KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1063513

Form ACO-1
June 2009
Form Must Be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 5663
Name: Hess Oil Company
Address 1: PO BOX 1009
Address 2:
City: MCPHERSON State: KS Zip: 67460 + 1009
Contact Person: Bryan Hess
Phone: (620) 241-4640
CONTRACTOR: License # 4958
Name: Mallard, J. V., Inc.
Wellsite Geologist: Derek W. Patterson
Purchaser:

Designate Type of Completion:

- [x] New Well
- [ ] Re-Entry
- [ ] Workover

- [ ] Oil
- [ ] WSW
- [x] 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
- [ ] Conv. to GSW
- [ ] Plug Back: Plug Back Total Depth
- [ ] Commingled Permit #:
- [ ] Dual Completion Permit #:
- [ ] SWD Permit #:
- [ ] ENHR Permit #:
- [ ] GSW Permit #:

8/1/2011	8/7/2011	9/16/2011
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-185-23694-00-00
Spot Description:
W2 - NE - NE - NE Sec. 7 Twp. 21 S. R. 14 [ ] East [x] West
330 Feet from [x] North / [ ] South Line of Section
470 Feet from [x] East / [ ] West Line of Section
Footages Calculated from Nearest Outside Section Corner:
[x] NE [ ] NW [ ] SE [ ] SW
County: Stafford
Lease Name: Wood Well #: 2-7
Field Name:
Producing Formation: na
Elevation: Ground: 1923 Kelly Bushing: 1928
Total Depth: 3990 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 889 Feet
Multiple Stage Cementing Collar Used? [ ] Yes [x] 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: 0 ppm Fluid volume: 0 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

- [ ] **Letter of Confidentiality Received**
  Date:
- [ ] **Confidential Release Date:**
- [ ] **Wireline Log Received**
- [x] **Geologist Report Received**
- [x] **UIC Distribution**

ALT [x] **I** [ ] **II** [ ] **III** **Approved by:** Deanna Garrisor **Date:** 09/19/2011

Side Two

1063513

Operator Name: Hess Oil Company Lease Name: Wood Well #: 2-7

Sec. 7 Twp. 21 S. R. 14 ☐ East ☑ West County: Stafford

INSTRUCTIONS: Show important tops and base 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. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

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
Electric Log Submitted Electronically ☐ Yes ☐ No
(If no, Submit Copy)

List All E. Logs Run:

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

Name	Top	Datum
Attached	Attached	Attached

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	8.625	23	889	common	375	2% gel, 3% cc
Disposal	7.875	5.5	15.5	3832	AA2	100	

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	-			
	-			

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
		2500 gal. 20% MCA acid	3832

TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run:
	2.875	3798	3798	☐ 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:
3832-3990

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Hess Oil Company
Well Name	Wood 2-7
Doc ID	1063513

Tops

Name	Top	Datum
Topeka	2907	-979
Heebner	3259	-1331
Toronto	3269	-1341
Douglas Shale	3290	-1362
Brown Lime	3365	-1437
Lansing	3376	-1448
Muncie Creek	3496	-1568
Stark Shale	3556	-1628
Hushpuckney	3584	-1656
Base Kansas City	3602	-1674
Viola	3636	-1708
Simpson Shale	3723	-1795
Simpson Sand	3745	-1817
Arbuckle	3778	-1850
RTD	3990	-2062

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

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

No. 5120

Date	Sec.	Twp.	Range	County	State	On Location	Finish
8-2-11	7	21	14	Stafford	Ks		9:15 AM

Lease Wood Well No. 2-7 Location Radium, Ks - 5N, 1/8W, 5/5

Contractor Mallard J.V. Inc.

Type Job Surface

Hole Size 12¼" T.D. 889'

Csg. 8⅝" 23# Depth 888.5'

Tbg. Size Depth

Tool Depth

Cement Left in Csg. 31.20' Shoe Joint 31.20'

Meas Line Displace 54 ⅖ BLS

EQUIPMENT

Pumptrk 1 No. Cementer Helper Cisco

Bulktrk 13 No. Driver Driver Matt

Bulktrk P.U. No. Driver Driver Rick

JOB SERVICES & REMARKS

Remarks: Cement did Circulate.

Rat Hole IN Cellar

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

X Signature Mad D Ellis

Owner

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

Charge To Hess oil

Street

City State

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

Cement Amount Ordered 375 sx Common 3%CC 2%Gel ¼# Flo-Seal

Common 375

Poz. Mix

Gel. 7

Calcium 14

Hulls

Salt

Flowseal 93#

Kol-Seal

Mud CLR 48

CFL-117 or CD110 CAF 38

Sand

Handling 396

Mileage

FLOAT EQUIPMENT

Guide Shoe

Centralizer

Baskets

AFU Inserts

Float Shoe

Latch Down

1- Baffle plate

1- Rubber plug

Pumptrk Charge Long Surface

Mileage 16

Tax

Discount

Total Charge

BASIC energy services, L.P.

TREATMENT REPORT

Customer: HESS OIL CO	Lease No.		Date: 08-07-11		
Lease: WOOD	Well #: 2-7				
Field Order #: 4778	Station: PRATT KS	Casing: 5 1/2	Depth	County: STAFFORD	State: KS
Type Job: CNW 5 1/2 LONGSTRING	Formation		Legal Description: 7-21-14		

PIPE DATA		PERFORATING DATA		FLUID USED	TREATMENT RESUME		
Casing Size: 5 1/2	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP
Depth	Depth	From	To	Pre Pad	Max		5 Min.
Volume	Volume	From	To	Pad	Min		10 Min.
Max Press: 2000	Max Press	From	To	Frac	Avg		15 Min.
Well Connection: P.C	Annulus Vol.	From	To		HHP Used		Annulus Pressure
Plug Depth	Packer Depth	From	To	Flush	Gas Volume		Total Load

Customer Representative	Station Manager: DAVE Scott	Treater: Robert Sullivan

Service Units	37900	33708	20920	19831	19862						
Driver Names	Sullivan	Melson		Lawrence							

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
2:00					on loc Safety meeting
					Run 5 JTS 5 1/2 - 15.5 csg w/ Packer Shoe
					cent. 1, 2, 4, 6 & 10, 12 Basket
					csg set @ 3832
0530					CASING on Bottom
0535					Hook Rig circ.
5:40					DROP BALL
5:55					Set Packer Shoe AND circ.
6:10	700		5	3	5 SPACER H20
			12		mix Super Flush
			5		SPACER
				5	mix 100 sk AA-2 cmt
			29		cmt mixed Shut down wash pump, lines
					Release plug
				6	Fl Disp
	250		68		Lift PSI
	500			4.5	Slow Rate
6:45	1,800		90		Plug down
			7-5-		plug R.H w/ 20 sk MH w/ 20 sk 60/40 P-
					JOB Complete Thank You

Taylor Printing, Inc. 620-672-3656

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

Well Name:	Wood #2-7		
Location:	Sec. 7 - T21S - R14W , Stafford County, KS		
Licence Number:	API No.: 15-185-23694-0000	Region:	Frey
Spud Date:	August 1, 2011	Drilling Completed:	August 7, 2011
Surface Coordinates:	330' FNL & 470' FEL		
Bottom Hole Coordinates:			
Ground Elevation (ft):	1923'	K.B. Elevation (ft):	1928'
Logged Interval (ft):	2850' To: 3990'	Total Depth (ft):	3990' (RTD)
Formation:	Arbuckle		
Type of Drilling Fluid:	Chemical Gel/Polymer		

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

OPERATOR

Company: Hess Oil Company
Address: 2080 E. Kansas
McPherson, KS 67460

GEOLOGIST

Name: Derek W. Patterson
Company: Valhalla Exploration, LLC
Address: 133 N. Glendale
Wichita, KS 67208

REMARKS

After review of the sample evaluations and given the negative structural position for the Wood #2-7, it was decided by operator to run 5 1/2" production casing for open hole completion in the Arbuckle as a Salt Water Disposal Well.

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

Respectfully Submitted,
Derek W. Patterson

COMMENTS

No Gas Detector Used

No DSTs

No Open Hole Logging Performed

Hess Oil Company

DAILY DRILLING REPORT

Company: Hess Oil Company
2080 E. Kansas
McPherson, KS 67460
Contact: Bryan Hess (Hess Oil Co)
Office: 620.241.4640
David Withrow (Edison Operating Co)
Cell: 316.613.1544
Geologist: Derek W. Patterson
Cell: 316.655.3550
Office: 316.558.5202
Drilling Contractor: J V Mallard, Inc., Rig - 785.731.5161
Toolpusher: Levon Urban

Well: Wood #2-7
Location: 330' FNL & 470' FEL
Sec. 7 - T21S - R14W
Stafford Co., KS
Elevation: 1923' GL - 1928' KB
Field: Frey
API: 15-185-23694-0000
Surface Casing: 882' of 8 5/8" set @ 889' KB
Spud Date: August 1, 2011
Drilling Complete: August 6, 2011

DATE	7:00 AM DEPTH	PREVIOUS 24 HOURS OF OPERATIONS
8.6.2011	3730'	Drilling and connections Topeka, Heebner, and into Toronto. Geologist Derek W. Patterson on location, 1155 hrs 8.5.11. Drilling and connections Toronto, Douglas Shale, Brown Lime, Lansing, Base Kansas City, and into Viola. CFS @ 3716' (Viola). Resume drilling and connections Viola and into Simpson. CFS @ 3730' (Simpson). Made 570' over past 24 hrs of operations. DMC: $1,901.90 CMC: $7,987.20
8.7.2011	RTD - 3990'	Resume drilling and connections Simpson. CFS @ 3761' (Simpson). Resume drilling and connections Simpson and into Arbuckle. CFS @ 3788' (Arb). Resume drilling and connections Arbuckle ahead to RTD of 3990'. RTD reached, 1930 hrs 8.6.11. CTCH. Short Trip (15 stands), 2100 hrs 8.6.11. CTCH, drop survey, TOH and lay down pipe for casing. Operator opted out from running any open hole logs. Orders received to run 5 1/2" production casing for SWDW completion. Made 260' over past 24 hrs of operations. Geologist Derek W. Patterson off location, 2040 hrs 8.6.11.

Hess Oil Company

WELL COMPARISON SHEET

	DRILLING WELL Hess Oil Company - Wood #2-7 Sec. 7 - 21S - 14W 330' FNL & 470' FEL 1928 KB				COMPARISON WELL Hess Oil Company - Pfister #1-6 Sec. 6 - 21S - 14W 990' FSL & 470' FEL Oil - Arb 1927 KB		Structural Relationship		COMPARISON WELL Hess Oil Company - Pfister #2-6 Sec. 6 - 21S - 14W 330' FSL & 1650' FEL Oil - Arb 1929 KB		Structural Relationship		COMPARISON WELL Vickers - Frey #4 Sec. 7 - 21S - 14W NE NW NE Oil - Arb 1929 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Topeka	2907	-979			2896	-969	-10		2904	-975	-4		2907	-978	-1	
Heebner	3259	-1331			3245	-1318	-13		3253	-1324	-7		3256	-1327	-4	
Toronto	3269	-1341			3256	-1329	-12		3264	-1335	-6		3270	-1341	0	
Douglas Shale	3290	-1362			3275	-1348	-14		3282	-1353	-9		3287	-1358	-4	
Brown Lime	3365	-1437			3348	-1421	-16		3355	-1426	-11		3358	-1429	-8	
Lansing	3376	-1448			3357	-1430	-18		3366	-1437	-11		3368	-1439	-9	
Muncie Creek	3496	-1568			3474	-1547	-21		3481	-1552	-16		3486	-1557	-11	
Stark Shale	3556	-1628			3536	-1609	-19		3541	-1612	-16		3545	-1616	-12	
Hushpuckney	3584	-1656			3561	-1634	-22		3568	-1639	-17		3572	-1643	-13	
Base Kansas City	3602	-1674			3578	-1651	-23		3584	-1655	-19		3589	-1660	-14	
Viola	3636	-1708			3611	-1684	-24		3620	-1691	-17		3620	-1691	-17	
Simpson Shale	3723	-1795			3636	-1709	-86		3642	-1713	-82		3647	-1718	-77	
Simpson Sand	3745	-1817			3651	-1724	-93		3659	-1730	-87		3668	-1739	-78	
Arbuckle	3778	-1850			3680	-1753	-97		3690	-1761	-89		3696	-1767	-83	
Total Depth	3990	-2062			3800	-1873	-189		3830	-1901	-161		3710	-1781	-281	

Note: No Open Hole Logs Performed.

BIT RECORD

Bit #	Size	Make	Type	Serial Number	Depth In	Depth Out	Feet	Hours
1	12 1/4"	Smith	PDC	RR	0'	889'	889'	8.25
2	7 7/8"	Smith	F-27	RR	889'	3990'	3101'	79.3

SURFACE CASING RECORD

8.2.2011 Ran 21 joints of new 23#/ft 8 5/8" casing, tallying 882', set @ 889' KB. Cemented with 375 sacks of common, 3% CC, 2% gel, 1/4# floseal per sack, cement did circulate. Plug down, 0915 hrs 8.2.11

PRODUCTION CASING RECORD

8.7.2011 Ran 91 joints of new 15.5#/ft 5 1/2", set @ 3832' KB. Cemented with 100 sacks AA-2. Plug down, 0645 hrs 8.7.11.

DEVIATION SURVEY RECORD

Depth	Survey
889'	3/4°

PIPE STRAP RECORD

Depth	Pipe Strap

No Pipe Straps Performed

ROCK TYPES

LITHOLOGY
Anhy
Bent
Brec
Cht
Clyst
Coal
Congl
Dol
Gyp
Igne
Lmst
Meta
Mrlst
Salt
Shale
Shcol
Shgy
Sltst
Ss
Till
Sltstn
Shale
Sandylms
Lms
Gry sh
Dtd
Dol
Carb sh
pipesymbol

unknown lith
Red shale

FOSSIL
Oomoldic
Fuss
Algae
Amph
Belm
Bioclst
Brach
Bryozoa
Cephal
Coral
Crin
Echin
Fish
Foram
Fossil
Gastro
Oolite
Ostra
Pelec
Pellet
Pisolite
Plant
Strom

MINERAL
Slty
Sand
Dol
Chlorite
Anhy
Arggrn
Arg
Bent
Bit
Brecfrag
Calc
Carb
Chtdk
Chtlt
Dol
Feldspar
Ferrpel
Ferr
Glau
Gyp
Hvymin
Kaol
Marl
Minxl
Nodule
Phos
Pyr
Salt
Sandy
Silt
Sil

Sulphur
Tuff

STRINGER
Red shale
Sh
Sandylms
Lms
Grysltt
Grysh
Dol
Clystn
Carbsh
Anhy
Arg
Bent
Coal
Dol
Gyp
Ls
Mrst
Sltstrg
Ssstrg

TEXTURE
Boundst
Chalky
Cryxln
Earthy
Finexln

Grainst
Lithogr
Microxln
Mudst
Packst
Wackest

OIL SHOW
Gas show
Good
Fair
Poor
Dead

INTERVAL
Dst
Core
Dst
Straddle test ta

EVENT
Rft
Sidewall
Dst
Open hole
Perforations

Curve Track 1
ROP (Min/Ft)
Gamma (API)
Caliper (inches)

Depth | Lithology | Oil Shows | Geological Descriptions

Engineering Data
TG (Units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
C5 (units)

0 ROP (Min/Ft) 5
1 Gamma (API) 150
6 Caliper (inches) 16

0 TG, C1-C5 100

2850

C

Hess Oil Company
Wood #2-7
330' FNL & 470' FEL
Sec. 7 - 21S - 14W
Stafford Co., KS

API: 15-185-23694-0000

Elevation: 1923' GL
1928' KB

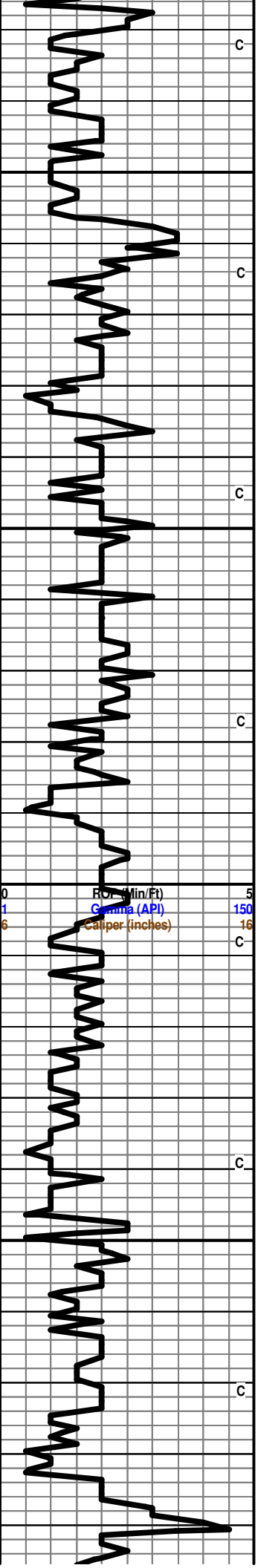
Drilling Contractor: J V Mallard, Inc.

Toolpusher: Levon Urban

Drillers: Daylight: M. Elsen
Evening: L. Juergensen
Morning: D. Brewer

Mud Company: Mud-Co/Service Mud
Mud Engineer: Rick Hughes

Geologist: Derek W. Patterson



Severy 2880 (-952)

Shale: gray dk gray brick red, blocky with some rounded, mostly soft with some denser and hard, some fissile.

Topeka 2907 (-979)

Limestone: cream lt cream lt gray, dense matrix, microxln, sub-fossiliferous in part, poor visible porosity, no shows noted, little-no mineral fluorescence.

Start 20' Wet & Dry Samples @ 2920'
Displace Mud System @ 2922'

Limestone: lt cream lt gray, dense matrix, micro-vfxln, sub-fossiliferous, poor visible porosity, no shows noted, little-no mineral fluorescence, with interbedded Shale: gray dk gray brick red, mostly blocky and hard.

Limestone: gray lt gray some cream, dense matrix, vfxln, fossiliferous, overall poor interxln porosity, no shows noted, little-no mineral fluorescence, with scattered Shale as above.

Limestone: cream lt cream lt gray, dense sub-chalky matrix, micro-vfxln, fossiliferous in part, poor interxln porosity, no shows noted, no fluorescence.

Limestone: gray lt gray lt cream mottled, dense sub-chalky matrix, vf-microxln, fossiliferous, poor interxln porosity, no shows noted, no fluorescence, with scattered Shale in sample.

0 TG, C1-C5 100

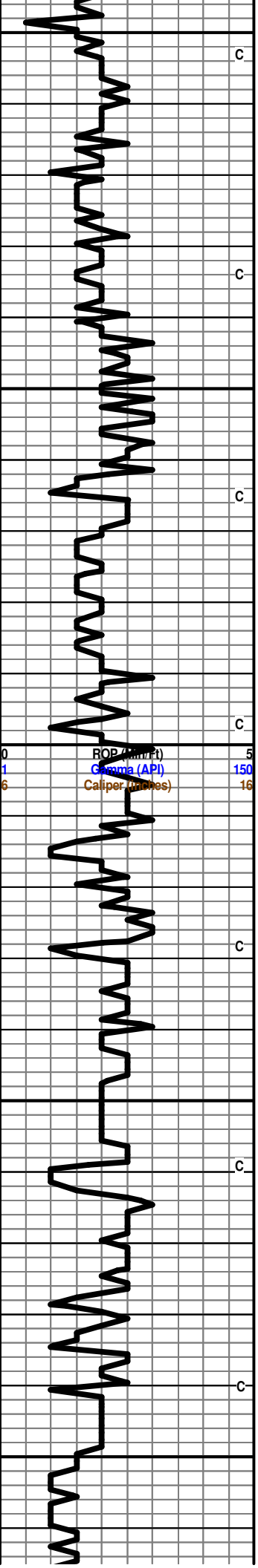
Limestone: lt cream lt gray mottled, softer sub-chalky matrix, vf-microxln, fossiliferous with trace bioclastic, poor interxln porosity, no shows noted, no fluorescence, with Shale stringers: gray dk gray, mostly blocky and hard.

Vis: 45
Wt: 8.8
LCM: 0 #/bbl

Limestone: lt cream lt gray lt tan, softer sub-chalky matrix, vf-microxln, fossiliferous, poor interxln porosity, no shows noted, no fluorescence, with continued Shale stringers.

Limestone: lt gray cream tan, dense matrix, micro-vfxln with some cryptoxln, fossiliferous in part, poor interxln porosity, no shows noted, no fluorescence, with scattered Shale.

Shale: black, carbonaceous, blocky and hard, no show gas bubbles.



Limestone: lt cream cream lt gray, chalky matrix in most pieces, vfxln, some slightly grainy, sub-fossiliferous to fossiliferous with trace sub-oolitic, overall poor visible porosity with few pieces having fair-poor interxln porosity, no shows noted, no fluorescence.

Limestone: lt gray lt cream, dense sub-arenaceous matrix, vfxln, sub-fossiliferous to barren, poor 2ndary xln along edges, fair-poor interxln porosity, no shows noted, little-no mineral fluorescence.

Limestone: lt cream lt gray, softer sub-chalky matrix, vfxln, mostly barren, trace arenaceous, overall poor interxln porosity, no shows noted, no fluorescence, with Shale: gray dk gray, blocky to rounded, soft.

Shale: black, carbonaceous, mostly round and soft, waxy in part, no show gas bubbles.

Limestone: cream lt cream tan, dense matrix, vf-microxln, heavily fossiliferous, very xln, poor visible porosity, no shows noted, no fluorescence, with trace Chert: lt gray smokey gray, fresh and sharp, no shows noted.

Limestone: cream lt cream tan, dense matrix, vf-microxln, fossiliferous in part, poor visible porosity, no shows noted, no fluorescence, with scattered Chert: lt gray smokey gray cream, fresh and sharp, no shows noted.

Limestone: lt cream tan, dense to sub-chalky matrix, micro-cryptoxln, fossiliferous in part, poor visible porosity, few pieces with very poor dk brown-black dead staining along edges, no live shows noted, very poor-no fluorescence, with continued Chert.

Start 10' Wet & Dry Samples @ 3250'

Limestone: lt cream tan lt brown, dense sub-chalky matrix, vf-microxln, very xln, fossiliferous in part, overall poor visible porosity, decrease in stained pieces above, no live shows noted, no fluorescence, with scattered Chert as above.

Heebner 3259 (-1331)

Shale: black, carbonaceous, mostly blocky and hard with some softer and waxy, no show gas bubbles, with Shale: gray dk gray, blocky and hard.

Toronto 3269 (-1341)

Limestone: off white lt cream, vf-microxln with some cryptoxln, dense slightly chalky matrix, fossiliferous to barren, pyritic in part, fair 2ndary xln in most pieces, overall poor visible porosity, no shows noted, little-no mineral fluorescence.

Geologist Derek W. Patterson on location, 1155 hrs 8.5.11

Douglas Shale 3290 (-1362)

Shale: gray dk gray green brick red, mostly blocky, soft to hard, some silty and pyritic, with trace interbedded Siltstone: gray lt gray, vf grained, poor visible porosity, pyritic, no shows noted, and loose Pyrite nodules in sample, sample washes brown-gray.

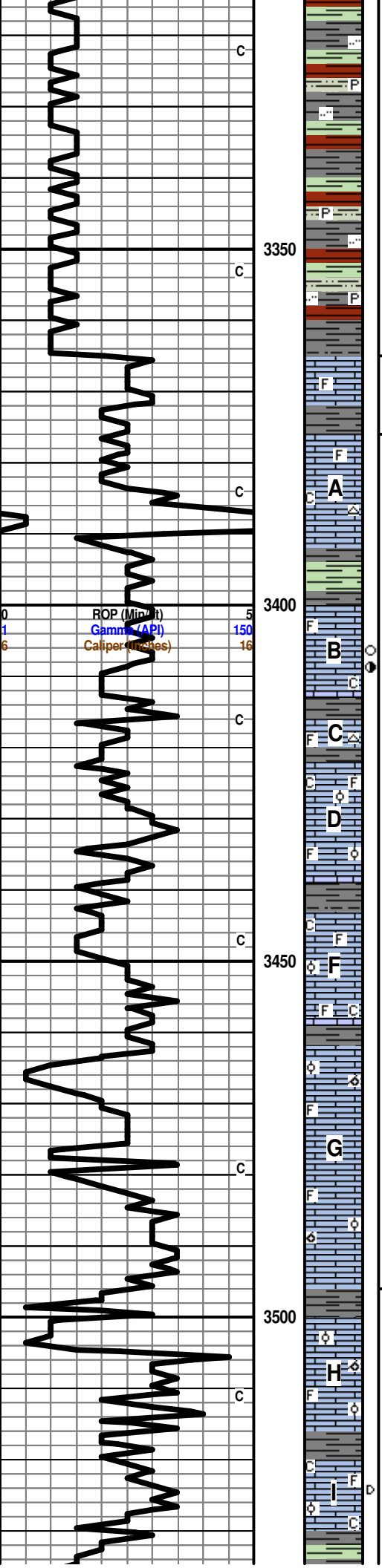
Vis: 45
Wt: 8.9
LCM: 0 #/bbl

0700 hrs, 8.5.11

Mud-Co Mud Ck
@ 3197'

0 TG, C1 100

0750 hrs 8.5.11
Vis 45 Wt 9.1
PV 13 YP 10
WL 9.2
Cake 1/32
pH 10.5
CHL 4,900 ppm
Cal 20
Sol 5.4
LCM: 0 #/bbl
DMC: $866.30
CMC: $6,085.30



Shale: gray dk gray green trace brick red, mostly blocky with some rounded, soft to hard, silty to micaceous, some scattered pyritic, with continued interbedded Siltstone as above, no shows noted, and loose Pyrite nodules in sample, sample washes gray-dk gray.

Shale: gray dk gray trace green and brick red, round to blocky, mostly soft and waxy, silty to micaceous, some scattered pyritic, with trace interbedded Siltstone: gray lt gray, vf grained, poor visible porosity, pyritic, no shows noted, and trace loose Pyrite nodules in sample, sample washes gray-dk gray.

Brown Lime 3365 (-1437)

Limestone: tan brown lt brown, dense tight matrix, microxln, fossiliferous to heavily fossiliferous, scattered 2ndary xln along edges in few pieces, poor visible porosity, no shows noted, no fluorescence grading to Shale: gray dk gray, mostly blocky and hard.

Lansing 3376 (-1448)

Limestone: off white lt cream, dense sub-chalky to sub-cherty matrix, vf-microxln with some lithographic non-descript, sub-fossiliferous to barren, fair amount of 2ndary xln in most pieces, poor interxln porosity, no shows noted, even dull pale yellow mineral fluorescence.

Shale: gray dk gray dk green, mostly blocky and hard with some rounded and softer.

Limestone: lt cream lt tan, dense chalky matrix, micro-vfxln, fossiliferous to barren, overall poor interxln porosity with some fair pinpoint porosity, very poor show lt brown oil in few pieces with fair increase upon break/left under lamp, poor saturated stain in few pieces, even dull pale yellow fluorescence, fair forced cut fluorescence, faint odor.

0 TG, C1-C5 100

Limestone: lt cream lt gray, dense slightly cherty matrix, microxln, fossiliferous in part, abundant 2ndary xln along edges and in porosity, poor interxln porosity, no shows noted, spotty poor dull pale yellow fluorescence.

Limestone: cream tan gray mottled, dense sub-chalky matrix, vfxln, fossiliferous with some oolitic, fair-poor interxln porosity, no shows noted, little-no mineral fluorescence.

Limestone: cream gray mottled, dense matrix, vfxln, fossiliferous with some heavily oolitic, fair-poor interoolitic porosity, no shows noted, little-no mineral fluorescence.

Vis: 52
Wt: 9.3
LCM; 0 #/bbl

Limestone: lt cream tan off white lt gray, slightly chalky dense matrix, micro-vfxln with some lithographic, fossiliferous with trace oolitic, fair 2ndary xln in most pieces along edges and between faces, poor visible porosity in most pieces with a few having fair pinpoint porosity, no shows noted, little-no fluorescence, with scattered Chalk in sample.

Limestone: lt cream off white, xln matrix, micro-vfxln, sub-fossiliferous with some scattered oolitic, heavily oomoldic with varying small-large molds, fair-good oomoldic porosity with heavy 2ndary xln within, no shows noted, spotty bright yellow mineral fluorescence.

Limestone: cream lt cream, xln matrix, micro-vfxln, sub-fossiliferous with some scattered oolitic, trace sub-oomoldic, heavy 2ndary xln along edges in most, poor oomoldic porosity in few pieces with overall poor interxln porosity, no shows noted, spotty-even dull pale yellow fluorescence.

Muncie Creek 3496 (-1568)

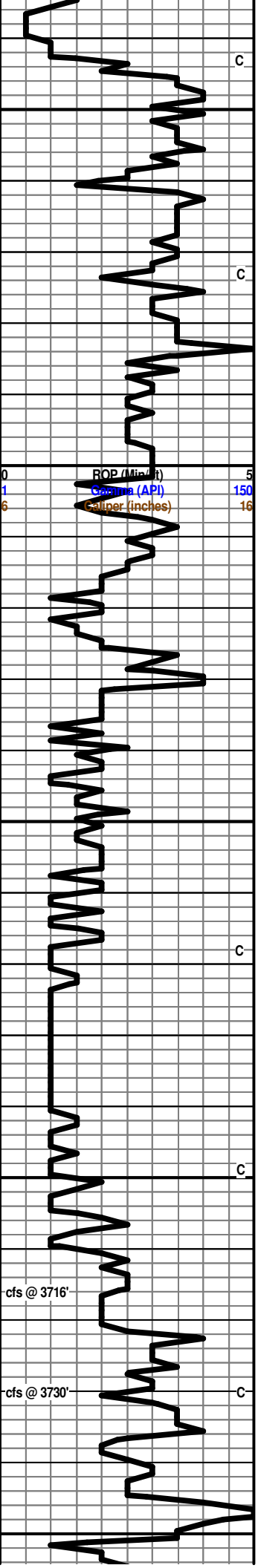
Shale: gray dk gray, blocky, mostly soft, some fissile, silty in part.

Limestone: lt cream off white lt gray, microxln, fossiliferous in part with some sub-oolitic, poor oomoldic development with few pieces having poor oomoldic porosity, overall poor visible porosity, no shows noted, spotty bright pale yellow mineral fluorescence in few pieces, no cut fluorescence

Shale: gray dk gray, blocky and hard, fissile in part.

Limestone: lt cream cream lt tan, slightly dense chalky matrix, vf-microxln, most heavily oolitic fossiliferous, fair-poor interoolitic porosity, few pieces with some heavy dk black dead staining along edges, no live shows noted, very poor fluorescence, no cut fluorescence, with scattered Chalk in sample.

Shale: gray dk gray dk green, mostly blocky, soft to hard, some fissile.



3550

3600

3650

3700

3750

Limestone: cream lt tan, dense matrix, vf-microxln, fossiliferous with oolitic, good oomoldic development, good oomoldic porosity, abundant 2ndary xln in porosity, no shows noted, spotty-even bright yellow mineral fluorescence, no cut fluorescence.

Limestone: lt cream off white lt tan, dense tight matrix, micro-vfxln, fossiliferous with oolitic, scattered sub-oomoldic, overall poor interxln/oomoldic porosity, no shows noted, little-no fluorescence, with scattered Chalk in sample.

Stark Shale 3556 (-1628)

Shale: gray dk gray pale green, blocky, mostly hard with some softer, some fissile.

Limestone: cream tan lt cream, dense tight matrix, micro-vfxln, fossiliferous with oolitic, scattered sub-oomoldic, overall poor interxln/oomoldic porosity and some scattered fair pinpoint porosity, abundant 2ndary xln along edges in most pieces, no shows noted, little-no fluorescence.

Hushpuckney 3584 (-1656)

Shale: gray dk gray dk green brick red, blocky, hard to soft, some fissile.

Limestone: cream tan, dense tight matrix, vf-microxln, very xln with abundant 2ndary xln along edges, sub-fossiliferous, poor visible porosity, no shows noted, little-no fluorescence.

Base Kansas City 3602 (-1674)

Shale: gray dk gray brick red trace dk green, blocky and hard, fissile in part.

Limestone: cream dk cream tan, dense tight marix, microxln with some cryptoxln, sub-fossiliferous in part with most barren, poor interxln porosity, few pieces with fair amount of dk black dead tarry staining along edges, no live shows noted, no fluorescence.

Shale: gray dk gray brick red brown dk green, blocky, mostly hard with some softer, fissile in part, trace silty, sample washes reddish-brown.

Limestone: off white lt cream lt gray, dense, micro-vfxln with some cryptoxln, fossiliferous in part, scattered 2ndary xln along edges, overall poor interxln/visible porosity, no shows noted, little-no fluorescence.

Shale: gray dk gray brown brick red dk green, blocky, hard to soft, some fissile, silty in part, sample washes reddish-brown.

Viola 3636 (-1708)

Abundant Shale as above, with scattered Chert: yellow cream, fresh and sharp, barren, no shows noted.

Shale: gray dk gray brown brick red, mostly blocky with some rounded, softer, with continued Chert: cream off white pink, fresh and sharp to slightly weathered, couple pieces with dk black dead staining along edges, no live shows noted, very poor pale yellow mineral fluorescence, sample washes reddish-brown.

INFLUX - Chert: cream lt cream off white lt pink, mostly fresh and sharp with trace slightly weathered, trace fossiliferous with most barren, no visible porosity, couple pieces with dk black dead staining along edges, no live shows noted, very poor-no mineral fluorescence, still carrying abundant Shale as above.

Chert: as above with influx Chert: black dk gray, weathered to slightly tripolitic, fair visible porosity, fair amount dk black dead staining along edges, no show free oil or gas, little-no fluorescence, no cut fluorescence, no odor, with continued abundant Shale, sample washes reddish-brown.

Chert: mixed as above, still carrying fair amount of weathered pieces with dk black dead staining, no live shows noted, no fluorescence, no odor, with abundant Shale, sample washes reddish-brown.

3716' cfs 0"/15" - Chert: cream lt cream off white black dk gray, fresh and sharp to weathered and tripolitic in part, fair porosity in weathered pieces, only notable shows are continued dk black dead staining in weathered pieces, no live shows noted, spotty poor lt yellow fluorescence in few pieces, no odor, with continued abundant Shale, and scattered Limestone: cream lt cream, dense sub-chalky matrix, vf-microxln, mostly barren, poor interxln porosity, no shows noted, sample washes red-brown.

3716' cfs 30"/45" - Chert: as above, still carrying fair amount of weathered pieces with dk black heavy staining along edges, poor-fair show heavy dk black oil in few pieces upon break, spotty poor lt yellow fluorescence in few pieces, fair forced cut fluorescence, no odor, with continued Shale and Limestone as above, sample washes reddish-brown.

Simpson Shale 3723 (-1795)

3730' cfs 30"/45" - Shale: gray dk gray brick red purple teal green, mostly blocky, soft to hard, some fissile, only 30% sample Shale, still carrying abundant Chert.

Shale: gray dk gray teal brick red purple maroon, mostly blocky, soft to hard, some fissile, still carrying abundant Chert and Limestone as above (from uphole?).

Simpson Sand 3745 (-1817)

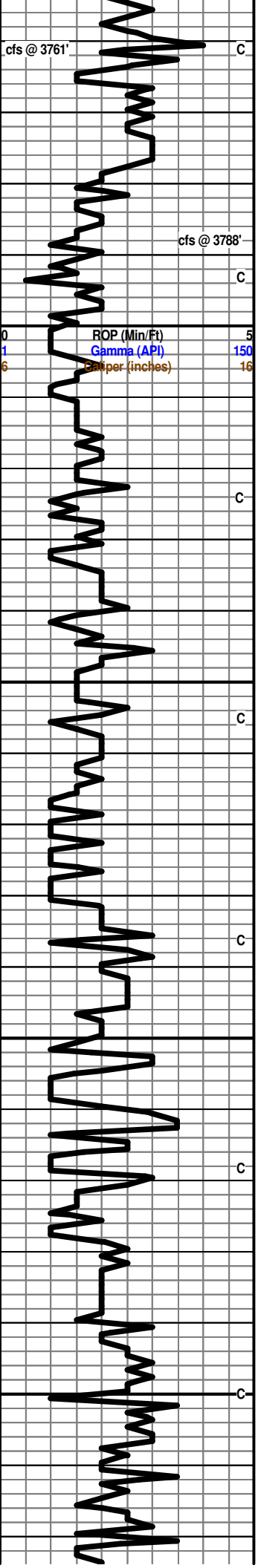
3761' cfs 20" - Sandstone (trace): clear quartz grains in clear-white pale green matrix, mostly coarse-med grains, sub-rounded to sub-angular, well cemented and sorted, fair intergranular porosity in most, no shows noted, little-no mineral fluorescence, no odor, with abundant Shale as above, sample washes dk reddish-brown.

0 TG, C1-C5 100

Vis: 55
Wt: 9.3
LCM: 0 #/bbl

0700 hrs, 8.6.11

Vis: 45
Wt: 9.4
LCM: 0 #/bbl



3800

3850

3900

3950

Sample washes dk reddish brown.

3761' cfs 40" - Shale: teal gray dk gray dk green brick red purple maroon, mostly blocky and hard, some slightly pyritic, fissile in part.

3788' cfs 20" - Shale: teal gray dk gray dk green brick red purple maroon, mostly blocky and hard, some slightly pyritic, fissile in part.

Arbuckle 3778 (-1850)

3788' cfs 40"/60" - (15%) Dolomite: off white lt cream lt gray, coarsexln with some f-vfxln, good-fair rhombic development in most, fair-good rhombic porosity, no shows noted, even bright pale yellow mineral fluorescence, no odor, with abundant Shale (from above?).

Dolomite: off white lt cream clear, coarse-fxln, good-fair rhombic development in most, fair-good rhombic porosity with abundant 2ndary xln fill in most, no shows noted, even bright pale yellow mineral fluorescence, no odor, with continued Shale.

Dolomite: off white lt cream clear, coarse-fxln, fair rhombic development in most, fair rhombic porosity with abundant 2ndary xln fill in most, no shows noted, even bright pale yellow mineral fluorescence, no odor, with scattered Shale: teal pale green, blocky and hard, and influx Chert: bone white, fresh and sharp, no shows noted.

Dolomite: lt cream clear, coarse-fxln, fair rhombic development in most, pyritic in part, fair-poor rhombic/interxln porosity with abundant 2ndary xln and some chalk fill, no shows noted, even bright pale yellow-white mineral fluorescence, no odor, with continued Shale and Chert in sample.

Dolomite: cream tan lt cream, coarse-fxln, fair-good rhombic development in most, barren, pyritic in part, fair-good rhombic porosity with fair amount of 2ndary xln and chalk fill, no shows noted, even bright pale yellow-white mineral fluorescence, no odor, overall decrease in Shale from above, still carrying scattered Chert: bone white, fresh and sharp, no shows noted.

Dolomite: cream tan, coarse-vfxln, very friable, fair-good rhombic development, trace sub-oolitic in few pieces, pyritic in part, fair-good rhombic porosity with some chalk fill, no shows noted, even bright pale yellow-white mineral fluorescence, no odor, with influx Chert: bone white, fresh and sharp to slightly weathered, some oolitic, no shows noted.

Dolomite: tan dk cream, denser matrix, vf-fxln, overall poor xln development with some fair rhombic, fair-poor rhombic/interxln porosity, no shows noted, even bright dull white mineral fluorescence, no odor, with Chert: bone white, fresh and sharp with some slightly weathered, some oolitic, no shows noted, and fair amount of Shale: gray dk gray, blocky, hard to soft, some fissile.

Dolomite: cream tan, coarse-vfxln, very friable, fair-good rhombic development, pyritic in part, fair-good rhombic porosity with some chalk fill, no shows noted, even bright pale dull white mineral fluorescence, no odor, with Chert: bone white, fresh and sharp to slightly weathered, some oolitic, no shows noted, some loose Pyrite nodules in sample, and continued Shale.

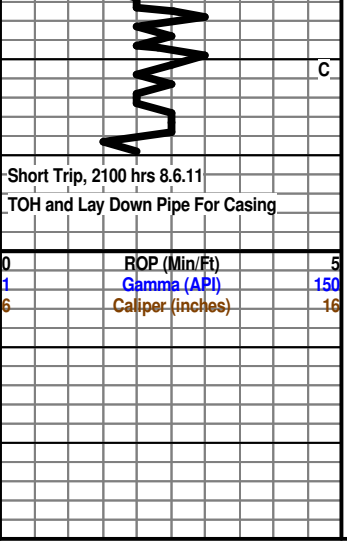
Dolomite: cream lt tan lt cream, coarse-fxln, friable, fair-good rhombic development, pyritic in part, fair-good rhombic porosity in most, no shows noted, even dull pale white mineral fluorescence, no odor, with continued Chert and Shale.

Dolomite: tan dk cream lt cream, denser matrix, vf-fxln, overall poor xln development with some fair rhombic, fair-poor rhombic/interxln porosity, no shows noted, even dull white mineral fluorescence, no odor, with Chert: bone white, fresh and sharp with some slightly weathered, some oolitic, no shows noted, and fair amount of Shale: gray dk gray, blocky, hard to soft, some fissile.

Dolomite: cream lt cream lt tan, denser matrix, vfxln, overall poor xln development, poor interxln porosity, no shows noted, even dull yellow-white mineral fluorescence, no odor, with continued Chert and Shale, and influx Sandstone: clear grains in white clear matrix, f grained, sub-angular to rounded, well cemented and sorted, micaceous, fair intergranular porosity, no shows noted.

Mud-Co Mud Ck
@ 3761'
0920 hrs 8.6.11
Vis 52 Wt 9.4
PV 13 YP 12
WL 12.2
Cake 1/32
pH 10.0
CHL 5,000 ppm
Cal 20
Sol 7.5
LCM: 0 #/bbl
DMC: $1,901.90
CMC: $7,987.20

0 TG, C1-C5 100



C

Short Trip, 2100 hrs 8.6.11

TOH and Lay Down Pipe For Casing

0 ROP (Min/Ft) 5
1 Gamma (API) 150
6 Caliper (inches) 16

4000

3990' cfs 30"60" - Dolomite: cream tan lt cream, denser matrix, f-microxln, overall poor xln development, poor interxln porosity in most, no shows noted, even dull pale yellow-white mineral fluorescence, no odor, with Chert: bone white cream tan, mostly fresh and sharp, barren, no shows noted, and overall decrease in Shale.

Vis: 51
Wt: 9.4
LCM: 4 #/bbl

RTD 3990 (-2062)

Rotary TD @ 3990', 1930 hrs 8.6.11
No Open Hole Logging Performed

Orders Received to Run 5 1/2" Production Casing
For SWDW Completion In The Arbuckle

Geologist Derek W. Patterson off location, 2040 hrs 8.6.11

Respectfully Submitted,
Derek W. Patterson

0 TG, C1-C5 100