

Confidentiality Requested:

Yes No

**KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION**

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

**WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

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 EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
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)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5) (Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Norstar Petroleum, Inc.
Well Name	HINEMAN UNIT 1-16
Doc ID	1352942

All Electric Logs Run

DIL
CDNL
Micro
Sonic

Form	ACO1 - Well Completion
Operator	Norstar Petroleum, Inc.
Well Name	HINEMAN UNIT 1-16
Doc ID	1352942

Tops

Name	Top	Datum
Anhydrite	2037	672
Heebner	3975	-1266
Lansing	4016	-1307
Stark Shale	4277	-1568
Marmaton	4393	-1684
Cherokee Shale	4555	-1846
Cherokee Sand	4603	-1894
Miss	4603	-1928

Form	ACO1 - Well Completion
Operator	Norstar Petroleum, Inc.
Well Name	HINEMAN UNIT 1-16
Doc ID	1352942

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
4	LKC K Lower		4296-4298
4	LKC K Upper		4281-4285



DRILL STEM TEST REPORT

Prepared For: **Norstar Petroleum Inc**

88 Inverness Cir E Unit F104
Englewood, CO 80112

ATTN: Wes Hansen

Hineman Unit #1-16

16-19s-27w Lane,KS

Start Date: 2017.02.20 @ 21:20:11

End Date: 2017.02.21 @ 04:14:11

Job Ticket #: 65663 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.02.24 @ 10:04:29



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Norstar Petroleum Inc
 88 Inverness Cir E Unit F104
 Englewood, CO 80112
 ATTN: Wes Hansen

16-19s-27w Lane, KS
Hineman Unit #1-16
 Job Ticket: 65663 **DST#: 1**
 Test Start: 2017.02.20 @ 21:20:11

GENERAL INFORMATION:

Formation: **LKC K**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:20:41
 Time Test Ended: 04:14:11
 Interval: **4272.00 ft (KB) To 4300.00 ft (KB) (TVD)**
 Total Depth: 4300.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brandon Turley
 Unit No: 79
 Reference Elevations: 2709.00 ft (KB)
 2702.00 ft (CF)
 KB to GR/CF: 7.00 ft

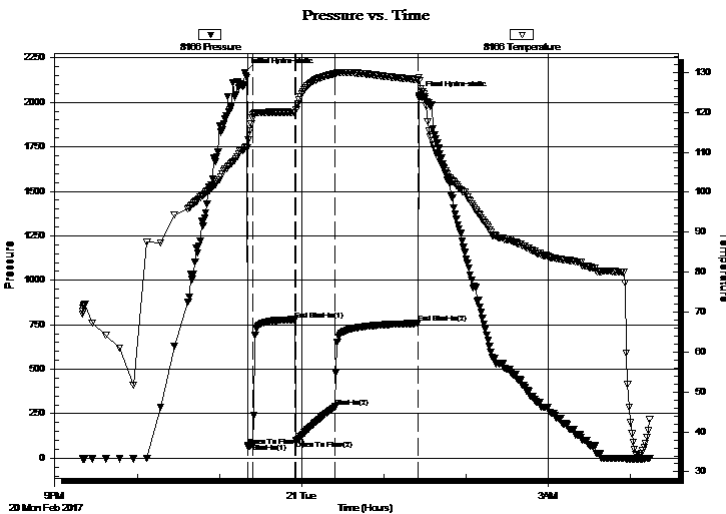
Serial #: 8166

Outside

Press@RunDepth: 289.40 psig @ 4273.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.02.20 End Date: 2017.02.21 Last Calib.: 2017.02.21
 Start Time: 21:20:16 End Time: 04:14:10 Time On Btm: 2017.02.20 @ 23:18:41
 Time Off Btm: 2017.02.21 @ 01:25:41

TEST COMMENT: IF: BOB in 1 min.
 IS: BOB in 7 min.
 FF: BOB in 1 min.
 FS: BOB in 10 min.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2167.91	110.98	Initial Hydro-static
2	66.73	111.16	Open To Flow (1)
6	84.02	119.26	Shut-In(1)
37	779.23	119.99	End Shut-In(1)
38	100.41	120.58	Open To Flow (2)
66	289.40	129.64	Shut-In(2)
127	758.12	128.16	End Shut-In(2)
127	2037.91	128.64	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
186.00	gocm 10%g 10%o 80%m	2.61
248.00	mogo 30%g 65%o 5%m	3.48
692.00	go 30%g 70%0	9.71
0.00	858 GIP	0.00

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Norstar Petroleum Inc
 88 Inverness Cir E Unit F104
 Englewood, CO 80112
 ATTN: Wes Hansen

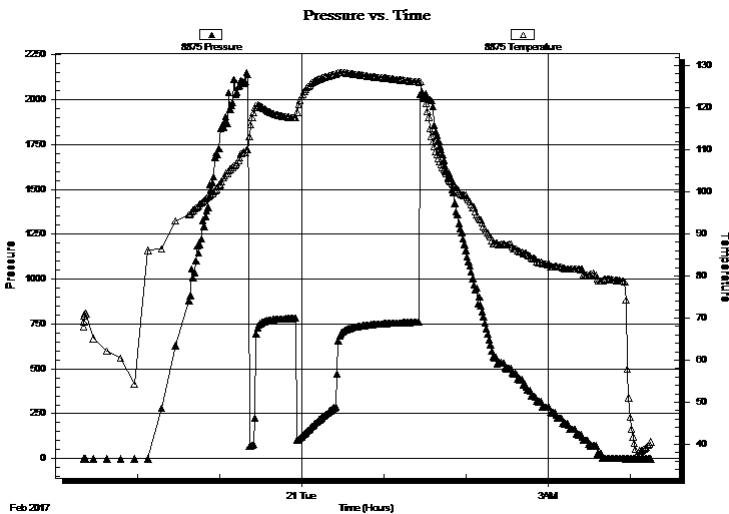
16-19s-27w Lane, KS
Hineman Unit #1-16
 Job Ticket: 65663 **DST#: 1**
 Test Start: 2017.02.20 @ 21:20:11

GENERAL INFORMATION:

Formation: **LKC K**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 23:20:41 Tester: Brandon Turley
 Time Test Ended: 04:14:11 Unit No: 79
Interval: 4272.00 ft (KB) To 4300.00 ft (KB) (TVD) Reference Elevations: 2709.00 ft (KB)
 Total Depth: 4300.00 ft (KB) (TVD) 2702.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 7.00 ft

Serial #: 8875 Inside
 Press@RunDepth: psig @ 4273.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.02.20 End Date: 2017.02.21 Last Calib.: 2017.02.21
 Start Time: 21:20:52 End Time: 04:14:46 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: BOB in 1 min.
 IS: BOB in 7 min.
 FF: BOB in 1 min.
 FS: BOB in 10 min.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
186.00	gocm 10%g 10%o 80%m	2.61
248.00	mogo 30%g 65%o 5%m	3.48
692.00	go 30%g 70%0	9.71
0.00	858 GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Norstar Petroleum Inc
88 Inverness Cir E Unit F104
Englewood, CO 80112
ATTN: Wes Hansen

16-19s-27w Lane, KS
Hineman Unit #1-16
Job Ticket: 65663 **DST#: 1**
Test Start: 2017.02.20 @ 21:20:11

Tool Information

Drill Pipe:	Length: 4250.00 ft	Diameter: 3.80 inches	Volume: 59.62 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: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 59.62 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	4272.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	28.00 ft			
Tool Length:	55.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Stubb	1.00			4246.00	
Shut In Tool	5.00			4251.00	
Hydraulic tool	5.00			4256.00	
Jars	5.00			4261.00	
Safety Joint	2.00			4263.00	
Packer	5.00			4268.00	27.00 Bottom Of Top Packer
Packer	4.00			4272.00	
Stubb	1.00			4273.00	
Recorder	0.00	8875	Inside	4273.00	
Recorder	0.00	8166	Outside	4273.00	
Perforations	22.00			4295.00	
Bullnose	5.00			4300.00	28.00 Bottom Packers & Anchor

Total Tool Length: 55.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Norstar Petroleum Inc
88 Inverness Cir E Unit F104
Englewood, CO 80112
ATTN: Wes Hansen

16-19s-27w Lane, KS
Hineman Unit #1-16
Job Ticket: 65663 **DST#: 1**
Test Start: 2017.02.20 @ 21:20:11

Mud and Cushion Information

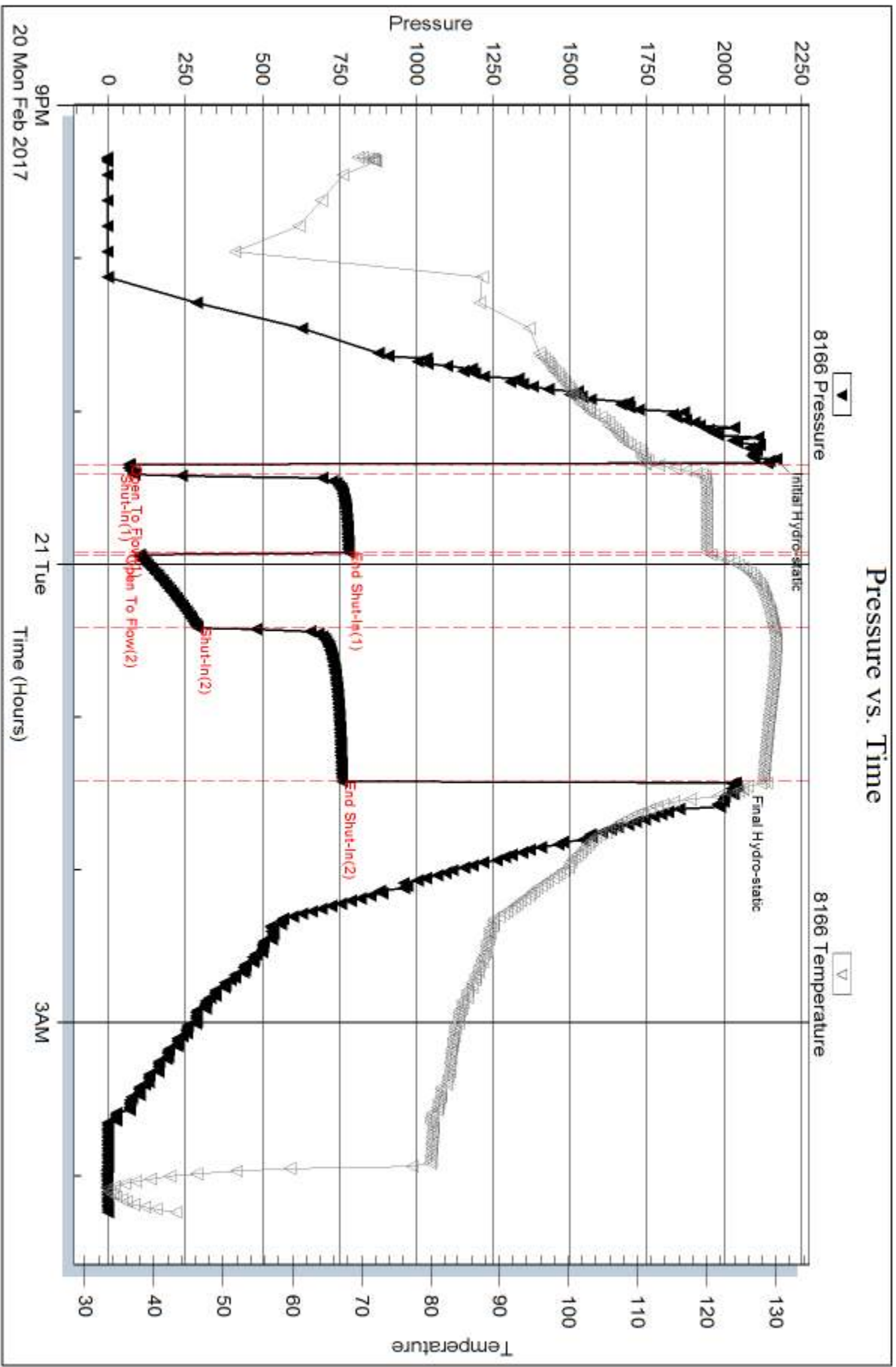
Mud Type: Gel Chem	Cushion Type:	Oil API: 35 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 0 ppm
Viscosity: 58.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.19 in ³	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 3000.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	gocm 10%g 10%o 80%m	2.609
248.00	mcgo 30%g 65%o 5%m	3.479
692.00	go 30%g 70%o	9.707
0.00	858 GIP	0.000

Total Length: 1126.00 ft Total Volume: 15.795 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: 33@40=35



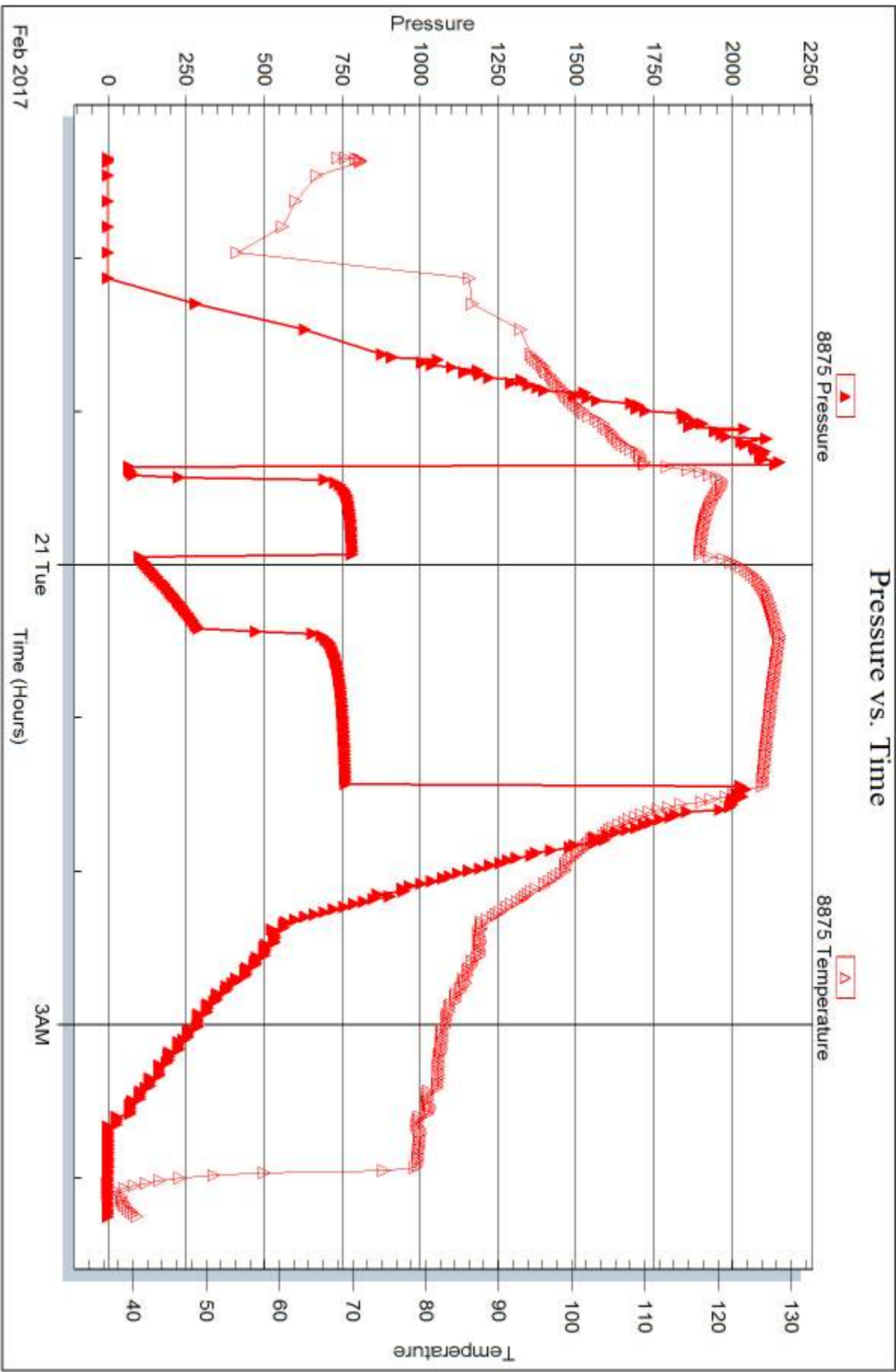
Serial #: 8875

Inside

Norstar Petroleum Inc

Hineman Unit #1-16

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 65663

Printed: 2017.02.24 @ 10:04:30



DRILL STEM TEST REPORT

Prepared For: **Norstar Petroleum Inc**

88 Inverness Cir E Unit F104
Englewood, CO 80112

ATTN: Wes Hansen

Hineman Unit #1-16

16-19s-27w Lane,KS

Start Date: 2017.02.22 @ 11:15:11

End Date: 2017.02.22 @ 17:27:11

Job Ticket #: 65664 DST #: 2

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.02.24 @ 10:03:24



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Norstar Petroleum Inc
 88 Inverness Cir E Unit F104
 Englewood, CO 80112
 ATTN: Wes Hansen

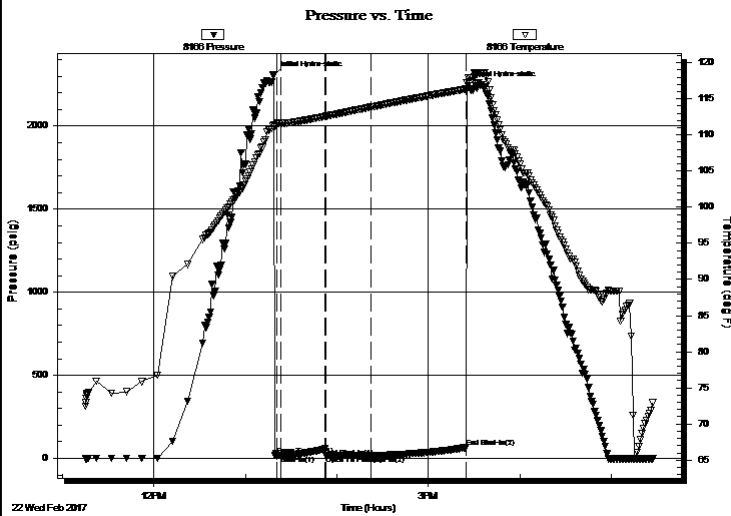
16-19s-27w Lane, KS
Hineman Unit #1-16
 Job Ticket: 65664 **DST#: 2**
 Test Start: 2017.02.22 @ 11:15:11

GENERAL INFORMATION:

Formation: **Cherokee Sand**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:20:41
 Time Test Ended: 17:27:11
 Interval: **4576.00 ft (KB) To 4623.00 ft (KB) (TVD)**
 Total Depth: 4623.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 79
 Reference Elevations: 2709.00 ft (KB)
 2702.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8166 Outside
 Press@RunDepth: 16.96 psig @ 4577.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.02.22 End Date: 2017.02.22 Last Calib.: 2017.02.22
 Start Time: 11:15:16 End Time: 17:27:10 Time On Btm: 2017.02.22 @ 13:18:41
 Time Off Btm: 2017.02.22 @ 15:26:11

TEST COMMENT: IF: 1/4 blow died to surface.
 IS: No return.
 FF: No blow.
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2307.18	111.34	Initial Hydro-static
2	16.19	111.56	Open To Flow (1)
5	16.63	111.62	Shut-In(1)
34	57.56	112.57	End Shut-In(1)
34	16.72	112.57	Open To Flow (2)
64	16.96	113.87	Shut-In(2)
126	64.96	116.35	End Shut-In(2)
128	2244.97	117.97	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100% m	0.07

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Norstar Petroleum Inc
88 Inverness Cir E Unit F104
Englewood, CO 80112
ATTN: Wes Hansen

16-19s-27w Lane, KS
Hineman Unit #1-16
Job Ticket: 65664 **DST#: 2**
Test Start: 2017.02.22 @ 11:15:11

GENERAL INFORMATION:

Formation: **Cherokee Sand**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:20:41
Time Test Ended: 17:27:11

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

Interval: **4576.00 ft (KB) To 4623.00 ft (KB) (TVD)**
Total Depth: 4623.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

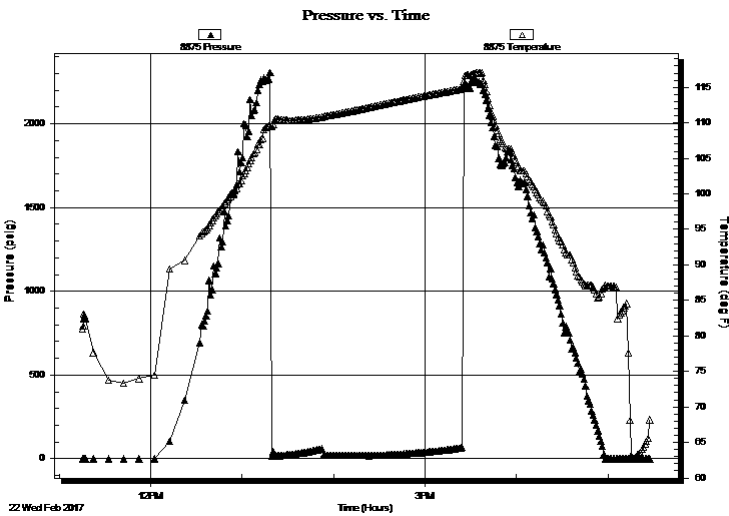
Reference Elevations: 2709.00 ft (KB)
2702.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8875 Inside

Press@RunDepth: psig @ 4577.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.02.22 End Date: 2017.02.22 Last Calib.: 1899.12.30
Start Time: 11:15:23 End Time: 17:27:17 Time On Btm:
Time Off Btm:

TEST COMMENT: IF: 1/4 blow died to surface.
IS: No return.
FF: No blow.
FS: No return.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100% m	0.07

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Norstar Petroleum Inc
88 Inverness Cir E Unit F104
Englewood, CO 80112
ATTN: Wes Hansen

16-19s-27w Lane,KS
Hineman Unit #1-16
Job Ticket: 65664 **DST#: 2**
Test Start: 2017.02.22 @ 11:15:11

Tool Information

Drill Pipe:	Length: 4561.00 ft	Diameter: 3.80 inches	Volume: 63.98 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: 30000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 63.98 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4576.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	47.00 ft			
Tool Length:	74.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Stubb	1.00			4550.00	
Shut In Tool	5.00			4555.00	
Hydraulic tool	5.00			4560.00	
Jars	5.00			4565.00	
Safety Joint	2.00			4567.00	
Packer	5.00			4572.00	27.00 Bottom Of Top Packer
Packer	4.00			4576.00	
Stubb	1.00			4577.00	
Recorder	0.00	8875	Inside	4577.00	
Recorder	0.00	8166	Outside	4577.00	
Perforations	7.00			4584.00	
Change Over Sub	1.00			4585.00	
Drill Pipe	32.00			4617.00	
Change Over Sub	1.00			4618.00	
Bullnose	5.00			4623.00	47.00 Bottom Packers & Anchor

Total Tool Length: 74.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Norstar Petroleum Inc

16-19s-27w Lane, KS

88 Inverness Cir E Unit F104
Englewood, CO 80112

Hineman Unit #1-16

Job Ticket: 65664

DST#: 2

ATTN: Wes Hansen

Test Start: 2017.02.22 @ 11:15:11

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.60 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud 100%m	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl

Num Fluid Samples: 0

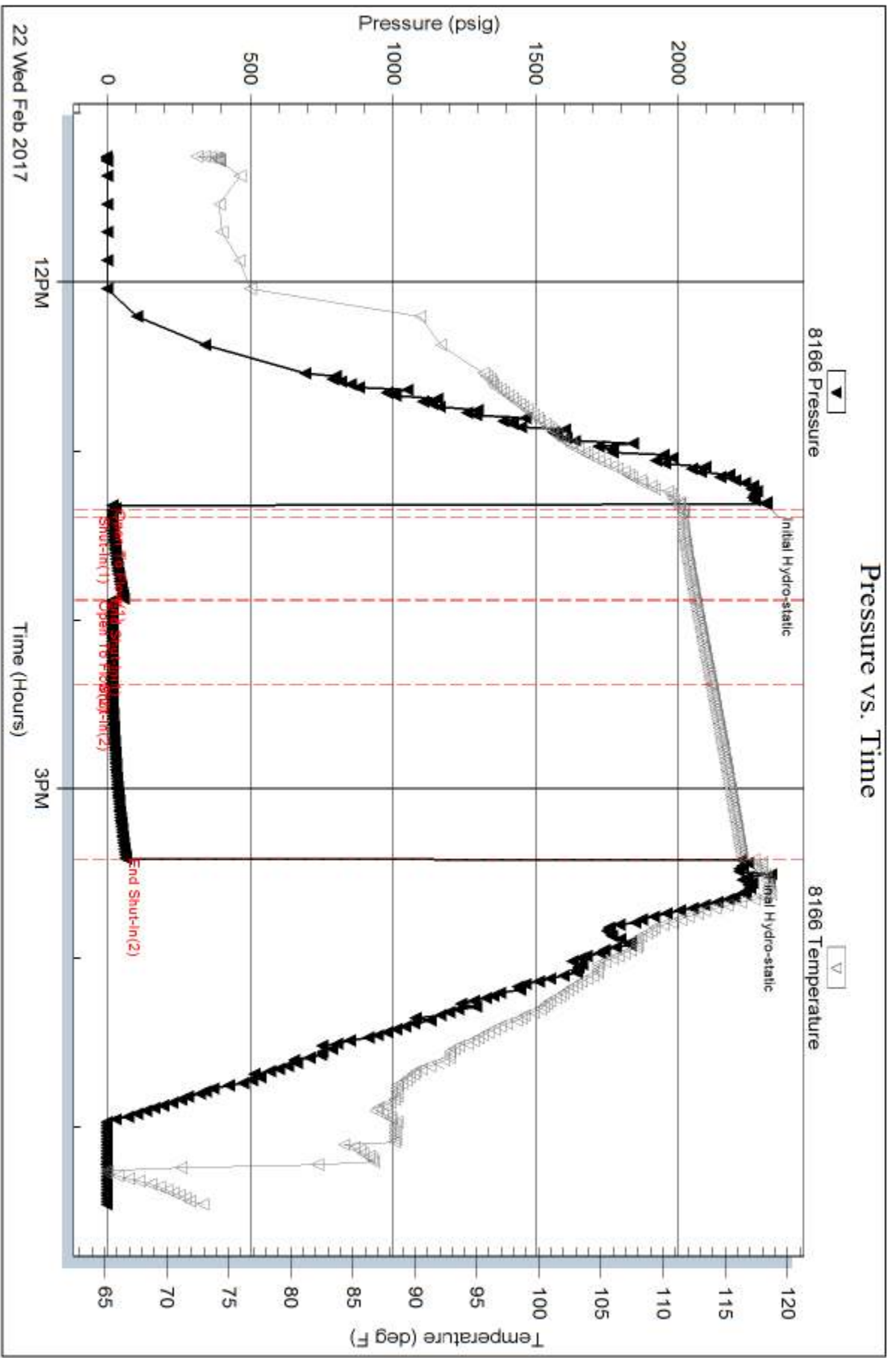
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



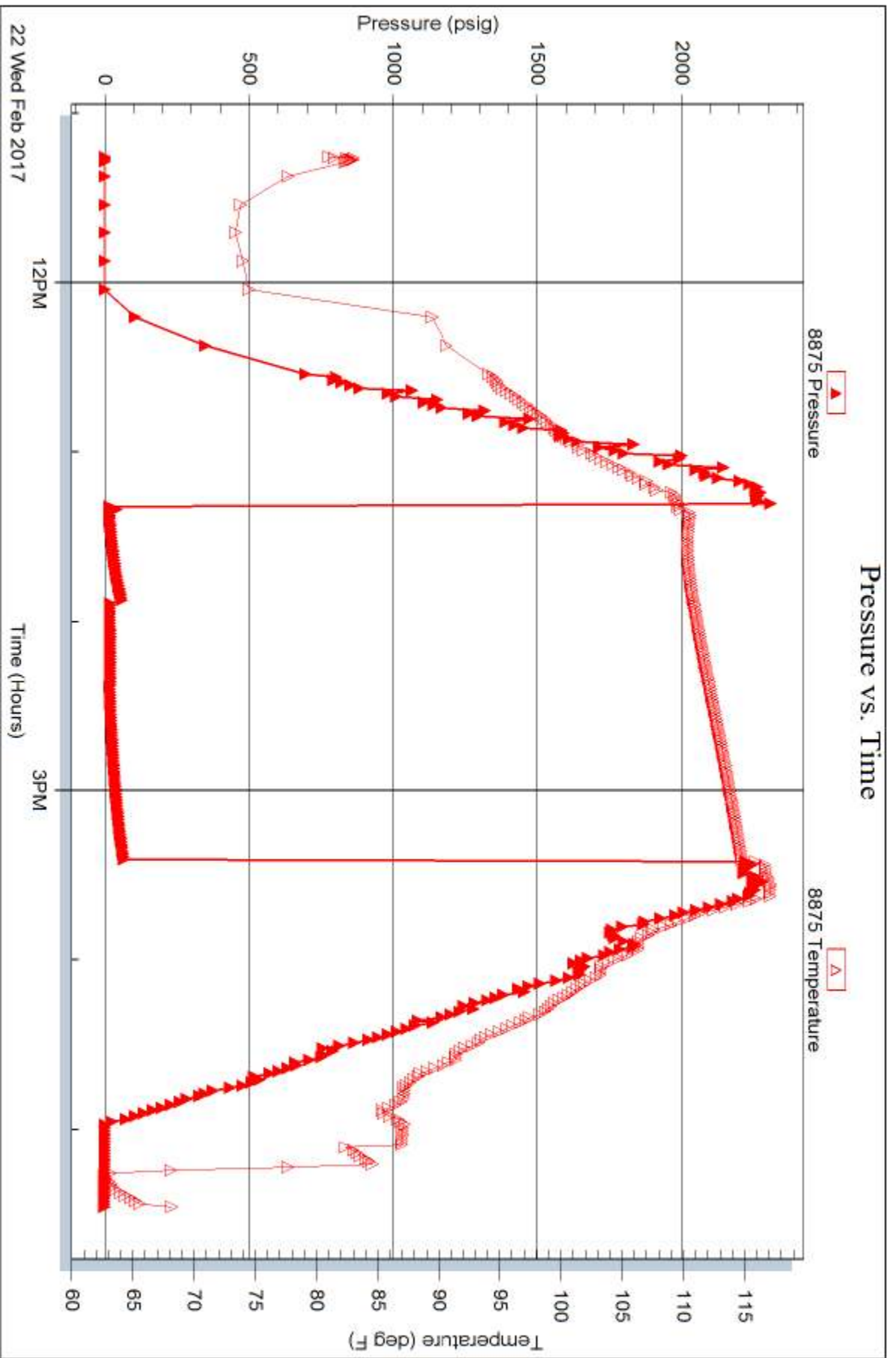
Serial #: 8875

Inside

Norstar Petroleum Inc

Hineman Unit #1-16

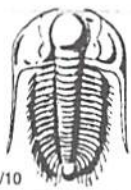
DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 65664

Printed: 2017.02.24 @ 10:03:25



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65663**

Well Name & No. Hineman unit 1-16 Test No. 1 Date 2-20-17
 Company Norstar Petroleum Inc Elevation 2709 KB 2702 GL
 Address 88 Inverness Cir E unit F104 Englewood, Co 80112
 Co. Rep / Geo. Wes Hansen Rig Pickrell #10
 Location: Sec. 16 Twp. 19S Rge. 27W Co. Lone State KS

Interval Tested 4272 4300 Zone Tested K
 Anchor Length 28 Drill Pipe Run 4250 Mud Wt. 9.2
 Top Packer Depth 4267 Drill Collars Run — Vis 58
 Bottom Packer Depth 4272 Wt. Pipe Run — WL 7.2
 Total Depth 4300 Chlorides 3000 ppm System LCM 2
 Blow Description IF: BoB in 1 min.
IS: BoB in 7 min.
FF: BoB in 1 min.
FS: BoB in 10 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>692</u>	<u>90</u>	<u>30</u>	<u>70</u>		
<u>248</u>	<u>MC90</u>	<u>30</u>	<u>65</u>	<u>5</u>	
<u>186</u>	<u>90CM</u>	<u>10</u>	<u>10</u>	<u>80</u>	
Rec	Feet of <u>858 GFP</u>	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1126 BHT 128 Gravity 35 API RW — @ —° F Chlorides — ppm

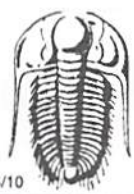
(A) Initial Hydrostatic 2167 Test 1150 T-On Location 19:45
 (B) First Initial Flow 66 Jars 250 T-Started 21:20
 (C) First Final Flow 84 Safety Joint 75 T-Open 23:20
 (D) Initial Shut-In 779 Circ Sub N/C T-Pulled 1:25
 (E) Second Initial Flow 100 Hourly Standby _____ T-Out 4:15
 (F) Second Final Flow 289 Mileage 86 - 64.50 Comments _____
 (G) Final Shut-In 758 Sampler _____
 (H) Final Hydrostatic 2057 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1539.50

Initial Open 5
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 60

Sub Total 0
 Total 1539.50
 MP/DST Disc't _____

Approved By Wesley D Hansen Our Representative [Signature]

TriLOBite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65664**

Well Name & No. Hime man unit 1-16 Test No. 2 Date 2-22-17
 Company Norstar Petroleum Inc Elevation 2709 KB 2702 GL
 Address _____
 Co. Rep / Geo. Wes Hansen Rig Pickrell #10
 Location: Sec. 16 Twp. 19S Rge. 27W Co. Lyme State KS

Interval Tested 4576 4623 Zone Tested Cherokee SMD
 Anchor Length _____ 47 Drill Pipe Run 4561 Mud Wt. 9.4
 Top Packer Depth _____ 4571 Drill Collars Run _____ Vis 59
 Bottom Packer Depth _____ 4576 Wt. Pipe Run _____ WL 7.6
 Total Depth _____ 4623 Chlorides 3000 ppm System LCM 2

Blow Description IF: 1/4 blow died to surface.
IS: NO return,
FF: No blow,
FS: No return,

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud</u>			<u>100</u>	
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Rec Total 5 BHT 116 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2307 Test 1150 T-On Location 10:00
 (B) First Initial Flow 16 Jars 250 T-Started 11:15
 (C) First Final Flow 16 Safety Joint 75 T-Open 13:18
 (D) Initial Shut-In 57 Circ Sub NIL T-Pulled 15:23
 (E) Second Initial Flow 16 Hourly Standby _____ T-Out 17:27
 (F) Second Final Flow 16 Mileage 86 - 64.50 + 64.50 Comments _____
 (G) Final Shut-In 64 Sampler _____ Loaded tools 2/23
 (H) Final Hydrostatic 2244 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 5 Extra Recorder _____ Sub Total 0
 Initial Shut-In 30 Day Standby _____ Total 1604
 Final Flow 30 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 60 Sub Total 1604

Approved By Wesley Hansen Our Representative [Signature]

TriLOBite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



WESLEY D. HANSEN Consulting Petroleum Geologist

212 N. Market, Suite 257, Wichita, KS 67202

Cellular 316.772.6188
whansen4651@sbcglobal.net

KGS
AAPG #799479
Kansas License #418



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

Well Name: Norstar Petroleum Inc. Hineman Unit #1-16
Location: 1222' FSL, 1086' FEL of Section 16-19S-27W
License Number: API: 15-101-22586
Spud Date: 2-14-2017
Surface Coordinates: 1222' FSL, 1086' FEL of Section 16-19S-27W
Region: Lane County, Kansas
Drilling Completed: 2-23-2017

Bottom Hole Vertical hole
Coordinates:
Ground Elevation (ft): 2702' K.B. Elevation (ft): 2709'
Logged Interval (ft): 3800' To: RTD Total Depth (ft): 4718'
Formation: Mississippian at RTD
Type of Drilling Fluid: Chemical - displaced at 3499'-3536'

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

OPERATOR

Company: Norstar Petroleum Inc.
Address: 88 Inverness Circle E
Unit F104
Englewood, CO. 80112

GEOLOGIST

Name: Wesley D. Hansen
Company: Wesley D. Hansen - Consulting Petroleum Geologist
Address: 212 N. Market, Suite 257
Wichita, KS 67202
Cellular: 316-772-6188

COMMENTS

Contractor: Pickrell Drilling Co., Inc. Rig #10
Pusher: Mike Kern

Surface Casing: 8 5/8" set at 290' w/155sx
Production Casing: 5 1/2" casing was set

Mud by: MudCo - Gary Schmidtberger was the engineer.

DST's by: Trilobite - Brandon Turley was the tester.

Logs by: ELI Wireline - Jason Cappellucci was the engineer

Deviation Surveys: 1/4 deg. @ 292'; 1/4 deg. @ 780'; 1/2 deg. @ 1279'; 3/4 deg. @ 1873'; 3/4 deg. @ 2373'; 3/4 deg. @ 2905'; 1 deg. @ 4718'

Samples delivered to Kansas Geological Survey Sample Library

BIT RECORD

Bit #	Size	MFG	Type	Depth Out	Footage Cut	Hours on bit
1	12 1/4"	JZ	527	292'	292'	4 1/4
2	7 7/8"	JZ	HA20QT	4300'	4008'	96 3/4
3	7 7/8"	JZ	HA25L rr	4718'	418'	25 1/4

FORMATION TOPS AND STRUCTURAL COMPARISON

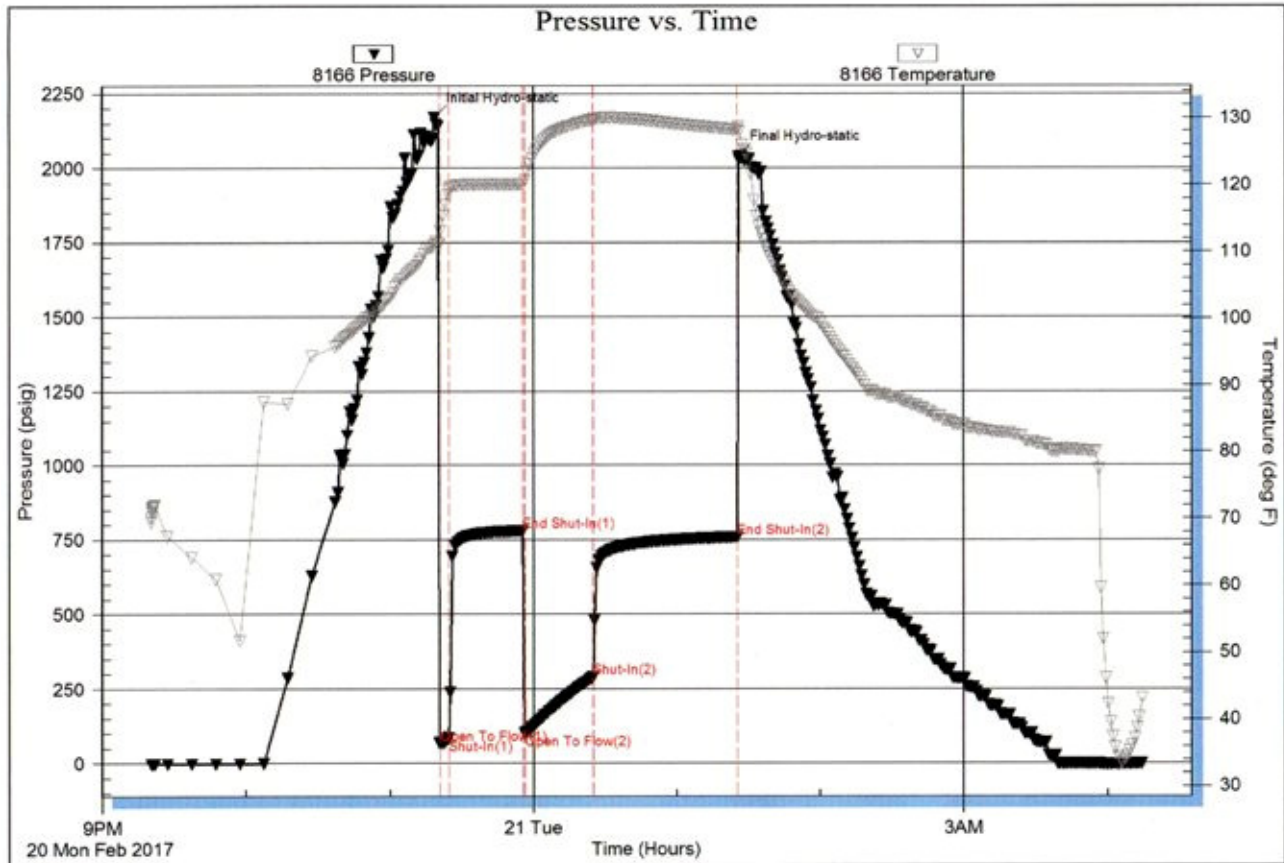
FORMATION	SAMPLE TOPS		LOG TOPS		COMPARISON WELL Gypsy Expl. Whipple B 16-1 2301' FSL, 2309' FEL of 16-19-27W 2716' KB
	Depth	Datum	Depth	Datum	
Anhydrite	2036'	+673	2037'	+672	-4
B/Anhydrite	2071'	+638	2070'	+639	na
Heebner Shale	3973'	-1264	3975'	-1266	-7
Toronto	3993'	-1284	3992'	-1283	-9
Lansing	4014'	-1305	4016'	-1307	-8
Stark Shale	4275'	-1566	4277'	-1568	-2
Marmaton	4389'	-1680	4393'	-1684	-5
Cherokee Shale	4552'	-1843	4555'	-1846	-2
Cherokee Sand	4602'	-1893	4605'	-1896	-6
Mississippian	4645'	-1936	4646'	-1937	-12
RTD	4718'	-2009			
LTD			4722'	-2013	

DRILL STEM TESTS

DST No. 1 LKC "K" Zone
 Interval: 4272'-4300'
 Times: 5-30-30-60
 Recovery: 858' GIP; 692' GCO (30g, 70o); 248'
 M&GCO (5m, 30g, 65o); 186' G&OCM (10g, 10o,
 80m); total fluid 1126'; oil gravity 35 deg.
 FP: 66-84/100-289 SIP: 779-758
 HP: 2167-2037 BHT: 128 deg. F

IFP: strong blow, BOB in 1 minute
 ISIP: return blow built to BOB in 7 minutes
 FFP: strong blow, BOB in 1 minute
 FSIP: return blow built to BOB in 10 minutes

Serial #: 8166 Outside Norstar Petroleum Inc Hineman Unit 1-16 DST Test Number: 1

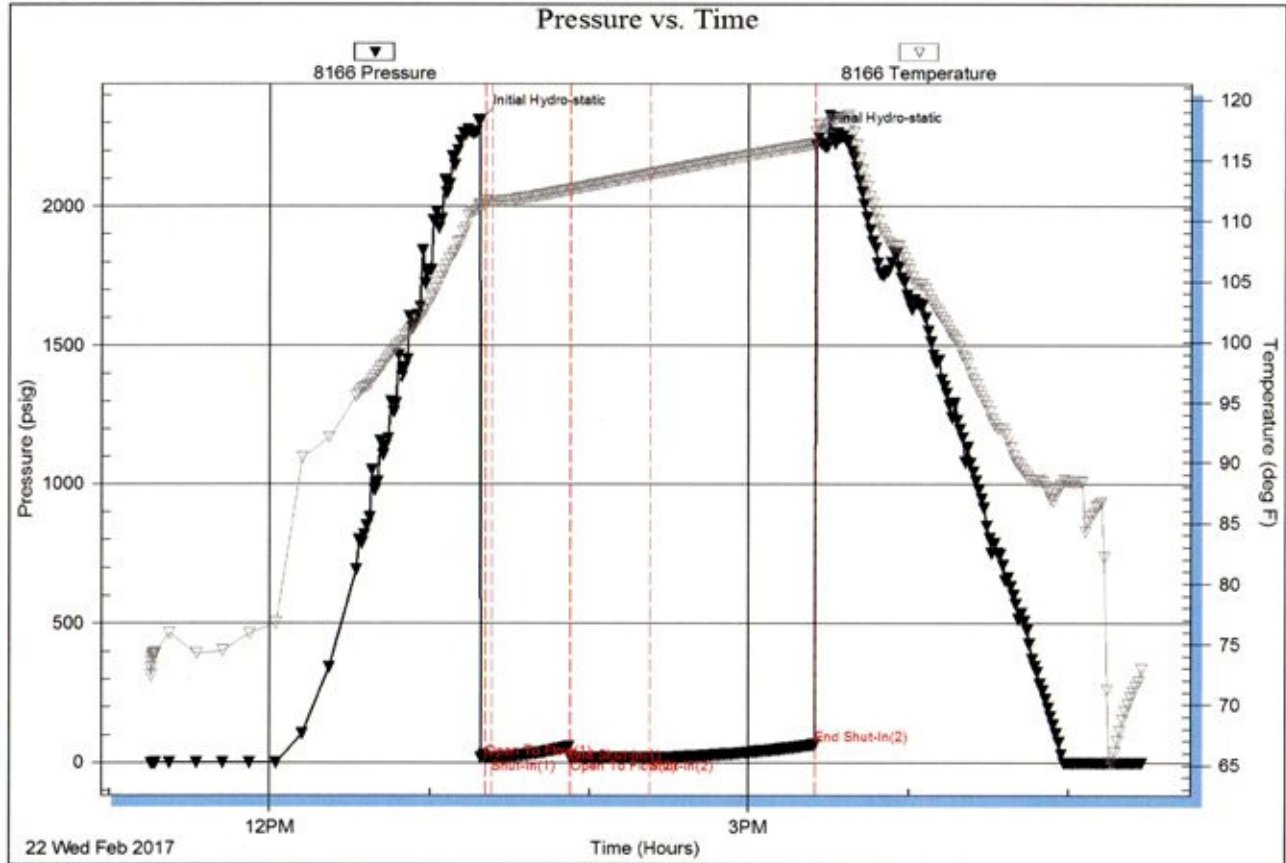


DRILL STEM TESTS

DST No. 2 Cherokee Sand
 Interval: 4576'-4823'
 Times: 5-30-30-60
 Recovery: 5' mud
 FP: 16-16/16-16 SIP: 57-64
 HP: 2307-2244 BHT: 116 deg. F

IFP: 1/4 inch blow, died to surface blow
 ISIP: no return blow
 FFP: no blow
 FSIP: no return blow

Serial #: 8166 Outside Norstar Petroleum Inc Hineman Unit 1-16 DST Test Number: 2



Triblote Testing, Inc

Ref. No: 65664

Printed: 2017.02.22 @ 17:29:50

ROCK TYPES

	Congl		Lmst		Carb sh		Siltstn
	Igne		Salt		Dol		Shlyslts
	Anhy		Shale		Dtd		Sndy/siltyshale
	Cht		Shcol		Grayshale		Silty dolo
	Coal		Siltstone		Sandylms		Shy dolo
	Congl		red sst		Redshale		Shaly ls
	Gyp		Sst		Greenshale		Dolomite

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
- Breclrag
- 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
- Sltly

- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg
- Carbsh
- Clystn
- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- red shale
- green shale
- Sltstn

STRINGER

- Anhy
- Arg

OTHER SYMBOLS

INTERVALS

- Core
- Dst
- Dst

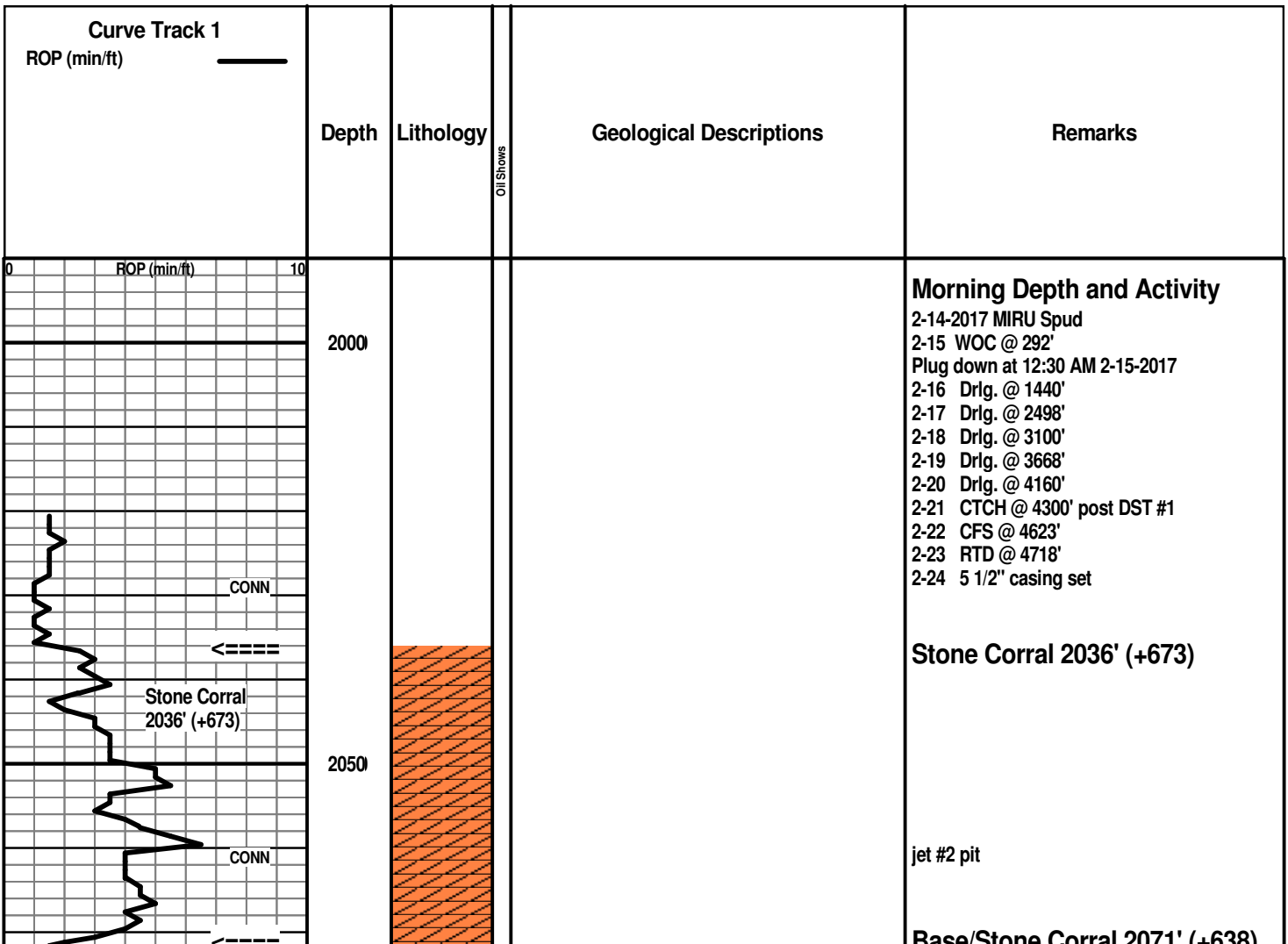
EVENTS

- Rft
- Dst top & bottom

OIL SHOWS

- Even
- Spotted
- Quest.

- Trace
- Dead
- Gas show



Depth Change

ROP (min/ft) 0 10

CONN

CONN

CONN

CONN

CONN

CONN

Heebner Shale
3973' (-1264)

3800

3850

3900

3950

10' spl - Sh: abund. lt to med gray, red, red-brn; lesser Ls: offwhite mic-fnxln with some interxln por.; scatt. offwhite, gray micac. Siltst and vfg silty Sst

20' spl - very shaly mix AA; influx Ls: mottled brn foss. to occ cryptoxln, trace crinoid fragments; lesser mottled gray granular

30' spl - Sh: influx med to dark gray; Ls: mix AA, some lt gray vfxln dense

40' spl - Sh: pred. med gray, silty; new dark brn; Ls: mix lt to med brn cryptoxln and mottled dark gray and offwhite mic-fnxln

50' spl - Sh: influx dark gray to black carbon.; Ls: thin brn and gray, mottled granular IP; other vf-cryptoxln

60' spl - Sh: med to dark gray and black carbon.; Ls: influx offwhite mic-fnxln with ppt and interxln por., N.S.; persistant mottled gray and brn, foss. IP

70' spl - Sh: various gray, red-brn and brn; Ls: pred. thin mottled brn and gray AA

80' spl - very shaly AA; Ls: tan, lt brn, offwhite mic-fnxln with ppt and inter-particle por., sl foss. IP; lesser mottled brn granular

90' spl - Sh: various gray AA; Ls: influx mottled brn granular with some inter-particle por.; other lt to med brn cryptoxln and offwhite micxln dense, subchalky

3900' spl - very shaly AA; Ls: mottled brn AA; tan, lt gray, lt to med brn vf-cryptoxln, NVP

10' spl - Sh: lt to med gray with sl influx dark gray; Ls: lt to med brn cryptoxln, granular IP; tan, offwhite mic-vfxln dense, subchalky IP

20' spl - shaly AA; Ls: various lt to med brn, gray vf-cryptoxln; tan, lt brn fnxln with ppt por. IP, foss. IP; scatt. mottled gray/brn granular; occ dark gray, brn opq chert

30' spl - various gray shales AA; Ls: influx offwhite, tan mic-fnxln with ppt and inter-particle por, subchalky IP; other mottled lt brn/gray granular and dolomitic with inter-particle por.; lesser med brn cryptoxln

40' spl - abund. gray shales; Ls: incr. % lt to med brn, gray vf-cryptoxln; scatt. offwhite, brn opq chert

50' spl - very shaly AA; Ls: incr. tan, offwhite mic-fnxln with some poor interxln por.; offwhite, tan mic-vfxln gen. dense

60' spl - very shaly AA; Ls: pred. tan, offwhite mic-fnxln with ppt and inter-particle por. AA

70' spl - very shaly; Ls: mottled gray and brn granular, poor-NVP

80' spl - very shaly AA; Ls: mottled AA with lt brn mic-vfxln dense; some tan, offwhite mic-fnxln with ppt por.

90' spl - Sh: sl influx black carbon.; Ls: mottled dark gray dense and tan, brn vf-cryptoxln

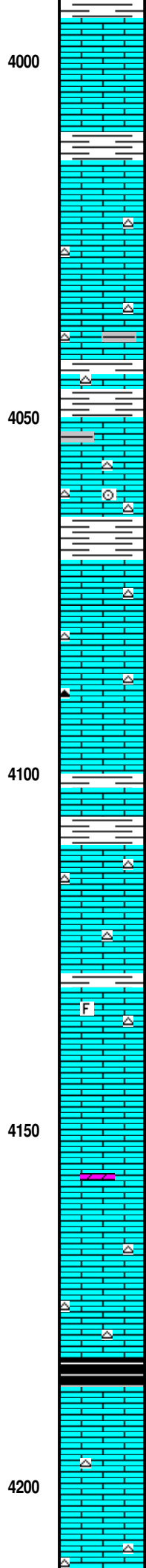
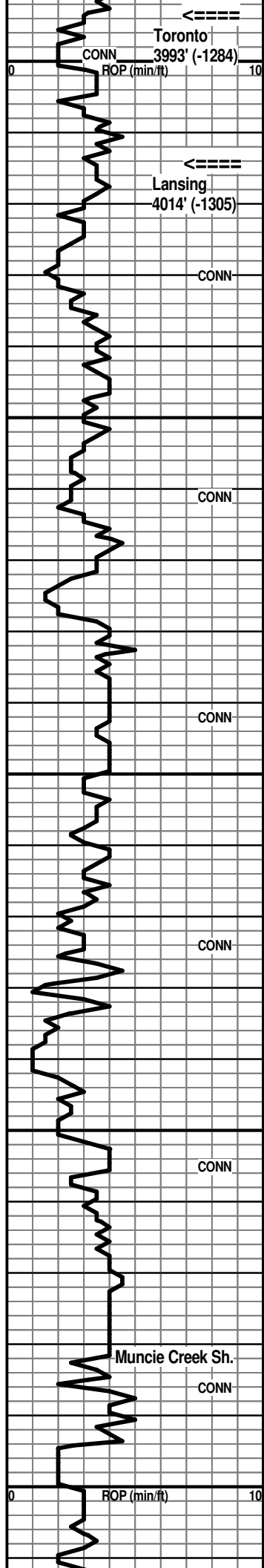
4000' spl - Sh: lt gray, lt gray-green, some gray silty; with Siltst: gray

10' spl - Sh: lt to med gray, silty with Siltst; lt to med gray

MudCo Mud Check at 3736'
9:25 AM on 2-19-2017
wt vis wl pH chl
8.7 51 7.2 11.0 3000
PV YP GelS lcm solids
12 20 8/18 2# 2.7%

Sample quality is only fair - samples contain abundant shales, much of which are recirculated as well as cavings from above

Heebner Shale 3973' (-1264)



10' spl - Sh: lt to med gray, silty with silst. lt to med gray, micac.

20' spl - GOOD SPL - Ls: good influx offwhite, tan mic-vfxln, subchalky to occ chalky, some ppt por., N.S.

30' spl - Sh: med to dark gray; Ls: abund. tan, offwhite mic-vfxln, gen. dense, subchalky IP; lesser gray, gray-brn cryptoxln, NVP

40' spl - Ls: pred. dense, subchalky AA; sl incr. lt brn, lt gray cryptoxln; occ Chert: offwhite, tan, lt gray opq

50' spl - Ls: pred. tan, lt gray vf-cryptoxln, granular IP, NVP, N.S.; Chert: tan, lt brn, offwhite opq; Sh: med to dark gray

60' spl - Ls: influx med brn, med gray cryptoxln, cherty AA; other offwhite, tan mic-vfxln dense, subchalky; Sh: incr. % med to dark gray

70' spl - Ls: lt to med brn, gray vf-cryptoxln and offwhite, tan mic-vfxln dense, subchalky IP, some sl granular; Chert: offwhite, lt brn opq; Sh: AA

80' spl - Ls: tan, offwhite mic-vfxln subchalky with sl influx white chalky; very cherty: offwhite, lt gray opq; trace crinoids; Sh: med to dark gray

90' spl - Ls: tan, lt brn fnxln with inter-particle por.; influx lt gray, lt to med brn cryptoxln; Chert: tan, orange opq; shales AA

4100' spl - Ls: tan, lt to med brn, lt gray pred. cryptoxln; other tan, offwhite mic-vfxln subchalky to white chalky; Chert: lt gray, dark brn opq; Sh: various gray

10' spl - Ls: lt gray, lt to med brn cryptoxln to sl granular, NVP; tan, offwhite mic-vfxln dense, subchalky to occ white chalky; Sh: lt to med gray

20' spl - Sh: incr. % lt to med gray; Ls: mix AA

30' spl - Ls: tan, lt to med brn cryptoxln and offwhite, tan mic-vfxln dense, subchalky to white chalky; Chert: offwhite, lt gray opq; decr. shale %

40' spl - Ls: influx offwhite subchalky to chalky; common lt to med brn, gray-brn cryptoxln; with Chert: offwhite, tan opq; Sh: occ very soft, pale gray

50' spl - Ls: very pred. offwhite, tan subchalky to chalky; lt brn foss. with ppt por., various dense, cherty AA, N.S.

60' spl - Ls: flood white chalky and tan fnxln with fair to good ppt and inter-particle por., N.S.; lesser tan, lt brn mic-vfxln dense

70' spl - Ls: pred. tan, lt brn vf-cryptoxln, NVP and offwhite, tan mic-vfxln dense; scatt. tan vfxln dolomite

80' spl - Ls: pred. tan, lt gray, lt brn vfxln dense; some lt brn with ppt and small vug. por., N.S.; trace offwhite opq chert

90' spl - Ls: mix AA with influx med brn cryptoxln, NVP; sl influx lt brn chert

4200' spl - Sh: influx black carbon.; Ls: mix AA with influx med to dark brn, sl granular to cryptoxln, NVP

10' spl - Ls: lt to med brn cryptoxln, some granular, NVP; abund. tan, offwhite mic-vfxln subchalky IP with some ppt por., occ white chalky, N.S.; Chert: scatt. offwhite, lt gray opq

20' spl - Ls: various brn, tan cryptoxln and offwhite, tan dense, subchalky; sl influx tan opq chert

Toronto 3993' (-1284)

fresh premix with higher vis

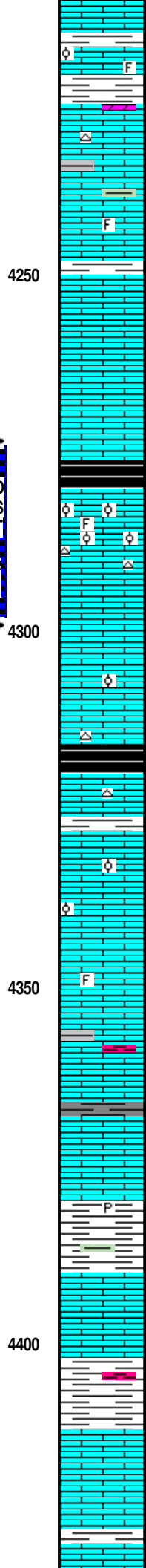
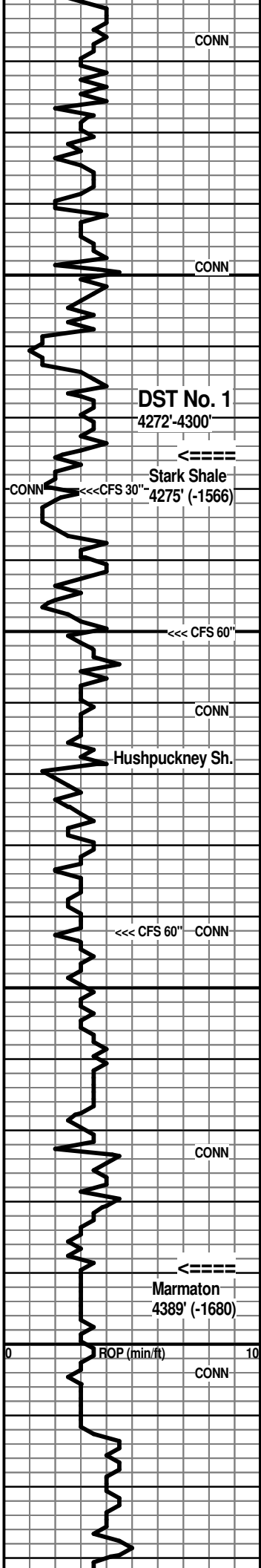
Lansing 4014' (-1305)

sample quality is good

sample quality is good

7:00 AM at 4160' on 2-20-2017

vis 63 wt 9.3 lcm 1#



30' spl - Ls: cherty mix AA; occ tan finely oolitic/foss. with small moldic and vug. por., N.S.; Sh: sl influx dark gray, black, brn

40' spl - Ls: common tan, offwhite mic-vfxln subchalky; sl influx mottled dark brn cryptoxln, NVP; Chert: lt gray opq; trace tan vfxln dolomite

50' spl - Ls: influx lt to med brn cryptoxln to mottled sl granular, NVP; abund. tan, offwhite dense AA; Sh: sl influx various gray, gray-green

60' spl - Ls: tan vfxln dense; some mottled tan granular/foss. IP, NVP; mottled med brn granular/foss., NVP; offwhite mic-vfxln dense

70' spl - Sh: sl influx various gray, gray-green; Ls: pred. various mottled brn, tan granular to cryptoxln

80' spl - Ls: mix AA with sl influx mottled lt brn granular with poor inter-particle por., N.S.; other various dense AA

CFS 4280' 15" spl - Ls: various lt to med brn mottled granular, NVP; some lt brn cryptoxln and offwhite, tan mic-vfxln dense; 30" spl - >>>

90' spl - Sh: good influx black carbon, med to dark gray; Ls: pred. various tan, lt brn mottled vfxln to granular, NVP, N.S.; one chip lt brn sl oolitic with poor inter-oolitic por. with spotty stain, no odor; 4300' spl - >>>

CFS 4300' 30" spl - Ls: good influx white chalky; abund. tan, offwhite mic-vfxln subchalky, rare ppt por., N.S.; lesser tan, brn cryptoxln, NVP; 60" spl - Ls: pred. subchalky to chalky AA; lesser tan, lt to med brn cryptoxln; occ chips with shows AA (cavings or new?)

10' spl - Ls: mix AA; 3-4 chips tan fn granular with ppt and inter-particle por., N.S.

20' spl - Ls: influx mottled tan, brn, gray granular, poor-NVP; common subchalky AA; one chip oolitic with poor oomoldic por. with stain

30' spl - flood Ls: tan, lt brn, lt gray cryptoxln and offwhite micxln, subchalky; occ lt gray spic., opq chert; 40' spl - Sh: strong influx black carbon.; Ls: mix AA, sl cherty; occ dark brn cryptoxln; one chip tan granular with spotty stain, trace show gas (new?)

CFS 4342' 30" spl - Ls: influx mottled tan/offwhite granular to occ oolitic with micxln matrix; other lt to med brn, lt gray cryptoxln and offwhite dense, subchalky; one chip tan oolitic, friable with lt oily sheen, no odor, nfo; Sh: incr. % med to dark gray, black

50' spl - no new rocks; 60' spl - Ls: mix AA with influx lt to med brn, lt gray cryptoxln; one chip offwhite foss. with intra-particle por with brn stain, no odor, nfo, looks residual

70' spl - Ls: various brn, gray cryptoxln to sl granular, NVP, N.S.; lesser offwhite mic-vfxln dense; Sh: influx med to dark gray, some black, dark red-brn

80' spl - Ls: various brn, gray cryptoxln to granular AA; offwhite dense AA; Sh: mix AA

90' spl - Ls: various cryptoxln and granular AA

4400' spl - Ls: various AA with some dark brn smooth cryptoxln; Sh: various gray, trace gray-green, trace pyrite

10' spl - Sh: common med to dark gray, black; occ pale gray, soft and mushy; Ls: influx offwhite mic-vfxln dense

20' spl - Ls: offwhite dense AA; tan, lt brn cryptoxln; Sh: abund. various gray, some dark red-brn

30' spl - Ls: mix tan, lt brn granular with micxln matrix; abund. offwhite mic-vfxln dense, subchalky; lesser lt brn cryptoxln

40' spl - Ls: mix AA with incr. med brn cryptoxln; Sh: common lt to med gray

9:00 AM on 2-20-2017
 wt vis wl pH chl
 9.2 58 7.2 11.0 3000
 PV YP GelS lcm solids
 19 27 11/15 2# 4.8%

sample quality is good

4280' and CFS 4280' samples contained abund. recirculated shales after earthen pits were stirred to get mud moving

30" spl - very shaly spl; Ls: sl mottled tan fnxln with ppt and interxln por.; some more granular with some inter-particle por., micxln matrix IP; other lt to med brn, dark gray-brn cryptoxln, N.S.

Stark Shale 4275' (-1566)

Pipe strap at 4300' Strap 4313.06'
 Board 4311.27' Strap long 1.79'

4300' spl - Ls: 3-4 chips tan oolitic/granular with some inter-particle and vug. por. with sl odor, lt stain, sl show brn free oil and gas bubbles; 3-4 chips tan granular/foss. with inter-particle por. with patchy stain and sfo; other brn cryptoxln to granular; sl influx lt gray opq chert

7:00 AM at 4300' on 2-21-2017

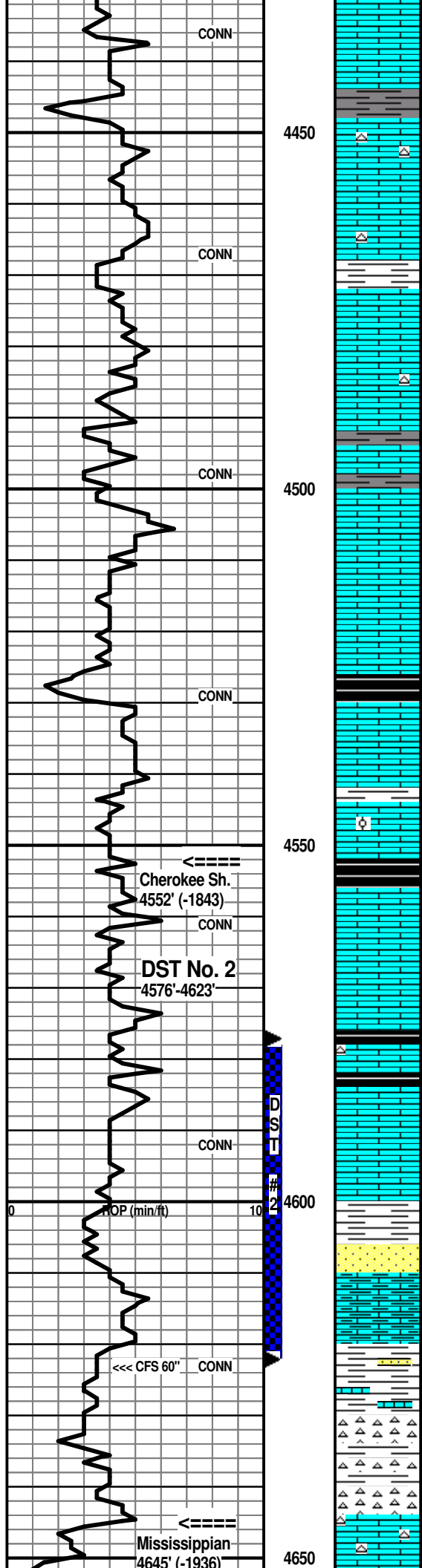
DST No. 1 LKC "K" Zone
 Interval: 4272'-4300'
 Times: 5-30-30-60
 IFP: strong blow, BOB in 1 minute
 ISIP: return blow built to BOB in 7 minutes
 FFP: strong blow, BOB in 1 minute
 FSIP: return blow built to BOB in 10 minutes
 Recovery: 858' GIP; 692' GCO (30g, 70g); 248' M&GCO (5m, 30g, 65g); 186' G&OCM (10g, 10g, 80m); total fluid 1126'; oil gravity 35 deg.
 FP: 66-84/100-289 SIP: 779-758
 HP: 2167-2037 BHT: 128 deg. F

CFS 4342' 60" spl - Ls: mix AA with incr. % various brn cryptoxln and mottled granular, N.S.

MudCo Mud Check at 4342'

9:30 AM on 2-21-2017
 wt vis wl pH chl
 9.2 50 7.2 10.5 3100
 PV YP GelS lcm solids
 15 24 10/17 2# 6.3%

Marmaton 4389' (-1680)



50' spl - Ls: influx med brn cryptoxln; Sh: various gray to black

60' spl - Ls: lt gray, lt brn cryptoxln and lt to med brn, sl mottled granular; other offwhite, tan mic-vfxln dense, subchalky; Chert: sl influx lt brn opq

70' spl - Ls: very pred. tan, lt brn cryptoxln and offwhite, tan mic-vfxln dense; Sh: sl incr. lt to med gray and dark gray

80' spl - Ls: offwhite, tan mic-vfxln dense; tan, lt brn cryptoxln; Chert: occ tan, lt gray opq; Sh: lt to med gray, some gray-green

90' spl - Ls: flood med brn cryptoxln; lesser mottled tan, brn granular, NVP, N.S.; Sh; AA

4500' spl - Sh: good influx med to dark gray, black, some gray-green; Ls: mix AA; occ brn chert

10' spl - Sh: med to dark gray, black; Ls: tan, lt gray, med to dark brn cryptoxln

20' spl - Ls: influx lt to med brn, gray-brn cryptoxln; common offwhite mic-vfxln dense

30' spl - Ls: lt to med brn, lt gray cryptoxln, NVP; Sh: some lt to med gray, occ red-maroon

40' spl - Sh: good influx black carbon., other lt to med gray, mottled red/green and dark red-brn; Ls: various dense AA with sl influx mottled dark brn granular

50' spl - Ls: good influx mottled dark brn granular; lesser med to dark brn cryptoxln and offwhite dense, subchalky to chalky

60' spl - Ls: very pred. mottled dark brn granular, some cryptoxln; other mottled lt brn/offwhite granular to sl oolitic with micxn matrix; Sh: med to dark gray, black

70' spl - Sh: black carbon., med to dark gray; Ls: mottled dark brn granular AA; lt to med brn, some lt gray pred. cryptoxln

80' spl - Sh: dark gray, black carbon., some lt gray, gray-green; Ls: med to dark brn, gray-brn cryptoxln to mottled granular

90' spl - Sh: med to dark gray, black, some gray-green; Ls: beds of med to dark brn cryptoxln and mottled brn/gray granular, poor-NVP; other offwhite mic-vfxln dense; occ brn opq chert

4600' spl - Ls: incr. % tan, lt gray, lt to med brn cryptoxln; Sh: lt to med gray, some black and gray-green

10' spl - Ls: lt to med brn, dark gray cryptoxln, some mottled dark brn granular and offwhite, tan mic-vfxln dense; Sh: med to dark gray, black, gray-green

20' spl - Sh: abund. vc gray, black and gray-green; Sst: scatt. clusters tan vf-fg, subrnd-rnd, tight to friable, silica cmt, with vsl odor, sl sfo, brn residual stain on interstices; Ls: various dense AA

CFS 4623' 30" spl - pred. Ls's and shales AA; scatt. Sst AA, some lt gray fn-med grnd, poor-NVP, N.S.; 60" spl - >>>

30' spl - no new rocks; 40' spl - pred. Sh: vc gray, occ pale gray green, brick red; Ls: tan, lt brn vfxln, some brn cryptoxln; Chert: sl influx brn subopq, offwhite opq

50' spl - good influx Chert: offwhite, brn, tan, gray opq, fresh; some offwhite opq, sl weathered, N.S.; spls still very shaly

60' spl - very cherty AA; Ls: tan, granular with some inter-particle por., N.S.; lt brn cryptoxln

vis 57 wt 9.4

Cherokee Sh. 4552' (-1843)

DST No. 2 Cherokee Sand
 Interval: 4576'-4823'
 Times: 5-30-30-60
 IFP: 1/4 inch blow, died to surface blow
 ISIP: no return blow
 FFP: no blow
 FSIP: no return blow
 Recovery: 5' mud
 FP: 16-16/16-16 SIP: 57-64
 HP: 2307-2244 BHT: 116 deg. F

vis 55 wt 9.6

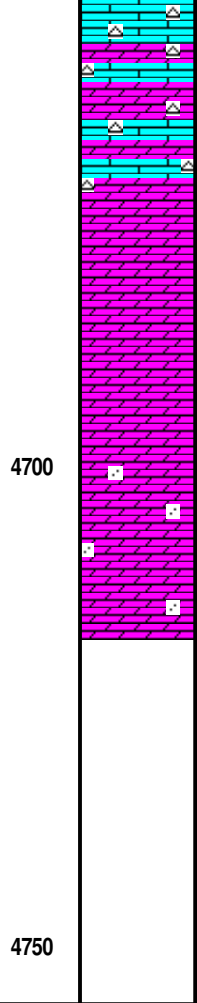
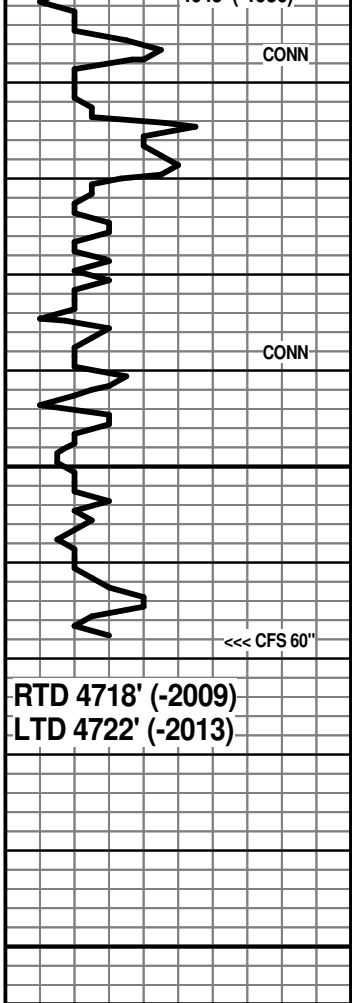
jet #2 pit

60" spl - Sh: pred. vc gray, some black, occ red-maroon; Ls: offwhite, tan mic-vfxln dense and brn, tan cryptoxln; occ Sst: offwhite fg, N.S.

7:00 AM at 4623' on 2-22-2017

MudCo Mud Check at 4623'
 9:25 AM on 2-22-2017
 wt vis wl pH chl
 9.4 59 7.6 10.5 3000
 PV YP GelS lcm solids
 19 33 12/26 2# 7.7%

Mississippian 4645' (-1936)



70' spl - Ls: influx offwhite chalky and mushy; other sl mottled tan, lt brn granular with micxn matrix; some Dolo: gray vfxln, limy; cherty AA

80' spl - Ls: chalky and cherty AA with fair influx Dolo: lt gray, tan fnxn with some fair interxn por., N.S.

90' spl - Dolo: mix AA with chalky and cherty Ls

4700' spl - Dolo: influx brn, gray fn-vfxln with good vug. por., N.S.

10' spl - Dolo: tan, gray, brn, mottled dirty gray with fair-good vug. por., N.S.

4718' spl - Dolo: mix AA

CFS 4718' 30" spl - Dolo: pred. tan, lt brn fn-vfxln with interxn and vug. por.; new offwhite mic-vfxln dense; sl influx coarse to very coarse qtz fragments; 60" spl - Dolo: tan, brn, some gray fnxn with interxn and vug. por.; scatt. qtz grains AA, N.S.

Because of the positive results of DST No. 1 in the "K" Zone, 5 1/2" production casing was set for completion.

Respectfully submitted,

Wesley D. Hansen
 Petroleum Geologist
 Kansas License No. 418

7:00 AM at 4718' on 2-23-2017

Pipe strap at RTD was 1.12' long to board

RTD of 4718' was reached at approx. 5:00 AM on 2-23-2017

JOB LOG

SWIFT Services, Inc.

DATE 17 Feb 17 PAGE NO. 1

CUSTOMER Norstar WELL NO. 1-16 LEASE Hireman Unit JOB TYPE cement surface pipe TICKET NO. 30149

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								165 sk standard cement 2% gel 3% CC 8 5/8" x 23# casing 7 joints TD = 292'
	2120							on loc TRK 114
	2250							start 8 5/8" x 23# casing in well
	2350							circ well
15 Feb	0000	3 1/4	40				20	Mix STD 2% 3% cement 165 sk @ 14.7 ppg
	0020	3	17 16 1/2				250	Displace with H ₂ O → cement to surface ←
			17 1/2					Kickout - shot in 8 5/8" (lost top it)
	0035							Wash truck
								Break up
								job complete
	0050							

JOB LOG

SWIFT Services, Inc.

DATE 23 Feb 17 PAGE NO. 1

CUSTOMER Horsar Petroleum WELL NO. 1-16 LEASE Hineman Unit JOB TYPE Cement long string TICKET NO. 30155

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								200 sk SA-2 cement w/ 1/4# Fballs TD= 4718 5 1/2 x 15.5# casing 11 joints - 4721' shoe jt 21' Bkt 17, 63 Centralizer 1, 5, 7, 9, 12, 14, 16, 62 Port Collar #63, 2044'
	2200							on loc TRK 110
	2245							start 5 1/2 x 15.5# casing in well
24 Feb	0105							Drop ball - circulate - reciprocate
	0207	5	12				300	Pump 500 gal mud flush
		5	20				300	Pump 20 bbl KCL flush
			4					Plug RH 30 sk
	0222	3 3/4	36				350	Mix SA-2 cement 170 sk @ 15.3 ppm
								Work out Pump & Line Drop latch down plug
	0242	6					350	Displace plug
		6	88				500	
		6	103				500	
	0300	4 1/2	111				1500	Land plug
	0305							Release pressure to truck - dried up
	0305							wash truck
								Rack up
	0340							job complete Thanks Blair, Phil & Isaac

JOB LOG

SWIFT Services, Inc.

DATE 6 MAR 17 PAGE NO.

CUSTOMER NORSTAR PETROLEUM WELL NO. LEASE HINEMAN #1 JOB TYPE CEMENT PORT COLLAR TICKET NO. 30218

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0830							ON LOCATION
								PORT COLLAR @ 2043
	1141				✓		1000	TEST-HELD
	1145							OPEN PORT COLLAR
	1149	4 1/2	80	✓		2000	300	MIX 1453 x SMD
		3	11	✓				DISPLACE CEMENT
								CIRCULATE 20 SX TO PIT
	1212				✓		1000	CLOSE PORT COLLAR-TEST-HELD
								RUN 4 JTS.
	1226	4	24		✓		300	REVERSE CLEAN.
	1235							WASH TRUCK
	1310							JOB COMPLETE
								THANKS B115
								JASON DAVE FRESTON.