

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1240611  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- 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 ENHR       Conv. to SWD
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx)      (e.g. -xxx.xxxxx)

Datum:  NAD27       NAD83       WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ 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: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

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: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1240611

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**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 <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> 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

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 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)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:      Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR. \_\_\_\_\_ Producing Method:  
 Flowing     Pumping     Gas Lift     Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
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<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <input type="checkbox"/> Commingled <i>(Submit ACO-4)</i>	<b>PRODUCTION INTERVAL:</b> _____ _____
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### #1 Broeckelman 29BC

2550' FNL & 1630' FWL

90° N & 20° W of W/2 E/2 W/2 Section 29-9S-30W

Sheridan County, Kansas

API# 15-179-21379-0000

Elevation: GL: 2982', KB: 2990'

Sample Tops			Ref. Well
Anhydrite	2569'	+421	-24
B/Anhydrite	2603'	+387	-27
Stotler	3648'	-658	-8
Heebner	3999'	-1009	-13
Toronto	4023'	-1033	-15
Lansing	4041'	-1051	-14
Muncie Shale	4153'	-1163	-4
Stark Shale	4239'	-1249	-3
Hush	4274'	-1284	-4
BKC	4298'	-1308	-3
Marmaton	4329'	-1339	-3
Altamont	4357'	-1367	-1
Pawnee	4425'	-1435	-4
Myrick	4464'	-1474	+8
Fort Scott	4498'	-1508	-3
Cherokee Shale	4525'	-1535	-2
Johnson	4572'	-1582	-1
Morrow	4579'	-1589	-1
Mississippian	4618'	-1628	-2
RTD	4780'	-1790	

# ALLIED OIL & GAS SERVICES, LLC 064330

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT:  
Oakley, KS

DATE <u>10-20-14</u>	SEC <u>29</u>	TWP. <u>9</u>	RANGE <u>30</u>	CALLED OUT	ON LOCATION <u>5100 pm</u>	JOB START <u>6:00 pm</u>	JOB FINISH <u>6:30 pm</u>
LEASE <u>290</u> WELL # <u>1</u>				LOCATION <u>Ginnel 7N, 4W, 18d</u>		COUNTY <u>Shelby</u>	STATE <u>KS</u>
OLD OR NEW (Circle one) <u>NEW</u>				SNE info.			

CONTRACTOR Discovery

TYPE OF JOB Surface

HOLE SIZE 12 1/4 T.D. 305'

CASING SIZE 8 7/8 DEPTH 305, 29'

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG. 15'

PERFS.

DISPLACEMENT 18.58 bbl

OWNER Same

CEMENT AMOUNT ORDERED 200 sks com 3% cc

2% gel

EQUIPMENT

PUMP TRUCK CEMENTER Lakone Edwards

# 423/281 HELPER Branden Wilkinson

BULK TRUCK DRIVER Mario Carrubias

# 818/287 DRIVER (405)

COMMON	<u>200 sks</u>	@ <u>17.90</u>	<u>3580.00</u>
POZMIX		@	
GEL	<u>376 #</u>	@ <u>.50</u>	<u>188.00</u>
CHLORIDE	<u>564 #</u>	@ <u>1.10</u>	<u>620.40</u>
ASC		@	
Material Total @ <u>4388.40</u>			
<u>(211.58/20%)</u>			
HANDLING <u>216.2747</u> @ <u>2.48</u> <u>536.85</u>			
MILEAGE <u>287m x 20 x 2.25</u> <u>592.85</u>			

REMARKS:

Mix 200 sks cement

Displace with water.

Cement did circulate

20 sks to pt

Thank you

TOTAL \_\_\_\_\_

SERVICE

DEPTH OF JOB 305.29'

PUMP TRUCK CHARGE 1512.25

EXTRA FOOTAGE @

MILEAGE 4210 @ 2.70 1137.00

MANIFOLD @

420 @ 4.90 88.00

(566.89/20%) TOTAL 2733.45

CHARGE TO: Ritchie

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

PLUG & FLOAT EQUIPMENT

\_\_\_\_\_ @ \_\_\_\_\_

\_\_\_\_\_ @ \_\_\_\_\_

\_\_\_\_\_ @ \_\_\_\_\_

\_\_\_\_\_ @ \_\_\_\_\_

\_\_\_\_\_ @ \_\_\_\_\_

TOTAL \_\_\_\_\_

To: Allied Oil & Gas Services, LLC.

You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME \_\_\_\_\_

SIGNATURE [Signature]

SALES TAX (if Any) \_\_\_\_\_

TOTAL CHARGES 7,221.85

DISCOUNT 1,444.37 (20%) IF PAID IN 30 DAYS

5,777.48 Net.

# ALLIED OIL & GAS SERVICES, LLC 064299

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT: Oakley, KS

DATE <u>10-28-14</u>	SEC <u>29</u>	TWP <u>9</u>	RANGE <u>30</u>	CALLED OUT	ON LOCATION <u>5:00pm</u>	JOB START <u>7:00pm</u>	JOB FINISH <u>8:00pm</u>
BRACKETMAN LEASE <u>29 D</u>	WELL # <u>1</u>	LOCATION <u>Campus N to Yin Rd</u>			COUNTY <u>Shedden</u>	STATE <u>KS</u>	
OLD OR <u>NEW</u> (Circle one)			1/2 E NE NE 1/4				

CONTRACTOR Discovery I

TYPE OF JOB PTA

HOLE SIZE 5 7/8 TD. 4000'

CASING SIZE \_\_\_\_\_ DEPTH \_\_\_\_\_

TUBING SIZE \_\_\_\_\_ DEPTH \_\_\_\_\_

DRILL PIPE 4 1/2 DEPTH 2590'

TOOL \_\_\_\_\_ DEPTH \_\_\_\_\_

PRES. MAX \_\_\_\_\_ MINIMUM \_\_\_\_\_

MEAS. LINE \_\_\_\_\_ SHOE JOINT \_\_\_\_\_

CEMENT LEFT IN CSG. \_\_\_\_\_

PERFS. \_\_\_\_\_

DISPLACEMENT 5 bbl water 24.72 bbl mud

EQUIPMENT \_\_\_\_\_

PUMP TRUCK # 120 CEMENTER Paul Beaver

BULK TRUCK # 650 DRIVER Marron (TWS)

BULK TRUCK # \_\_\_\_\_ DRIVER \_\_\_\_\_

OWNER Same

CEMENT AMOUNT ORDERED 255 sks 60/40

4 1/2 gel 14 # Flo-seal

COMMON	@	_____	_____
POZMIX	@	_____	_____
GEL	@	_____	_____
CHLORIDE	@	_____	_____
ASC	@	_____	_____
<u>Lik 60/40/4</u>	@	<u>255 sks</u>	<u>18.92</u> <u>4824.60</u>
<u>Flo-seal 64 #</u>	@	<u>64 #</u>	<u>2.97</u> <u>190.08</u>
<u>Material 10 bbl</u>	@	<u>10 bbl</u>	<u>30.60</u>
<u>(1000-94/200)</u>	@	<u>_____</u>	<u>_____</u>
HANDLING <u>273.87 @ 10</u>	@	<u>2.48</u>	<u>679.20</u>
MILEAGE <u>11.44 hrs @ 20mi x 2.75</u>	@	<u>2.75</u>	<u>629.20</u>
TOTAL			_____

REMARKS:

Mix 50 sks @ 2590' Displace w/ mud

mix 100 sks @ 1750' Displace w/ water

mix 50 sks @ 360'

mix 10 sks @ 40' w/ needs a plug

mix 30 sks in R.H

mix 15 sks in R.H

Paul Beaver  
Paul Beaver

CHARGE TO: Richie Exploration

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

SERVICE

DEPTH OF JOB 2590'

PUMP TRUCK CHARGE 2483.59

EXTRA FOOTAGE \_\_\_\_\_ @ \_\_\_\_\_

MILEAGE MILV 20 @ 7.70 154.00

MANIFOLD \_\_\_\_\_ @ \_\_\_\_\_

MILV 20 @ 4.40 88.00

(806.71/20%) TOTAL 4033.99

PLUG & FLOAT EQUIPMENT

8 3/8 Wooden plug @ \_\_\_\_\_ 110.00

\_\_\_\_\_ @ \_\_\_\_\_

\_\_\_\_\_ @ \_\_\_\_\_

\_\_\_\_\_ @ \_\_\_\_\_

\_\_\_\_\_ @ \_\_\_\_\_

TOTAL 110.00

To: Allied Oil & Gas Services, LLC.

You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME \_\_\_\_\_

SIGNATURE Cliff Marshall

SALES TAX (if Any) \_\_\_\_\_

TOTAL CHARGES 9,138.67

DISCOUNT 1,709.73 (20%) IF PAID IN 30 DAYS

7,348.93 Net

**Ritchie Exploration, Inc.  
Broeckelman 29BC No. 1  
2550' FNL and 1630' FWL  
90'N & 20'W of W2 E2 W2  
Sec 29 T9S R30W  
Sheridan County, Kansas**

Geological Report  
by

Macklin M. Armstrong, P.G.  
License Number 743

Scale 1:240 Imperial

Well Name:	Broeckelman 29BC No. 1	
Surface Location:	Sec 29 T9S R30W	
Bottom Location:	2550' FNL and 1630' FWL	
API:	15-179-21379	
License Number:	4767	
Spud Date:	10/20/2014	Time: 4:15 PM
Region:	Sheridan County, Kansas	
Drilling Completed:	10/28/2014	Time: 3:16 AM
Surface Coordinates:		
Bottom Hole Coordinates:		
Ground Elevation:	2982.00ft	
K.B. Elevation:	2990.00ft	
Logged Interval:	3600.00ft	To: 4780.00ft
Total Depth:	4780.00ft	
Formation:	Mississippi	
Drilling Fluid Type:	Chemical/Fresh Water Gel	

**OPERATOR**

Company:	Ritchie Exploration, Inc.	
Address:	800 East 22nd Street North, Building 700 Wichita, Kansas 67226	
Contact Geologist:	Pete Fiorini	
Contact Phone Nbr:	316-691-9500	
Well Name:	Broeckelman 29BC No. 1	
Location:	Sec 29 T9S R30W	API: 15-179-21379
Pool:	Oil	Field: Wildcat
State:	Kansas	Country: USA

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: 100.696928829      Latitude: 39.242019154  
 N/S Co-ord:  
 E/W Co-ord:

**CONTRACTOR**

Contractor: Discovery Drilling  
 Rig #: 1  
 Rig Type: mud rotary  
 Spud Date: 10/20/2014      Time: 4:15 PM  
 TD Date: 10/28/2014      Time: 3:16 AM  
 Rig Release: 10/28/2014      Time: 8:15 PM

**ELEVATIONS**

K.B. Elevation: 2990.00ft      Ground Elevation: 2982.00ft  
 K.B. to Ground: 8.00ft

**NOTES**

Date	Depth at 7 am	Activity
10-20-14	MIRT	Spud at 1:00 pm
10-21-14	680	Drilling
10-22-14	2583	Drilling
10-23-14	3500	Drilling
10-24-14	4036	CFS
10-25-14	4108	OB with DST No. 2
10-26-14	4182	Drilling
10-27-14	4490	CFS
10-28-14	4780	TOH for Log
10-29-14	4780	P & A

Surface Casing: 8 5/8" 23# at 305'  
 Production Casing: None set

Deviation: 305' - 1°  
 4036' - 1°  
 4780' - 1 1/2°

Bit Record:	Make	Size	Type	Depth In	Depth Out	Hours
	JZ	12 1/4"	CTZ	Surface	305	2 3/4
	Hughes	7 7/8"	GX20C	305	4780	101

**Drill Stem Tests:**

DST No. 1 3990 to 4036 Toronto  
 30-45-45-60

Recovery: 200' WCM (30%W, 70%M)  
 250' Water (Chl 8000 ppm)

IHP 1927      FHP 1910  
 IFP 20-112      FFP 117-221  
 ISIP 1202      FSIP 1185  
 Temp 125°

DST No. 2 4076 to 4108 Lansing D, E Zones  
 30-45-45-60

Recovery: 780' Water (Chl 52,000 ppm)  
 IHP 1955      FHP 1897  
 IFP 32-185      FFP 190-380  
 ISIP 1242      FSIP 1224  
 Temp 131°

DST No. 3 4110 to 4132 Lansing F Zone  
 30-45-45-60



30-43-43-00  
 Recovery: 150' Water (Chl 36,000 ppm)  
 IHP 1962 FHP 1914  
 IFP 17-63 FFP 48-60  
 ISIP 1294 FSIP 1265  
 Temp 125°

Formation	Sample	E-Log	Datum	Well 1	Well 2	Well 3
Anhydrite	2570	2569	+421	+18	-24	+17
Base/Anhydrite	2603	2598	+392	+19	-22	+16
Stotler	3653	3660	-670	+1	-20	+10
Heebner	3999	4006	-1016	+3	-20	+13
Toronto	4024	4030	-1040	+3	-22	+16
Lansing	4039	4046	-1056	+1	-19	+16
Muncie Creek	4160	4168	-1178	0	-19	+17
Stark	4250	4256	-1266	0	-20	+8
Hushpuckney	4281	4288	-1298	0	-18	+9
Base/Kansas City	4305	4312	-1322	+7	-17	+8
Marmaton	4335	4342	-1352		-16	0
Altamont	4366	4373	-1383		-17	-9
Pawnee	4431	4438	-1448		-17	+4
Myrick Station	4471	4478	-1488		-17	+3
Fort Scott	4505	4510	-1520		-15	+8
Cherokee Shale	4536	4544	-1554		-21	+3
Johnson Zone	4586	4591	-1601		-20	+5
Morrow	4592	4599	-1609		-21	+4
Mississippi	4623	4630	-1640		-14	-2
Total Depth	4780	4780	-1790			

Well 1: Calvin Noah Baalman No. 1 200'N & 75'E of NE NW SE Sec 20 T9S R30W

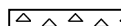







Well 2: National Associated Petroleum Company George Boger Community No. 1A C SW NW Sec 32 T9S R30W

Well 3: Empire & NCRA John Moellering No. 1 SE SE NE Sec 28 T9S R30W

Due to the results of the Drill Stem Tests and the electric log calculations, it was decided to plug this test well.

Respectfully submitted,  
 Macklin M. Armstrong

### ROCK TYPES

 Cht	 shale, grn	 Carbon Sh	 Shcol
 Lmst fw7>	 shale, gry	 shale, red	 Ss

### ACCESSORIES

#### MINERAL

- ▲ Chert, dark
- ◌ Varicolored chert
- △ Chert White

#### FOSSIL










- F Fossils < 20%
- 🦠 Oomoldic
- 🦠 Fussilind

#### TEXTURE

- C Chalky

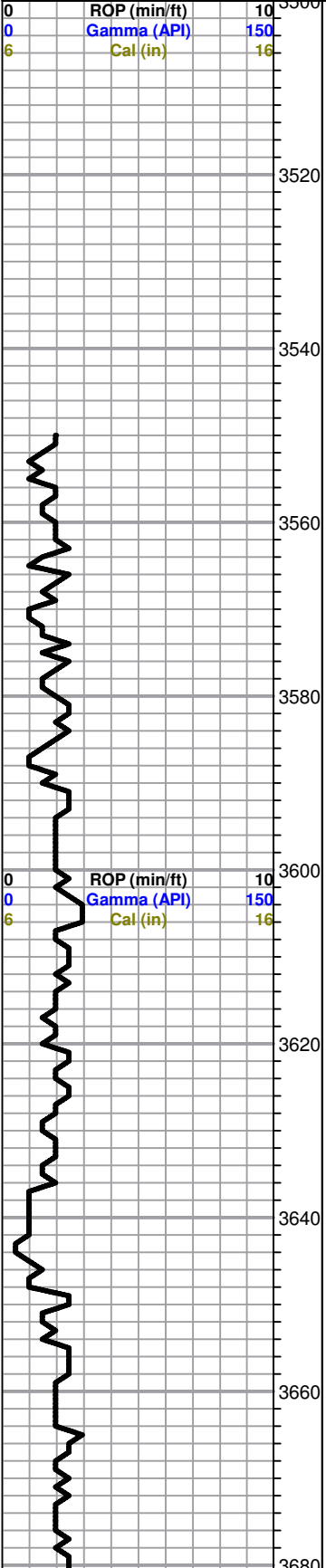
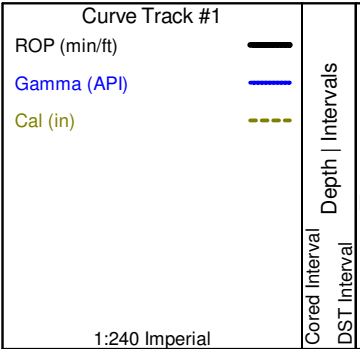
### OTHER SYMBOLS

#### MISC

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

#### DST

-  DST Int
-  DST alt
-  Core



Lithology

Oil Show

Geological Descriptions

Comment

**Ritchie Exploration, Inc.**  
**Broeckelman 29BC No. 1**  
**2550' FNL and 1630' FWL**  
**Sec 29 T9S R30W**  
**Sheridan County, Kansas**

**GL 2982 KB 2990**

Mud Program:  
Mud Co/Service Mud, Inc.  
Chemical Gel/Premix

Sample Cuttings:  
KGS Well Sample Library

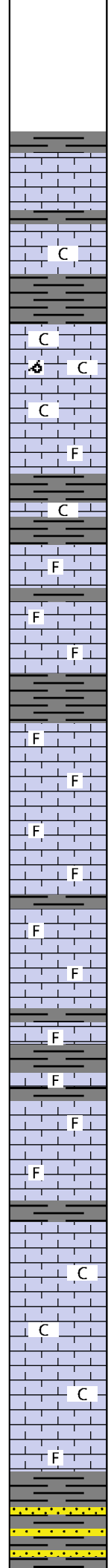
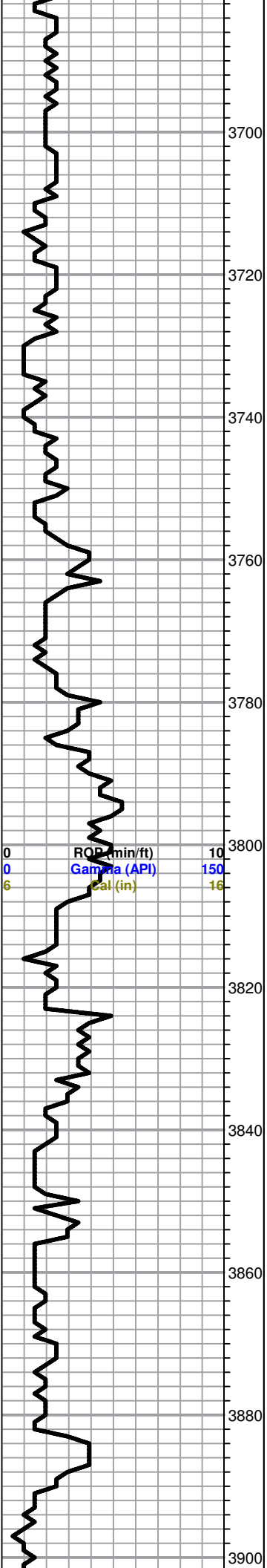
Testing: Diamond Testing

Electric Logs:  
Nabors Completion &  
Production Services  
Company  
DIL  
CNL/CDL

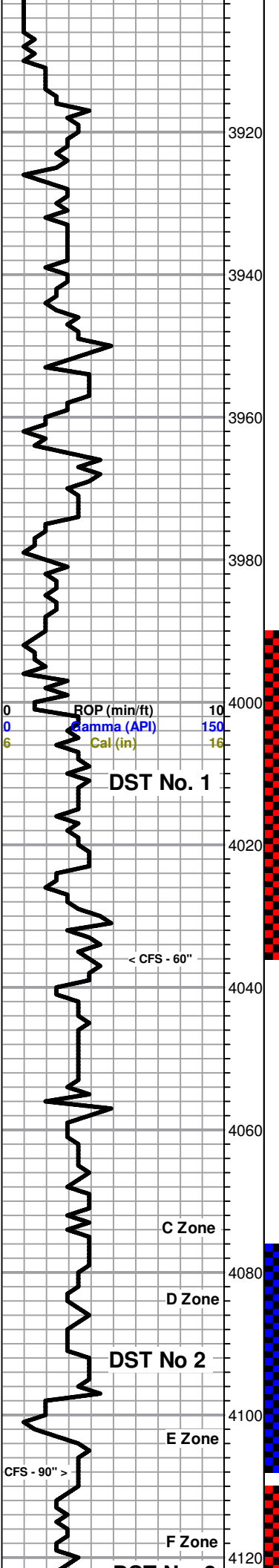
Deviation:  
305' - 3/4°  
4036' - 1°  
4780' - 1 1/2°

----- Stotler 3653 -663 -----

All formation tops on this geological log have been correlated back to the electric log



Sh-gry/dk gry  
 Ls-lt gry fxln dns no por  
 Sh-gry/dk gry  
 Ls-lt gry/crm fxln mhd sl clkly no por  
 Sh-gry/dk gry  
 Ls-lt gry/crm fxln mhd/dns sl clkly no por  
 Ls-lt gry/crm f/mxln soft/mhd sl clkly fos sl oom fr inter xln por nsfo  
 Ls-lt gry/crm f/mxln mhd sl clkly no por  
 Ls-lt gry f/mxln mhd/dns sl fos no por  
 Sh-gry/dk gry  
 Ls-lt gry/crm f/mxln mhd fos sl clkly pr inter xln por nsfo  
 Sh-gry/dk gry  
 Ls-lt gry/crm f/mxln dns sl fos no por  
 Sh-gry/dk gry  
 Ls-lt gry f/mxln mhd sl fos no por  
 Ls-AA  
 Sh-gry/dk gry  
 Ls-lt gry/gry fxln sl fos mhd no por  
 Ls-lt gry fxln dns sl fos no por  
 Ls-AA  
 Ls-lt gry fxln mhd/dns no por  
 Sh-gry/dk gry  
 Ls-lt gry f/mxln mhd sl fos no por  
 Ls-AA  
 Sh-gry/dk gry  
 Ls-lt gry f/mxln mhd/dns sl fos no por  
 Sh-gry/dk gry  
 Ls-lt gry f/mxln mhd/dns sl fos no por  
 Sh-gry/dk gry  
 Ls-lt gry f/mxln mhd sl fos no por  
 Ls-lt gry f/mxln mhd sl fos pr inter xln por nsfo  
 Sh-gry/dk gry  
 Ls-lt gry fxln mhd/dns no por  
 Ls-lt gry fxln mhd no por sm Ls-wt fxln soft clkly no por  
 Ls-AA  
 Ls-lt gry/crm f/mxln mhd sl clkly no por sm Ls-wt fxln soft clkly no por  
 Ls-AA  
 Ls-lt gry/crm f/mxln dns fos no por  
 Sh-gry/dk gry  
 Sh-AA sm Ss-lt gry fgrr sub ang to sub rnd sl fri



Sh-gry/dk gry sm Ss-AA

Ls-lt gry/crm fxln mhd/dns sl clky no por

3920 Sh-gry/dk gry

Ls-lt gry/crm fxln mhd/dns sl clky no por

3940 Sh-gry/dk gry

Ls-lt gry/crm fxln mhd/dns sl clky no por

Ls-lt gry/crm fxln dns sl clky no por

Sh-blk carb

Ls-lt gry/crm fxln dns sl clky no por

3960 Ls-lt gry/crm f/mxln sl clky fr inter xln por nsfo

Ls-lt gry/crm fxln dns sl clky no por

Sh-gry/dk gry

Ls-lt gry/crm f/mxln mhd sl clky sl fos fr inter xln por nsfo

3980 Ls-lt gry/crm f/mxln mhd/dns sl clky sl fos no por

Ls-AA

Ls-lt gry/crm f/mxln mhd no por

Ls-lt gry/crm/gry f/mxln dns no por

----- Heebner 3999 -1009 -----

Sh-blk carb

Ls-gry fxln dns no por

Sh-gry/dk gry

Sh-AA

Sh-AA

----- Toronto 4024 -1034 -----

Ls-crm fxln mhd gd vug/inter xln por sl gils lt brn spt stn fgsfo on brk gd cut sl odor

Ls-crm fxln dns sl clky no por

Sh-gry/dk gry

----- Lansing 4039 -1049 -----

Ls-lt gry/crm fxln dns sl clky no por sm Ls-crm fxln mhd clky sl gils no por

Ls-crm fxln dns clky no por

Sh-gry/dk gry

Ls-crm fxln dns sl clky no por

Sh-gry/dk gry/dk grn

Sh-AA

Sh-AA

D Ls-lt gry/crm fxln dns no por sm pcs with blk dead oil stn nsfo

Sh-gry/d gry

Ls-lt gry fxln mhd fr vug/pp por brn spt stn fgsfo on brk gd fluor gd cut fr odor

Ls-lt gry/crm fxln dns sl clky sl gils no por

Ls-lt gry fxln mhd gd vug por brn spt stn fgsfo on brk gd fluor gd cut fr odor

Sh-gry/dk gry

Ls-lt gry/crm fxln dns sl clky no por

Sh-gry/dk gry

Ls-lt gry/crm fxln dns sl clky no por and Ls-lt gry fxln mhd fr vug por brn spt stn fgsfo on brk gd fluor gd cut

**DST No. 1**  
 3990 to 4036  
 30-45-45-60  
 1st Open: BOB in 20"  
 2nd Open: BOB in 27"  
 Recovery:  
 200' WCM (30%W, 70%M)  
 250' W (Chl 8000 ppm)  
 IHP 1927 FHP 1910  
 IFP 20-112 IFP 117-221  
 ISIP 1202 FSIP 1185  
 Temp 125°

Pulled 25 stand short trip at 4036' Then cir for test - 90"

Pipe Strap at 4036'  
 Long 0.47'

**Mud Data at 4036'**  
 11:45 am 10-24-14  
 Wt 9.2 Vis 52 WL 8.8  
 pH 10.5 Chl 1800 Sol 6.3%  
 YP 20 LCM 1#

**DST No. 2**  
 4076 to 4108  
 30-45-45-60  
 1st Open: BOB in 8"  
 2nd Open: BOB in 12"  
 Recovery:  
 780' W (Chl 52,000 ppm)  
 IHP 1955 FHP 1897  
 IFP 32-185 FFP 190-380  
 ISIP 1242 FSIP 1224  
 Temp 131°

**Mud Data at 4108'**  
 11:00 am 10-25-14  
 Wt 9.2, Vis 62, WL 8  
 pH 9 Chl 2000 Sol 6.3%  
 YP 22 LCM 1#

DST No. 3

CFS - 90" >

G Zone

4140

4160

H Zone

4180

4200

I Zone

4220

J Zone

4240

4260

K Zone

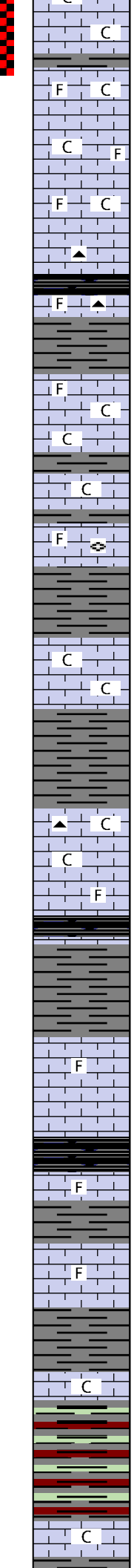
4280

L Zone

4300

4320

4340



Ls-lt gry/crm fxln mhd/dns sl clkly no por

Sh-gry/dk gry

Ls-crm f/mxln mhd/dns sl clkly sl fos no por

Ls-AA sm Ls-wt fxln soft clkly no por

Ls-lt gry/crm f/mxln mhd/dns sl clkly sl fos no por

Ls-lt gry/crm fxln mhd/dns no por sm Cht-lt tan/lt gry fsh opa

Muncie Creek 4160 -1170

Sh-blk carb

Ls-lt gry/gry f/mxln mhd/dns sl fos no por sm Cht-lt gry/lt tan fsh opa

Sh-gry/dk gry

Ls-lt gry fxln mhd/dns sl fos no por

Ls-lt gry/crm sm mott gry f/mxln mhd sl clkly no por

Ls-lt gry fxln dns no por sm Ls-wt fxln soft clkly no por

Sh-gry/dk gry

Ls-lt gry fxln dns sl clkly no por

Sh-gry/dk gry

Ls-gry f/mxln mhd/dns fos sl fuss no por

Sh-gry/dk gry

Ls-lt gry/crm fxln mhd/dns sl clkly sm pcs sl gils no por

Ls-lt gry/crm fxln mhd/dns sl clkly no por

Sh-gry/dk gry

Sh-AA

Ls-lt gry fxln mhd/dns sl clkly no por sm Cht-tan fsh opa

Ls-lt gry fxln dns sl clkly no por

Ls-gry/brn f/mxln mhd/dns sl fos no por

Stark 4250 -1260

Sh-blk carb

Sh-gry/dk gry

Sh-AA

Ls-lt gry/gry f/mxln mhd/dns sl fos no por

Ls-lt gry/gry f/mxln mhd/dns no por

Hushpuckney 4281 -1291

Sh-blk carb

Ls-lt gry/gry f/mxln dns sl fos no por

Sh-gry/dk gry

Ls-lt gry fxln dns sl fos no por

Base/Kansas City 4305 -1315

Sh-gry/dk gry

Ls-lt gry/crm fxln mhd sl clkly no por

Sh-gry/gry grn/sm red

Sh-AA

Marmaton 4335 -1345

Ls-lt gry/crm fxln dns sl clkly no por

POP (min/ft) 10  
 Gamma (API) 150  
 Cal (in) 16  
 CFS - 60" >

< CFS - 60"

< CFS - 60"

DST No. 3

4110 to 4132

30-45-45-60

1st Open: Fair blow, building to 4"

2nd Open: Fair blow, building to 7"

Recovery:

150' W (Chl 36,000 ppm)

IHP 1962 FHP 1914

IFP 17-63 FFP 48-60

ISIP 1294 FSIP 1265

Temp 125°

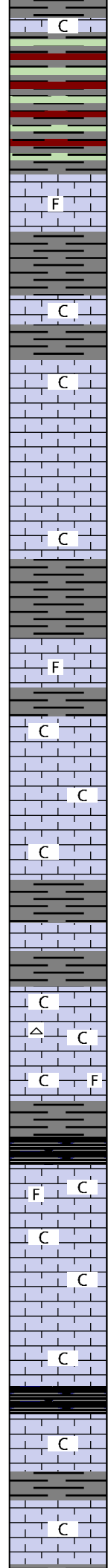
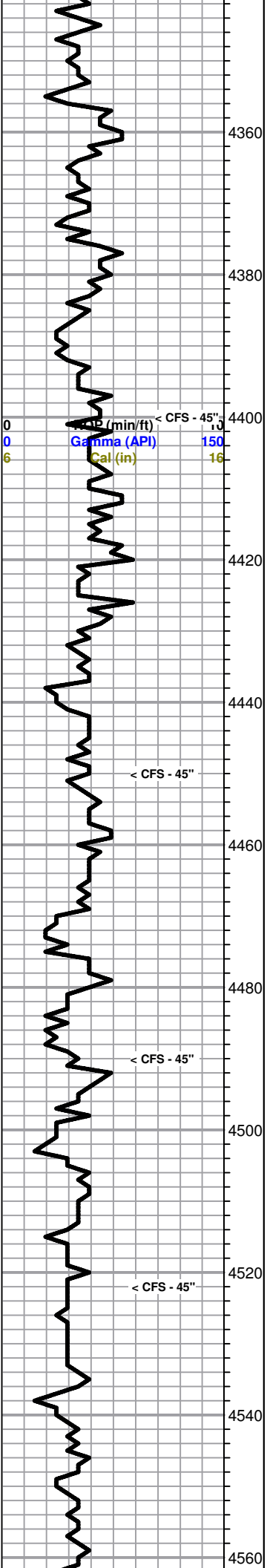
Mud Data at 4209'

9:30 am 10-26-14

Wt 9.3 Vis 52 WL 8

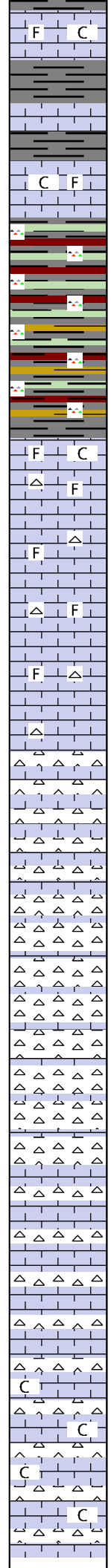
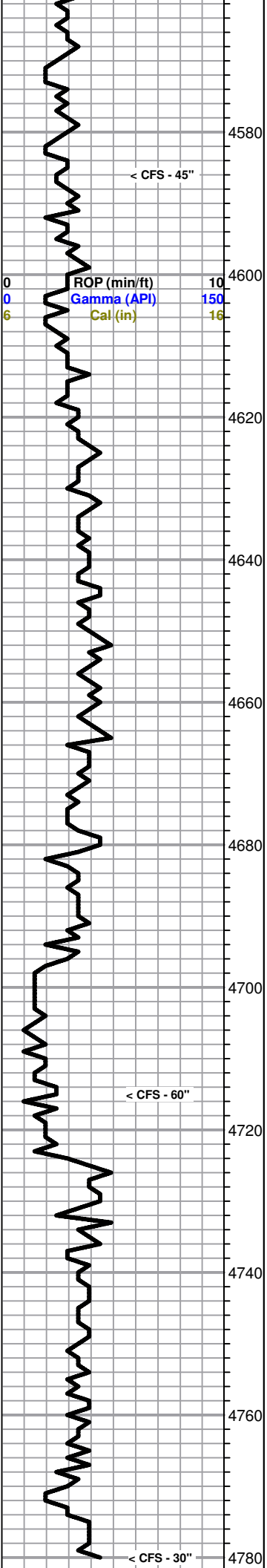
pH 9 Chl 2000 Sol 6.9%

YP 18 LCM trc



Sh-gry/dk gry  
 Ls-lt gry/crm fxln dns sl clkly no por  
 Sh-gry/gry grn/sm red  
 Sh-AA  
 Sh-AA  
 -----**Altamont 4366 -1376**-----  
 Ls-lt gry/crm f/mxln dns sl fos no por  
 Sh-gry/dk gry  
 Ls-lt gry/crm fxln mhd/dns sl clkly no por  
 Sh-gry/dk gry  
 Ls-lt gry/crm fxln mhd/dns sl clkly no por  
 Ls-lt gry/crm/gry fxln dns no por  
 Ls-AA  
 Ls-lt gry/gry fxln dns no por  
 Ls-lt gry/crm fxln dns sl clkly no por  
 Sh-gry/dk gry  
 -----**Pawnee 4431 -1441**-----  
 Ls-lt gry/grm f/mxln mhd/dns sl fos no por  
 Sh-gry/dk gry  
 Ls-lt gry/crm fxln dns sl clkly no por  
 Ls-AA  
 Ls-lt gry/crm/lt gry fxln dns sl clkly no por  
 Ls-AA  
 Sh-gry/dk gry  
 -----**Myrick Station 4471 -1481**-----  
 Ls-lt gry/crm f/mxln dns no por  
 Sh-gry/dk gry  
 Ls-lt gry/crm f/mxln mhd/dns sl clkly no por  
 Ls-crm/wt f/mxln mhd clkly sl fos no por and Cht-gry wt fsh opaq  
 Ls-lt gry/crm fxln mhd sl clkly no por sm Ls-tan f/mxln mhd sl clkly  
 with dk gry irregular shapped fos no por  
 Sh-gry/dk gry  
 Sh-blk carb  
 -----**Fort Scott 4505 -1515**-----  
 Ls-crm/lt gry f/mxln mhd/dns sl clkly sl fos no por sm Ls-tan f/mxln  
 fos sl clkly no por  
 Ls-lt gry/crm fxln mhd clkly no por  
 Ls-AA  
 Ls-lt gry/gry fxln dns no por  
 Ls-gry/brn f/mxln dns no por  
 -----**Cherokee Shale 4536 -1546**-----  
 Sh-blk carb  
 Ls-lt gry fxln dns no por sm Ls-crm/wt fxln soft clkly no por  
 Sh-gry/dk gry  
 Ls-lt gry fxln dns no por sm Ls-crm/wt fxln soft clkly no por

**Mud Data at 4476'**  
 6:15 am 10-27-14  
 Wt 9.3 Vis 62 WL 8  
 pH 8.5 Chl 2000 Sol 6.9%  
 YP 22 LCM 1#






Sh-gry/dk gry  
 Ls-lt gry/crm f/mxln mhd/dns sl clkly sl fos no por sm Ls-tan mxln mhd clkly fos no por  
 Sh-gry/dk gry  
 Ls-lt gry/tan fxln dns no por  
 ----- **Johnson Zone 4586 -1596** -----  
 Ls-lt gry/lt tan fxln mhd no por sm Ls-wt fxln soft clkly no por and Ls-tan gry/brn mxln mhd/dns sl fos no por  
 ----- **Morrow 4592 -1602** -----  
 Sh-gry/gry grn/mar sm Cht-yel/tan/org & wt fsh opaqa  
 Sh-AA sm Cht-yel/tan fsh opaqa  
 Sh-gry/dk grn/sm mar/red/yel and Cht-yel/tan/crm fsh opaqa  
 Sh-AA sm Cht-yel/tan/crm fsh opaqa  
 ----- **Mississippi 4623 -1633** -----  
 Ls-crm/tan cxln dns fos no por sm Ls-crm f/mxln mhd chty no por and Cht-wt/crm fsh opaqa  
 Ls-crm/tan/lt gry frag to blkly dns fos no por sm Ls-wt cxln dns sl chty no por and Cht-wt fsh opaqa  
 Ls-crm/lt tan cxln to frag mhd sl fos no por sm Ls-crm cxln mhd dns sl chty no por sm Ls-crm mott red brn blkly mhd no por and Cht-wt fsh opaqa fos  
 Ls-lt gry/tan cxln to blkly mhd sl fos no por sm Ls-lt gry/crm cxln dns sl chty no por and Cht-wt fsh opaqa  
 Ls-lt gry/crm cxln dns chty no por sm Cht-wt/gry wt fsh opaqa  
 Ls-wt/crm f/mxln dns sl chty no por and Cht-wt fsh and weat  
 Ls-wt/crm f/mxln mhd sl clkly no por sm Ls-wt fxln dns sl chty no por and Cht-wt/lt gry fsh opaqa and Cht-wt weat  
 Cht-wt/lt gry fsh opaqa and Cht-wt weat sm Ls-tan/crm fxln mhd sl chty no por  
 Cht-AA with sm Ls-tan fxln mhd sl chty no por  
 Cht-wt/lt gry fsh opaqa and Cht-wt weat opaqa and Cht-lt gry fsh semi trans sm Ls-tan/crm fxln mhd sl chty no por  
 Cht-wt/lt gry/sm tan fsh opaqa and Cht-wt weat sm Ls-AA  
 Cht-AA sm Ls-tan/crm fxln mhd sl chty no por  
 Ls-tan/lt brn fxln dns no por sm Cht-wt/lt gry fsh opaqa  
 Ls-AA sm Cht-wt/lt gry fsh opaqa  
 Ls-crm/lt tan fxln dns no por sm Cht-wt/lt gry fsh opaqa  
 Ls-AA sm Cht-wt/lt gry fsh opaqa  
 Ls-crm/lt tan fxln dns sl clkly no por sm Cht-wt/gry wt fsh opaqa  
 Ls-AA sm Cht-wt/gry wt fsh opaqa  
 Ls-crm/lt tan fxln dns sl clkly no por sm Cht-AA  
 ----- **RTD 4780 -1790** -----

0	ROP (min/ft)	10	4800
0	Gamma (API)	150	
6	Cal (in)	16	
			4820

Finished drilling at 3:16 am on 10-28-14. Pulled 15 stand short trip, then circulated for log 90 minutes.

Finished Logging at 12:45 pm on 10-28-14

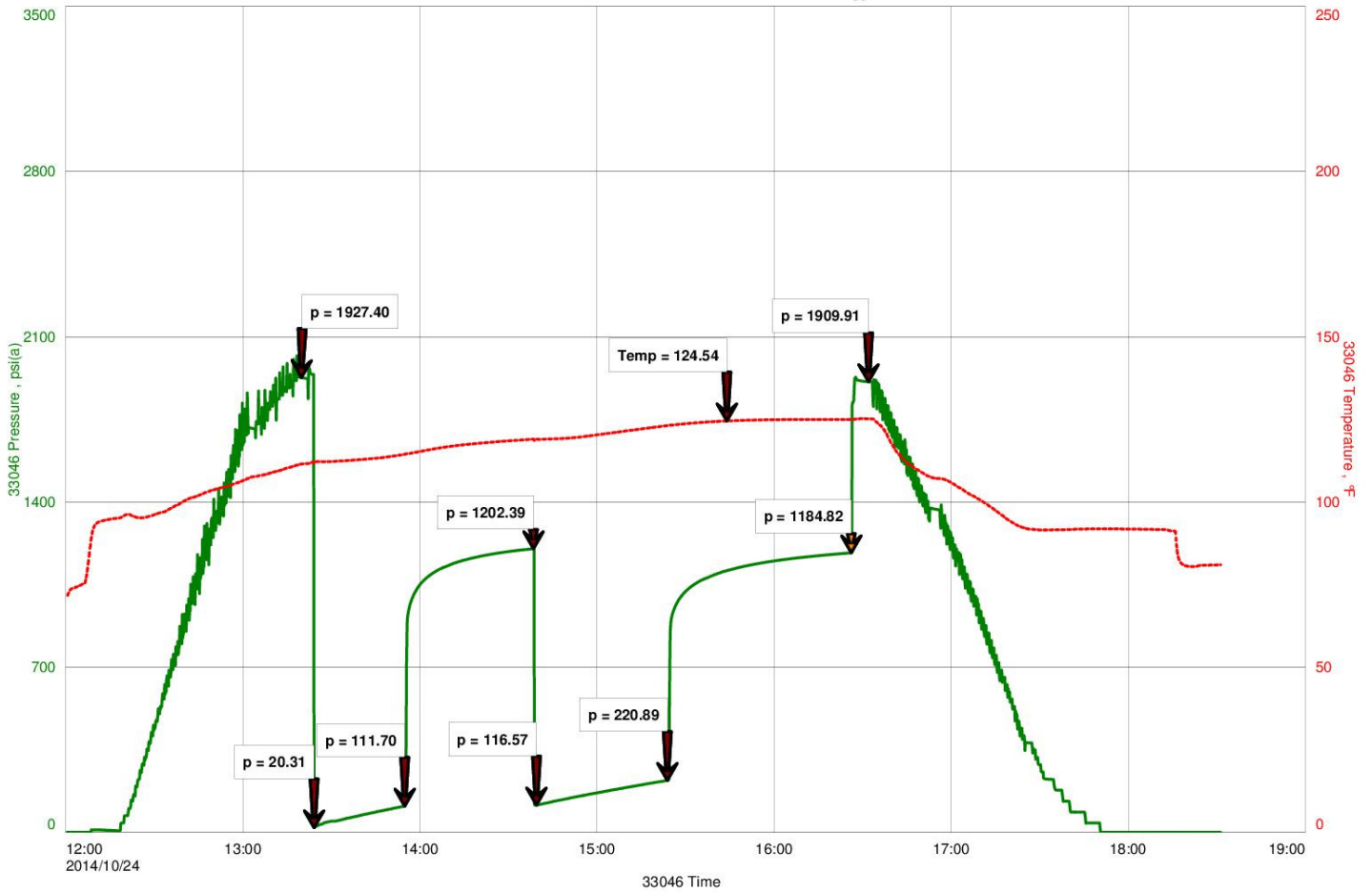
-  BROCKELMAN29BC1DST1ALL-3.jpg
-  BROCKELMAN291DST2ALL-3.jpg
-  BROCKELMANBC1DST3ALL-2.jpg

### BROCKELMAN29BC1DST1ALL-3.jpg

RITCHIE EXPLORATION INC  
 Start Test Date: 2014/10/24  
 Final Test Date: 2014/10/24

BROCKELMAN 29BC #1  
 Formation: TORONTO  
 Job Number: J3313

## BROCKELMAN 29BC #1

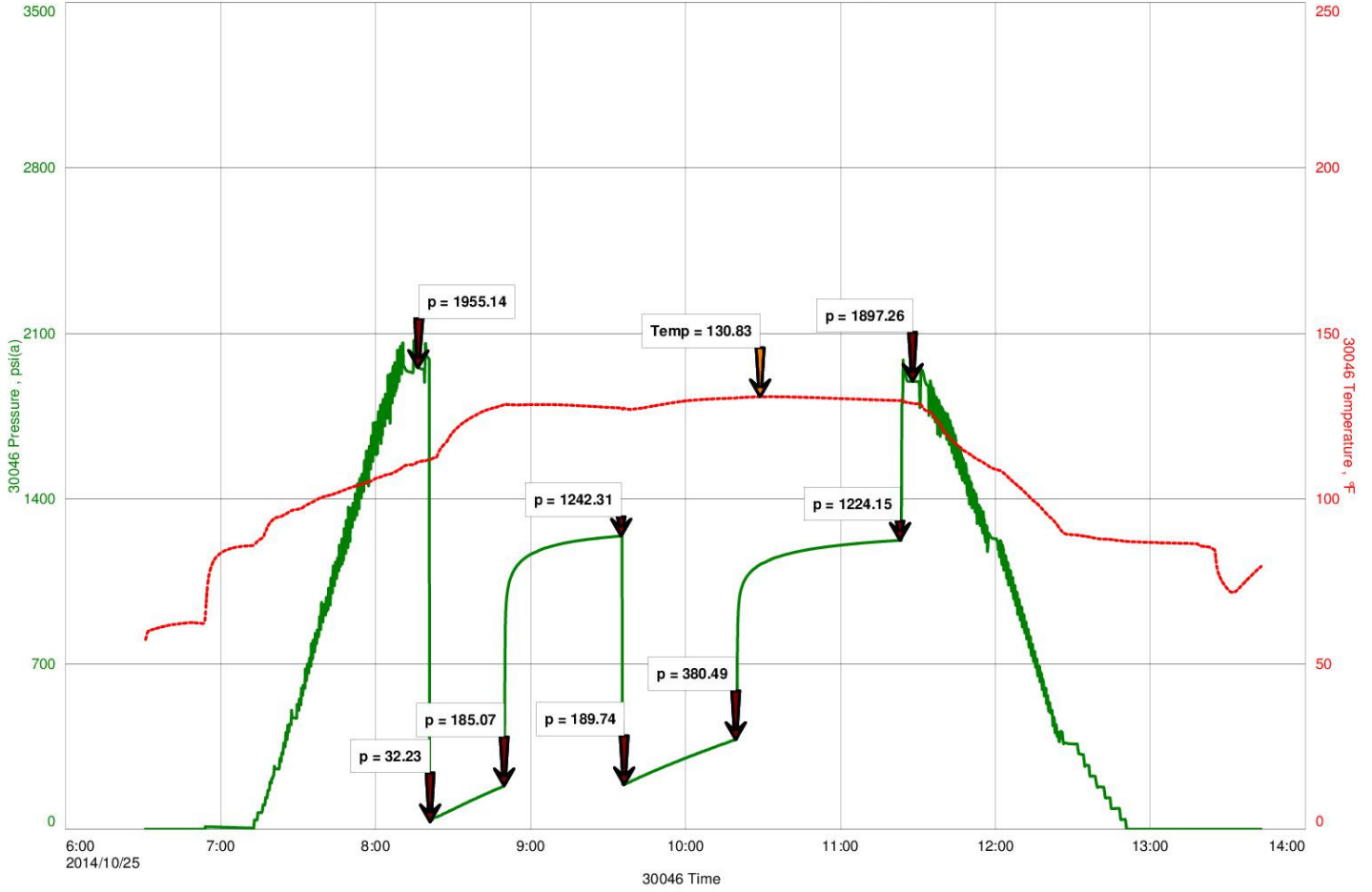




RITCHIE EXPLORATION INC.  
Start Test Date: 2014/10/25  
Final Test Date: 2014/10/25

BROCKELMAN 29BC #1  
Formation: LKC "D"  
Job Number: J3314

# BROCKELMAN 29BC #



# ROCKELMAN 29BC #1

