



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1133943  
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

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: \_\_\_\_\_



1133943

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 <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  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: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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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: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
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Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<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. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <i>(Submit ACO-4)</i>	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	Falcon Exploration, Inc.
Well Name	JAMES KOEHN 2-31(NW)
Doc ID	1133943

All Electric Logs Run

MEL
DIL
BHCS
CNL/CDL

Form	ACO1 - Well Completion
Operator	Falcon Exploration, Inc.
Well Name	JAMES KOEHN 2-31(NW)
Doc ID	1133943

Tops

Name	Top	Datum
STOTLER	3543	-710
TARKIO	3597	-764
LANSING	4264	-1431
CHEROKEE	4920	-2087
MORROW SH	5144	-2311
MORROW SD	5168	-2335
ST GEN	5322	-2489
ST LOUIS	5341	-2508

# DIAMOND TESTING

## General Information Report

### General Information

**Company Name** FALCON EXPLORATION, INC.  
**Contact** MIKE MITCHELL  
**Well Name** JAMES KOEHN #2-31 (NW)  
**Unique Well ID** DST #1, ST. LOUIS L. "B", 5386-5421  
**Surface Location** SEC 31-28S-30W, GRAY CO. KS.  
**Field** WILDCAT  
**Well Type** Vertical  
**Test Type** CONVENTIONA.  
**Formation** DST #1, ST. LOUIS L. "B" 5386-5421  
**Well Fluid Type** 01 Oil

**Representative** TIM VENTERS  
**Well Operator** FALCON EXPLORATION, INC.  
**Report Date** 2013/01/11  
**Prepared By** TIM VENTERS  
**Qualified By** DAVE WILLIAMS

**Start Test Date** 2013/01/11  
**Final Test Date** 2013/01/11

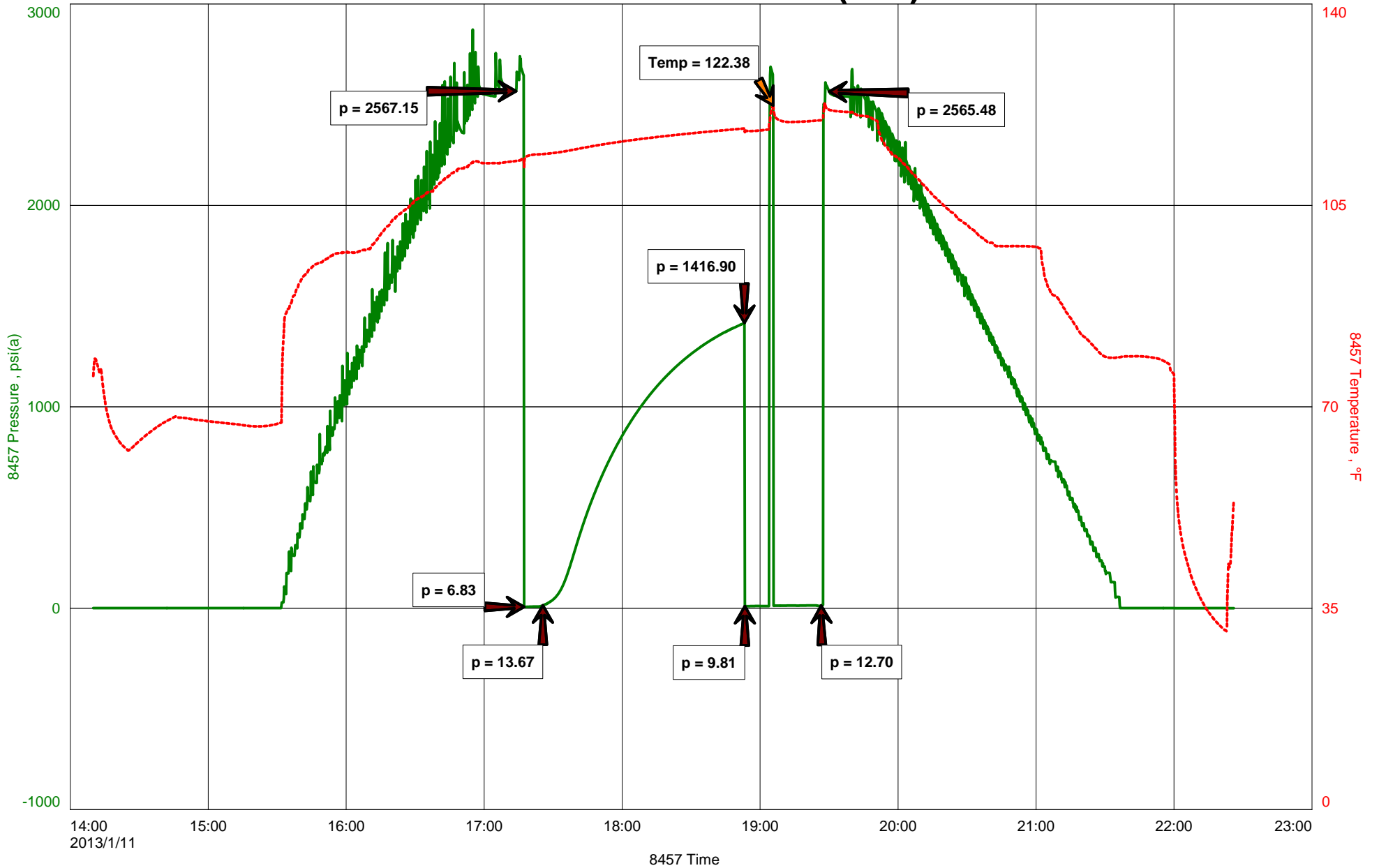
**Start Test Time** 14:10:00  
**Final Test Time** 22:26:00

### Test Recovery:

RECOVERED: 5' MUD

TOOL SAMPLE: SPOTTY OIL, 100% MUD

# JAMES KOEHN #1-31 (NW)





**DIAMOND TESTING**  
P.O. Box 157  
**HOISINGTON, KANSAS 67544**  
(800) 542-7313  
**DRILL-STEM TEST TICKET**  
FILE: \_\_\_\_\_

TIME ON: \_\_\_\_\_  
TIME OFF: \_\_\_\_\_

Company \_\_\_\_\_ Lease & Well No. \_\_\_\_\_  
Contractor \_\_\_\_\_ Charge to \_\_\_\_\_  
Elevation \_\_\_\_\_ Formation \_\_\_\_\_ Effective Pay \_\_\_\_\_ Ft. Ticket No. \_\_\_\_\_  
Date \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S Range \_\_\_\_\_ W County \_\_\_\_\_ State **KANSAS**  
Test Approved By \_\_\_\_\_ Diamond Representative \_\_\_\_\_

Formation Test No. \_\_\_\_\_ Interval Tested from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Total Depth \_\_\_\_\_ ft.  
Packer Depth \_\_\_\_\_ ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.  
Packer Depth \_\_\_\_\_ ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.  
Depth of Selective Zone Set \_\_\_\_\_

Top Recorder Depth (Inside) \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ P.S.I.  
Bottom Recorder Depth (Outside) \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ P.S.I.  
Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ P.S.I.

Mud Type \_\_\_\_\_ Viscosity \_\_\_\_\_ Drill Collar Length \_\_\_\_\_ ft. I.D. 2 1/4 in.  
Weight \_\_\_\_\_ Water Loss \_\_\_\_\_ cc. Weight Pipe Length \_\_\_\_\_ ft. I.D. 2 7/8 in.  
Chlorides \_\_\_\_\_ P.P.M. Drill Pipe Length \_\_\_\_\_ ft. I.D. 3 1/2 in.  
Jars: Make STERLING Serial Number \_\_\_\_\_ Test Tool Length \_\_\_\_\_ ft. Tool Size 3 1/2-IF in.  
Did Well Flow? \_\_\_\_\_ Reversed Out \_\_\_\_\_ Anchor Length \_\_\_\_\_ ft. Size 4 1/2-FH in.  
Main Hole Size 7 7/8 Tool Joint Size 4 1/2 in. Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: \_\_\_\_\_  
2nd Open: \_\_\_\_\_

Recovered _____ ft. of _____	
Recovered _____ ft. of _____	
Recovered _____ ft. of _____	
Recovered _____ ft. of _____	
Recovered _____ ft. of _____	Price Job
Recovered _____ ft. of _____	Other Charges
Remarks: _____	Insurance
	Total

Time Set Packer(s) \_\_\_\_\_ A.M. P.M. Time Started Off Bottom \_\_\_\_\_ A.M. P.M. Maximum Temperature \_\_\_\_\_  
Initial Hydrostatic Pressure..... (A) \_\_\_\_\_ P.S.I.  
Initial Flow Period..... Minutes \_\_\_\_\_ (B) \_\_\_\_\_ P.S.I. to (C) \_\_\_\_\_ P.S.I.  
Initial Closed In Period..... Minutes \_\_\_\_\_ (D) \_\_\_\_\_ P.S.I.  
Final Flow Period..... Minutes \_\_\_\_\_ (E) \_\_\_\_\_ P.S.I. to (F) \_\_\_\_\_ P.S.I.  
Final Closed In Period..... Minutes \_\_\_\_\_ (G) \_\_\_\_\_ P.S.I.  
Final Hydrostatic Pressure..... (H) \_\_\_\_\_ P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



Phone: 316-337-6200  
Fax: 316-337-6211  
<http://kcc.ks.gov/>

Mark Sievers, Chairman  
Thomas E. Wright, Commissioner  
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

April 17, 2013

CYNDE WOLF  
Falcon Exploration, Inc.  
125 N MARKET STE 1252  
WICHITA, KS 67202-1719

Re: ACO1  
API 15-069-20424-00-00  
JAMES KOEHN 2-31(NW)  
NW/4 Sec.31-28S-30W  
Gray County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,  
CYNDE WOLF



# ALLIED OIL & GAS SERVICES, LLC KB 052914

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31  
RUSSELL, KANSAS 67665

SERVICE POINT:

Liberal

*James Kocher 2-31NW*

DATE <u>1-13-13</u>	SEC <u>31</u>	TWP <u>28S</u>	RANGE <u>30W</u>	CALLED OUT	ON LOCATION	JOB START <u>0400</u>	JOB FINISH <u>0200</u>
LEASE <u>James Kocher</u> WELL# <u>2-31</u>				LOCATION <u>copeland</u>		COUNTY <u>gray</u>	STATE <u>KS</u>
OLD OR <input checked="" type="radio"/> NEW (Circle one)						<u>1-03</u>	<u>7.45</u> <i>all</i>

CONTRACTOR Sterling

TYPE OF JOB PTA

HOLE SIZE 7 7/8 T.D. \_\_\_\_\_

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

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

DRILL PIPE 4.5 16.6 # DEPTH \_\_\_\_\_

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

PRES. MAX 1000 MINIMUM \_\_\_\_\_

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

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

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

DISPLACEMENT \_\_\_\_\_

OWNER \_\_\_\_\_

CEMENT AMOUNT ORDERED: 160 SKS

60140 A, poz 4% gel

COMMON	<u>96 SKS</u>	@ <u>17.90</u>	<u>1719.40</u>
POZMIX	<u>64 SKS</u>	@ <u>9.35</u>	<u>598.40</u>
GEL	<u>6.4 SKS</u>	@ <u>23.40</u>	<u>149.76</u>
CHLORIDE	_____	@ _____	_____
ASC	_____	@ _____	_____
_____	_____	@ _____	_____
_____	_____	@ _____	_____
_____	_____	@ _____	_____
_____	_____	@ _____	_____
_____	_____	@ _____	_____
_____	_____	@ _____	_____
_____	_____	@ _____	_____
HANDLING	<u>160</u>	@ <u>2.48</u>	<u>396.80</u>
MILEAGE	<u>214.65</u>	@ <u>2.60</u>	<u>558.09</u>
TOTAL			<u>3421.45</u>

EQUIPMENT

530-484

PUMP TRUCK CEMENTER Lanny - Kelly Edger

# 530-484 HELPER Angel (Garion)

BULK TRUCK

# 470-528 DRIVER Vicente Torres

BULK TRUCK

# \_\_\_\_\_ DRIVER \_\_\_\_\_

REMARKS:

50SKS 1900Ft

40SKS 760 Ft

20SKS 60 Ft

30SKS RH

20SKS MH

CHARGE TO: Falcon Exploration

STREET \_\_\_\_\_

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

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 Alan Loftis

SIGNATURE Alan Loftis

SERVICE

DEPTH OF JOB 1900Ft

PUMP TRUCK CHARGE 1250 1250.00

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

MILEAGE Light kehaul 30 @ 4.40 132.00

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

Heavy kehaul 30 @ 7.70 231.00

TOTAL 1613.00

PLUG & FLOAT EQUIPMENT

N/A

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

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

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

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

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

TOTAL 0

SALES TAX (If Any) 375.06

TOTAL CHARGES 5084.45

DISCOUNT 1510.33 IF PAID IN 30 DAYS

NET = 3524.12

# ALLIED OIL & GAS SERVICES, LLC KB 052642

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31  
RUSSELL, KANSAS 67665

SERVICE POINT:  
Liberal ks.

DATE <u>01-05-13</u>	SEC. <u>31</u>	TWP. <u>28S</u>	RANGE <u>30W</u>	CALLED OUT	ON LOCATION <u>2:30pm</u>	JOB START <u>11:30</u>	JOB FINISH <u>1:00 a.m.</u>
JAMES LEASE <u>40EHN</u> WELL# <u>2-31</u> LOCATION <u>N.W. Copeland ks.</u>				COUNTY <u>Gray</u>		STATE <u>ks.</u>	
OLD OR (NEW) (Circle one)				1.01		7.45	

CONTRACTOR Sterling #75  
 TYPE OF JOB Surface  
 HOLE SIZE 12 1/4 T.D.  
 CASING SIZE 8 7/8 24# DEPTH 1870 feet  
 TUBING SIZE DEPTH  
 DRILL PIPE DEPTH  
 TOOL DEPTH  
 PRES. MAX MINIMUM  
 MEAS. LINE SHOE JOINT  
 CEMENT LEFT IN CSG.  
 PERFS.  
 DISPLACEMENT 116.43 BBls H2O

OWNER Falcon Exploration.  
 CEMENT  
 AMOUNT ORDERED 450sk "A" 3% CC, 2% S.M.S., 2% Gyp Seal, 1/4 lb/sk Flo Seal  
150sk "C" 2% CC, 1/4 lb/sk F. Seal

COMMON <u>450sk A</u>	@ <u>17.90</u>	<u>8055.00</u>
POZMIX	@	
GEL	@	
CHLORIDE <u>19sk</u>	@ <u>64.00</u>	<u>1,216.00</u>
ASC	@	
CLPP <u>150sk</u>	@ <u>24.40</u>	<u>3660.00</u>
GpSl <u>9sk</u>	@ <u>37.60</u>	<u>338.40</u>
NAMS <u>846 lb</u>	@ <u>3.30</u>	<u>2,791.80</u>
FLSL <u>113 lb</u>	@ <u>2.97</u>	<u>335.61</u>
	@	
	@	
	@	
	@	
HANDLING <u>660.40C</u>	@ <u>2.48</u>	<u>1,637.79</u>
MILEAGE <u>1196 Ton Mi</u>	@ <u>2.60</u>	<u>3,109.60</u>
TOTAL		<u>21,144.20</u>

EQUIPMENT  
 PUMP TRUCK CEMENTER Ruben Chavez  
 # 531/541 HELPER Cesar Pavia 2  
 BULK TRUCK  
 # 562/554 DRIVER Ricardo Estrada 2  
 BULK TRUCK  
 # 470/528 DRIVER Jaime Torres 3

REMARKS:  
Mix + pump 10 BBls H2O - Spacer  
Mix + pump 600 sk of Cement  
280.46 BBls of Slurry and displace  
it with 116.43 BBls of H2O  
Circulate 15 BB to surface.  
4 Hours stand by - No charge

CHARGE TO: Falcon Exploration  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

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 Alan Lopez  
 SIGNATURE Alan Lopez

1196 SERVICE

DEPTH OF JOB	<u>1870 feet</u>
PUMP TRUCK CHARGE	<u>8,213.75</u>
EXTRA FOOTAGE	@
MILEAGE heavy <u>40 Mi</u>	@ <u>7.70</u> <u>308.00</u>
MANIFOLD + Cem. head <u>1</u>	@ <u>2.75</u> <u>2.75.00</u>
Light Vehicle <u>40 Mi</u>	@ <u>4.40</u> <u>176.00</u>
	@
TOTAL <u>2,972.75</u>	

8 7/8 PLUG & FLOAT EQUIPMENT

Guide Sho <u>1</u>	@ <u>460.95</u>	<u>460.95</u>
AFU Float Valve <u>1</u>	@ <u>446.94</u>	<u>446.94</u>
Centralizer <u>3</u>	@ <u>74.86</u>	<u>224.64</u>
Cem Basket <u>3</u>	@ <u>559.26</u>	<u>1,677.78</u>
Top Rubber plug <u>1</u>	@ <u>131.09</u>	<u>131.09</u>
TOTAL		<u>2,941.38</u>

SALES TAX (If Any) 1440.69  
 TOTAL CHARGES 27,058.33  
 DISCOUNT 8117.50 IF PAID IN 30 DAYS

NET = 18,940.83



Scale 1:240 (5"=100') Imperial  
Measured Depth Log

Well Name: JAMES KOEHN #2-31 (NW)  
Location: SE-SE-SE-NW 1/4 SEC. 31 - 28 S. - 30 W.  
License Number: A.P.I. #15-069-20424-00-00  
Spud Date: 01/04/2013  
Surface Coordinates: 2540' FNL & 2540' FWL

Region: GRAY CO., KS.  
Drilling Completed: 01/12/2013

Bottom Hole  
Coordinates:  
Ground Elevation (ft): 2820'                      K.B. Elevation (ft): 2833'  
Logged Interval (ft): 1869'              To: 5473'              Total Depth (ft): 5473'  
Formation: MISSISSIPPIAN "ST. LOUIS"  
Type of Drilling Fluid: CHEMICAL/POLYMER/GEL MUD

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

**OPERATOR**

Company: FALCON EXPLORATION, INC.  
Address: 125 North Market Street, Ste. #1252  
Wichita, Kansas 67202

**GEOLOGIST**

Name: David P. Williams, P.G.  
Company: DW Energy, LLC  
Address: 312 North Broadview Street  
Wichita, Kansas 67208

**CASING & DEVIATION**

Spud at 12:45 AM on 01/04/2013 . Drilled 12-1/4" to 1875'. Ran 44 joints of new 24#, 8-5/8" casing. Tallied 1855'. Set at 1870' KB . Welded straps on GS & bottom 3 joints, then tack welded all collars. Float insert in 1st collar. Centralizers (3) 1,41. Baskets (3) 1,40 & 42. Cemented with 450 sks Class A, 3% CC, 2% Salt, 2% Gyp, 1/4# FS. Tailed with 150 sks Class C; 2% CC, 1/4# FS. Cement did circulate to surface. Plug down at 1:00 AM on 01/06/13. Allied Cementing.

Deviation Survey's Taken: @ 1875' = 1 degree; @ 5114' = 2 degrees; @ 5421' = 2 degrees; @ 5470' = 1 1/2 degrees.

**DSTs**

DST # 1 5386' - 5421'. Times:5"-90"-32"-0". Blow: IF= V. Weak; FF= No Blow & Flushed Tool (w/No Help) & Blow Died. Recovery: 5' Mud; (Tool Spl:Spotty Oil 100% Mud).  
Pressures: IH = 2567#; FH= 2565#; IF= 7-14#; FF= 10-13#; ISIP= 1417#; FSIP= None. Temp= 122 degrees F..

**Comments**

### ROCK TYPES

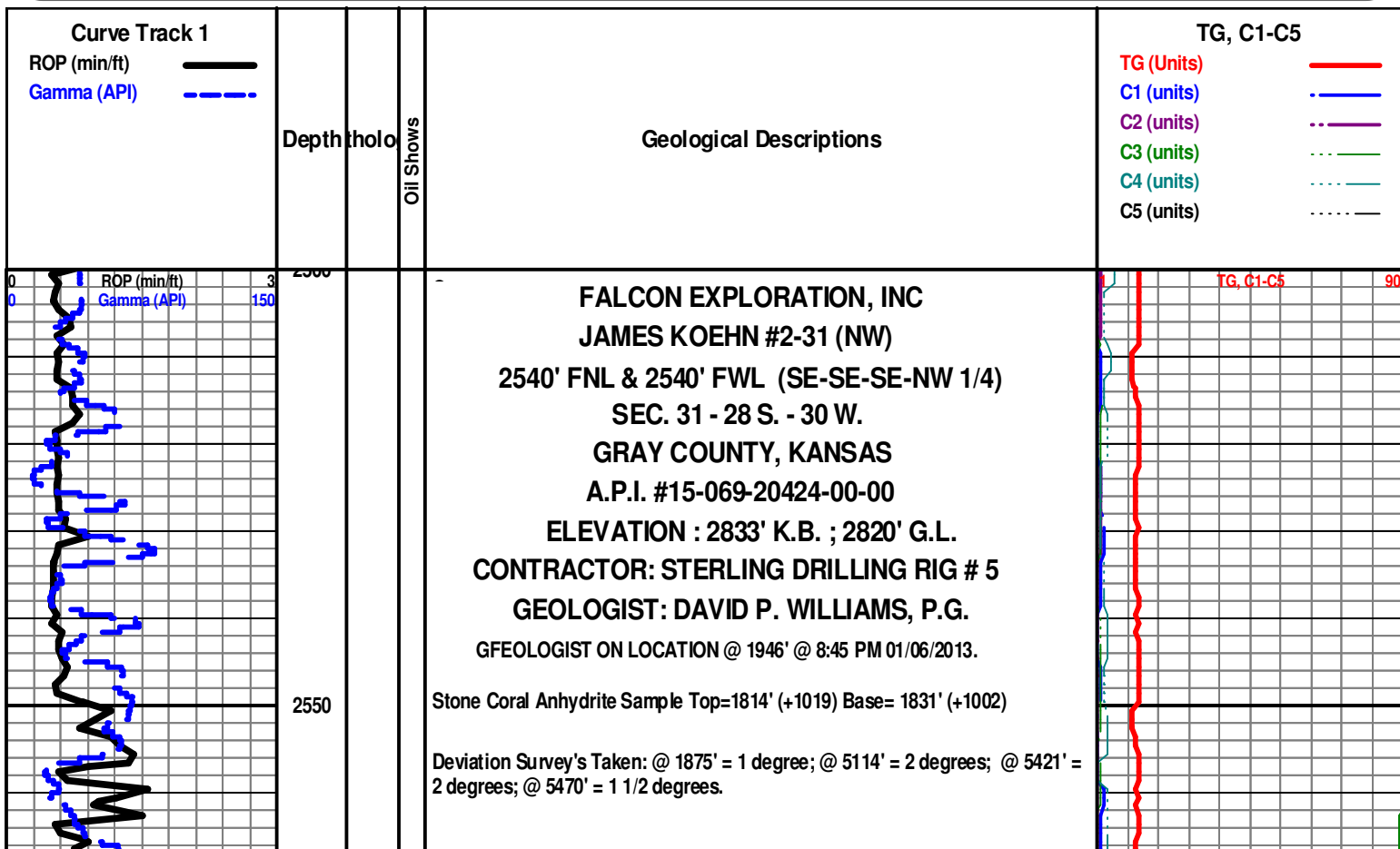
	Anhy		Clyst		Gry shale		Mrlst		Shgy
	Bent		Coal		Gyp		Red shale		Sltst
	Brec		Congl		Igne		Salt		Ss
	Carb sh		Dol		Lmst		Shale		Till
	Cht		Grn sh		Meta		Shcol		

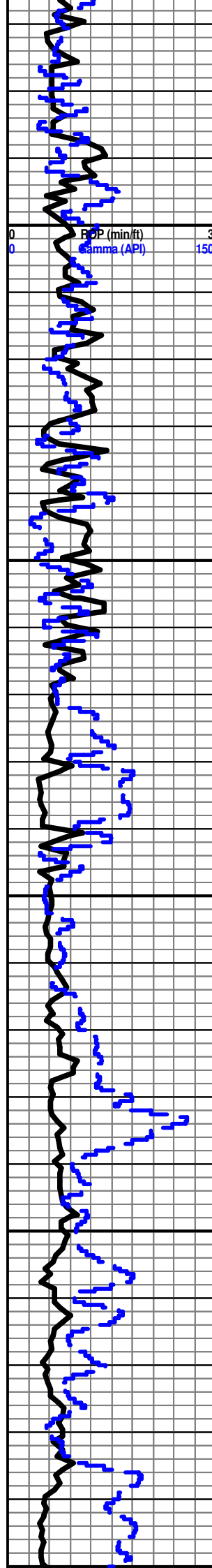
### ACCESSORIES

<b>MINERAL</b>		Hvmin		Belm		Pellet		Ssstrg		
	Anhy		Kaol		Bioclst		Pisolite	<b>TEXTURE</b>		
	Arggrn		Marl		Brach		Plant		Boundst	
	Arg		Minxl		Bryozoa		Strom		Chalky	
	Bent		Nodule		Cephal	<b>STRINGER</b>		Anhy		Cryxln
	Bit		Phos		Coral		Arg		Earthy	
	Brecfrag		Pyr		Crin		Bent		Finexln	
	Calc		Salt		Echin		Coal		Grainst	
	Carb		Sandy		Fish		Dol		Lithogr	
	Chtdk		Silt		Foram		Gryslt		Microxln	
	Chtlt		Sil		Fossil		Grysh		Mudst	
	Dol		Sulphur		Fuss		Gyp		Packst	
	Feldspar	<b>FOSSIL</b>		Algae		Oolite		Ls		Wackst
	Ferrpel		Amph		Oostr		Mrst			
	Ferr				Pelec		Sltstrg			
	Glau									
	Gyp									

### OTHER SYMBOLS

<b>POROSITY</b>		Vuggy	<b>ROUNDING</b>		Even		Straddle test tail pi		
	Earthy		Rounded		Spotted		Dst_alt		
	Fenest	<b>SORTING</b>		Subrnd		Ques	<b>EVENT</b>		
	Fracture		Well		Subang		Dead		Rft
	Inter		Moderate		Angular	<b>INTERVAL</b>	Core		Sidewall
	Moldic		Poor	<b>OIL SHOW</b>	Gas show		Core		
	Organic				Gas show		Dst		
	Pinpoint								





2600  
2650  
2700  
2750  
2800



Begin 30' Sample Examination @ 2650'.

Sh Red Soft (Wash Red) Anhy/Gyp Gry-Crm No Odor No Stn No Flor NS

Sh Red Soft (Wash Red) Anhy/Gyp Gry-Crm No Odor No Stn No Flor NS

Sh Red Soft (Wash Red) Anhy/Gyp Gry-Crm No Odor No Stn No Flor NS

\_\_\_\_\_ CHASE GROUP 2688' (+ 145) \_\_\_\_\_

Dolo Wht-Gry Fxln Dns Micrite Sh AA Anhy/Gyp AA No Odor No Flor No Stn NS

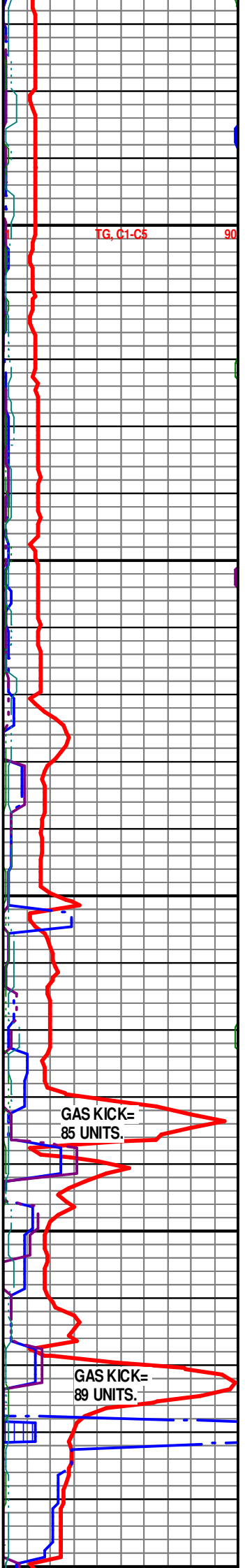
⊗ \_\_\_\_\_ KRIDER 2736' (+ 97) \_\_\_\_\_

Dolo Wht-Gry Fxln Dns Micrite Sh AA Anhy/Gyp AA No Odor No Flor No Stn NS

\_\_\_\_\_ WINFIELD 2758' (+ 75) \_\_\_\_\_

⊗ \_\_\_\_\_

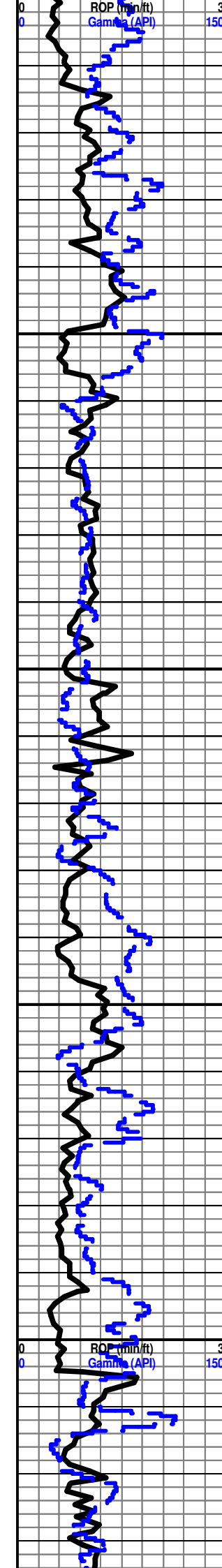
Dolo Wht-Gry Fxln Dns Micrite Sh AA Anhy/Gyp AA No Odor No Flor No Stn NS



TG, C1-C5 90

GAS KICK=  
85 UNITS.

GAS KICK=  
89 UNITS.



**TOWANDA 2807' (+ 26)**

Dolo Wht-Crm-Gry FxIn Dns Micrite Sh Red-Gry Soft-Fissil Anhy/Gyp AA No Odor No Flor No Stn NS

**FORT RILEY 2856' (- 23)**

Dolo Wht-Crm-Gry FxIn Dns Micrite Sh Red-Maroon-Gry Soft-Fissil Anhy/Gyp AA No Odor No Flor No Stn NS

GAS KICK= 40 UNITS

Ls Wht-Crm-Gry FxIn Dns Micrite Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

**MUD DISPLACEMENT @ 2915'**

Ls Wht-Crm-Gry FxIn Dns Micrite Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

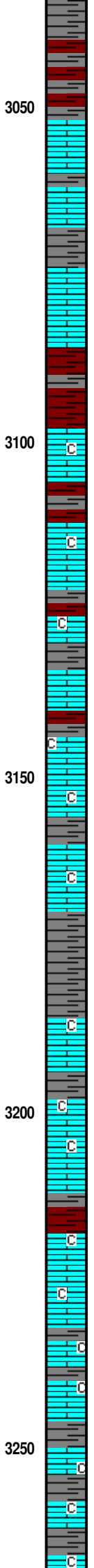
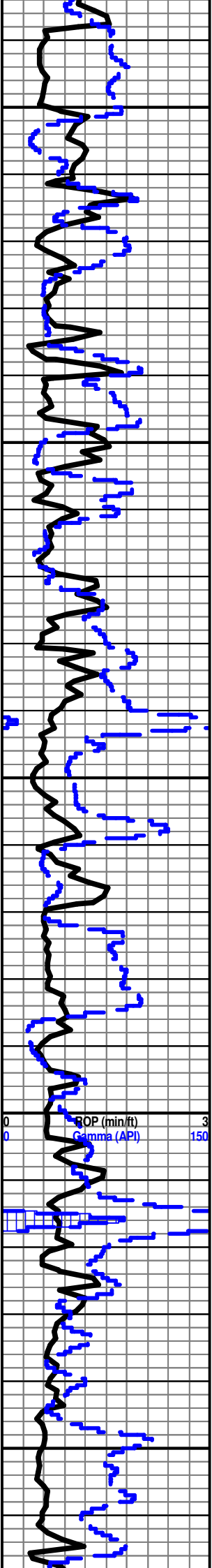
Ls Wht-Crm-Gry FxIn Dns Micrite Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry FxIn Dns Micrite Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry FxIn Dns Micrite Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

TG, C1-C5

90



Flor No Stn NS

Ls Wht-Crm-Gry FxIn Dns Micrite Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry FxIn Dns Micrite Chalky Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

**COTTONWOOD 3144' (-311)**

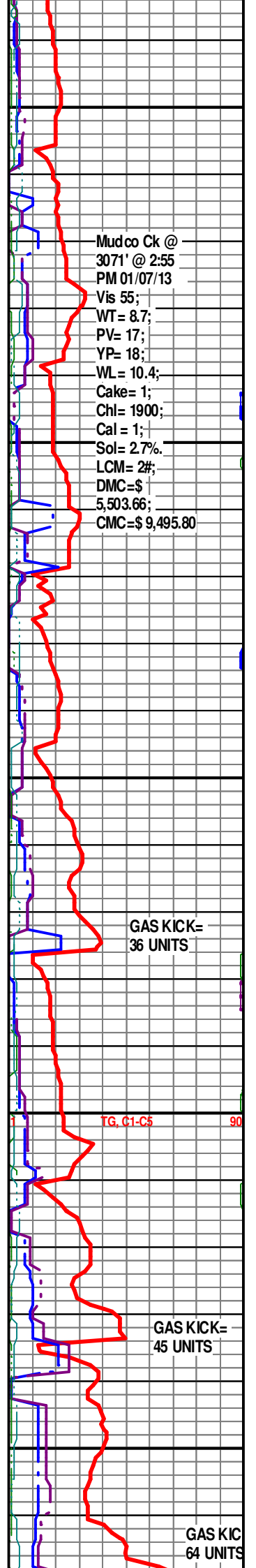
Ls Wht-Crm-Gry FxIn Poor Pin-Pt IxIn Por Chalky Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

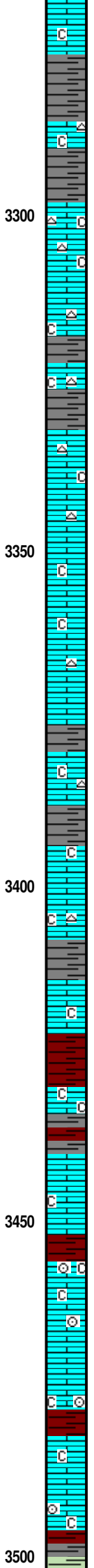
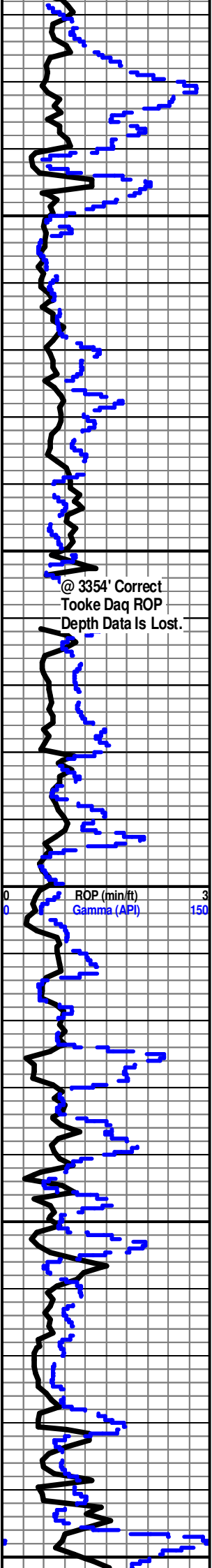
**NEVA 3186' (- 353)**

Ls Wht-Crm-Gry FxIn Poor Pin-Pt IxIn Por Chalky Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry FxIn Poor Pin-Pt IxIn Por Chalky Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry FxIn Poor Pin-Pt IxIn Por Chalky Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS





Ls Wht-Crm-Gry FxIn Poor Pin-Pt IxIn Por Cht Wht (w/Fos (Spic Includ ) Chalky  
Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

**FORAKER 3298' (- 465)**

Ls Wht-Crm-Gry FxIn Poor IxIn Por Dns Micrite Cht Wht Transp-Op Shp Vit  
Chalk Sh Char-Gry-Red-Maroon-Lt Grn Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry FxIn Poor IxIn Por Dns Micrite Cht Wht-Clear Transp-Op Shp  
Vit Chalk Sh Char-Gry-Red-Maroon-Lt Grn Soft-Fissil No Odor No Stn No Flor  
NS

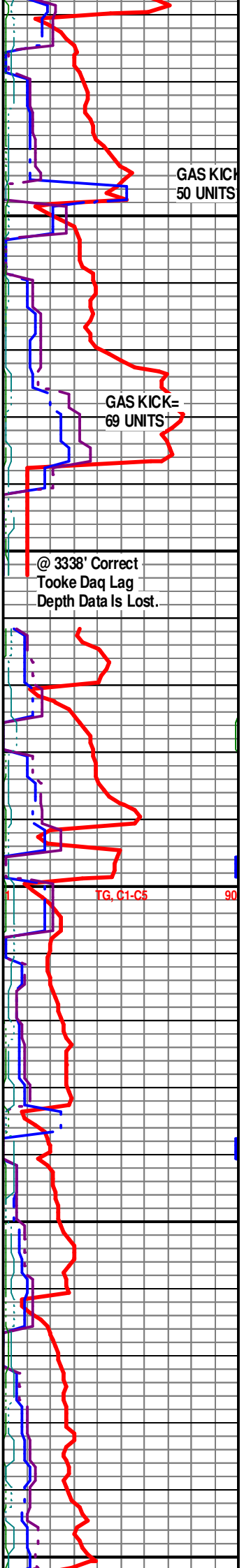
Ls Crm-Wht-Gry FxIn Poor IxIn Por Dns Micrite Cht Wht-Clear Transp - Op Shp  
Vit Chalk Sh Char-Gry-Red-Maroon-Lt Grn Soft-Fissil No Odor No Stn No Flor  
NS

Ls Gry-Crm-Wht FxIn Grad Micritic Por Chalky Sh Char-Gry Fissil No Odor No  
Stn No Flor NS

**FALL CITY 3440' (- 607)**

Ls Wht-Crm-Gry FxIn-MxIn Grad Pin-Pt Por Fair-Med IxIn Por Cht Gry Op Shp  
Vit Fos (Crin) Chalky Sh Char-Gry Fissil No Odor No Stn No Flor NS

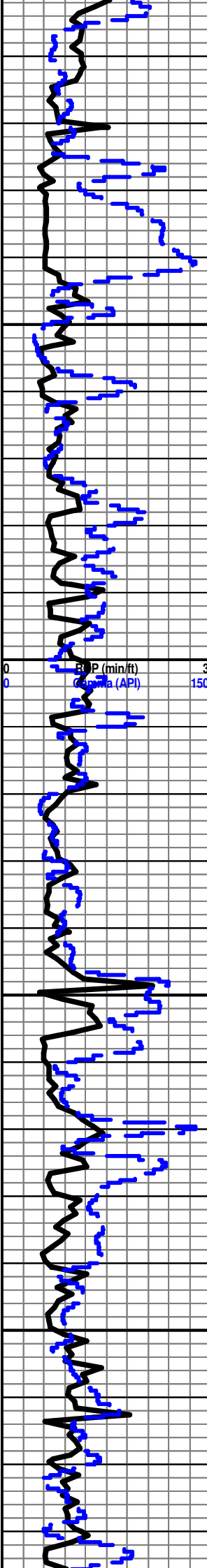
Ls Wht-Crm-Gry FxIn-MxIn Grad Pin-Pt Por Fair-Med IxIn Por Cht Gry Op Shp  
Vit Fos (Crin) Chalky Sh Char-Gry Fissil No Odor No Stn No Flor NS



@ 3354' Correct  
Tooke Daq ROP  
Depth Data Is Lost.

@ 3338' Correct  
Tooke Daq Lag  
Depth Data Is Lost.





**ROOT SHALE 3524' (- 691 )**  
 Sh Red-Gry Fissil-Soft V Abd (Spl Wash Red) LS Crm-Gry FxIn Micritic AA Poor  
 IxIn Por No Odor No Stn ? Min Flor AA NS

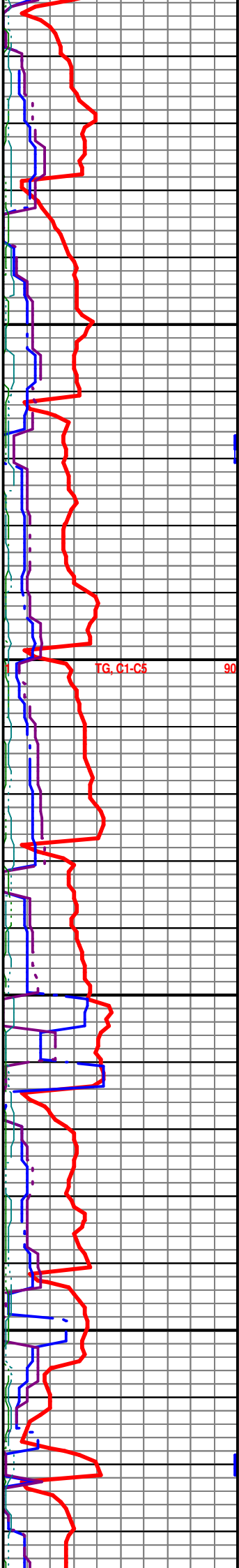
**STOTLER 3543' (- 710)**  
 LS Wht-Crm-Gry MicroIxIn-FxIn IxIn Por Micritic Dsn Barren Grad Tr/Fair OOM  
 Por w/OOL (Small) in pl Fair InterOOM/OOL Por Fair Leaching Fair Disolu Sh  
 Grn-Red Soft Fos (Brach) Chalk Wht Abd No Odor No Flor No Stn NS

**TARKIO 3598' (- 765)**  
 LS Gry-Wht-Crm MicroIxIn-FxIn IxIn Por Micritic Dsn Barren Chalk Wht V Abd  
 Sh Gry-Char-Tr/Grn Soft-Fissil No Odor No Flor No Stn NS

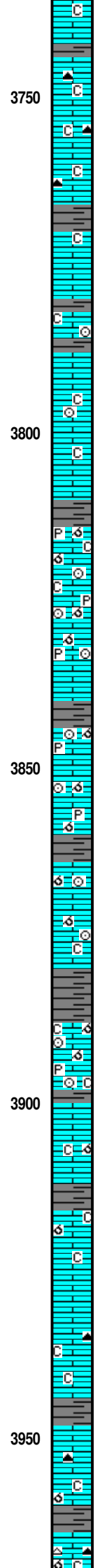
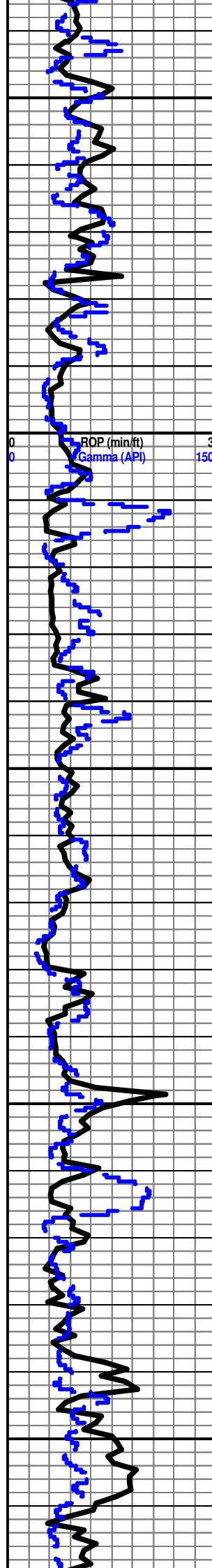
Ls Gry-Crm-Wht MicroIxIn-FxIn IxIn Por Micritic Dsn Barren Chalk Wht V Abd  
 Cht Crm-Gry Op-Transl Shp Vit Sh Gry-Char Soft No Odor No Flor No Stn NS

**BERN 3688' (- 855)**  
 Ls Wht-Gry FxIn IxIn Pin-Pt Por Mostly Micritic AA Dsn Barren Chalk Wht Abd  
 Cht Blk Op Shp Vit Sh Gry-Char-Tr/ Blk-Carb Fissil Gry-Char Soft No Odor No  
 Flor No Stn NS

Ls Gry-Wht-Crm FxIn Poor IxIn Por Dns Micrite Grad Poor Pin-Pt Por Chalk V  
 Abd Cht Drk Gry Op Vit Shp Sh Char-Gry-Lt Grn-Red Soft-Fissil No Odor No  
 Stn No Flor NS



TG, G1-C5 90



Ls Crm-Gry FxIn Poor IxIn Por Dns Micrite Grad Poor Pin-Pt Por Cht Drk Gry-Lt  
 Gry Op Shp Vit Chalk Sh Char-Gry-Lt Grn Soft-Fissil No Odor No Stn No Flor  
 NS

3750

ROP (min/ft)  
 Gamma (API)

3800

**TOPEKA 3812' (- 979)**

Ls Wht-Crm-Gry FxIn Poor IxIn Por Mostly Micritic Dsn Barren Grad Fair IxIn  
 Por Grad Poor OOM Por Poor Leaching Poor Dussolu Chalk Wht Sh Char-Grn  
 Fissil Soft No Odor No Flor No Stn NS

3850

Ls Wht-Crm-Gry FxIn Poor IxIn Por Mostly Micritic Dsn Barren Grad Poor OOM  
 Por Poor Leaching Poor-No Dussolu Chalk Wht Fos (Crin) Sh Char-Grn Fissil  
 Soft No Odor No Flor No Stn NS

3900

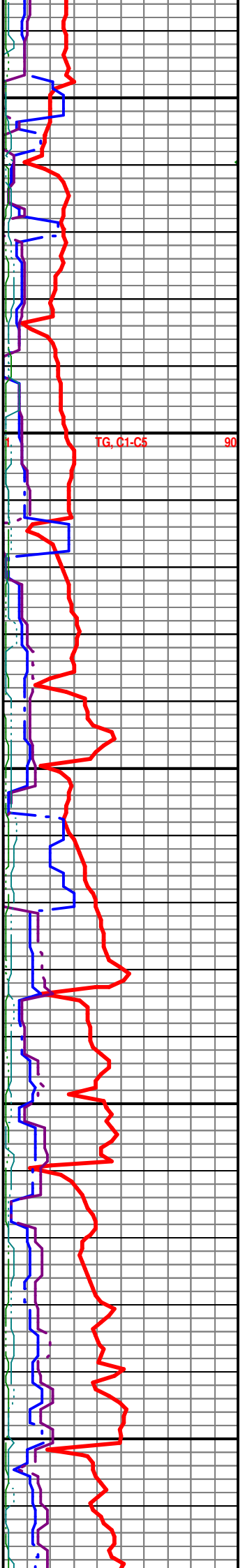
Ls Wht-Crm-Gry FxIn Poor IxIn Por Mostly Micritic Dsn Barren Grad Poor OOM  
 Por Poor Leaching Poor-No Dussolu Chalk Wht Fos (Crin in Pyr) Sh Char-Grn  
 Fissil Soft No Odor No Flor No Stn NS

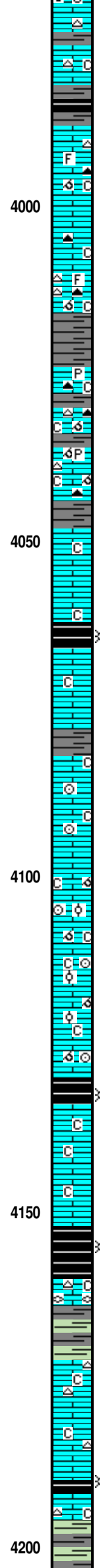
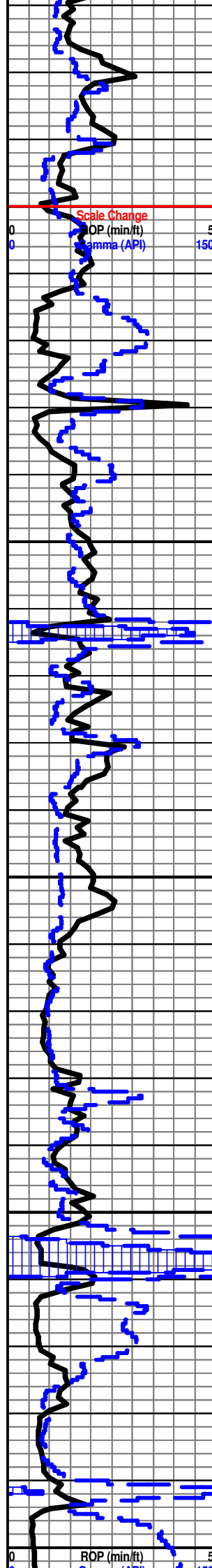
3950

Ls Wht-Gry FxIn Poor IxIn Por Mostly Micritic Dsn Barren Chalk Wht V Abd Cht  
 Tan- Drk Gry Transl-Op Shp Vit Sh Char-Grn Fissil Soft No Odor No Flor No  
 Stn NS

**Start 20' Samples At 4000'**

LS Wht-Gry FxIn Poor IxIn Por Mostly Micritic Dsn Barren Grad Poor OOM Por  
 Poor InterOOM Por Chalky Abd Cht Wht-Gry-Drk Gry (w/Fos Inlus-Wht) Op  
 Shp Vit Sh Char Fissil No Odor No Flor No Stn NS





LS Wht-Gry Fxln Poor Ixln Por Mostly Micritic Dsn Barren Grad Poor OOM Por  
 Poor InterOOM Por Chalky Abd Cht Wht-Gry-Drk Gry (w/Fos Includ-Wht) Op  
 Shp Vit Sh Blk Carb Char Fissil No Odor No Flor No Stn NS

**LeCOMPTON 3992' (- 1159)**

LS Wht-Gry Fxln Poor Ixln Por Mostly Micritic Dsn Barren Grad Poor OOM Por  
 Poor InterOOM Por Chalky Abd Cht Wht-Gry-Drk Gry (w/Fos Includ-Wht) Op  
 Shp Vit Sh Char Fissil No Odor No Flor No Stn NS

LS Wht-Gry Fxln Poor Ixln Por Mostly Micritic Dsn Barren Grad Poor OOM Por  
 Poor InterOOM Por Chalky Abd Pry Mass Cht Wht-Gry-Drk Gry Op Shp Vit Sh  
 Char Fissil No Odor No Flor No Stn NS

**QUEEN HILL 4062' (- 1229)**

**OREAD 4066' (- 1235)**

Sh Blk Carb-Char Fissil Ls Crm-Wht-Gry Fxln Dns Micrite Poor Ixln Por Chalk  
 Wht No Odor No Stn No Flor NSG (?)

Ls Crm-Wht Fxln Grad Poor Ixln Por Chalk Wht Abd Fos (Crin) Sh Char Fissil  
 No Odor No Flor No Stn N

Ls Crm-Wht Fxln Grad Poor Ixln Por Grad Tr/OOM Por w/ OOL (Small) in pl  
 Poor Develop Poor Dissolu Poor Leaching Chalk Wht Abd Cht Blk-Tan Op Shp  
 Vit Fos (Crin) Sh Char Fissil No Odor No Flor No Stn NS

Ls Crm-Wht Fxln Grad Poor Ixln Por Grad Tr/OOM Por w/ OOL (Small) in pl  
 Poor Develop Poor Dissolu Poor Leaching Chalk Wht Abd Cht Blk-Tan Op Shp  
 Vit Fos (Crin) Sh Char Fissil No Odor No Flor No Stn NS

**PLATTSMOUTH 4134' (- 1301)**

Ls Gry-Crm Fxln Dns Micrite Poor-No Vis Ixln Por Chalk Wht Soft Sh Blk  
 Carb-Char-Red Fissil No Odor No Stn No Flor NS

**HEEBNER 4152' (- 1319)**

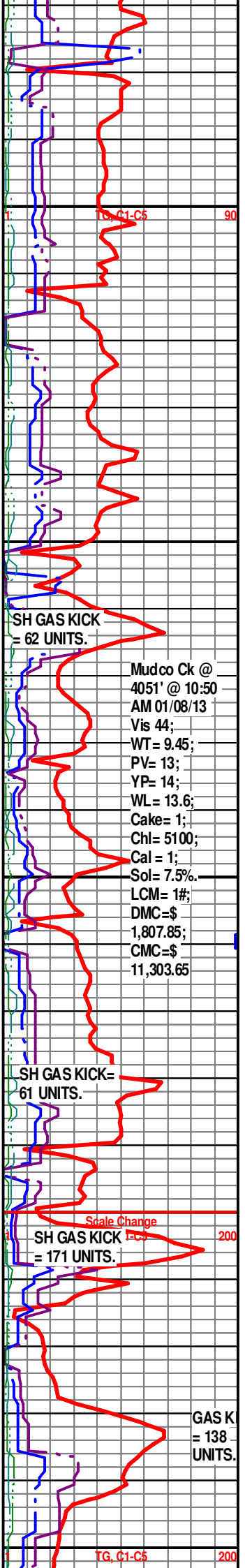
Sh Blk Carb-Char-Grn Fissil F-G SG Ls Crm Fxln Dns Micrite Poor Ixln Por  
 Chalk Wht Soft Cht Wht Transl-Op Shp Vit No Odor No Stn No Flor F-MSG (in  
 Sh Blk Carb)

**TORONTO 4172' (- 1339)**

Ls Crm Fxln Dns Micrite Poor Ixln Por Chalk Wht Soft Cht Wht Transl-Op Shp  
 Vit Sh Blk Carb-Char-Grn Fissil F-G SG No Odor No Stn No Flor F-MSG (in Sh  
 Blk Carb AA)

**DOUGLAS 4190' (- 1357)**

30" CFS @ 4214' Ls Crm Fxln Dns Micrite Poor Ixln Por Chalk Wht Soft Cht Wht  
 Transl-Op Shp Vit Sh Blk Carb-Char-Grn Fissil F-G SG No Odor No Stn No Flor  
 F-MSG (in Sh Blk Carb AA)



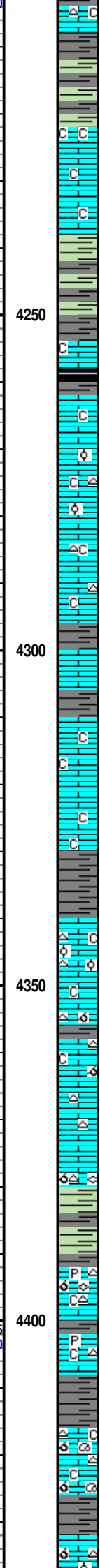
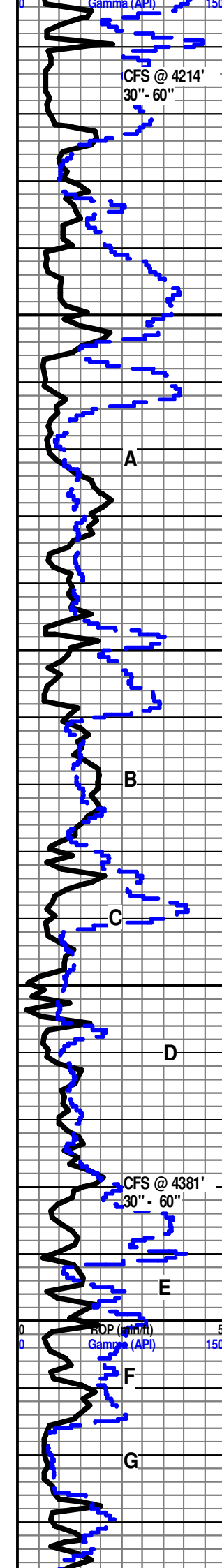
SH GAS KICK  
 = 62 UNITS.

Mudco Ck @  
 4051' @ 10:50  
 AM 01/08/13  
 Vis 44;  
 WT= 9.45;  
 PV= 13;  
 YP= 14;  
 WL= 13.6;  
 Cake= 1;  
 Chl= 5100;  
 Cal = 1;  
 Sol= 7.5%  
 LCM= 1#;  
 DMC=\$  
 1,807.85;  
 CMC=\$  
 11,303.65

SH GAS KICK=  
 61 UNITS.

SH GAS KICK  
 = 171 UNITS.

GAS K  
 = 138  
 UNITS.



60" CFS @ 4214' Ls Wht-Crm-Tan MicroIn-FxIn Poor-Fair IxIn Por Cht Wht Op Shp Vit Chalk Wht Soft Abd Sh Blk Carb-Char AA Fissil No Odor No Stn ? Min Flor NS

Ls Crm-Wht-Gry FxIn Dns Micrite Poor IxIn Por AA Chalk Wht Soft Abd Sh Char-Gry-Grn Soft-Fissil No Odor No Stn No Flor NS

Ls Crm-Wht-Gry FxIn Dns Micrite Poor IxIn Por AA Chalk Wht Soft Abd Sh Char-Gry-Grn Soft-Fissil No Odor No Stn No Flor NS

**IATAN (BROWN LIME) 4254' (- 1421)**

**LANSING 4264' (- 1431)**

Ls Crm-Wht-Gry FxIn Dns Micrite Poor IxIn Por Chalk Wht Soft Abd Sh Char-Gry-Grn Soft-Fissil No Odor No Stn No Flor NS

Ls Wht MicroIn-FxIn Micritic w/Calc Xls Includ Grad OOL Fair InterOOL Por w/OOL in pl Tr/Scat Leaching Por Barren FairStn Flor (Lt Grn-Wht of Spl through Tray 60%) Cht Wht-Gry Op Shp Vit V Abd Chalk Wht Soft Sh Char-Gry-Grn Fissil No Odor Fair Scat ? Min Flor ? Stn NS

Ls Crm-Gry MicroIn-FxIn Poor IxIn Por Grad Micritic Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor Dec AA NS

Ls Crm-Gry MicroIn-FxIn Poor IxIn Por Grad Micritic Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor Dec AA NS

Chalk Wht Soft V Abd (70% of Spl) Ls Wht-Crm MicroIn-FxIn Poor IxIn Por Grad Micritic Cht Wht-Gry Op Vis Shp Sh Char-Gry-Grn Fissil Abd No Odor No Stn ? V Sli Min Flor NS

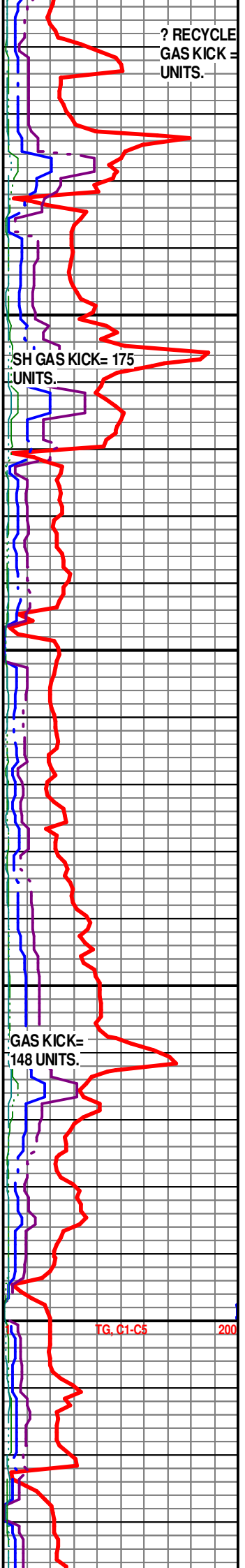
30" CFS @ 4361' Ls Wht-Crm MicroIn-FxIn Poor IxIn Por Grad Grad Tr/Poor OOL Por Poor InterOOL Por w/ Small Ooids in pl Chalk Wht Soft V Abd Sh Char-Gry Fissil Faint Odor No Stn Sli Flor (Lt Grn) ? SSG

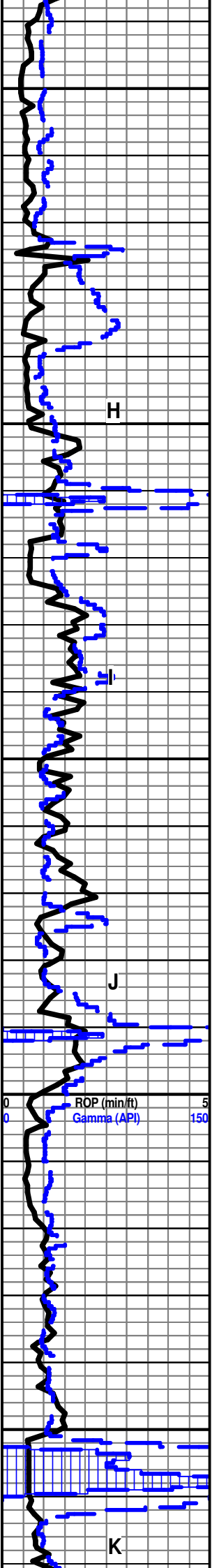
60" CFS @ 4361' Ls Crm-Gry MicroIn-FxIn Poor IxIn Por Grad Micritic Cht Tan-Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor Sh Char-Gry Fissi No Odor No Stn ? Sli Min NS

Ls Wht-Crm MicroIn-FxIn Poor IxIn Por Grad Micritic Grad Tr/Poor OOL Por Poor InterOOL Por w/ Small Ooids in pl Cht Wht w/Fos (Fuss) Includ Op Shp Vit Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor NS

Ls Wht-Crm-Gry MicroIn Poor IxIn Por Micritic w/Pyr Includ Grad OOL Por w/OOL (Small-Med Ooids w/Ctr's Fill w/? Drk-Gry Calcite? Includ) in pl Poor Inter-OOM/OOL Por Poor Develop Poor Leaching Cht Wht Op Shp Vit Fos (Crin) Sh Char-Gry-Maroon Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Tan OOM Por w/OOL (Small-Med Ooid in pl) Poor Inter-OOM/OOL Por Poor Develop Poor Leaching Grad Micrite Cht Wht Op Shp Vit Sh Char-Gry-Maroon Fissil No Odor No Flor No Stn NS





Ls Wht-Crm-Tan OOM Por w/OOL (Small-Med Ooid in pl) Poor Inter-OOM/OOL  
Por Poor Develop Poor Leaching Grad Micrite Cht Wht Op Shp Vit Sh  
Char-Gry-Maroon Fissil No Odor No Flor No Stn NS

Ls Crm-Tan-Gry Fxln Micritic Grad Med OOM (w/OOL in pl) Por Med Dissolu  
Med Develop Good Leaching Barren Chalk Abd Cht Wht-Amber Op Shp Vit Fos  
(Crim) Chalky Sh Char-Gry Soft- Fissil No Odor No Flor No Stn NS

**MUNCIE CREEK 4484' (- 1651)**

Ls Crm-Tan-Gry Fxln Micritic Grad Med OOM (w/OOL in pl) Por Med Dissolu  
Med Develop Good Leaching Barren Chalk Abd Cht Wht-Amber Op Shp Vit  
Chalky Sh Char-Gry-Blk Carb-Red Soft- Fissil No Odor No Flor No Stn NS

Ls Crm-Tan-Gry Fxln Micritic Grad Fair-Med OOM (w/OOL in pl) Por Fair  
Dissolu Fair Develop Fair Leaching Barren Chalk Cht Wht-Drk Gry Op Shp Vit  
Chalky Sh Blk Carb-Char-Gry Soft- Fissil No Odor No Flor No Stn NS

SH GAS KICK = 112 UNITS.

Ls Crm-Tan Fxln Micritic Grad Fair-Med OOM (w/OOL in pl) Por Fair Dissolu  
Fair Develop Fair Leaching Barren Chalk Abd Cht Wht-Drk Gry Op Shp Vit Sh  
Char-Gry-Blk Carb Soft-Fissil No Odor No Flor No Stn NS

Ls Crm-Tan Fxln Micritic Grad Med-Good OOM (w/Lg OOL in pl) Por Fair-Med  
Dissolu Fair-Med Develop Fair-Med Leaching Barren Chalk Abd Cht Wht-Drk  
Gry Op Shp Vit Sh Char-Gry-Blk Carb Soft-Fissil No Odor No Flor No Stn NS

Ls Crm-Tan Fxln Micritic Grad Fair-Med OOM (w/OOL in pl) Por Fair Dissolu  
Fair Develop Fair Leaching Barren Chalk Abd Cht Wht-Drk Gry Op Shp Vit Sh  
Char-Gry-Blk Carb Tr Fissil No Odor No Flor No Stn NS

Ls Crm-Tan Fxln Micritic Grad Med -Good OOM Por Fair Dissolu Fair Develop  
Fair Leaching (Tr/Single Med Ooid in pl) Chalk Abd Cht Wht-Gry Op Shp Vit Sh  
Char-Gry-Blk Carb Tr Fissil No Odor No Flor No Stn NS

Ls Wht-Crm Fxln Micritic Grad Med -Good OOM Por Fair Dissolu Fair Develop  
Fair Leaching Chalk Abd Cht Wht Op Shp Vit Sh Char-Gry-Grn-Blk Carb Fissil  
No Odor No Flor No Stn NS

TG, C1-C5 200

Ls Crm-Tan Fxln Micritic Grad Poor OOM Por (w/OOL in pl) Poor-No Dissolu  
Poor Develop Poor Leaching Chalk Abd Cht Wht Op Shp Vit Sh Gry-Grn Fissil  
No Odor No Flor No Stn NS

Ls Crm-Tan Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit Sh Gry-Grn  
Fissil No Odor No Flor No Stn NS

SH GAS KICK = 222 UNITS.

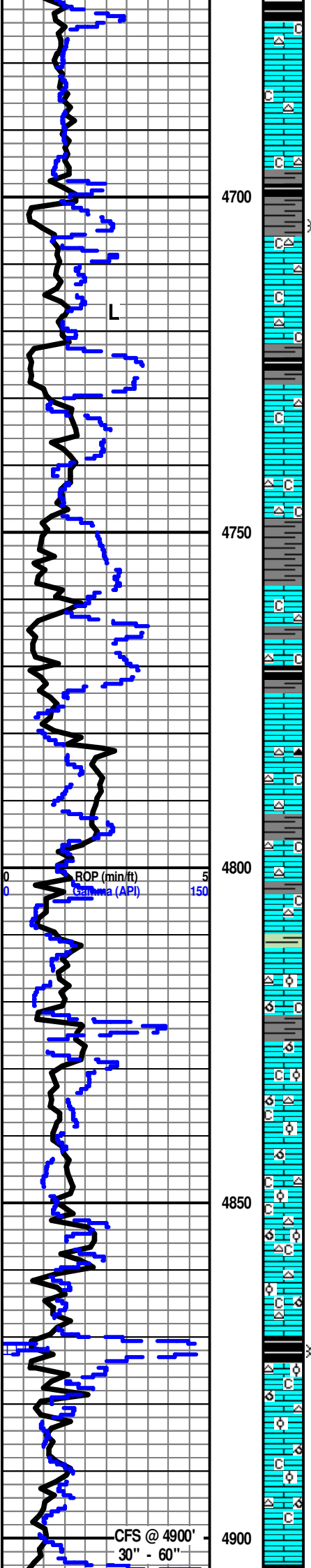
**STARK SHALE 4652' (- 1819)**

**KANSAS CITY "SWOPE" (K) 4660' (-1827)**

Sh Blk Carb-Gry-Grn Fissil (w/SG) Ls Crm-Tan Fxln Dns Micritic Barren Chalk  
Abd Cht Wht Op Shp Vit No Odor No Flor No Stn NS

SPL TRAP LEFT OPEN.

SH GAS KICK = 22 UNITS.



Ls Crm-Tan Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit Sh Blk Carb-Gry-Grn Fissil No Odor No Flor No Stn NS

4700

**KANSAS CITY "HERTHA" (L) 4706' (-1873)**

Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit Sh Blk Carb-Gry-Grn Fissil No Odor No Flor No Stn NS

SH GAS KICK = 91 UNITS.

Sh Blk Carb-Gry-Grn Fissil Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit No Odor No Flor No Stn NS

4750

Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit Sh Blk Carb-Gry-Grn Fissil No Odor No Flor No Stn NS

Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit Sh Blk Carb-Gry-Grn Fissil No Odor No Flor No Stn NS

**MARMATON 4773' (- 1940)**

Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Cht Wht-Brn Translu- Op Shp Vit Sh Blk Carb-Gry-Grn Fissil No Odor No Flor No Stn NS

4800

Ls Wht-Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Cht Wht Op Shp Vit Sh Char-Gry-Grn Fissil No Odor No Flor No Stn NS

TC C1-C5 200

Ls Wht-Gry-Crm Fxln Poor Ixln Por Micritic Dns Barren Grad Poor-Fair OOL Por (w/OOL in pl) Fair Dissolu Fair Leaching Cht Gry Op Shp Vit Chalky Wht Soft Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

Mudco Ck @ 4850' @ 9:25 AM 1/09/13 Vis 74;  
 WT= 9.3;  
 PV= 21;  
 YP= 26;  
 WL= 11.2;  
 Cake= 1;  
 Chl= 3200;  
 Cal= 1;  
 Sol= 7.0%.  
 LCM= 3#;  
 DMC=\$ 4,348.10;  
 CMC=\$ 15,651.75

4850

Ls Wht-Gry-Crm Fxln Poor Ixln Por Micritic Dns Barren Grad Poor-Fair OOL Por (w/OOL in pl) Fair Dissolu Fair Leaching Cht Wht-Gry Translu-Op Shp Vit Chalky Wht Soft Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

SH GAS KICK = 124 UNITS.

**PAWNEE 4870' (- 2037)**

30" CFS @ 4900' Ls Wht-Gry-Crm Fxln Poor Ixln Por Micritic Dns Barren Grad Poor-Fair OOL Por (w/OOL in pl) Fair Dissolu Fair Leaching Cht Wht-Gry Translu-Op Shp Vit Chalky Wht Soft Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

SH GAS KICK=152 UNITS.

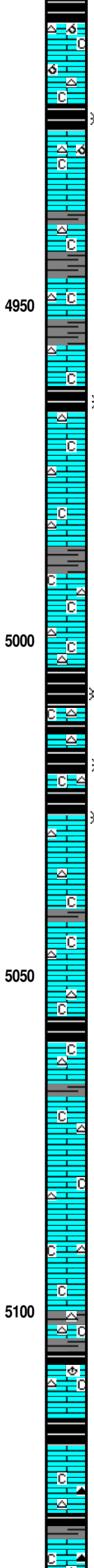
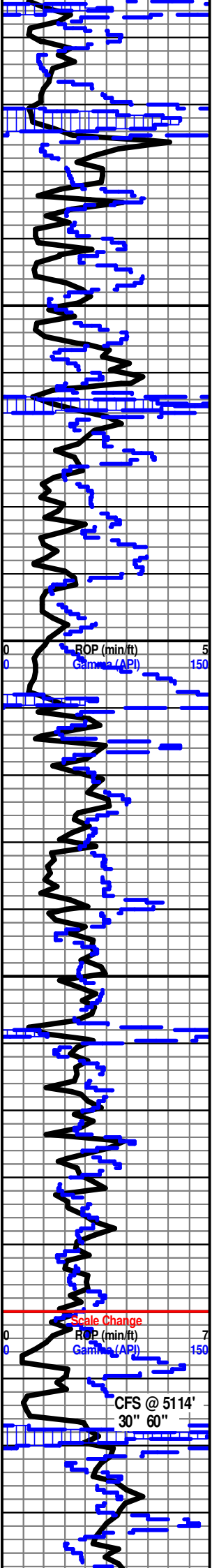
60" CFS @ 4900' Ls Wht-Gry-Crm Fxln Poor Ixln Por Micritic Dns Barren Grad Poor-Fair OOL Por (w/OOL in pl) Fair Dissolu Fair Leaching Cht Wht-Gry Translu-Op Shp Vit Chalky Wht Soft Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

SH GAS KICK = 109 UNITS.

CFS @ 4900' 30" - 60"

Scale Change TG C1-C5 300

**LABETTE 4904' (- 2071)**



**CHEROKEE 4920' (- 2087)**  
 Ls Gry-Crm-Wht Fxln Poor Ixln Por Micritic Dns Barren Grad Poor OOM Por (w/OOL in pl) Poor InterOOM Por Poor Develop Poor Leaching Cht Amber-Tan Translu-Op Shp Vit Chalk Wht Soft Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

Ls Crm-Wht Fxln Poor Ixln Por Micritic Dns Barren Grad Fair Pin-Pt Ixln Gran Por Chalk Wht Soft Cht Wht Op Shp Vit Sh Char-Gry Fissil No Odor No Flor No Stn NS

**SECOND CHEROKEE SHALE 4962' (- 2129)**  
 Sh Blk Carb-Gry-Grn Fissil (SSG) Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit No Odor No Flor No Stn SSh Blk Carb

Sh Char-Gry-Grn Fissil Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit No Odor No Flor No Stn NS

**THIRD CHEROKEE SHALE 5006' (- 2173)**  
 Sh Blk Carb-Gry-Grn Fissil (SSG) Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit No Odor No Flor No Stn SSh Blk Carb

Sh Blk Carb-Gry-Grn Fissil (SSG) Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit No Odor No Flor No Stn SSh Blk Carb

Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Cht-Amber Op Shp Vit Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Cht-Wht Amber-Gry Op Shp Vit Sh Char-Gry-Tr Blk Carb Fissil No Odor No Flor No Stn NS

Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Cht-Wht Amber-Gry Op Shp Vit Sh Char-Gry-Tr Blk Carb Fissil No Odor No Flor No Stn NS

30" CFS @ 5114' Ls Wht-Crm Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Sh Char-Gry- Blk Carb-Maroon-Red Soft-Fissil No Odor No Flor No Stn NS

60" CFS @ 5114' Sh Blk Carb-Gry-Grn Fissil Ls Wht-Crm-Tan-Gry Fxln Dns Micritic Barren Grad Poor-Fair Pin-Pt Ixln Por Chalk Cht Wht Op Shp Vit Fos (Brach) No Odor No Flor No Stn NS

NOTE: @ 5114' TOH TO REPLACE PDC BIT. The Pipe Strap @ 5114' = Was <0.74'> Short To Board. No Correction Has Been Made.

10' Sample Examination Start At 5120'

Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Cht Gry-Drk-Blk Op Shp Vit Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

SH GAS KICK = 271 UNITS.  
 FROM 4924' TO 4941' DATA LOST. REPLACE PLUGGED EXTRACTOR FILTER

SH GAS KICK = 160 UNITS.

SH GAS KICK = 173 UNITS.

TG. C1-C5 300  
 SH GAS KICK = 178 UNITS.

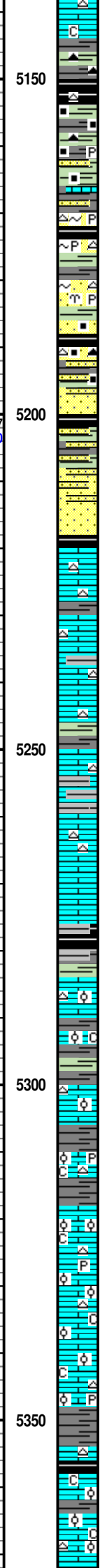
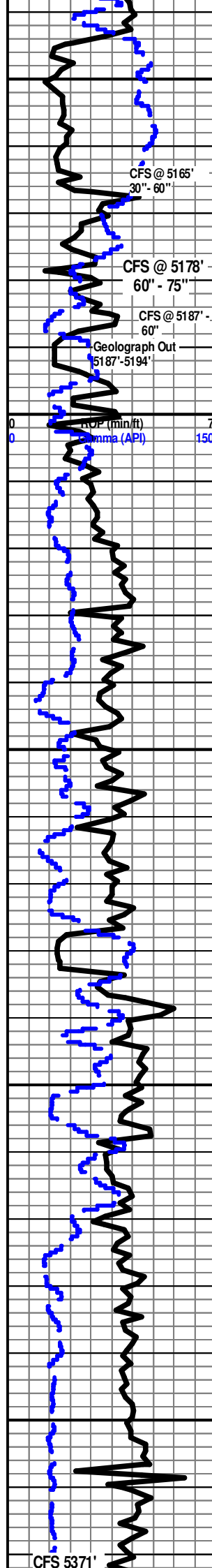
SH GAS KICK = 257 UNITS.

SH GAS KICK = 188 UNITS.

SH GAS KICK = 158 UNITS.

Scale Change TG. C1-C5 200

Mudco Ck @ 5179' @ 11:15 AM  
 01/10/13  
 Vis 49;  
 WT= 9.2;  
 PV= 16;  
 YP= 16;  
 WL= 9.6;  
 Cake= 1;  
 Chl= 3800;  
 Cal = 80



**MORROW SHALE 5144' (- 2311)**  
 Sh Varicolored Blk Carb-Gry-Grn-Red Fissil Faint Odor Ls Crm-Wht-Tan Fxn Poor Ixn Por Micritic Dns Barren Chalk Wht Soft Cht Gry-Drk Blk Op Shp Vit Faint Odor No Flor No Stn NS  
 30" CFS @ 5165' Sh Varicolored Blk Carb-Gry (w/Carb Includ) Grn-Red Fissil Ls Crm-Wht-Tan Fxn Poor Ixn Por Micritic Dns Barren Chalk Wht Soft Cht Gry-Drk Blk Op Shp Vit Faint Odor No Flor No Stn NS  
 60" CFS @ 5165' Sh Varicolored Blk Carb-Gry (w/Carb Includ) Grn-Red Fissil Ls Crm-Wht-Tan Fxn Poor Ixn Por Micritic Dns Barren Chalk Wht Soft Cht Lt Gry-Drk-Blk Op Shp Vit Pry Mass Tr/Orz Ss Gry Poor Igran Por Dns ? Faint Odor No Flor No Stn NS

**MORROW SAND 5171' (- 2338)**  
 60" CFS @ 5178' Qrz Ss Wht-Gry Clusters (w/Glacu Includ) Poor-Fair Igran Por Fair Sorting Sh Varicolored AA Ls Crm-Wht-Tan Fxn Poor Ixn Por Micritic AA Chalk Wht Soft Cht AA Pry Foss (Brach) Mass No Odor No Flor No Stn NS  
 75" CFS @ 5178' Qtz Ss AA Wht FGm-Ang to Sub Ang Well Sort Clusters (w/Glacu & Carb Includ) Cht AA Chalk AA Sh AA No Odor No Stn No Flor NS  
 NOTE: BIT PLUGGED UP @ 5187' AT 20" INTO CFS.  
 60" CFS @ 5187' Qtz Ss Wht-Gry FGm-Ang-Sub Ang Well Sort Clusters (w/Glacu & Carb Includ) Fair Igran Por Friable w/Lt-Med CaCO3 Matrix Cht AA Fos (Bry) Pyr Mass Sh AA Tr Aqua No Odor No Stn No Flor NS

Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil Qtz Ss Wht-Gry FGm -Ang-Sub Ang Well Sort Clusters (w/Glacu & Carb Includ) Fair Igran Por Friable (w/Lt-Med CaCO3 Matrix) Ls AA Cht AA No Odor No Flor No Stn NS  
 Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil Qtz Ss Wht-Gry FGm -Ang -Sub Ang Well Sort Clusters (w/Glacu & Carb Includ) Fair Igran Por Friable (w/Lt-Med CaCO3 Matrix) Ls AA Cht AA No Odor No Flor No Stn NS

Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil Qtz Ss Wht-Gry FGm -Ang -Sub Ang Well Sort Clusters (w/Glacu & Carb Includ) Fair Igran Por Friable (w/Lt-Med CaCO3 Matrix) Ls AA Cht AA No Odor No Flor No Stn NS  
 Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil Qtz Ss Wht-Gry FGm -Ang -Sub Ang Well Sort Clusters (w/Glacu & Carb Includ) Fair Igran Por Friable (w/Lt-Med CaCO3 Matrix) Ls AA Cht AA No Odor No Flor No Stn NS

Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil ) Ls AA Cht AA No Odor No Flor No Stn NS  
 Ls Crm-Wht-Tan Fxn Poor Ixn Por Micritic Dns Barren Sh Varicolored Blk Carb-Gry-Grn- Aqua-Maroon-Red Fissil Cht AA No Odor No Flor No Stn NS

**MISSISSIPPIAN CHESTER 5240' (- 2407)**

Ls Crm-Wht-Tan Fxn Poor Ixn Por Micritic Dns Barren Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil Cht AA No Odor No Flor No Stn NS

Ls Crm-Wht-Tan Fxn Poor Ixn Por Micritic Dns Barren Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil Cht AA No Odor No Flor No Stn NS

Ls Crm-Wht-Tan Fxn Poor Ixn Por Micritic Dns Barren Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil ) Cht AA No Odor No Flor No Stn NS

Sh Char-Blk Carb-Gry-Grn-Aqua-Red-Maroon Fissil Ls Wht Fxn Crm-Tan Dns Micrite Barren Chalky Sh Char-Gry-Grn Fissil No Odor No Stn No Flor NS

**MISSISSIPPIAN "Ste. GEN" 5284' (- 2451)**

Ls Wht-Crm-Gry Fxn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry Fxn Dns Micrite Chalky Sh Char-Blk Carb-Gry-Grn-Aqua-Red-Maroon Fissil No Odor No Stn No Flor NS

Ls Crm-Wht Fxn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry Fxn Dns Micrite (w/Pry Includ in pl) Chalky Pyr Mass Sh Char-Blk Carb - Gry - Grn- Aqua- Red Fissil No Odor No Stn No Flor NS

Ls Wht Fxn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry Fxn Dns Micrite Chalky Pyr Mass Sh Char-Blk Carb-Gry-Grn-Aqua-Red Fissil No Odor No Stn No Flor NS

Ls Wht Fxn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry Fxn Dns Micrite Chalky Pyr Mass Sh Char-Blk Carb-Gry-Grn-Aqua-Red Fissil No Odor No Stn No Flor NS

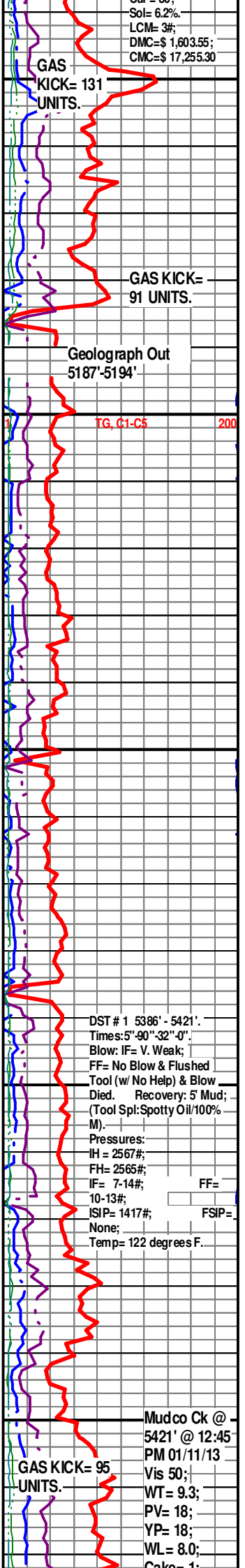
Ls Wht Fxn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry Fxn Dns Micrite Chalky Sh Char- Blk Carb-Gry-Grn-Aqua-Red-Olive Fissil No Odor No Stn No Flor NS

30 CFS @ 5371' Ls Wht Fxn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry Fxn Dns Micrite Cht Wht Translu-Op Shp Vit Chalky Pyr Mass Sh Char -Gry-Grn-Aqua-Red Fissil No Odor No Stn No Flor NS

**ST. LOUIS 5353' (- 2520)**

60 CFS @ 5371' Ls Wht Fxn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry Fxn Dns Micrite Cht Wht Translu-Op Shp Vit (Tr Only) Chalky Sh Char -Gry-Grn-Aqua-Red Abd Fissil No Odor No Stn No Flor NS

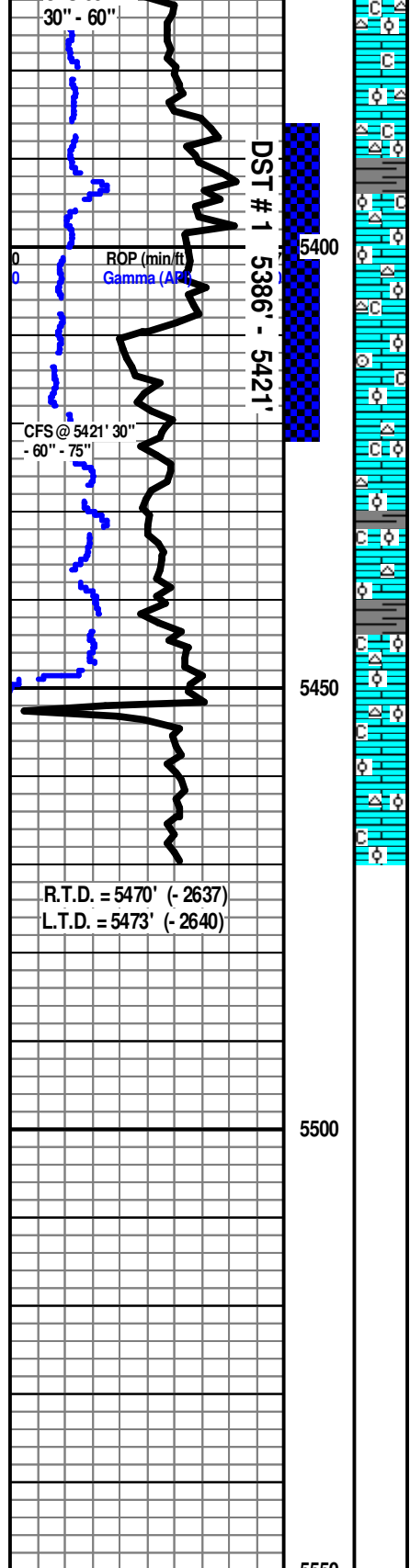
**ST. LOUIS UPPER "B' POROSITY 5372' (- 2539)**



DST # 1 5386' - 5421'.  
 Times: 5'-90"-32"-0".  
 Blow: IF= V. Weak;  
 FF= No Blow & Flushed  
 Tool (w/ No Help) & Blow  
 Died. Recovery: 5' Mud;  
 (Tool Spl: Spotty Oil/100% M).  
 Pressures:  
 IH = 2567#;  
 FH = 2565#;  
 IF = 7-14#;  
 10-13#;  
 ISIP = 1417#;  
 None;  
 Temp = 122 degrees F.

Mudco Ck @ 5421' @ 12:45 PM 01/11/13  
 Vis 50;  
 WT = 9.3;  
 PV = 18;  
 YP = 18;  
 WL = 8.0;  
 Ck = 1;





Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry FxIn Dns Micrite Cht Wht Translu-Op Shp Vit (Tr Only) Chalky Sh Char -Gry-Grn-Aqua Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry FxIn Dns Micrite Cht Wht Translu-Op Shp Vit (Tr Only) Chalky Sh Char -Gry-Grn-Aqua Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry FxIn Dns Micrite Cht Wht Translu-Op Shp Vit (Tr Only) Chalky Sh Char -Gry-Grn-Aqua Fissil No Odor No Stn No Flor NS

30" @ 5421' Sh Char -Gry-Grn-Aqua Fissil Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry FxIn Dns Micrite Chalky No Odor No Stn No Flor NS

**ST. LOUIS LWR "B" POROSITY 5410' (- 2577)**

60" @ 5421' Sh Char -Gry-Grn-Aqua Fissil Ls Wht FxIn Poor-Fair OOL Por (w/Small-Med OOL in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry FxIn Dns Micrite Chalky Fos (Crin) No Odor No Stn No Flor NS

75" @ 5421' Sh Char -Gry-Grn-Aqua Fissil Ls Wht FxIn Poor-Fair OOL Por (w/Small-Med OOL in pl) Barren Chalky No Odor No Stn No Flor NS

Sh Char -Gry-Grn-Aqua Fissil Ls Wht FxIn Poor-Fair OOL Por (w/Small-Med OOL in pl) Barren Chalky No Odor No Stn No Flor NS

Ls Wht FxIn Poor IxIn Por Micritic Dns Barren Grad Tr OOL Por (w/OOL in pl) Med-Small Ooids AA Barren Cht Wht Translu-Op Shp Vit Sh Char-Gry (w/Pyr Includ) Blk-Carb Fissil No Odor No Stn No Flor NS

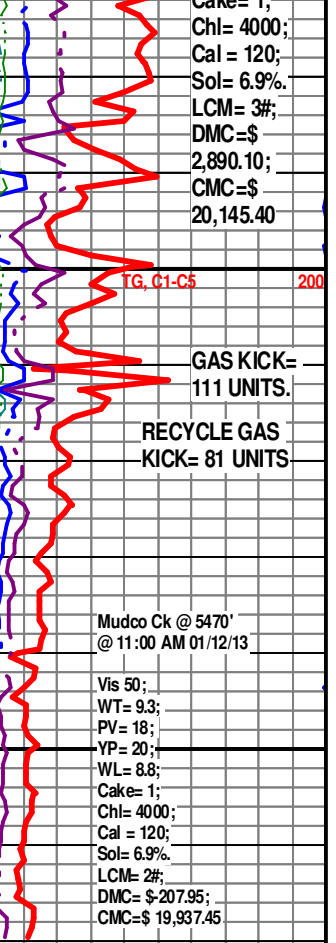
Ls Wht FxIn Poor IxIn Por Micritic Dns Barren Grad Tr OOL Por (w/OOL in pl) Med-Small Ooids AA Barren Cht Wht Translu-Op Shp Vit Sh Char-Gry (w/Pyr Includ) Blk-Carb Fissil No Odor No Stn No Flor NS

30" CFS @ 5470' Ls Wht FxIn Poor IxIn Por Micritic Dns Barren Grad Tr OOL Por (w/OOL in pl) Med-Small Ooids AA Barren Cht Wht Translu-Op Shp Vit Sh Char-Gry (w/Pyr Includ) Blk-Carb Fissil No Odor No Stn No Flor NS

60" CFS @ 5470' Ls Wht FxIn Poor IxIn Por Micritic Dns Barren Grad Tr OOL Por (w/OOL in pl) Med-Small Ooids AA Barren Cht Wht Translu-Op Shp Vit Sh Char-Gry (w/Pyr Includ) Blk-Carb Fissil No Odor No Stn No Flor NS

Electric Logs Run: By Pioneer (LogTech) Logging:  
 Dual Induction; Compensated Density-Neutron; Sonic;  
 Microresistivity & Cased Hole Gamma Ray-Nutron Logs.

Geologist left Location @ 6:00 PM on 1-12-2013



DST # 1 5386' - 5421'

ROP (min/ft)  
Gamma (API)

CFS @ 5421' 30"  
- 60" - 75"

R.T.D. = 5470' (- 2637)  
L.T.D. = 5473' (- 2640)

5400

5450

5500

5550