Confidentiality Requested:
☐ Yes ☑ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1332899

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 # 35243
Name: Infinity Oil, Inc.
Address 1: 1014 E. 29TH
Address 2:
City: HAYS State: KS Zip: 67601 + __ __ __ __
Contact Person: DRUE HERL
Phone: (785) 628-6078
CONTRACTOR: License # 31548
Name: Discovery Drilling
Wellsite Geologist: KEITH REAVIS
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 #:

11/01/2016	11/11/2016	12/1/2016
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-063-22297-00-00
Spot Description:
NE - SW - SE - NW Sec. 18 Twp. 14 S. R. 31 ☐ East ☑ West
2045 Feet from ☑ North / ☐ South Line of Section
1670 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: 4H FOUNDATION Well #: 1
Field Name:
Producing Formation: N/A DRY
Elevation: Ground: 2768 Kelly Bushing: 2776
Total Vertical Depth: 4482 Plug Back Total Depth: 0
Amount of Surface Pipe Set and Cemented at: 260 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: 1500 ppm Fluid volume: 80 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:
☐ **Confidential Release Date:**
☑ **Wireline Log Received**
☑ **Geologist Report Received**
☑ **UIC Distribution**
ALT ☐ I ☑ II ☐ III **Approved by:** Karen Ritter **Date:** 02/07/2017

[redacted]

1332899

Operator Name: Infinity Oil, Inc. Lease Name: 4H FOUNDATION Well #: 1

Sec. 18 Twp. 14 S. R. 31 ☐ 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 ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

DUAL IND

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

Name	Top	Datum
LANSING	3815	-1044

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	12.25	8.875	23	260	COMMON	180	N/A
Production	7.625	5.5	15.5	2292	COMMON	450	N/A

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	-			
	-			

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 *(Amount and Kind of Material Used)*	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

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION:
☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)* _____

PRODUCTION INTERVAL:
_____
_____

Form	ACO1 - Well Completion
Operator	Infinity Oil, Inc.
Well Name	4H FOUNDATION 1
Doc ID	1332899

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	12.25	8.875	23	260	COMMON	180	N/A
Production	7.625	5.5	15.5	2292	COMMON	450	N/A

4H Foundation Cement Tickets

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025 Home Office P.O. Box 32 Russell, KS 67665 No. 3026

Cell 785-324-1041

Date	Sec.	Twp.	Range	County	State	On Location	Finish
10-21-16	18	14	31	Gove	Ks		10:15 PM

Lease 4H Foundation Well No. 1

Location Oakley, Ks - 20 S to Jayhawk Rd

Owner 2E, ½N, E/S

Contractor Discovery #2

Type Job Surface

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.

Hole Size 12¼" T.D. 260'

Csg. 8 5/8" Depth 260'

Charge To Infinity oil inc.

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 15'

Cement Amount Ordered 180 80/20 3+2

Meas Line Displace 15½ BLS

EQUIPMENT

Pumptrk 20	No.	Cementer	Rick
		Helper	
Bulktrk 15	No.	Driver	
		Driver	Doug
Bulktrk	No.	Driver	
		Driver	

JOB SERVICES & REMARKS

Remarks: Cement did Circulate

Rat Hole

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

Common	145
Poz. Mix	35
Gel.	3
Calcium	7
Hulls	
Salt	
Flowseal	
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	190
Mileage	
FLOAT EQUIPMENT	
Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
Pumptrk Charge	Surface
Mileage	22
Tax	
Discount	
Total Charge	

X Signature

ALLIED OFS, LLC

ALLIED OFS, LLC

Federal Tax I.D. #81-2169190

68204

REMIT TO: Allied OFS, LLC
P.O. Box 205803
Dallas, TX 75320-5803

SERVICE POINT: Oakley

DATE 10-28-2	SEC. 18	TWP. 17s	RANGE 31w	CALLED OUT	ON LOCATION	JOB START 6:30am	JOB FINISH 7:30am
LEASE Four H Foundation	WELL # 1		LOCATION Oakley 20S 2E ½N E into			COUNTY Gove	STATE KS
OLD OR NEW (Circle one)							

CONTRACTOR Discovery 2 — OWNER Same

TYPE OF JOB Production

HOLE SIZE 7⅞ — T.D. 4482'

CASING SIZE 5½ — DEPTH 2292'

TUBING SIZE — DEPTH

DRILL PIPE — DEPTH

TOOL — DEPTH

PRES. MAX — MINIMUM

MEAS. LINE — SHOE JOINT 43.40

CEMENT LEFT IN CSG. 43.40

PERFS.

DISPLACEMENT 55.5

EQUIPMENT

PUMP TRUCK # 431 — CEMENTER Andrew

HELPER Wayne

BULK TRUCK # 991 — DRIVER Jade

BULK TRUCK # — DRIVER

REMARKS:

Pump 20 BBL H.Vis sweep 5 BBL water. Plug Rat hole 30 sks mouse hole 15 sks mix 405 sks down 5½ casing wash Pump and Line clean Release Plug and Displace 55.5 Lift Pressure 4... Plug 1500# Run ... out of water @ 40 BBL Displaced Float held Circulated 10 BBL To Pit

Thank you

CHARGE TO: R + L Investments

STREET

CITY — STATE — ZIP

CEMENT

AMOUNT ORDERED 450 sks 60/40 8% gel ¼ Flo-seal
20 BBL H.Vis sweep

		@	
COMMON		@	
POZMIX		@	
GEL		@	
CHLORIDE		@	
ASC		@	
60/40 8% gel	450 sks	@ 19.89	8950.50
		@	
Flo-seal	113#	@ 2.97	335.61
		@	
20 BBL H.Vis sweep		@ 25.00	500.00
		@	
		@	
		@	
		TOTAL	
		DISCOUNT ___%	

SERVICE

		@	
HANDLING	510 cu ft	@ 2.48	1264.80
MILEAGE	2.25 Ton/mile 21 ton		1155.00
DEPTH OF JOB	2,292'		
PUMP TRUCK CHARGE			2493.75
EXTRA FOOTAGE		@	
HV MILEAGE	20 miles	@ 7.70	154.00
LV MILEAGE	20 miles	@ 4.40	88.00
Head + manifold		@	225.00
		@	
		TOTAL	
		DISCOUNT ___%	

PLUG & FLOAT EQUIPMENT

5½

	@	
1 AFU Float shoe	@	545.00
1 Latch down Plug	@	660.00
1 Basket	@	395.00
6 Centralizers	@ 57.00	342.00
	@	
	TOTAL	
	DISCOUNT ___%	

SALES TAX (If Any)

TOTAL CHARGES

DISCOUNT ________ IF PAID IN 30 DAYS

NET TOTAL ________ IF PAID IN 30 DAYS

To: Allied OFS, 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

THILL PRINTING CO., INC. — GREAT BEND, KS.

ALLIED OFS, LLC

ALLIED OFS, LLC

Federal Tax I.D. #81-2169190

68203

REMIT TO: Allied OFS, LLC
P.O. Box 205803
Dallas, TX 75320-5803

SERVICE POINT: Oakley

DATE 10-28-16	SEC. 18	TWP. 14	RANGE 31	CALLED OUT	ON LOCATION 9:30 Am	JOB START 11:00 Am	JOB FINISH 11:30 Am
LEASE Fourth Foundation	WELL # 1	LOCATION Oakley 20 S 2 E 1/2 N				COUNTY Gove	STATE KS
OLD OR NEW (Circle one)		E into					

CONTRACTOR Discovery 2 — OWNER same

TYPE OF JOB Plug Back

HOLE SIZE 7 7/8 — T.D. 4482

CASING SIZE — DEPTH

TUBING SIZE — DEPTH

DRILL PIPE 4 1/2 — DEPTH 4430'

TOOL — DEPTH

PRES. MAX — MINIMUM

MEAS. LINE — SHOE JOINT

CEMENT LEFT IN CSG.

PERFS.

DISPLACEMENT

CEMENT

AMOUNT ORDERED 25 sks 60/40 4% gel 1/4 flo-seal

		@		
COMMON		@		
POZMIX		@		
GEL		@		
CHLORIDE		@		
ASC		@		
60/40 4% gel	25 sks	@	13.92	1419.00
		@		
Flo-Seal	18#	@	2.97	52.43
		@		
		@		
		@		
		@		
		@		
TOTAL				

DISCOUNT ____%

EQUIPMENT

PUMP TRUCK # 431 — CEMENTER Andrew / HELPER Wayne

BULK TRUCK # 323 — DRIVER Allen

BULK TRUCK # — DRIVER

REMARKS:

Spot 25 sks 60/40 4% gel 1/4 flo-seal
thru 4 1/2 Drill pipe @ 4430'

thank you

SERVICE

		@		
HANDLING	81 cu/FT	@	2.48	200.88
MILEAGE	2.75 Ton/mile		4 Ton	220.00
DEPTH OF JOB			4430'	
PUMP TRUCK CHARGE				2810.84
EXTRA FOOTAGE		@		
HV MILEAGE	20 miles	@	7.70	154.00
LV MILEAGE	20 miles	@	4.40	88.00
		@		
		@		
TOTAL				

DISCOUNT ____%

CHARGE TO: R+L Investments

STREET

CITY ____ STATE ____ ZIP ____

PLUG & FLOAT EQUIPMENT

	@		
	@		
	@		
	@		
	@		
	@		
TOTAL			

DISCOUNT ____%

To: Allied OFS, 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

SALES TAX (If Any)

TOTAL CHARGES

DISCOUNT ____ IF PAID IN 30 DAYS

NET TOTAL ____ IF PAID IN 30 DAYS

THILL PRINTING CO., INC. — GREAT BEND, KS.

DRILL STEM TEST REPORT

Infinity Oil

1014 E 29th
Hays, Ks 67601

ATTN: Keith Reavis

18-14s-31w Gove, Ks

4H Foundation #1

Job Ticket: 65630 **DST#: 1**

Test Start: 2016.10.27 @ 18:43:09

GENERAL INFORMATION:

Formation: **Morrow**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 20:52:39
Time Test Ended: 01:30:39

Test Type: Conventional Bottom Hole (Initial)
Tester: Brandon Turley
Unit No: 79

Interval: 4402.00 ft (KB) To 4482.00 ft (KB) (TVD)
Total Depth: 4482.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

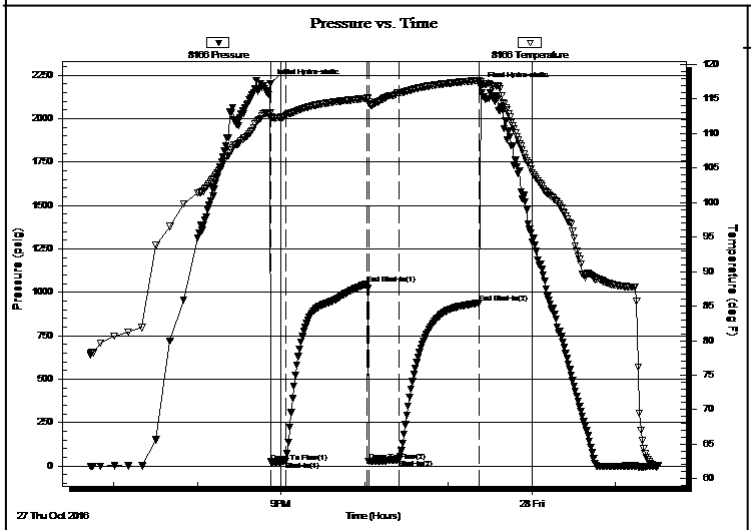
Reference Elevations: 2771.00 ft (KB)
2764.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8166 **Outside**

Press@RunDepth: 36.21 psig @ 4403.00 ft (KB)
Start Date: 2016.10.27 End Date: 2016.10.28
Start Time: 18:43:14 End Time: 01:30:38

Capacity: 8000.00 psig
Last Calib.: 2016.10.28
Time On Btm: 2016.10.27 @ 20:52:09
Time Off Btm: 2016.10.27 @ 23:23:09

TEST COMMENT: IF: 1/4 blow died to a surface blow .
IS: No return.
FF: No blow . Flushed tool surface blow died in 2 min.
FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2202.11	113.00	Initial Hydro-static
1	23.90	112.06	Open To Flow (1)
11	28.20	112.57	Shut-In(1)
70	1049.51	115.11	End Shut-In(1)
71	27.83	114.53	Open To Flow (2)
92	36.21	115.96	Shut-In(2)
150	939.15	117.69	End Shut-In(2)
151	2185.46	117.49	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud 100%m	0.05

Gas Rates

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

DRILL STEM TEST REPORT

Infinity Oil

1014 E 29th
Hays, Ks 67601

ATTN: Keith Reavis

18-14s-31w Gove, Ks

4H Foundation #1

Job Ticket: 65630 **DST#: 1**

Test Start: 2016.10.27 @ 18:43:09

GENERAL INFORMATION:

Formation: **Morrow**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 20:52:39
Time Test Ended: 01:30:39

Test Type: Conventional Bottom Hole (Initial)
Tester: Brandon Turley
Unit No: 79

Interval: 4402.00 ft (KB) To 4482.00 ft (KB) (TVD)
Total Depth: 4482.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

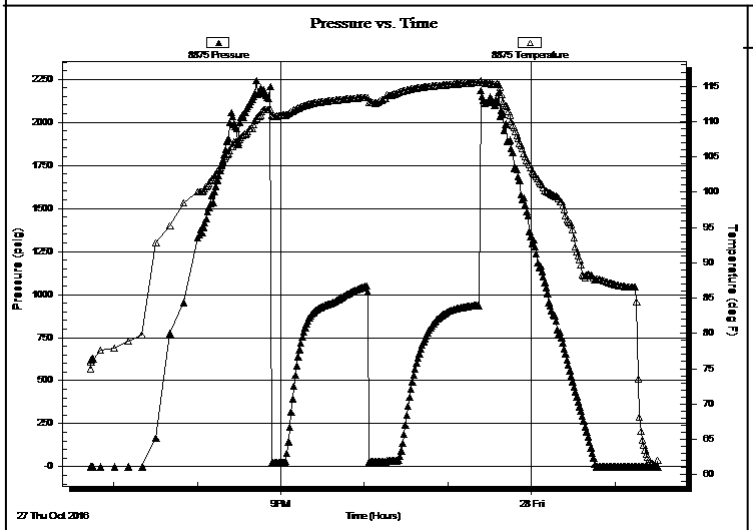
Reference Elevations: 2771.00 ft (KB)
2764.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8875 **Inside**

Press@RunDepth: psig @ 4403.00 ft (KB)
Start Date: 2016.10.27 End Date: 2016.10.28
Start Time: 18:43:31 End Time: 01:30:25

Capacity: 8000.00 psig
Last Calib.: 2016.10.28
Time On Btm:
Time Off Btm:

TEST COMMENT: IF: 1/4 blow died to a surface blow .
IS: No return.
FF: No blow . Flushed tool surface blow died in 2 min.
FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

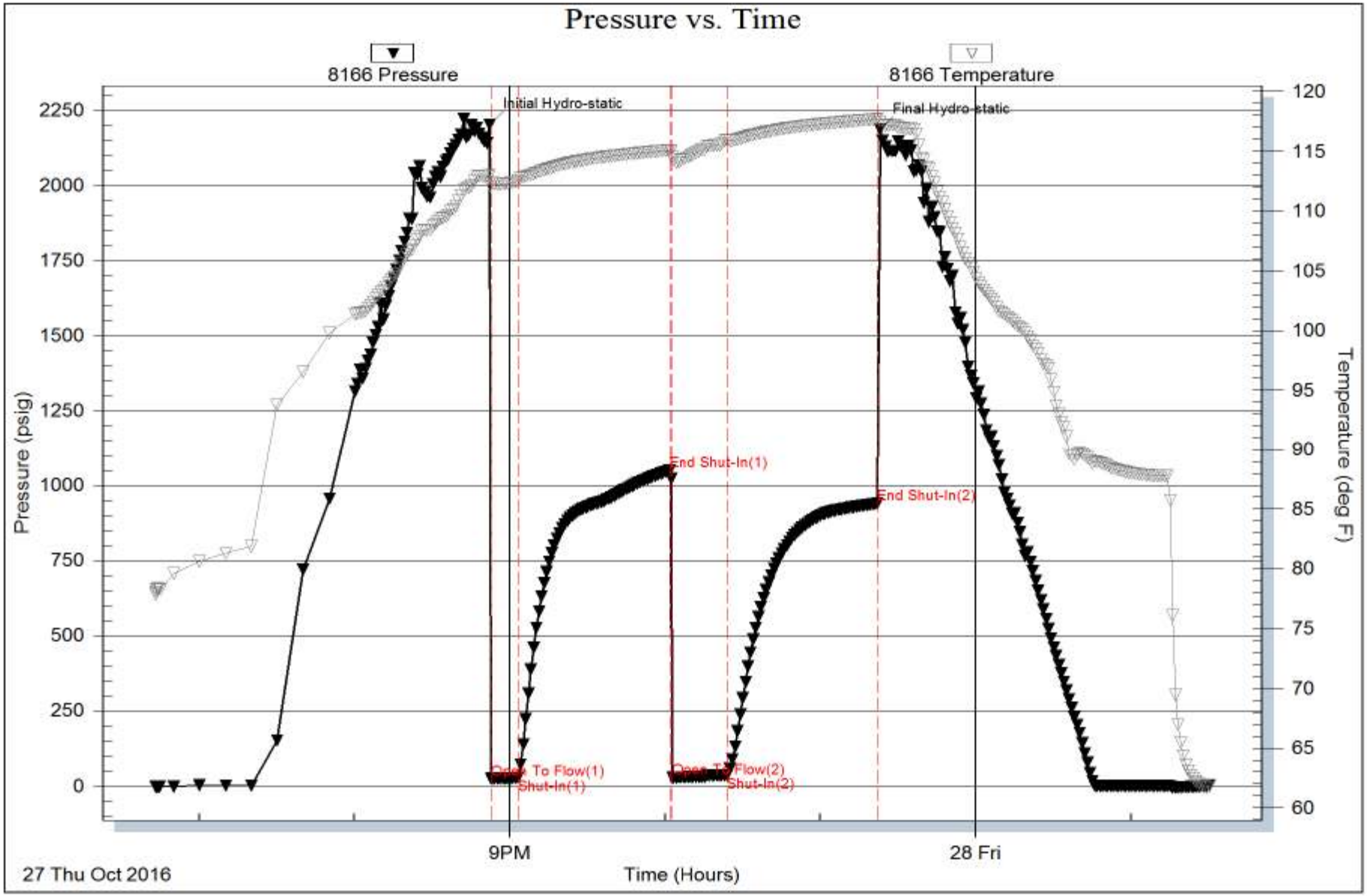
Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud 100%m	0.05

Gas Rates

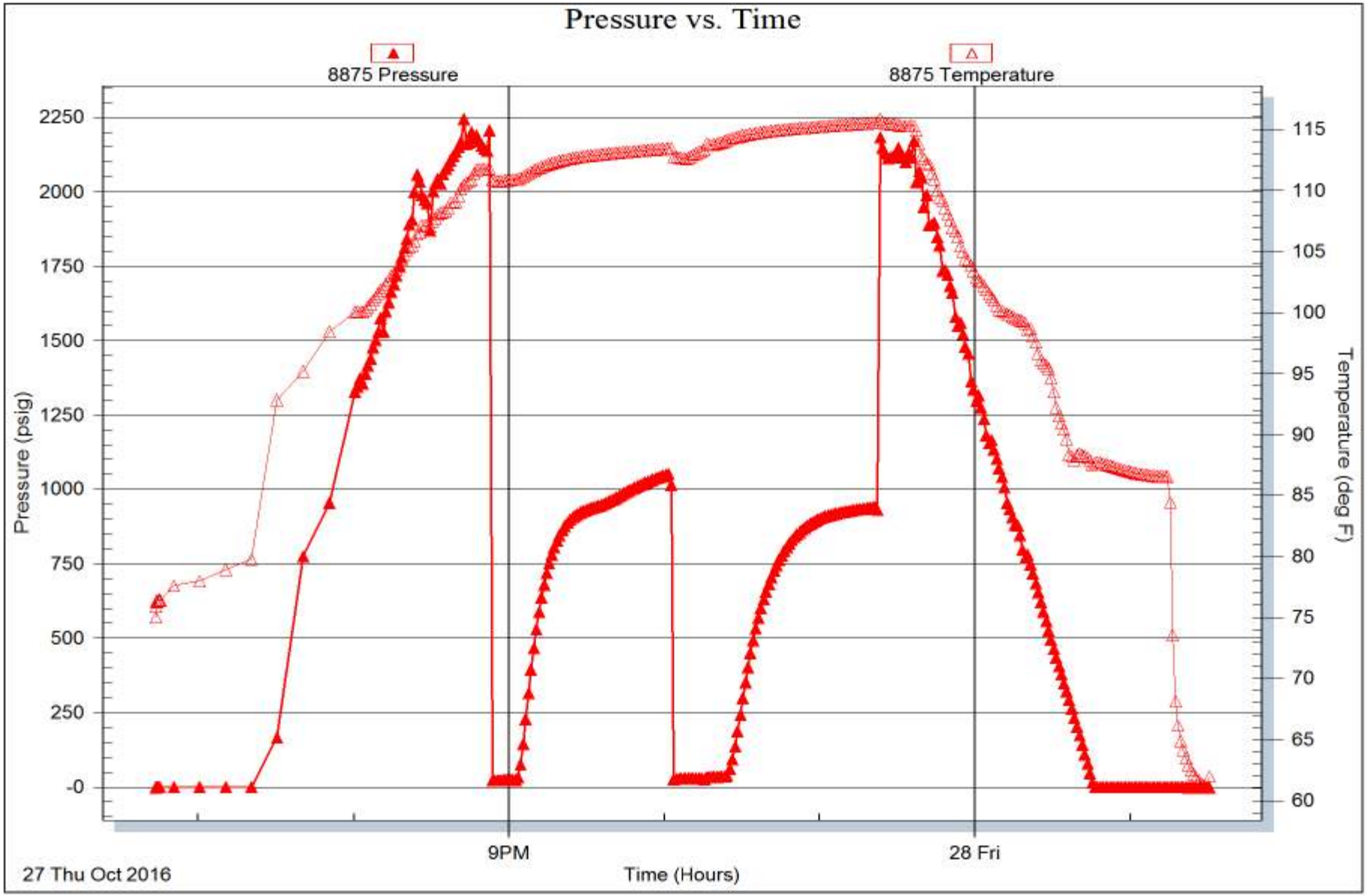
	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

Serial #: 8166 **Outside** Infinity Oil 4H Foundation #1 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 65630 Printed: 2016.10.28 @ 07:10:35

Serial #: 8875 **Inside** Infinity Oil 4H Foundation #1 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 65630 Printed: 2016.10.28 @ 07:10:35

ROCK TYPES

Lmst fw<7 | shale, grn | Carbon Sh | Shcol | Sltst
Lmst fw7> | shale, gry | shale, red | Ss

ACCESSORIES

MINERAL
- ▲ Chert, dark
- P Pyrite
- △ Chert White

FOSSIL
- ∩ Bioclastic or Fragmenta
- F Fossils < 20%
- ○ Oolite
- ∅ Pellets

STRINGER
- Limestone
- Siltstone

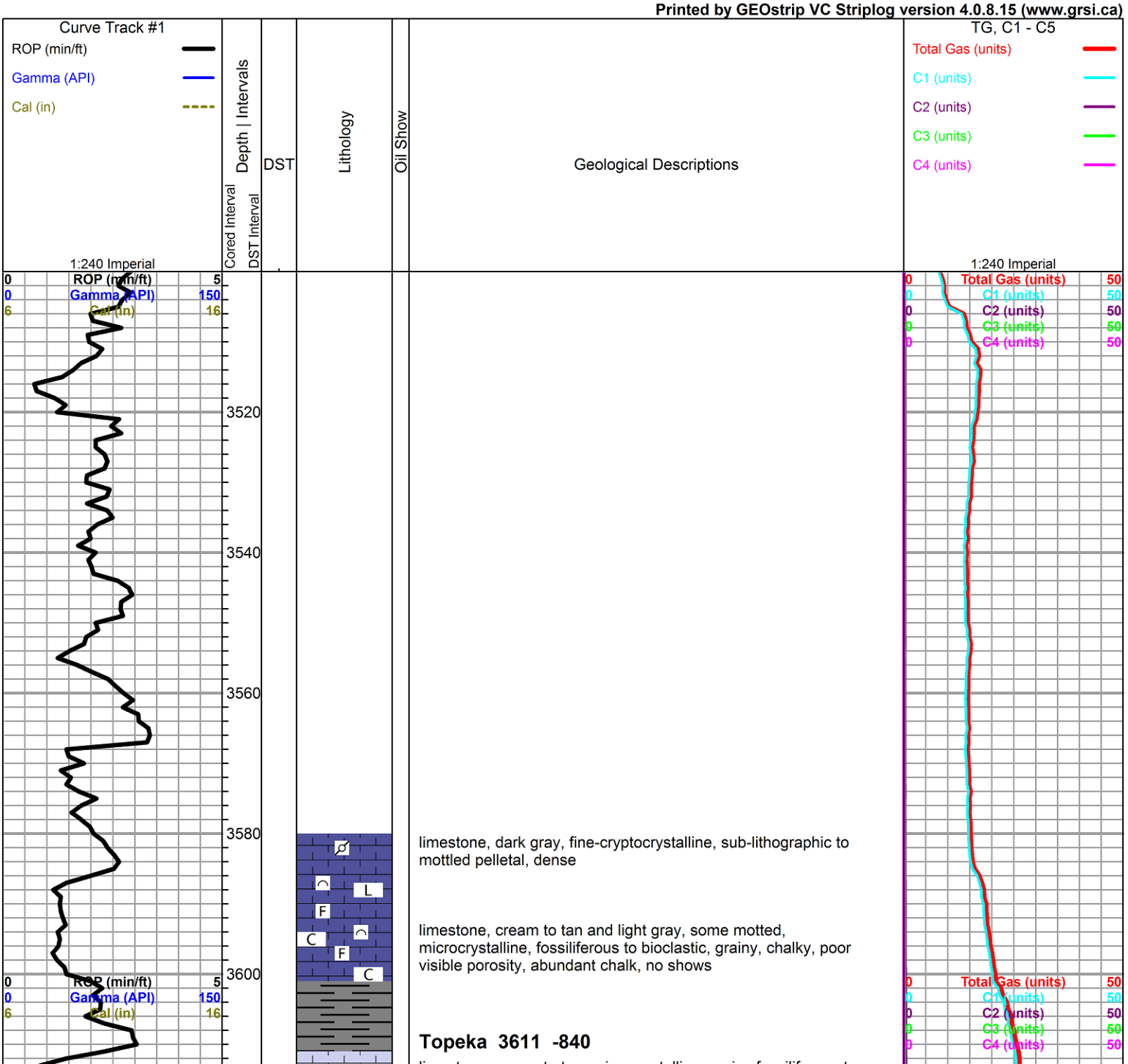
TEXTURE
- C Chalky
- L Lithogr

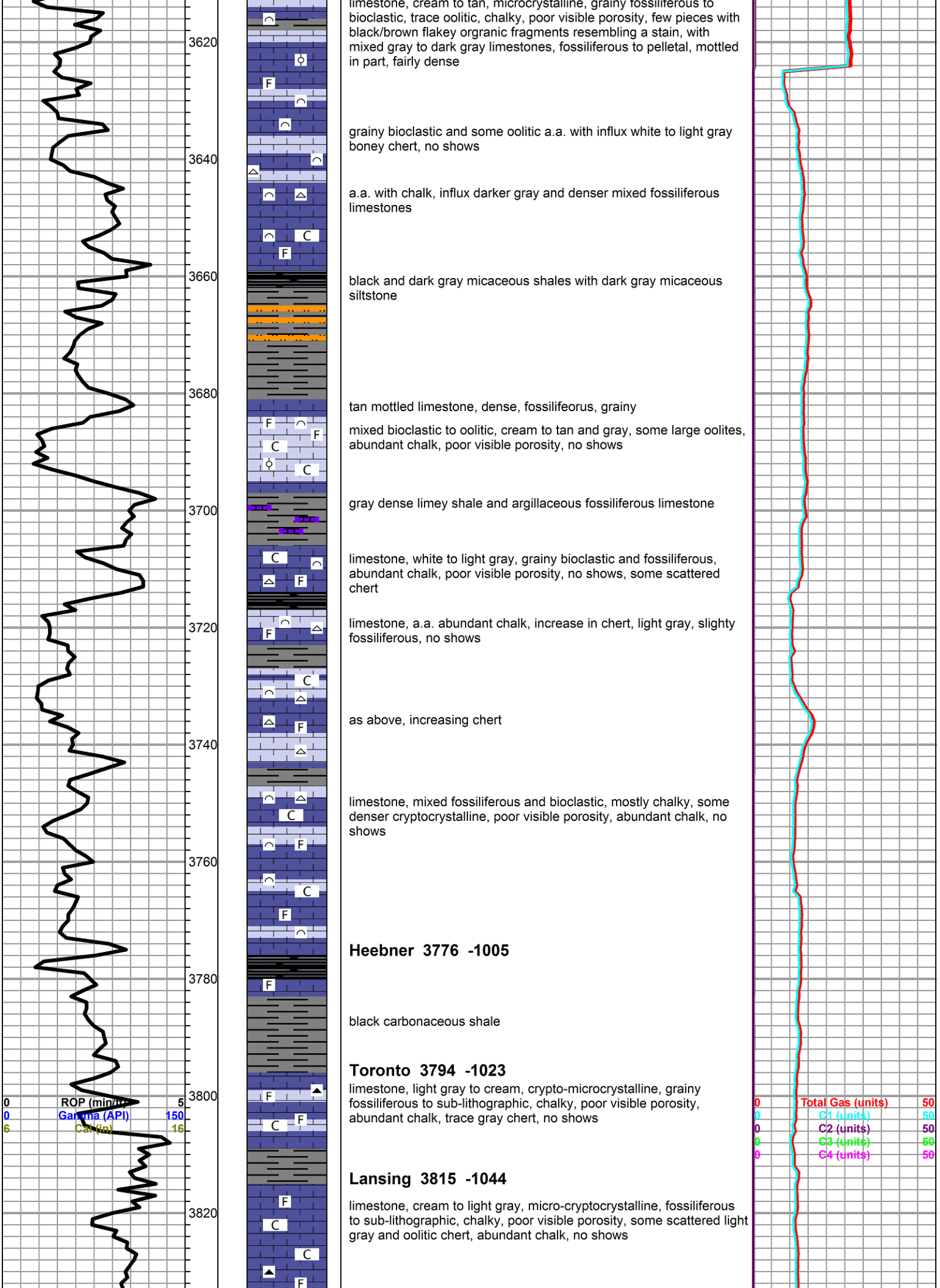
OTHER SYMBOLS

Oil Show
- ● Good Show
- ◐ Fair Show
- ◑ Poor Show
- ◑ Spotted or Trace
- ○ Questionable Stn
- D Dead Oil Stn
- ■ Fluorescence
- ✷ Gas

DST
- DST Int
- DST alt
- Core
- tail pipe

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





limestone, cream to tan, microcrystalline, grainy fossiliferous to bioclastic, trace oolitic, chalky, poor visible porosity, few pieces with black/brown flakey orgranic fragments resembling a stain, with mixed gray to dark gray limestones, fossiliferous to pelletal, mottled in part, fairly dense

grainy bioclastic and some oolitic a.a. with influx white to light gray boney chert, no shows

a.a. with chalk, influx darker gray and denser mixed fossiliferous limestones

black and dark gray micaceous shales with dark gray micaceous siltstone

tan mottled limestone, dense, fossilifeorus, grainy

mixed bioclastic to oolitic, cream to tan and gray, some large oolites, abundant chalk, poor visible porosity, no shows

gray dense limey shale and argillaceous fossiliferous limestone

limestone, white to light gray, grainy bioclastic and fossiliferous, abundant chalk, poor visible porosity, no shows, some scattered chert

limestone, a.a. abundant chalk, increase in chert, light gray, slighty fossiliferous, no shows

as above, increasing chert

limestone, mixed fossiliferous and bioclastic, mostly chalky, some denser cryptocrystalline, poor visible porosity, abundant chalk, no shows

Heebner 3776 -1005

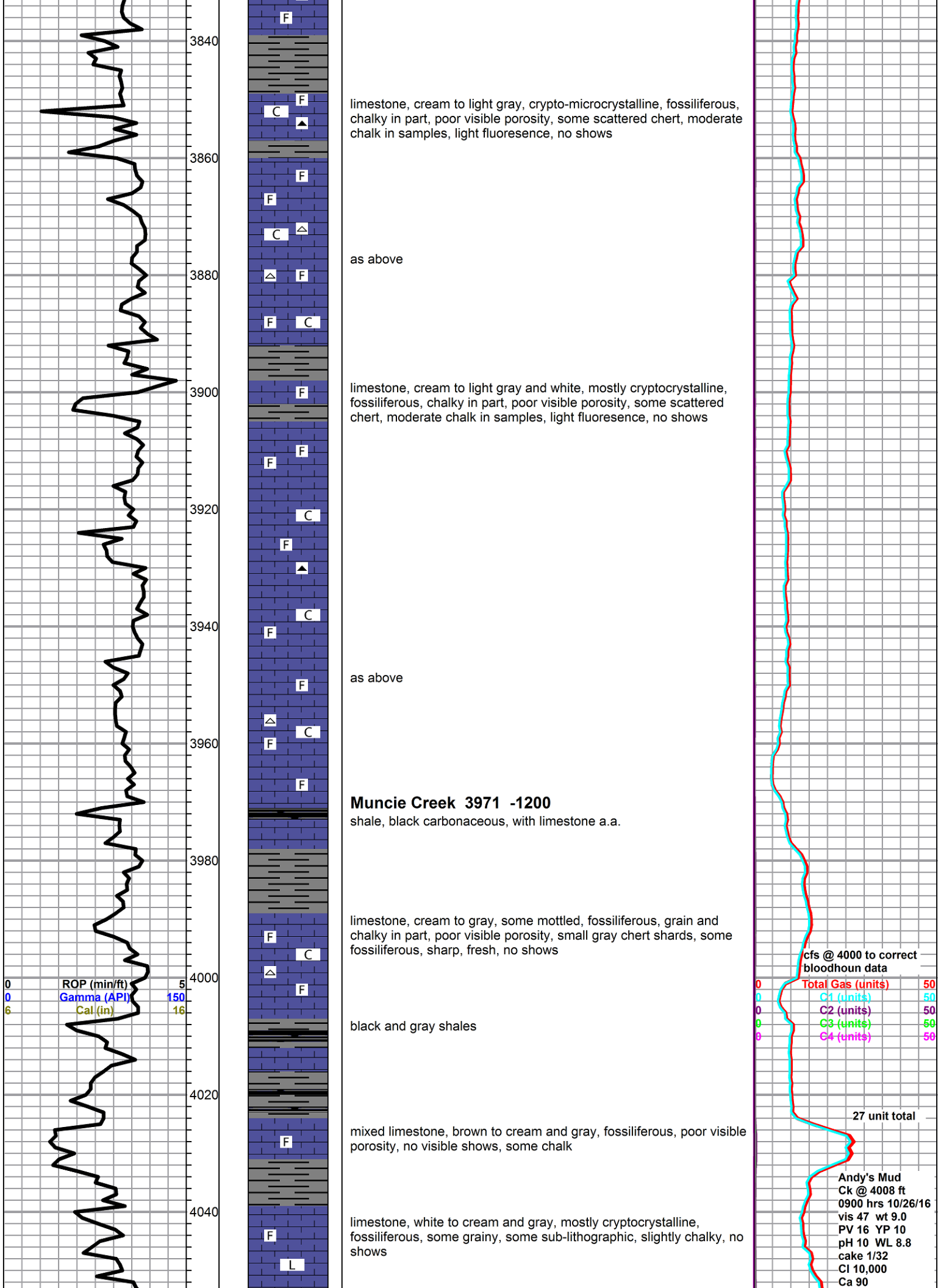
black carbonaceous shale

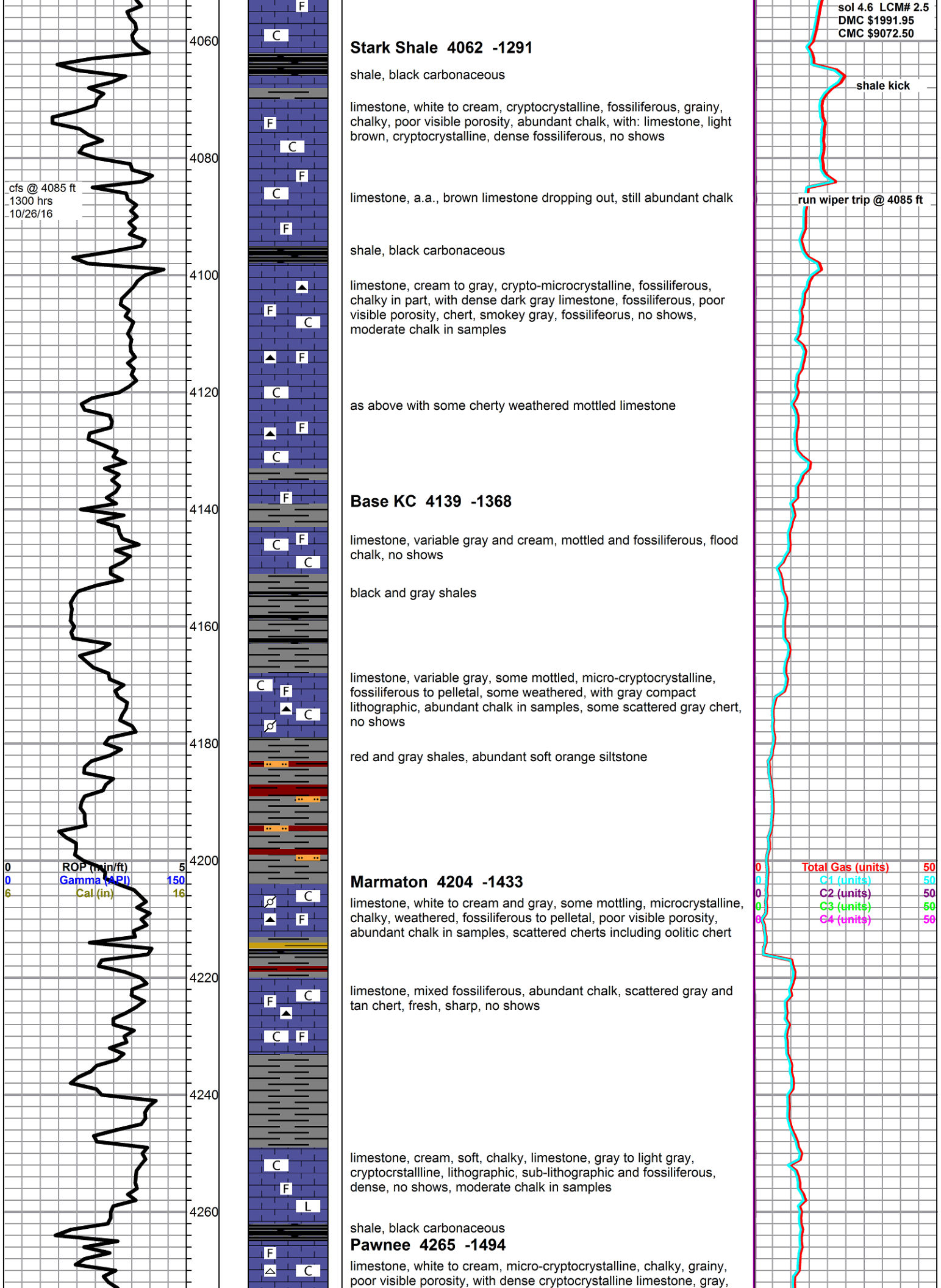
Toronto 3794 -1023

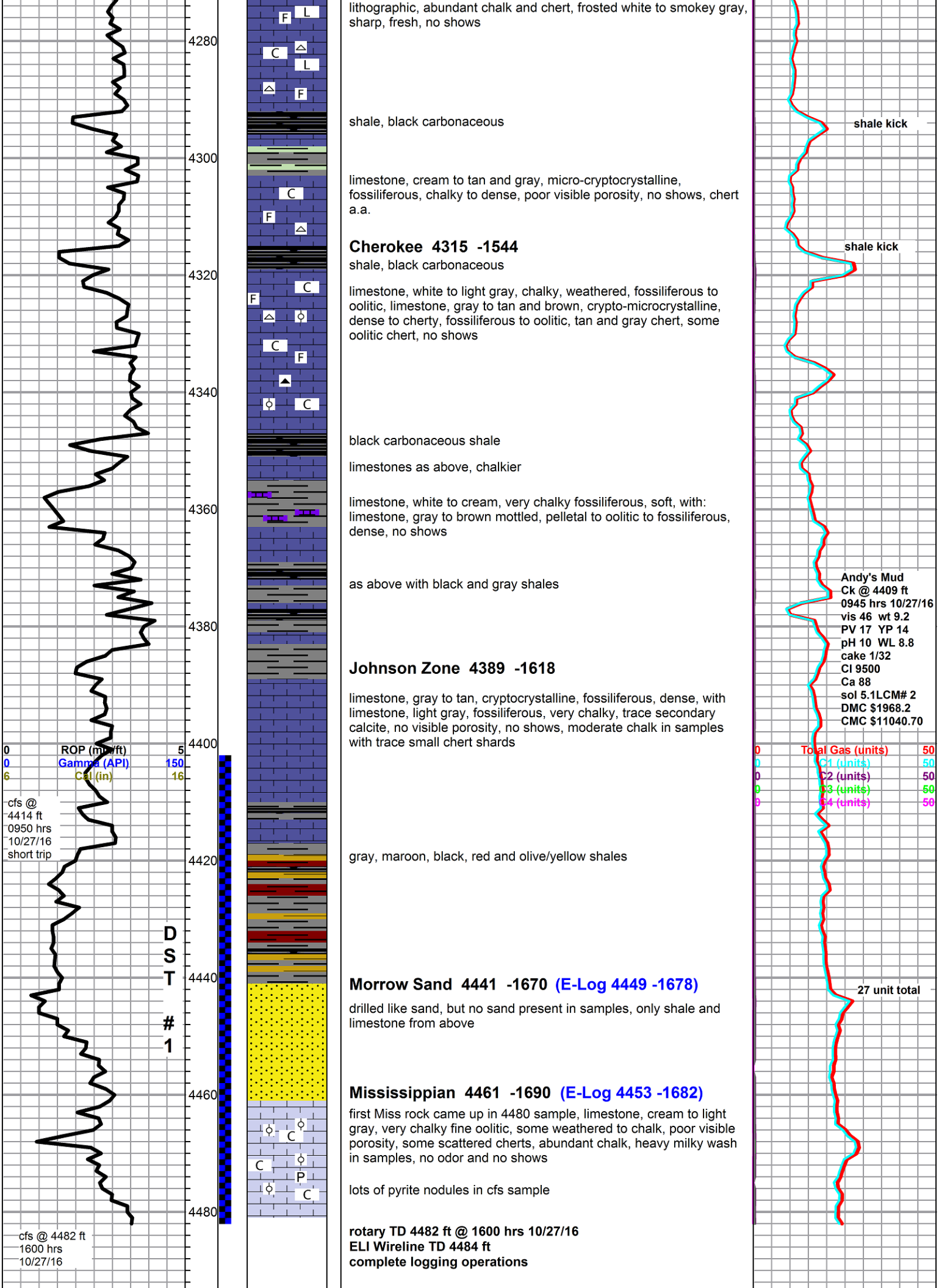
limestone, light gray to cream, crypto-microcrystalline, grainy fossiliferous to sub-lithographic, chalky, poor visible porosity, abundant chalk, trace gray chert, no shows

Lansing 3815 -1044

limestone, cream to light gray, micro-cryptocrystalline, fossiliferous to sub-lithographic, chalky, poor visible porosity, some scattered light gray and oolitic chert, abundant chalk, no shows


3840
3860
3880
3900
3920
3940
3960
3980
4000
4020
4040
0 ROP (min/ft) 5
0 Gamma (API) 150
6 Cal (in) 16
limestone, cream to light gray, crypto-microcrystalline, fossiliferous, chalky in part, poor visible porosity, some scattered chert, moderate chalk in samples, light fluoresence, no shows
as above
limestone, cream to light gray and white, mostly cryptocrystalline, fossiliferous, chalky in part, poor visible porosity, some scattered chert, moderate chalk in samples, light fluoresence, no shows
as above
Muncie Creek 3971 -1200
shale, black carbonaceous, with limestone a.a.
limestone, cream to gray, some mottled, fossiliferous, grain and chalky in part, poor visible porosity, small gray chert shards, some fossiliferous, sharp, fresh, no shows
black and gray shales
mixed limestone, brown to cream and gray, fossiliferous, poor visible porosity, no visible shows, some chalk
limestone, white to cream and gray, mostly cryptocrystalline, fossiliferous, some grainy, some sub-lithographic, slightly chalky, no shows
cfs @ 4000 to correct bloodhoun data
0 Total Gas (units) 50
0 C1 (units) 50
0 C2 (units) 50
0 C3 (units) 50
0 C4 (units) 50
27 unit total
Andy's Mud Ck @ 4008 ft
0900 hrs 10/26/16
vis 47 wt 9.0
PV 16 YP 10
pH 10 WL 8.8
cake 1/32
Cl 10,000
Ca 90


sol 4.6 LCM# 2.5
DMC $1991.95
CMC $9072.50
shale kick
run wiper trip @ 4085 ft
cfs @ 4085 ft
1300 hrs
10/26/16
4060
4080
4100
4120
4140
4160
4180
4200
4220
4240
4260
0 ROP (min/ft) 5
0 Gamma (API) 150
6 Cal (in) 16
0 Total Gas (units) 50
0 C1 (units) 50
0 C2 (units) 50
0 C3 (units) 50
0 C4 (units) 50
Stark Shale 4062 -1291
shale, black carbonaceous
limestone, white to cream, cryptocrystalline, fossiliferous, grainy, chalky, poor visible porosity, abundant chalk, with: limestone, light brown, cryptocrystalline, dense fossiliferous, no shows
limestone, a.a., brown limestone dropping out, still abundant chalk
shale, black carbonaceous
limestone, cream to gray, crypto-microcrystalline, fossiliferous, chalky in part, with dense dark gray limestone, fossiliferous, poor visible porosity, chert, smokey gray, fossilifeorus, no shows, moderate chalk in samples
as above with some cherty weathered mottled limestone
Base KC 4139 -1368
limestone, variable gray and cream, mottled and fossiliferous, flood chalk, no shows
black and gray shales
limestone, variable gray, some mottled, micro-cryptocrystalline, fossiliferous to pelletal, some weathered, with gray compact lithographic, abundant chalk in samples, some scattered gray chert, no shows
red and gray shales, abundant soft orange siltstone
Marmaton 4204 -1433
limestone, white to cream and gray, some mottling, microcrystalline, chalky, weathered, fossiliferous to pelletal, poor visible porosity, abundant chalk in samples, scattered cherts including oolitic chert
limestone, mixed fossiliferous, abundant chalk, scattered gray and tan chert, fresh, sharp, no shows
limestone, cream, soft, chalky, limestone, gray to light gray, cryptocrstallline, lithographic, sub-lithographic and fossiliferous, dense, no shows, moderate chalk in samples
shale, black carbonaceous
Pawnee 4265 -1494
limestone, white to cream, micro-cryptocrystalline, chalky, grainy, poor visible porosity, with dense cryptocrystalline limestone, gray,



lithographic, abundant chalk and chert, frosted white to smokey gray, sharp, fresh, no shows

shale, black carbonaceous

limestone, cream to tan and gray, micro-cryptocrystalline, fossiliferous, chalky to dense, poor visible porosity, no shows, chert a.a.

Cherokee 4315 -1544

shale, black carbonaceous

limestone, white to light gray, chalky, weathered, fossiliferous to oolitic, limestone, gray to tan and brown, crypto-microcrystalline, dense to cherty, fossiliferous to oolitic, tan and gray chert, some oolitic chert, no shows

black carbonaceous shale

limestones as above, chalkier

limestone, white to cream, very chalky fossiliferous, soft, with: limestone, gray to brown mottled, pelletal to oolitic to fossiliferous, dense, no shows

as above with black and gray shales

Johnson Zone 4389 -1618

limestone, gray to tan, cryptocrystalline, fossiliferous, dense, with limestone, light gray, fossiliferous, very chalky, trace secondary calcite, no visible porosity, no shows, moderate chalk in samples with trace small chert shards

gray, maroon, black, red and olive/yellow shales

Morrow Sand 4441 -1670 (E-Log 4449 -1678)

drilled like sand, but no sand present in samples, only shale and limestone from above

Mississippian 4461 -1690 (E-Log 4453 -1682)

first Miss rock came up in 4480 sample, limestone, cream to light gray, very chalky fine oolitic, some weathered to chalk, poor visible porosity, some scattered cherts, abundant chalk, heavy milky wash in samples, no odor and no shows

lots of pyrite nodules in cfs sample

rotary TD 4482 ft @ 1600 hrs 10/27/16
ELI Wireline TD 4484 ft
complete logging operations