KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1053550

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 # 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: Ronald N. Sinclair
Phone: (316) 265-3000
CONTRACTOR: License # 30606
Name: Murfin Drilling Co., Inc.
Wellsite Geologist: Robert J. Petersen
Purchaser: NCRA

Designate Type of Completion:

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

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

02/05/2011	02/16/2011	03/23/2011
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-063-21889-00-00
Spot Description: 332' FNL & 2551' FEL
SW - NW - NW - NE Sec. 33 Twp. 13 S. R. 31 [ ] East [x] West
332 Feet from [x] North / [ ] South Line of Section
2551 Feet from [x] East / [ ] West Line of Section
Footages Calculated from Nearest Outside Section Corner:
[x] NE [ ] NW [ ] SE [ ] SW
County: Gove
Lease Name: Klaus-Hess Well #: 1-33
Field Name: Wildcat
Producing Formation: Lansing
Elevation: Ground: 2846 Kelly Bushing: 2851
Total Depth: 4570 Plug Back Total Depth: 4546
Amount of Surface Pipe Set and Cemented at: 220 Feet
Multiple Stage Cementing Collar Used? [x] Yes [ ] No
If yes, show depth set: 2355 Feet
If Alternate II completion, cement circulated from: 2355
feet depth to: 0 w/ 300 sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)

Chloride content: 9000 ppm Fluid volume: 1000 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

- [x] **Letter of Confidentiality Received**
  Date: 04/07/2011
- [x] **Confidential Release Date:** 04/06/2013
- [x] **Wireline Log Received**
- [x] **Geologist Report Received**
- [ ] **UIC Distribution**

ALT [ ] I [x] II [ ] III **Approved by:** NAOMI JAMES **Date:** 04/08/2011

Side Two

1053550

Operator Name: Grand Mesa Operating Company Lease Name: Klaus-Hess Well #: 1-33

Sec. 33 Twp. 13 S. R. 31 ☐ East ☑ West County: Gove

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:
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	220	Common	165	3% CC; 2% Gel
Production	7.875	5.50	15.5	4557	EA-2	175	

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	0-2355	SMD	300	
	-			

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
4	3960-3968	500 Gals. 15% MCA Acid	3934-3944'
4	3934-3944	1,000 Gals. 15% MCA Acid	3944-3958'
4	3944-3958		

TUBING RECORD: Size: 2.875 Set At: 4485 Packer At:

Liner Run: ☐ Yes ☑ No

Date of First, Resumed Production, SWD or ENHR. 03/23/2011

Producing Method: ☐ Flowing ☑ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
	135	0	120		

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:
3934-3968

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

Form	ACO1 - Well Completion
Operator	Grand Mesa Operating Company
Well Name	Klaus-Hess 1-33
Doc ID	1053550

All Electric Logs Run

Array Induction Shallow Focussed Electric Log
CPDCN Microresistivity Log
Microresistivity Log
Dual Receiver Cement Bond Log

Form	ACO1 - Well Completion
Operator	Grand Mesa Operating Company
Well Name	Klaus-Hess 1-33
Doc ID	1053550

Tops

Name	Top	Datum
Stone Corral	2344	+507
Bs/Stone Corral	2365	+486
Heebner	3860	-1006
Lansing	3902	-1051
Muncie Creek	4054	-1203
Bs/KC	4209	-1358
Marmaton	4249	-1398
Pawnee	4317	-1466
Ft. Scott	4381	-1530
Morrow	4492	-1641
Mississippian	4518	-1667
LTD	4568	

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

Kansas
Corporation Commission

phone: 316-337-6200
fax: 316-337-6211
http://kcc.ks.gov/

Thomas E. Wright, Chairman
Ward Loyd, Commissioner

Sam Brownback, Governor

April 07, 2011

Ronald N. Sinclair
Grand Mesa Operating Company
1700 N WATERFRONT PKWY BLDG 600
WICHITA, KS 67206-5514

Re: ACO1
API 15-063-21889-00-00
Klaus-Hess 1-33
NE/4 Sec.33-13S-31W
Gove County, Kansas

Dear Production Department:

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

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

Respectfully,
Ronald N. Sinclair

ALLIED CEMENTING CO., LLC. 040992

Federal Tax I.D.# 20-5975804

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

SERVICE POINT: Oakley

DATE 2-5-11	SEC. 33	TWP. 13	RANGE 31	CALLED OUT	ON LOCATION	JOB START 4:00pm	JOB FINISH 4:30pm
LEASE Klaus Hess	WELL # 1-33		LOCATION Oakley 1/2 S E 5S W into			COUNTY Gove	STATE KS
OLD OR NEW (Circle one)							

CONTRACTOR Murfin Drilling Rig 24
TYPE OF JOB Surface
HOLE SIZE 12¼ T.D. 220'
CASING SIZE 8 5/8 DEPTH 223'
TUBING SIZE DEPTH
DRILL PIPE DEPTH
TOOL DEPTH
PRES. MAX MINIMUM
MEAS. LINE SHOE JOINT
CEMENT LEFT IN CSG. 15'
PERFS.
DISPLACEMENT 13.24 BBL

OWNER same

EQUIPMENT

PUMP TRUCK # 423-281 CEMENTER Andrew
HELPER Larene
BULK TRUCK # 373 DRIVER Andrew
BULK TRUCK # DRIVER

REMARKS:

cement did circulate

thank you

CHARGE TO: Grand mesa
STREET
CITY STATE ZIP

CEMENT

AMOUNT ORDERED 165 sks com 3%cc 2%gel

COMMON	165 sks	@ 15.45	2549.25
POZMIX		@	
GEL	3 sks	@ 20.80	62.40
CHLORIDE	6 sks	@ 58.20	349.20
ASC		@	
		@	
		@	
		@	
		@	
		@	
		@	
		@	
HANDLING	174 sks	@ 2.40	417.60
MILEAGE	10¢ sk/mile		348.00
		TOTAL	3726.45

SERVICE

DEPTH OF JOB	220'		
PUMP TRUCK CHARGE			1018.00
EXTRA FOOTAGE		@	
MILEAGE	20 miles	@ 7.00	140.00
MANIFOLD		@	
		@	
		@	
		TOTAL	1158.00

PLUG & FLOAT EQUIPMENT

		@	
		@	
		@	
		@	
		@	
		TOTAL	

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

To Allied Cementing Co., 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 Anthony Martin

SIGNATURE Anthony Martin

JOB LOG

SWIFT Services, Inc.

DATE 02-15-11 | PAGE NO. 1

CUSTOMER	WELL NO.	LEASE	JOB TYPE	TICKET NO.
GRAND MESA	1-33	MCCAW-KISS	2-STAGE	19601

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
	2200							ON LOCATION
								CMT. BOTTOM / 75 SX 2. TOP 3025 MD
								RIG 4570 SET PIPE 4557 SJ 110 INSERT 4546
								5½ 15.5# DV TOOL #53, 2355 FT
								CENT 24.6.8.10.12.14.53 BASKET 4,53
								8 JOINTS OUT SCRATCHERS 30 EA 150 FT
	2230							START GEL & FLUSH EQ
								TAG BOTTOM - DROP BALL
	0045							BREAK CIRC & ROTATE
	0135	5.5	12		✓		200	MUD FLUSH SCRATCHERS
		∫	20		✓		∫	KCL "
			42.5		-			EA-2 CMT
								DROP LD, WASHOUT PL
	0150	6.0	0		✓		200	START DISP W/ H2O
		∫	52		✓		200	" W/ MUD
			95		✓		500	
			100		✓		600	
			105		✓		700	
	0200		103.1		✓		1500	LAND PLUG - RELEASE
								DROP DV OPENING DART
	0205						900	OPEN DV, CIRC 3 HRS W/ RIG
	0400		7.5					PLUG RH 30 MH 15
	0415	5.5	20		✓		200	START KCL
		∫	0		✓		∫	" SAND CMT
			145		-			END CMT
								DROP DV CLOSING PLUG
		5.5	0		-		200	START DISP
		∫	20		-		300	
			40		-		400	CIRC CMT TO PIT! 30 SKS TO PIT!
	0500		56.		-		1500	LAND PLUG, CLOSE DV
								RELEASE
	0600							JOB COMPLETE
								THANK YOU!
								DAVE, JOSH & LANE, JOE

JOB LOG

SWIFT Services, Inc.

DATE 3-3-11 | PAGE NO. 1

CUSTOMER	WELL NO.	LEASE	JOB TYPE	TICKET NO.
Grand Mesa	A 1-33	Klaus/Hess	Acidize Perfs	19540

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
	1300							on loc setup Trk
								2 7/8" x 5 1/2"
								RBP 3955'
								Perfs 3934-44'
								Pkr to spot 3944'
								to treat 3910'
	1325	2.5	0			0		spot 2bbl acid
								set pkr to treat
	1340	2.5	2			0		cont. Acid
			12			0		start flush
	1349		23			300		Hole loaded ½bbl late
	1350	.5	23.5			300		feeding
	1351	1	24			300		increase rate
	1353	1.5	26			200		"
	1355	2.75	30			150		" "
	1357		35			190		Acid flushed
						0		ISIP
								Thank you
								Nick, Josh F.

JOB LOG

SWIFT Services, Inc.

DATE 3-7-11 | PAGE NO.

CUSTOMER	WELL NO.	LEASE	JOB TYPE	TICKET NO.
Grand Mesa	#1-33	Klaus/Hess	Acidize Perfs	19542

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
	1240							on loc setup Trk
								2 7/8" x 5 1/2"
								Perfs 3934-68'
								Pkr to Spot 3975'
								to treat 3910'
		2.5	0			0		Spot 15 bbl acid
								set pkr to treat
		2.5	15			0		Cont. Acid
		3.5	24			0		Start flush increase rate
		3.5	28			200		Hole loaded
		4	30			300		increase rate
		4	49			325		Acid over-flushed 5 bbl
						0		ISIP vacuum
								Thank you
								Nick + Josh F.

DRILL STEM TEST REPORT

Prepared For: **GRAND MESA OPERATING**

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206

ATTN: BOB PETERSON

33-13S-31W GOVE

KLAUS-HESS 1-33

Start Date: 2011.02.11 @ 03:00:00
End Date: 2011.02.11 @ 10:53:00
Job Ticket #: 1064 DST #: 1

Eagle Testers LLC.
P.O.Box 1011, Great Bend, KS 67530
620-617-7548

Printed: 2011.02.11 @ 04:14:31

DRILL STEM TEST REPORT

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206
ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1064 **DST#: 1**

Test Start: 2011.02.11 @ 03:00:00

GENERAL INFORMATION:

Formation: **LKC C-**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:45:00
Time Test Ended: 10:53:00

Test Type: Conventional Bottom Hole (Initial)
Tester: DAVID NICHOLS
Unit No: 15 43 M RT OAKLEY

Interval: 3928.00 ft (KB) To 3950.00 ft (KB) (TVD)
Total Depth: 3950.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

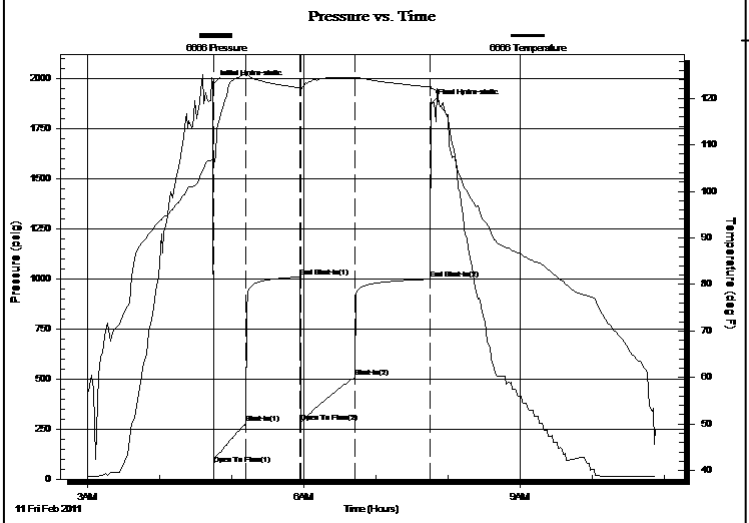
Reference Elevations: 2853.00 ft (KB)
2846.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6666 **Outside**

Press@RunDepth: 508.29 psig @ 3947.00 ft (KB)
Start Date: 2011.02.11 End Date: 2011.02.11
Start Time: 03:00:00 End Time: 10:53:00

Capacity: 5000.00 psig
Last Calib.: 2011.02.11
Time On Btm: 2011.02.11 @ 04:44:30
Time Off Btm: 2011.02.11 @ 07:46:00

TEST COMMENT: 30-INITIAL OPENING GOOD BLOW BOTTOM BUCKET IN 6 MINS
45-INITIAL SHUT IN FAIR BLOW BACK
45-FINAL OPENING GOOD BLOW BOTTOM BUCKET IN 6 MINS
60-FINAL SHUT IN FAIR BLOW BACK



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1967.71	106.65	Initial Hydro-static
1	73.53	106.24	Open To Flow (1)
28	280.49	125.17	Shut-In(1)
72	1008.25	122.28	End Shut-In(1)
73	281.68	121.91	Open To Flow (2)
118	508.29	124.41	Shut-In(2)
180	996.32	122.48	End Shut-In(2)
182	1870.79	122.17	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
480.00	GAS IN PIPE 100%GAS	5.82
960.00	GASSY OIL 75%OIL25%GAS	14.04
240.00	MUD CUTGASSY OIL 15%M15%G70%OI	3.51

Gas Rates

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

DRILL STEM TEST REPORT

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206
ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1064 **DST#: 1**

Test Start: 2011.02.11 @ 03:00:00

GENERAL INFORMATION:

Formation: **LKC C-**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:45:00
Time Test Ended: 10:53:00

Test Type: Conventional Bottom Hole (Initial)
Tester: DAVID NICHOLS
Unit No: 15 43 M RT OAKLEY

Interval: 3928.00 ft (KB) To 3950.00 ft (KB) (TVD)
Total Depth: 3950.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

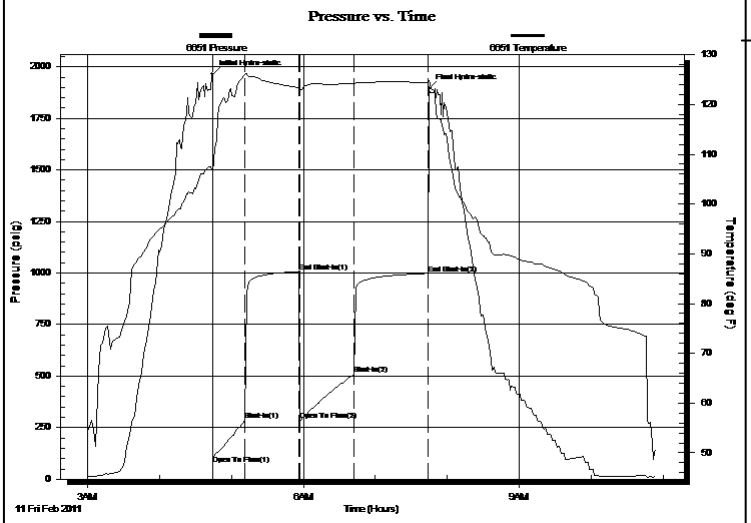
Reference Elevations: 2853.00 ft (KB)
2846.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6651 **Inside**

Press@RunDepth: 996.88 psig @ 3946.00 ft (KB)
Start Date: 2011.02.11 End Date: 2011.02.11
Start Time: 03:00:00 End Time: 10:53:30

Capacity: 5000.00 psig
Last Calib.: 2011.02.11
Time On Btm: 2011.02.11 @ 04:44:00
Time Off Btm: 2011.02.11 @ 07:45:00

TEST COMMENT: 30-INITIAL OPENING GOOD BLOW BOTTOM BUCKET IN 6 MINS
45-INITIAL SHUT IN FAIR BLOW BACK
45-FINAL OPENING GOOD BLOW BOTTOM BUCKET IN 6 MINS
60-FINAL SHUT IN FAIR BLOW BACK



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1963.30	107.01	Initial Hydro-static
1	73.87	106.57	Open To Flow (1)
28	283.63	125.94	Shut-In(1)
73	1007.66	123.38	End Shut-In(1)
73	285.59	123.06	Open To Flow (2)
118	507.51	124.17	Shut-In(2)
180	996.88	124.40	End Shut-In(2)
181	1894.78	124.55	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
480.00	GAS IN PIPE 100%GAS	5.82
960.00	GASSY OIL 75%OIL25%GAS	14.04
240.00	MUD CUTGASSY OIL 15%M15%G70%OI	3.51

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206
ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1064 **DST#: 1**

Test Start: 2011.02.11 @ 03:00:00

Tool Information

Drill Pipe:	Length:	3777.00 ft	Diameter:	3.88 inches	Volume:	55.24 bbl	Tool Weight:		2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:		20000.00 lb
Drill Collar:	Length:	124.00 ft	Diameter:	2.25 inches	Volume:	0.61 bbl	Weight to Pull Loose:		50000.00 lb
					Total Volume:	55.85 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		1.75 ft					String Weight:	Initial	44000.00 lb
Depth to Top Packer:		3928.00 ft						Final	48000.00 lb
Depth to Bottom Packer:		ft							
Interval between Packers:		22.00 ft							
Tool Length:		50.75 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut-in tool	5.00			3904.25		
Hydrolic tool	5.00			3909.25		
Change over sub	0.75			3910.00		
Jars	6.00			3916.00		
Safety Joint	2.00			3918.00		
Packer	5.00			3923.00	28.75	Bottom Of Top Packer
Packer	5.00			3928.00		
Anchor	17.00			3945.00		
Recorder	1.00	6651	Inside	3946.00		
Recorder	1.00	6666	Outside	3947.00		
Bull plug	3.00			3950.00	22.00	Bottom Packers & Anchor
Total Tool Length:	**50.75**					

DRILL STEM TEST REPORT

FLUID SUMMARY

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206

ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1064 **DST#: 1**

Test Start: 2011.02.11 @ 03:00:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	35 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	58.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.20 in³	Gas Cushion Type:			
Resistivity:	1000.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
480.00	GAS IN PIPE 100%GAS	5.816
960.00	GASSY OIL 75%OIL25%GAS	14.039
240.00	MUD CUTGASSY OIL 15%M15%G70%OIL	3.510

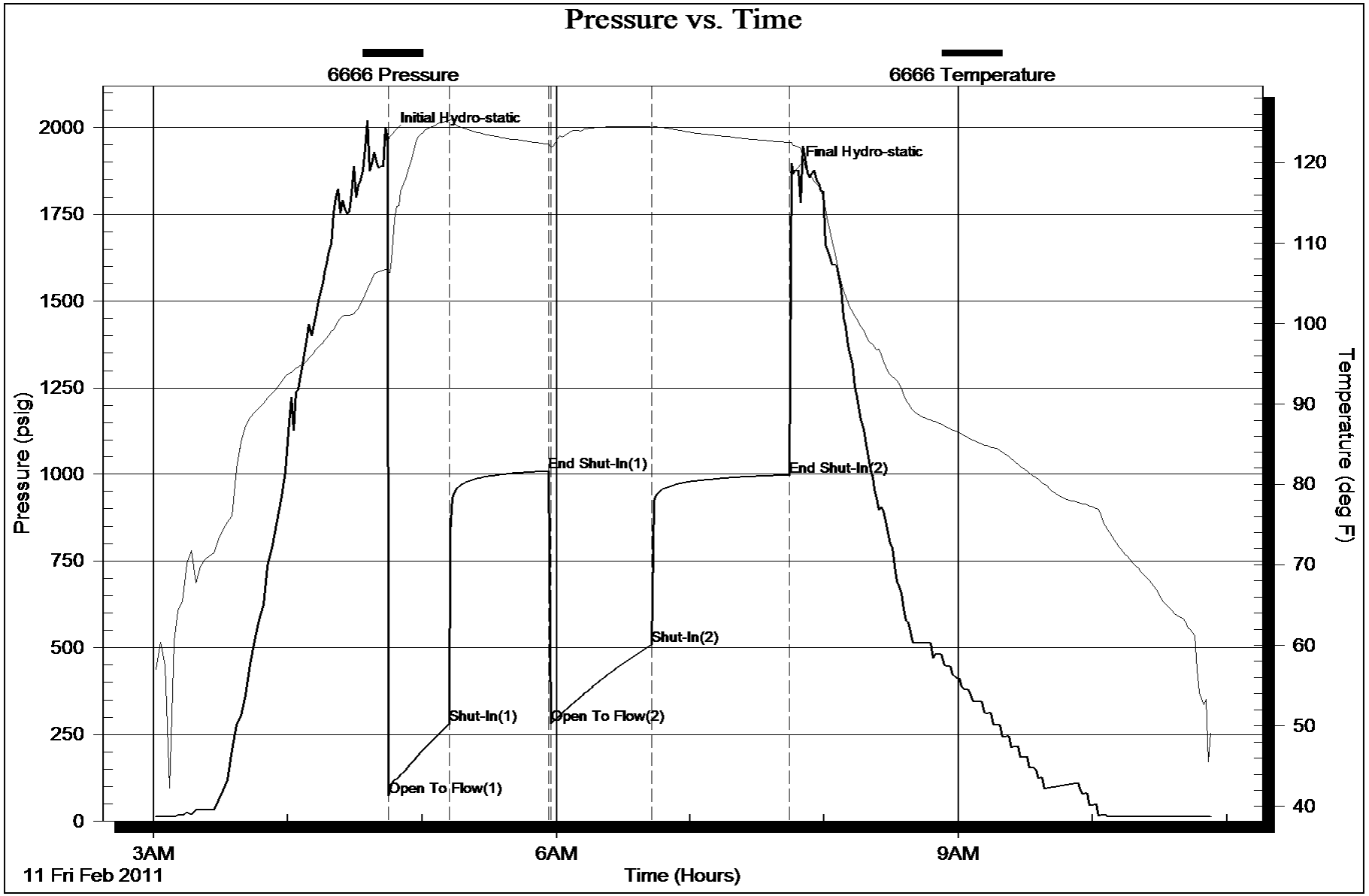
Total Length: 1680.00 ft Total Volume: 23.365 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

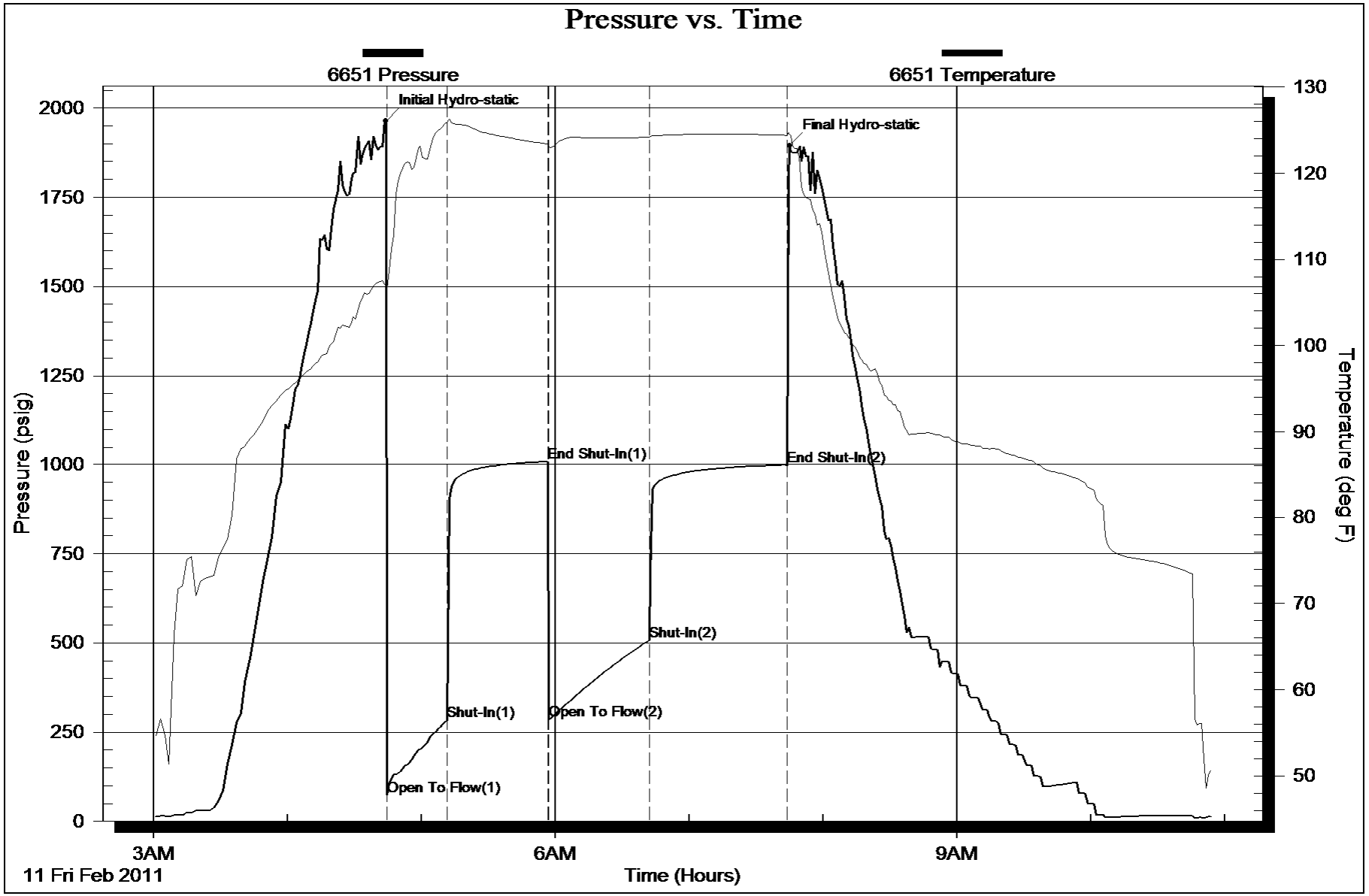
Recovery Comments: GRAIVITY OF OIL 35

Serial #: 6666 **Outside** GRAND MESA OPERATING 33-13S-31W GOVE DST Test Number: 1



Eagle Testers LLC. Ref. No: 1064 Printed: 2011.02.11 @ 04:14:33

Serial #: 6651 **Inside** GRAND MESA OPERATING 33-13S-31W GOVE DST Test Number: 1



Eagle Testers LLC. Ref. No: 1064 Printed: 2011.02.11 @ 04:14:33

DRILL STEM TEST REPORT

Prepared For: **GRAND MESA OPERATING**

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206

ATTN: BOB PETERSON

33-13S-31W GOVE

KLAUS-HESS 1-33

Start Date: 2011.02.11 @ 20:00:00
End Date: 2011.02.12 @ 04:42:00
Job Ticket #: 1065 DST #: 2

Eagle Testers LLC.
P.O.Box 1011, Great Bend, KS 67530
620-617-7548

Printed: 2011.02.13 @ 20:43:35

DRILL STEM TEST REPORT

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206
ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1065 **DST#: 2**

Test Start: 2011.02.11 @ 20:00:00

GENERAL INFORMATION:

Formation: **LKC -D-**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 22:06:30
Time Test Ended: 04:42:00

Test Type: Conventional Bottom Hole (Initial)
Tester: DAVID NICHOLS
Unit No: 15 42 M RT OAKLEY

Interval: 3950.00 ft (KB) To 3965.00 ft (KB) (TVD)
Total Depth: 3965.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

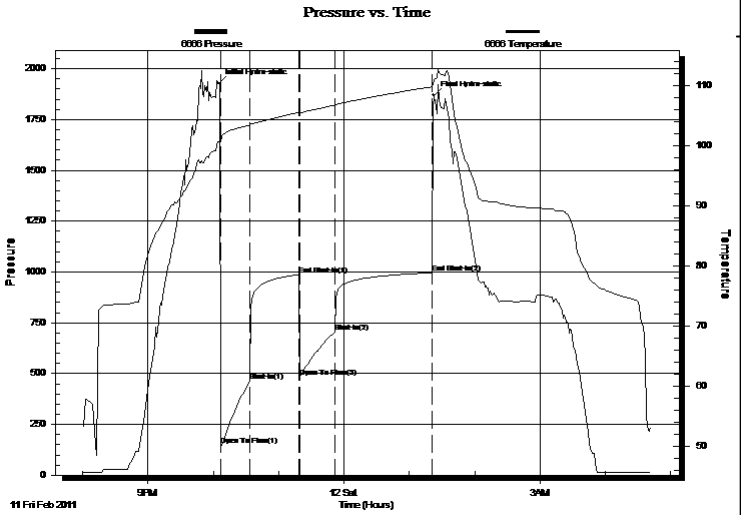
Reference Elevations: 2853.00 ft (KB)
2846.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6666 **Outside**

Press@RunDepth: 705.86 psig @ 3962.00 ft (KB)
Start Date: 2011.02.11 End Date: 2011.02.12
Start Time: 20:01:00 End Time: 04:42:00

Capacity: 5000.00 psig
Last Calib.: 2011.02.11
Time On Btm: 2011.02.11 @ 22:05:00
Time Off Btm: 2011.02.12 @ 01:22:30

TEST COMMENT: 30-INITIAL OPENING GOOD BLOW BOTTOM BUCKET IN 1 1/2 MINS
45-INITIAL SHUT IN GOOD BLOW BACK 4 INCHES INTO WATER
45-FINAL OPENING GOOD BLOW BOTTOM BUICKET IN 2 MINS
75-FINAL SHUT IN GOOD BLOW BACK BOTTOM BUCKET



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1928.99	100.67	Initial Hydro-static
2	147.07	100.65	Open To Flow (1)
29	462.61	103.37	Shut-In(1)
74	987.02	105.51	End Shut-In(1)
75	482.01	105.41	Open To Flow (2)
107	705.86	106.72	Shut-In(2)
196	995.36	109.75	End Shut-In(2)
198	1868.16	110.84	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
300.00	GAS IN PIPE 100%GAS	3.22
1720.00	GASSY OIL 30%GAS 70%OIL	25.15
120.00	MUD CUT GASSY OIL 30%G60%O10%M	1.75
60.00	MUD CUT GASSY OIL TRACE OF WATER	0.88
0.00	30%GAS 40%OIL 15%MUD 15%WATER	0.00

Gas Rates

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

DRILL STEM TEST REPORT

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206
ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1065 **DST#: 2**

Test Start: 2011.02.11 @ 20:00:00

GENERAL INFORMATION:

Formation: **LKC -D-**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 22:06:30
Time Test Ended: 04:42:00

Test Type: Conventional Bottom Hole (Initial)
Tester: DAVID NICHOLS
Unit No: 15 42 M RT OAKLEY

Interval: 3950.00 ft (KB) To 3965.00 ft (KB) (TVD)
Total Depth: 3965.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

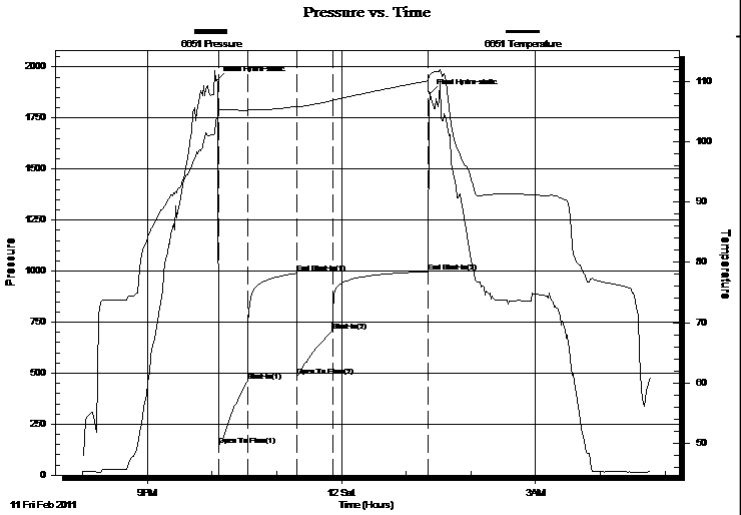
Reference Elevations: 2853.00 ft (KB)
2846.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6651 **Inside**

Press@RunDepth: 995.97 psig @ 3961.00 ft (KB)
Start Date: 2011.02.11 End Date: 2011.02.12
Start Time: 20:01:00 End Time: 04:47:00

Capacity: 5000.00 psig
Last Calib.: 2011.02.11
Time On Btm: 2011.02.11 @ 22:04:00
Time Off Btm: 2011.02.12 @ 01:22:00

TEST COMMENT: 30-INITIAL OPENING GOOD BLOW BOTTOM BUCKET IN 1 1/2 MINS
45-INITIAL SHUT IN GOOD BLOW BACK 4 INCHES INTO WATER
45-FINAL OPENING GOOD BLOW BOTTOM BUICKET IN 2 MINS
75-FINAL SHUT IN GOOD BLOW BACK BOTTOM BUCKET



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1935.20	103.85	Initial Hydro-static
2	147.86	104.91	Open To Flow (1)
29	460.44	105.15	Shut-In(1)
75	989.00	105.88	End Shut-In(1)
75	485.07	105.72	Open To Flow (2)
108	704.64	106.83	Shut-In(2)
197	995.97	110.11	End Shut-In(2)
198	1871.53	111.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
300.00	GAS IN PIPE 100%GAS	3.22
1720.00	GASSY OIL 30%GAS 70%OIL	25.15
120.00	MUD CUT GASSY OIL 30%G60%O10%M	1.75
60.00	MUD CUT GASSY OIL TRACE OF WATER	0.88
0.00	30%GAS 40%OIL 15%MUD 15%WATER	0.00

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206
ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1065 **DST#: 2**

Test Start: 2011.02.11 @ 20:00:00

Tool Information

Drill Pipe:	Length:	3805.00 ft	Diameter:	3.88 inches	Volume:	55.65 bbl	Tool Weight:		2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:		20000.00 lb
Drill Collar:	Length:	120.00 ft	Diameter:	2.25 inches	Volume:	0.59 bbl	Weight to Pull Loose:		60000.00 lb
					Total Volume:	56.24 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		3.75 ft					String Weight:	Initial	45000.00 lb
Depth to Top Packer:		3950.00 ft						Final	50000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		15.00 ft							
Tool Length:		43.75 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut-in tool	5.00			3926.25		
Hydrolic tool	5.00			3931.25		
Change over sub	0.75			3932.00		
Jars	6.00			3938.00		
Safety Joint	2.00			3940.00		
Packer	5.00			3945.00	28.75	Bottom Of Top Packer
Packer	5.00			3950.00		
Anchor	10.00			3960.00		
Recorder	1.00	6651	Inside	3961.00		
Recorder	1.00	6666	Outside	3962.00		
Bull plug	3.00			3965.00	15.00	Bottom Packers & Anchor
Total Tool Length:	**43.75**					

DRILL STEM TEST REPORT

FLUID SUMMARY

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206

ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1065 **DST#: 2**

Test Start: 2011.02.11 @ 20:00:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	79.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	5.99 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	1100.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
300.00	GAS IN PIPE 100%GAS	3.222
1720.00	GASSY OIL 30%GAS 70%OIL	25.154
120.00	MUD CUT GASSY OIL 30%G60%O10%M	1.755
60.00	MUD CUT GASSY OIL TRACE OF WATER	0.877
0.00	30%GAS 40%OIL 15%MUD 15%WATER	0.000

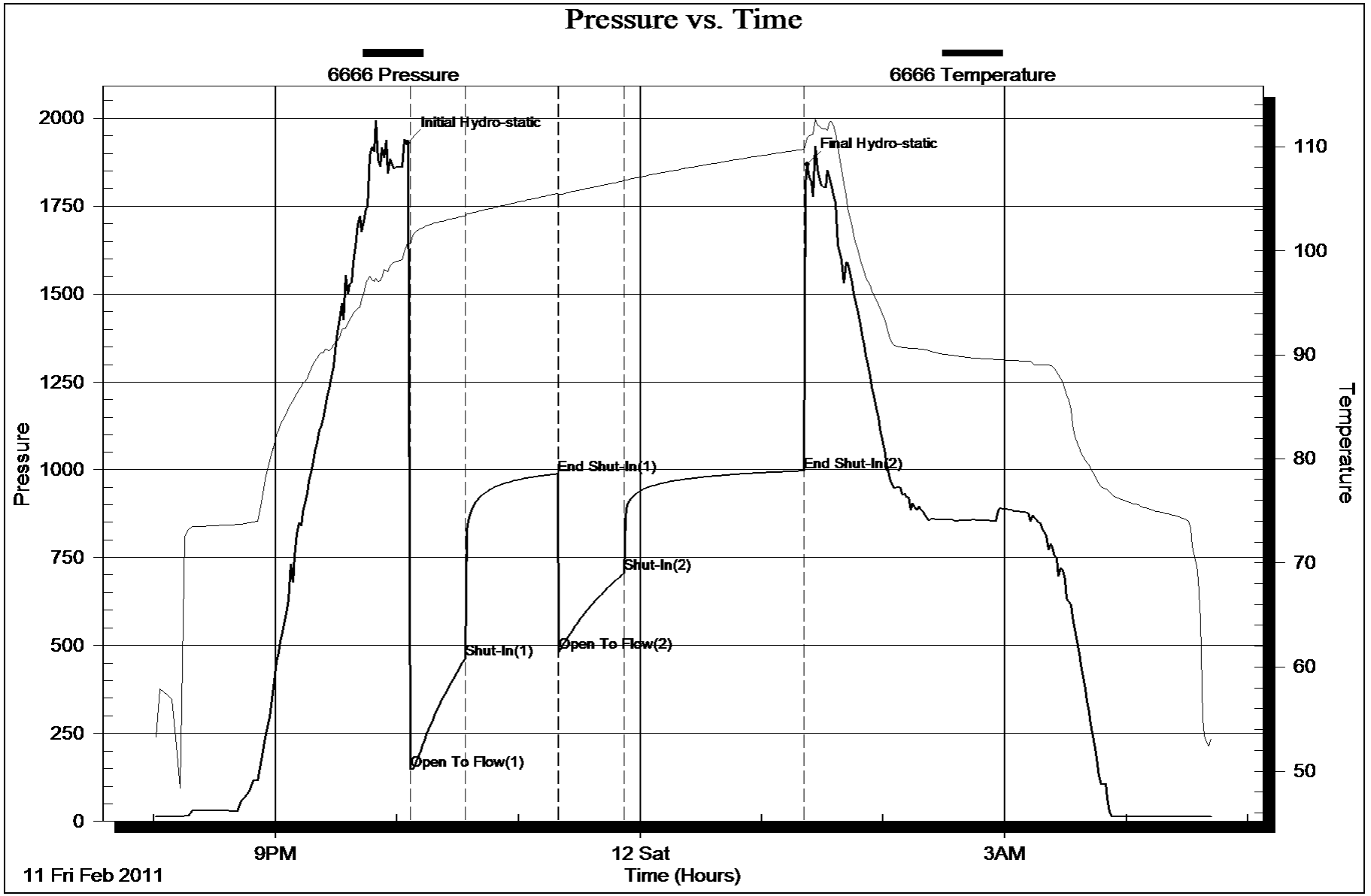
Total Length: 2200.00 ft Total Volume: 31.008 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: GRAVITY OF OIL 35 CORRECTED

Serial #: 6666 **Outside** GRAND MESA OPERATING 33-13S-31W GOVE DST Test Number: 2



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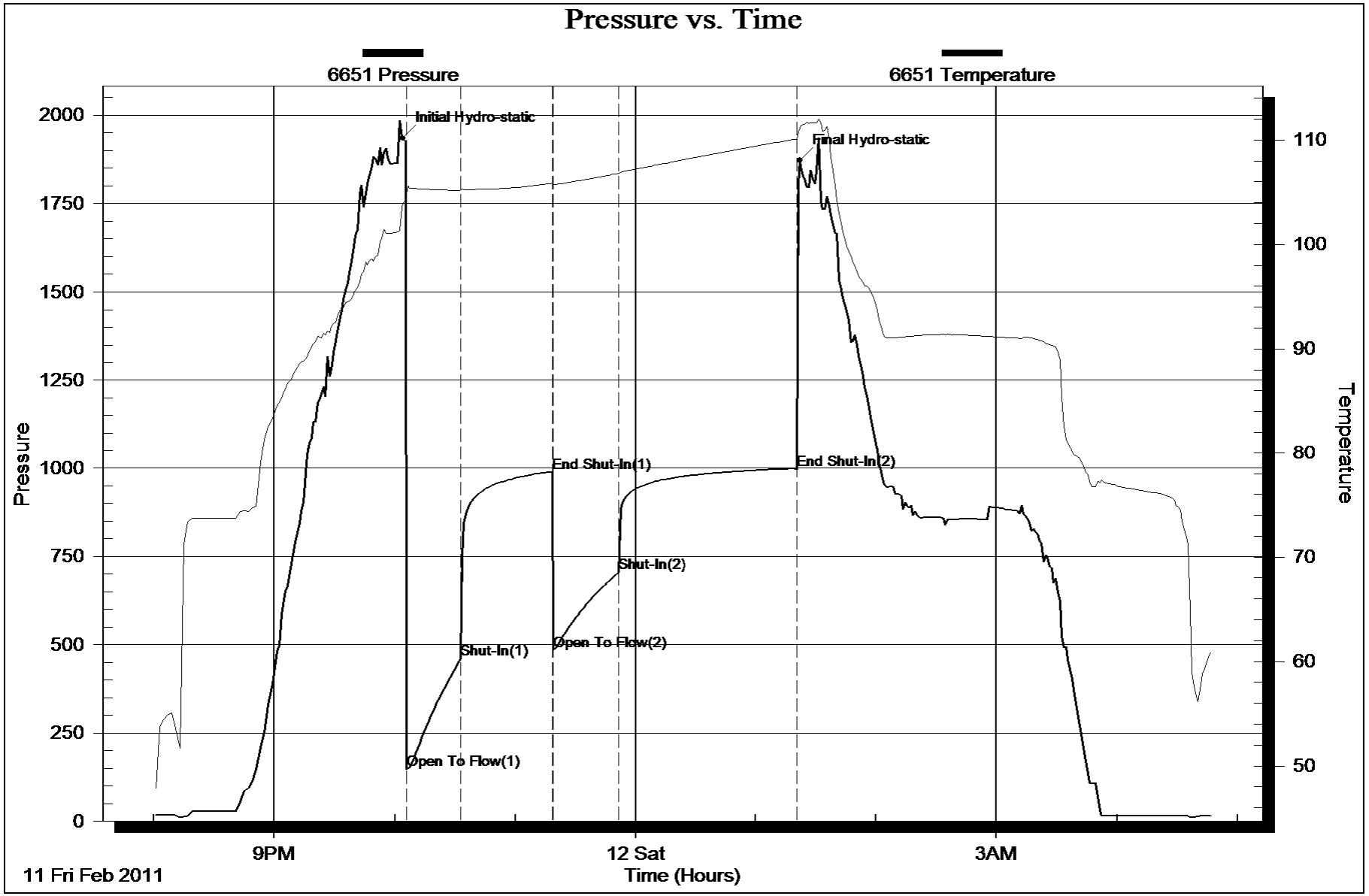

Pressure vs. Time
6651 Pressure
6651 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Shut-In(1)
Shut-In(2)
Open To Flow(1)
Open To Flow(2)
Pressure
Temperature
2000
1750
1500
1250
1000
750
500
250
0
110
100
90
80
70
60
50
9PM
12 Sat
3AM
11 Fri Feb 2011
Time (Hours)

DRILL STEM TEST REPORT

Prepared For: **GRAND MESA OPERATING**

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206

ATTN: BOB PETERSON

33-13S-31W GOVE

KLAUS-HESS 1-33

Start Date: 2011.02.13 @ 04:00:00
End Date: 2011.02.13 @ 11:28:30
Job Ticket #: 1066 DST #: 3

Eagle Testers LLC.
P.O.Box 1011, Great Bend, KS 67530
620-617-7548

Printed: 2011.02.13 @ 04:12:04

DRILL STEM TEST REPORT

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206
ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1066 **DST#: 3**

Test Start: 2011.02.13 @ 04:00:00

GENERAL INFORMATION:

Formation: **LKC -J-**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 06:22:00
Time Test Ended: 11:28:30

Test Type: Conventional Bottom Hole (Initial)
Tester: DAVID NICHOLS
Unit No: 15 43 M RT OAKLEY

Interval: 4126.00 ft (KB) To 4136.00 ft (KB) (TVD)
Total Depth: 4136.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

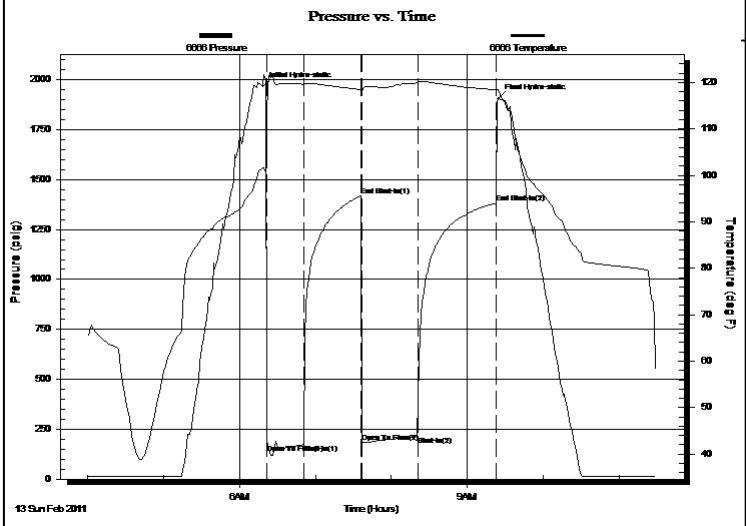
Reference Elevations: 2853.00 ft (KB)
2846.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6666 **Outside**

Press@RunDepth: 215.20 psig @ 4133.00 ft (KB)
Start Date: 2011.02.13 End Date: 2011.02.13
Start Time: 04:00:00 End Time: 11:28:30

Capacity: 5000.00 psig
Last Calib.: 2011.02.13
Time On Btm: 2011.02.13 @ 06:18:30
Time Off Btm: 2011.02.13 @ 09:24:30

TEST COMMENT: 30-INITIAL OPENING FAIR BLOW BOTTOM BUCKET IN 12 MINS
45-INITIAL SHUT IN SURFACE BLOW BACK
45-FINAL OPENING WEAK BUILDING BLOW BUILT TO 10 INCHES INTO WATER
60-FINAL SHUT IN NO BLOW BACK



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1965.52	101.54	Initial Hydro-static
4	131.83	113.77	Open To Flow (1)
33	173.97	119.59	Shut-In(1)
77	1418.13	118.44	End Shut-In(1)
79	184.89	118.35	Open To Flow (2)
123	215.20	119.93	Shut-In(2)
184	1382.21	118.44	End Shut-In(2)
186	1903.79	118.38	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
200.00	MUD 100%MUD	1.76
60.00	MUD CUT WATER 40%W60%MUD	0.88
120.00	MUDDY WATER 40%M60%WATER	1.75

Gas Rates

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

DRILL STEM TEST REPORT

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206
ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1066 **DST#: 3**

Test Start: 2011.02.13 @ 04:00:00

GENERAL INFORMATION:

Formation: **LKC -J-**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 06:22:00
Time Test Ended: 11:28:30

Test Type: Conventional Bottom Hole (Initial)
Tester: DAVID NICHOLS
Unit No: 15 43 M RT OAKLEY

Interval: 4126.00 ft (KB) To 4136.00 ft (KB) (TVD)
Total Depth: 4136.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

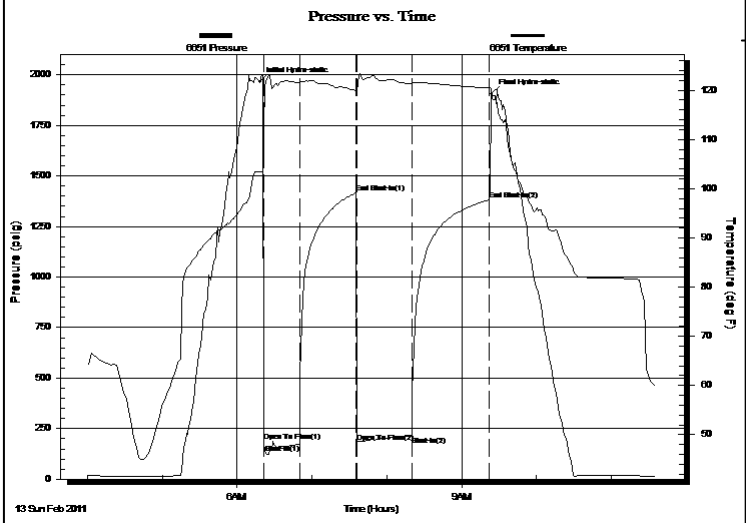
Reference Elevations: 2853.00 ft (KB)
2846.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6651 **Inside**

Press@RunDepth: 1381.07 psig @ 4132.00 ft (KB)
Start Date: 2011.02.13 End Date: 2011.02.13
Start Time: 04:00:00 End Time: 11:36:00

Capacity: 5000.00 psig
Last Calib.: 2011.02.13
Time On Btm: 2011.02.13 @ 06:18:30
Time Off Btm: 2011.02.13 @ 09:24:00

TEST COMMENT: 30-INITIAL OPENING FAIR BLOW BOTTOM BUCKET IN 12 MINS
45-INITIAL SHUT IN SURFACE BLOW BACK
45-FINAL OPENING WEAK BUILDING BLOW BUILT TO 10 INCHES INTO WATER
60-FINAL SHUT IN NO BLOW BACK



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1966.13	103.51	Initial Hydro-static
3	186.57	112.14	Open To Flow (1)
32	171.84	121.56	Shut-In(1)
77	1418.27	120.00	End Shut-In(1)
78	184.82	119.61	Open To Flow (2)
122	213.64	121.34	Shut-In(2)
184	1381.07	120.44	End Shut-In(2)
186	1907.03	119.69	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
200.00	MUD 100%MUD	1.76
60.00	MUD CUT WATER 40%W60%MUD	0.88
120.00	MUDDY WATER 40%M60%WATER	1.75

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206
ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1066 **DST#: 3**

Test Start: 2011.02.13 @ 04:00:00

Tool Information

Drill Pipe:	Length:	3980.00 ft	Diameter:	3.88	inches	Volume:	58.20	bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00	inches	Volume:	0.00	bbl	
Drill Collar:	Length:	120.00 ft	Diameter:	2.25	inches	Volume:	0.59	bbl	
						Total Volume:	58.79	bbl	

Drill Pipe Above KB:	2.75 ft
Depth to Top Packer:	4126.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	10.00 ft
Tool Length:	38.75 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:		2000.00 lb
Weight set on Packer:		20000.00 lb
Weight to Pull Loose:		55000.00 lb
Tool Chased		0.00 ft
String Weight:	Initial	45000.00 lb
	Final	45000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut-in tool	5.00			4102.25		
Hydrolic tool	5.00			4107.25		
Change over sub	0.75			4108.00		
Jars	6.00			4114.00		
Safety Joint	2.00			4116.00		
Packer	5.00			4121.00	28.75	Bottom Of Top Packer
Packer	5.00			4126.00		
Anchor	5.00			4131.00		
Recorder	1.00	6651	Inside	4132.00		
Recorder	1.00	6666	Outside	4133.00		
Bull plug	3.00			4136.00	10.00	Bottom Packers & Anchor
Total Tool Length:	**38.75**					

DRILL STEM TEST REPORT

FLUID SUMMARY

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206

ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1066 **DST#: 3**

Test Start: 2011.02.13 @ 04:00:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	60.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	10.50 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	1500.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
200.00	MUD 100%MUD	1.760
60.00	MUD CUT WATER 40%W60%MUD	0.877
120.00	MUDDY WATER 40%M60%WATER	1.755

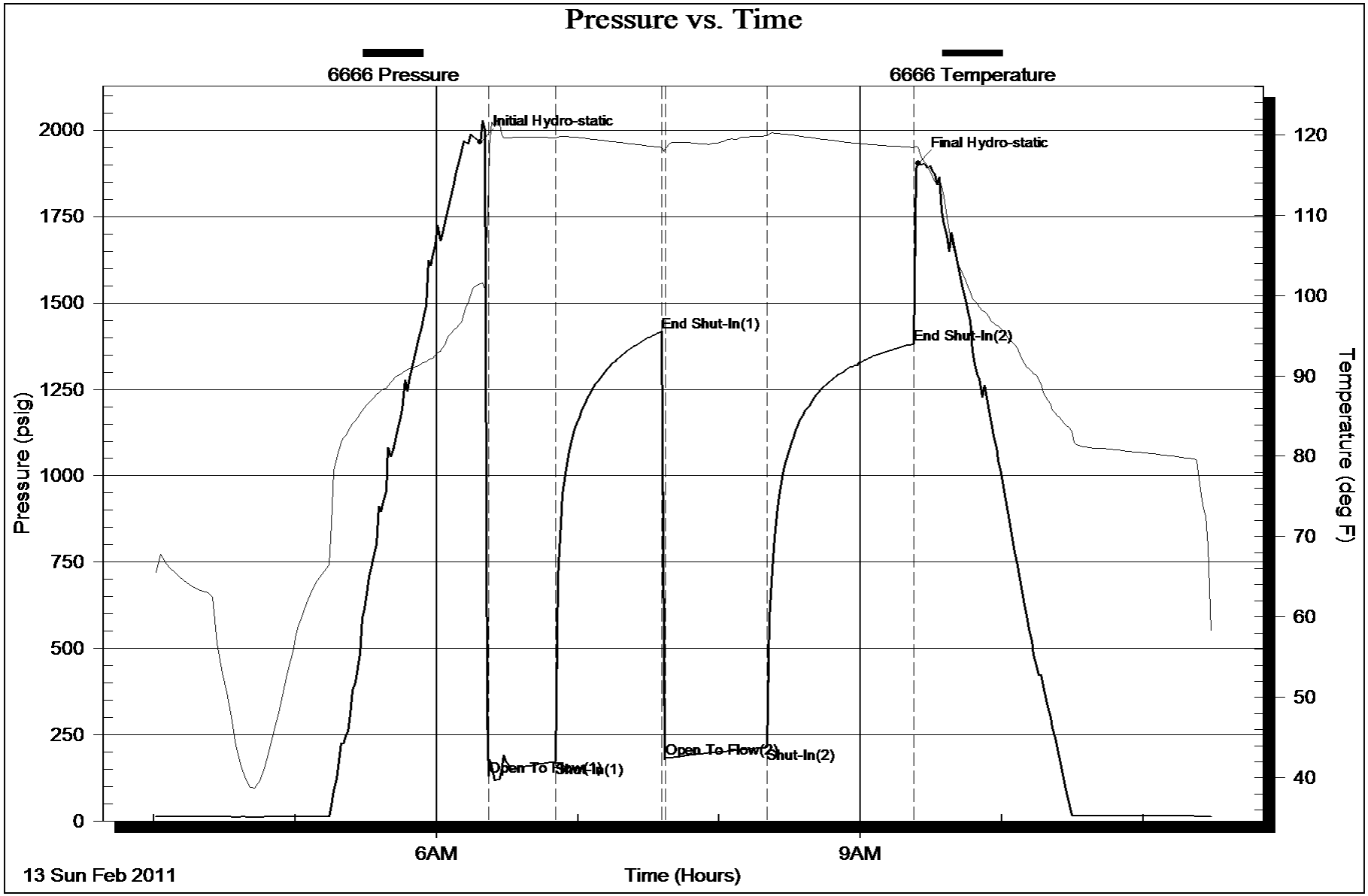
Total Length: 380.00 ft Total Volume: 4.392 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: RECOVERY CHLORIDES 37,000 PPM

Serial #: 6666 **Outside** GRAND MESA OPERATING 33-13S-31W GOVE DST Test Number: 3



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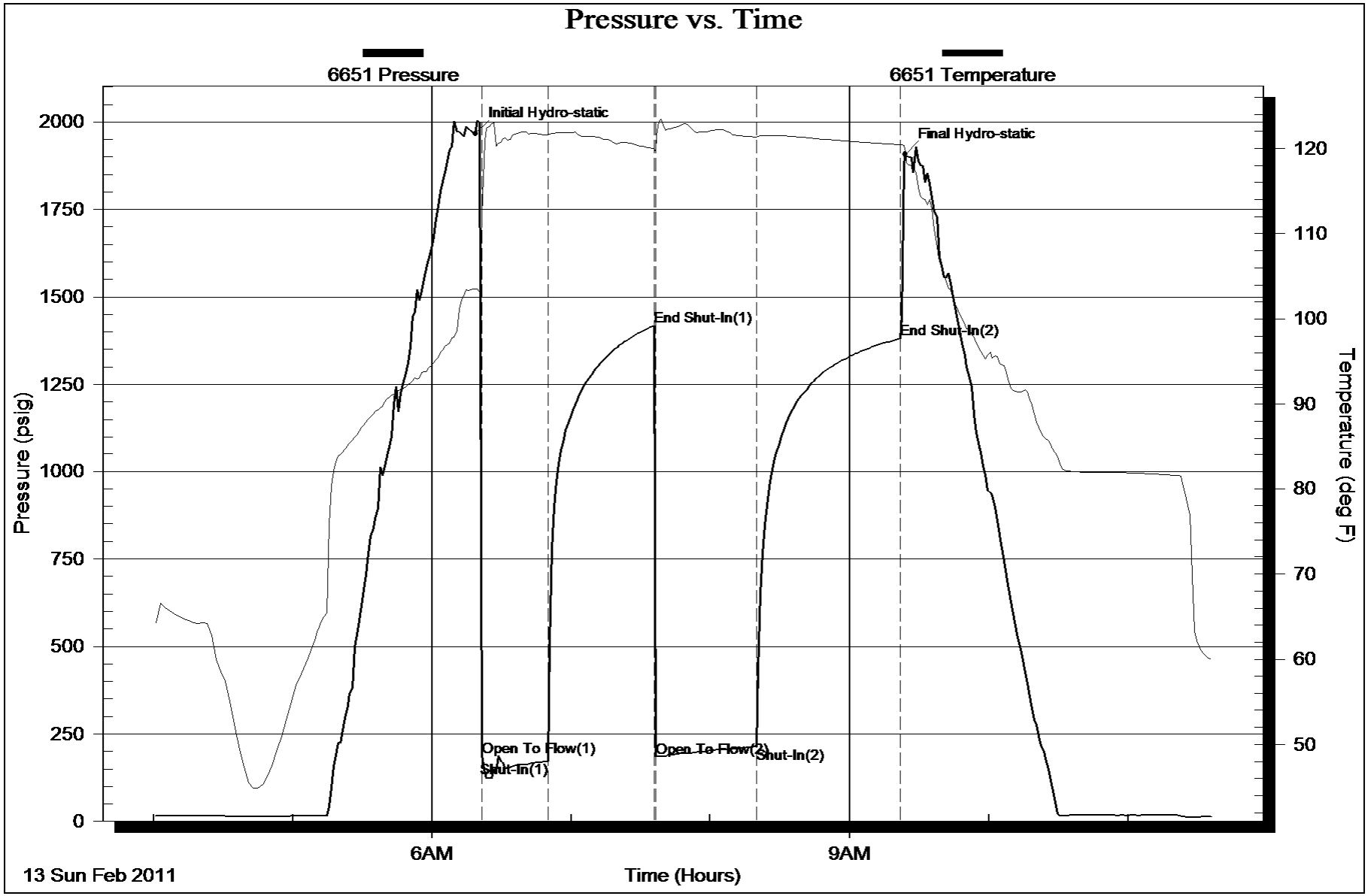

Pressure vs. Time
6651 Pressure
6651 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure (psig)
Temperature (deg F)
2000
1750
1500
1250
1000
750
500
250
0
120
110
100
90
80
70
60
50
6AM
9AM
13 Sun Feb 2011
Time (Hours)

DRILL STEM TEST REPORT

Prepared For: **GRAND MESA OPERATING**

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206

ATTN: BOB PETERSON

33-13S-31W GOVE

KLAUS-HESS 1-33

Start Date: 2011.02.13 @ 19:00:00

End Date: 2011.02.14 @ 00:58:30

Job Ticket #: 1067 DST #: 4

Eagle Testers LLC.

P.O.Box 1011, Great Bend, KS 67530

620-617-7548

Printed: 2011.02.13 @ 19:12:06

DRILL STEM TEST REPORT

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206
ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1067 **DST#: 4**

Test Start: 2011.02.13 @ 19:00:00

GENERAL INFORMATION:

Formation: **LKC -K-**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 20:54:30
Time Test Ended: 00:58:30

Test Type: Conventional Bottom Hole (Initial)
Tester: DAVID NICHOLS
Unit No: 15 43 M RT OAKLEY

Interval: 4142.00 ft (KB) To 4167.00 ft (KB) (TVD)
Total Depth: 4167.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

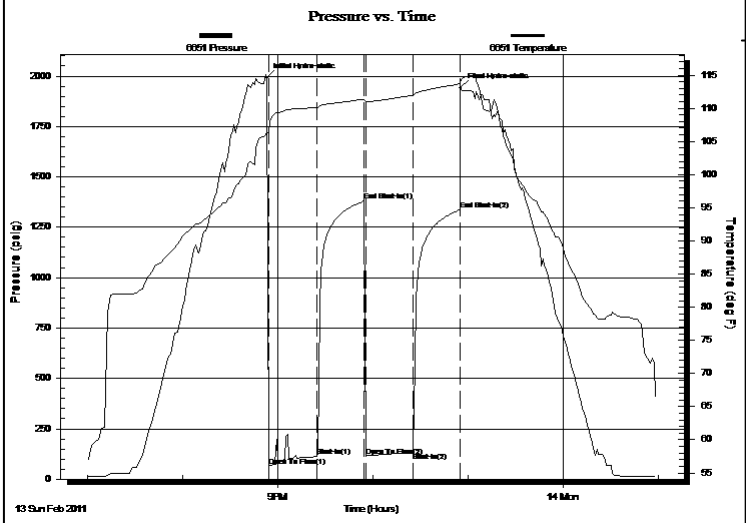
Reference Elevations: 2853.00 ft (KB)
2846.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6651 **Inside**

Press@RunDepth: 133.06 psig @ 4163.00 ft (KB)
Start Date: 2011.02.13 End Date: 2011.02.14
Start Time: 19:00:00 End Time: 00:58:30

Capacity: 5000.00 psig
Last Calib.: 2011.02.13
Time On Btm: 2011.02.13 @ 20:53:30
Time Off Btm: 2011.02.13 @ 22:55:30

TEST COMMENT: 30-INITIAL OPENING WEAK BLOW BUILT TO 1 INCHE THEN DIED OF TO SURFACE BLOW
30-INITIAL SHUT IN NO BLOW BACK
30-FINAL OPENING SURFACE BLOW
30-FINAL SHUT IN NO BLOW BACK



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1990.63	106.34	Initial Hydro-static
1	65.73	106.29	Open To Flow (1)
32	111.85	110.11	Shut-In(1)
61	1379.98	111.36	End Shut-In(1)
63	116.12	111.03	Open To Flow (2)
93	133.06	111.97	Shut-In(2)
122	1335.75	113.69	End Shut-In(2)
122	1942.05	113.96	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
75.00	MUD 100%MUD	0.37
120.00	MUDDY WATER 40%M60%WATER	1.32

Gas Rates

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

DRILL STEM TEST REPORT

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206
ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1067 **DST#: 4**

Test Start: 2011.02.13 @ 19:00:00

GENERAL INFORMATION:

Formation: **LKC -K-**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 20:54:30
Time Test Ended: 00:58:30

Test Type: Conventional Bottom Hole (Initial)
Tester: DAVID NICHOLS
Unit No: 15 43 M RT OAKLEY

Interval: 4142.00 ft (KB) To 4167.00 ft (KB) (TVD)
Total Depth: 4167.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

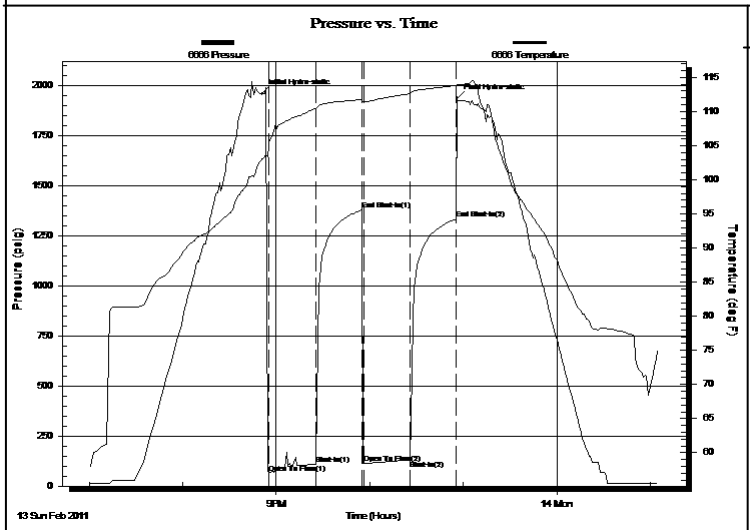
Reference Elevations: 2853.00 ft (KB)
2846.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6666 **Outside**

Press@RunDepth: 1335.83 psig @ 4164.00 ft (KB)
Start Date: 2011.02.13 End Date: 2011.02.14
Start Time: 19:00:00 End Time: 01:04:30

Capacity: 5000.00 psig
Last Calib.: 2011.02.13
Time On Btm: 2011.02.13 @ 20:51:00
Time Off Btm: 2011.02.13 @ 22:56:00

TEST COMMENT: 30-INITIAL OPENING WEAK BLOW BUILT TO 1 INCHE THEN DIED OF TO SURFACE BLOW
30-INITIAL SHUT IN NO BLOW BACK
30-FINAL OPENING SURFACE BLOW
30-FINAL SHUT IN NO BLOW BACK



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1959.55	103.04	Initial Hydro-static
4	62.31	104.89	Open To Flow (1)
35	109.72	110.45	Shut-In(1)
64	1380.72	111.77	End Shut-In(1)
65	113.25	111.41	Open To Flow (2)
95	130.63	112.62	Shut-In(2)
125	1335.83	113.81	End Shut-In(2)
125	1938.38	113.92	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
75.00	MUD 100%MUD	0.37
120.00	MUDDY WATER 40%M60%WATER	1.32

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206
ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1067 **DST#: 4**

Test Start: 2011.02.13 @ 19:00:00

Tool Information

Drill Pipe:	Length:	3996.00 ft	Diameter:	3.88 inches	Volume:	58.44 bbl	Tool Weight:		2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:		20000.00 lb
Drill Collar:	Length:	120.00 ft	Diameter:	2.25 inches	Volume:	0.59 bbl	Weight to Pull Loose:		55000.00 lb
					Total Volume:	59.03 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		2.75 ft					String Weight:	Initial	48000.00 lb
Depth to Top Packer:		4142.00 ft						Final	48000.00 lb
Depth to Bottom Packer:		ft							
Interval between Packers:		25.00 ft							
Tool Length:		53.75 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut-in tool	5.00			4118.25		
Hydrolic tool	5.00			4123.25		
Change over sub	0.75			4124.00		
Jars	6.00			4130.00		
Safety Joint	2.00			4132.00		
Packer	5.00			4137.00	28.75	Bottom Of Top Packer
Packer	5.00			4142.00		
Anchor	20.00			4162.00		
Recorder	1.00	6651	Inside	4163.00		
Recorder	1.00	6666	Outside	4164.00		
Bull plug	3.00			4167.00	25.00	Bottom Packers & Anchor
Total Tool Length:	**53.75**					

DRILL STEM TEST REPORT

FLUID SUMMARY

GRAND MESA OPERATING

1700 N WATERFRONT
PKWY BLDG 600
WICHITA KS 67206

ATTN: BOB PETERSON

KLAUS-HESS 1-33

33-13S-31W GOVE

Job Ticket: 1067 **DST#: 4**

Test Start: 2011.02.13 @ 19:00:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	60.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	6.80 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	1300.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

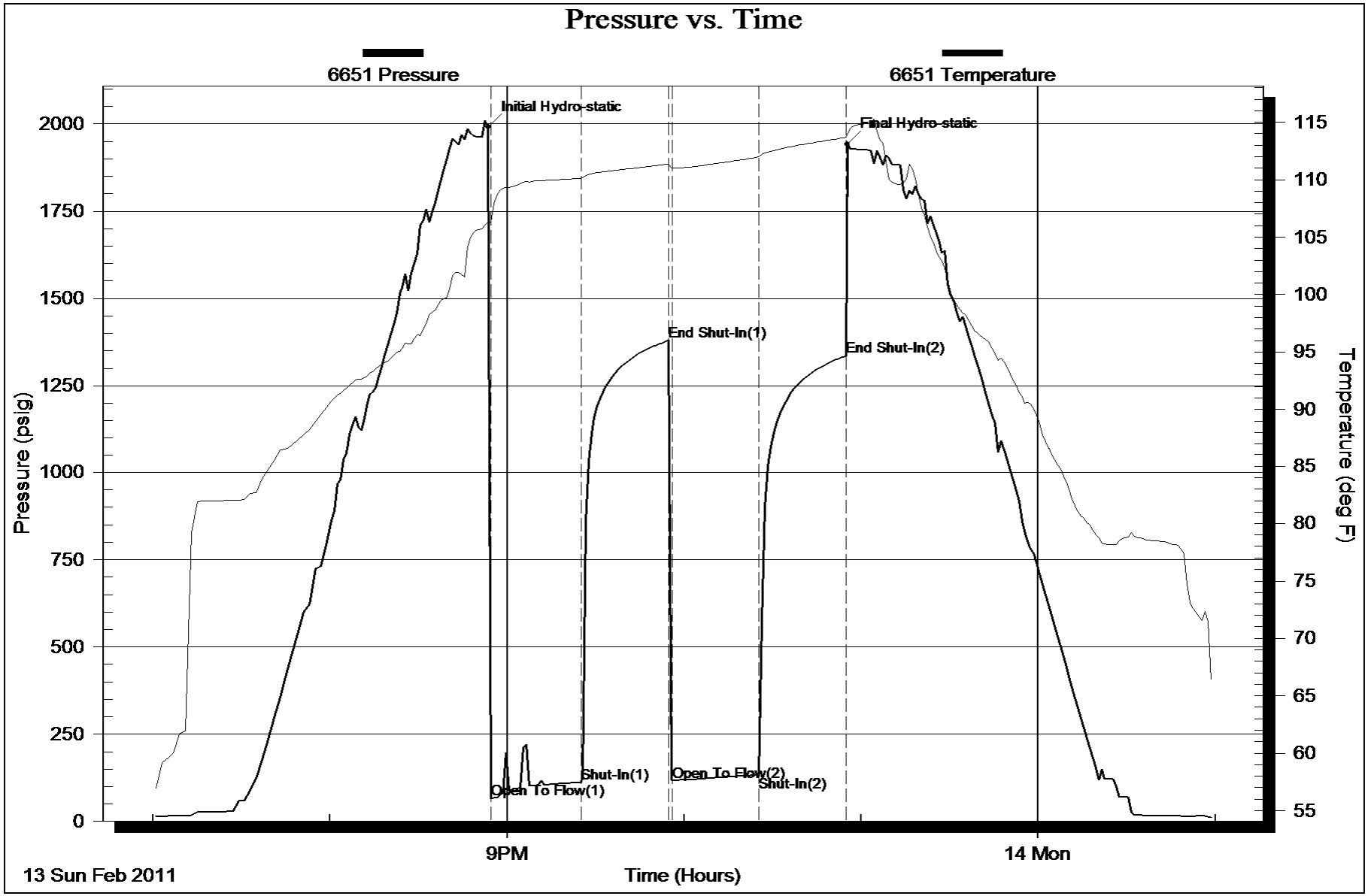
Length ft	Description	Volume bbl
75.00	MUD 100%MUD	0.369
120.00	MUDDY WATER 40%M60%WATER	1.318

Total Length: 195.00 ft Total Volume: 1.687 bbl

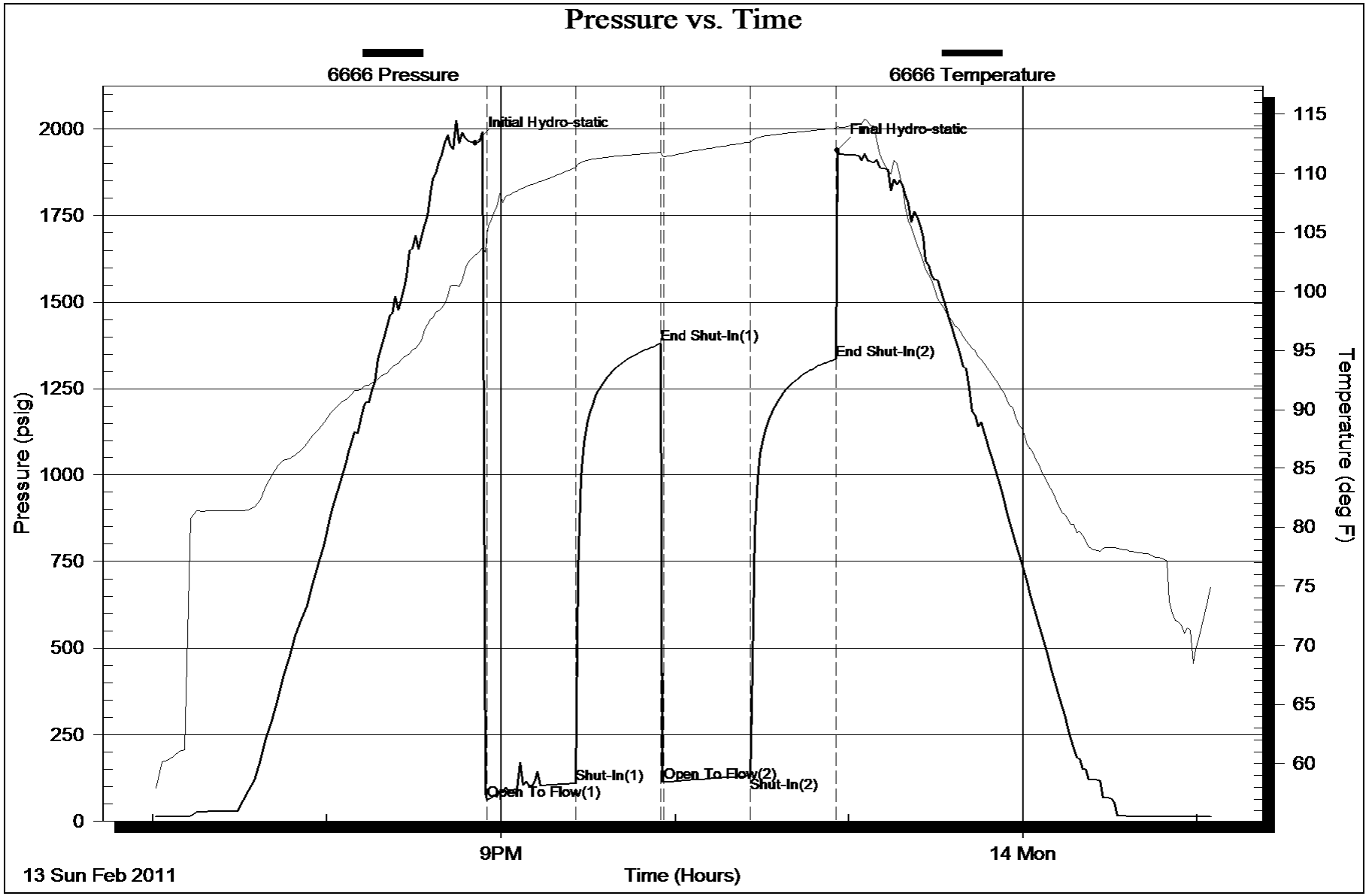
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: RECOVERY CHOLRIDES 34,000


Pressure vs. Time
6651 Pressure
6651 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure (psig)
Temperature (deg F)
2000
1750
1500
1250
1000
750
500
250
0
115
110
105
100
95
90
85
80
75
70
65
60
55
9PM
14 Mon
13 Sun Feb 2011
Time (Hours)

Serial #: 6666 **Outside** GRAND MESA OPERATING 33-13S-31W GOVE DST Test Number: 4



Eagle Testers LLC. Ref. No: 1067 Printed: 2011.02.13 @ 19:12:19

GEOLOGIST'S REPORT
DRILLING TIME AND SAMPLE LOG

GRAND MESA OPERATING CO.

WELL: KLAUS–HESS #1–33
LOC.: 332' FNL & 2551' FEL
SEC. 33–13–31W
GOVE COUNTY, KANSAS
API: 15–063–21889–00–00

DRILLING CONTR.: MURFIN RIG #24
SPUD: 02–03–11 COMP: 02–16–11
MUD UP: 3500' TYPE MUD: CHEM.
DRILL TIME: 3600–RTD
RTD: 4570' LTD: 4568'
SAMPLES SAVED: 3800'–RTD
GEOLOGIST: ROBERT J. PETERSEN

ELEVATION
KB: 2851'
GL: 2846'
LOG MEASURED FROM: KB

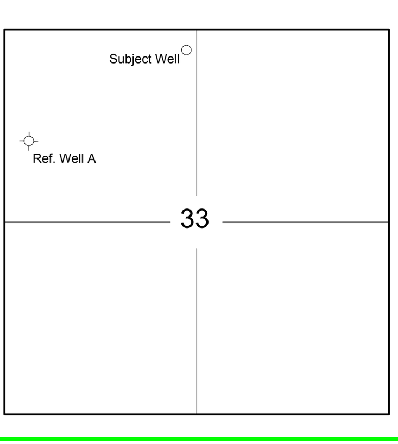
SURFACE CASING
New 23# 8 5/8" surface csg., Tally 211.13', Set @ 220' KB. Cemented w/165sx Common, 3% CC, 2% Gel

PRODUCTION CASING
Ran 110 jts 5 1/2", 15.5# csg, Set @ 4557'. PBTD @ 4546' Cem.1st stage with 175sxs DV tool @ 2355' Cemented 2nd stage w/ 255sx circ. to surface

WELL LOG SURVEYS
DIL/CDL w/micro

ELECTRIC LOG TOPS

Formation	Depth	Datum	Ref. Well A	Ref. Well B
SC	2343	+508	−8	−43
BSC	2365	+486	−7	−39
LARSH	3746	−895	−1	−11
HEEB	3861	−1010	−4	−13
TOR	3884	−1033	−3	−11
LANS	3901	−1050	+2	−10
Muncie Cr	4054	−1203	+6	−15
BKC	4209	−1358	+5	−15
Marmaton	4248	−1397	+5	−14
Altamont	4292	−1441	+6	−15
Little Osage	4368	−1517	+4	−15
Excello	4395	−1544	+4	−14
Johnson	4466	−1615	+7	−14
Morrow	4487	−1636	+6	−14
Miss	4518	−1667	+9	−2



REFERENCE WELL:

WELL A:	WELL B:
GMOC	Thunderbird Drlg.
Hess#1–33	Phelps "B" #1
2914KB	2885 KB
1406' FNL & 335' FWL	SW–SW
33–13–31W	28–13–31W

DAILY REPORT @7:00 A.M.

02/04/11 MIRU
02/05/11 Spud @ 11:15 a.m.
02/06/11 675' Drilling
02/07/11 2080' Drilling
02/08/11 3350' Displace mud
02/09/11 3424' Circulating (cold weather)
02/10/11 3795' Drilling
02/11/11 3950' DST #1
02/12/11 4045' Drilling ahead
02/13/11 4136' DST #4
02/14/11 4300' Drilling ahead
02/15/11 4570' Conditioning hole for log
02/16/11 4570' Rig down

REMARKS AND RECOMMENDATIONS

Due to the positive drill stem results the operator ran production casing to further test theis well.

Respectfully submitted,

Robert J. Petersen Feb. 17, 2011

Bit trip @3424
Strap .73 Short

DST#1
3928-3950'
30-45-45-60"
IF: Bottom of bucket in 6 min.
ISI: ½" return blow
FF: Bottom of bucket in 6 min.
FSI: 1" return blow
Recovered:
480' GIP
960' Gassy oil 25% gas/75% oil
240' Mud cut gassy oil 15% gas/70% oil/ 15% mud
SIP: 1008-996#
FP: 73-280/281-508#
HP: 1963-1895#
BHT: 125F

DST#2
3950-3965'
30-45-45-75"
IF: Bottom of bucket in 1 ½ min.
ISI: 4" return blow
FF: Bottom of bucket in 2 min.
FSI: Return blow to bottom of bucket
Recovered:
300' GIP
1720' Gassy oil 30%gas/70% oil
120' Mud cut gassy oil 30% gas/60% oil/10% mud
60' mud cut gassy oil trace water 30%% gas/ 40% mud/15% mud/15%water
SIP: 987-995#
FP: 147-462/482-705#
HP: 1929-1868#
BHT: 111F

DST#3
4126-4136'
30-45-45-60"
IF: Bottom of bucket in 12 min.
FF: 10" blow
Recovered:
200' Mud
60' Mud cut water 60% mud/40% water
120' Muddy water 40% mud/60% water
SIP: 1418-1382#
FP: 131-173/184-215#
HP: 1966-1904#
BHT: 118F

DST#4
4142-4167'
30-30-30-30"
Recovered:
75' Mud
120' Muddy water 40%mud/ 60% water
IF: 1379-1335#
FP: 65-111/116-133#
HP 1991-1942#
BHT: 114F

Samples start at 3800'

LS; Cream/gray, fine crystalline, foss, chalky + SH; Gray/SS; Gray (3810)
SH; Black (trace 20)
Vis 58/ Wt 8.7
LS; Cream/white, fine crystalline to dense, foss, chalky, cherty (20)
LS; Cream/lt gray, fine crystalline to dense, foss, chalky (30)
LS; Cream/lt gray, fine crystalline , foss, chalkym cherty + SH; Gray, trace black shale (40)
LS; Cream/lt gray/tan, fine crystalline to dense, foss- subgranular + SH; Gray, silty-sandy (50)
LS; Cream/gray, fine crystalline, chalky, sofy + SH; Red/gray (60)
LS; Cream/gray, fine crystalline to dense, foss, chalky, cherty (70)
SH; Black (80)
LS: Cream/tan, fine crystalline, foss, chalky, mealy, trace stain (80)
LS; Cream/gray, fine crystalline, foss, chalky (90)
SH; Red/gray, silty, sandy + SS; Gray, fine grained (3900)
LS; Gray/cream, fine crystalline, oolitic, oomoldic por, chalky/mealy, trace dead stain (00)
LS; Cream/white, fine crystalline, foss, chalky, soft, cherty + LS; Gray, dense, foss (00/30"-3910)
SH; Red/gray, silty, sandy (20-30)
LS; Cream/white, fine crystalline, ool, chalky (30)
LS; Cream/lt gray, fine crystalline, ool, chalky, sl dolo (40)
SH; Black (trace 40 incr. 50)
SH; Red/gray, silty, sandy (50 50/30")
LS; Cream/white, fine crystalline, chalky (chalk very soft) cherty + LS; Gray, dense(50/30")
LS; Gray, fine crystalline, ool, sl dolo w/fair vug por, sfo, odor, even brown stain on dry (50/60")
Vis 79/ Wt 8.6
LS; Cream, fine crystalline, ool, cherty + SH; Gray (65)
LS; Cream/lt gray, fine crystalline, ool, cherty w/chert inclusions, granular w. fair inter-ool/oomoldic por, sfo, odor, patchy to full sat on dry grading to intercrystalline por w/depth (65/20-40")
LS; Cream/white, fine crystalline por, decrease por, chalky + LS; Tan, fine crystalline, dolo (65/60")
LS; Cream/lt gray, fine crystalline, foss, cherty, sl dolo (80-90)
LS; Cream/lt gray, fine crystalline, ool, chalky, cherty (orange) trace SH; Gray, silty (91/20")
LS; Cream/lt gray, fine crystalline, ool, granular, no vis por, trace dead stain (91/40"-4002')
LS; Lt gray/cream, fine crystalline, trace poor intergran por, vssfo (4002/30")
LS; Lt gray, fine crystalline to dense, foss, dolo, cherty + SH; Red (4002/60")
LS; Cream/tan, fine crystalline to dense, foss, trace dead stain (10) no stain (20)
LS; Cream/tan/lt gray, fine crystalline, sl dolo, foss, chalky, cherty (30)
LS; White/lt gray/tan, fine crystalline to dense, chalky (40)
LS; Cream/lt gray, fine crystalline to dense, foss, chalky (50)
Vis 60+/ Wt 8.9
LS; Cream/lt gray, fine crystalline to dense, chalky, cherty + tr SH; Red (60)
SH; Black (trace 70 incr 80)
LS; Cream/lt gray, fine crystalline to dense, foss, chalky (70) + Chert; Gray (80)
SH; Gray, silty (90)
LS; Cream/tan/lt gray, fine crystalline to dense, cherty(tan), foss, mottled, chalky, trace dead stain (90)
LS: Cream/tan/lt gray, fine crystalline to dense, chalky, cherty + SH; Gray (4100)
SH; Black (10)
SH; Red/gray, silty(10)
LS; Cream/tan/lt gray, fine crystalline to dense, foss, chalky (trace stain-mealy) (25)
LS; Cream/tan/lt brown, fine crystalline to dense, chalky-mealy, trace stain (25/20")
LS; Tan/gray, dense, ool-gran, chalky + SH; Gray, silty-sandy (25/40")
trace LS; White, fine crystalline, ool, gran, tr lt stain on dry, vssfo (25/60")
LS; Cream/lt gray, fine crystalline to dense, chalky, cherty, trace vug por, vssfo, abund LS; Cream/lt gray, fine crystalline to dense, chalky, cherty (36-36/20")
LS; Tan, fine crystalline, ool-subgran w/fair vug por, sfo (36/40")
LS; Tan, fine crystalline, oolitic-granular, bleeding oil (36/60")
Vis 60+/ Wt 8.9
LS; Tan/lt gray, dense, foss (45)
SH; Black (50) flood (60)
SH; Red/gray, silty-sandy+ SS; Gray, fine grained (62/20")
LS; Cream/tan, dense, ool (62/20")
LS; Lt gray/cream, dense,cherty + LS; Gray, fine crys dolo (62/40")
LS; Cream/white, fine crystalline, ool-foss in part, w/p-f vug/frac por + LS; Tan, fine to med crystalline, dolo, w/intercrystalline por, ssfo (67/20"
increase dolomite (67/40')
LS; Cream/gray, fine crystalline to dense, dolo, cherty (80-90)
SH; Black (4200)
SH; Gray, silty-sandy +LS; Tan/cream, fine crystalline to dense, foss, dolomitic-cherty (00)
LS; Cream/lt gray, fine crystalline to dense, foss, mottled, trace stain, nsfo (10)
LS; Lt gray, fine crystalline, dolomitic (20)
SH; Black (20)
LS; Cream/lt gray, fine crystalline to dense, foss, + Dolo; Gray, fine crystalline (30)
SH; Red/gray (30)
LS; Gray, fine crystalline to dense, sl foss, chalky-gummy + SH; Red (40)
SH; Red/gray, silty-sandy, calc in part (50-60)
LS; Gray, fine crystalline to dense, sl foss, sl dolo (60)
LS; Cream/gray, fine crystalline, foss, chalky, cherty, trace stain (70)
SH; Black (trace 70 incr 80)
SH; Red/gray, silty-sandy+ LS; Cream, fine crystalline to dense,chalky, trace SS; Gray, fine grained (80-90)
LS; Cream/tan/lt brown, fine crystalline to dense, foss, chalky (90)
LS; Cream/tan/lt gray, fine crystalline to dense + SH; Gray, trace black pyritic shale(4300)
SH; Gray (10)
LS; Cream/tan, foss, subgran (10)
LS; Cream/white, fine crystalline to dense, foss, cherty (20)
Vis 64/ Wt 9.1
SH; Red/gray (20)
LS; Cream/tan, fine crystalline, ool granular in part, chalky, trace stain (30)
SH; Red/gray, silty (40)
LS; Cream, fine crystalline, ool/foss, granular in part w/ intergran por, vssfo (40)
SH; Dark gray (50)
LS; Cream, fine crystalline, ool, chalky, cherty (50)
LS; Cream, fine crystalline, oolitic, granular w/trace poor oomoldic/inter-ool por, vssfo, light stain on dry (61)
LS; Cream, fine crystalline, ool, very chalky, soft abundant Chert; Tan/gray, angular (61/15")
LS; Cream/tan, dense, ool -gran in part + SH; Red/gray (70)
LS; Tan/lt gray, fine crystalline to dense, sl foss, cherty (80)
SH; Black (flood 90)
LS; Gray, dense, foss + SH; Gray (90)
LS; Cream/brown, dense, foss, cherty (4400)
SH; Black (10)
LS; Tan/cream, dense, chalky, cherty (20)
LS; Gray, dense, foss, cherty, trace poor ppt por, vssfo + SH; Gray (30)
SH; Black (40)
LS; Tan/brown, dense, foss, cherty, chalky (40)
LS; Tan/brown, dense, foss, pell., cherty, chalky (soft)(50)
LS; Tan/brown, dense, chalky, foss-brecciated +SH; Black (60)
LS; Tan/gray/brown, dense, foss, trace poor, vug por, spot sat., vssfo, dark gray stain on dry (65/30"-70)
SH; Gray, silty (80)
LS; Tan/gray, dense (80)
LS; Cream/tan, dense, chalky, cherty, w/trace poor foss-cast por, trace stain, vssfo(tarry) no odor (80/20-40")
LS; Cream/tan, fine crystalline to dense, foss, chalky + SH; Gray (92)
LS; Cream/tan, dense, foss, cherty, chalky + SH; Black (92/60")
LS; Cream/tan, fine crystalline to dense, chalky, sl foss w/ trace poor fossilcast por, vssfo (tarry) no odor + SH; Green/gray (4500)
LS; Cream/tan, fine crystalline to dense, mostly dense, foss + Dolo; Cream, fine crystalline, trace frac por, ssfo (tarry) trace SH; Black + Calc concretions (10)
LS; Lt gray/tan, dense, hard, foss + LS; Cream, chalky, soft, mealy w/trace stain + Chert; White-milky/tan, blocky (10/20") + Chert; Black/dense dolo (10/40")
LS; Brown, dense, hard + SH; Gray/red, silty-sandy + SS; Brown, fine grained + Dolo, Cream, dense (10/60")
LS; Tan/gray, dense, ool sl dolo + SH; Mustard yell/gray, blocky + Chert; Gray (20)
SH; Gray, blocky (30)
LS; Gray, dense + LS: Tan/cream, dolomitic, foss (bryazoan) + SH; Gray/green/yell (40)
LS; Tan, dense, hard, foss + LS; White, dense, dolomitic, chalky w/vssfo (50)
LS; White, sandy, ool + SS; White/gray, fine grained, ang, friable (60)
LS; Cream/tan, fine crystalline, ool, sandy + SS; Gray, hard + SH; Green (70)
LS: Cream/white, fine crystalline, ool, sandy, chalky + SH; Olive, brittle (70/30")
LS; Cream.white, sandy(coarse rounded sand) + SS; Clear, coarse, friable + SS; Gray, fine grained, pyritic, hard (70/60")
Vis 50/ Wt 9.1