmf / Rmc	Charts			
Rm @ BHT	0.31 @ 121			
Operating Rig Time	3 1/2 HOURS			
Max Rec. Temp. F	121			
Equipment Number	91			
Location	Hays			
Recorded By	D. SCHMIDT			
Witnessed By	JEFF LAWLER			

<<< Fold Here >>>

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

GOVE,
10 SOUTH TO GOVE 1 RD,
6 WEST TO 32 RD, 1/2 SOUTH,
EAST INTO

Log Measured From: KELLY BUSHING 8 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneeres.com 785-625-3858

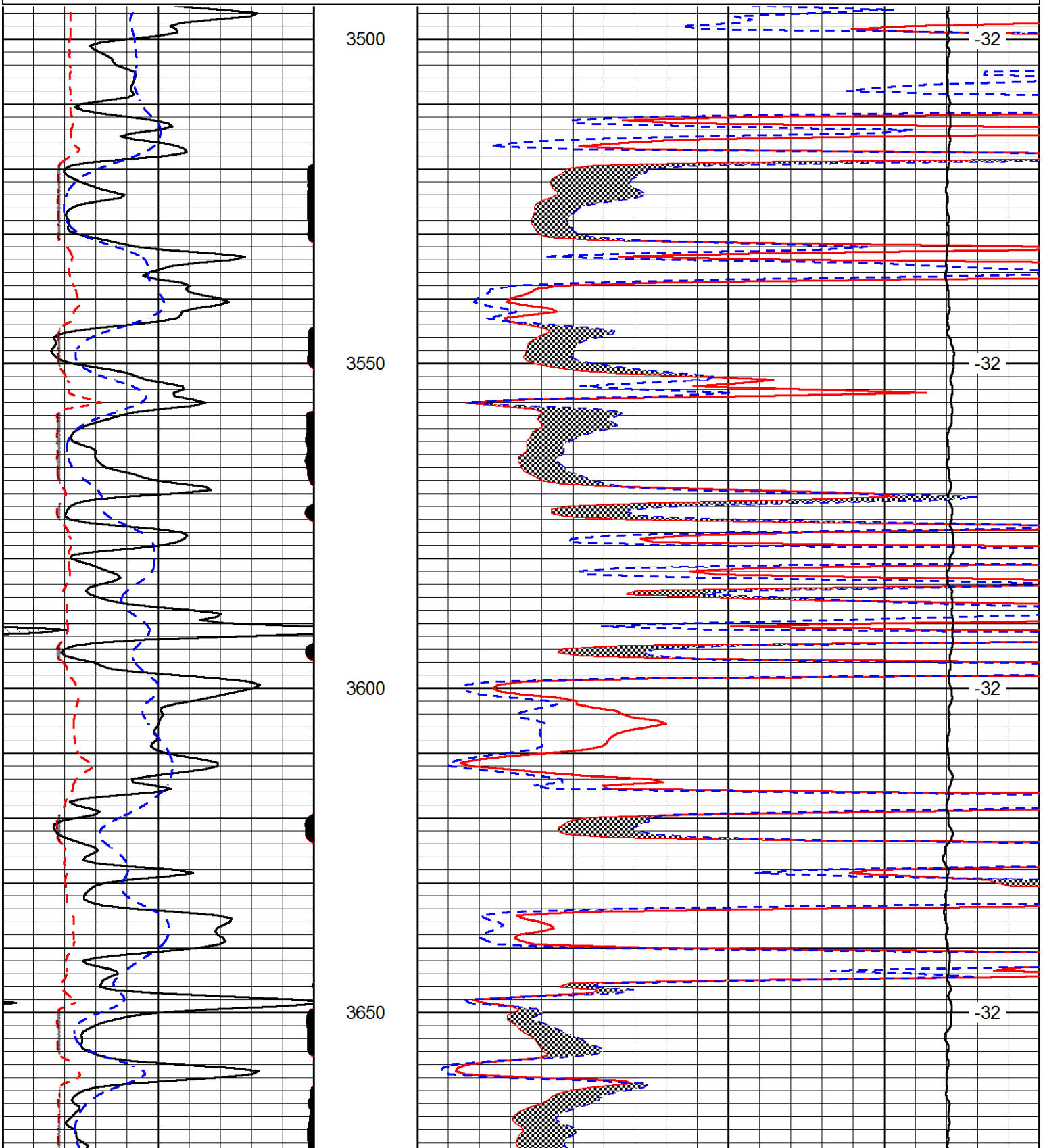
Your Pioneer Energy Services Crew	This Log Record Was Witnessed By
Engineer: D. SCHMIDT	Primary Witness: JEFF LAWLER
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

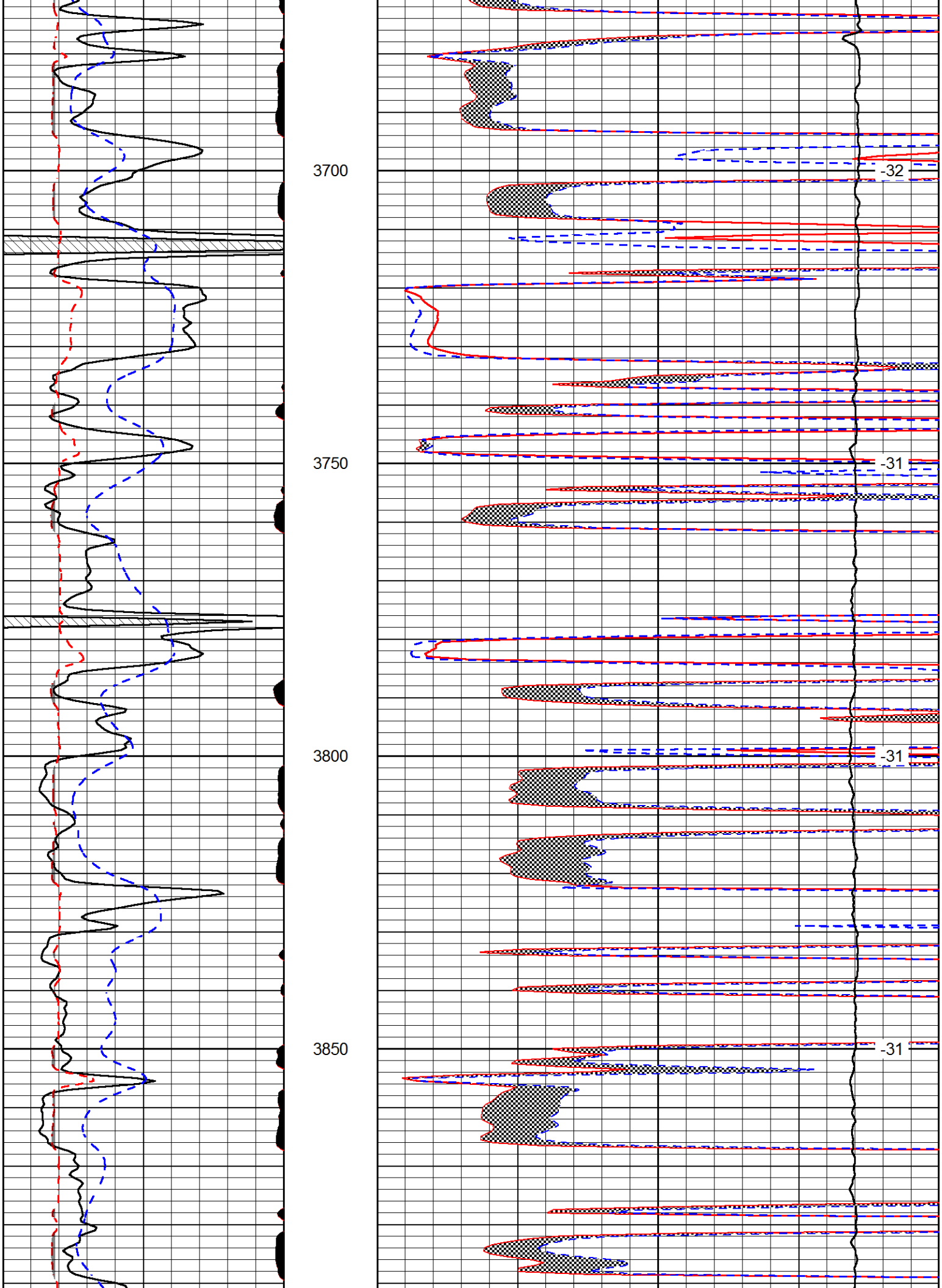
Database File	mustang_kuhn_1hd.db
Dataset Pathname	DIL/mustkml
Presentation Format	micro
Dataset Creation	Wed Nov 11 20:33:40 2015
Charted by	Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	MCAL (in)	16
2.875	Mud Cake (in)	7.875
-200	SP (mV)	0

0	Micro Inverese 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0

LSPD (ft/min)

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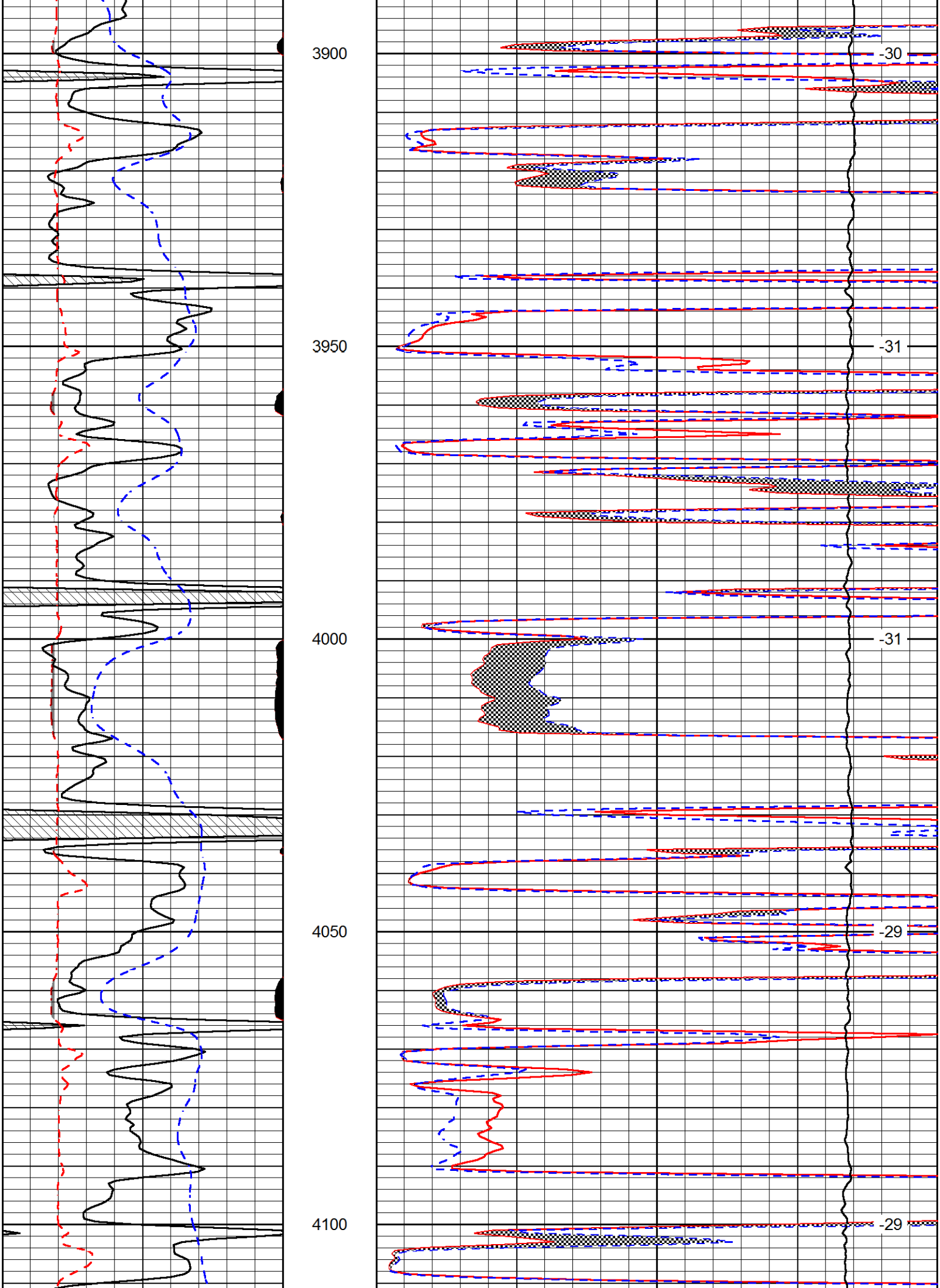
3850
-32
-31
-31
-31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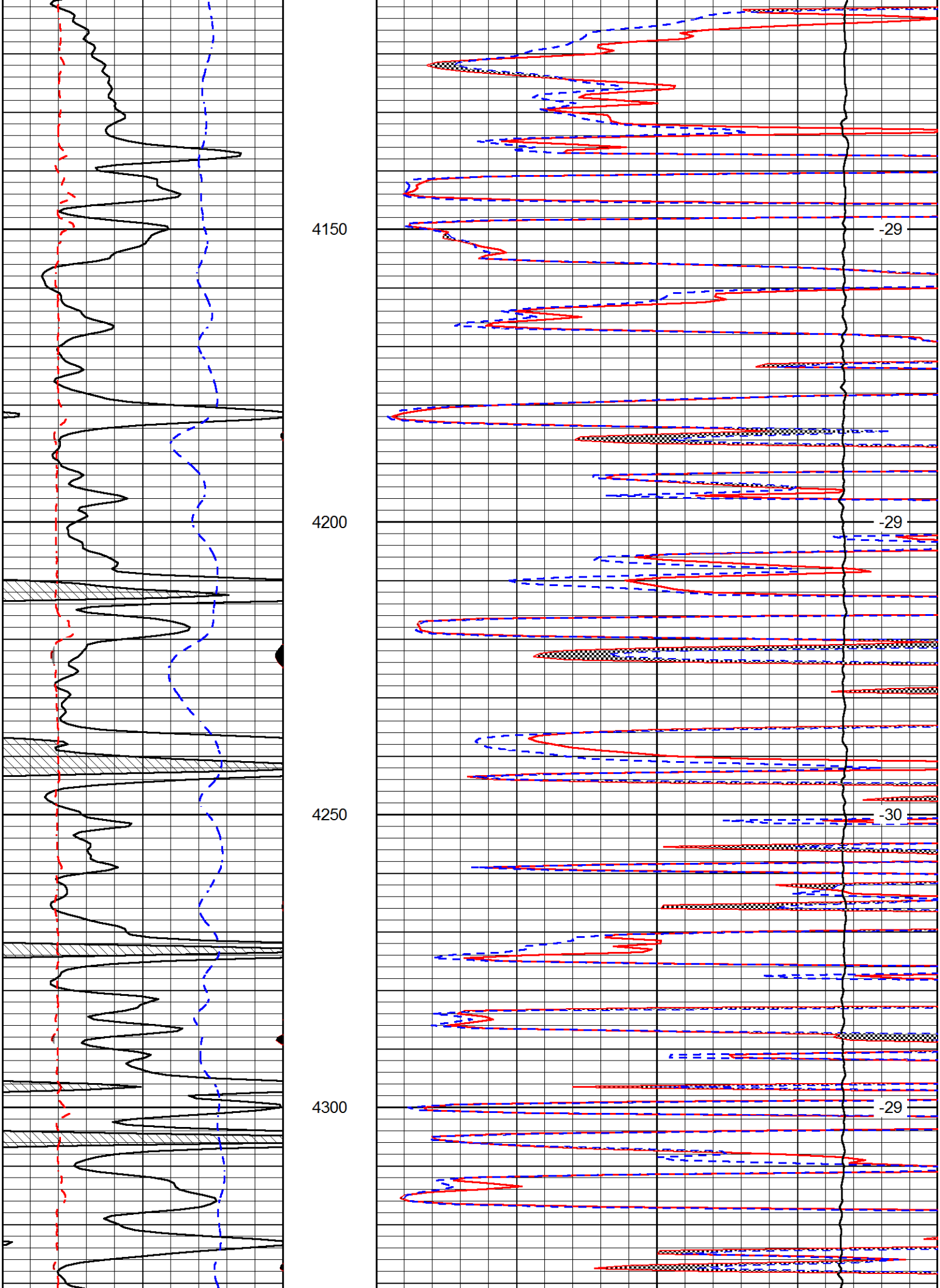
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-30
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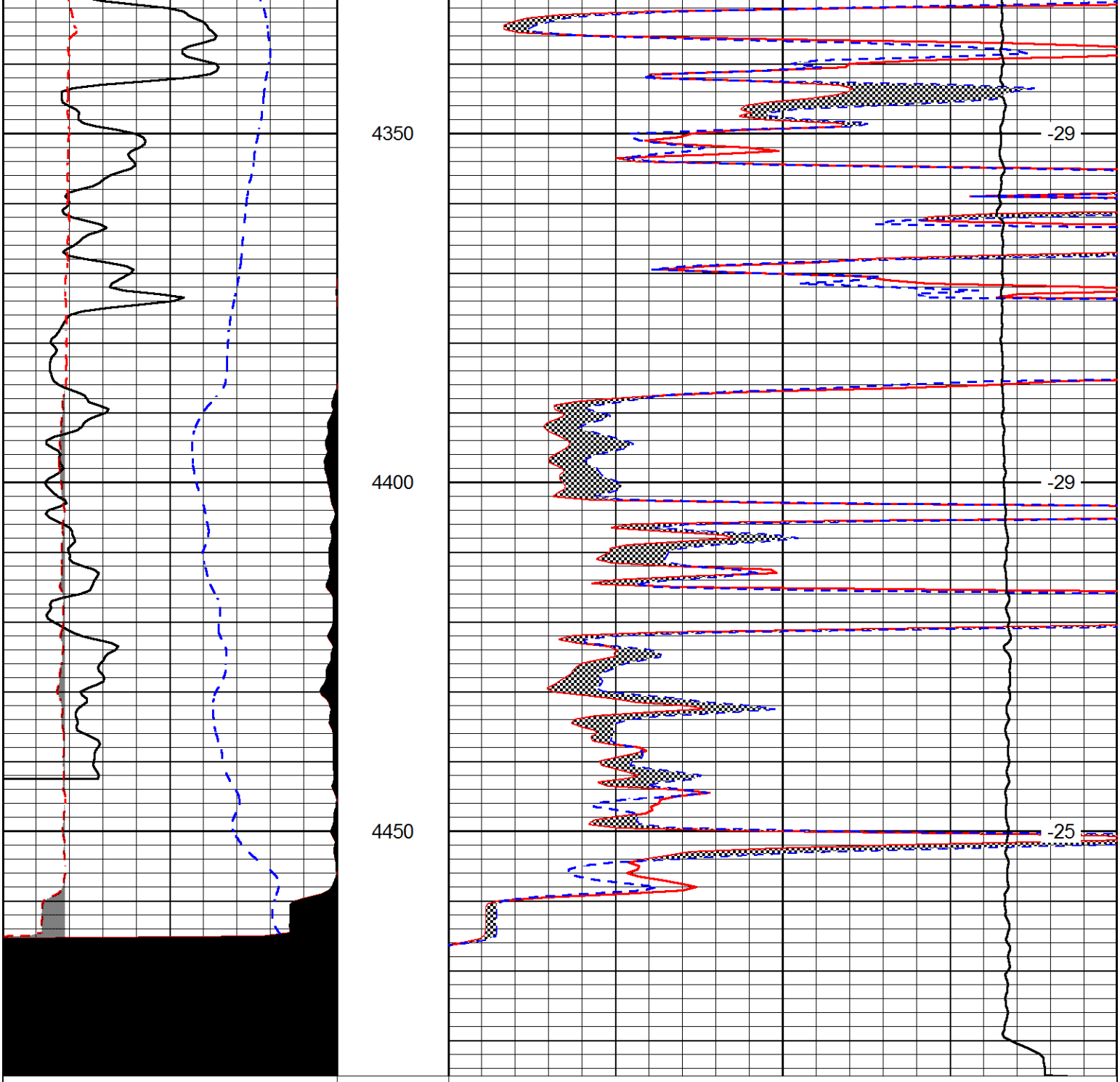

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0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0

LSPD
(ft/min)

MUSTANG ENERGY CORPORATION

Scale 1:240 Imperial

Well Name:	KUHN #1		
Surface Location:	SW NE NW SW Sec. 25 - 14S - 30W		
Bottom Location:			
API:	15-063-22273		
License Number:	33922		
Spud Date:	11/4/2015	Time:	2:00 PM
Region:	GOVE COUNTY KANSAS		
Drilling Completed:	11/11/2015	Time:	2:00 PM
Surface Coordinates:	2300' FSL & 935' FWL		
Bottom Hole Coordinates:			
Ground Elevation:	2681.00ft		
K.B. Elevation:	2689.00ft		
Logged Interval:	3500.00ft	To:	4480.00ft
Total Depth:	4480.00ft		
Formation:	LANSING - KANSAS CITY, JOHNSON ZONE		
Drilling Fluid Type:	FRESH WATER / CHEMICAL GEL		

OPERATOR

Company:	MUSTANG ENGERY CORPORATION		
Address:	P.O. BOX 1121 HAYS, KS 67601		
Contact Geologist:	ROD BRIN		
Contact Phone Nbr:	(785) 623-0533		
Well Name:	KUHN #1		
Location:	SW NE NW SW Sec. 25 - 14S - 30W		
API:	15-063-22273		
Pool:		Field:	LUNGREN
State:	KANSAS	Country:	USA

SURFACE CO-ORDINATES

Well Type:	Vertical
Longitude:	-100.6104301
Latitude:	38.8074376
N/S Co-ord:	2300' FSL
E/W Co-ord:	935' FWL

LOGGED BY

BIG CREEK CONSULTING

Company:	BIG CREEK CONSULTING, INC.		
Address:	1909 MAPLE ELLIS, KS 67637		
Phone Nbr:	(785) 259-3737		
Logged By:	GEOLOGIST	Name:	JEFF LAWLER

CONTRACTOR

Contractor:	WW DRILLING, LLC		
Rig #:	12		
Rig Type:	MUD ROTARY		
Spud Date:	11/4/2015	Time:	2:00 PM
TD Date:	11/11/2015	Time:	2:00 PM
Rig Release:		Time:	

ELEVATIONS

K.B. Elevation:	2689.00ft	Ground Elevation:	2681.00ft
K.B. to Ground:	8.00ft		

NOTES

WELL COMPARISON SHEET

	KUHN #1				• PIONEER RESOURCES GROOM #2 SE NW SW NW 25-14-30				H BEREXCO, INC. FERN #1 NE SW SW 25-14-30				• BLACK DIAMOND OIL, INC. KRUG #1 SW SE SE 25-14-30				H BEREXCO, INC. GROOM #1 C E/2 SE NE 25-15-30			
	KB	2689	GL	2681	KB	2693			KB	2661			KB	2632			KB	2655		
	LOG TOPS		SAMPLE TOPS		LOGS		LOG	SMPL.	COMP. CARD		LOG	SMPL.	COMP. CARD		LOG	SMPL.	PLUGGING REPORT		LOG	SMPL.
FORMATION	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.
ANHYDRITE TOP			2104	585	2102	591		- 6	2070	591		- 6	2038	594		- 9	2073	582		+ 3
BASE			2133	556	2132	561		- 5	2100	561		- 5					2107	548		+ 8
HEEBNER SHALE			3714	-1025	3713	-1020		- 5	3679	-1018		- 7	3646	-1014		- 11	3677	-1022		- 3
TORONTO			3736	-1047	3734	-1041		- 6									3699	-1044		- 3
LKC			3754	-1065	3750	-1057		- 8	3717	-1056		- 9	3682	-1050		- 15	3714	-1059		- 6
MUNCIE CREEK			3908	-1219	3905	-1212		- 7												
STARK SHALE			3995	-1306	3994	-1301		- 5	3963	-1302		- 4								
BKC			4067	-1378	4068	-1375		- 3	4036	-1375		- 3					4030	-1375		- 3
MARMATON			4093	-1404	4096	-1403		- 1	4063	-1402		- 2					4055	-1400		- 4
PAWNEE			4192	-1503	4194	-1501		- 2	4157	-1496		- 7	4122	-1490		- 13	4155	-1500		- 3
MYRICK STATION			4225	-1536	4226	-1533		- 3												
FT SCOTT			4246	-1557	4250	-1557		+ 0	4219	-1558		+ 1	4186	-1554		- 3	4216	-1561		+ 4
CHEROKEE SHALE			4272	-1583	4277	-1584		+ 1	4245	-1584		+ 1					4243	-1588		+ 5
JOHNSONE ZONE			4315	-1626	4323	-1630		+ 4	4293	-1632		+ 6					4291	-1636		+ 10
MORROW SHALE			4328	-1639	4336	-1643		+ 4												
MISSISSIPPIAN			4344	-1655	4352	-1659		+ 4	4320	-1659		+ 4	4290	-1658		+ 3	4319	-1664		+ 9
SPERGEN			4390	-1701	4392	-1699		- 2												
TOTAL DEPTH			4480	-1791	4470	-1777		- 14	4365	-1704		- 87	4327	-1695		- 96	4373	-1718		- 73

DST #1 LKC C 3780' - 3800'

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mustang Energy Corperation

PO Box 1112
Hays, Ks 67601

ATTN: Jeff Lawler

25-14s-30w

Kuhn #1

Job Ticket: 61841 **DST#: 1**

Test Start: 2015.11.08 @ 10:57:00

GENERAL INFORMATION:

Formation: **LKC - C**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:44:30
Time Test Ended: 18:55:15

Test Type: Conventional Bottom Hole (Initial)
Tester: Bradley Walter
Unit No: 69

Interval: 3780.00 ft (KB) To 3800.00 ft (KB) (TVD)
Total Depth: 3800.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

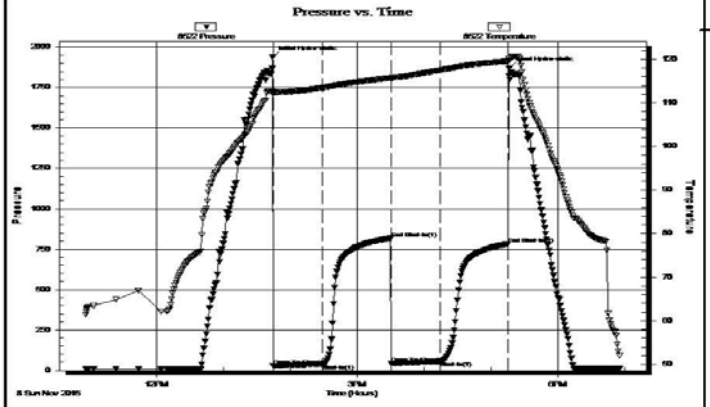
Reference Elevations: 2689.00 ft (KB)
2681.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8522 **Outside**

Press@RunDepth: 54.54 psig @ 3781.00 ft (KB)
Start Date: 2015.11.08 End Date: 2015.11.08
Start Time: 10:57:05 End Time: 18:55:14

Capacity: 8000.00 psig
Last Calib.: 2015.11.08
Time On Btm: 2015.11.08 @ 13:44:15
Time Off Btm: 2015.11.08 @ 17:16:15

TEST COMMENT: IF: 2" blow.
ISI: No return.
FF: 1/4" blow.
FSI: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1940.41	112.70	Initial Hydro-static
1	27.25	112.11	Open To Flow (1)
45	37.28	113.43	Shut-In(1)
106	817.54	115.69	End Shut-In(1)
107	43.69	115.43	Open To Flow (2)
151	54.54	117.49	Shut-In(2)
211	782.38	119.55	End Shut-In(2)
212	1872.52	119.84	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	w cm 40w 60m (oil spots)	0.34
1.00	oil 100o	0.00

Gas Rates

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

Trilobite Testing, Inc Ref. No: 61841 Printed: 2015.11.10 @ 00:46:35

DST #2 LKC H 3900' - 3940'

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mustang Energy Corperation

PO Box 1112
Hays, Ks 67601

ATTN: Jeff Lawler

25-14s-30w

Kuhn #1

Job Ticket: 61842 **DST#: 2**

Test Start: 2015.11.09 @ 10:37:00

GENERAL INFORMATION:

Formation: **LKC - H**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 12:46:15
Time Test Ended: 15:54:30

Test Type: Conventional Bottom Hole (Reset)
Tester: Bradley Walter
Unit No: 69

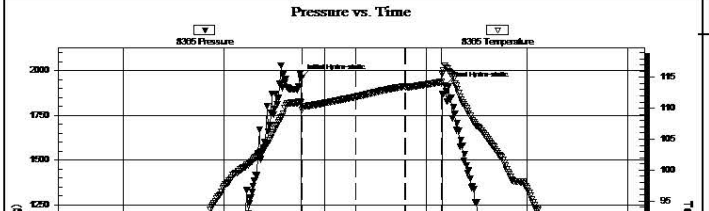
Interval: 3900.00 ft (KB) To 3940.00 ft (KB) (TVD)
Total Depth: 3940.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2689.00 ft (KB)
2681.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8365 **Inside**
Press@RunDepth: 19.05 psig @ 3901.00 ft (KB)
Start Date: 2015.11.09 End Date: 2015.11.09
Start Time: 10:37:05 End Time: 15:54:29

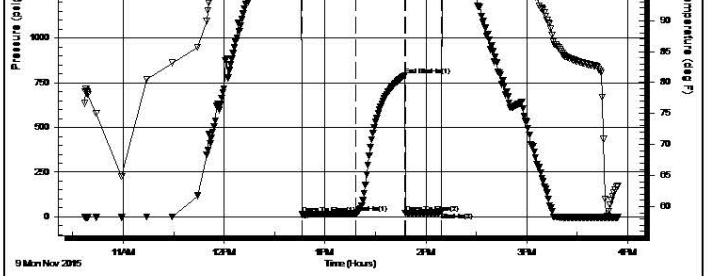
Capacity: 8000.00 psig
Last Calib.: 2015.11.09
Time On Btm: 2015.11.09 @ 12:46:00
Time Off Btm: 2015.11.09 @ 14:11:15

TEST COMMENT: IF: Surface blow , Died @ 20 min.
ISI: No return.
FF: No blow , flushed tool. surge died.
Pulled test.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1961.13	110.93	Initial Hydro-static
1	13.27	109.76	Open To Flow (1)
33	19.05	111.84	Shut-In(1)
62	789.72	113.52	End Shut-In(1)



62	21.02	113.34	Open To Flow (2)
83	24.70	114.21	Shut-In(2)
86	1918.33	116.89	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
25.00	mud 100m, oil spots	0.12

* Recovery from multiple tests

Gas Rates

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

Trilobite Testing, Inc Ref. No: 61842 Printed: 2015.11.09 @ 16:35:23

DST #3 SPERGEN 4385' - 4400'

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Mustang Energy Corperation

PO Box 1112
Hays, Ks 67601

ATTN: Jeff Lawler

25 14s 30w

Kuhn #1

Job Ticket: 61843 **DST#: 3**

Test Start: 2015.11.11 @ 01:50:00

GENERAL INFORMATION:

Formation: **Spergen**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:18:00
Time Test Ended: 07:55:30

Test Type: Conventional Bottom Hole (Reset)
Tester: Bradley Walter
Unit No: 69

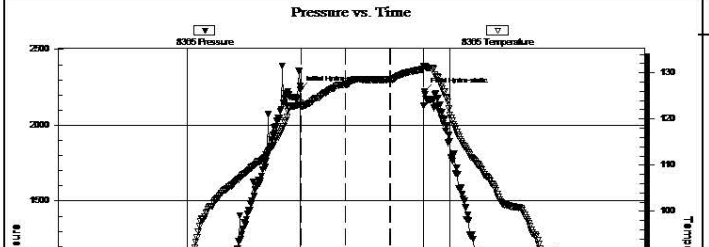
Interval: 4385.00 ft (KB) To 4400.00 ft (KB) (TVD)
Total Depth: 4400.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2689.00 ft (KB)
2681.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8365 **Inside**
Press@RunDepth: 29.82 psig @ 4386.00 ft (KB)
Start Date: 2015.11.11 End Date: 2015.11.11
Start Time: 01:50:05 End Time: 07:55:29

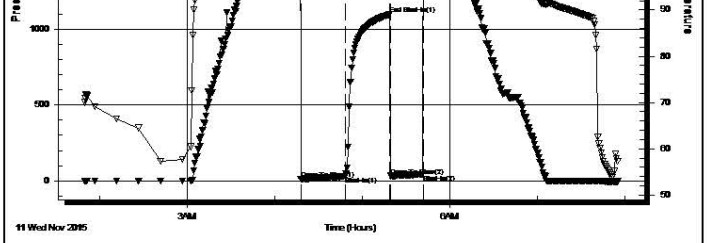
Capacity: 8000.00 psig
Last Calib.: 2015.11.11
Time On Btm: 2015.11.11 @ 04:17:45
Time Off Btm: 2015.11.11 @ 05:42:45

TEST COMMENT: IF: 1/4" - receded to a surface blow .
ISI: No return.
FF: No blow , flushed tool, surge died to surface blow .
Pulled test



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2234.92	123.45	Initial Hydro-static
1	11.87	122.72	Open To Flow (1)
31	29.82	127.39	Shut-In(1)
62	1097.24	128.59	End Shut-In(1)
62	32.43	128.36	Open To Flow (2)



84	43.64	130.78	Shut-In(2)
85	2221.14	131.50	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	Mud 100m (oil spots)	0.34
1.00	Oil 100o	0.00

* Recovery from multiple tests

Gas Rates

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

Trilobite Testing, Inc Ref. No: 61843 Printed: 2015.11.11 @ 09:08:53

ROCK TYPES

Cht vari
Dolprim
Dolsec
Lmst fw<7
Lmst fw7>
shale, gry
Carbon Sh
shale, red

ACCESSORIES

FOSSIL
Pellets

STRINGER
Chert

TEXTURE
Chalky

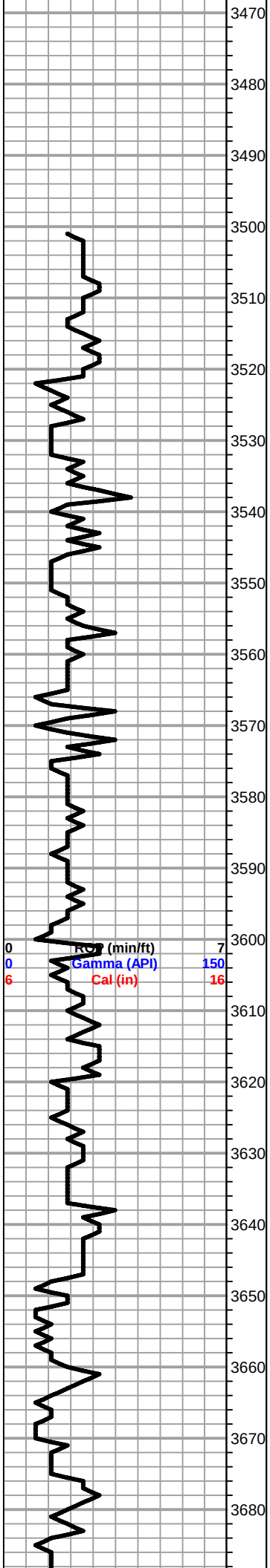
OTHER SYMBOLS

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

DST
DST Int
DST alt

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)

Curve Track #1	Depth | Intervals	DST	Lithology	Oil Show	Geological Descriptions	Curve Track #3
ROP (min/ft) 0 — 7 Gamma (API) 0 — 150 Cal (in) 6 — 16 1:240 Imperial	Cored Interval DST Interval					1:240 Imperial
	3460				1' DRILL TIME THROUGH ANHYDRITE FROM 2080' - 2140' 1' DRILL TIME FROM 3500' - RTD 10' WET/DRY SAMPLES FROM 3550' - RTD	



GEOLOGICAL SUPERVISION BY JEFF LAWLER FROM 3500' - RTD

8 5/8" SURFACE PIPE SET @ 220' SURVEY 3/4 dgr.

ANHYDRITE TOP 2104' (+585) R-LOG
ANHYDRTITE BASE 2133' (+556) E-LOG

Sh- Maroon Gray, gritty & earhty, waxy & dense, several pcs rounded by turbulant flow

Lm- Gray Buff, VFXLN, dense, sl fsl, well cemented, poorly dev. w/ sctrd XLN porosity, some chalk

Sh- A/A w/ gummy argillaceous gray clumps, few pcs of maroon shale w/ qtz inclusions

Lm- Gray Buff, Vf-Fn Grn, dense arenaceous, loosely cemented Ls w/ abundant soft white chalk

Lm- Drk Gray, VFXLN, dense, well cemented, sl fsl w/ poor vis. porosity, decrease in chalk

Lm- Cream Buff, FXLN, sl arenaceous, sl fsl, well cemented, poorly dev. w/ sctrd XLN porosity, few w/ sctrd reXLN

Sh- Black Gray Maroon, soft & carbonaceous, dense & waxy, gritty & earthy

Lm- Tan Buff, FXLN, dense, well cemented sl dolomitic Ls w/ dense XLN porosity, barren

Lm/Ss- Cream Gray, mix of fsl poorly dev. Ls w/ sctrd XLN porosity & sl chalky fn grn consolidated & sorted Ss, all barren

Lm- A/A w/ sl increase in Ss & sl arenaceous Ls w/ sctrd intergranluar porosity, barren

Lm- Cream Tan, VFXLN, dense tight cherty Ls w/ fusulinids, sctrd micro XLN porosity

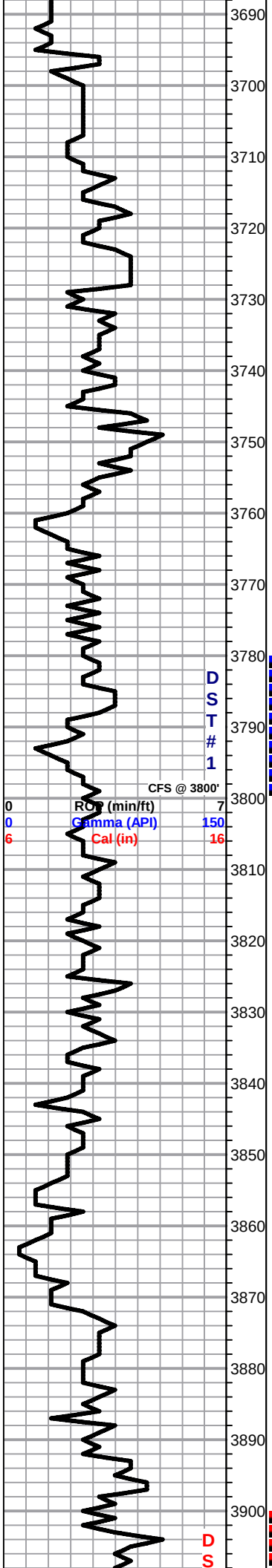
Sh- Black Gray, fissile & carbonaceous, dense & waxy slivers

Lm- Cream Off White, FXLN Vf Grn, sl fsl, poorly dev. & mostly tight w/ sctrd XLN porosity, some soft mud supported matrix & soft white chalk

Lm/Chert- Off White, VFXLN, dense sl fsl, cherty Lm/sl dolomitic chert, min. vis. porosity, most massive, few slick & porcelain like

Lm- Cream, VFXLN, dense, well cemented, oolitic, poorly dev. w/ sctrd clear replacement cementation, tight

Lm- Cream Off White, VF-FXLN, dense, well cemented, sl chalky in part, tight w/ min. vis. porosity, some soft white chalk



Lm- Brown/Tan, Vf Grn, dense, loosely cemented mud supported matrix, heavily mottled, poor vis. porosity

HEEBNER 3714' (-1025) E-LOG Sh- Black Maroon, fissile & carbonaceous, gritty & earthy

TORONTO 3736' (-1047) E-LOG Lm- Cream Off White, FXLN, dense, well cemented, poorly dev. w/ sctrd XLN porosity, barren

LKC 3754' (-1065) E-LOG Lm- Cream Off White, massive mix of fsl chert, sl dolomitic w/ no vis. porosity, and poorly dev. oolitic Ls w/ clear replacement cementation, poor vis. porosity, all barren

Lm/Chert- Cream Off White, fsl w/ sctrd XLN porosity, some sl chalky in part, fsl fresh bedded chert w/o vis. porosity

SHORT TRIP
STRAP +1.84'
SURVEY 3/4 dgr.
45-60-45-60

DST #1 LKC C
3780' - 3800'
45-60-45-60

1' OIL
70' WCM
(40%W, 60%M)

SIP: 818-782#

B-1.jpg

Lm- Cream Off White, FXLN, oolitic, sctrd dev. w/ sctrd fn ppt inter oolite porosity, some clear replacement cementation w/in porosity, 4-5 pcs. SCTRD DRK STN, NSFO, NO ODR, MOD YLW FLOR & SLW STRM WET CUT some soft white chalk

Sh- Gray Maroon, gummy argillaceous clumps & gritty slivers, gritty & earthy

Lm- Cream Off White, FXLN, mod. dev. oolitic w/ sctrd XLN & ppt inter oolite porosity, SCTRD DRK STN, TR FO, WK-FR ODR, GD YLW FLOR & SL SLW STRM WET CUT

C-1.jpg

Lm- White Cream Translucent, VFXLN, dense vry well cemented cherty Ls w/ min. vis. porosity, barren

Sh- Gray Maroon, silty & soft, some calcareous, gritty & earthy, also some arenaceous shale

Lm- Cream Tan, VF-FXLN, dense, well cemented, sl fsl, poorly dev., sctrd reXLN & XLN porosity, vry clean & barren, some soft white chalk

Lm- Cream Tan, FXLN, fsl, well cemented, massive, sctrd dev. & reXLN, sctrd to dense XLN & secondary reXLN porosity, barren, some soft white chalk

Lm- Cream Off White, VF-FXLN, dense, massive well cemented, oolitic sl dolomitic Ls w/ dense micro XLN & sctrd fn ppt inter oolite porosity, SCTRD LT STN, TR FO, FR ODR, BRT YLW FLOR & DRK HALO FLOR, STRM WET CUT

F-1.jpg

Lm- Cream Tan, F-Med XLN, mod. well dev. oolitic w/ mostly consistent ppt & sctrd vugular inter oolite porosity & sctrd reXLN, SCTRD DRK STN, TR FO & TR GSY BUBBLES, FR ODR, INSTANT STRM WET CUT

F-2.jpg

Lm- Cream Tan, FXLN, mod. well dev. oomoldic w/ sctrd skeletal dissolution, poor inter vugular connectivity, barren

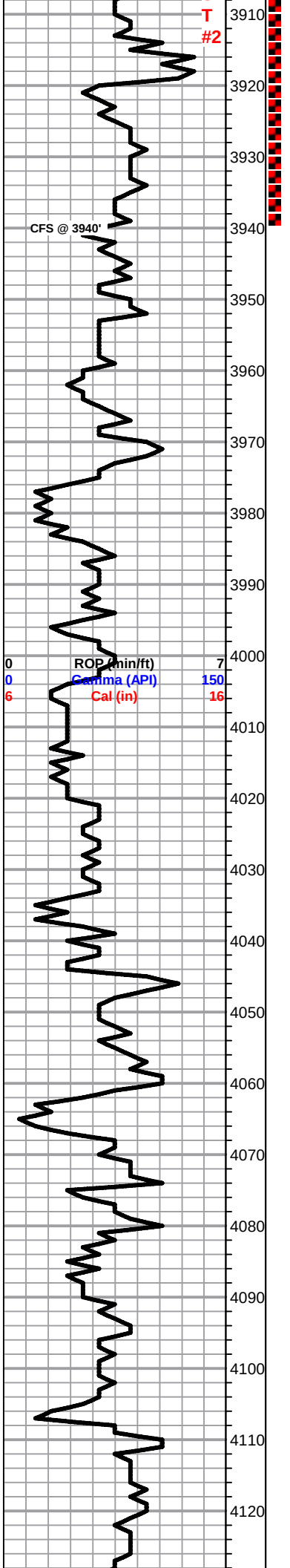
Lm- Cream Tan, VF-FXLN, dense, sl fsl, sctrd reXLN, XLN porosity, barren

Lm- A/A w/ some sl chalky in part and soft white chalk

Lm- Buff Gray, VF-FXLN, dense, well cemented, mostly tight w/ sctrd XLN porosity, barren

Sh- Black, fissile & carbonaceous

DST #2 LKC H



Lm- Brown Tan, mix of soft mud supported matrix & VF-FXLN w/ poor vis. porosity, NO VIS. STAIN, MOD. ODR??

3900' - 3940'
30-30-0-0

.25' MUD w/ OIL SPOTS

SIP: 790-N/A

Lm- Cream Tan, mix of dense well cemented sl dolomitic Ls w/ dense consistent micro XLN porosity throughout, LT SCTRD STN, TR FO & cream/off white, fsl & sl oolitic Ls w/ sctrd fn ppt inter oolite porosity, SCTRD LT STN, TR FO, ALL W/ FR ODR

H-1.jpg

H-2.jpg

Lm- Tan, VF-FXLN, sl fsl, well cemented, poorly dev. w/ sctrd XLN porosity, barren

Sh- Maroon Gray Lm Green, gritty & earthy, dense & waxy

Lm- Tan, VFXLN, dense, well cemented, mostly tight w/ poor vis. porosity, barren

Lm- Cream Off White, F-MED XLN, mod. well dev. oolitic w/ ppt inter oolite porosity, SCTRD DRK/BLK STN, NSFO, WK ODR

I-1.jpg

Sh- Gray, dark waxy slivers & gummy argillaceous clumps

Lm- Tan Semi-Translucent, VF-FXLN, mix of poorly dev. & tight oolitic Ls w/ min. vis. porosity & mod. dev. oomoldic w/ sctrd vugular porosity, rare intervugular connectivity, WK TR STN W/IN VUGS, NSFO, TR ODR

J-1.jpg

Lm- Cream Tan, VFXLN, dense, well cemented, mostly tight w/ poor vis. porosity

STARK SHALE 3995' (-1306) E-LOG Sh- Black, fissile & carbonaceous

Lm- Cream Off White, FXLN, oolitic w/ sctrd vuggy inter oolite & XLN porosity, SCTRD STN, TR FO UPON CRUSH, FR ODR

Lm- Gray Buff, FXLN, sl fsl well cemented sctrd XLN porosity, barren

Sh- Black Brick Red Gray, fissile & carbonaceous, gritty & earhty, soft & silty

Lm- Lt Gray, VF-FXLN, dense, well cemented, mostly tight w/ poor min. vis. posority

Lm- Buff, VFXLN, dense, well cemented, tight w/ min. vis. porosity

Lm- Cream Off White, VFXLN, dense, well cemetend gritty dolomitic Ls w/ consistent dense XLN porosity throughout, barren

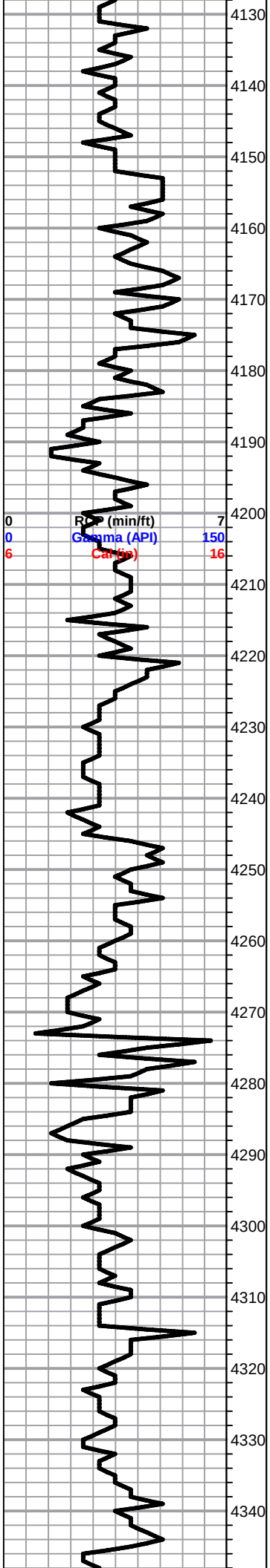
BKC 4067' (-1378) E-LOG Sh- Brick Red Gray, gritty & earhty, soft & calcareous

Sh/Ss- gray gummy argillaecous clumps & vf grn, rounded, consolidated & well sorted gray Ss, sl shaley, barren

MARMATON 4093' (-1404) E-LOG Lm- Cream Off White Tan, VF-FXLN, mostly dense & well sorted, sctrd to dense XLN porosity, some loosely cemented & chalky in part, all barren

Lm- Tan, VFXLN, dense, well cemented, mostly tight w/ sctrd XLN porosity

Lm- Cream Off White, VFXLN, dense, well cemented, sl cherty Ls w/ sctrd XLN porosity, barren



4130

Sh- Maroon Brick Red Gray Lm Green, gritty & earthy, arenaceous soft shales

4140

Sh- A/A w/ dense & waxy gray shale

4150

Lm- Cream Tan, VFXLN, dense, well cemented, tigh w/ sctrd XLN porosity

4160

Lm/Chert- Off White Salmon, mix of tight FXLN Ls & fresh bedded chert/cherty Ls

4170

Sh- Gray, dense & waxy

Lm- Tan Buff, VF-FXLN, dense, well cemented, mostly tight w/ sctrd XLN porosity, some lithographic w/ min. vis. porosity

4180

Sh- Gray Maroon, gummy argillaceous clumps, silty & sandy, gritty & earthy

4190

PAWNEE 4192' (-1503) E-LOG Lm- Cream Tan, VF-FXLN, dense, well cemented, mostly tight w/ sctrd XLN & vry fn ppt porosity, some chalky in part, WK TR STN, NSFO, TR ODR

PAW.jpg

4200

Lm- Gray, FXLN, loosely to well cemented, sl fsl, trashy biolcastic, poor vis. porosity

4210

Sh- Black, fissile & carbonaceous, some sl fsl & chalky

4220

MYRICK STATION 4225' (-1536) E-LOG Lm- Cream Off White, VF-FXLN, mostly dense & well cemented, some loosely cemented & sl chalky in part, sctrd XLN & sctrd ppt porosity, SCTRD DRK STN, NSFO, SOME BLK DO STN??, WK ODR, some reXLN w/in ppt porosity

MY ST-1.j...

4230

Lm- Cream Off White, VF-FXLN, dense, well cemented, mostly tight w/ poor vis. porosity, barren

4240

FT SCOTT 4246' (-1557) E-LOG Lm/Chert- Tan Cream Off White, VFXLN, dense, vry well cemented oolitic chert/cherty Ls w/o vis. porosity, much lithographic porcelain like

4250

Lm- Cream Tan, VFXLN, dense, well cemented, tight w/ min. vis. porosity

4260

4270

CHEROKEE SHALE 4272' (-1583) E-LOG Sh- Black Gray, fissile & carbonaceous, waxy, gummy clumps

4280

Lm- Gray Buff, VF-FXLN, dense, well cemented, tight w/ sctrd XLN porosity, barren

4290

Lm- A/A w/ soft mud supported matrix & soft white chalk

4300

4310

JOHNSON ZONE 4315' (-1626) E-LOG Lm- Cream Off White, mix of tight well cemented w/ min. vis. porosity, some w/ TR OF EDGE BLK DO RESIDUAL STN, NSFO & few sl oolitic pcs w/ ppt & XLN porosity, WK LT STN, TR FO UPON CRUSH, ALL W/ WK ODR

JZ-1.jpg

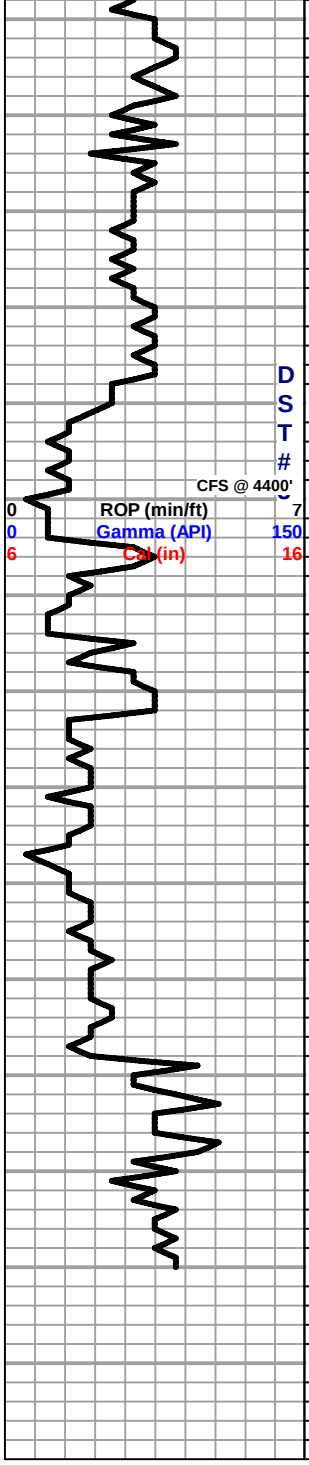
4320

4330

MORROW SHALE 4328' (-1639) E-LOG Sh- Gray Green Yellow Maroon, dense & waxy, sl pebbly, argillaceous clumps, gritty & earthy

4340

MISSISSIPPIAN 4344' (-1655) E-LOG Lm/Chert- Cream Buff Yellow, VF-FXLN, dense, well cemented, mostly tight w/ min. vis. porosity, fresh bedded



4350
4360
4370
4380
4390
4400
4410
4420
4430
4440
4450
4460
4470
4480
4490

cryptoXLN chert/cherty Ls w/o vis. porosity

Lm- A/A w/ clear fn grn semi-friable Ss clusters, matture consolidated well sorted, rounded, barren

Lm/Chert- White Salmon, loosely cemented, sl chalky fsl & oolitic Ls w/ poor vis. to sctrd XLN porosity, some soft white chalk, several pcs of salmon fresh bedded vitreous chert

Lm- A/A w/ white translucent fresh bedded chert

Lm- A/A, loosely cemented oolitic w/ poor vis. porosity, vry clean & barren, w/ white/off white detritial well cemented chert

SPERGEN 4390' (-1701) E-LOG **40"-**Dolomite- Tan, VF-FXLN, dense, well cemented, dense micro XLN & XLN porosity, several pcs w/ sctrd fn ppt to ppt porosity, SUB-SAT STN, MOST PCS W/ FR SFO & GSY BUBBLES UPON CRUSH, SEVERL PCS W/ SFO W/O CRUSH, FR ODR
60"- Dol- Tan Cream, FXLN, massive, mod. well dev. w/ consistent XLN & sctrd ppt porosity, SUB-SAT STN, FR FSO, SOME GSY BUBBLES UPON CRUSH, FR ODR

Lm- White Tan, Vf Grn, loosely cemented peloidal Ls w/ min. vis. porosity

Dol- Tan, VF-FXLN, dense, well cemented, mod. dev. w/ dense XLN & sctrd vry fn-fn ppt porosity, STN A/A, SL INCR. IN ODR

Lm- White Cream, Vf Grn VFXLN, mix of peloidal Ls & chalk, all vry loosely cemented & crumbly, soft white barren chalk

Dol- Cream Off White, VFXLN, dense, well cemented & tight w/ micro XLN porosity, barren

Lm/Dol- Tan Brown, VF-FXLN, fsl, oolitic & sl unconsolidated Ls Dol & dolomitic Ls, mostly massive, trashy w/ dense to sctrd XLN porosity, mostly tight, barren

A/A w/ gray fsl & sl unconsolidated VFXLN Ls, sctrd to dense XLN porosity, several pcs of tan lithographic Ls w/ rare ppt porosity, vry well cemented

Chert- Milky White Gray Translucenet, mix of fsl fresh bedded vitreous & clastic detritial chert

Lm- Cream Off White, FXLN, sl fsl, loosely cemented & crumbly, much soft white chalk, all vry clean & barren

RTD 4480' (-1791) LTD @ 14:00 11/11/2015

SPERGE...

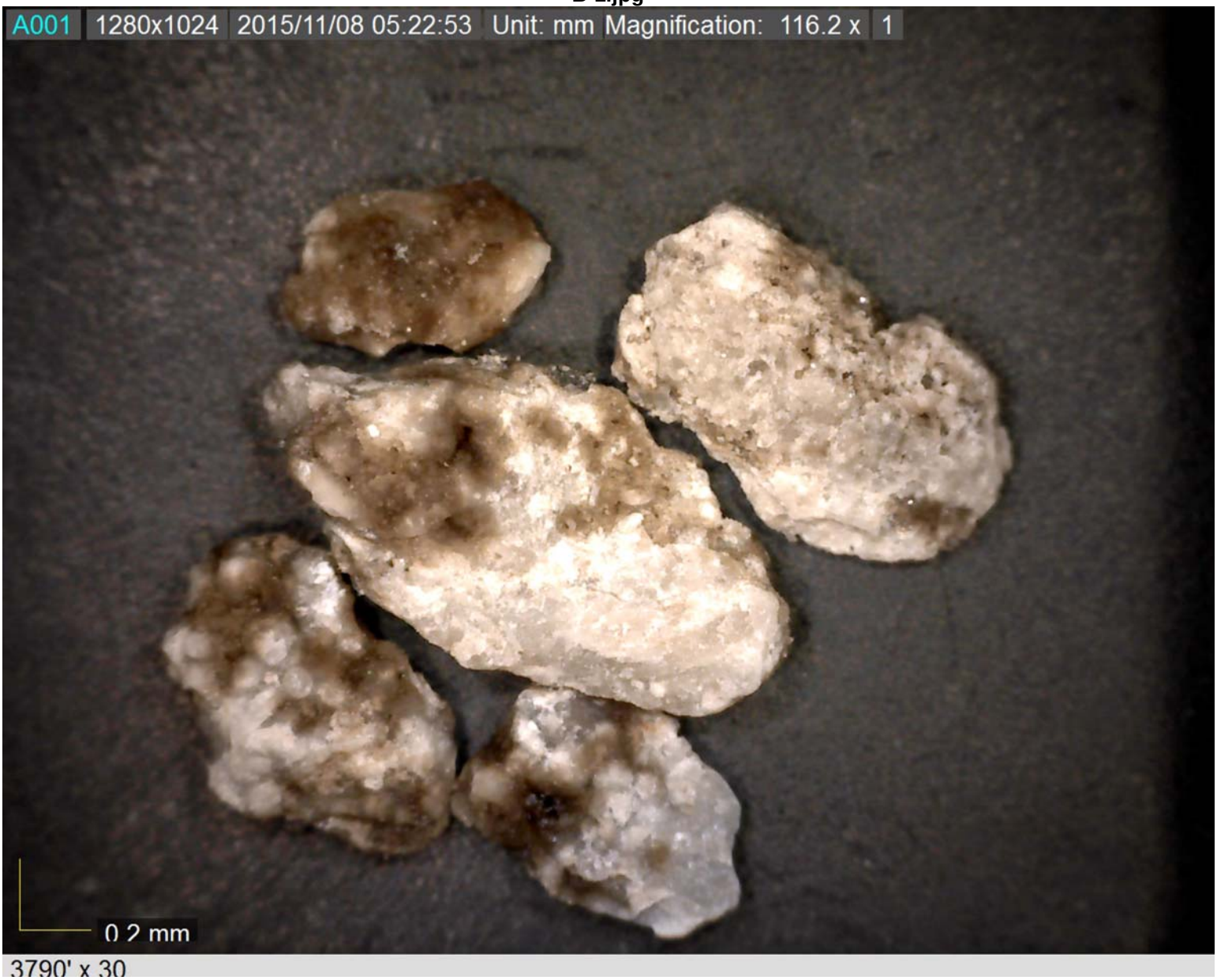
SHORT TRIP SURVEY

DST #3 SPERGEN 4385' - 4400' 30-30-0-0

1' OIL
70' MUD w/ OIL SPOTS

SIP: 1097-N/A

B-1.jpg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0.2 mm
3790' x 30

C-1.jpg

D ZONE X 25

F-1.jpg


A003 1280x1024 2015/11/09 00:51:03 Unit: mm Magnification: 77.5 x 1
0.5 mm
F ZONE X 20

F-2.jpg


A004 1280x1024 2015/11/09 01:07:06 Unit: mm Magnification: 77.5 x 1
0.5 mm
F-2 x 20

H-1.jpg

H ZONE X 20

H-2.jpg

H ZONE X 20

I-1.jpg


A007 1280x1024 2015/11/09 22:05:27 Unit: mm Magnification: 77.5 x 1
0.5 mm
LZONE X 30

J-1.jpg


A008 1280x1024 2015/11/09 22:06:25 Unit: mm Magnification: 77.5 x 1
0.5 mm
JLZONE X 30

PAW.jpg

PAWNEE X 25

MY ST-1.jpg

MYRICK ST X 25

JZ-1.jpg

JOHNSON X 25

SPERGEN.jpg

SPERGEN X 20