

Confidentiality Requested:

☐ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1215189

Form ACO-1

August 2013

Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

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 ☐ SIOW
- ☐ Gas ☐ D&A ☐ ENHR ☐ SIGW
- ☐ OG ☐ GSW ☐ Temp. Abd.
- ☐ CM (Coal Bed Methane)
- ☐ Cathodic ☐ Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- ☐ Deepening ☐ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD
- ☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer
- ☐ Commingled Permit #: _____
- ☐ Dual Completion Permit #: _____
- ☐ SWD Permit #: _____
- ☐ ENHR Permit #: _____
- ☐ GSW Permit #: _____

Spud Date or
Recompletion Date

Date Reached TD

Completion Date or
Recompletion Date

API No. 15 - _____

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

☐ Geologist Report Received

☐ UIC Distribution

ALT ☐ I ☐ II ☐ III Approved by: _____ Date: _____

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

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 <i>(Attach Additional Sheets)</i>	☐ Yes	☐ No	☐ Log	Formation (Top), Depth and Datum	☐ Sample
Samples Sent to Geological Survey	☐ Yes	☐ No	Name	Top	Datum
Cores Taken	☐ Yes	☐ No			
Electric Log Run	☐ Yes	☐ No			
List All E. Logs Run:					

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

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
☐ Perforate				
☐ Protect Casing				
☐ Plug Back TD				
☐ Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☐ No (If No, skip questions 2 and 3)

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No (If No, skip question 3)

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☐ No (If No, fill out Page Three of the ACO-1)

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record (Amount and Kind of Material Used)	Depth

TUBING RECORD:		Size:	Set At:	Packer At:	Liner Run:			
					☐ Yes ☐ No			
Date of First, Resumed Production, SWD or ENHR.			Producing Method:					
			☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other (Explain) _____					
Estimated Production Per 24 Hours	Oil	Bbbs.	Gas	Mcf	Water	Bbbs.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: ☐ Vented ☐ Sold ☐ Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: ☐ Open Hole ☐ Perf. ☐ Dually Comp. ☐ Commingled <i>(Submit ACO-5)</i> ☐ Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Hess Oil Company
Well Name	Helen 1
Doc ID	1215189

Tops

Name	Top	Datum
Anhydrite	2109	+594
Base Anhydrite	2144	+559
Heebner	3947	-1244
Lansing	3985	-1282
Stark Shale	4229	-1526
Marmaton	4320	-1617
Pawnee	4370	-1667
Base Kansas City	4303	-1600
Ft. Scott	4485	-1782
Cherokee	4513	-1810
Mississippi	4592	-1889
RTD	4650	-1947
LTD	4652	-1949



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

Well Name: HELEN #1
API: 15-101-22520-00-00
Location: NW SW NE SE SECTION 23 16S 27W
License Number: 5663
Spud Date: 6/17/2014
Surface Coordinates: 1786' FROM SOUTH LINE OF SECTION
1000' FROM EAST LINE OF SECTION
Bottom Hole Coordinates: 1786' FROM SOUTH LINE OF SECTION
1000' FROM EAST LINE OF SECTION
Ground Elevation (ft): 2692' **K.B. Elevation (ft):** 2703'
Logged Interval (ft): 2700' **To:** 4650 **Total Depth (ft):** 4650
Formation: MISSISSIPPI
Type of Drilling Fluid: CHEMICAL, MUD-CO

Region: LANE CO. KS.

Drilling Completed: 6/28/2014

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

OPERATOR

Company: HESS OIL COMPANY
Address: PO BOX 1009
MCPHERSON, KANSAS 67460-1009
(620) 241-4640

GEOLOGIST

Name: DAVID GOULD (LOGGER)
Company: DMT COMPANY
Address: 532 SUNRISE
PRATT, KANSAS 67124
(620) 388-2847

Comments

CONTRACTOR:

MURFIN Rig #22

BIT RECORD:

A1, 12 ¼, HTCO, GTC-1, 5225787, 0'-225'
1, 7 7/8, HTCO, DP506F, 7146173, 225'-3700'
2, 7 7/8, HTCO, GX223RN, 5234524, 3700'-4218'
3, 7 7/8, HTCO, GX20CNEW, 5241127, 4218'-

SURVEYS:

225, ¼ DEGREE
1008', ½ DEGREE
2045', ¾ DEGREE
3048', ½ DEGREE
3700', 1 DEGREE
3948', 4 DEGREE
3979', 3 ¼ DEGREE
4041', 3 ¼ DEGREE
4042', 3 DEGREE
4168', 3 ¼ DEGREE
4200', 4 ½ DEGREE
4271', 3 ½ DEGREE
4287', 3 1/2 DEGREE
4370', 2 ¾ DEGREE
4410', 3 1/2 DEGREE
4510', 2 ¾ DEGREE
4530', 2 ¾ DEGREE
4650', 2 1/2 DEGREE

DAILY STATUS: (7:00 AM)

6-17-2014, MOVE RIG IN, RIGUP, SPUD, SUFACE SET AT 10:45 PM
6-18-2014, 225 WOC
6-19-2014, 2780 DRILLING AHEAD
6-20-2014, 3825 DRILLING AHEAD
6-21-2014, 4067, DST #1
6-22-2014, 4165 DRILLING AHEAD
6-23-2014, 4238 DRILL AHEAD
6-24-2014, 4300 DRILLING AHEAD
6-25-2014, 4410, DST #4
6-26-2014, 4510, DST #5
6/27/2014, 4530, DST #6
6/28/2014, 4650, LOGGING, PLUG WELL

Well Name & No.: Helen #1 Company: Hess Oil Co. Test No.: 1 Interval Tested: 3977 – 4067

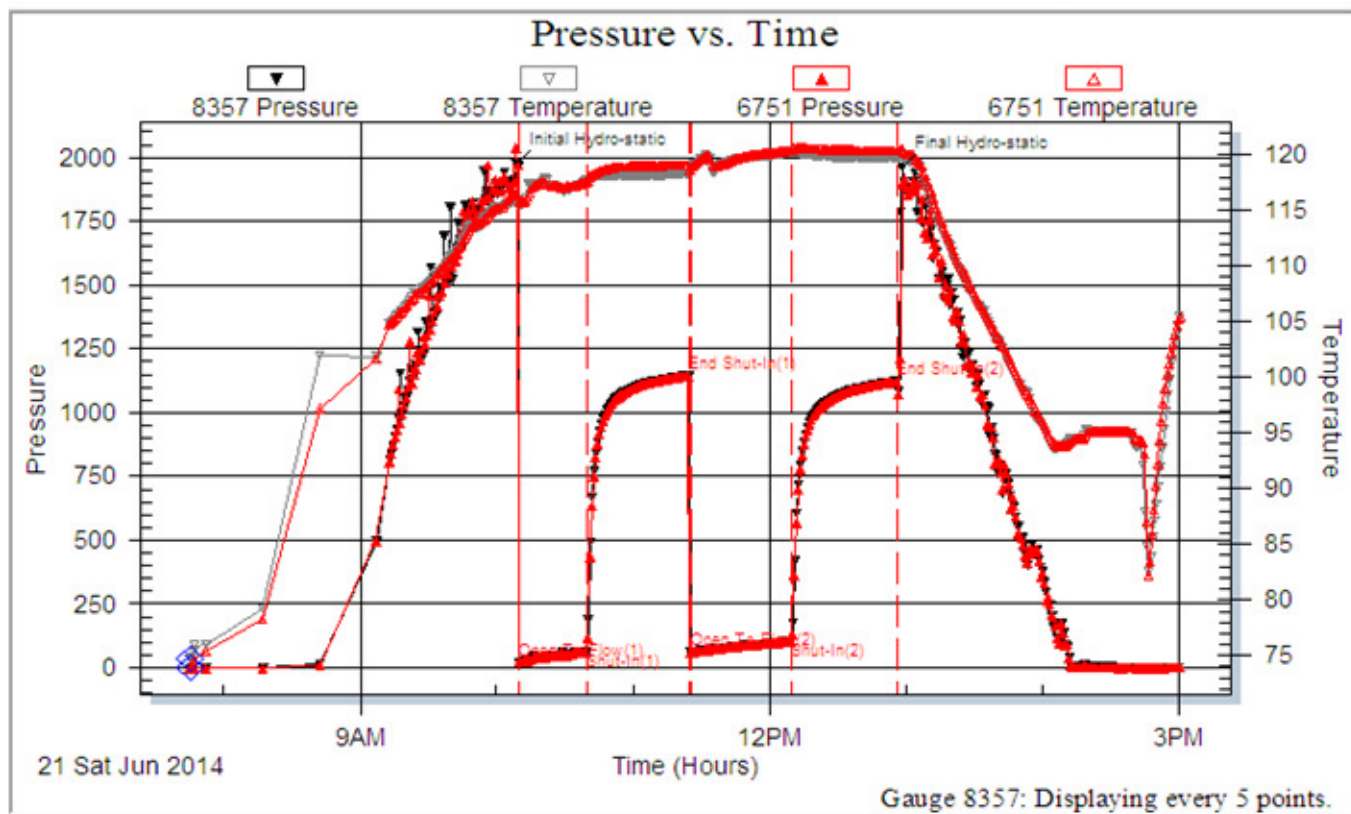
Zone Tested: Lansing Times: 30-45-45-45

Blow Description: IFP: 3" Blow ISI: No blow back FFP: 2" Blow FSI: No blow back

Rec: 116 Feet of WM 40% Water 60% Mud, 59 Feet of M 100% Mud Rec. Total: 175', BHT: 120 Gravity: N/A

Initial Hydrostatic: 1977 First Initial Flow: 22 First Final Flow: 60 Initial Shut-In: 1144

Second Initial Flow: 63 Second Final Flow: 103 Final Shut-In: 1123 Final Hydrostatic: 1963



Well Name & No.: Helen #1 Company: Hess Oil Co. Test No.: 2 Interval Tested: 4139 – 4218

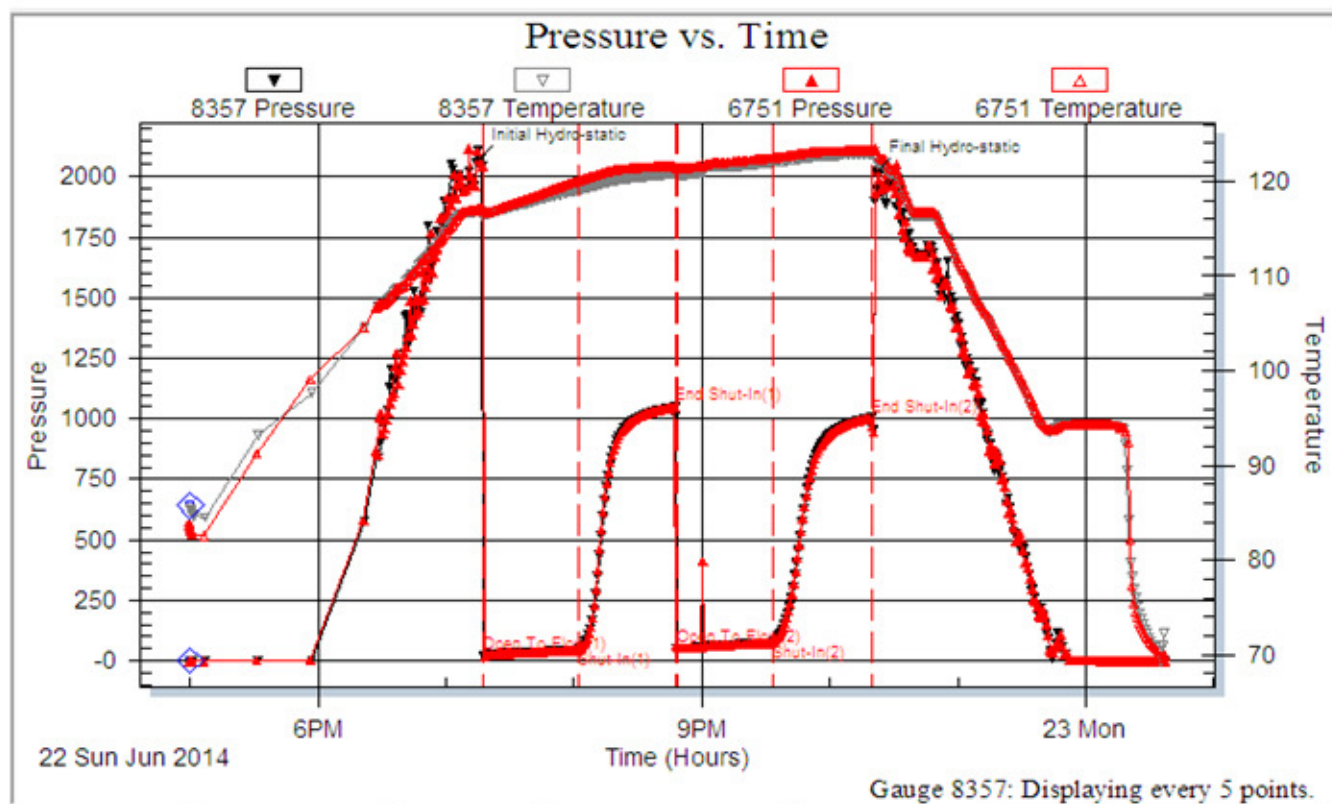
Zone Tested: KC Times: 45-45-45-45

Blow Description: IFP: 1 1/2" Blow ISI: No blow back FFP: No blow, Flush Tool, No blow FSI: No blow back

Rec: 1 Feet of O 100% Oil, 118 Feet of OSWM 15% Water, 85% Mud Rec. Total: 119', BHT: 123 Gravity: N/A

Initial Hydrostatic: 2072 First Initial Flow: 21 First Final Flow: 45 Initial Shut-In: 1050

Second Initial Flow: 53 Second Final Flow: 74 Final Shut-In: 1004 Final Hydrostatic: 2020



Well Name & No.: Helen #1 Company: Hess Oil Co. Test No.: 3 Interval Tested: 4240 – 4287

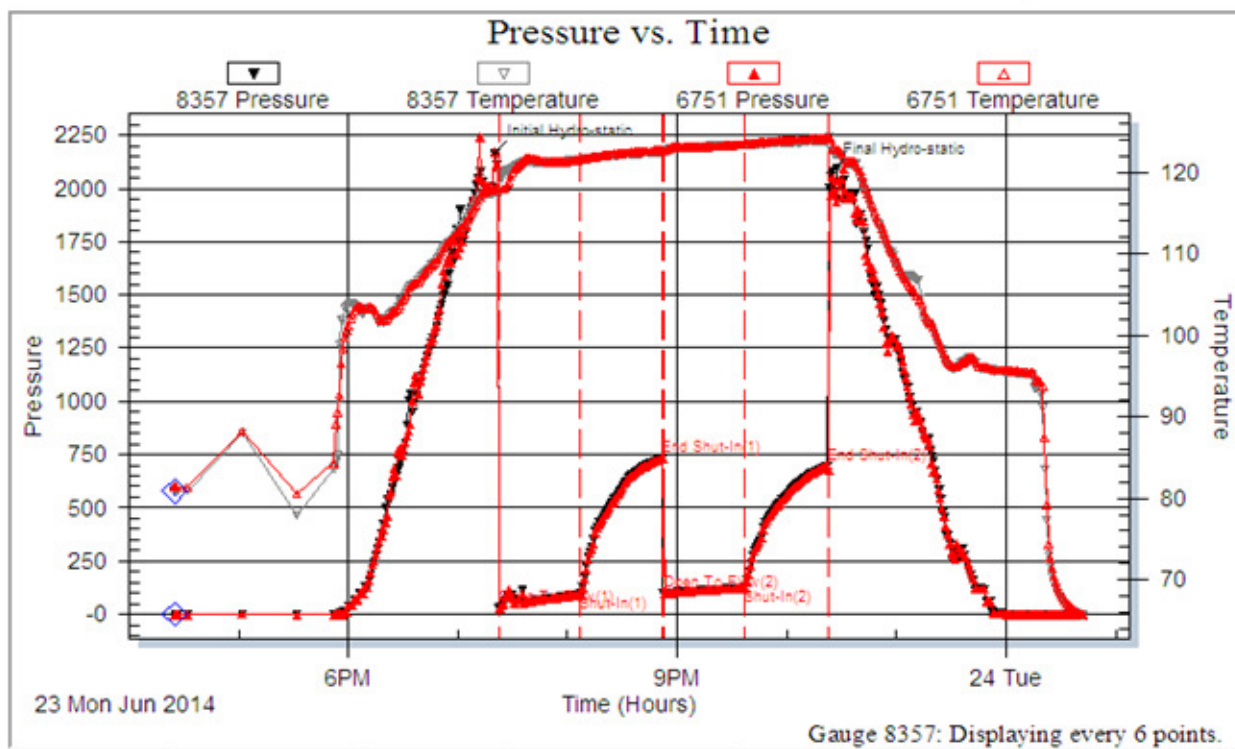
Zone Tested: KC Times: 45-45-45-45

Blow Description: IFP: BOB in 20 Min. ISI: 1/4" Blow back died in 30 Min. FFP: BOB in 12 Min. FSI: 4" Blow back

Rec: 30 Feet of GMCO 10% Gas, 50% Oil, 0% Water, 40% Mud, 118 Feet of GOCM Emulsion 25% Gas, 12% Oil, 35% Emulsion, 28% Mud, 118 Feet of GOCWM 12% Emulsion 15% Gas, 3% Oil, 25% Water, 45% Mud, 570 Feet of GIP Rec. Total: 266', BHT: 124 Gravity: 36

Initial Hydrostatic: 2162 First Initial Flow: 28 First Final Flow: 92 Initial Shut-In: 733

Second Initial Flow: 99 Second Final Flow: 123 Final Shut-In: 699 Final Hydrostatic: 2078



Well Name & No.: Helen #1 Company: Hess Oil Co. Test No.: 4 Interval Tested: 4292 – 4410

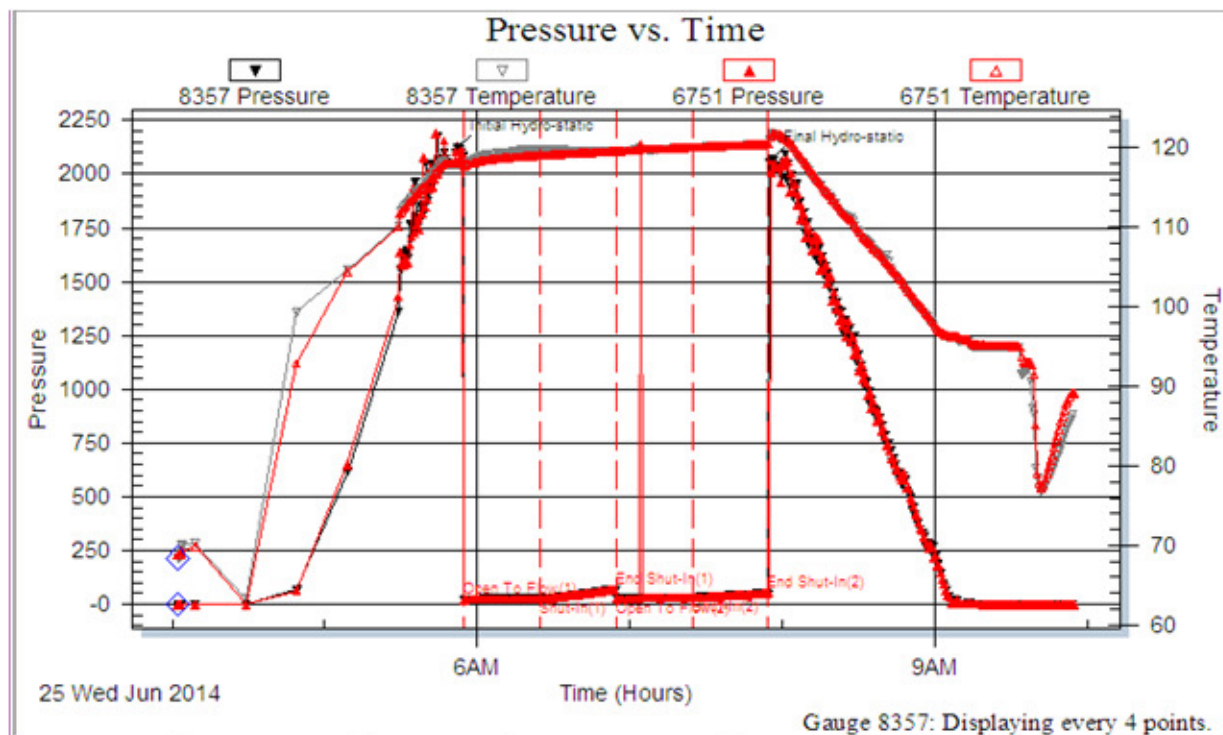
Zone Tested: Pawnee Times: 30-30-30-30

Blow Description: IFP: 1/2" Blow died in 20 Min. ISI: No blow back FFP: No blow Flushed Tool No Blow FSI: No blow back

Rec: 30 Feet of OSM 100% Mud Rec. Total: 30', BHT: 120 Gravity: N/A

Initial Hydrostatic: 2124 First Initial Flow: 24 First Final Flow: 27 Initial Shut-In: 71

Second Initial Flow: 26 Second Final Flow: 33 Final Shut-In: 51 Final Hydrostatic: 2072



Well Name & No.: Helen #1 Company: Hess Oil Co. Test No.: 5 Interval Tested: 4478 – 4510

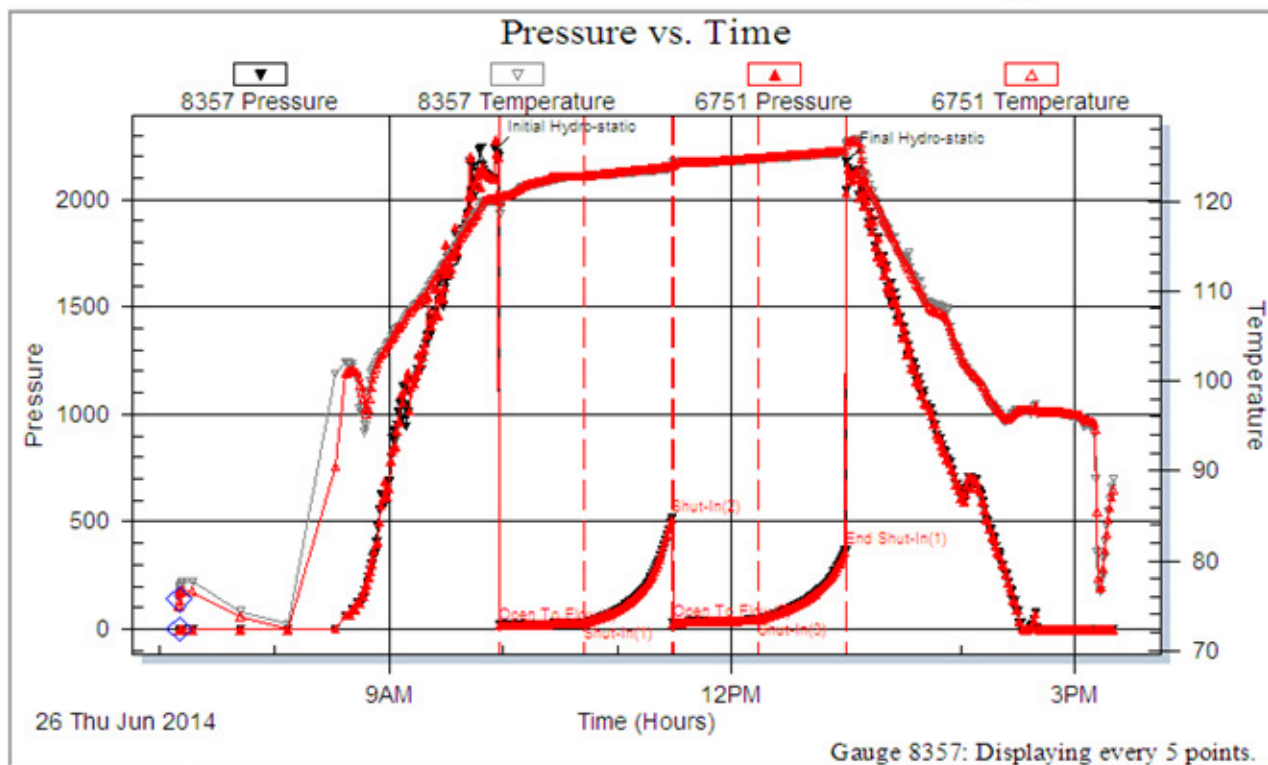
Zone Tested: Fort Scot Times: 45-45-45-45

Blow Description: IFP: 1 1/2" Blow ISI: No blow back FFP: 5" Blow FSI: No blow back

Rec: 60 Feet of GSOCM 20% Gas, 2% Oil, 0% Water 78% Mud, 118 Feet of GIP Rec. Total: 60', BHT: 125 Gravity: N/A

Initial Hydrostatic: 2235 First Initial Flow: 20 First Final Flow: 28 Initial Shut-In: 519

Second Initial Flow: 30 Second Final Flow: 42 Final Shut-In: 367 Final Hydrostatic: 2177



Well Name & No.: Helen #1 Company: Hess Oil Co. Test No.: 6 Interval Tested: 4478 – 4530

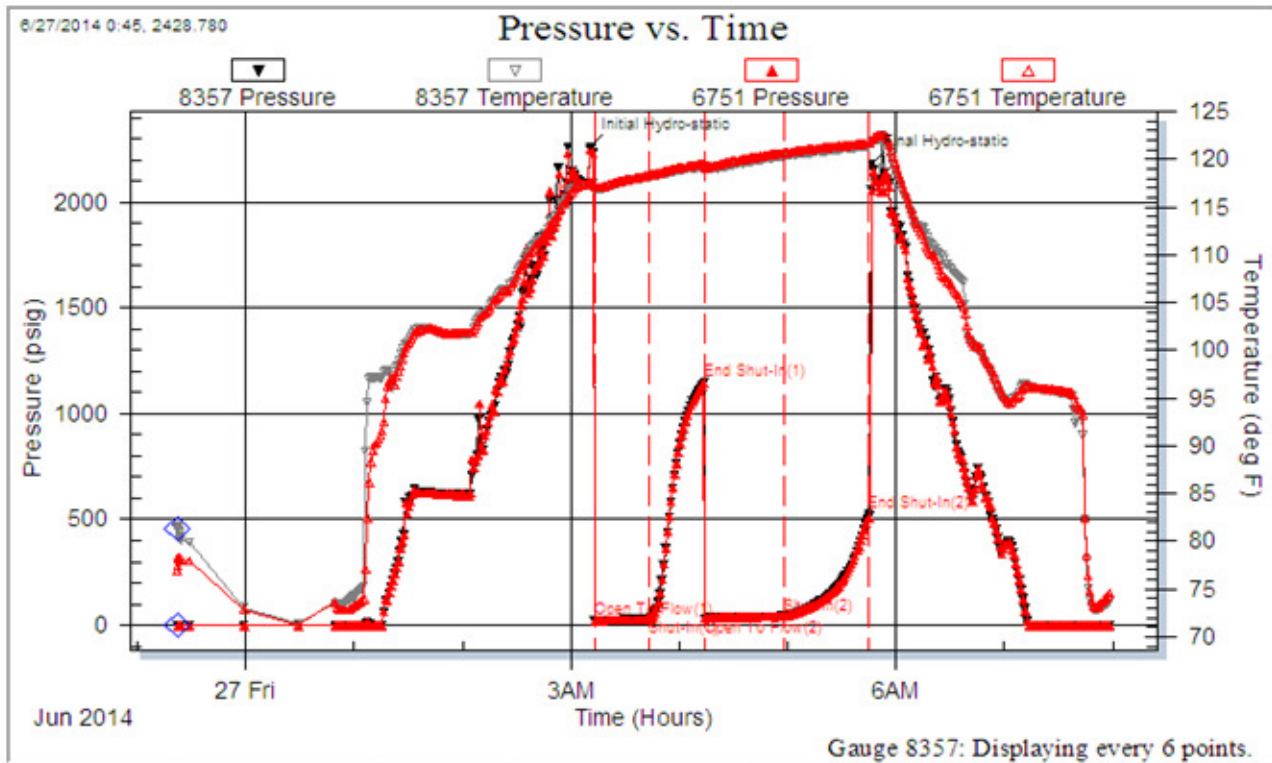
Zone Tested: Cherokee Times: 30-30-45-45

Blow Description: IFP: 1/2" Blow died in 23 Min. ISI: No blow back FFP: No blow flushed tool, 1" blow FSI: No blow back

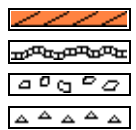
Rec: 60 Feet of OSM 100% Mud, Rec. Total: 60', BHT: 121 Gravity: N/A

Initial Hydrostatic: 2259 First Initial Flow: 22 First Final Flow: 30 Initial Shut-In: 1151

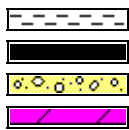
Second Initial Flow: 35 Second Final Flow: 42 Final Shut-In: 525 Final Hydrostatic: 2183



ROCK TYPES



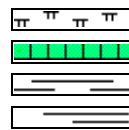
Anhy
Bent
Brec
Cht



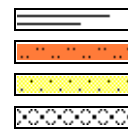
Clys
Coal
Congl
Dol



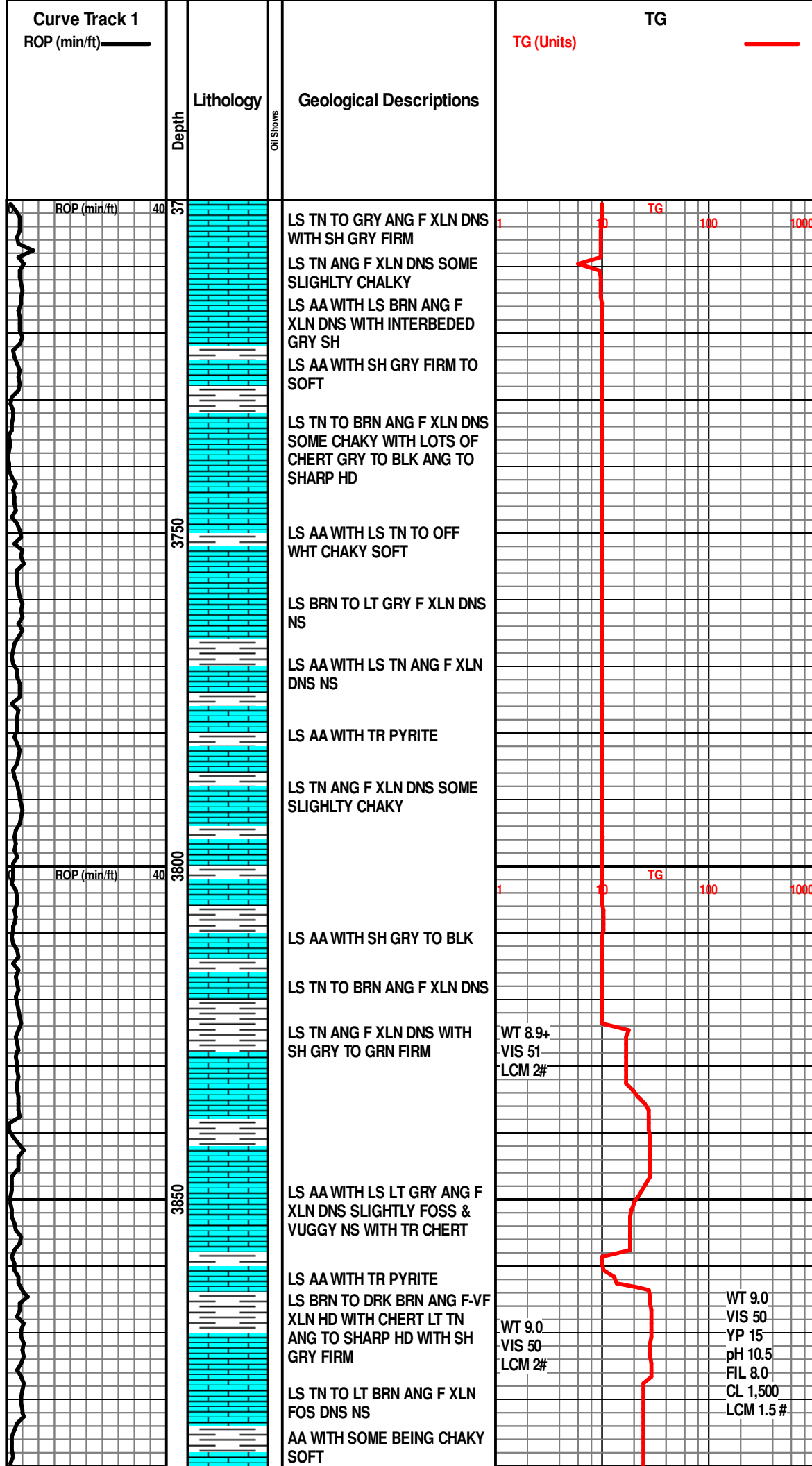
Gyp
Igne
Lmst
Meta

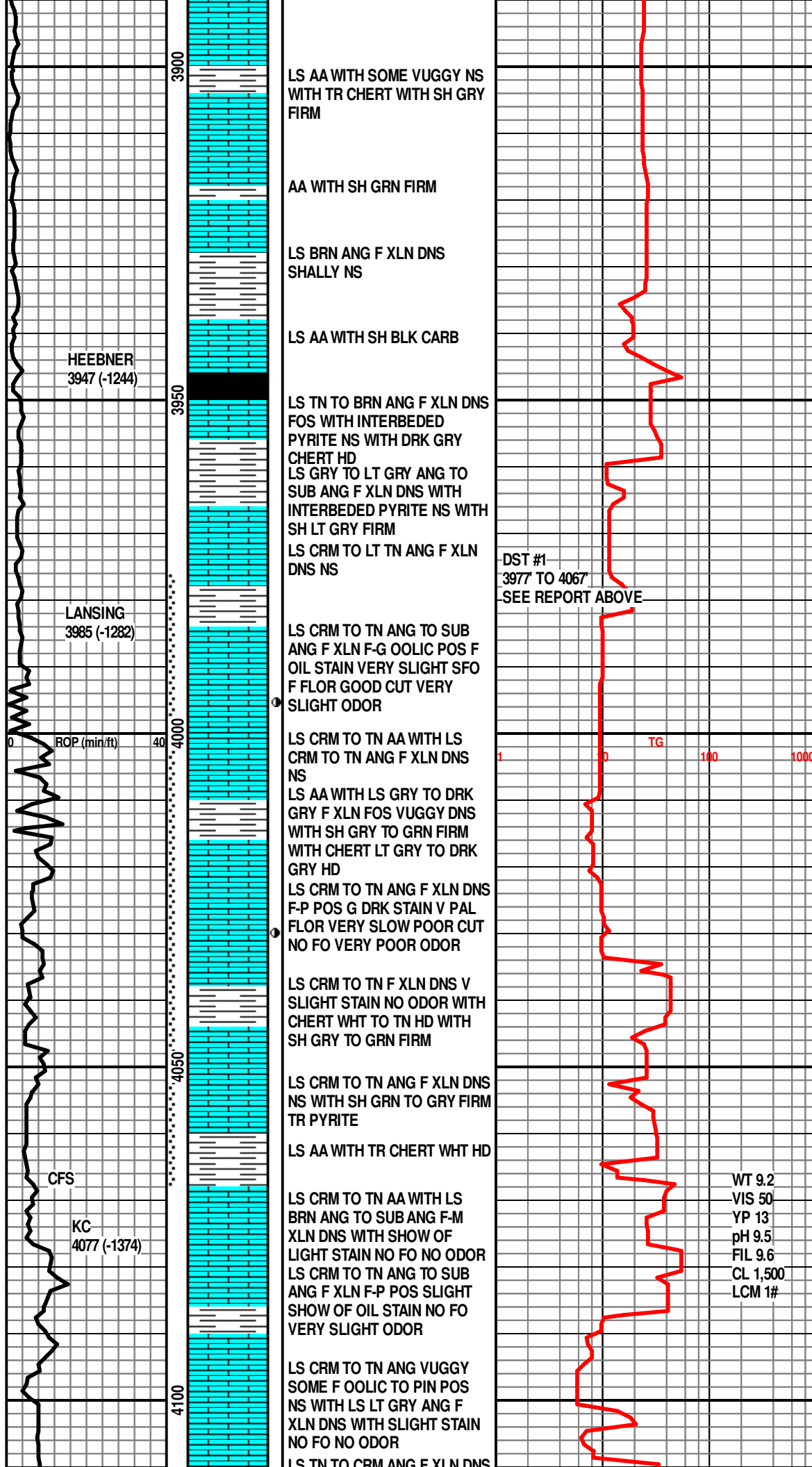


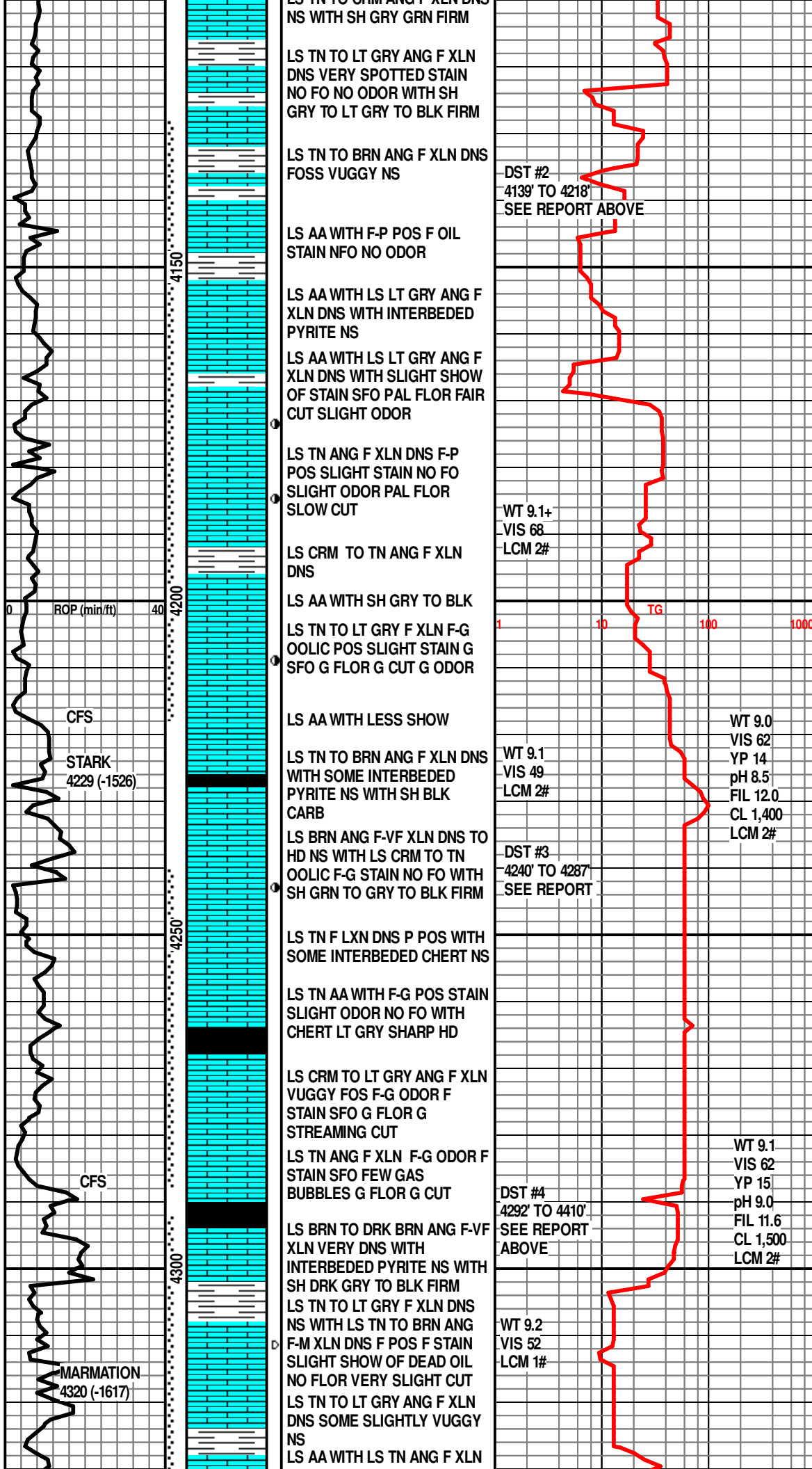
Mrlst
Salt
Shale
Shcol

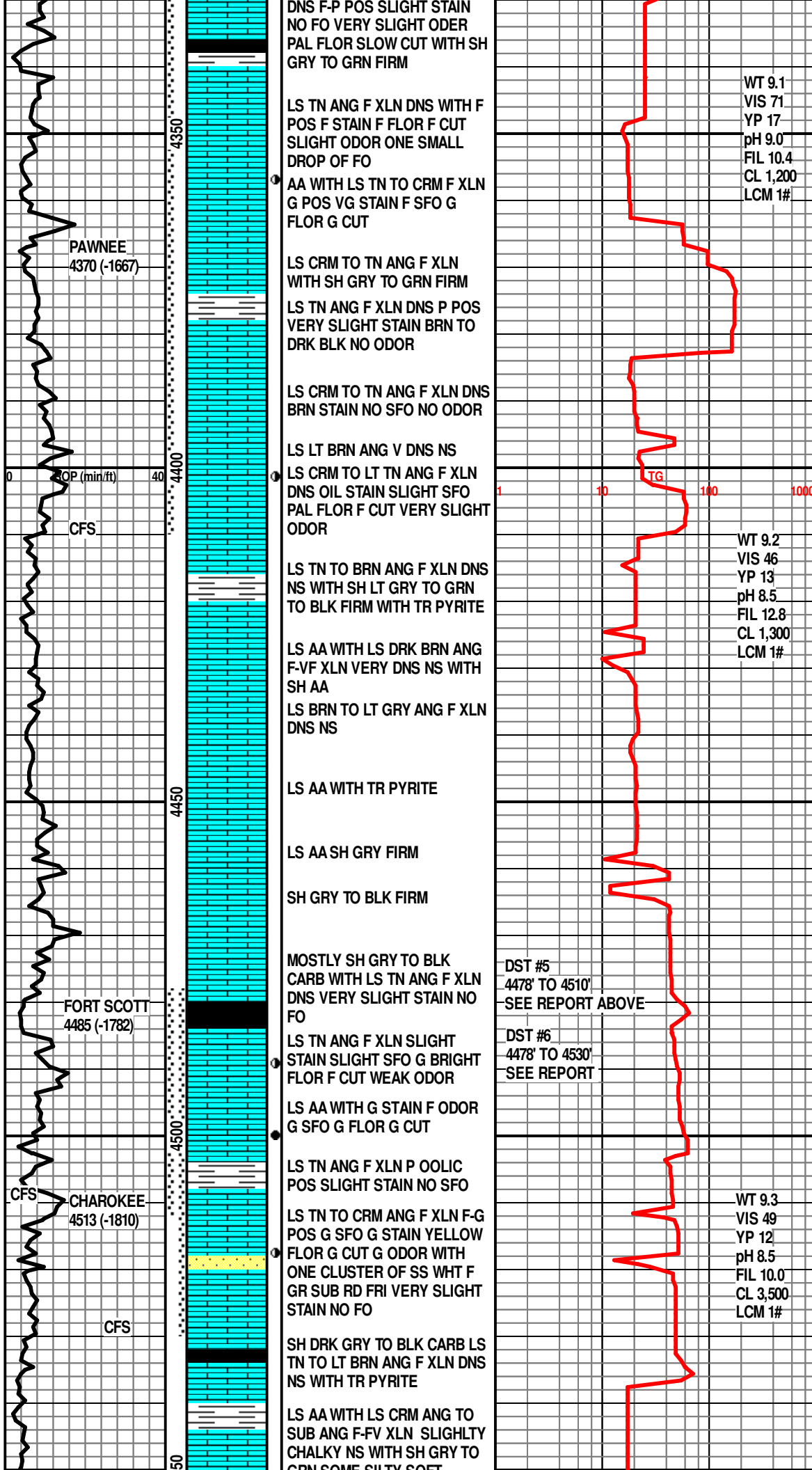


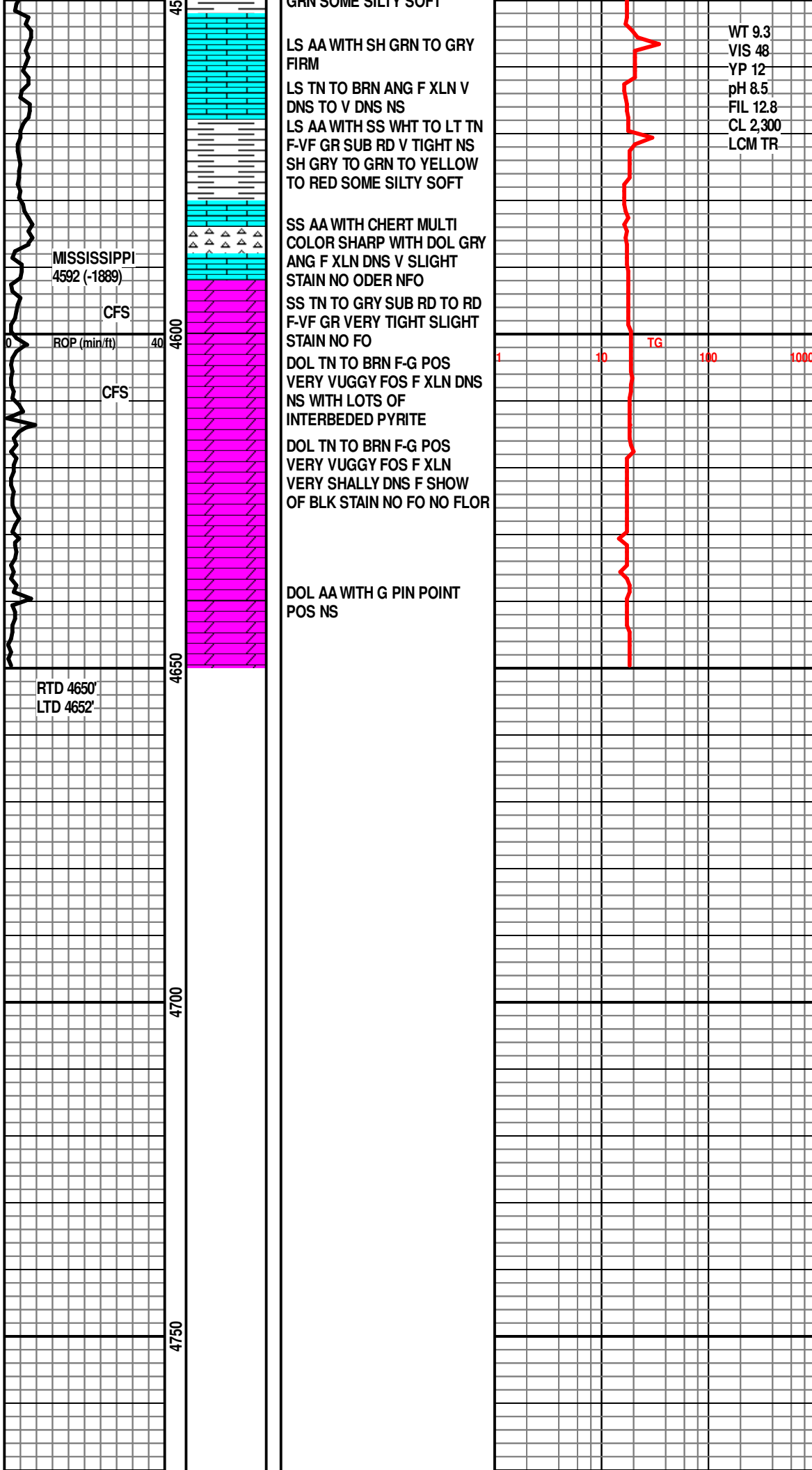
Shgy
Sltst
Ss
Till

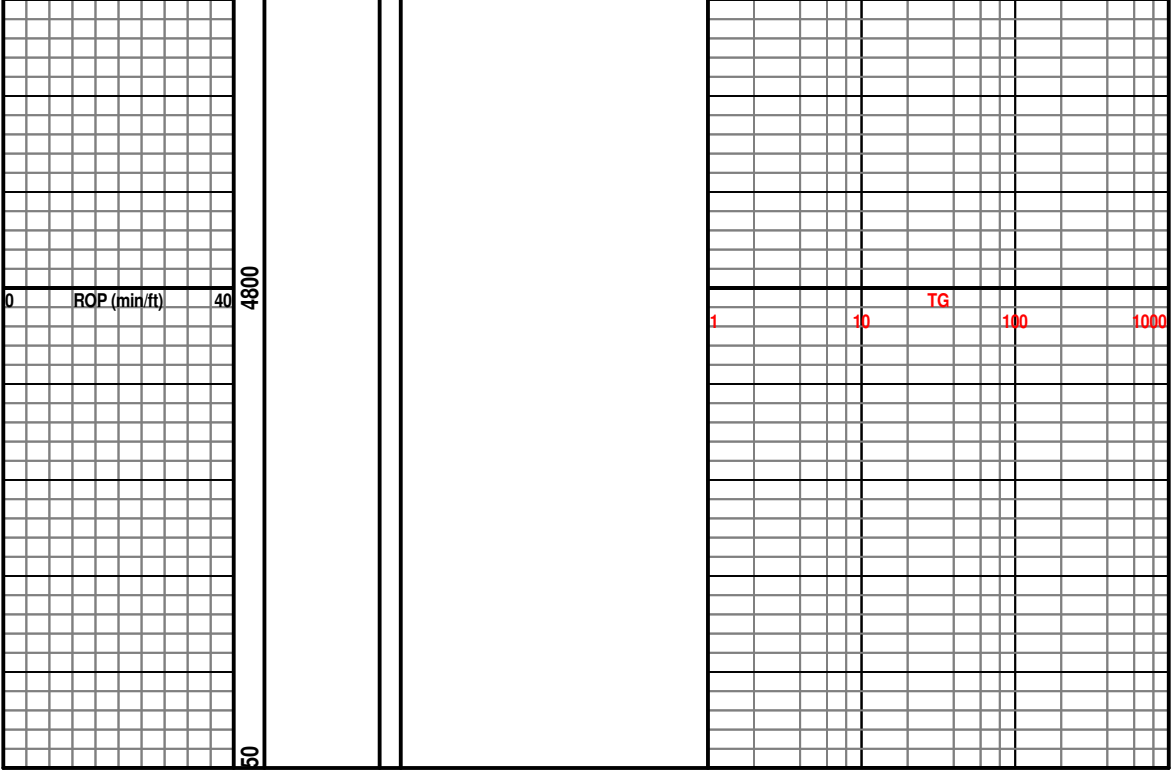


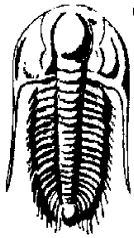












TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hess Oil Co.

S23-16s-17w Lane,KS

POB 1009
McPherson, KS 67460

Helen #1

Job Ticket: 57177

DST#: 1

ATTN: Dave Gould

Test Start: 2014.06.21 @ 07:45:00

GENERAL INFORMATION:

Formation: **Lansing**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:09:50

Time Test Ended: 15:00:50

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Smith

Unit No: 62

Interval: 3977.00 ft (KB) To 4067.00 ft (KB) (TVD)

Total Depth: 4067.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2703.00 ft (KB)

2694.00 ft (CF)

KB to GR/CF: 9.00 ft

Serial #: 8357 Inside

Press@RunDepth: 103.07 psig @ 3980.00 ft (KB)

Start Date: 2014.06.21

End Date:

2014.06.21

Start Time: 07:45:12

End Time:

15:01:00

Capacity: 8000.00 psig

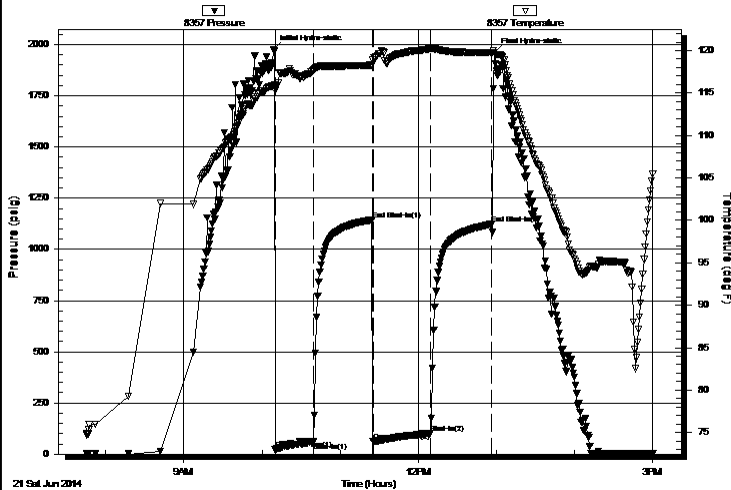
Last Calib.: 2014.06.21

Time On Btm: 2014.06.21 @ 10:08:40

Time Off Btm: 2014.06.21 @ 12:58:40

TEST COMMENT: 30- 3" Blow .
45- No return.
45- 2" Blow .
45- No return.

Pressure vs. Time



PRESSURE SUMMARY

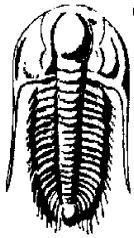
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1977.10	115.89	Initial Hydro-static
2	21.95	115.31	Open To Flow (1)
32	60.18	117.73	Shut-In(1)
76	1144.38	118.29	End Shut-In(1)
77	63.21	118.96	Open To Flow (2)
121	103.07	120.23	Shut-In(2)
168	1122.81	119.78	End Shut-In(2)
170	1962.88	119.76	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	RW: .175 @ 78 Degrees F = 37000 PPM	0.00
59.00	M 100m	0.29
116.00	WM 40w 60m	0.57

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hess Oil Co.

S23-16s-17w Lane,KS

POB 1009
McPherson, KS 67460

Helen #1

Job Ticket: 57177

DST#: 1

ATTN: Dave Gould

Test Start: 2014.06.21 @ 07:45:00

GENERAL INFORMATION:

Formation: **Lansing**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:09:50

Time Test Ended: 15:00:50

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Smith

Unit No: 62

Interval: 3977.00 ft (KB) To 4067.00 ft (KB) (TVD)

Total Depth: 4067.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2703.00 ft (KB)

2694.00 ft (CF)

KB to GR/CF: 9.00 ft

Serial #: 6751 Outside

Press@RunDepth: psig @ 3980.00 ft (KB)

Start Date: 2014.06.21

End Date:

2014.06.21

Capacity: 8000.00 psig

Last Calib.:

2014.06.21

Start Time: 07:45:02

End Time:

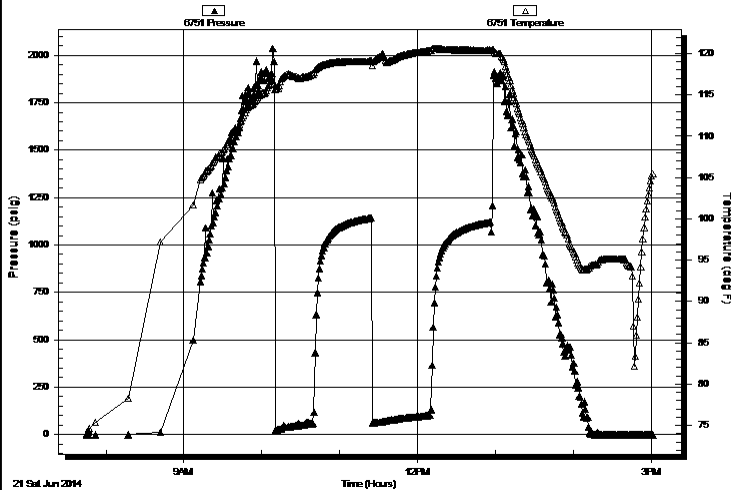
15:01:00

Time On Btm:

Time Off Btm:

TEST COMMENT: 30- 3" Blow .
45- No return.
45- 2" Blow .
45- No return.

Pressure vs. Time



PRESSURE SUMMARY

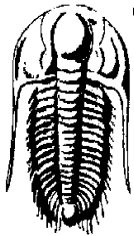
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
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Recovery

Length (ft)	Description	Volume (bbl)
0.00	RW: .175 @ 78 Degrees F = 37000 PPM	0.00
59.00	M 100m	0.29
116.00	WM 40w 60m	0.57

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Co.

S23-16s-17w Lane,KS

POB 1009
McPherson, KS 67460

Helen #1

Job Ticket: 57177

DST#: 1

ATTN: Dave Gould

Test Start: 2014.06.21 @ 07:45:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 60.00 sec/qt

Water Loss: 8.19 in³

Resistivity: ohm.m

Salinity: 1500.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API:

Water Salinity: 37000 ppm

deg API

ft

bbl

psig

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	RW: .175 @ 78 Degrees F = 37000 PPM	0.000
59.00	M 100m	0.290
116.00	WM 40w 60m	0.570

Total Length: 175.00 ft

Total Volume: 0.860 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

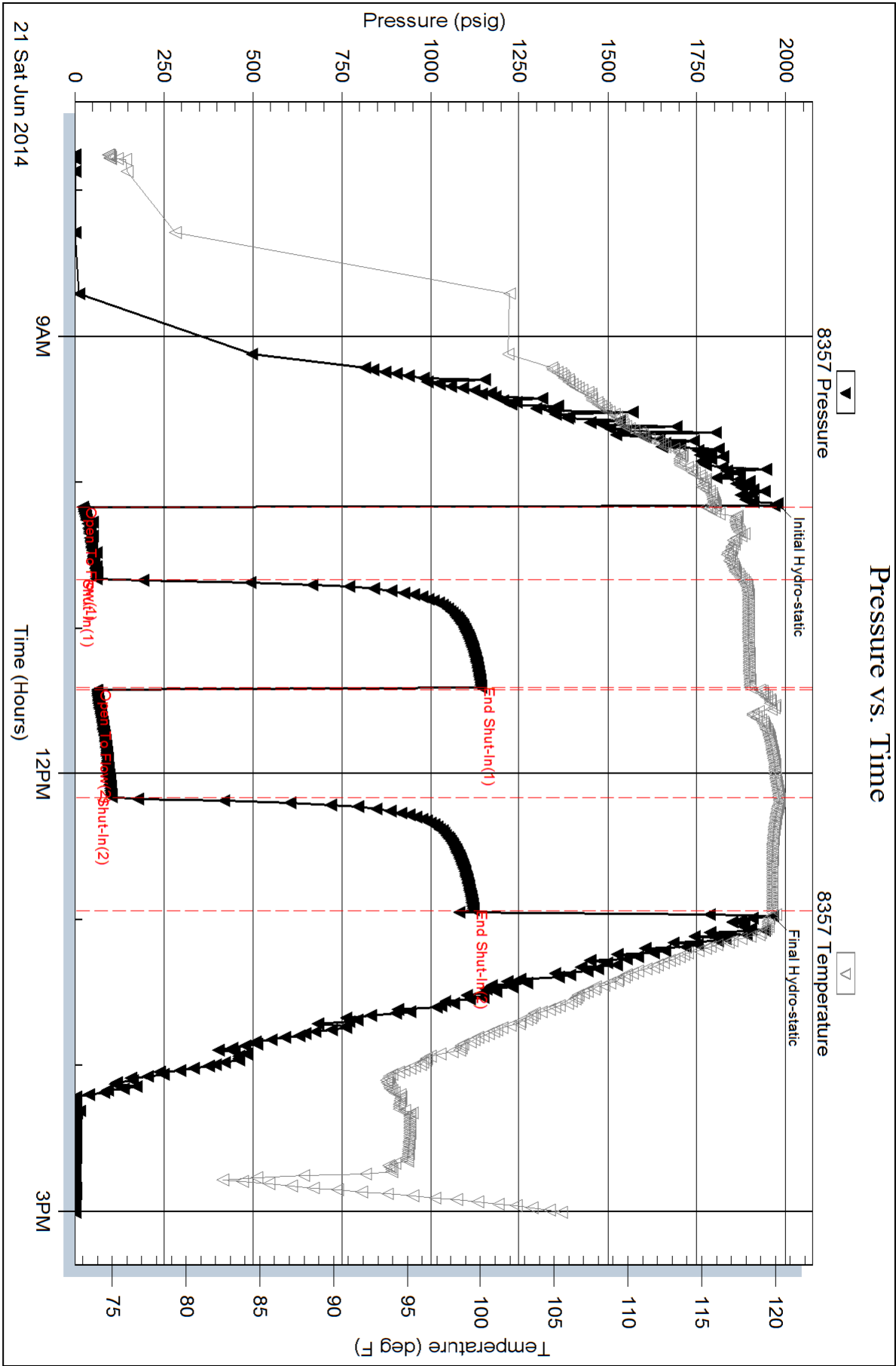
Serial #: 8357

Inside

Hess Oil Co.

Helen #1

DST Test Number: 1

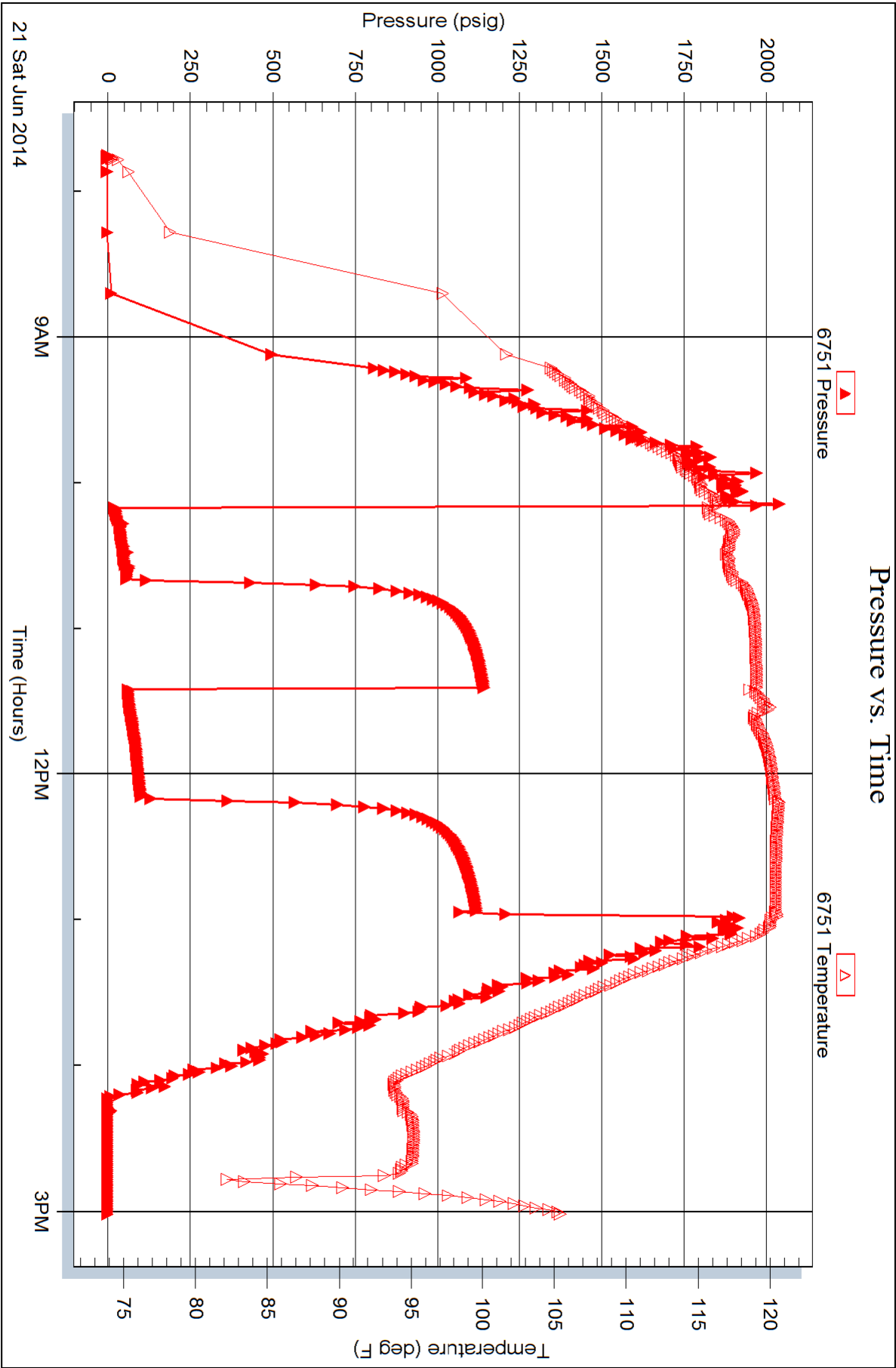


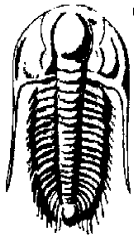
Serial #: 6751

Outside Hess Oil Co.

Helen #1

DST Test Number: 1





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hess Oil Co.

S23-16s-17w Lane, KS

POB 1009
McPherson, KS 67460

Helen #1

Job Ticket: 57178

DST#: 2

ATTN: Dave Gould

Test Start: 2014.06.22 @ 17:00:00

GENERAL INFORMATION:

Formation: **KC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:17:20

Time Test Ended: 00:37:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4139.00 ft (KB) To 4218.00 ft (KB) (TVD)

Total Depth: 4218.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2703.00 ft (KB)

2692.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8357 Inside

Press@RunDepth: 73.96 psig @ 4141.00 ft (KB)

Start Date: 2014.06.22

End Date:

2014.06.23

Start Time: 17:00:02

End Time:

00:37:30

Capacity: 8000.00 psig

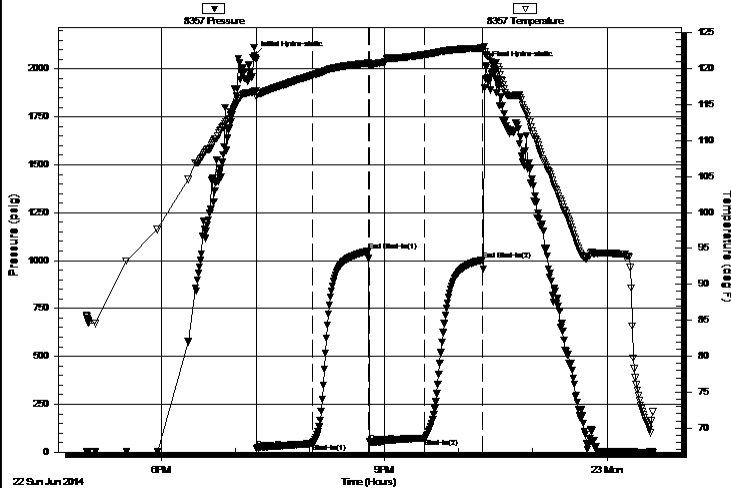
Last Calib.: 2014.06.23

Time On Btm: 2014.06.22 @ 19:15:30

Time Off Btm: 2014.06.22 @ 22:22:09

TEST COMMENT: 45- 1 1/2" Blow .
45- No return.
45- No blow , flushed tool, no blow .
45- No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2071.96	116.85	Initial Hydro-static
2	21.16	116.09	Open To Flow (1)
47	44.53	119.07	Shut-In(1)
92	1049.88	120.77	End Shut-In(1)
93	53.15	120.59	Open To Flow (2)
138	73.96	121.95	Shut-In(2)
184	1003.90	122.86	End Shut-In(2)
187	2019.88	121.98	Final Hydro-static

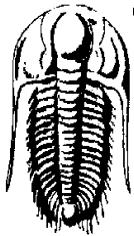
Recovery

Length (ft)	Description	Volume (bbl)
0.00	RW: .194 @ 70 Degrees F = 38000 PPM	0.00
118.00	OSWM 15w 85m	0.58
1.00	O 100o	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Co.

S23-16s-17w Lane,KS

POB 1009
McPherson, KS 67460

Helen #1

Job Ticket: 57178

DST#: 2

ATTN: Dave Gould

Test Start: 2014.06.22 @ 17:00:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 65.00 sec/qt

Water Loss: 11.99 in³

Resistivity: ohm.m

Salinity: 1400.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API: deg API

Water Salinity: 38000 ppm

ft

bbl

psig

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	RW: .194 @ 70 Degrees F = 38000 PPM	0.000
118.00	OSWM 15w 85m	0.580
1.00	O 100o	0.005

Total Length: 119.00 ft

Total Volume: 0.585 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

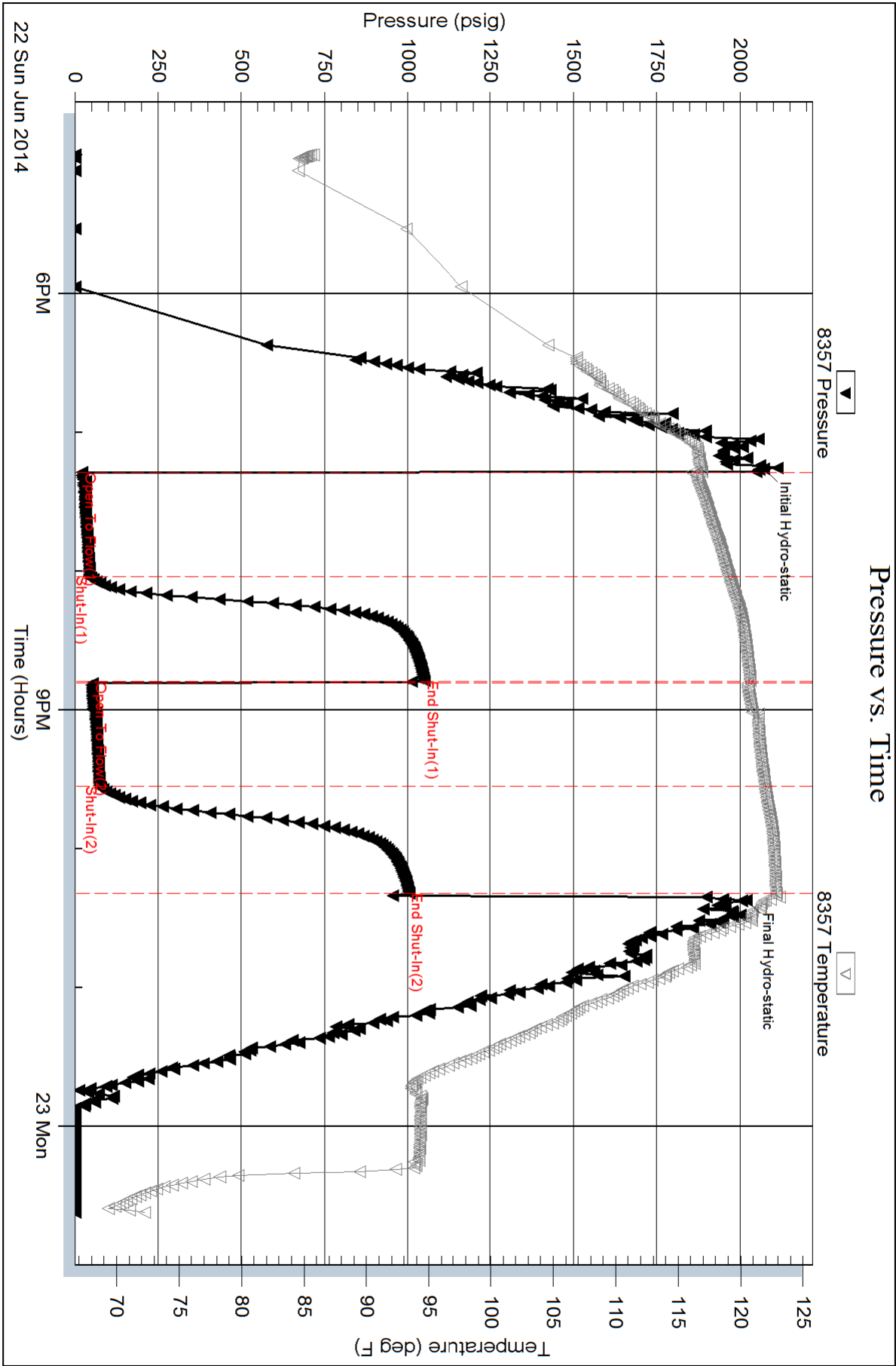
Serial #: 8357

Inside

Hess Oil Co.

Helen #1

DST Test Number: 2





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hess Oil Co.

S23-16s-17w Lane, KS

POB 1009
McPherson, KS 67460

Helen #1

Job Ticket: 57179

DST#: 3

ATTN: Dave Gould

Test Start: 2014.06.23 @ 16:25:00

GENERAL INFORMATION:

Formation: **K. C.**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:22:20

Time Test Ended: 00:42:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4240.00 ft (KB) To 4287.00 ft (KB) (TVD)

Total Depth: 4287.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2703.00 ft (KB)

2692.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8357 Inside

Press@RunDepth: 122.63 psig @ 4241.00 ft (KB)

Start Date: 2014.06.23

End Date:

2014.06.24

Start Time: 16:25:02

End Time:

00:42:30

Capacity: 8000.00 psig

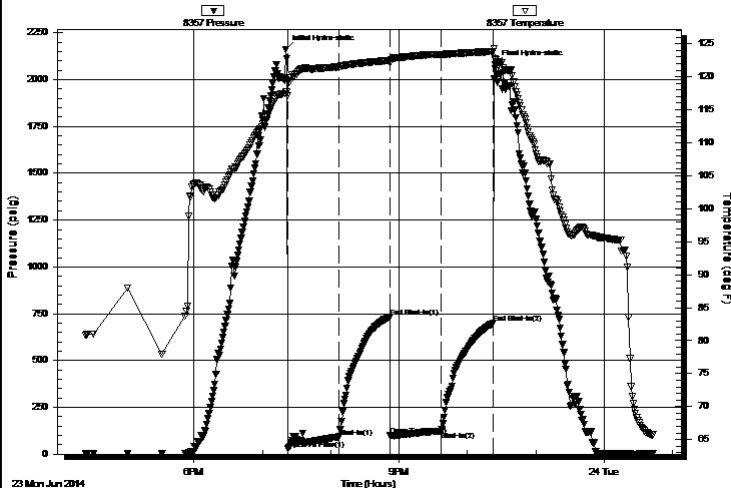
Last Calib.: 2014.06.24

Time On Btm: 2014.06.23 @ 19:20:20

Time Off Btm: 2014.06.23 @ 22:24:30

TEST COMMENT: 45- B.O.B. @ 20 min.
45- 1/4" Return died @ 35 min.
45- B.O.B. @ 12 min.
45- 4" Return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2161.83	117.79	Initial Hydro-static
2	27.86	117.09	Open To Flow (1)
47	92.05	121.52	Shut-In(1)
92	733.34	122.46	End Shut-In(1)
92	98.56	122.19	Open To Flow (2)
137	122.63	123.37	Shut-In(2)
183	698.61	123.83	End Shut-In(2)
185	2078.45	122.57	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
118.00	GOWM Emulsion 15g 3o 25w 45m 12 Em	0.58
118.00	GOCM Emulsion 25g 12o 28m 35 Emulsi	0.58
30.00	GMCO 10g 40m 50o	0.42
0.00	570' GIP	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Co.

S23-16s-17w Lane,KS

POB 1009
McPherson, KS 67460

Helen #1

Job Ticket: 57179

DST#: 3

ATTN: Dave Gould

Test Start: 2014.06.23 @ 16:25:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 60.00 sec/qt

Water Loss: 11.58 in³

Resistivity: ohm.m

Salinity: 1500.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API: 36 deg API

Water Salinity: 51000 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
118.00	GOWM Emulsion 15g 3o 25w 45m 12 Emulsio	0.580
118.00	GOCM Emulsion 25g 12o 28m 35 Emulsion	0.580
30.00	GMCO 10g 40m 50o	0.421
0.00	570' GIP	0.000

Total Length: 266.00 ft Total Volume: 1.581 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API: 37 @ 70 Degrees F = 36. RW: .160 @ 66 Degrees F = 51000 PPM

Serial #: 8357

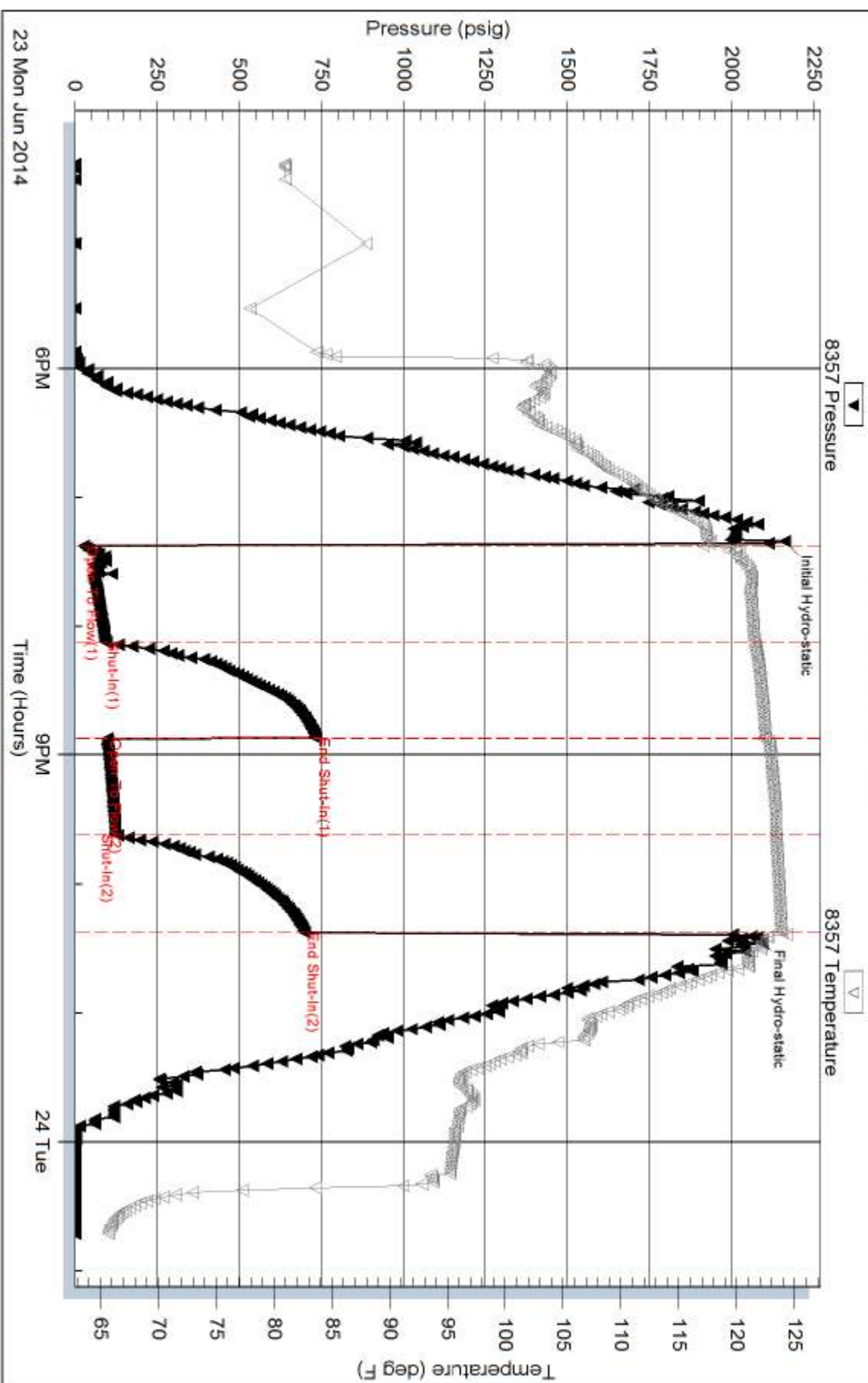
Inside

Hess Oil Co.

Helen #1

DST Test Number: 3

Pressure vs. Time





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hess Oil Co.
POB 1009
McPherson, KS 67460
ATTN: Dave Gould

S23-16s-17w Lane, KS

Helen #1

Job Ticket: 57180

DST#: 4

Test Start: 2014.06.25 @ 04:02:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:54:40

Time Test Ended: 09:54:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4292.00 ft (KB) To 4410.00 ft (KB) (TVD)

Total Depth: 4410.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2703.00 ft (KB)

2692.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8357 Inside

Press@RunDepth: 32.92 psig @ 4295.00 ft (KB)

Start Date: 2014.06.25

End Date:

2014.06.25

Start Time: 04:02:02

End Time:

09:54:50

Capacity: 8000.00 psig

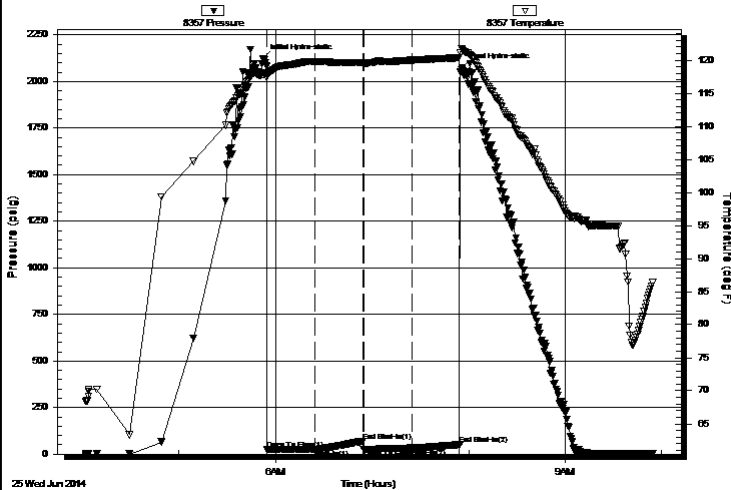
Last Calib.: 2014.06.25

Time On Btm: 2014.06.25 @ 05:52:20

Time Off Btm: 2014.06.25 @ 07:56:00

TEST COMMENT: 30- 1/2" Blow died @ 20 min.
30- No return.
30- No blow, flushed tool, no blow.
30- No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2123.90	117.87	Initial Hydro-static
3	23.74	117.39	Open To Flow (1)
32	26.64	119.78	Shut-In(1)
62	70.55	119.62	End Shut-In(1)
63	26.47	119.60	Open To Flow (2)
93	32.92	120.02	Shut-In(2)
122	51.25	120.37	End Shut-In(2)
124	2072.28	121.57	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	OSM 100m	0.15

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Co.

S23-16s-17w Lane, KS

POB 1009
McPherson, KS 67460

Helen #1

Job Ticket: 57180

DST#: 4

ATTN: Dave Gould

Test Start: 2014.06.25 @ 04:02:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 53.00 sec/qt

Water Loss: 10.39 in³

Resistivity: ohm.m

Salinity: 1200.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	OSM 100m	0.148

Total Length: 30.00 ft Total Volume: 0.148 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API: @ Degrees F =

Serial #: 8357

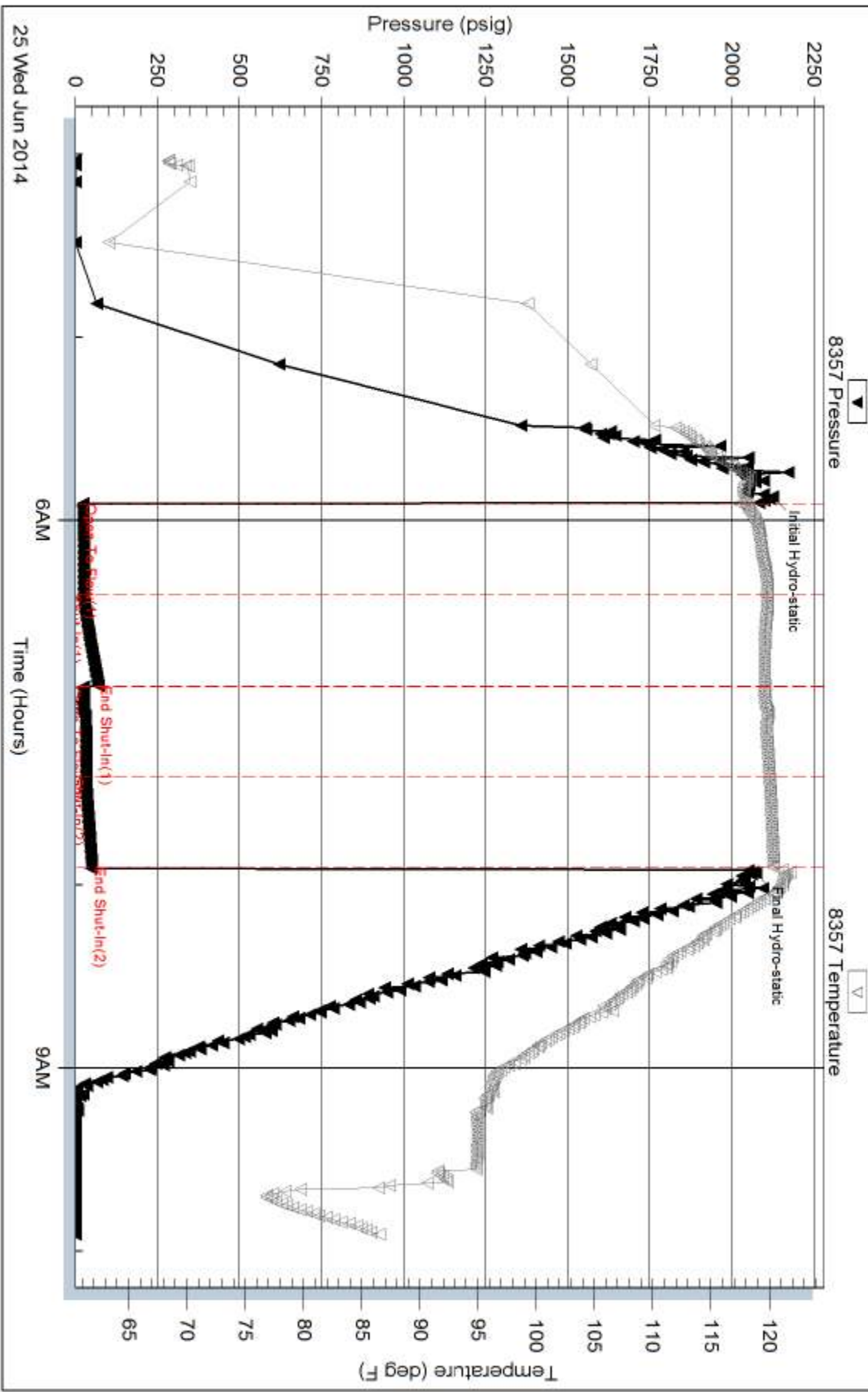
Inside

Hess Oil Co.

Helen #1

DST Test Number: 4

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 57180

Printed: 2014.06.25 @ 11:10:50



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hess Oil Co.

S23-16s-17w Lane, KS

POB 1009
McPherson, KS 67460

Helen #1

Job Ticket: 57181

DST#: 5

ATTN: Dave Gould

Test Start: 2014.06.26 @ 07:10:00

GENERAL INFORMATION:

Formation: **Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:58:20

Time Test Ended: 15:20:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4478.00 ft (KB) To 4510.00 ft (KB) (TVD)

Total Depth: 4510.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2703.00 ft (KB)

2692.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8357 Inside

Press@RunDepth: 42.10 psig @ 4481.00 ft (KB)

Start Date: 2014.06.26

End Date:

2014.06.26

Start Time: 07:10:02

End Time:

15:20:10

Capacity: 8000.00 psig

Last Calib.: 2014.06.26

Time On Btm: 2014.06.26 @ 09:56:00

Time Off Btm: 2014.06.26 @ 13:00:20

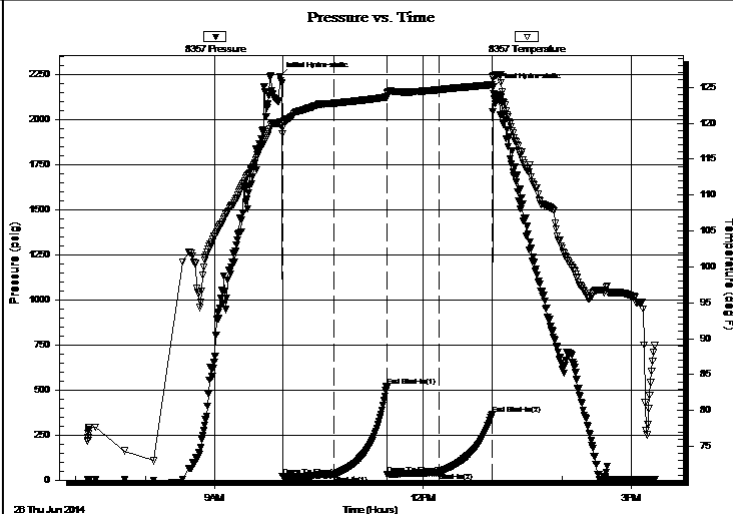
TEST COMMENT: 45- 1 1/2" Blow .

45- No return.

45- 5" Blow .

45- No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2234.74	120.19	Initial Hydro-static
3	19.54	118.52	Open To Flow (1)
47	27.73	122.77	Shut-In(1)
93	518.80	123.64	End Shut-In(1)
94	30.22	124.19	Open To Flow (2)
138	42.10	124.64	Shut-In(2)
184	366.51	125.36	End Shut-In(2)
185	2177.17	126.47	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	GSOCM 20g 2o 78m	0.30
0.00	118' Weak GIP	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Co.

S23-16s-17w Lane,KS

POB 1009
McPherson, KS 67460

Helen #1

Job Ticket: 57181

DST#: 5

ATTN: Dave Gould

Test Start: 2014.06.26 @ 07:10:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 58.00 sec/qt

Water Loss: 12.79 in³

Resistivity: ohm.m

Salinity: 1300.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	GSOCM 20g 2o 78m	0.295
0.00	118' Weak GIP	0.000

Total Length: 60.00 ft

Total Volume: 0.295 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8357

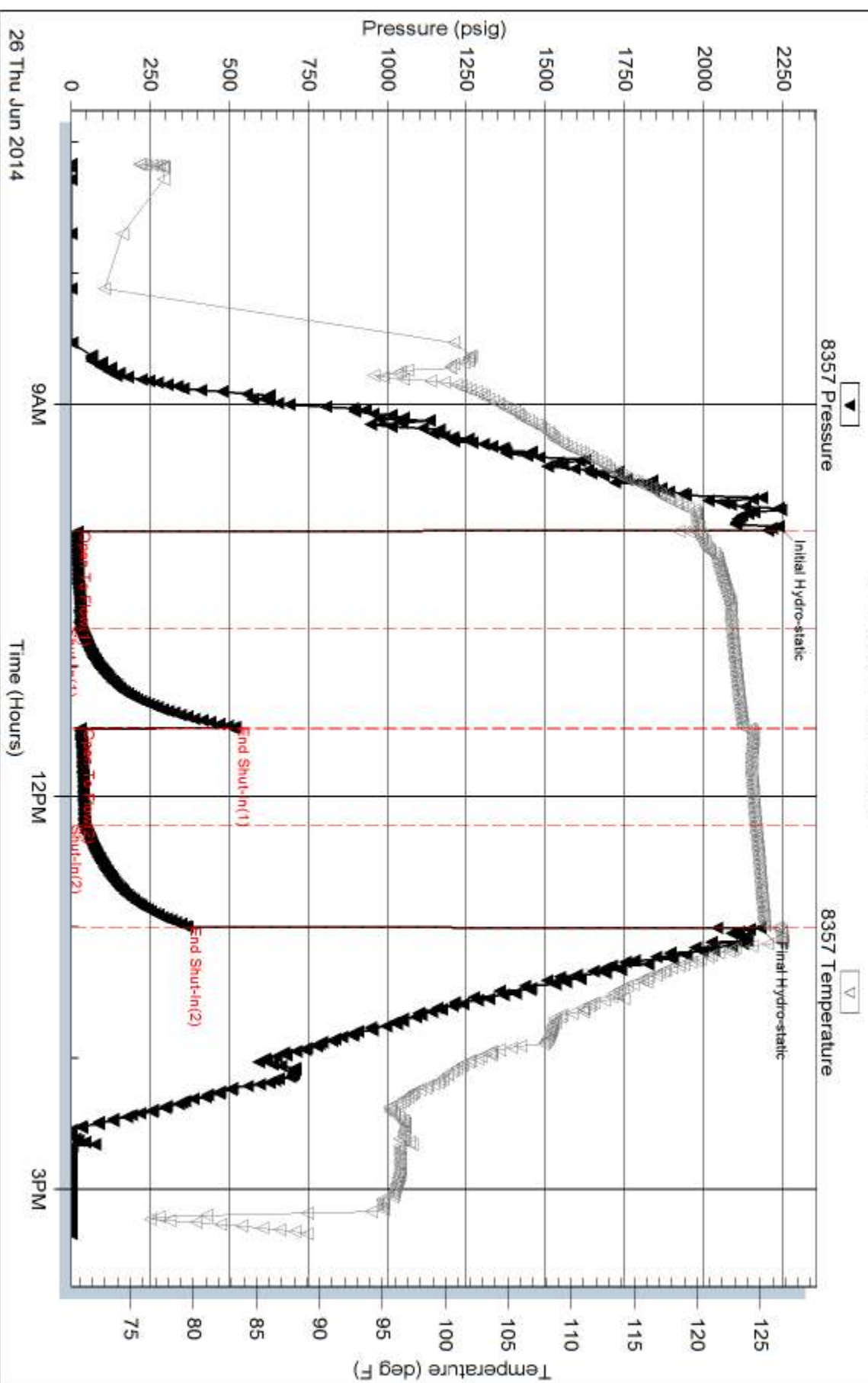
Inside

Hess Oil Co.

Helen #1

DST Test Number: 5

Pressure vs. Time





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hess Oil Co.

S23-16s-17w Lane, KS

POB 1009
McPherson, KS 67460

Helen #1

Job Ticket: 57182

DST#: 6

ATTN: David Gould

Test Start: 2014.06.26 @ 23:22:00

GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:13:00

Time Test Ended: 07:58:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4478.00 ft (KB) To 4530.00 ft (KB) (TVD)

Total Depth: 4530.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2703.00 ft (KB)

2692.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8357 Inside

Press@RunDepth: 41.59 psig @ 4480.00 ft (KB)

Start Date: 2014.06.26

End Date:

2014.06.27

Start Time: 23:22:02

End Time:

07:58:30

Capacity: 8000.00 psig

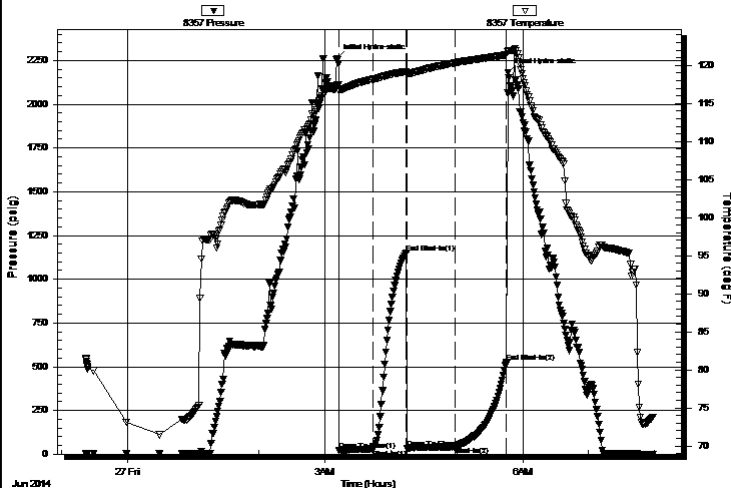
Last Calib.: 2014.06.27

Time On Btm: 2014.06.27 @ 03:10:50

Time Off Btm: 2014.06.27 @ 05:46:39

TEST COMMENT: 30- 1/2" Blow died @ 23 min.
30- No return.
45- No blow, flushed tool, 1" blow.
45- No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2259.39	117.38	Initial Hydro-static
3	21.64	116.71	Open To Flow (1)
33	29.57	118.17	Shut-In(1)
64	1151.18	119.19	End Shut-In(1)
64	34.48	118.80	Open To Flow (2)
108	41.59	120.33	Shut-In(2)
155	524.68	121.38	End Shut-In(2)
156	2182.71	121.89	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	OSM 100m	0.30

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Co.

S23-16s-17w Lane,KS

POB 1009
McPherson, KS 67460

Helen #1

Job Ticket: 57182

DST#: 6

ATTN: David Gould

Test Start: 2014.06.26 @ 23:22:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 60.00 sec/qt

Water Loss: 9.99 in³

Resistivity: ohm.m

Salinity: 3500.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	OSM 100m	0.295

Total Length: 60.00 ft

Total Volume: 0.295 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8357

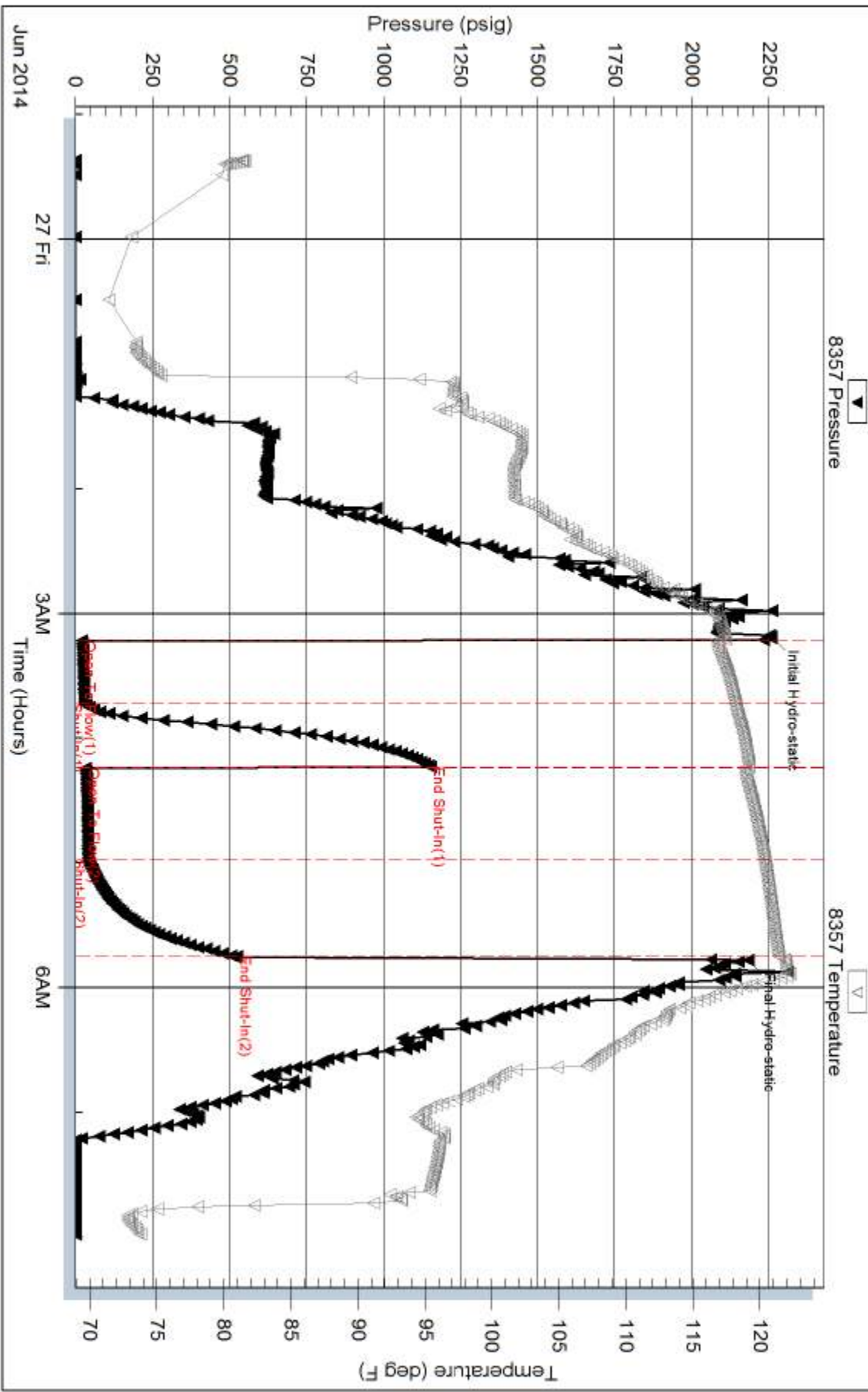
Inside

Hess Oil Co.

Helen #1

DST Test Number: 6

Pressure vs. Time



ALLIED OIL & GAS SERVICES, LLC 063526

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:

Great bend

DATE <u>6-17-14</u>	SEC <u>23</u>	TWP. <u>16</u>	RANGE <u>27</u>	CALLED OUT	ON LOCATION <u>10pm</u>	JOB START <u>10:30pm</u>	JOB FINISH <u>11pm</u>
LEASE <u>Helen</u>	WELL # <u>1</u>	LOCATION <u>3 East Pendennis 1/2 N, Winto</u>			COUNTY <u>Went</u>	STATE <u>KS</u>	
OLD OR <u>NEW</u> (Circle one)							

CONTRACTOR Murfin
TYPE OF JOB Surface
HOLE SIZE 12 1/4 T.D.
CASING SIZE 8 5/8 DEPTH 224.88
TUBING SIZE DEPTH
DRILL PIPE DEPTH
TOOL DEPTH
PRES. MAX MINIMUM
MEAS. LINE SHOE JOINT
CEMENT LEFT IN CSG. 15 FT
PERFS.
DISPLACEMENT 13.36 bbl fresh water
EQUIPMENT

PUMP TRUCK CEMENTER Josh Isaac
366 HELPER Ben Newell
BULK TRUCK
571/12 DRIVER Marlyn Spangberg
BULK TRUCK
DRIVER

REMARKS:

*on location, rig up had safety meeting
run 8 5/8 casing - break circulation w/ 100% mud
pump 5 bbl fresh water ahead
mix 105 sacks class A 3% 2 1/2 gal
displace 13.36 bbl fresh water
shut in
Cement did circulate
rig down*

CHARGE TO: Hess Oil
STREET
CITY STATE ZIP

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

PRINTED NAME X Sammy Fabera
SIGNATURE X Sammy Fabera

Thank you!!

OWNER
CEMENT
AMOUNT ORDERED 185 Sks Class A 3 1/2
2 1/2 gal

COMMON	<u>185</u>	@ <u>17.90</u>	<u>3,311.50</u>
POZMIX		@	
GEL	<u>347</u>	@ <u>1.05</u>	<u>364.35</u>
CHLORIDE	<u>531</u>	@ <u>1.10</u>	<u>573.10</u>
ASC		@	
<u>Materials Total</u>			@ <u>4,248.95</u>
<u>Disc.</u>			@ <u>25%</u>
			<u>1,062.24</u>
			@
			@
			@
			@
<u>Service</u>			@
HANDLING	<u>200.4</u>	@ <u>2.88</u>	<u>496.99</u>
MILEAGE	<u>9.12 x 40 x</u>	<u>2.75</u>	<u>1,003.20</u>

DEPTH OF JOB 224.88
PUMP TRUCK CHARGE 1512.22
EXTRA FOOTAGE @
MILEAGE Hum 40 @ 7.70 308.00
MANIFOLD @
Hum 40 @ 4.40 176.00

TOTAL 3,495.59
25% 873.88

PLUG & FLOAT EQUIPMENT

	@	
	@	
	@	
	@	
	@	

0% TOTAL 0

SALES TAX (If Any)
TOTAL CHARGES 7,744.49
25% 1,936.12 (25/25/0)
DISCOUNT \$ 5,808.37
IF PAID IN 30 DAYS

ALLIED OIL & GAS SERVICES, LLC 063204

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:
Great Bend KS

DATE <u>6-28-14</u>	SEC. <u>23</u>	TWP. <u>16S</u>	RANGE <u>27W</u>	CALLED OUT	ON LOCATION <u>11:45 A</u>	JOB START <u>1:45 P</u>	JOB FINISH <u>5:00 P</u>
LEASE <u>Helen</u>	WELL # <u>1</u>	LOCATION <u>Pennonis 3E 1/4 W</u>			COUNTY <u>Lane</u>	STATE <u>KS</u>	
OLD OR <u>NEW</u> (Circle one)				<u>W into</u>			

CONTRACTOR Murfin Drilling
TYPE OF JOB Rotary Plug
HOLE SIZE 7 7/8 T.D.
CASING SIZE 8 5/8 DEPTH 225
TUBING SIZE DEPTH
DRILL PIPE DEPTH
TOOL DEPTH
PRES. MAX MINIMUM
MEAS. LINE SHOE JOINT
CEMENT LEFT IN CSG.
PERFS.
DISPLACEMENT

EQUIPMENT

PUMP TRUCK CEMENTER Jake Heard (ML)
417 HELPER Ben Newell
BULK TRUCK
544/198 DRIVER Dan Casper
BULK TRUCK
DRIVER

REMARKS:

Plug at 2160 took 50 sx
1370 took 80 sx
690 took 50 sx
260 took 40 sx
60 took 80 sx basic
Batt mouse hole 50 sx
200 sx

CHARGE TO: Hess Oil Company
STREET
CITY STATE ZIP

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

PRINTED NAME X Jimmy Fabel

SIGNATURE X Jimmy Fabel

OWNER Hess Oil Company

CEMENT
AMOUNT ORDERED 300sdx 0:40:47 Gel
+ 1/4 # Flo Seal used 250 sx

COMMON	@	
POZMIX	@	
GEL	@	
CHLORIDE	@	
ASC	@	
<u>294sx 60/40+4%</u>	@ <u>18.92</u>	<u>5.486.80</u>
<u>Flo Seal 73</u>	@ <u>2.97</u>	<u>216.81</u>
	@	
<u>Materials Total</u>		<u>5.703.61</u>
<u>Disc</u>	@ <u>25%</u>	<u>1.425.90</u>
	@	
<u>Service</u>	@	
	@	
HANDLING <u>294.86</u>	@ <u>2.48</u>	<u>731.22</u>
MILEAGE <u>12.50 X 40 X</u>	@ <u>2.75</u>	<u>1.375.00</u>

DEPTH OF JOB 2160, 1370, 690, 260, 60
PUMP TRUCK CHARGE 2483.82
EXTRA FOOTAGE @
MILEAGE Hvm 40 @ 7.70 308.00
MANIFOLD @
hvm 40 @ 4.40 176.00

TOTAL 5.073.81
25% 1.268.46

PLUG & FLOAT EQUIPMENT

	@	
	@	
	@	
	@	
	@	

0% TOTAL 0

SALES TAX (If Any)
TOTAL CHARGES 10.777.45
25% 2.694.36 (25/25/0)
DISCOUNT IF PAID IN 30 DAYS

8.083.09