



1146579

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 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				

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 <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
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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)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	H & C Oil Operating Inc.
Well Name	Griffith 2-3
Doc ID	1146579

Tops

Name	Top	Datum
Top Anhydrite	1969	+446
Base Anhydrite	2004	+411
Topeka	3437	-1022
Heebner	3654	-1239
Toronto	3676	-1261
LKC	3691	-1276
BKC	3920	-1505
Marmaton	4010	-1595

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



Phone: 316-337-6200
Fax: 316-337-6211
<http://kcc.ks.gov/>

Mark Sievers, Chairman
Thomas E. Wright, Commissioner
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

July 1, 2013

Charles Ramsay
H & C Oil Operating Inc.
PO BOX 86
PLAINVILLE, KS 67663-0086

Re: ACO1
API 15-065-23922-00-00
Griffith 2-3
SE/4 Sec.02-10S-23W
Graham 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,
Charles Ramsay



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc.**

PO Box 86
Plainville KS 67663

ATTN: Marc Downing

Griffith #2-3

2-10s-23w Graham,KS

Start Date: 2013.05.22 @ 15:25:00

End Date: 2013.05.22 @ 21:35:00

Job Ticket #: 53880 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.05.29 @ 15:19:35



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H&C Oil Operating Inc.

2-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #2-3

Job Ticket: 53880

DST#: 1

ATTN: Marc Downing

Test Start: 2013.05.22 @ 15:25:00

GENERAL INFORMATION:

Formation: **KC "C-D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:06:30

Time Test Ended: 21:35:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Brett Dickinson

Unit No: 59

Interval: 3714.00 ft (KB) To 3755.00 ft (KB) (TVD)

Reference Elevations: 2415.00 ft (KB)

Total Depth: 3755.00 ft (KB) (TVD)

2410.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 5.00 ft

Serial #: 8319

Inside

Press @ Run Depth: 51.01 psig @ 3715.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.22

End Date: 2013.05.22

Last Calib.: 2013.05.22

Start Time: 15:25:05

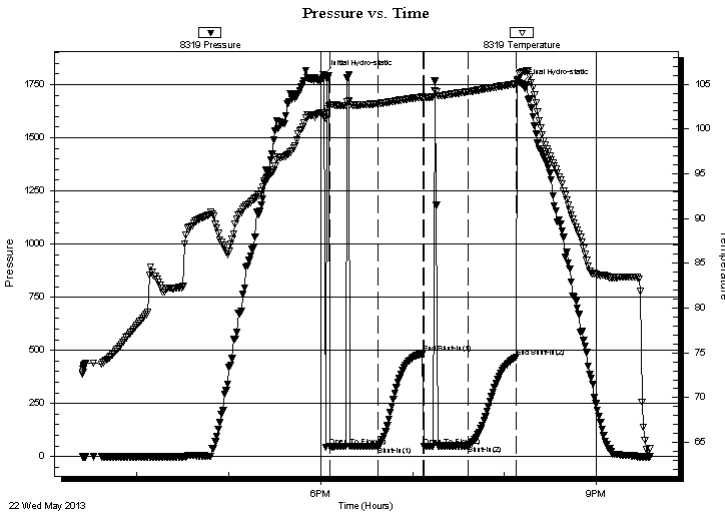
End Time: 21:34:59

Time On Btm: 2013.05.22 @ 18:02:00

Time Off Btm: 2013.05.22 @ 20:10:30

TEST COMMENT: IF-No blow Flush tool weak surface blow died in 2 min
ISI-No blow
FF-No blow Flush tool No blow
FSI-No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1795.00	101.60	Initial Hydro-static
5	45.95	102.72	Open To Flow (1)
36	48.90	102.84	Shut-In(1)
65	486.08	103.58	End Shut-In(1)
66	49.19	103.49	Open To Flow (2)
94	51.01	104.16	Shut-In(2)
126	466.17	105.04	End Shut-In(2)
129	1754.91	106.29	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
65.00	Oil Spotted Mud	0.91

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc.

2-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #2-3

Job Ticket: 53880

DST#: 1

ATTN: Marc Downing

Test Start: 2013.05.22 @ 15:25:00

Tool Information

Drill Pipe:	Length: 3712.00 ft	Diameter: 3.80 inches	Volume: 52.07 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 15.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	3714.00 ft			Final 44000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	41.00 ft			
Tool Length:	62.00 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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Change Over Sub	1.00			3694.00	
Shut In Tool	5.00			3699.00	
Hydraulic tool	5.00			3704.00	
Packer	5.00			3709.00	21.00 Bottom Of Top Packer
Packer	5.00			3714.00	
Stubb	1.00			3715.00	
Recorder	0.00	8319	Inside	3715.00	
Recorder	0.00	8166	Outside	3715.00	
Perforations	4.00			3719.00	
Change Over Sub	1.00			3720.00	
Drill Pipe	31.00			3751.00	
Change Over Sub	1.00			3752.00	
Bullnose	3.00			3755.00	41.00 Bottom Packers & Anchor

Total Tool Length: 62.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc.

2-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #2-3

Job Ticket: 53880

DST#: 1

ATTN: Marc Downing

Test Start: 2013.05.22 @ 15:25:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
65.00	Oil Spotted Mud	0.912

Total Length: 65.00 ft Total Volume: 0.912 bbl

Num Fluid Samples: 0

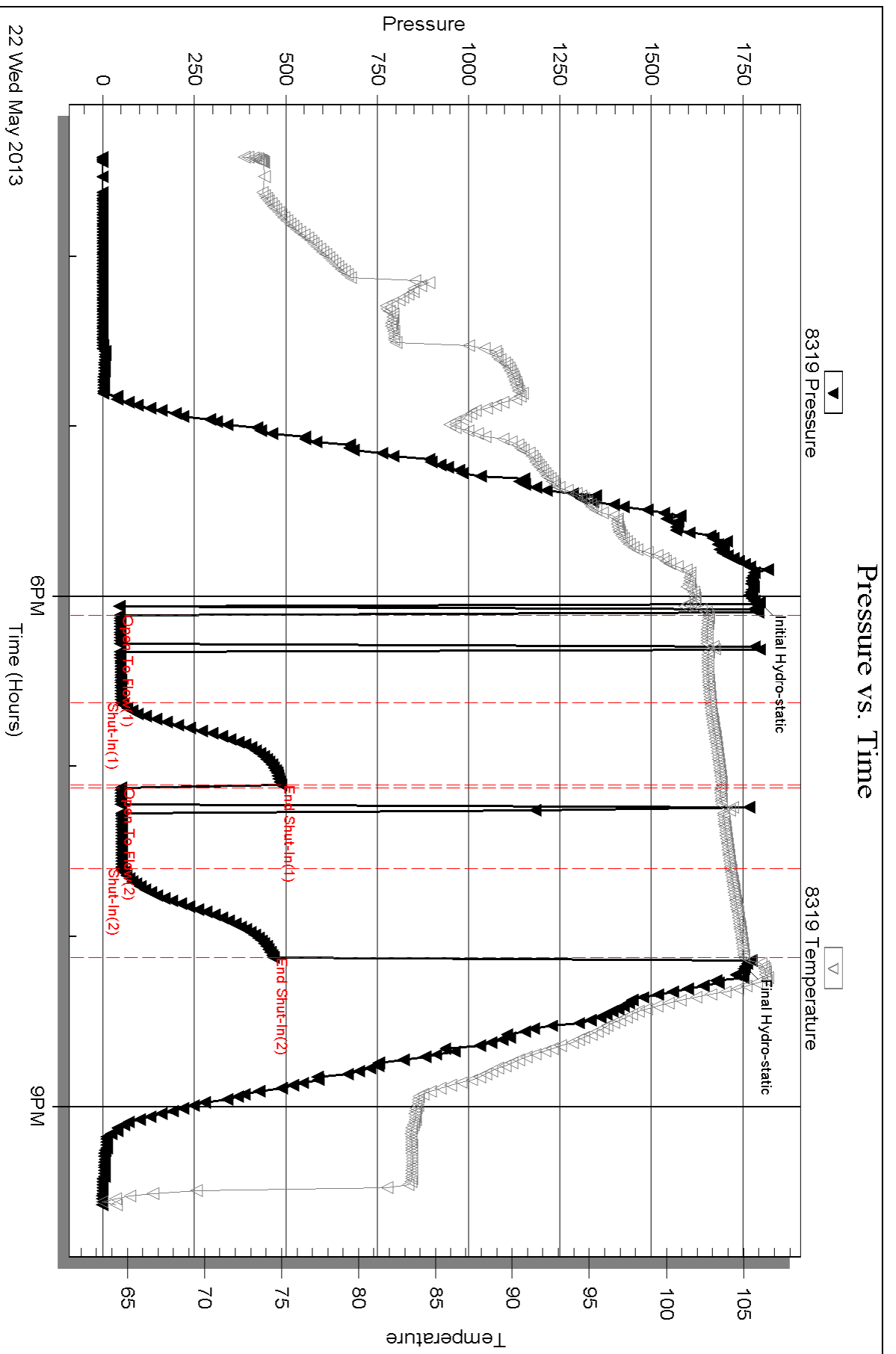
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

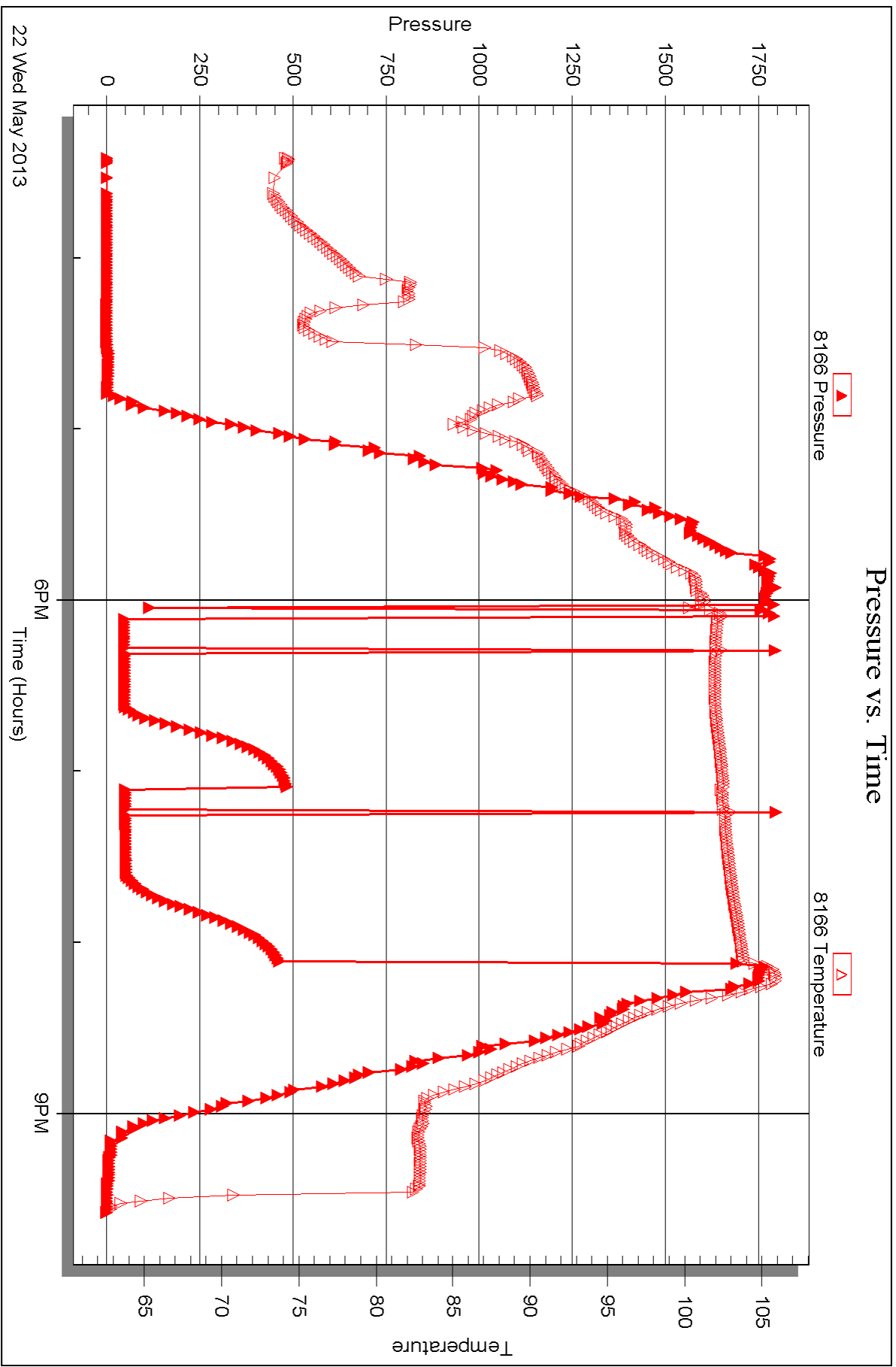


Serial #: 8166

Outside H&C Oil Operating Inc.

Griffith #2-3

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 53880

Printed: 2013.05.29 @ 15:19:38



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc.**

PO Box 86
Plainville KS 67663

ATTN: Marc Downing

Griffith #2-3

2-10s-23w Graham,KS

Start Date: 2013.05.23 @ 04:37:00

End Date: 2013.05.23 @ 11:27:30

Job Ticket #: 53882 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.05.29 @ 15:18:05

H&C Oil Operating Inc. 2-10s-23w Graham,KS Griffith #2-3 DST # 2 KC "E-F" 2013.05.23



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H&C Oil Operating Inc.

2-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #2-3

Job Ticket: 53882

DST#: 2

ATTN: Marc Downing

Test Start: 2013.05.23 @ 04:37:00

GENERAL INFORMATION:

Formation: **KC "E-F"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:25:00

Time Test Ended: 11:27:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3759.00 ft (KB) To 3788.00 ft (KB) (TVD)

Reference Elevations: 2415.00 ft (KB)

Total Depth: 3788.00 ft (KB) (TVD)

2410.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8319

Inside

Press @ Run Depth: 104.18 psig @ 3760.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.23

End Date:

2013.05.23

Last Calib.:

2013.05.23

Start Time: 04:37:05

End Time:

11:27:29

Time On Btm:

2013.05.23 @ 06:23:30

Time Off Btm:

2013.05.23 @ 09:28:30

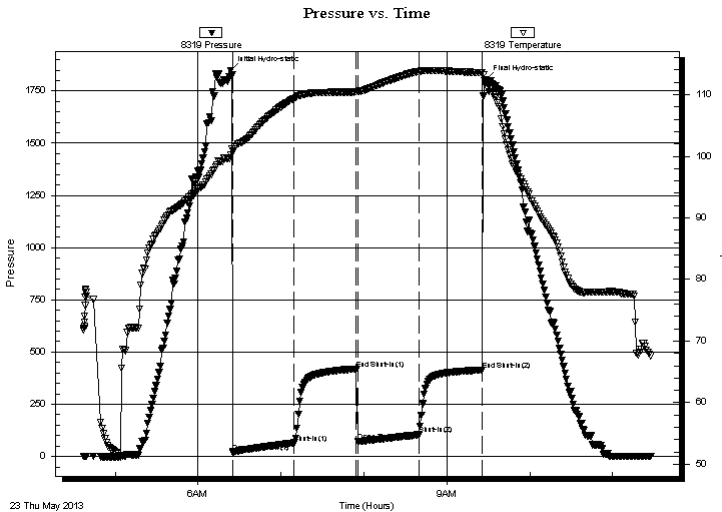
TEST COMMENT: IF-BOB in 13 min

FSI-No blow

FF-9" blow

FSI-No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1848.97	100.20	Initial Hydro-static
2	20.17	100.85	Open To Flow (1)
46	65.09	109.41	Shut-In(1)
91	419.16	110.45	End Shut-In(1)
92	70.01	110.47	Open To Flow (2)
136	104.18	113.75	Shut-In(2)
182	414.20	113.57	End Shut-In(2)
185	1803.93	112.04	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	GO 20%G 80%O	0.28
80.00	Oil Spotted MCW 60%W 40%M	1.12
90.00	%85W 15%M	1.26
0.00	120ft GIP	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc.

2-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #2-3

Job Ticket: 53882

DST#: 2

ATTN: Marc Downing

Test Start: 2013.05.23 @ 04:37:00

Tool Information

Drill Pipe:	Length: 3743.00 ft	Diameter: 3.80 inches	Volume: 52.50 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	3759.00 ft			Final 44000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	29.00 ft			
Tool Length:	50.00 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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Change Over Sub	1.00			3739.00	
Shut In Tool	5.00			3744.00	
Hydraulic tool	5.00			3749.00	
Packer	5.00			3754.00	21.00 Bottom Of Top Packer
Packer	5.00			3759.00	
Stubb	1.00			3760.00	
Recorder	0.00	8319	Inside	3760.00	
Recorder	0.00	8166	Outside	3760.00	
Perforations	25.00			3785.00	
Bullnose	3.00			3788.00	29.00 Bottom Packers & Anchor
Total Tool Length:	50.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc.

2-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #2-3

Job Ticket: 53882

DST#: 2

ATTN: Marc Downing

Test Start: 2013.05.23 @ 04:37:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
20.00	GO 20%G 80%O	0.281
80.00	Oil Spotted MCW 60%W 40%M	1.122
90.00	%85W 15%M	1.262
0.00	120ft GIP	0.000

Total Length: 190.00 ft

Total Volume: 2.665 bbl

Num Fluid Samples: 0

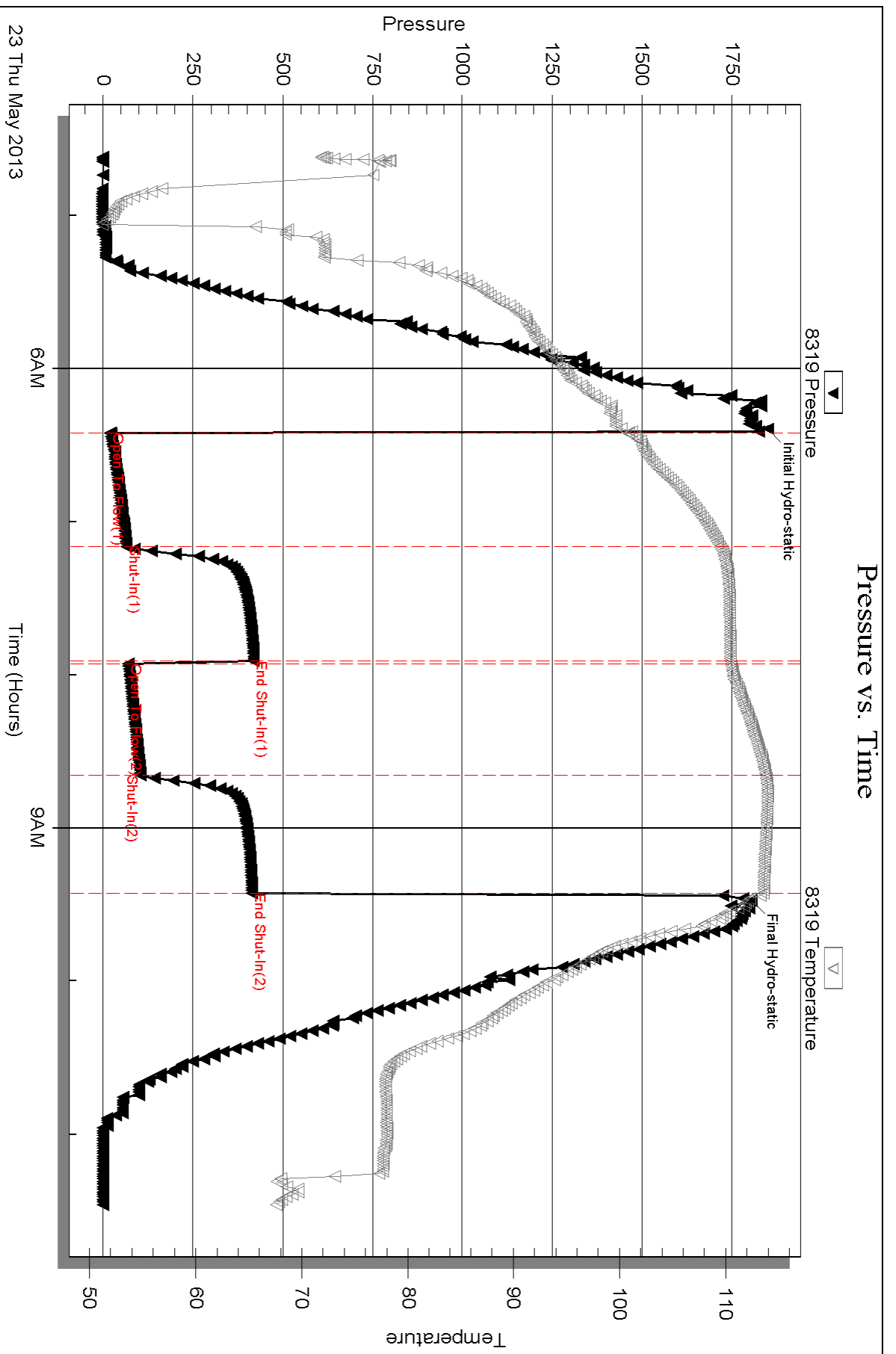
Num Gas Bombs: 0

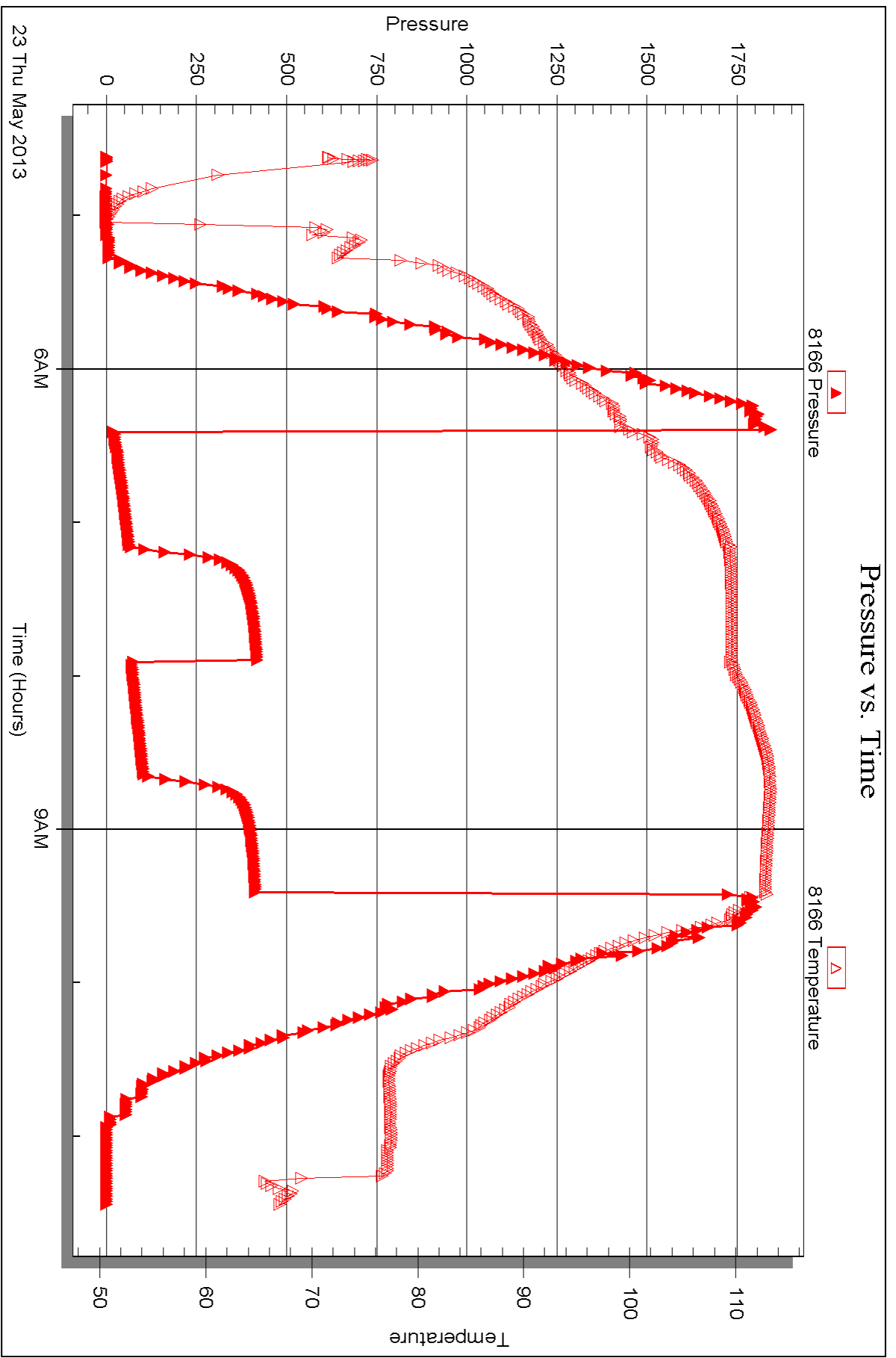
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc.**

PO Box 86
Plainville KS 67663

ATTN: Marc Downing

Griffith #2-3

2-10s-23w Graham,KS

Start Date: 2013.05.23 @ 23:15:00

End Date: 2013.05.24 @ 06:04:00

Job Ticket #: 53883 DST #: 3

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

Printed: 2013.05.29 @ 15:17:10



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H&C Oil Operating Inc.

2-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #2-3

Job Ticket: 53883

DST#: 3

ATTN: Marc Downing

Test Start: 2013.05.23 @ 23:15:00

GENERAL INFORMATION:

Formation: **KC "H-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:16:00

Time Test Ended: 06:04:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3815.00 ft (KB) To 3882.00 ft (KB) (TVD)

Reference Elevations: 2415.00 ft (KB)

Total Depth: 3882.00 ft (KB) (TVD)

2410.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8319

Inside

Press @ Run Depth: 45.33 psig @ 3816.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.23

End Date:

2013.05.24

Last Calib.:

2013.05.24

Start Time: 23:15:05

End Time:

06:03:59

Time On Btm:

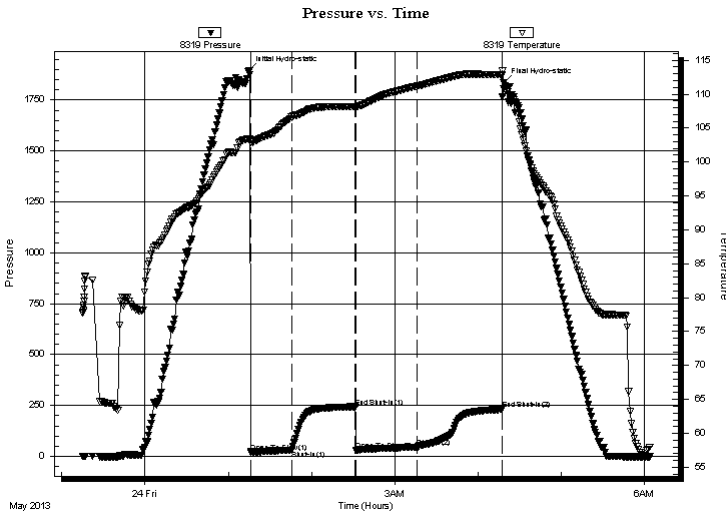
2013.05.24 @ 01:15:00

Time Off Btm:

2013.05.24 @ 04:18:30

TEST COMMENT: IF-BOB in 8 1/2 min
ISI-No blow
FF-BOB in 5 1/2 min
FSI-1/2" blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1895.45	103.34	Initial Hydro-static
1	22.33	102.91	Open To Flow (1)
31	31.61	106.61	Shut-In(1)
76	244.21	108.21	End Shut-In(1)
77	28.80	108.17	Open To Flow (2)
121	45.33	111.19	Shut-In(2)
182	230.72	112.84	End Shut-In(2)
184	1836.41	110.83	Final Hydro-static

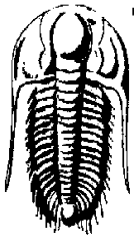
Recovery

Length (ft)	Description	Volume (bbl)
55.00	SGO 5%G 95%O	0.77
30.00	OCM 30%O 70%M	0.42
0.00	480ft GIP	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H&C Oil Operating Inc.

2-10s-23w Graham, KS

PO Box 86
Plainville KS 67663

Griffith #2-3

Job Ticket: 53883

DST#: 3

ATTN: Marc Downing

Test Start: 2013.05.23 @ 23:15:00

GENERAL INFORMATION:

Formation: **KC "H-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:16:00

Time Test Ended: 06:04:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: **3815.00 ft (KB) To 3882.00 ft (KB) (TVD)**

Total Depth: 3882.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2415.00 ft (KB)

2410.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: **8166** Outside

Press @ Run Depth: psig @ 3816.00 ft (KB)

Start Date: 2013.05.23

End Date: 2013.05.24

Start Time: 23:15:05

End Time: 06:03:29

Capacity: 8000.00 psig

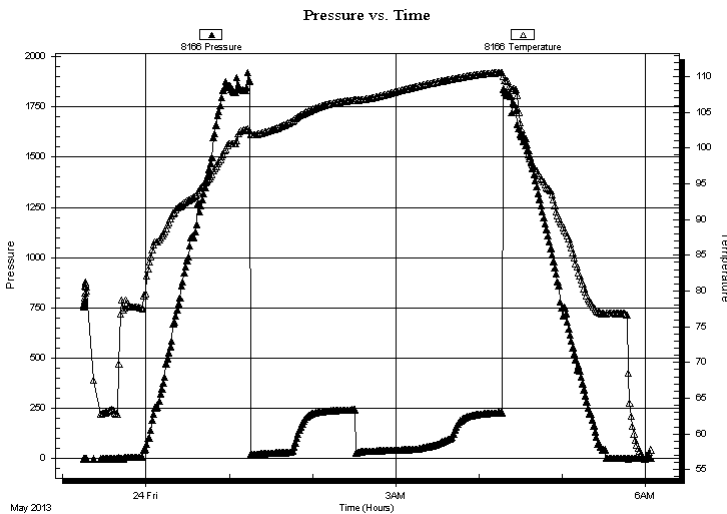
Last Calib.: 2013.05.24

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-BOB in 8 1/2 min
ISI-No blow
FF-BOB in 5 1/2 min
FSI-1/2" blow

PRESSURE SUMMARY





**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc.

2-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #2-3

Job Ticket: 53883

DST#: 3

ATTN: Marc Downing

Test Start: 2013.05.23 @ 23:15:00

Tool Information

Drill Pipe:	Length: 3806.00 ft	Diameter: 3.80 inches	Volume: 53.39 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	45000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
				String Weight: Initial	40000.00 lb
Drill Pipe Above KB:	12.00 ft			Final	42000.00 lb
Depth to Top Packer:	3815.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	67.00 ft				
Tool Length:	88.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3795.00	
Shut In Tool	5.00			3800.00	
Hydraulic tool	5.00			3805.00	
Packer	5.00			3810.00	21.00 Bottom Of Top Packer
Packer	5.00			3815.00	
Stubb	1.00			3816.00	
Recorder	0.00	8319	Inside	3816.00	
Recorder	0.00	8166	Outside	3816.00	
Perforations	9.00			3825.00	
Change Over Sub	1.00			3826.00	
Drill Pipe	31.00			3857.00	
Change Over Sub	1.00			3858.00	
Perforations	21.00			3879.00	
Bullnose	3.00			3882.00	67.00 Bottom Packers & Anchor

Total Tool Length: 88.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc.

2-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #2-3

Job Ticket: 53883

DST#: 3

ATTN: Marc Downing

Test Start: 2013.05.23 @ 23:15:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
55.00	SGO 5%G 95%O	0.772
30.00	OCM 30%O 70%M	0.421
0.00	480ft GIP	0.000

Total Length: 85.00 ft Total Volume: 1.193 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

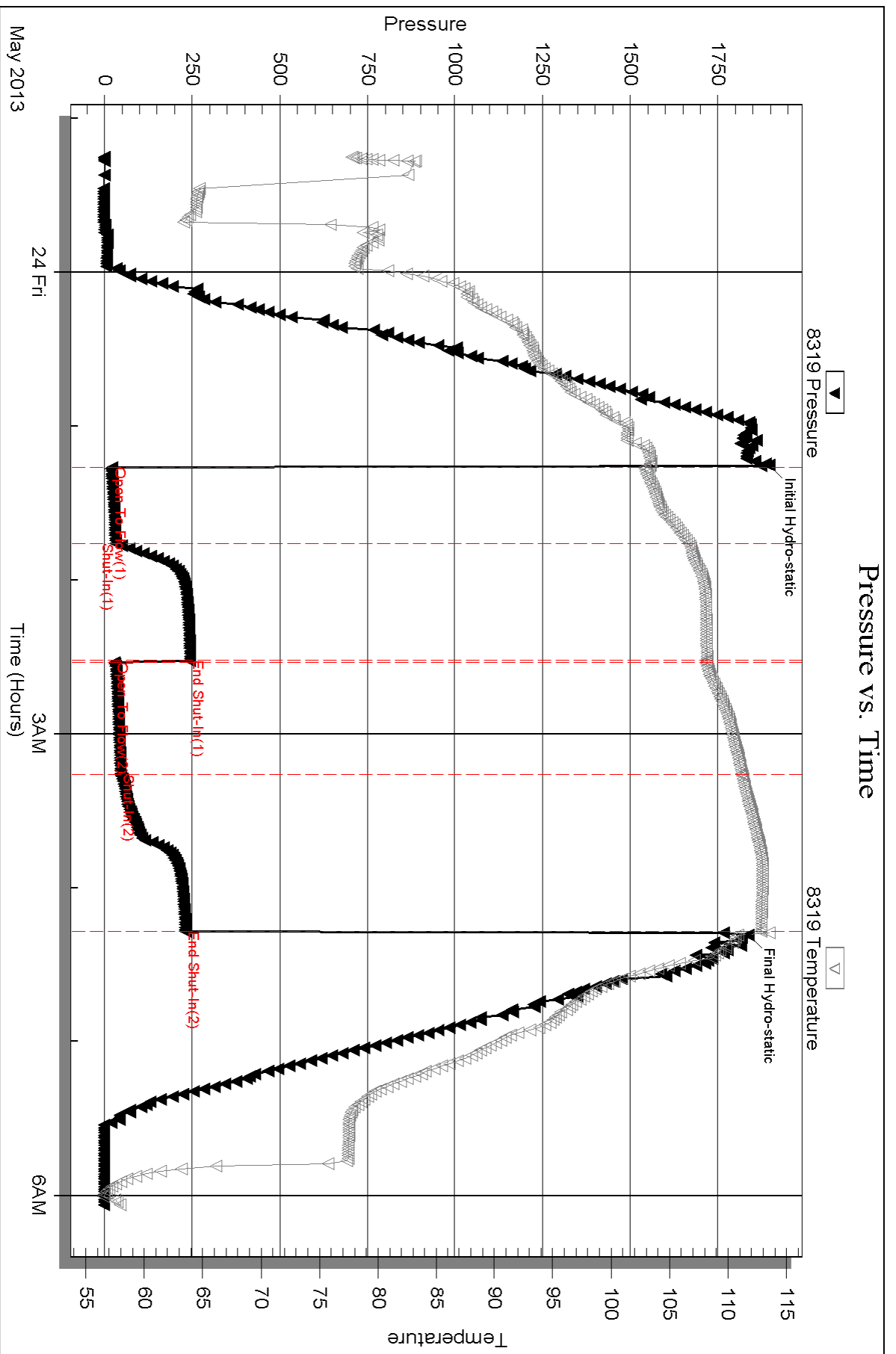
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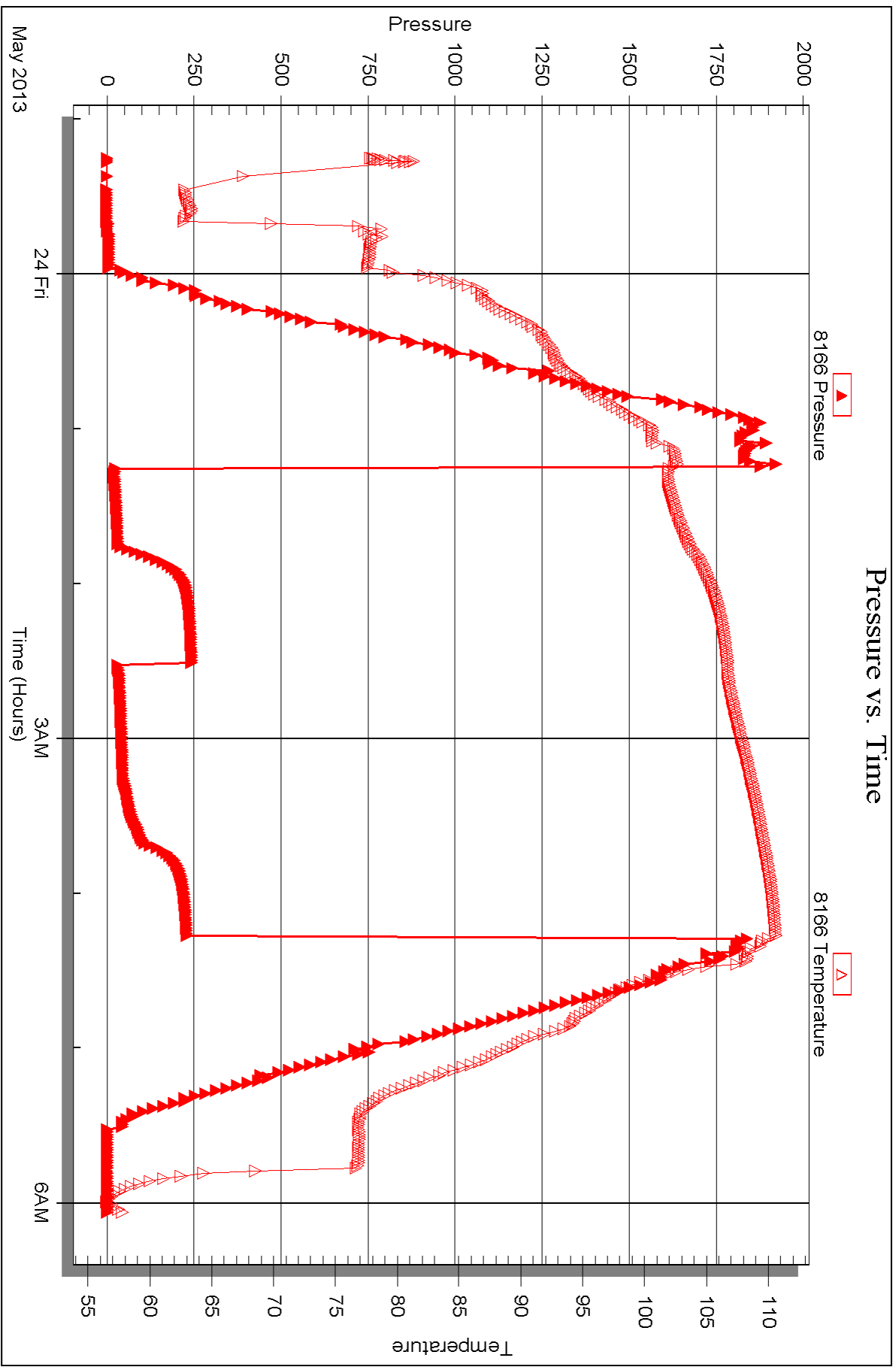
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc.**

PO Box 86
Plainville KS 67663

ATTN: Marc Downing

Griffith #2-3

2-10s-23w Graham,KS

Start Date: 2013.05.24 @ 15:58:00

End Date: 2013.05.24 @ 22:53:00

Job Ticket #: 53884 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.05.29 @ 15:14:04



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H&C Oil Operating Inc.

2-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #2-3

Job Ticket: 53884

DST#: 4

ATTN: Marc Downing

Test Start: 2013.05.24 @ 15:58:00

GENERAL INFORMATION:

Formation: **KC "K-L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:13:30

Time Test Ended: 22:53:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3880.00 ft (KB) To 3925.00 ft (KB) (TVD)

Reference Elevations: 2415.00 ft (KB)

Total Depth: 3925.00 ft (KB) (TVD)

2410.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8319

Inside

Press @ Run Depth: 55.88 psig @ 3881.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.24

End Date:

2013.05.24

Last Calib.:

2013.05.24

Start Time: 15:58:05

End Time:

22:52:59

Time On Btm:

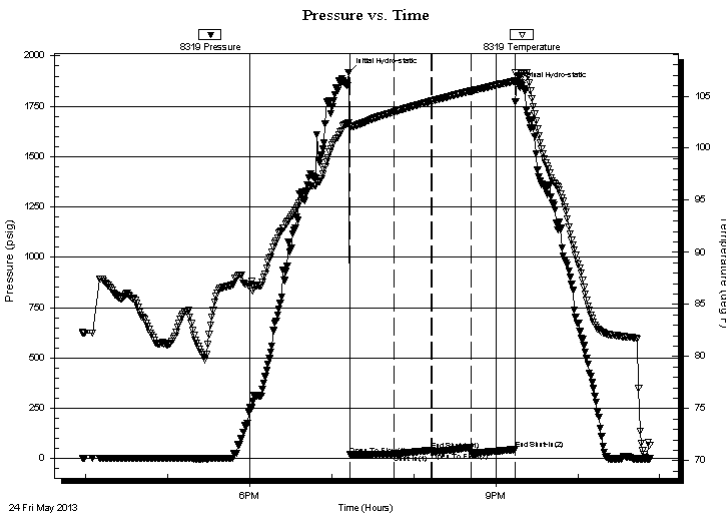
2013.05.24 @ 19:12:30

Time Off Btm:

2013.05.24 @ 21:17:00

TEST COMMENT: IF-1/2" blow
ISI-No blow
FF-No blow
FSI-No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1918.38	102.44	Initial Hydro-static
1	18.62	102.03	Open To Flow (1)
34	21.62	103.49	Shut-In(1)
61	41.20	104.52	End Shut-In(1)
61	30.93	104.53	Open To Flow (2)
90	55.88	105.49	Shut-In(2)
122	45.24	106.44	End Shut-In(2)
125	1848.07	106.96	Final Hydro-static

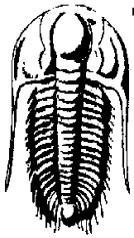
Recovery

Length (ft)	Description	Volume (bbl)
3.00	VSOCM 2%O 98%M	0.04

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H&C Oil Operating Inc.

2-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #2-3

Job Ticket: 53884

DST#: 4

ATTN: Marc Downing

Test Start: 2013.05.24 @ 15:58:00

GENERAL INFORMATION:

Formation: **KC "K-L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:13:30

Time Test Ended: 22:53:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3880.00 ft (KB) To 3925.00 ft (KB) (TVD)

Reference Elevations: 2415.00 ft (KB)

Total Depth: 3925.00 ft (KB) (TVD)

2410.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8166

Outside

Press @ Run Depth: psig @ 3881.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.24

End Date: 2013.05.24

Last Calib.: 2013.05.24

Start Time: 15:58:05

End Time: 22:52:29

Time On Btm:

Time Off Btm:

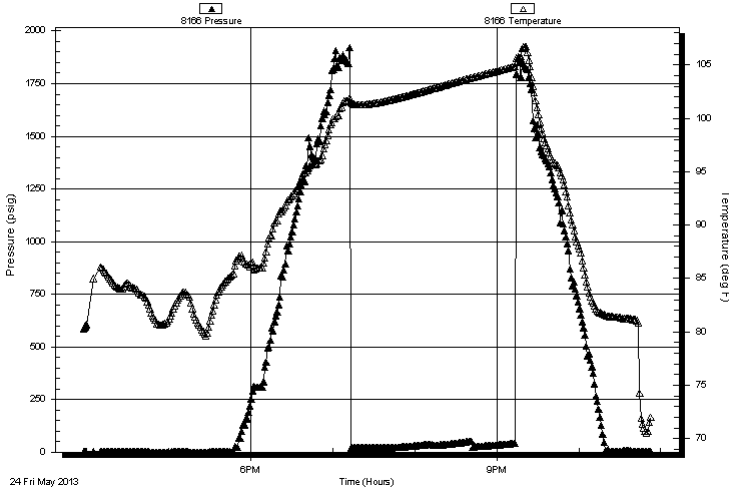
TEST COMMENT: IF-1/2" blow

ISI-No blow

FF-No blow

FSI-No blow

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
3.00	VSOCM 2%O 98%M	0.04

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc.

2-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #2-3

Job Ticket: 53884

DST#: 4

ATTN: Marc Downing

Test Start: 2013.05.24 @ 15:58:00

Tool Information

Drill Pipe:	Length: 3866.00 ft	Diameter: 3.80 inches	Volume: 54.23 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	40000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
			- bbl	String Weight: Initial	40000.00 lb
Drill Pipe Above KB:	7.00 ft			Final	40000.00 lb
Depth to Top Packer:	3880.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	45.00 ft				
Tool Length:	66.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3860.00	
Shut In Tool	5.00			3865.00	
Hydraulic tool	5.00			3870.00	
Packer	5.00			3875.00	21.00 Bottom Of Top Packer
Packer	5.00			3880.00	
Stubb	1.00			3881.00	
Recorder	0.00	8319	Inside	3881.00	
Recorder	0.00	8166	Outside	3881.00	
Perforations	7.00			3888.00	
Change Over Sub	1.00			3889.00	
Drill Pipe	32.00			3921.00	
Change Over Sub	1.00			3922.00	
Bullnose	3.00			3925.00	45.00 Bottom Packers & Anchor

Total Tool Length: 66.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc.

2-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #2-3

Job Ticket: 53884

DST#: 4

ATTN: Marc Downing

Test Start: 2013.05.24 @ 15:58:00

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:

bbf

Water Loss: 5.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
3.00	VSOCM 2%O 98%M	0.042

Total Length: 3.00 ft Total Volume: 0.042 bbf

Num Fluid Samples: 0

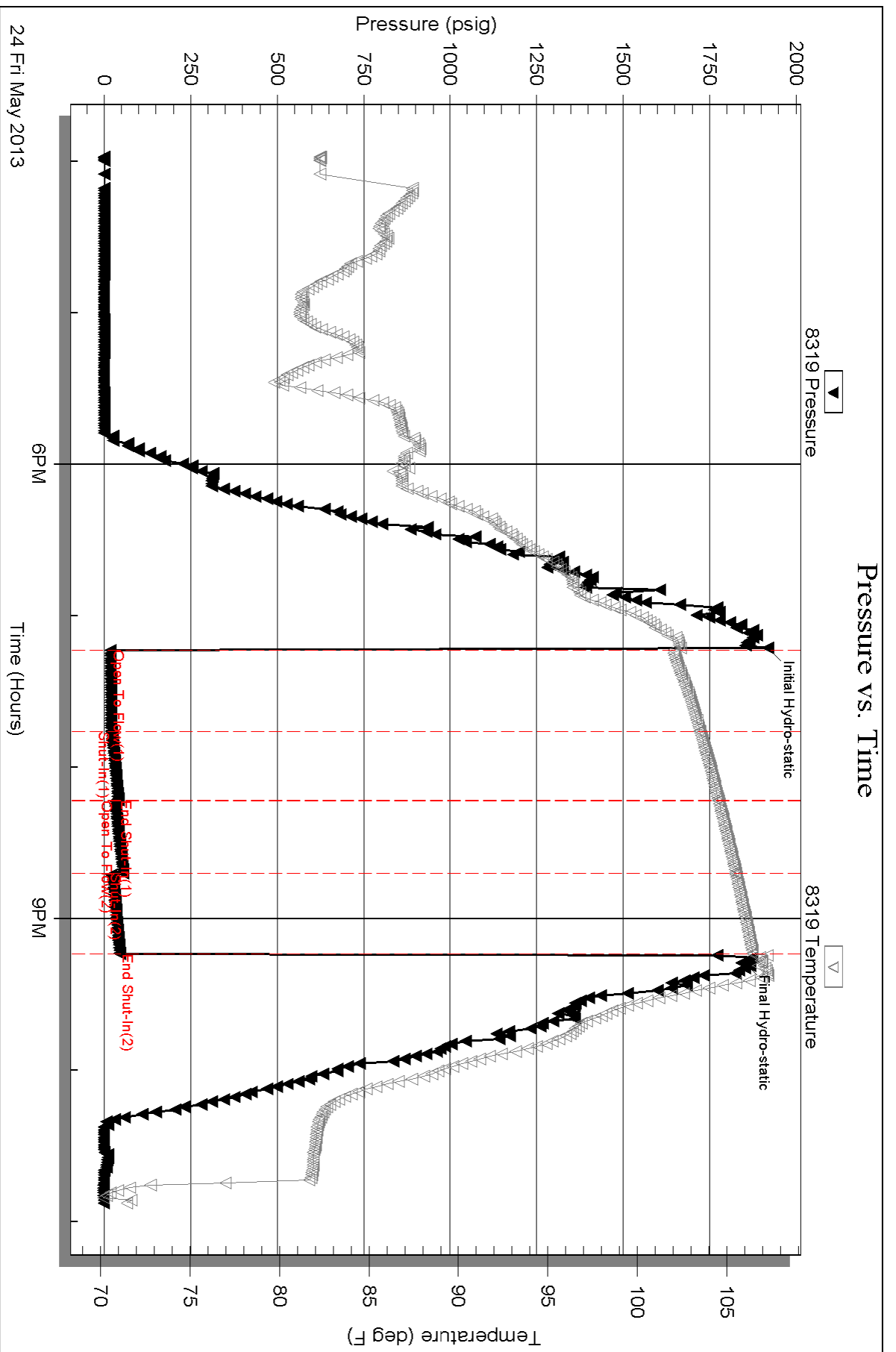
Num Gas Bombs: 0

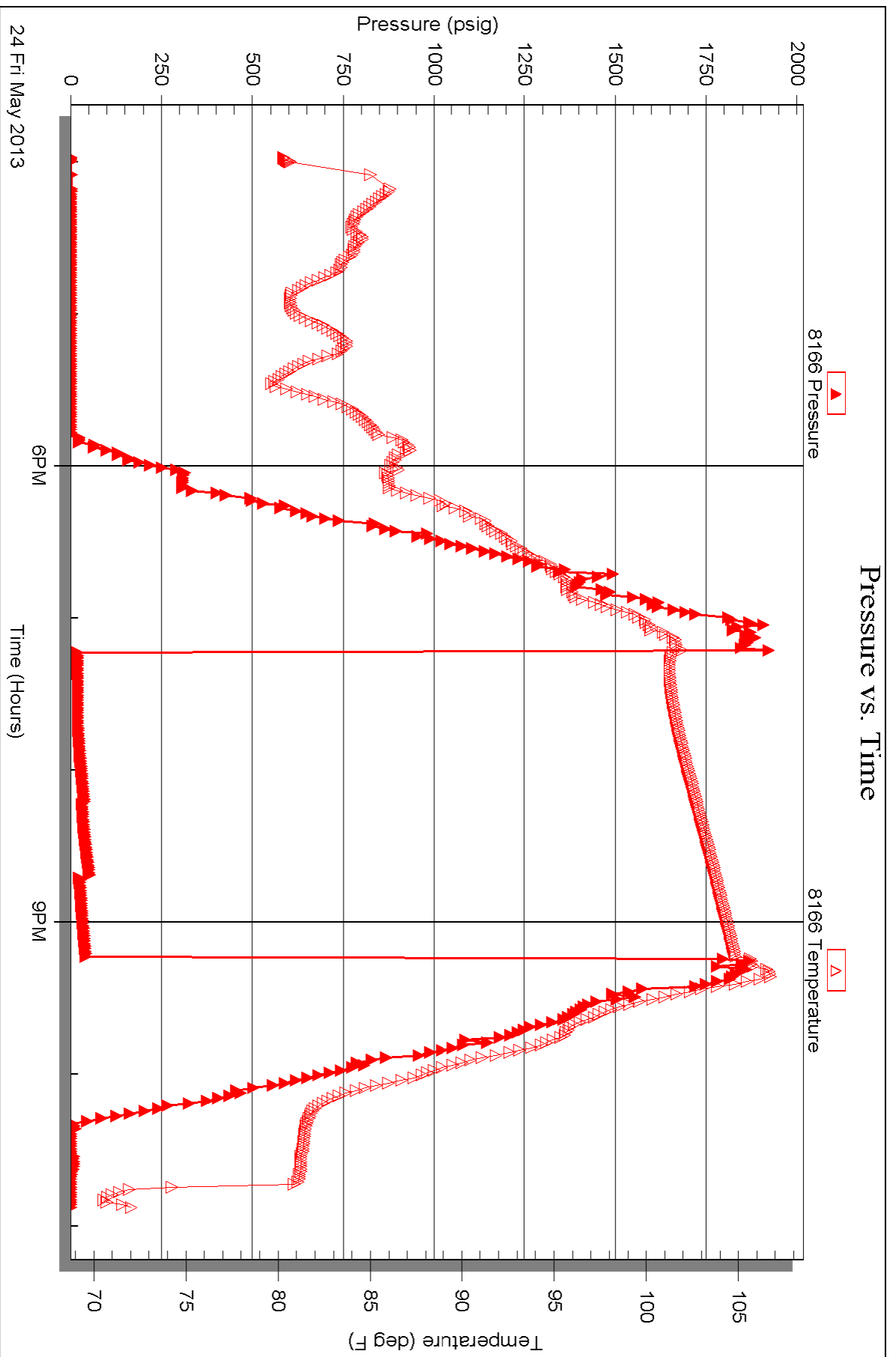
Serial #:

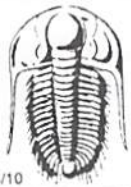
Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **53880**

Well Name & No. Griffeth #2-3 Test No. 1 Date 5/22/13
 Company H+C Oil Operating Inc. Elevation 2415 KB 2410 GL
 Address PO Box 86 Plainville KS 67663
 Co. Rep / Geo. Marc Downing Rig American Eagle
 Location: Sec. 2 Twp. 10 Rge. 23 Co. Graham State KS

Interval Tested 3714-3755 Zone Tested KC "C, D"
 Anchor Length 41 Drill Pipe Run _____ Mud Wt. 9.0
 Top Packer Depth 3709 Drill Collars Run — Vis 56
 Bottom Packer Depth 3714 Wt. Pipe Run — WL 6.8
 Total Depth 3755 Chlorides 1,200 ppm System LCM 2
 Blow Description IF - No blow flush tool weak surface blow died in 2 min
ISI - No blow
FF - No blow flush tool No blow
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>65</u>	<u>oil spotted mud</u>				
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 65 BHT 105 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 6795 Test 1150 T-On Location 14:10
 (B) First Initial Flow 46 Jars _____ T-Started 15:25
 (C) First Final Flow 49 Safety Joint _____ T-Open 18:00
 (D) Initial Shut-In 486 Circ Sub _____ T-Pulled 20:00
 (E) Second Initial Flow 49 Hourly Standby _____ T-Out 21:30
 (F) Second Final Flow 51 Mileage 102 RT 158.10 Comments 700l slid
 (G) Final Shut-In 466 Sampler _____ 15 FT
 (H) Final Hydrostatic 6755 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1308.10
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1308.10

Approved By _____ Our Representative Beth Davis
 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 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. 53882

Well Name & No. Griffith #2-3 Test No. 2 Date 5/23/13
 Company H+C Oil Operating Inc Elevation 2415 KB 2410 GL
 Address PO Box 86 Plainville KS 67663
 Co. Rep / Geo. Marc Powning Rig American Eagle #3
 Location: Sec. 2 Twp. 10 Rge. 23 Co. Graham State KS

Interval Tested 3759-3788 Zone Tested KC "E,F"
 Anchor Length 29 Drill Pipe Run _____ Mud Wt. 9.0
 Top Packer Depth 3754 Drill Collars Run — Vis 56
 Bottom Packer Depth 3759 Wt. Pipe Run — WL 6.8
 Total Depth 3788 Chlorides 1,200 ppm System LCM 2

Blow Description IF - BOB in 13min
ISF - No blow
FF - 9 in blow
FSF - No blow

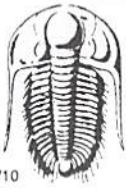
Rec	Feet of	%gas	%oil	%water	%mud
<u>90</u>	<u>SMCW</u>		<u>85</u>	<u>15</u>	
<u>80</u>	<u>oil spotted MCW</u>		<u>60</u>	<u>40</u>	
<u>20</u>	<u>60</u>	<u>20</u>	<u>80</u>		
____	____	____	____	____	____
____	____	____	____	____	____

Rec Total 190 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1,849 Test 1150 T-On Location 4:20
 (B) First Initial Flow 20 Jars _____ T-Started 4:37
 (C) First Final Flow 65 Safety Joint _____ T-Open 6:24
 (D) Initial Shut-In 419 Circ Sub _____ T-Pulled 9:24
 (E) Second Initial Flow 20 Hourly Standby _____ T-Out 11:25
 (F) Second Final Flow 104 Mileage 102-T 158.10 Comments _____
 (G) Final Shut-In 414 Sampler _____
 (H) Final Hydrostatic 1,804 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 45 Ruined Shale Packer _____
 Initial Shut-In 45 Ruined Packer _____
 Final Flow 45 Extra Copies _____
 Final Shut-In 45 Sub Total 0
 Sub Total 1308.10 Total 1308.10
 MP/DST Disc't _____

Approved By _____ Our Representative _____
 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. 53883

Well Name & No. Griffith #2-3 Test No. 3 Date 5/23/13
 Company H&C Oil Operating Inc Elevation 2415 KB 2410 GL
 Address PO Box 86 Plainville KS 67663
 Co. Rep / Geo. Marc Downing Rig American Eagle #3
 Location: Sec. 2 Twp. 10 Rge. 23 Co. Graham State KS

Interval Tested 3815 - 3882 Zone Tested KC "H-J"
 Anchor Length 67 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth 3810 Drill Collars Run _____ Vis _____
 Bottom Packer Depth 3815 Wt. Pipe Run _____ WL _____
 Total Depth 3882 Chlorides _____ ppm System LCM _____
 Blow Description IF - BOB in 8 1/2
ISF - No blow
FF - BOB in 5 1/2 min
FSI - 1/2 in blow

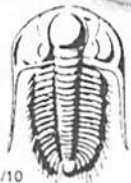
Rec	Feet of	%gas	%oil	%water	%mud
<u>5.5</u>	<u>SGO</u>	<u>5</u>	<u>95</u>		
<u>30</u>	<u>OCM</u>		<u>30</u>		<u>70</u>
	<u>480FT GIP</u>				

Rec Total 85 BHT 113 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1,895 Test 1150 T-On Location 22:50
 (B) First Initial Flow 22 Jars _____ T-Started 23:15
 (C) First Final Flow 32 Safety Joint _____ T-Open 1:15
 (D) Initial Shut-In 244 Circ Sub _____ T-Pulled 4:15
 (E) Second Initial Flow 29 Hourly Standby _____ T-Out 6:05
 (F) Second Final Flow 45 Mileage 102CT 158.10 Comments _____
 (G) Final Shut-In 231 Sampler _____
 (H) Final Hydrostatic 1,836 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 45 Day Standby _____ Total 1308.10
 Final Flow 45 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 60 Sub Total 1308.10

Approved By _____ Our Representative But D

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. 53884

Well Name & No. Griffith #2-3 Test No. 4 Date 5-24-13
 Company H&C Oil Operating Inc Elevation 2415 KB 2410 GL
 Address PO Box 86 Plainville KS 67663
 Co. Rep / Geo. Marc Downing Rig American Eagle #3
 Location: Sec. 2 Twp. 10 Rge. 23 Co. Graham State KS

Interval Tested 3880-3925 Zone Tested KC "K, L"
 Anchor Length 4.5 Drill Pipe Run _____ Mud Wt. 9.2
 Top Packer Depth 3875 Drill Collars Run - Vis 60
 Bottom Packer Depth 3880 Wt. Pipe Run - WL 5.2
 Total Depth 3925 Chlorides 3,000 ppm System LCM 2[#]

Blow Description IF - 1/2 in blow
ISI - No blow
FF - No blow
FSL - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>3</u>	<u>VSOCM</u>		<u>2</u>		<u>98</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 3 BHT 106 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 6918 Test 1150 T-On Location 15:25
 (B) First Initial Flow 19 Jars _____ T-Started 15:58
 (C) First Final Flow 22 Safety Joint _____ T-Open 19:15
 (D) Initial Shut-In 41 Circ Sub _____ T-Pulled 21:15
 (E) Second Initial Flow 31 Hourly Standby _____ T-Out 22:53
 (F) Second Final Flow 56 Mileage 102 rT 158.10 Comments _____
 (G) Final Shut-In 45 Sampler _____
 (H) Final Hydrostatic 1,848 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open 30 Extra Packer _____ Extra Copies _____
 Initial Shut-In 30 Extra Recorder _____ Sub Total 0
 Final Flow 30 Day Standby _____ Total 1308.10
 Final Shut-In 30 Accessibility _____ MP/DST Disc't _____
 Sub Total 1308.10

Approved By _____ Our Representative Butt Dickinson

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.

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

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

No. 6859

Date 5-26-13 Sec. 2 Twp. 10 Range 23 County Graham State KS On Location _____ Finish 9:15 AM

Lease Griffith Well No. 2-3 Location Wakeeny N to Rd E, 1E, 1 1/2 IV, W 1 2 Owner _____

Contractor American Eagle #3
To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish
cement and helper to assist owner or contractor to do work as listed.

Type Job Long string
Hole Size 7 7/8 T.D. 4095
Charge To HAG oil

Csg. 5 1/2 Depth 4094.67
Street _____ State _____

Tbg. Size _____ City _____

Tool _____ Depth _____

Cement Left in Csg. 21.67 Shoe Joint 21.67
The above was done to satisfaction and supervision of owner agent or contractor.

Meas Line _____ Displace 99661
Cement Amount Ordered 180sx Q Pro - C 10% Salt, 8% Flo

EQUIPMENT
Pumptrk 16 No. Cementer Texas
Helper Cisco

Bulktrk 12 No. Driver Billy
Bulktrk 1 No. Driver Dave

Common 180
Poz. Mix 400 QMDC

Gel. _____
Calcium _____

Hulls _____
Salt 16

Flowseal 150#
Kol-Seal 900#

Mud CLR 48 500 gal
CFL-117 or CD110 CAF 38

Sand _____
Handling 605

Mileage _____
Guide Shoe _____

Centralizer 12 turbos
Baskets 33 weatherfords

AFU Inserts _____
Float Shoe with ball

Latch Down with plug
FLOAT EQUIPMENT

lift preser @ 1,000

landed plug @ 1,500

Pumptrk Charge _____
Mileage 44

Tax _____
Discount _____

Total Charge _____

Signature Bob Plante

JOB SERVICES & REMARKS

pipe on bottom drop ball Break circulation,
Circulated on bottom 1 hr 15 min. Pumped 500 gal
Mud clear 48 + 10 bbl fw. Plug Rat hole with 30sx
plug cement hole with 15 sx. Hooked to 5 1/2 mixed
400sx QMDC 1/4 Flo followed by 180 sx Q Pro C
shut down washed pump and lines, Released plug
and displaced with 99 bbl fw released and
held cement circulated

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

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

No. 6903

Date	5-18-13	2	10	23	Caravan	KS	On Location	2:00 PM
Lease	Corinth		Well No. 2.3		Location <i>W Henry & R E "F" in 1/2 mi W into</i>			
Contractor	Amesbury Energy #3							
Type Job	Surface							
Hole Size	13 7/8		T.D. 252		Charge To <i>NAC</i>			
Csg.	8 5/8		Depth 251		Street			
Tbg. Size			Depth		City			
Tool			Depth		State			
Cement Left in Csg.	15'		Shoe Joint		The above was done to satisfaction and supervision of owner agent or contractor.			
Meas Line			Displace 15 Bbl		Cement Amount Ordered <i>Common 160</i>			
EQUIPMENT								
Pumptrk	No. 5	Cementite Helper						
Bulktrk	No. 3	Driver						
Bulktrk	No. 5	Driver						
JOB SERVICES & REMARKS								
Remarks:								
Rat Hole								
Mouse Hole								
Centralizers								
Baskets								
DV or Port Collar								
<i>8 5/8 on bottom - Est. Circulation Mix</i>								
<i>100% 4 Disk</i>								
<i>Cement Circulate!</i>								
FLOAT EQUIPMENT								
Guide Shoe								
Centralizer								
Baskets								
AFU Inserts								
Float Shoe								
Latch Down								
Pumptrk Charge	<i>Surface</i>							
Mileage	<i>44</i>							
Tax								
Discount								
Total Charge								
Signature <i>A. J. Feltner</i>								