Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1188915

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 # 9855
Name: Grand Mesa Operating Company
Address 1: 1700 N WATERFRONT PKWY BLDG 600
Address 2:
City: WICHITA State: KS Zip: 67206 + 5514
Contact Person: Michael J. Reilly
Phone: (316) 265-3000
CONTRACTOR: License # 5929
Name: Duke Drilling Co., Inc.
Wellsite Geologist: John Goldsmith
Purchaser: N/A

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 #:

01/20/2014	01/30/2014	01/30/2014
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-171-21019-00-00
Spot Description:
SE - NE - SW - SE Sec. 10 Twp. 16 S. R. 33 ☐ East ☑ West
780 Feet from ☐ North / ☑ South Line of Section
1415 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: Scott
Lease Name: EPLEY Well #: 1-10
Field Name: Wildcat
Producing Formation: None
Elevation: Ground: 3026 Kelly Bushing: 3035
Total Vertical Depth: 4880 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 218 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: 22000 ppm Fluid volume: 850 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: 02/13/2014
☑ **Confidential Release Date:** 02/13/2016
☑ **Wireline Log Received**
☑ **Geologist Report Received**
☐ **UIC Distribution**
ALT ☐ I ☑ II ☐ III **Approved by:** NAOMI JAMES **Date:** 02/13/2014

[redacted] 1188915

Operator Name: Grand Mesa Operating Company Lease Name: EPLEY Well #: 1-10

Sec. 10 Twp. 16 S. R. 33 ☐ East ☑ West County: Scott

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:

Attached

☑ 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	218	Common	165	3% CC; 2% Gel

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:
☐ Perforate
☐ Protect Casing
☑ Plug Back TD
☐ Plug Off Zone

Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
0-4880	60/40 Pozmix	270	4% Gel, 1/4#sx Flocele
-			

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:

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

Form	ACO1 - Well Completion
Operator	Grand Mesa Operating Company
Well Name	EPLEY 1-10
Doc ID	1188915

All Electric Logs Run

CPDCN Micro Log
AI Shallow Focused Elect Log
Micro Log
Caliper Log

Form	ACO1 - Well Completion
Operator	Grand Mesa Operating Company
Well Name	EPLEY 1-10
Doc ID	1188915

Tops

Name	Top	Datum
Stone Corral	2407	+628
Bs/Stone Corral	2424	+611
Heebner	3950	-915
Lansing	3994	-959
Muncie Creek	4172	-1137
Stark	4261	-1226
Marmaton	4379	-1344
Excello	4520	-1485
Mississippian	4708	-1671
LTD	4882	

Form	ACO1 - Well Completion
Operator	Grand Mesa Operating Company
Well Name	EPLEY 1-10
Doc ID	1188915

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	8.625	23	218	Common	165	3% CC; 2% Gel

ALLIED OIL & GAS SERVICES, LLC 062142

Federal Tax I.D. # 20-8651475

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

SERVICE POINT: Oakley, Ks

DATE 1/20/14	SEC. 10	TWP. 18	RANGE 33	CALLED OUT	ON LOCATION	JOB START 8:45 pm	JOB FINISH 11:30 pm
LEASE Copley	WELL # 1-10	LOCATION Hy 95 + Horse Rd 2W 1N W on N to				COUNTY Scott	STATE Ks
OLD OR NEW (Circle one)							

CONTRACTOR Duke 4
TYPE OF JOB Surface
HOLE SIZE 12¼ T.D. 222
CASING SIZE 8 5/8 DEPTH 218 set @
TUBING SIZE DEPTH
DRILL PIPE DEPTH
TOOL DEPTH
PRES. MAX MINIMUM
MEAS. LINE SHOE JOINT
CEMENT LEFT IN CSG. 15'
PERFS.
DISPLACEMENT 13.185 bbl

OWNER Same

CEMENT
AMOUNT ORDERED 165 com 3%cc 2% gel

EQUIPMENT

PUMP TRUCK CEMENTER Alan Ryan
417-281 HELPER Kevin Ryan
BULK TRUCK
396-306 DRIVER Chris Helpingstine
BULK TRUCK
DRIVER

COMMON	165	@	[redacted]
POZMIX		@	
GEL	3	@	[redacted]
CHLORIDE	6	@	
ASC		@	
		@	
		@	
		@	
		@	
		@	
		@	
		@	
HANDLING	[redacted]	@	[redacted]
MILEAGE			
		TOTAL	[redacted]

REMARKS:

Ran Csg, Circulate, Mix Cement, Displace Cement, Shut in
Cement did circulate in Cellar
Thank You
Alan, Kevin, Chris

SERVICE

DEPTH OF JOB	222'		
PUMP TRUCK CHARGE			[redacted]
EXTRA FOOTAGE		@	
MILEAGE	40 miles	@	[redacted]
MANIFOLD Head		@	
Wellhead	40 miles	@	
		@	
		TOTAL	[redacted]

CHARGE TO: Grand Mesa Oper.
STREET
CITY STATE ZIP

PLUG & FLOAT EQUIPMENT

	@	
	@	
	@	
	@	
	@	
	TOTAL	

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

SALES TAX (If Any) [redacted]
TOTAL CHARGES [redacted]
DISCOUNT [redacted] IF PAID IN 30 DAYS

PRINTED NAME Rich Wheeler
SIGNATURE Rich Wheeler

CONSOLIDATED
Oil Well Services, LLC

265739

TICKET NUMBER 43094
LOCATION Oakley KS
FOREMAN Dane Ritzhoff

PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

FIELD TICKET & TREATMENT REPORT
CEMENT

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
1-30-14	3372	Epley 1-10	10	15	33	Scott KS

CUSTOMER: Grandmesa

MAILING ADDRESS: 1700 N Waterfront PKWY Building 800

CITY: Wichita | STATE: KS | ZIP CODE: 67206

Penske RD 2 west to Juniper 1 N W.S.

TRUCK #	DRIVER	TRUCK #	DRIVER
399	Tim W.		
460	Steven O.		
Supervisor	Terry Y		

JOB TYPE PTA | HOLE SIZE 7 7/8 | HOLE DEPTH | CASING SIZE & WEIGHT
CASING DEPTH | DRILL PIPE 4½ (2440) | TUBING | OTHER
SLURRY WEIGHT 13 + 13.5 | SLURRY VOL 1.42 | WATER gal/sk | CEMENT LEFT In CASING
DISPLACEMENT | DISPLACEMENT PSI | MIX PSI | RATE

REMARKS: Safety meeting on Rig Duke 4# Rig up pumptruck

2440 mix 50 sks — Plug as Ordered
1140 mix 80 sks
846 mix 40 sks
240 mix 50 sks
60 mix 20 sks
Rathole mix 30 sks — 270 sks 60/40 4% gel .25 #flo seal

Thanks Dane + Crew

ACCOUNT CODE	QUANITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5401C	1	PUMP CHARGE	[redacted]	[redacted]
5406	50	MILEAGE		
5407A	11.61	Ton mileage Delivery		
1131	270 sks	60/40 poz mix		
1118B	928	Bentonite		
1107	67	Flo seal		
1111	100	Salt		
		8.15	SALES TAX	
			ESTIMATED TOTAL	

completed

Ravin 3737

AUTHORIZTION Rich Wheeler TITLE TP DATE

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.

John Goldsmith Wellsite Service

Cell and Home Phone:
316-640-0236

427 Roosevelt St.
Cheney, KS 67025

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

Well Name:	Epley #1-10		
Location:	780' FSL, 1415' FEL, SECTION 10-16S-33W, SE/NE/SW/SE		
License Number:	API: 15-171-21019	**Region:**	Scott County
Spud Date:	01/20/2014	**Drilling Completed:**	01/30/14
Surface Coordinates:	LAT 38.6724474 LONG -100.9490791		
Bottom Hole Coordinates:	Vertical hole		
Ground Elevation (ft):	3026'	**K.B. Elevation (ft):**	3035'
Logged Interval (ft):	3700' To: RTD	**Total Depth (ft):**	4880'
Formation:	Mississippian at RTD		
Type of Drilling Fluid:	Chemical		

OPERATOR

Company: Grand Mesa Operating Co.
Address: 1700 N. Waterfront Parkway
Bldg. 600
Wichita, KS 67206-5514

GEOLOGIST

Name: John Goldsmith
Company: John Goldsmith Wellsite Service
Address: 427 Roosevelt St
Cheney, KS 67025
(316) 640-0236

COMMENTS

Contractor: Duke Drilling Rig #4
Pusher: Rich Wheeler
Surface Casing: 5 joints of 8 5/8" set at 218'
Production Casing: No production casing installed, well was plugged.
Mud by: MudCo
DST's by: Diamond Testing
Logs by: Weatherford Wireline (DIL, CN-CD, ML)
RTD=4880'
LTD=4880'

FORMATION TOPS

FORMATION	SAMPLE TOPS Depth	Datum	LOG TOPS Depth	Datum
Heebner Shale	3950'	-915	3950'	-915
Lansing	3994'	-959	3994'	-959
Muncie Creek Shale	4172'	-1137	4172'	-1137
Stark Shale	4260'	-1225	4261'	-1226
Hushpuckney Shale	4303'	-1268	4303'	-1268
Marmaton	4380'	-1345	4379'	-1344
Pawnee	4442'	-1407	4442'	-1407
Little Osage Shale	4503'	-1468	4503'	-1468
Excello Shale	4520'	-1485	4520'	-1485
Johnson Zone	4596'	-1561	4596'	-1561
Morrow	4662'	-1627	4662'	-1627
Mississippian	4709'	-1674	4709'	-1674
RTD	4880'	-1845		
LTD			4880'	-1845

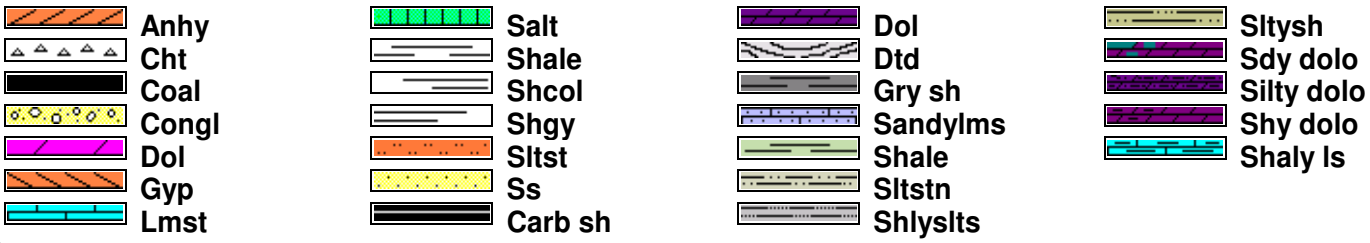
DSTs

DST #1 E/F Zone 4072'-4112' 30-45-45-60
1st Blow: Gd Blw, blt to BOB in 11" (No BB)
2nd Blow: Gd Blw, blt to BOB in 13" (No BB)
IFP: 13-99# ISIP: 1055# FFP: 104-222# FSIP: 1041#
HYD: 1931-1912#
380' MW (90% WTR)

DST #2 Johnson/Atoka 4548'-4656' 30-45-60-90
1st Blow: Gd Blw, blt to BOB in 18" (1" BB)
2nd Blow: Gd Blw, blt to BOB in 8" (2" BB)
IFP: 13-61# ISIP: 1009# FFP: 66-129# FSIP: 1010#
HYD: 2208-2191#
465' GIP, 255' GOCM (35% Gas, 25% Oil)

DST #3 Morrow 4660-4715' 30-30-30-30
1st Blow: Wk Blw, blt to 1" (No BB)
2nd Blow: No Blw (No BB)
IFP: 9-13# ISIP: 321# FFP: 12-14# FSIP: 175#
HYD: 2260-2253#
10' Mud

ROCK TYPES



ACCESSORIES

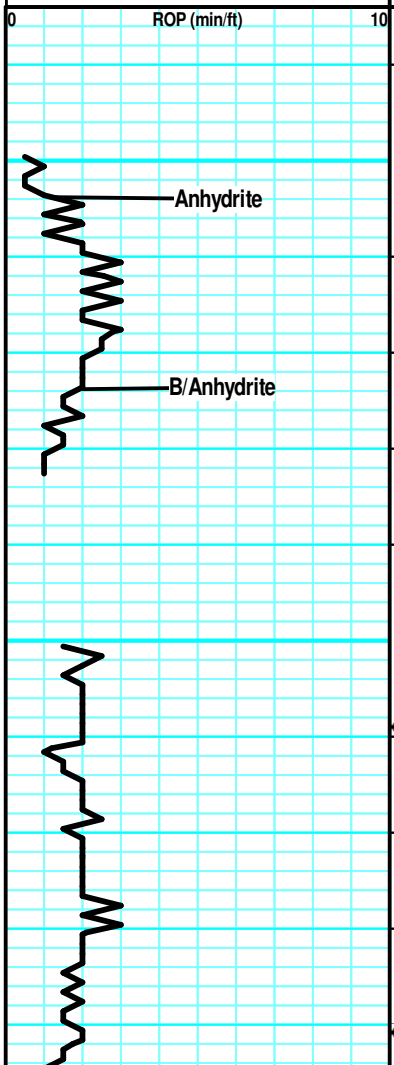
FOSSIL
- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom
- Fuss
- Oomold

MINERAL
- 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
- Chlorite
- Dol
- Sand
- Slty

STRINGER
- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg
- Carbsh
- Clystn
- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Sltstn

ROP
ROP (min/ft)

Depth	ithology	CFS Point	Oil Shows	Geological Descriptions	Remarks



Morning Report Depth/Activity

01/20/2014, Spud
01/21/14, drill @ 218'
01/22/14, drill @ 1821'
01/23/14, drill @ 2893'
01/24/14, drill @ 3478' (Mud-Up)
01/25/14, drill @ 4045' (DST #1)
01/26/14, drill @ 4118'
01/27/14, drill @ 4485'
01/28/14, drill @ 4656' (DST #2, DST #3)
01/29/14, drill @ 4715'
01/30/13, drill @ 4880' (TD)

ROP Data begin @ 3500' on 01/24/2014

Mud-Co Check #1 @ 0'
01/17/14

Anhydrite @ 2404' (+631)

Survey @ 867'
3/4 Degree

Survey @ 1179'
3/4 Degree

B/Anhydrite @ 2424' (+611)

Mud-Co Check #2 @
1867' 01/21/14

wt	vis	pH
9.0	29	7.0
Filt	chlr	LCM
NC	130	NR

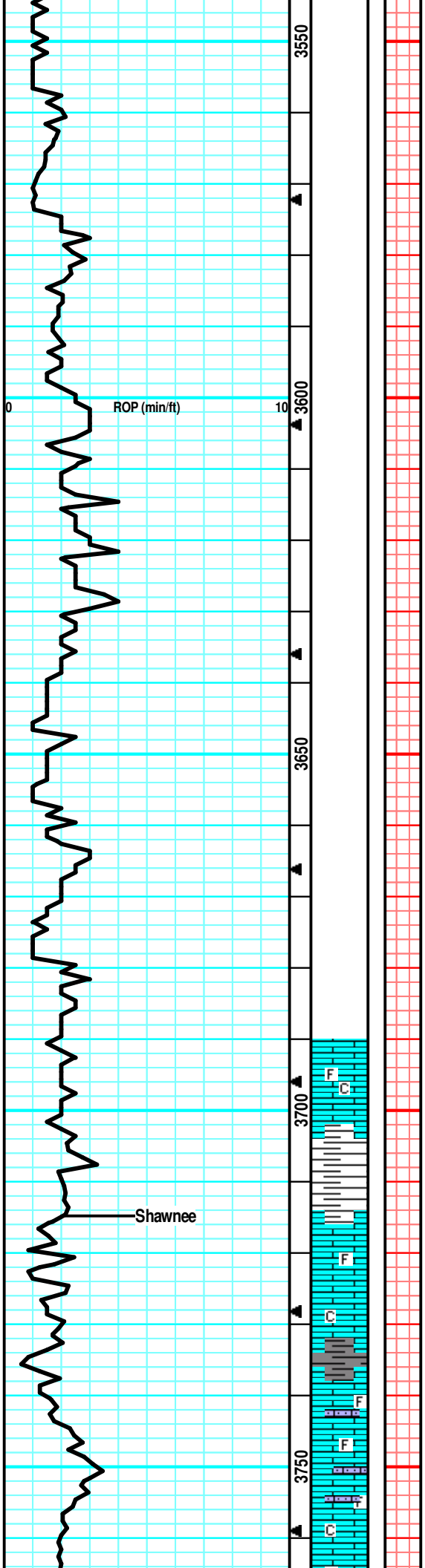
Mud Displacement @ 3313'

Mud-Co Check #3 @
2961' 01/23/14

wt	vis	pH	9.4
	30	7.0	
Filt	chlr	LCM	
NC	39K	1#	

Mud-Co Check #4 @
3525' 01/24/14

wt	vis	pH
8.8	63	11.0
Filt	chlr	LCM
6.2	3K	2#



Survey @ 1711'
3/4 Degree

Survey @ 2238'
3/4 Degree

Survey @ 2704'
3/4 Degree

Survey @ 3262'
3/4 Degree

Sample began @ 3700' on 01/24/2014

LS: lt gry/lt tan, fn xln, fw foss in prt, sm dense, sm brittle, fw flakey, sm chlky in prt, tr-nvp, fw SH: gry, silty, soft, no cup odr, ns.

LS: lt tan/lt gry, fn xln, mostly brittle, fw dense, fw foss frags, sm chlky in prt, tr-nvp, fw SH: gry/brn, silty, soft, no cup odr, ns.

LS: lt tan/gry, fn xln, sm brittle, sm dense, fw foss frags, many chlky, tr-nvp, fw pcs pur chlk, sm SH: gyr/brn, silty, fw soft, no cup odr, ns.

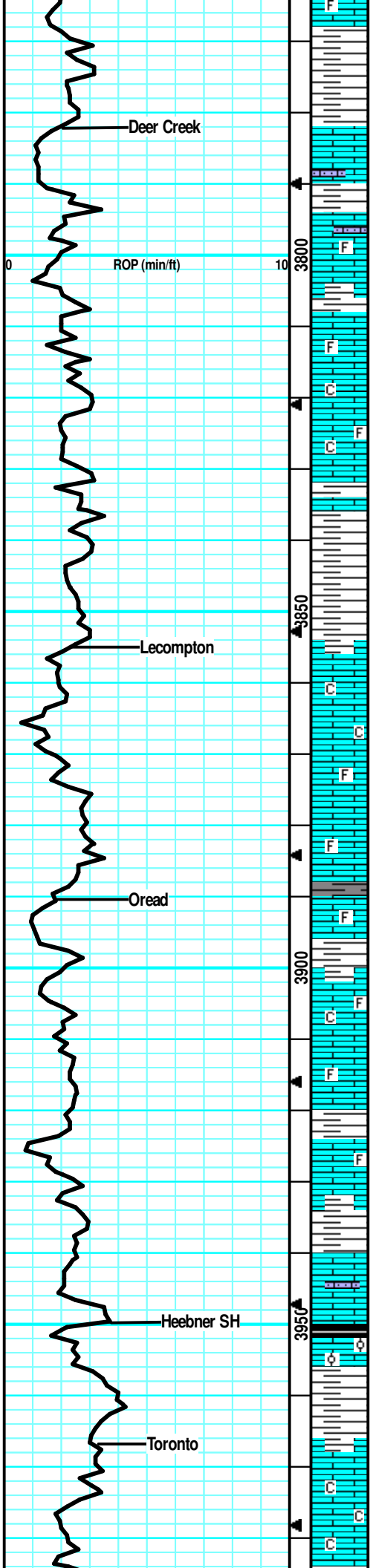
LS: gry/tan, fw mott in prt, fn xln, sm chlky, fw brittle, sm flakey, tr-nvp, fw SH; gry, silty, sm soft, no cup odr, ns.

LS: lt tan/lt gry, fw mott in prt, fn xln, fw foss in prt, sm brittle, fw flakey, sm chlky, tr-nvp, fw SH: gry/brn, silty, fw soft, no cup odr, ns.

LS: tan/lt gry, fw mott in prt, fn xln, fw sandy like, fw foss frags, sm sub-chlky, fw flakey, tr-nvp, fw SH: gry, silty, sm soft, no cup odr, ns.

LS: lt gry/lt tan, fw mott in prt, fn xln, fw scat foss frags, sm sub-chlky, fw brittle, fw sandy/gritty, tr-nvp, fw SH: gry, silty, soft, no cup odr, ns.

LS: tan/lt gry, fw mott in prt, fn xln, sm brittle, fw foss frags, fw



sandy, tr-nvp, fw pcs pur chlk, fw SH: gry, silty, soft, no cup odr, ns.

LS: lt tan/lt gry, fn xln, sm brittle, fw dense, sm sandy like, fw chlky, tr-nvp, fw pcs pur chlk, fw SH: gry/lt brn, silty, soft, no cup odr, ns.

LS: tan/lt gry, fn xln, fw dense, sm brittle, fw sandy/gritty, sub-chlky in prt, tr-nvp, fw pcs pur chlk, fw SH: gry, silty, soft, no cup odr, ns.

LS: tan/lt gry, fn xln, sm brittle, fw sandy/gritty, fw chlky in prt, tr-nvp, fw pcs pur chlk, fw SH: gry, silty, sm soft, no cup odr, ns.

LS: tan/gry, sm mott in prt, fn xln, fw scat foss frags, sm dense, sm brittle, fw sub-chlky in prt, tr-nvp, fw pcs pur chlk, fw SH: gry/blk, silty, fw carb, no cup odr, ns.

LS: tan/lt gry, fw mott in prt, fn xln, fw foss frags, sm dense, fw brittle, fw sub-chlky in prt, tr-nvp, fw pcs pur chlk, fw SH: gry/blk, silty, fw carb, no cup odr, ns.

LS: tan/lt gry, fw mott in prt, fn xln, v fw foss frags, mostly dense, fw brittle, sub-chlky in prt, tr-nvp, fw pcs pur chlk, fw SH: drk gry, silty, soft, no cup odr, ns.

LS: tan/gry, fw mott in prt, fn xln, many dense, sm brittle, sub-chlky in prt, fw flakey like, tr-nvp, fw pcs pur chlk, fw SH: gry, silty, easy-med crush, no cup odr, ns.

LS: gry/lt tan, fn xln, many dense, fw brittle, sm flakey, sub-chlky in prt, tr-nvp, fw pcs pur chlk, fw SH: gry/drk brn, silty, soft, no cup odr, ns.

LS: gry/tan, fn xln, mostly dense, fw brittle, sm flakey/mealy, tr-nvp, fw pcs pur chlk, v fw SH: gry, silty, sm soft, no cup odr, ns.

LS: tan/gry, slght mott in prt, fn xln, mostly dense, sm brittle, fw sub-chlky, tr-nvp, fw pcs pur chlk, no cup odr, ns.

LS: tan/lt gry, fw mott in prt, fn xln, fw foss frags, sm brittle, fw dense, fw sub-chlky in prt, tr-nvp, fw pcs pur chlk, no cup odr, ns.

LS: lt tan/lt gry, fw mott in prt, fn xln, fw foss in prt, sm brittle, sm dense, sub-chlky, tr-nvp, svrl pcs pur chlk, no cup odr, ns.

LS: lt tan/lt gry, slght mott in prt, fn xln, sm foss, sm brittle, v fw dense, sub-chlky in prt, tr-nvp, svrl pcs pur chlk, no cup odr, ns.

LS: lt tan/lt gry, sm mott in prt, fn xln, sm foss frags, many brittle, fw dense, sub-chlky in prt, tr-nvp, sm pur chlk, no cup odr, ns.

LS: lt tan/gry, sm mott in prt, fn xln, foss, many britle, fw dense, fw gritty like, sub-chlky in prt, tr-ppt intxln por in fw, fw pcs pur chlk, no cup odr, ns.

LS: gry/lt tan, fw slght mott, fn xln, fw scat foss frags, many dense, sm brittle, sm sub-chlky in prt, tr-nvp, fw SH: gry/brn, silty, no cup odr, ns.

LS: gry/lt tan, fn xln, many dense, sm brittle, fw sub-chlky in prt, fw flakey, tr-nvp, fw pcs pur chlk, no cup odr, ns.

LS: lt gry/lt tan, fn xln, sm dense, sm brittle, fw gritty like, sub-chlky in prt, sm scat 2nd rxln, tr-? ppt intxln por in fw, fw pcs pur chlk, no cup odr, ns.

Heebner @ 3950' (-915)

LS: gry/lt tan, sm mott, fn xln, many dense, sm ool, fw brittle, sub-chlky, tr-nvp, fw pcs pur chlk, sm SH: gry/blk, silty, sm carb, no cup odr, ns.

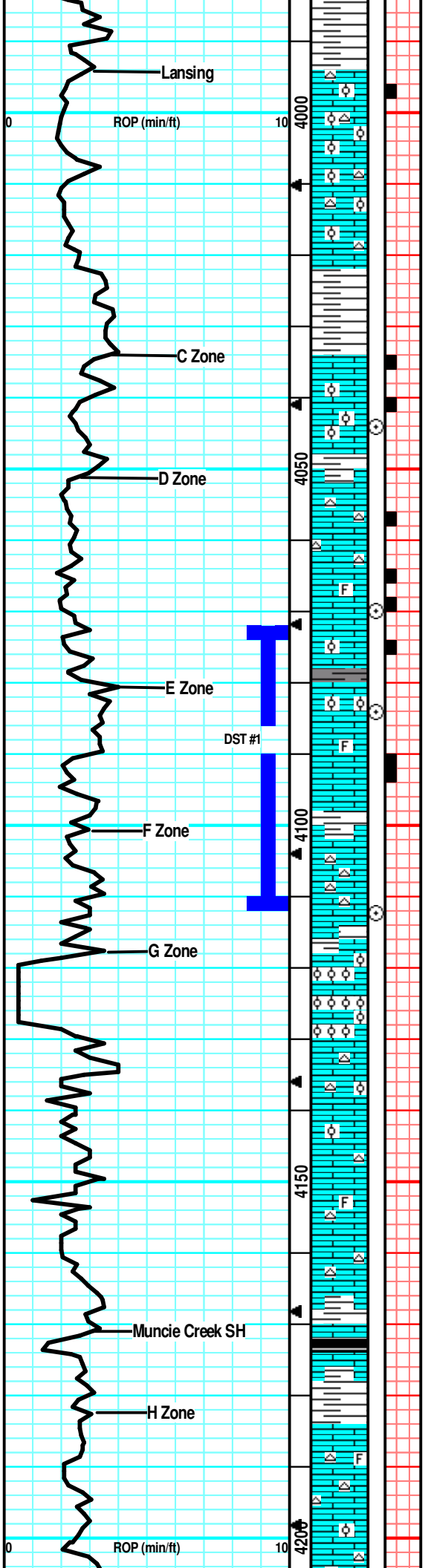
LS: gry/tan, slght mott in prt, fn xln, fw dense, mostly brittle, chlky/sub-chlky, tr-nvp, svrl pcs pur chlk, sm SH: gry/blk, silty, fw carb, no cup odr, ns.

LS: gry/tan, sm mott in prt, fn xln, sm dense, sm brittle, fw flakey/like, tr-nvp, 1 pc LS: crm, micro-fn xln, dense, 2 small sphr oil on surf, no cup odr, ns.

LS: tan/lt gry, slght mott in prt, fn xln, many dense, fw brittle,

Mud-Co Check #5 @ 3985' 01/25/14

wt	vis	pH
9.0	66	10.5
Filt	chlr	LCM
6.4	3.4K	2#



sub-chlky in prt, tr-nvp, fw pcs pur chlk, fw Chert: wht/opaque, sharp, sm SH: gry, silty, soft, no cup odr, ns.

LS: tan/lt gry, fn xln, many dense, sm brittle, sub-chlky in prt, pr fn intxln por in sm, 2 pcs w/ scat dul yel fluor, cut pal blu, ssfo on brk, no cup odr, sm SH: gry/brn, silty.

LS: gry/lt tan/crm, fn xln, mostly dense, sm ool, sm brittle, sub-chlky in prt, tr-nvp, fw Chert: wht/opaque, sharp, no cup odr, ns.
LS: gry/lt tan, fn xln, mostly dense, sm brittle, sub-chlky in prt, fw ool, tr-nvp, fw Chert: wht/opaq, sharp, fw SH: gry/grn, silty, soft, no cup odr, ns.

LS: gry/tan, fn xln, mostly dense, sm brittle, sm chlky/sub-chlky in prt, tr-nvp, fw Chert: wht/opaq, sharp, sm SH: gry/grn/brn, silty, soft, no cup odr, ns.

LS: tan/lt gry, fn xln, moslty dense, sm britle, fw sub-chlky, tr-nvp, fw Chert: wht/opaque, foss, sharp, no cup odr, ns.

LS: tan/lt gry, fn xln, many dense, sm ool, fw brittle, sm pr 2nd rxln, pr-fr intool por in fw, 5-6 pcs w/ fn salt/pepr look, dul yel fluor/cut pal blu, ssfo, no cup odr.

LS: lt gry/crm, fn xln, sm v ool, sm dense, many brittle, many chlky/sub-chlky, friable, tr-nvp, svrl pcs pur chlk, fw SH: gry/grn, silty, soft, no cup odr, ns.

LS: tan/lt gry/crm, fn xln, many dense, sm chlky in prt, sm brittle, tr-nvp, svrl pcs pur chlk, fw Chert: wht/opaque, sharp, 1-2 pcs LS: crm, micro xln, v chlky, pr fn intxln por, ssfo, dul yel fluor, strm cut, no cup odr.

LS: lt tan/crm, fn xln, chlky/sub-chlky, brittle, rare 2nd rxln, sm dense, pr fn intxln por, 3-4 w/ dul yel fluor/strm cut, ssfo on brk, 1-2 pcs w/ small sphr oil on watery surf, wk-fnt cup odr.

LS: gry/tan, fn xln, sm dense, sm brittle, fw sub-chlky, tr-pr fn intxln por in sm, fw SH: gry/grn, silty, soft, fw waxy, no cup odr, ns.
LS: gry/tan, fn xln, sm ool/foss, sm brittle, sm dense, v fw pcs w/ pr intool por, 1-2 dul yel fluor, strm cut, vssfo, no cup odr.

LS: tan/lt tan, fn xln, mostly brittle, fw dense, sub-chlky in prt, fr intxln por in sm, svrl pcs w/ smal sphr oil on surf, ssfo on brk, dul yel fluor, strm cut, faint-slght cup odr.

LS: tan/lt gry, fn xln, mostly brittle, chlky/sub-chlky, fw dense, fw flakey, tr-pr intxln por in sm, fw pcs pur chlk, no cup odr, ns.
LS: crm/lt gry, micro-fn xln, mostly dense, sm brittle, fw chlky, tr-nvp, fw Chert: wht/opaq, sharp, no cup odr, ns.

LS: lt gry/lt tan, fn xln, sm dense, sm brittle, fw sub-chlky in prt, sm ool, fw oolcast por, fw SH: gry/brn/grn, silty, soft, no cup odr, ns.
LS: tan/lt brn, fn xln, profus ool, sm brittle, fw sub-chlky, gd oolcast por, fw Chert: wht/opaq, sharp, foss, fw SH: gry/brn, silty, soft, no cup odr, ns.
LS: tan/lt gry, fn xln, sm profus ool, sm dense, sm chlky, many brittle, many gd oolcast por, svrl pcs pur chlk, no cup odr, ns.

LS: lt gry/crm/lt tan, micro-fn xln, mandy dense, many brittle, chlky/sub-chlky, tr-nvp, svrl pcs pur chlk, fw Chert: wht/opaq, sharp, foss, no cup odr, ns.

LS: lt tan/lt gry, micro-fn xln, mostly dense, fw scat foss frags, many chlky, many brittle, tr-nvp, svrl pcs pur chlk, no cup odr, ns.

LS: lt tan/lt gry, micro-fn xln, many dense, mostly brittle, sub-chlky in prt, tr-nvp, fw pcs pur chlk, fw Chert: wht/opaq, sharp, no cup odr, ns.

LS: tan/lt gry, fw mott in prt, fn xln, sm dense, fw brittle, sm scat 2nd rxln, tr-? intxln por in sm, sm SH: gry/blk, silty, fw carb, soft, no cup odr, ns.

LS: gry/lt tan, fw mott in prt, fn xln, many dense, fw foss frags, chlky/sub-chlky, tr-nvp, svrl SH: gry/grn, silty, soft, no cup odr, ns.
LS: lt gry/lt tan/crm, micro-fn xln, mostly dense, sm brittle, sub-chlky in prt, fw flakey like, tr-nvp, fw Chert: gry/smokey, sharp, fw SH: gyr/grn, silty, no cup odr, ns.

LS: gry/tan/lt brn, fw mott in prt, fn xln, fw foss frags, mostly

Lansing @ 3994' (-959)

CFS @ 4044'
(30"/60")

CFS @ 4070'
(30"/60")

DST #1 E/F Zone 4072'-4112'
30-45-45-60
1st Blow: Gd Blw, blt to BOB in 11" (No BB)
2nd Blow: Gd Blw, blt to BOB in 13" (No BB)
IFP: 13-99# ISIP: 1055# FFP: 104-222# FSIP: 1041#
HYD: 1931-1912#
380' MW (90% WTR)

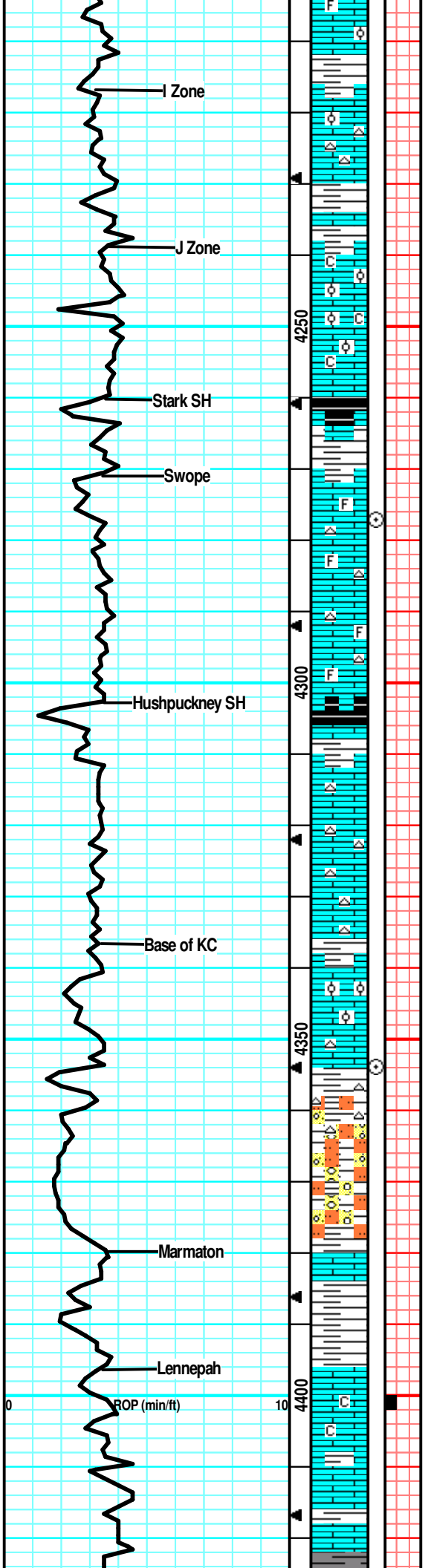
CFS @ 4084'
(30"/60")

Survey @ 4112'
1/2 Degree

CFS @ 4112'
(30"/60")

Mud-Co Check #6 @ 4112' 01/26/14
wt vis pH 9.1
57 10.0
Filt chlr LCM
7.2 4.4K 2#

Muncie Creek @ 4172' (-1137)



dense, sm firm, fw flakey/mealy, tr-nvp, fw pcs chlky/brittle, tr-nvp, no cup odr, ns.

LS: tan/lt tan, fw mott in prt, fn xln, fw ool, mostly dense, fw brittle, sub-chlky in prt, fw flakey, tr-nvp, fw pcs w/ drk min stns, no fluor/cut, no cup odr, ns.

LS: tan/lt gry, fn xln, many dense, sm brittle, sm sub-chlky in prt, tr-nvp, fw Chert: wht/opaq, sharp, fw pcs pur chlk, fw SH: gry/brn, silty, no cup odr, ns.

LS: tan/lt tan, fn xln, many dense, sm brittle, sub-chlky in prt, fw flakey/mealy, tr-nvp, fw pcs pur chlk, fw SH: gry/brn, silty, no cup odr, ns.

LS: lt gry/lt tan, fn xln, mostly brittle, fw dense, sub-chlky in most, tr-nvp, fw pcs LS: profus ool, gd oolcast por, fw pcs pur chlk, no cup odr, ns.

LS: lt gry/lt tan/crm, micro-fn xln, mostly dense, mostly brittle, sub-chlky in prt, tr-nvp, fw pcs pur chlk, fw SH: gry, silty, no cup odr, ns.

LS: gry/lt tan, fn xln, mostly dense, mostly brittle, sub-chlky in prt, fw flakey/mealy, tr-nvp, fw pcs pur chlk, abund SH: blk/drk gry, silty, soft, carb, no cup odr, ns.

Stark @ 4260' (-1225)

LS: lt gry/lt tan/crm, fn xln, sm foss in prt, sm dense, many brittle, sub-chlky, fw flakey/mealy, rare scat 2nd rxln, tr-nvp, fw pcs pur chlk, no cup odr, ns.

CFS @ 4277'
(30"/60")

LS: tan/lt gry, fn xln, fw foss frags, mostly dense, sm brittle, sub-chlky in prt, tr-nvp, fw Chert: wht/opaq, sharp, fw SH: gry/brn, silty, no cup odr, ns.

LS: tan/lt gry, fn xln, v fw foss frags, mostly dense, sm brittle, sub-chlky in prt, fw flakey, tr-nvp, fw Chert: wht/opaq, foss, sharp, fw SH: gry/grn, silty, sm soft, no cup odr, ns.

LS: tan/gry, sm mott in prt, fn xln, fw foss frags, mostly dense, many brittle, sub-chlky in prt, scat 2nd rxln, tr-vp, abund SH: blk/drk gry, silty, carb, soft, no cup odr, ns.

Hushpuckney @ 4303' (-1268)

LS: lt tan/gry, micro-fn xln, mostly dense, sm brittle, sub-chlky in prt, fw flakey/mealy, tr-nvp, fw pcs pur chlk, 2-3 pcs w/ pos patchy brn stns, wk-? fluor, no cut, no cup odr, nsfo.

LS: lt gry/crm/lt tan, micro-fn xln, mostly dense, fw brittle, sm sub-chlky in prt, tr-nvp, fw Chert: wht/opaq, sharp, fw pcs pur chlk, no cup odr, ns.

LS: lt gry/lt tan, micro-fn xln, mostly dense, sm brittle, sub-chlky in prt, tr-nvp, fw pcs pur chlk, fw Chert: wht/opaq, sharp, sm SH: gry/brn, silty, no cup odr, ns.

B/KC @ 4337' (-1302)

LS: tan/lt gry, fn xln, sm dense, sm brittle, fw ool, sub-chlky, sm 2nd rxln on edge, fw pcs w/ fr intxln por on edges, tr-nvp in most, no cup odr, ns.

CFS @ 4354'
(30"/60")

LS: tan/lt gry, fn xln, many dense, sm brittle, sub-chlky in prt, scat 2nd rxln in fw, fw flakey, tr-nvp, sm SH: gry/brn, silty, no cup odr, ns.

LS: lt gry/lt tan, fn xln, mostly dense, fw brittle, sm sub-chlky in prt, flakey/mealy, fw firm, tr-nvp, fw Chert: wht/opaq, sm SH: gry/grn, silty, no cup odr, ns.

LS: lt tan, fn xln, mostly dense, fw brittle, tr-nvp, fw SS: lt gry, fn grn, arg, fw glauc, friable, fw soft, sm SH: gry/grn/brn, silty, fw waxy, fw SltStn: lt brn, v soft, muddy like, no cup odr, ns.

SS: gry/grn, fn xln, arg, fw soft, friable, tr-nvp, fw SltStn: lt brn, gritty, sm muddy like, svrl LS: tan/lt tan, fn xln, brittle, fw dense, sub-chlky, tr-nvp, no cup odr, ns.

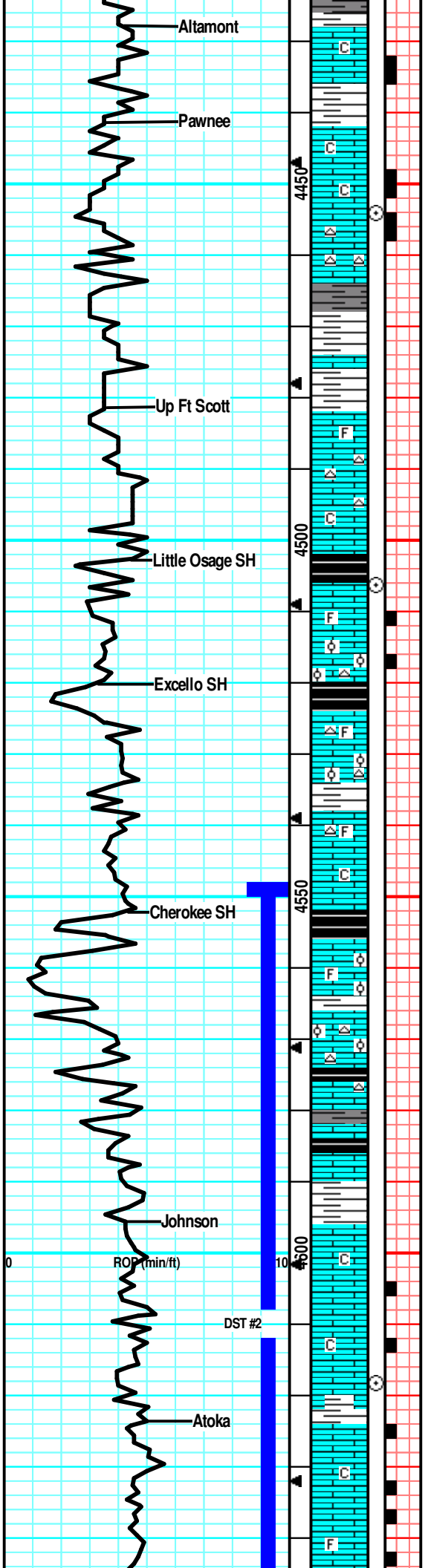
Marmaton @ 4380' (-1345)

LS: gry/tan, fw slght mott in prt, fn xln, scat foss frags, mostly dense, fw firm, sm flakey/mealy, tr-nvp, fw pcs pur chlk, fw SH: gry/grn, silty, soft, no cup odr, ns.

LS: gry/lt tan, fn xln, mostly dense, sm brittle, sub-chlky in prt, fw firm, many flakey/mealy, tr-pr fn intxln por in fw, 2-3 w/ drk scat stns on edge, scat dul yel fluo, strm cut, vssfo on brk, no cup odr.

LS: tan/lt gry, fn xln, mostly dense, sm brittle, fw firm, fw pcs sub-chlky, sm flakey/mealy, tr-pr intxln por in sm, 3-4 pcs w/ drk sptd stns, wk-? fluor, no cut, pos drk dead oil, no cup odr, nsfo.

LS: lt gry/lt tan, micro-fn xln, mostly dense, sm brittle,



sub-chlky f prt, v fw flakey like, tr-nvp, fw SH: grn/blu, silty, sm gritty, med crush, no cup odr, ns.
LS: lt tan/crm, micro-fn xln, many dense, sm brittle, fw sub chlky, scat 2nd rxln in sm, sm patchy fn ppt intxln por in sm, patchy lght brn stns, wk dul yeal fluor, strm cut, ssfo on brk, faint cup odr, 4-5 pcs in 30" smpl, 6-7 in 60" smple.

LS: lt gry/lt tan, micro-fn xln, mostly dense, many brittle, sub-chlky, tr-nvp, 1 pcs w/ small 2nd rxln spt, fr intxln por, vssfo, no cup odr.
LS: lt gry/lt tan, fn xln, mostly dense, sm brittle, sub-chlky in prt, tr-nvp, 3-4 pcs LS: tan, micro xln, dense, firm, gd 2nd rxln, fr intxln por, scat dul yel fluor, strm cut, ssfo on brk, fnt-? cup odr.
LS: lt gry/crm, fn xln, mostly dense, many brittle, chlky/sub chlky in prt, tr-nvp, fw Chert: wht/opaq, sharp, svrl SH: gry/blk, silty, many carb, no cup odr, ns.

LS: gry/lt tan, fn xln, mostly brittle, chlky, fw dense, tr-nvp, abund chlk, svrl SH: gry/blk, silty, fw carb, sm gritty like, no cup odr, ns.
LS: tan/lt brn, micro-fn xln, fw foss fags, mostly dense, sub-chlky, brittle, v fw pcs w/ pr intxln por, fw Chert: lt brn, foss, sharp, fw SH: gry/lt brn, silty, med crush, no cup odr, ns.

LS: gry/tan/lt brn, sm mott in prt, fn-crs xln, many dense, fw firm, fw sub-chlky/brittle, tr-? intxln por in fw, sm SH: gry/blk, silty, soft, carb, no cup odr, ns.
LS: gry/tan, sm mott in prt, fn-crs xln, many dense, firm, sub-chkly in prt, tr-? intxln por in sm, abund SH: blk/gry, silty, carb, soft, no cup odr, ns.
LS: tan/lt gry, fn xln, fw foss frags, fw dense, sm brittle, sub-chlky in prt, 2-3 pcs dense, micro xln, ppt inxln por in prt, patchy brn stns, wk dul yel fluor, slw cut, vssfo, no cup odr.
LS: gry/tan, fn xln, sm ool, dense, sm firm, fw sub-chlky, tr-pr intxln por in fw, dul yel fluor, wk cut, ssfo on brk, no cup odr, svrl Chert: gry, foss, sharp, abund SH: blk/gry, silty, carb, soft, no cup odr, ns.
LS: tan/gry, fn xln, mostly dense, fw firm, fw ool, tr-nvp, fw pcs w/ drk hvy stns, wk-? fluor, no cut, pos drk dead oil, svrl Chert: wht/gry, ool, sharp, svrl SH: gry/brn, silty, no cup odr, ns.
LS: tan/lt gry, fn xln, mostly dense, sm brittle, fw sub-chlky in prt, tr-nvp, svrl Chert: wht/gry, foss, sharp, sm SH: brn/gry, silty, no cup odr, ns.
LS: tan/gry, slght mott in prt, fn-crs xln, dense, fw brittle, fw foss frags, sm flakey/mealy, tr-nvp, svrl SH: gry/brn/blk, silty, fw carb, med crush, no cup odr, ns.

LS: lt tan/crm, fw slght mott, micro-fn xln, dense, brittle, sub-chlky, fw ool, sm foss in prt, tr-nvp, fw pcs w/ pos lght brn stns, wk-? fluor, no cut, fw SH: gry/blk, silty, fw carb, no cup odr, nsfo.
LS: gry/tan, sm mott in prt, fn xln, sm dense, fw firm sm flakey/mealy, fw chlky/brittle, tr-nvp, fw Chert: wht/gry, ool, sharp, svrl SH: gry/blk, silty, carb, soft, no cup odr, ns.

LS: tan/lt brn/gry, sm mott, fn xln, sm firm, fw dense, sandy, sm 2nd rxln, tr-nvp, fw pcs chlk, svrl SH: gry/blk, silty, sm carb, no cup odr, ns.
LS: lt brn/gry, fn xln, mostly dense, sm hard, sm 2nd rxln, sm flakey/mealy, tr-nvp, sm SH: gry/grn, silty, sm waxy, soft, no cup odr, ns.
LS: lt tan/lt gry, micro-fn xln, mostly dense, sm brittle, fw sub-chlky in prt, tr-? ppt intxln por, fw pcs w/ patchy lght brn stns, scat wk fluor, slw cut, vssfo, no cup odr.

LS: lt tan/lt gry, micro-fn xln, mostly dense, sm brittle, scat pr ppt intxln por sites, patchy lght brn stns, ssfo on brk, scat dul yel fluor, strm cut, faint-? cup odr.

LS: gry/tan, fn xln, mostly dense, fw brittle, tr-? ppt intxln por, fw pcs patchy brn stns, scat fluor, wk cut, many pcs flakey/mealy, fw SH: gry/brn, silty, no cup odr, nsfo.

LS: lt tan/lt gry, fn xln, mostly dense, sm brittle, fw sub-chlky, 1-2 pcs w/ pr intxln por, hvy vis fo on surf, majority, tr-nvp, no cup odr.
LS: lt tan/lt gry, micro-fn xln, mostly dense, brittle, fw foss

Pawnee @ 4442' (-1407)

CFS @ 4454'
(30"/60")

Mud-Co Check #7 @ 4496' 01/27/14

wt	vis	pH
9.1	53	10.0
Filt	chlr	LCM
7.2	4K	2#

Little Osage @ 4503' (-1468)

CFS @ 4506'
(30"/60")

Excello @ 4520' (-1485)

Cherokee @ 4552' (-1517)

DST #2 Johnson/Atoka
4548'-4656' 30-45-60-90
1st Blow: Gd Blw, blt to BOB in 18" (1" BB)
2nd Blow: Gd Blw, blt to BOB in 8" (2" BB)
IFP: 13-61# ISIP: 1009# FFP: 66-129# FSIP: 1010#
HYD: 2208-2191#
465' GIP, 255' GOCM (35% Gas, 25% Oil)

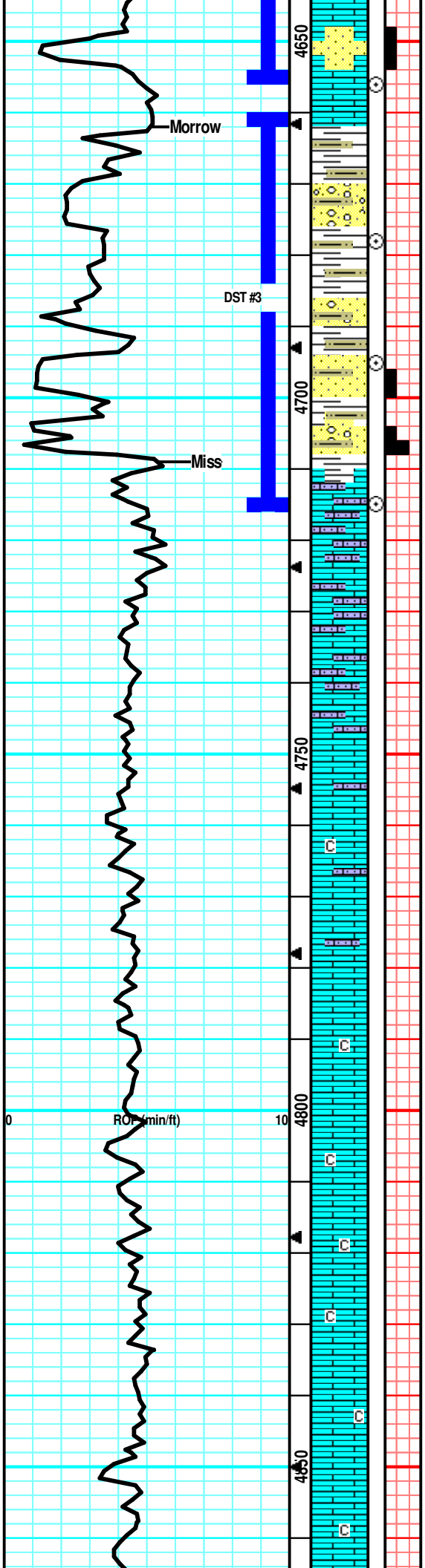
Johnson @ 4596' (-1561)

CFS @ 4618'
(30"/60")

Atoka @ 4624' (-1589)

Mud-Co Check #8 @ 4656' 01/28/14

wt	vis	pH
9.2	57	10.5
Filt	chlr	LCM



frags, sub-chlky in prt, pr ppt intxln por, smal sphr oil on surf, ssfo on brk, svrl pcs/try, no cup odr.

SS: lt gry/clr, fn-crs qrtz grn, sub-rnd, brittle, v friable, hvy stns in wet and dry, ssfo on brk, gd cut resid, no cup odr.

LS: lt tan/lt gry, fn xln, mostly dense, fw sandy, many brittle, sub-chlky, fw flakey, tr-nvp, abund SH: gry/brn/grn, silty, sm soft, fw waxy, fw SS: lt gry/crm, fn grn, arg, friable, tr-nvp, no cup odr, ns.

SS: crm/lt gry, fn grn, sub-rnd, arg, sub-chlky in prt, tr-nvp, fw pcs w/ drk min stns, no fluor/cut, no fo on brk in wtr, abund SH: gry/brn/grn, silty, fw waxy, no cup odr, ns.

SH: gry/grn/brn, silty, sm soft, fw med crush, sm SS: lt gry/crm, fn grn, sub-rnd, arg/limey, brittle, many friable, sm lght brn min stns, no fluor/cut, no cup odr, nsfo. 30" smple had a fw more pcs of SS, fw SltStn: lt brn, v soft, muddy like.

SS: lt gry/crm, fn grn, sub-rd, well srtd, fw tight, sm arg, fw sub-chlky, friable, sm fr intgnr por, wk fluor, strm cut on brk, fr sfo, wk no cup odr.

SS: lt tan/crm, fn-med grn, arg, fr srtd, chlky, brittle, friable, tr-nvp, sm SS: gry, fn grn, frible, fw firm, well srtd, fn intgrn por, hvy sat stns, wk fluor, strm cut, fr-gd sfo, no cup odr.

LS: tan/lt gry, fn xln, mostly dense, sm brittle, fw sub-chlky in prt, fw flakey/mealy, tr-nvp, fw SH: gry/grn/brn, silty, sm soft, no cup odr, ns.

LS: tan/lt gry, fn xln, mostly brittle, v fw dense, sandy/gritty, sm v friable, tr-nvp, fw SS: lt gry, fn grn, well srtd, arg, limey, tr-nvp, v friable, no cup odr, ns.

LS: tan/lt gry, fn xln, sm dense, sm brittle, fw firm, sandy/gritty, sm sub-chlky in prt, fw w/ lrg qrtz grns, tr-nvp, fw SH: gry/grn, silty, no cup odr, ns.

LS: lt tan/lt gry, fn xln, many dense, sm brittle, sub-chlky in prt, fw sandy/gritty, fw flakey/mealy, tr-nvp, sm SH: gry/grn, silty, sm soft, no cup odr, ns.

LS: gry/lt tan/crm, fn xln, sm dense, mostly brittle, sub-chlky in prt, fw sandy/gritty, tr-nvp, sm SH: gry/brn, silty, sm soft, no cup odr, ns.

LS: tan/lt gry, fn xln, sm dense, sm sub-chlky/brittle, fw flakey/mealy, fw w/ 2nd rlxn, tr-nvp, svrl SH: gry/brn/grn, silty, sm soft, no cup odr, ns.

LS: tan/lt gry, fn xln, many dense, sm brittle, sm sub-chlky in prt, fw flakey/mealy, tr-nvp, svrl SH: gry/blu/brn, silty, sm soft, no cup odr, ns.

LS: tan/lt gry, micro-fn xln, mostly dense, sm brittle, sub-chlky in prt, mostly uniform, fw flakey, svrl SH: gry/brn/blu, silty, sm soft, no cup odr, ns.

LS: tan/lt tan, micro-fn xln, mostly dense, sm brittle, fw firm, fw sub-chlky in prt, mostly uniform, tr-nvp, abund SH: gry/blu/grn, silty, sm soft, no cup odr, ns.

LS: tan/lt tan, micro-fn xln, mostly dense, fw brittle, fw flakey like, sub-chlky in prt, tr-nvp, fw SH: gry/brn, silty, no cup odr, ns.

LS: lt tan/tan, micro-fn xln, moslty dense, fw firm, fw brittle/sub-chlky, fw flakey like, tr-nvp, sm SH: gry/brn/grn, silty, sm soft, no cup odr, ns.

LS: tan/lt tan, micro-fn xln, mostly dense, sm brittle, fw firm, fw sub-chlky in prt, fw flakey, tr-nvp, abund SH: gry/brn, silty, no cup odr, ns.

LS: tan/lt gry, micro-fn xln, mostly dense, fw brittle, sm firm, semi-uniform, tr-nvp, abund SH: gry/brn/grn, silty, sm soft, no cup odr, ns.

LS: tan/lt gry, micro-fn xln, dense, fw brittle, fw flakey, sub-chlky in prt, tr-nvp, svrl SH: brn/gry, silty, fw fissile, no cup odr, ns.

LS: lt gry/tan, micro-fn xln, mostly dense, fw brittle, sm firm, fw flakey like, sub-chlky in prt, tr-nvp, fw SH: brn/gry, silty, sm soft, no cup odr, ns.

LS: lt gry/tan, micro-fn xln, dense, fw brittle, sub-chlky, tr-nvp,

5.6 4.2K 2#

CFS @ 4656' (30"/60")

Survey @ 4656'
3/4 Degree

Morrow @ 4662' (-1627)

CFS @ 4678' (30"/60")

DST #3 Morrow 4660-4715'
30-30-30-30
1st Blow: Wk Blw, blt to 1" (No BB)
2nd Blow: No Blw (No BB)
IFP: 9-13# ISIP: 321# FFP: 12-14# FSIP: 175#
HYD: 2260-2253#
10' Mud

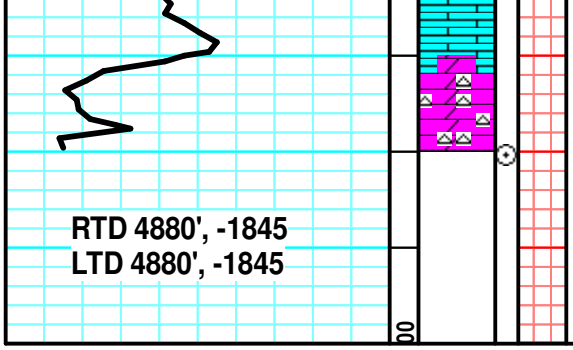
CFS @ 4695' (30"/60")

Miss @ 4709' (1674)

CFS @ 4715' (30"/60")

Mud-Co Check #9 @ 4719' 01/29/14

wt	vis	pH	9.1
	54	10.5	
Filt	chlr	LCM	
6.4	4.5K	2#	



fw DOL: lt tan, fn xln, fw dense, many brittle, friable, fw chlky, tr-nvp, no cup odr, ns.

DOL: lt gry/tan, fn xln, mostly brittle, sm dense, sm friable, tr sub-chlky, tr-nvp, svrl Chert: lt gry, semi-trans, sharp, no cup odr, ns.

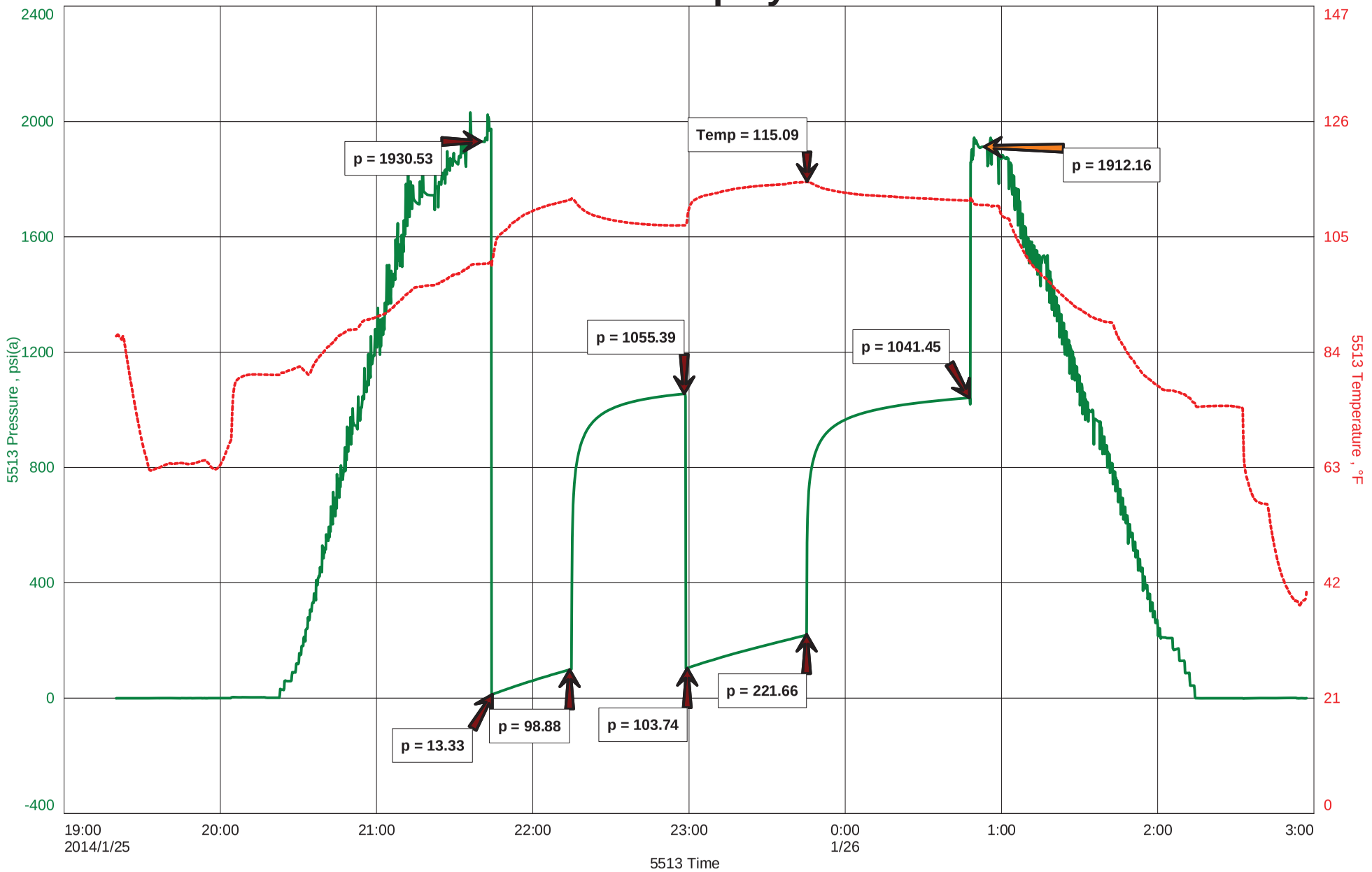
CFS @ 4880' (30''/60'')

Survey @ 4880'
3/4 Degree

Grand Mesa
DST #1 Lansing E-F 4072-4112
Start Test Date: 2014/01/25
Final Test Date: 2014/01/26

#1-10 Epley
Formation: Lansing E-F
Pool: Wildcat
Job Number: K083

#1-10 Epley



JASON MCLEMORE

CELL # 620-617-0527

General Information

Company Name	Grand Mesa		
Contact	Mike Reilly	Job Number	K083
Well Name	#1-10 Epley	Representative	Jason McLemore
Unique Well ID	DST #1 Lansing E-F 4072-4112	Well Operator	Grand Mesa
Surface Location	10-16s-33w-Scott	Prepared By	Jason McLemore
Field	Wildcat	Qualified By	John Goldsmith
Well Type	Vertical	Test Unit	#7

Test Information

		Representative	Jason McLemore
Test Type	Drill Stem Test	Well Operator	Grand Mesa
Formation	Lansing E-F	Report Date	2014/01/26
Well Fluid Type	01 Oil	Prepared By	Jason McLemore
Test Purpose (AEUB)	Initial Test		

Start Test Date	2014/01/25	Start Test Time	19:20:00
Final Test Date	2014/01/26	Final Test Time	02:58:00

Test Results

RECOVERED:

380	Muddy Water,90% Water, 10% Mud
380	TOTAL FLUID

CHLORIDES: 30000
PH: 7
RW: .320 @ 50

DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313

DRILL-STEM TEST TICKET

FILE: epley1dst1

TIME ON: 7:20 PM

TIME OFF: 2:58 AM

Company Grand Mesa — Lease & Well No. #1-10 Epley

Contractor Duke #4 — Charge to Grand Mesa

Elevation 3035 KB — Formation E-F — Effective Pay ____ Ft. — Ticket No. K083

Date 1-25-14 — Sec. 10 — Twp. 16 S — Range 33 W — County Scott — State KANSAS

Test Approved By John Goldsmith — Diamond Representative Jason McLemore

Formation Test No. 1 — Interval Tested from 4072 ft. to 4112 ft. — Total Depth 4112 ft.

Packer Depth 4067 ft. — Size 6 3/4 in. — Packer depth ____ ft. — Size 6 3/4 in.

Packer Depth 4072 ft. — Size 6 3/4 in. — Packer depth ____ ft. — Size 6 3/4 in.

Depth of Selective Zone Set ____

Top Recorder Depth (Inside) 4053 ft. — Recorder Number 5513 — Cap. 5000 P.S.I.

Bottom Recorder Depth (Outside) 4054 ft. — Recorder Number 5588 — Cap. 6000 P.S.I.

Below Straddle Recorder Depth ____ ft. — Recorder Number ____ — Cap. ____ P.S.I.

Mud Type Chemical — Viscosity 66 — Drill Collar Length 0 ft. — I.D. 2 1/4 in.

Weight 9.0 — Water Loss 6.4 cc. — Weight Pipe Length 0 ft. — I.D. 2 7/8 in

Chlorides 3400 P.P.M. — Drill Pipe Length 4039 ft. — I.D. 3 1/2 in

Jars: Make STERLING — Serial Number 6 — Test Tool Length 33 ft. — Tool Size 3 1/2-IF in

Did Well Flow? NO — Reversed Out NO — Anchor Length 40 ft. (31' DP in Anchor) — Size 4 1/2-FH in

Main Hole Size 7 7/8 — Tool Joint Size 4 1/2 XH in. — Surface Choke Size 1 in. — Bottom Choke Size 5/8 in

Blow: 1st Open: Good Blow, BOB in 11 Min., No Blowback

2nd Open: Good Blow, BOB in 13 Min., No Blowback

Recovered 380 ft. of Muddy Water, 90% Water, 10% Mud

Recovered 380 ft. of TOTAL FLUID

Recovered ____ ft. of ____

Recovered ____ ft. of CHLORIDES: 30,000

Recovered ____ ft. of PH: 7

Recovered ____ ft. of RW: .320 @ 50

Remarks: Tool Sample: Salt Water

Price Job	
Other Charges	
Insurance	
Total	

Time Set Packer(s) 9:45 PM A.M. P.M. — Time Started Off Bottom 12:45 AM A.M. P.M. — Maximum Temperature 115

Initial Hydrostatic Pressure ..... (A) 1931 P.S.I.

Initial Flow Period ..... Minutes 30 (B) 13 P.S.I. to (C) 99 P.S.I.

Initial Closed In Period ..... Minutes 45 (D) 1055 P.S.I.

Final Flow Period ..... Minutes 45 (E) 104 P.S.I. to (F) 222 P.S.I.

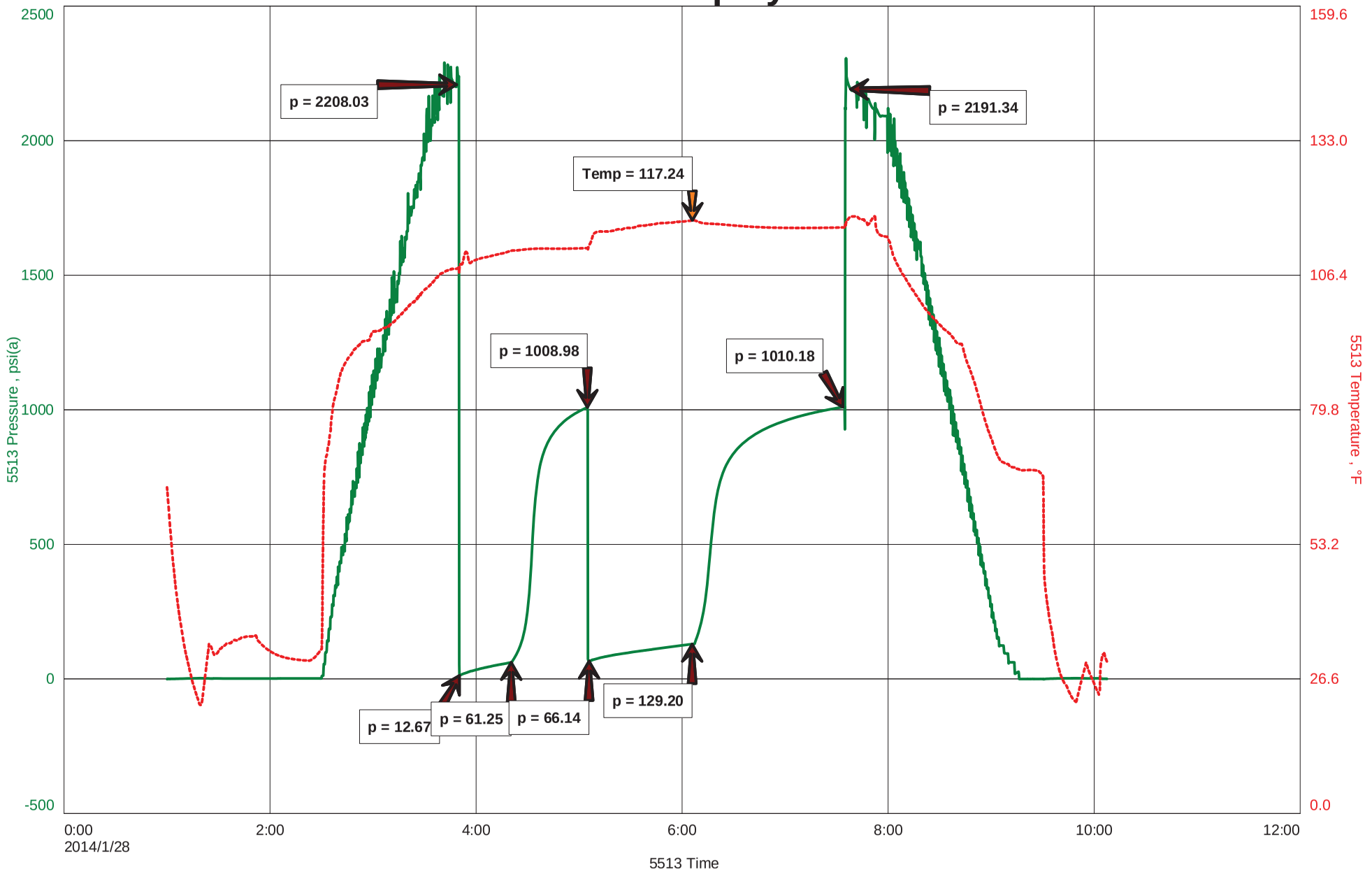
Final Closed In Period ..... Minutes 60 (G) 1041 P.S.I.

Final Hydrostatic Pressure ..... (H) 1912 P.S.I.

Grand Mesa
DST #2 Johnson-Atoka 4548-4656
Start Test Date: 2014/01/28
Final Test Date: 2014/01/28

#1-10 Epley
Formation: Johnson-Atoka
Pool: Wildcat
Job Number: K084

#1-10 Epley



JASON MCLEMORE

CELL # 620-617-0527

General Information

Company Name	Grand Mesa		
Contact	Mike Reilly	Job Number	K084
Well Name	#1-10 Epley	Representative	Jason McLemore
Unique Well ID	DST #2 Johnson-Atoka 4548-4656	Well Operator	Grand Mesa
Surface Location	10-16s-33w-Scott	Prepared By	Jason McLemore
Field	Wildcat	Qualified By	John Goldsmith
Well Type	Vertical	Test Unit	#7

Test Information

		Representative	Jason McLemore
Test Type	Drill Stem Test	Well Operator	Grand Mesa
Formation	Johnson-Atoka	Report Date	2014/01/28
Well Fluid Type	01 Oil	Prepared By	Jason McLemore
Test Purpose (AEUB)	Initial Test		

Start Test Date	2014/01/28	Start Test Time	01:00:00
Final Test Date	2014/01/28	Final Test Time	10:10:00

Test Results

RECOVERED: 255 Gassy Oil Cut Mud, 35% Gas, 25% Oil, 40% Mud
255 Total Fluid

465' Gas In Pipe

TOOL SAMPLE: Muddy Oil, 75% Oil, 25% Mud

DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313

DRILL-STEM TEST TICKET

FILE: epley1dst2

TIME ON: 1:00 AM

TIME OFF: 10:10 AM

Company Grand Mesa — Lease & Well No. #1-10 Epley

Contractor Duke #4 — Charge to Grand Mesa

Elevation 3035 KB — Formation Johnson-Atoka — Effective Pay ____ Ft. — Ticket No. K084

Date 1-28-14 — Sec. 10 — Twp. 16 S — Range 33 W — County Scott — State KANSAS

Test Approved By John Goldsmith — Diamond Representative Jason McLemore

Formation Test No. 2 — Interval Tested from 4548 ft. to 4656 ft. — Total Depth 4656 ft.

Packer Depth 4543 ft. — Size 6 3/4 in. — Packer depth ____ ft. — Size 6 3/4 in.

Packer Depth 4548 ft. — Size 6 3/4 in. — Packer depth ____ ft. — Size 6 3/4 in.

Depth of Selective Zone Set ____

Top Recorder Depth (Inside) 4529 ft. — Recorder Number 5513 — Cap. 5000 P.S.I.

Bottom Recorder Depth (Outside) 4530 ft. — Recorder Number 5588 — Cap. 6000 P.S.I.

Below Straddle Recorder Depth ____ ft. — Recorder Number ____ — Cap. ____ P.S.I.

Mud Type Chemical — Viscosity 53 — Drill Collar Length 0 ft. — I.D. 2 1/4 in.

Weight 9.1 — Water Loss 7.2 cc. — Weight Pipe Length 0 ft. — I.D. 2 7/8 in

Chlorides 4000 P.P.M. — Drill Pipe Length 4515 ft. — I.D. 3 1/2 in

Jars: Make STERLING — Serial Number 6 — Test Tool Length 33 ft. — Tool Size 3 1/2-IF in

Did Well Flow? NO — Reversed Out NO — Anchor Length 108 ft. (93' DP in Anchor) — Size 4 1/2-FH in

Main Hole Size 7 7/8 — Tool Joint Size 4 1/2 XH in. — Surface Choke Size 1 in. — Bottom Choke Size 5/8 in

Blow: 1st Open: Good Blow, BOB in 18 Min., Blowback Built to 1"

2nd Open: Good Blow, BOB in 8 Min., Blowback Built to 2"

Recovered 255 ft. of Gassy Oil Cut Mud, 35% Gas, 25% Oil, 40% Mud

Recovered 255 ft. of Total Fluid

Recovered ____ ft. of ____

Recovered ____ ft. of 465' Gas In Pipe

Recovered ____ ft. of ____

Recovered ____ ft. of ____

Remarks: Tool Sample: Muddy Oil, 75% Oil, 25% Mud

Price Job	
Other Charges	
Insurance	
Total	

Time Set Packer(s) 3:53 AM A.M. P.M. — Time Started Off Bottom 7:38 AM A.M. P.M. — Maximum Temperature 117

Initial Hydrostatic Pressure ..... (A) 2208 P.S.I.

Initial Flow Period ..... Minutes 30 (B) 13 P.S.I. to (C) 61 P.S.I.

Initial Closed In Period ..... Minutes 45 (D) 1009 P.S.I.

Final Flow Period ..... Minutes 60 (E) 66 P.S.I. to (F) 129 P.S.I.

Final Closed In Period ..... Minutes 90 (G) 1010 P.S.I.

Final Hydrostatic Pressure ..... (H) 2191 P.S.I.