

DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co.**

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Chas-Mar #1-13

13-13s-19w Ellis,KS

Start Date: 2012.11.14 @ 01:30:00

End Date: 2012.11.14 @ 07:33:30

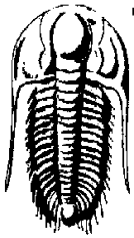
Job Ticket #: 50796 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.23 @ 09:05:05



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50796

DST#: 1

ATTN: Ron Nelson

Test Start: 2012.11.14 @ 01:30:00

GENERAL INFORMATION:

Formation: **Topeka**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:49:00

Time Test Ended: 07:33:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Brett Dickinson

Unit No: 59

Interval: 4107.00 ft (KB) To 3150.00 ft (KB) (TVD)

Total Depth: 3150.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2082.00 ft (KB)

2074.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6753 Inside

Press@RunDepth: 45.51 psig @ 3108.00 ft (KB)

Start Date: 2012.11.14

End Date:

2012.11.14

Start Time: 01:30:05

End Time:

07:33:29

Capacity: 8000.00 psig

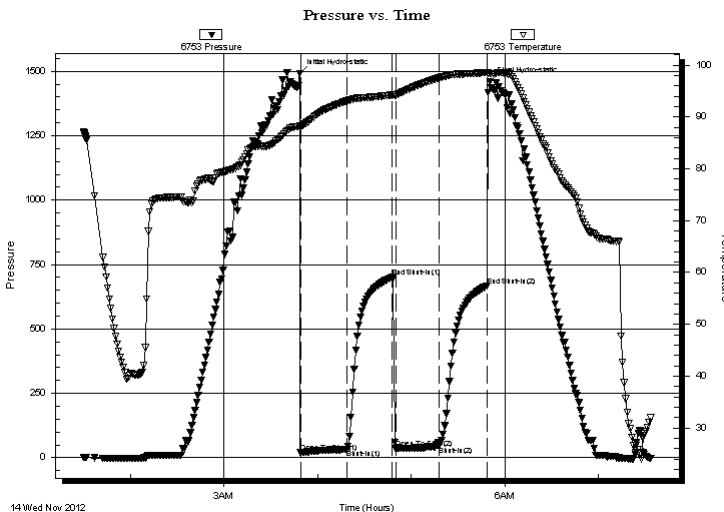
Last Calib.: 2012.11.14

Time On Btm: 2012.11.14 @ 03:48:30

Time Off Btm: 2012.11.14 @ 05:50:30

TEST COMMENT: IF-Very weak surface blow
ISI-No blow
FF-Very weak surface blow died in 10 min
FSI-No blow

PRESSURE SUMMARY



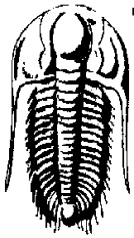
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1490.87	88.37	Initial Hydro-static
1	20.05	88.12	Open To Flow (1)
31	33.63	93.08	Shut-In(1)
60	700.16	94.23	End Shut-In(1)
62	35.43	94.20	Open To Flow (2)
90	45.51	97.55	Shut-In(2)
120	666.50	98.59	End Shut-In(2)
122	1460.67	98.40	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	Oil spotted WCM 40%W 60%M	0.43

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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Job Ticket: 50796

DST#: 1

ATTN: Ron Nelson

Test Start: 2012.11.14 @ 01:30:00

GENERAL INFORMATION:

Formation: **Topeka**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:49:00

Time Test Ended: 07:33:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Brett Dickinson

Unit No: 59

Interval: 4107.00 ft (KB) To 3150.00 ft (KB) (TVD)

Reference Elevations: 2082.00 ft (KB)

Total Depth: 3150.00 ft (KB) (TVD)

2074.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8166 Outside

Press@RunDepth: psig @ 3108.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.14

End Date:

2012.11.14

Last Calib.:

2012.11.14

Start Time: 01:30:05

End Time:

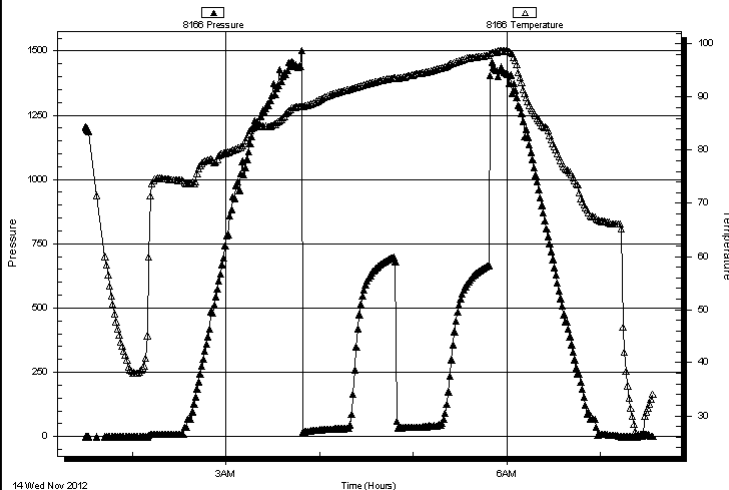
07:33:29

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-Very weak surface blow
ISI-No blow
FF-Very weak surface blow died in 10 min
FSI-No blow

Pressure vs. Time



PRESSURE SUMMARY

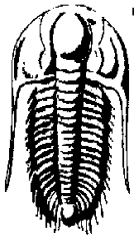
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
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Recovery

Length (ft)	Description	Volume (bbl)
50.00	Oil spotted WCM 40%W 60%M	0.43

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50796

DST#: 1

ATTN: Ron Nelson

Test Start: 2012.11.14 @ 01:30:00

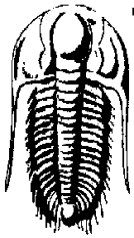
Tool Information

Drill Pipe:	Length:	3074.00 ft	Diameter:	3.80 inches	Volume:	43.12 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:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:	60000.00 lb
					Total Volume:	- bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		18.00 ft					String Weight: Initial	48000.00 lb
Depth to Top Packer:		3107.00 ft					Final	48000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		43.00 ft						
Tool Length:		64.00 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			3087.00	
Shut In Tool	5.00			3092.00	
Hydraulic tool	5.00			3097.00	
Packer	5.00			3102.00	21.00 Bottom Of Top Packer
Packer	5.00			3107.00	
Stubb	1.00			3108.00	
Recorder	0.00	6753	Inside	3108.00	
Recorder	0.00	8166	Outside	3108.00	
Perforations	5.00			3113.00	
Change Over Sub	1.00			3114.00	
Drill Pipe	32.00			3146.00	
Change Over Sub	1.00			3147.00	
Bullnose	3.00			3150.00	43.00 Bottom Packers & Anchor

Total Tool Length: 64.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50796

DST#: 1

ATTN: Ron Nelson

Test Start: 2012.11.14 @ 01:30:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: lb/gal

Viscosity: sec/qt

Water Loss: in³

Resistivity: ohm.m

Salinity: ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API: deg API

Water Salinity: 25000 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	Oil spotted WCM 40%W 60%M	0.428

Total Length: 50.00 ft Total Volume: 0.428 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

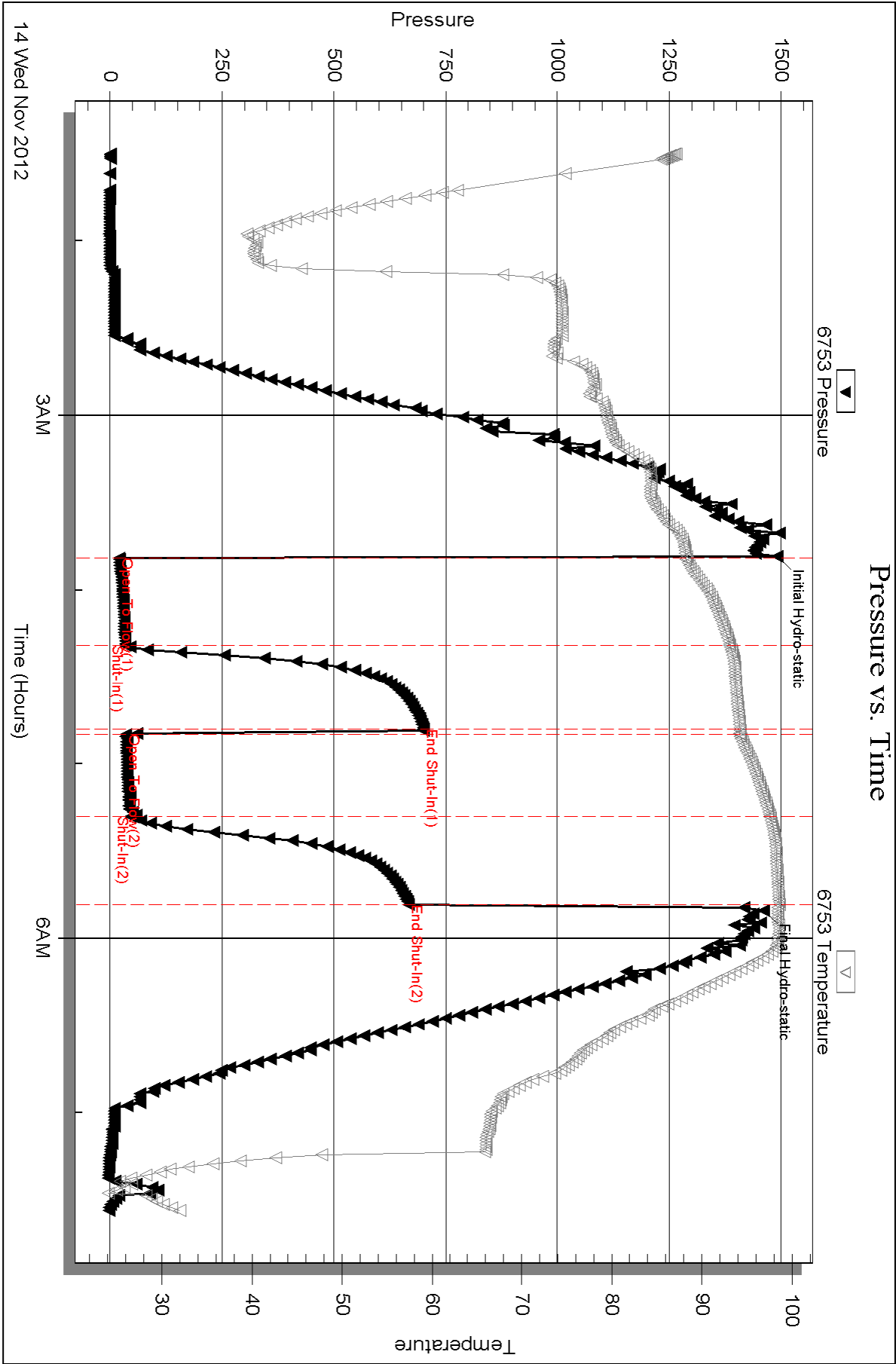
Serial #: 6753

Inside

Dow nting-Nelson Oil Co.

Chas-Mar #1-13

DST Test Number: 1

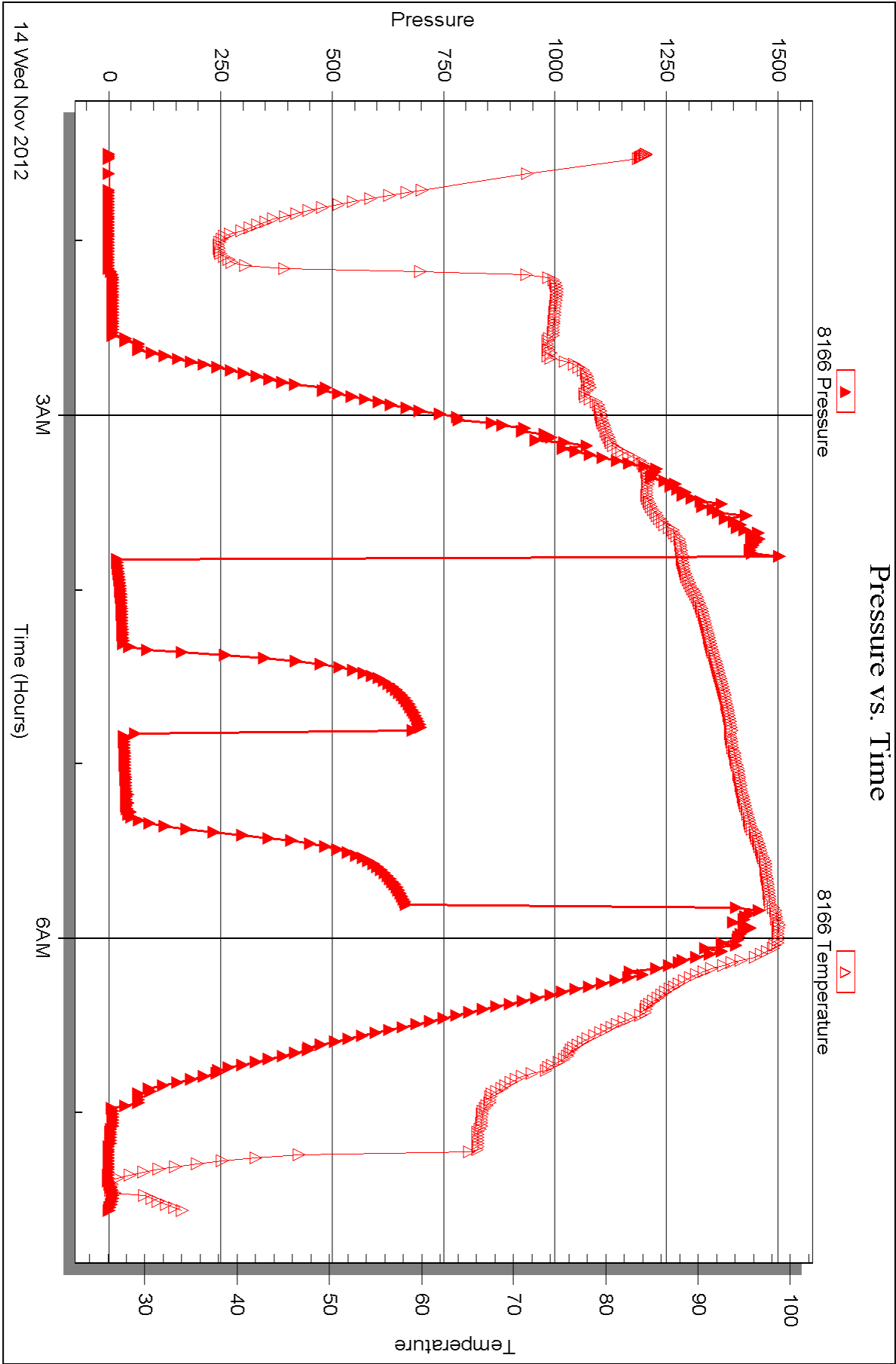


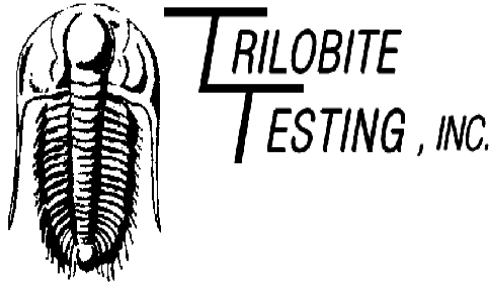
Serial #: 8166

Outside Dow nting-Nelson Oil Co.

Chas-Mar #1-13

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co.**

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Chas-Mar #1-13

13-13s-19w Ellis,KS

Start Date: 2012.11.14 @ 22:55:00

End Date: 2012.11.15 @ 05:39:00

Job Ticket #: 50797 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.23 @ 09:04:15

Downing-Nelson Oil Co.

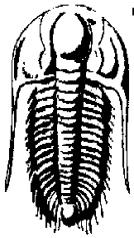
13-13s-19w Ellis,KS

Chas-Mar #1-13

DST # 2

Toronto-KC"A"

2012.11.14



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50797

DST#: 2

ATTN: Ron Nelson

Test Start: 2012.11.14 @ 22:55:00

GENERAL INFORMATION:

Formation: **Toronto-KC"A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:57:30

Time Test Ended: 05:39:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3320.00 ft (KB) To 3381.00 ft (KB) (TVD)

Reference Elevations: 2082.00 ft (KB)

Total Depth: 3381.00 ft (KB) (TVD)

2074.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6753 Inside

Press@RunDepth: 24.51 psig @ 3321.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.14

End Date:

2012.11.15

Last Calib.: 2012.11.15

Start Time: 22:55:05

End Time:

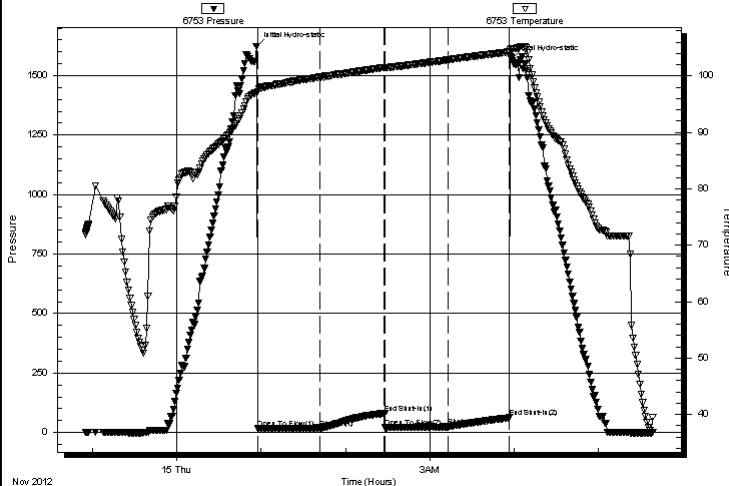
05:38:59

Time On Btm: 2012.11.15 @ 00:56:30

Time Off Btm: 2012.11.15 @ 03:58:00

TEST COMMENT: IF-1 1/4" blow
ISI-No blow
FF-Very weak surface blow
FSI-No blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1622.81	97.06	Initial Hydro-static
1	16.36	97.23	Open To Flow (1)
46	19.04	99.71	Shut-In(1)
91	79.49	101.49	End Shut-In(1)
92	20.20	101.50	Open To Flow (2)
137	24.51	102.86	Shut-In(2)
180	61.74	104.24	End Shut-In(2)
182	1569.05	104.75	Final Hydro-static

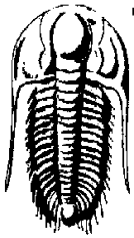
Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud	0.02

Gas Rates

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



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DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50797

DST#: 2

ATTN: Ron Nelson

Test Start: 2012.11.14 @ 22:55:00

GENERAL INFORMATION:

Formation: **Toronto-KC"A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:57:30

Time Test Ended: 05:39:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3320.00 ft (KB) To 3381.00 ft (KB) (TVD)

Reference Elevations: 2082.00 ft (KB)

Total Depth: 3381.00 ft (KB) (TVD)

2074.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8166 Outside

Press@RunDepth: psig @ 3321.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.14

End Date:

2012.11.15

Last Calib.:

2012.11.15

Start Time: 22:55:05

End Time:

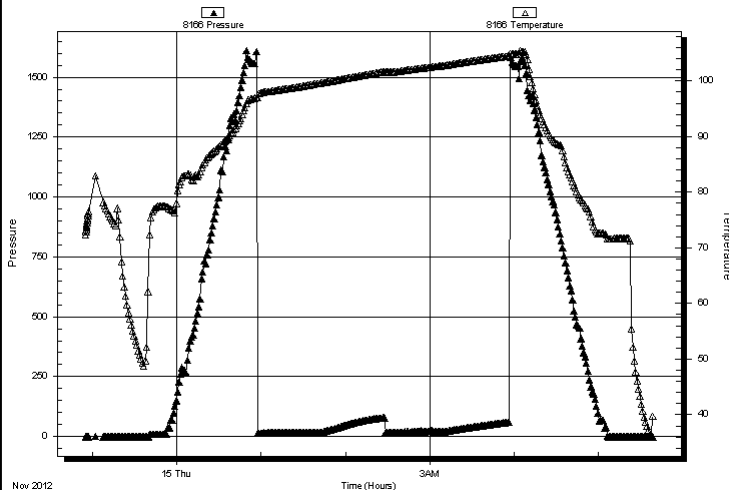
05:38:59

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-1 1/4" blow
ISI-No blow
FF-Very weak surface blow
FSI-No blow

Pressure vs. Time



PRESSURE SUMMARY

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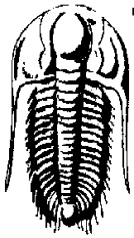
Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud	0.02

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

TOOL DIAGRAM

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50797

DST#: 2

ATTN: Ron Nelson

Test Start: 2012.11.14 @ 22:55:00

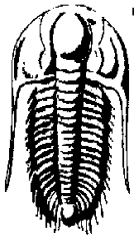
Tool Information

Drill Pipe:	Length:	3294.00 ft	Diameter:	3.80 inches	Volume:	46.21 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:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:	60000.00 lb
					Total Volume:	- bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		25.00 ft					String Weight: Initial	50000.00 lb
Depth to Top Packer:		3320.00 ft					Final	50000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		61.00 ft						
Tool Length:		82.00 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			3300.00	
Shut In Tool	5.00			3305.00	
Hydraulic tool	5.00			3310.00	
Packer	5.00			3315.00	21.00 Bottom Of Top Packer
Packer	5.00			3320.00	
Stubb	1.00			3321.00	
Recorder	0.00	6753	Inside	3321.00	
Recorder	0.00	8166	Outside	3321.00	
Perforations	23.00			3344.00	
Change Over Sub	1.00			3345.00	
Drill Pipe	32.00			3377.00	
Change Over Sub	1.00			3378.00	
Bullnose	3.00			3381.00	61.00 Bottom Packers & Anchor

Total Tool Length: 82.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50797

DST#: 2

ATTN: Ron Nelson

Test Start: 2012.11.14 @ 22:55:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 46.00 sec/qt

Water Loss: 7.98 in³

Resistivity: ohm.m

Salinity: 1000.00 ppm

Filter Cake: 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
5.00	mud	0.025

Total Length: 5.00 ft

Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 6753

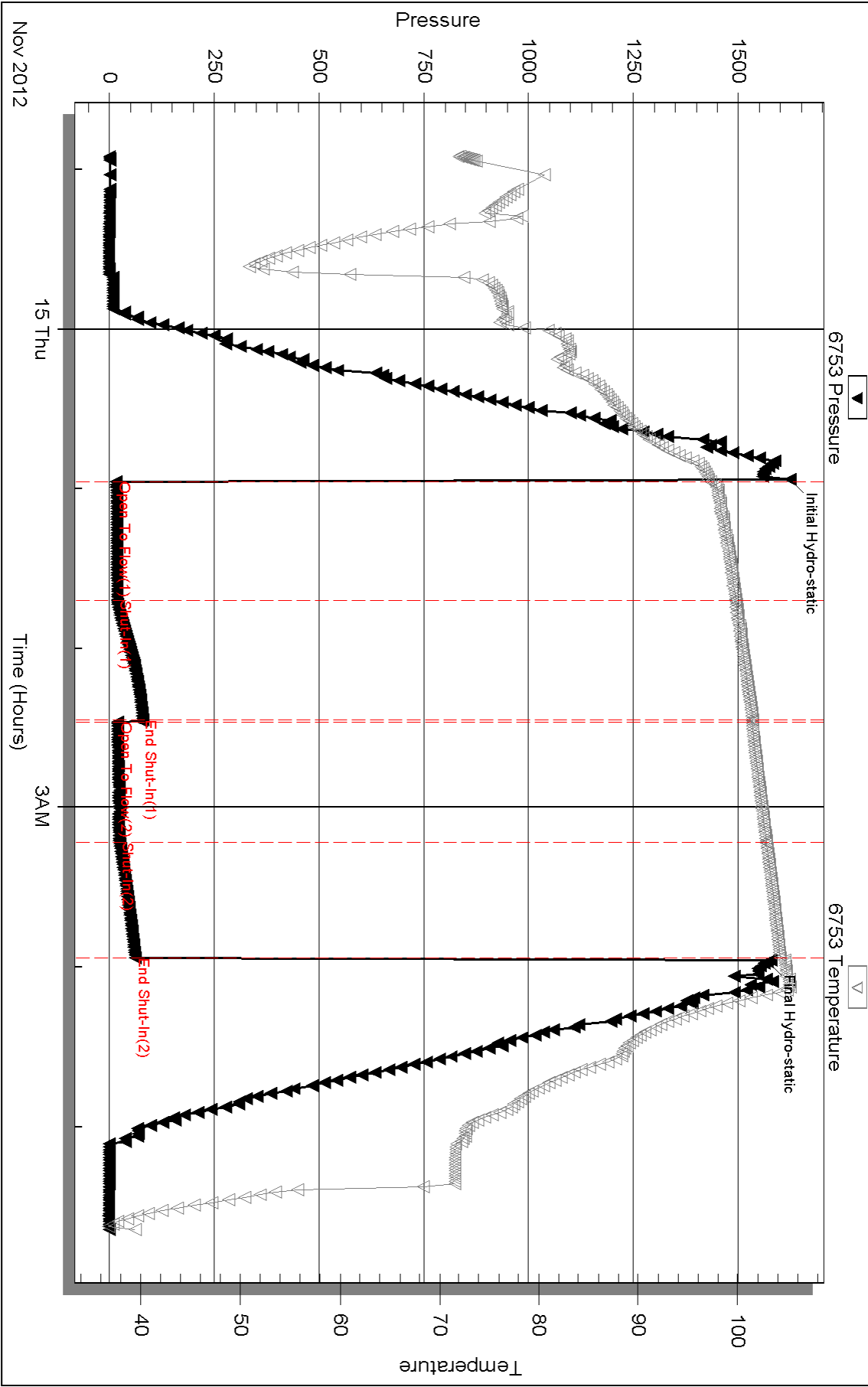
Inside

Dow nung-Nelson Oil Co.

Chas-Mar #1-13

DST Test Number: 2

Pressure vs. Time



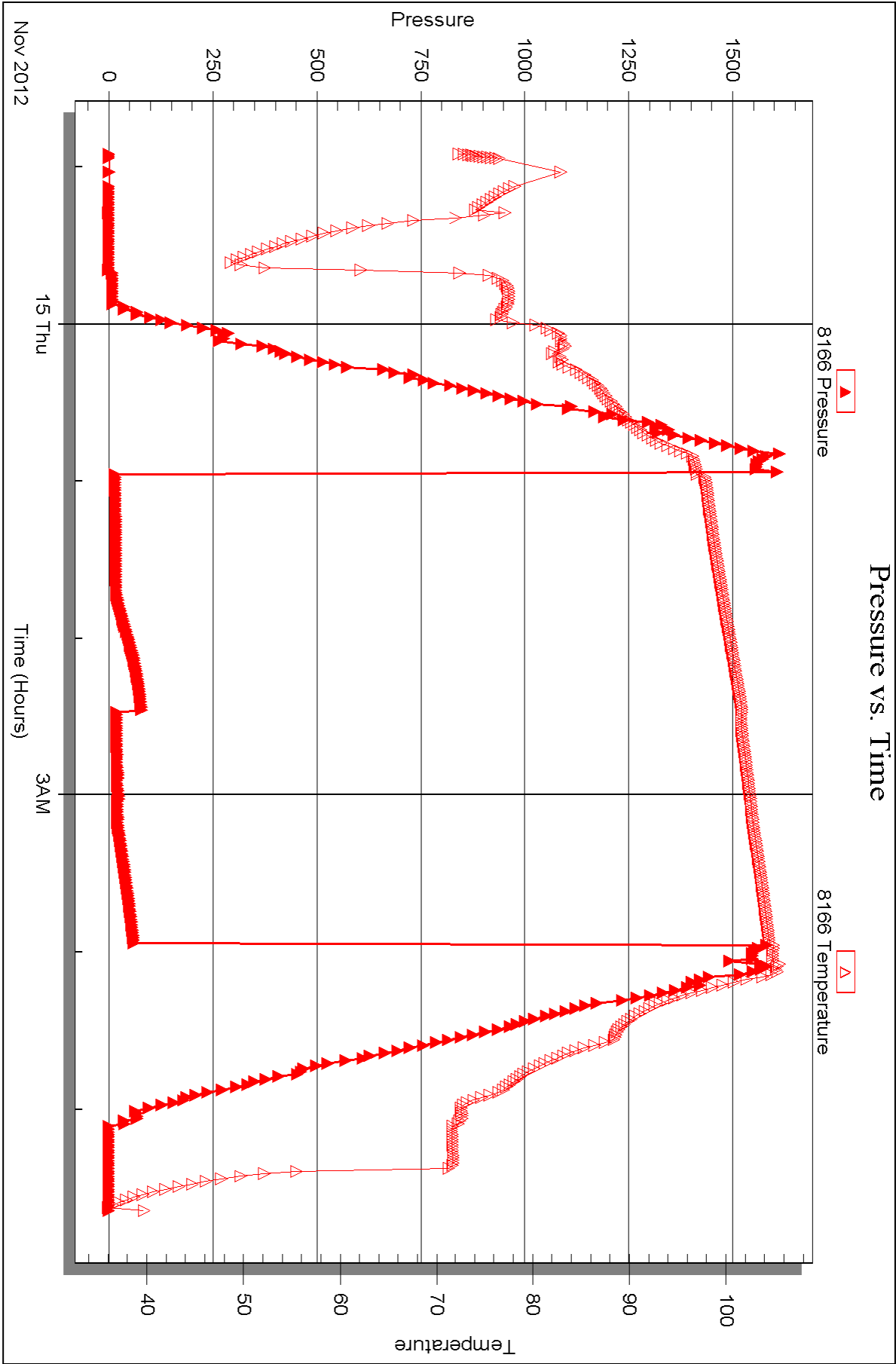
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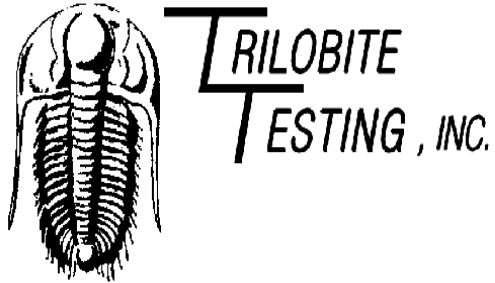
Outside

Dow nung-Nelson Oil Co.

Chas-Mar #1-13

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co.**

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Chas-Mar #1-13

13-13s-19w Ellis,KS

Start Date: 2012.11.15 @ 13:10:00

End Date: 2012.11.15 @ 20:27:00

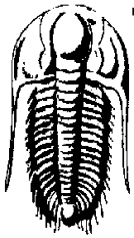
Job Ticket #: 50798 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.23 @ 09:03:32



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50798

DST#: 3

ATTN: Ron Nelson

Test Start: 2012.11.15 @ 13:10:00

GENERAL INFORMATION:

Formation: **KC"C,D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:16:30

Time Test Ended: 20:27:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3386.00 ft (KB) To 3432.00 ft (KB) (TVD)

Total Depth: 3432.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2082.00 ft (KB)

2074.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6753 Inside

Press@RunDepth: 785.38 psig @ 3387.00 ft (KB)

Start Date: 2012.11.15

End Date:

2012.11.15

Start Time: 13:10:05

End Time:

20:26:59

Capacity: 8000.00 psig

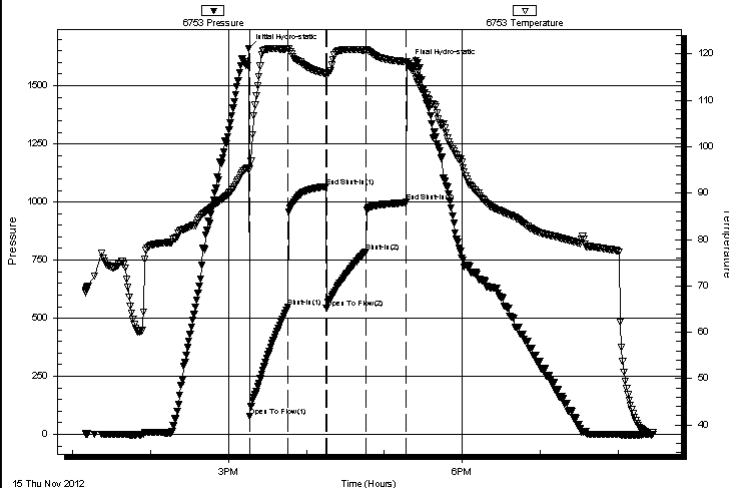
Last Calib.: 2012.11.15

Time On Btm: 2012.11.15 @ 15:15:30

Time Off Btm: 2012.11.15 @ 17:18:30

TEST COMMENT: IF-BOB in 2 min
ISI-No blow
FF-BOB Immediately
FSI-BOB in 18 min

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1660.75	95.51	Initial Hydro-static
1	78.42	95.17	Open To Flow (1)
30	547.84	121.16	Shut-In(1)
60	1065.20	115.74	End Shut-In(1)
60	544.29	115.49	Open To Flow (2)
90	785.38	120.87	Shut-In(2)
121	998.88	118.36	End Shut-In(2)
123	1595.47	117.58	Final Hydro-static

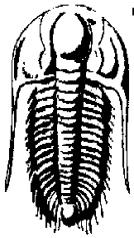
Recovery

Length (ft)	Description	Volume (bbl)
430.00	water	5.76
340.00	GOCW 10%G 20%O 70%W	4.77
245.00	GSOCW 10%G 5%O 85%W	3.44
185.00	GSOCW 40%G 10%O 50%W	2.60
310.00	GSMOCW 30%G 5%M 20%O 45%W	4.35
40.00	GO 40%G 60%O	0.56

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

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50798

DST#: 3

ATTN: Ron Nelson

Test Start: 2012.11.15 @ 13:10:00

GENERAL INFORMATION:

Formation: **KC"C,D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:16:30

Time Test Ended: 20:27:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3386.00 ft (KB) To 3432.00 ft (KB) (TVD)

Reference Elevations: 2082.00 ft (KB)

Total Depth: 3432.00 ft (KB) (TVD)

2074.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8166 Outside

Press@RunDepth: psig @ 3387.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.15

End Date:

2012.11.15

Last Calib.:

2012.11.15

Start Time: 13:10:05

End Time:

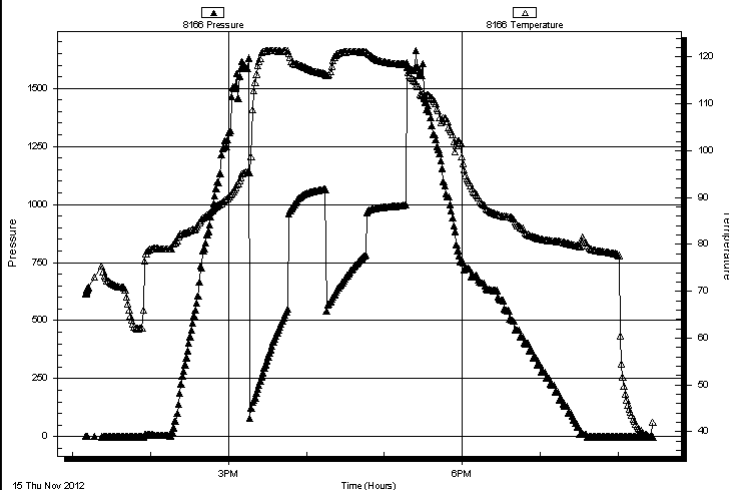
20:26:59

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-BOB in 2 min
ISI-No blow
FF-BOB Immediately
FSI-BOB in 18 min

Pressure vs. Time



PRESSURE SUMMARY

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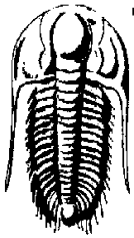
Recovery

Length (ft)	Description	Volume (bbl)
430.00	water	5.76
340.00	GOCW 10%G 20%O 70%W	4.77
245.00	GSOCW 10%G 5%O 85%W	3.44
185.00	GSOCW 40%G 10%O 50%W	2.60
310.00	GSMOCW 30%G 5%M 20%O 45%W	4.35
40.00	GO 40%G 60%O	0.56

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50798

DST#: 3

ATTN: Ron Nelson

Test Start: 2012.11.15 @ 13:10:00

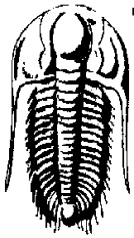
Tool Information

Drill Pipe:	Length:	3358.00 ft	Diameter:	3.80 inches	Volume:	47.10 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:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:	60000.00 lb
					Total Volume:	- bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		23.00 ft					String Weight: Initial	50000.00 lb
Depth to Top Packer:		3386.00 ft					Final	60000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		46.00 ft						
Tool Length:		67.00 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			3366.00	
Shut In Tool	5.00			3371.00	
Hydraulic tool	5.00			3376.00	
Packer	5.00			3381.00	21.00 Bottom Of Top Packer
Packer	5.00			3386.00	
Stubb	1.00			3387.00	
Recorder	0.00	6753	Inside	3387.00	
Recorder	0.00	8166	Outside	3387.00	
Perforations	5.00			3392.00	
Change Over Sub	1.00			3393.00	
Drill Pipe	32.00			3425.00	
Change Over Sub	1.00			3426.00	
Perforations	3.00			3429.00	
Bullnose	3.00			3432.00	46.00 Bottom Packers & Anchor

Total Tool Length: 67.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50798

DST#: 3

ATTN: Ron Nelson

Test Start: 2012.11.15 @ 13:10:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: lb/gal

Viscosity: sec/qt

Water Loss: in³

Resistivity: ohm.m

Salinity: ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API: 38 deg API

Water Salinity: 130000 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
430.00	water	5.758
340.00	GOCW 10%G 20%O 70%W	4.769
245.00	GSOCW 10%G 5%O 85%W	3.437
185.00	GSOCW 40%G 10%O 50%W	2.595
310.00	GSMOCW 30%G 5%M 20%O 45%W	4.348
40.00	GO 40%G 60%O	0.561
0.00	440ft GIP	0.000

Total Length: 1550.00 ft Total Volume: 21.468 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

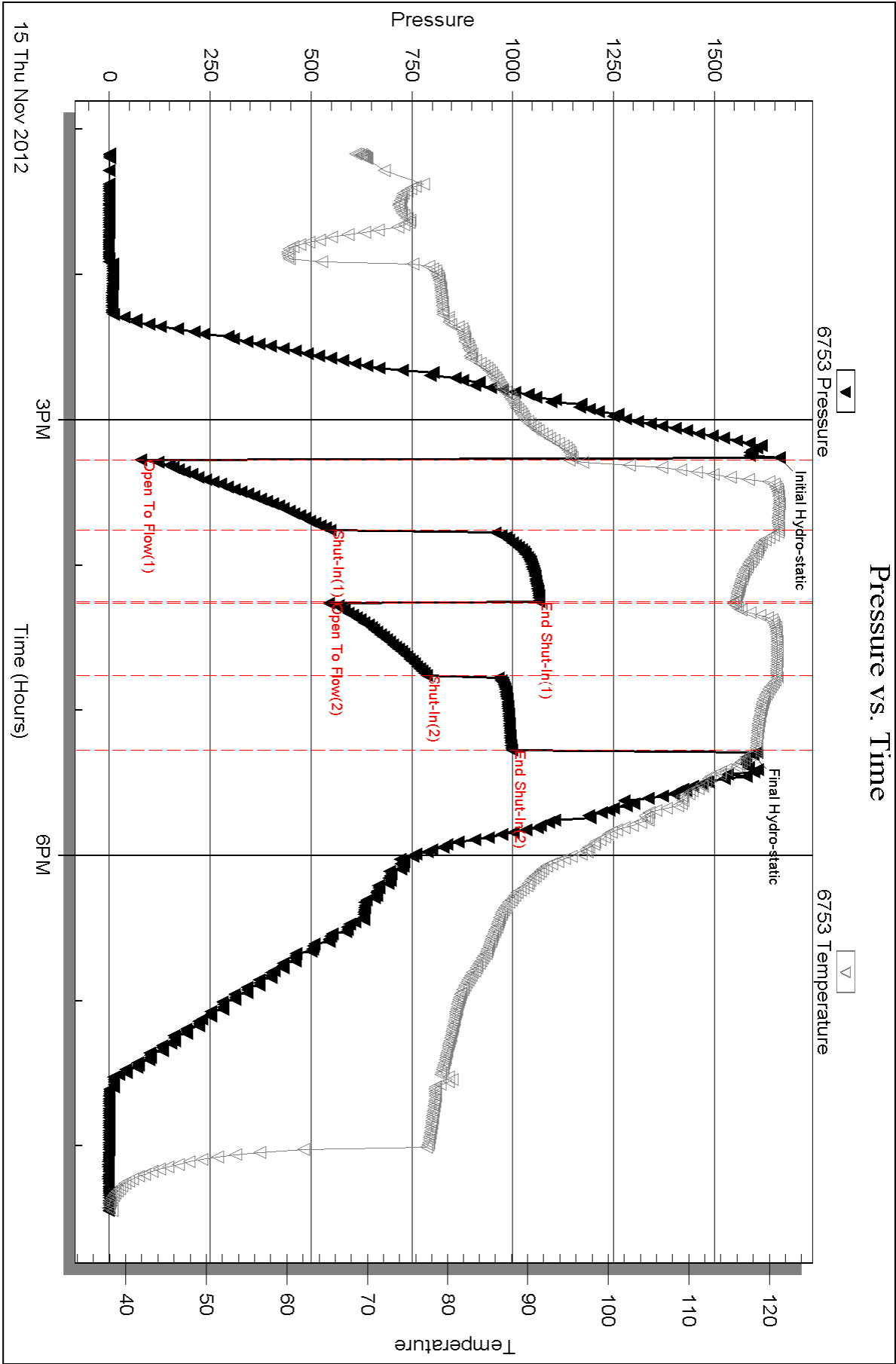
Serial #: 6753

Inside

Dow nung-Nelson Oil Co.

Chas-Mar #1-13

DST Test Number: 3



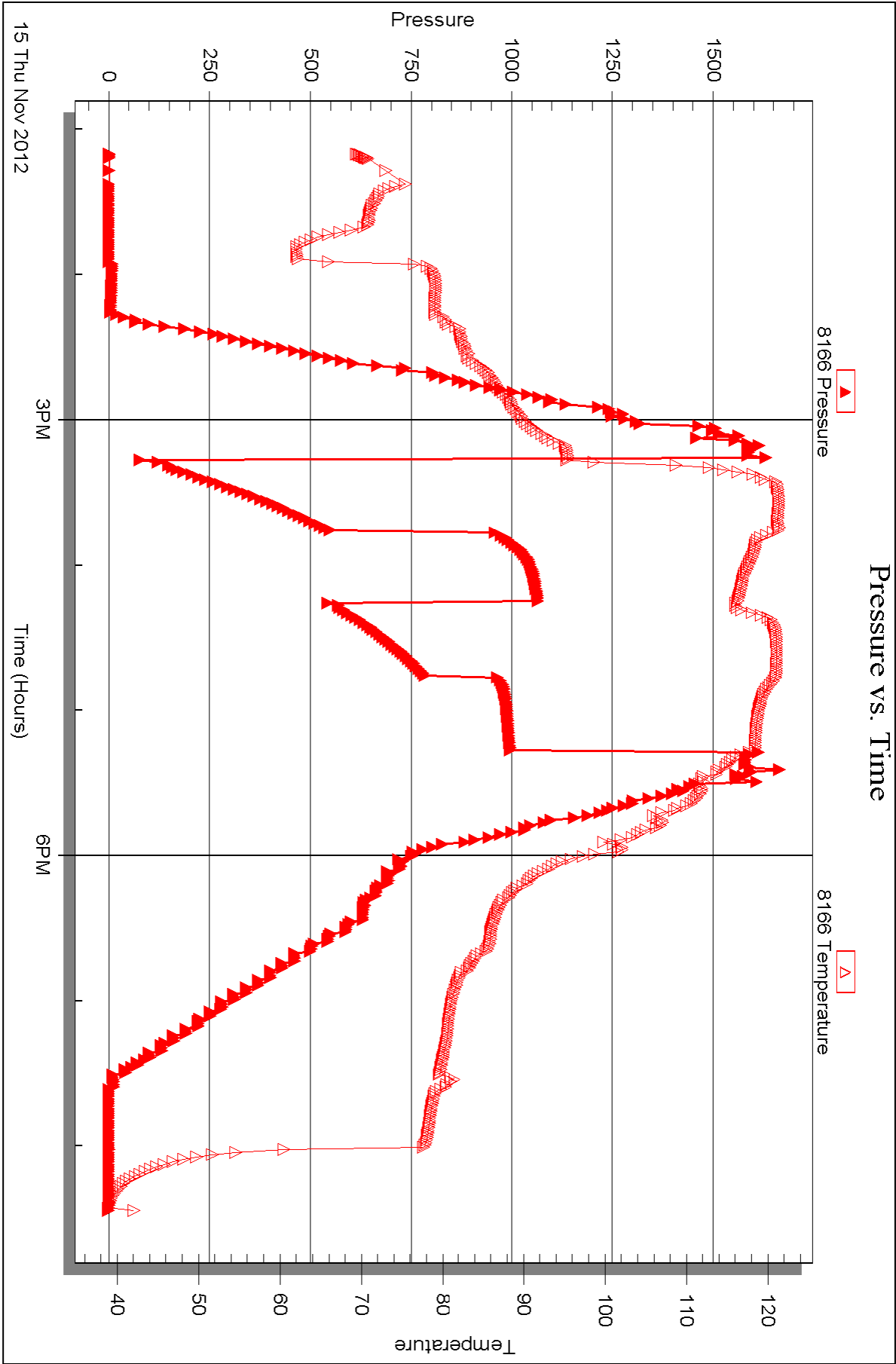
Serial #: 8166

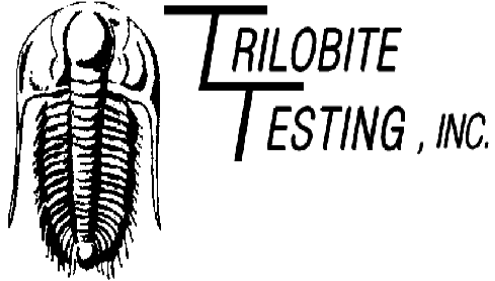
Outside

Dow n/g-nelson Oil Co.

Chas-Mar #1-13

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co.**

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Chas-Mar #1-13

13-13s-19w Ellis,KS

Start Date: 2012.11.16 @ 02:20:00

End Date: 2012.11.16 @ 09:37:30

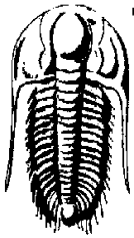
Job Ticket #: 50799 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.23 @ 09:02:31



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50799

DST#: 4

ATTN: Ron Nelson

Test Start: 2012.11.16 @ 02:20:00

GENERAL INFORMATION:

Formation: **KC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:27:30

Time Test Ended: 09:37:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3426.00 ft (KB) To 3444.00 ft (KB) (TVD)

Reference Elevations: 2082.00 ft (KB)

Total Depth: 3444.00 ft (KB) (TVD)

2074.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6753 Inside

Press@RunDepth: 685.27 psig @ 3427.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.16

End Date:

2012.11.16

Last Calib.: 2012.11.16

Start Time: 02:20:05

End Time:

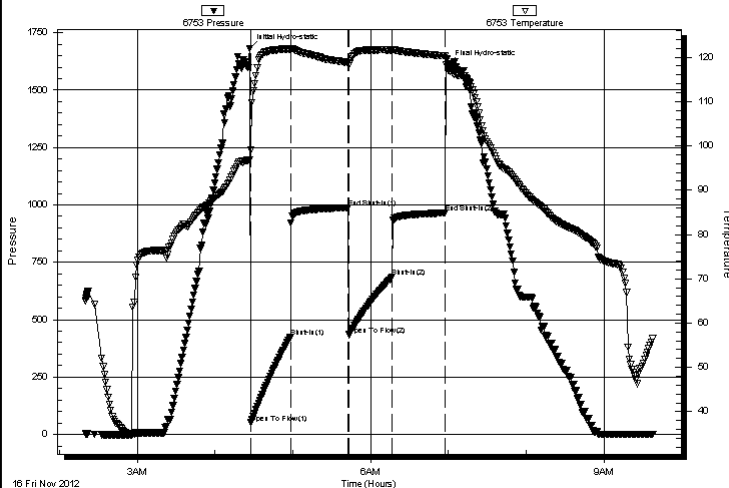
09:37:29

Time On Btm: 2012.11.16 @ 04:26:30

Time Off Btm: 2012.11.16 @ 07:00:00

TEST COMMENT: IF-BOB in 2 1/2 min
ISI-No blow
FF-BOB in 3 1/2 min
FSI-1/2" blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1681.77	96.82	Initial Hydro-static
1	50.65	98.98	Open To Flow (1)
32	424.40	121.82	Shut-In(1)
76	988.32	118.81	End Shut-In(1)
77	434.37	118.47	Open To Flow (2)
110	685.27	121.60	Shut-In(2)
151	965.16	120.26	End Shut-In(2)
154	1609.56	117.11	Final Hydro-static

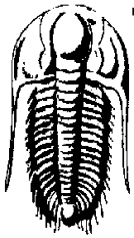
Recovery

Length (ft)	Description	Volume (bbl)
435.00	Water	5.83
794.00	VSOCW 2%O 98%W	11.14
1.00	Free Oil	0.01

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

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50799

DST#: 4

ATTN: Ron Nelson

Test Start: 2012.11.16 @ 02:20:00

GENERAL INFORMATION:

Formation: **KC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:27:30

Time Test Ended: 09:37:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3426.00 ft (KB) To 3444.00 ft (KB) (TVD)

Total Depth: 3444.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2082.00 ft (KB)

2074.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8166 Outside

Press@RunDepth: psig @ 3427.00 ft (KB)

Start Date: 2012.11.16

End Date:

2012.11.16

Start Time: 02:20:05

End Time:

09:37:29

Capacity: 8000.00 psig

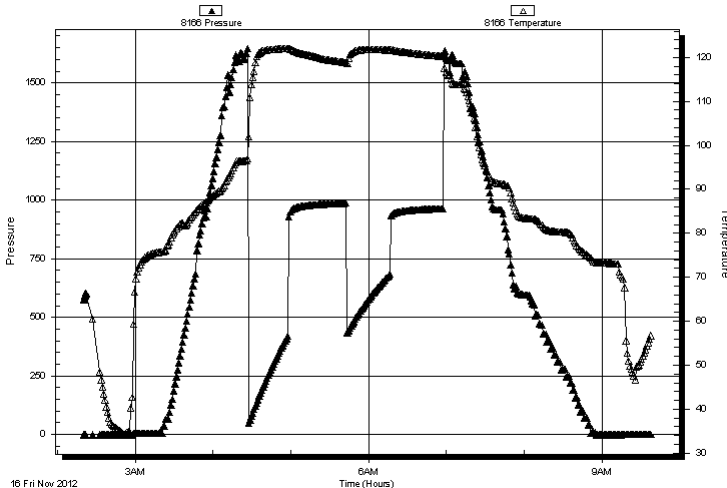
Last Calib.: 2012.11.16

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-BOB in 2 1/2 min
ISI-No blow
FF-BOB in 3 1/2 min
FSI-1/2" blow

Pressure vs. Time



PRESSURE SUMMARY

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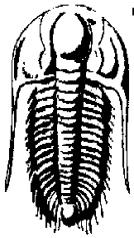
Recovery

Length (ft)	Description	Volume (bbl)
435.00	Water	5.83
794.00	VSOCW 2%O 98%W	11.14
1.00	Free Oil	0.01

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50799

DST#: 4

ATTN: Ron Nelson

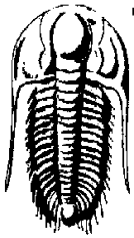
Test Start: 2012.11.16 @ 02:20:00

Tool Information

Drill Pipe:	Length:	3391.00 ft	Diameter:	3.80 inches	Volume:	47.57 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:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:	60000.00 lb
					Total Volume:	- bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		16.00 ft					String Weight: Initial	50000.00 lb
Depth to Top Packer:		3426.00 ft					Final	58000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		18.00 ft						
Tool Length:		39.00 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			3406.00	
Shut In Tool	5.00			3411.00	
Hydraulic tool	5.00			3416.00	
Packer	5.00			3421.00	21.00 Bottom Of Top Packer
Packer	5.00			3426.00	
Stubb	1.00			3427.00	
Recorder	0.00	6753	Inside	3427.00	
Recorder	0.00	8166	Outside	3427.00	
Perforations	14.00			3441.00	
Bullnose	3.00			3444.00	18.00 Bottom Packers & Anchor
Total Tool Length:	39.00				



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50799

DST#: 4

ATTN: Ron Nelson

Test Start: 2012.11.16 @ 02:20:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 50.00 sec/qt

Water Loss: 8.78 in³

Resistivity: ohm.m

Salinity: 7000.00 ppm

Filter Cake: 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
435.00	Water	5.829
794.00	VSOCW 2%O 98%W	11.138
1.00	Free Oil	0.014

Total Length: 1230.00 ft

Total Volume: 16.981 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

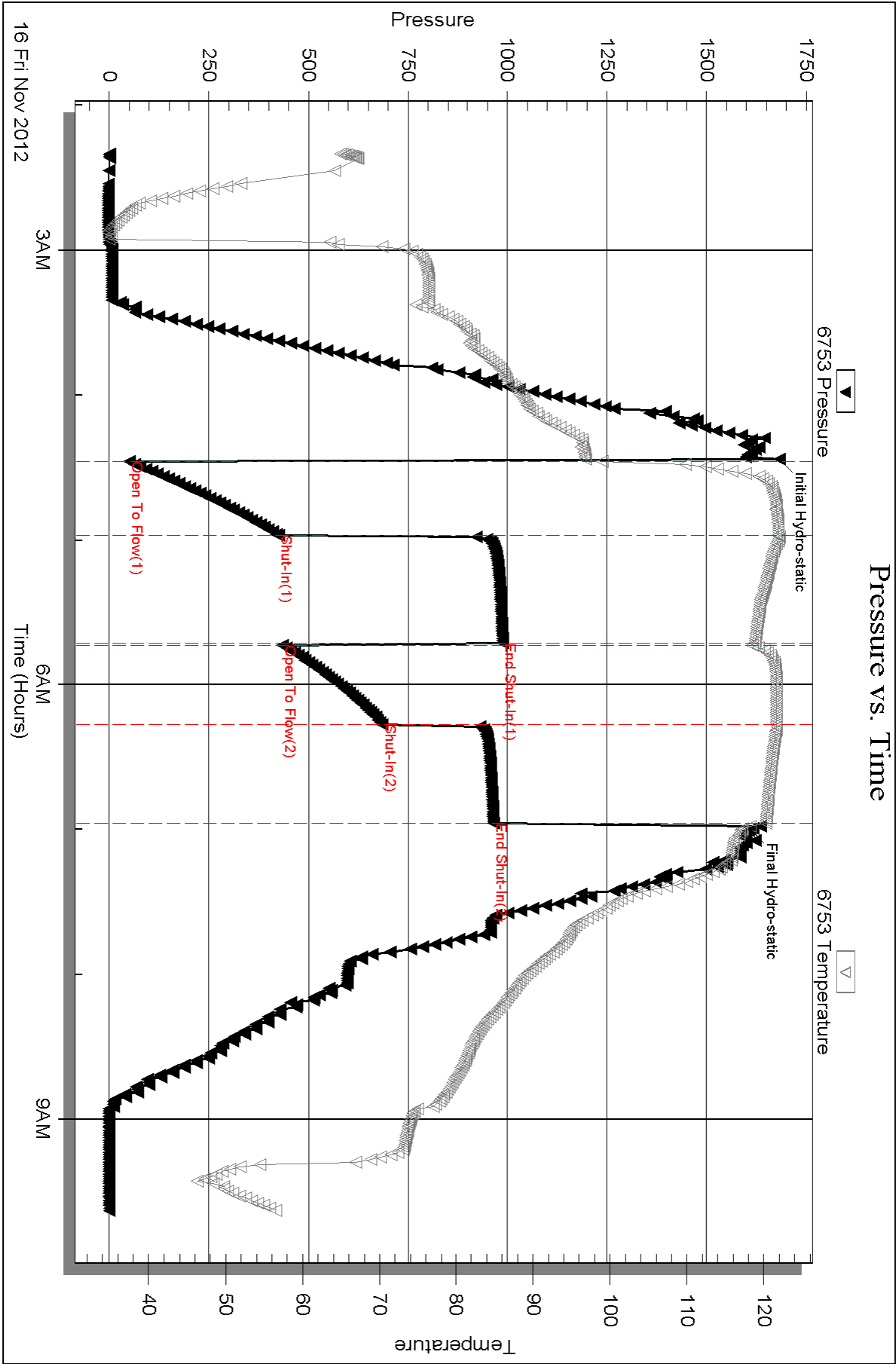
Serial #: 6753

Inside

Dow nung-Nelson Oil Co.

Chas-Mar #1-13

DST Test Number: 4



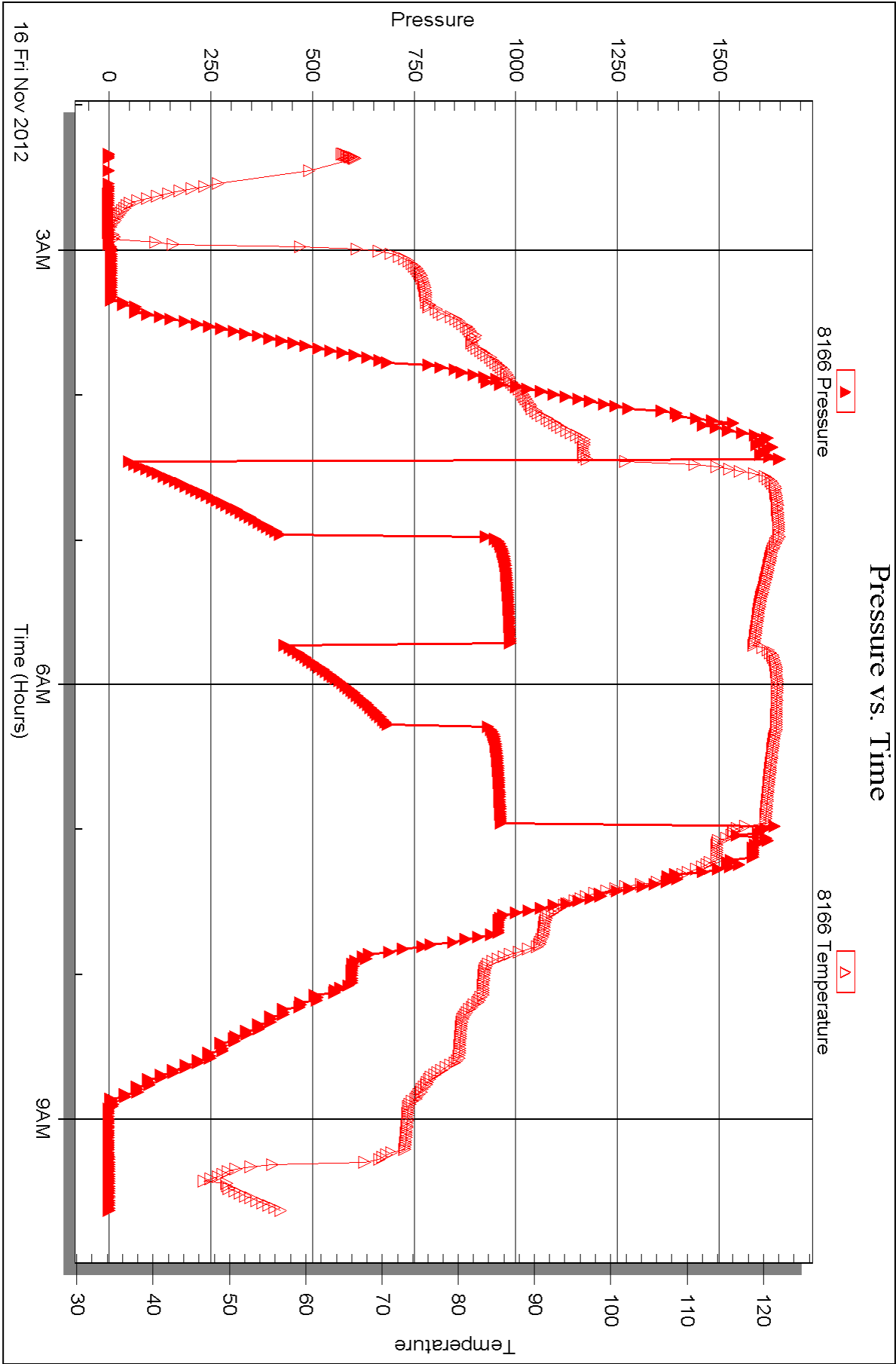
Serial #: 8166

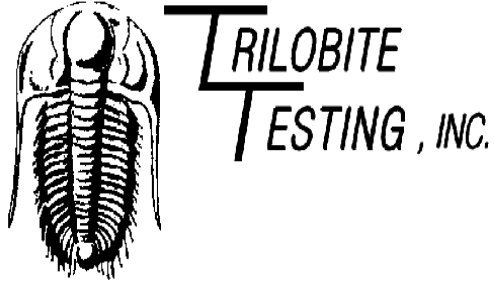
Outside

Dow n/g-Nelson Oil Co.

Chas-Mar #1-13

DST Test Number: 4





DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co.**

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Chas-Mar #1-13

13-13s-19w Ellis,KS

Start Date: 2012.11.16 @ 19:40:00

End Date: 2012.11.17 @ 01:04:00

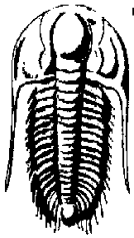
Job Ticket #: 50800 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.23 @ 09:01:49



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50800

DST#: 5

ATTN: Ron Nelson

Test Start: 2012.11.16 @ 19:40:00

GENERAL INFORMATION:

Formation: **KC"J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:23:00

Time Test Ended: 01:04:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3536.00 ft (KB) To 3555.00 ft (KB) (TVD)

Total Depth: 3555.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2082.00 ft (KB)

2074.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6753 Inside

Press@RunDepth: 26.99 psig @ 3537.00 ft (KB)

Start Date: 2012.11.16

End Date:

2012.11.17

Start Time: 19:40:05

End Time:

01:03:59

Capacity: 8000.00 psig

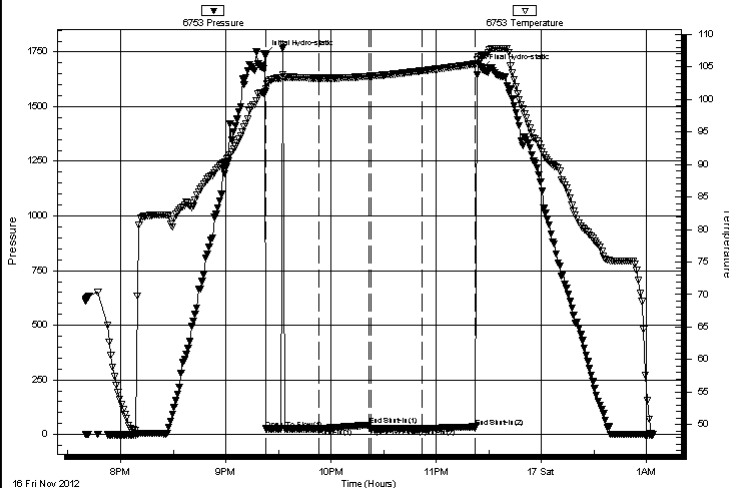
Last Calib.: 2012.11.17

Time On Btm: 2012.11.16 @ 21:22:00

Time Off Btm: 2012.11.16 @ 23:26:00

TEST COMMENT: IF-1 1/2" blow
ISI-No Blow
FF-Very weak surface blow
FSI-No blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1740.34	101.04	Initial Hydro-static
1	26.15	101.60	Open To Flow (1)
31	26.31	103.28	Shut-In(1)
60	43.37	103.57	End Shut-In(1)
61	27.30	103.59	Open To Flow (2)
90	26.99	104.40	Shut-In(2)
121	35.28	105.46	End Shut-In(2)
124	1676.29	106.67	Final Hydro-static

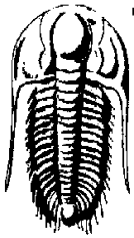
Recovery

Length (ft)	Description	Volume (bbl)
20.00	Oil spotted mud	0.10

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

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50800

DST#: 5

ATTN: Ron Nelson

Test Start: 2012.11.16 @ 19:40:00

GENERAL INFORMATION:

Formation: **KC"J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:23:00

Time Test Ended: 01:04:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3536.00 ft (KB) To 3555.00 ft (KB) (TVD)

Reference Elevations: 2082.00 ft (KB)

Total Depth: 3555.00 ft (KB) (TVD)

2074.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8166 Outside

Press@RunDepth: psig @ 3537.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.16

End Date:

2012.11.17

Last Calib.:

2012.11.17

Start Time: 19:40:05

End Time:

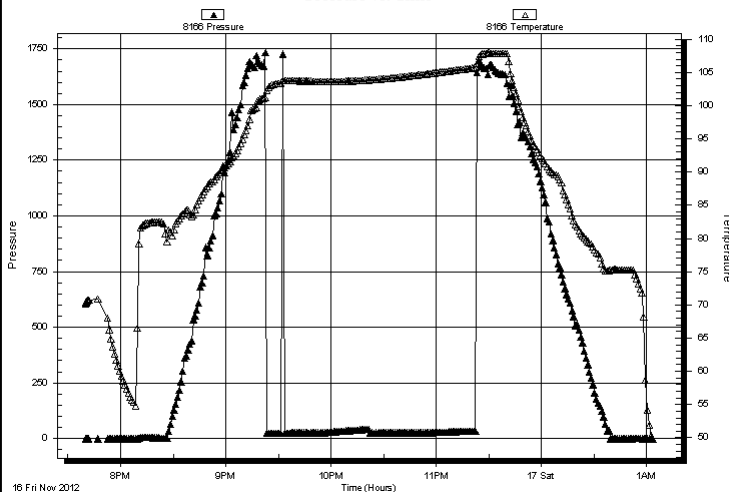
01:03:59

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-1 1/2" blow
ISI-No Blow
FF-Very weak surface blow
FSI-No blow

Pressure vs. Time



PRESSURE SUMMARY

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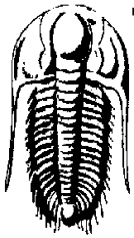
Recovery

Length (ft)	Description	Volume (bbl)
20.00	Oil spotted mud	0.10

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50800

DST#: 5

ATTN: Ron Nelson

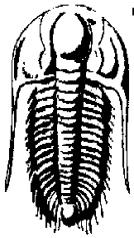
Test Start: 2012.11.16 @ 19:40:00

Tool Information

Drill Pipe:	Length:	3515.00 ft	Diameter:	3.80 inches	Volume:	49.31 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:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:	65000.00 lb
					Total Volume:	- bbl	Tool Chased	2.00 ft
Drill Pipe Above KB:		30.00 ft					String Weight: Initial	50000.00 lb
Depth to Top Packer:		3536.00 ft					Final	50000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		19.00 ft						
Tool Length:		40.00 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			3516.00	
Shut In Tool	5.00			3521.00	
Hydraulic tool	5.00			3526.00	
Packer	5.00			3531.00	21.00 Bottom Of Top Packer
Packer	5.00			3536.00	
Stubb	1.00			3537.00	
Recorder	0.00	6753	Inside	3537.00	
Recorder	0.00	8166	Outside	3537.00	
Perforations	15.00			3552.00	
Bullnose	3.00			3555.00	19.00 Bottom Packers & Anchor
Total Tool Length:	40.00				



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 50800

DST#: 5

ATTN: Ron Nelson

Test Start: 2012.11.16 @ 19:40:00

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: 48.00 sec/qt

Cushion Volume:

bbl

Water Loss: 10.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 11000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	Oil spotted mud	0.098

Total Length: 20.00 ft

Total Volume: 0.098 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 6753

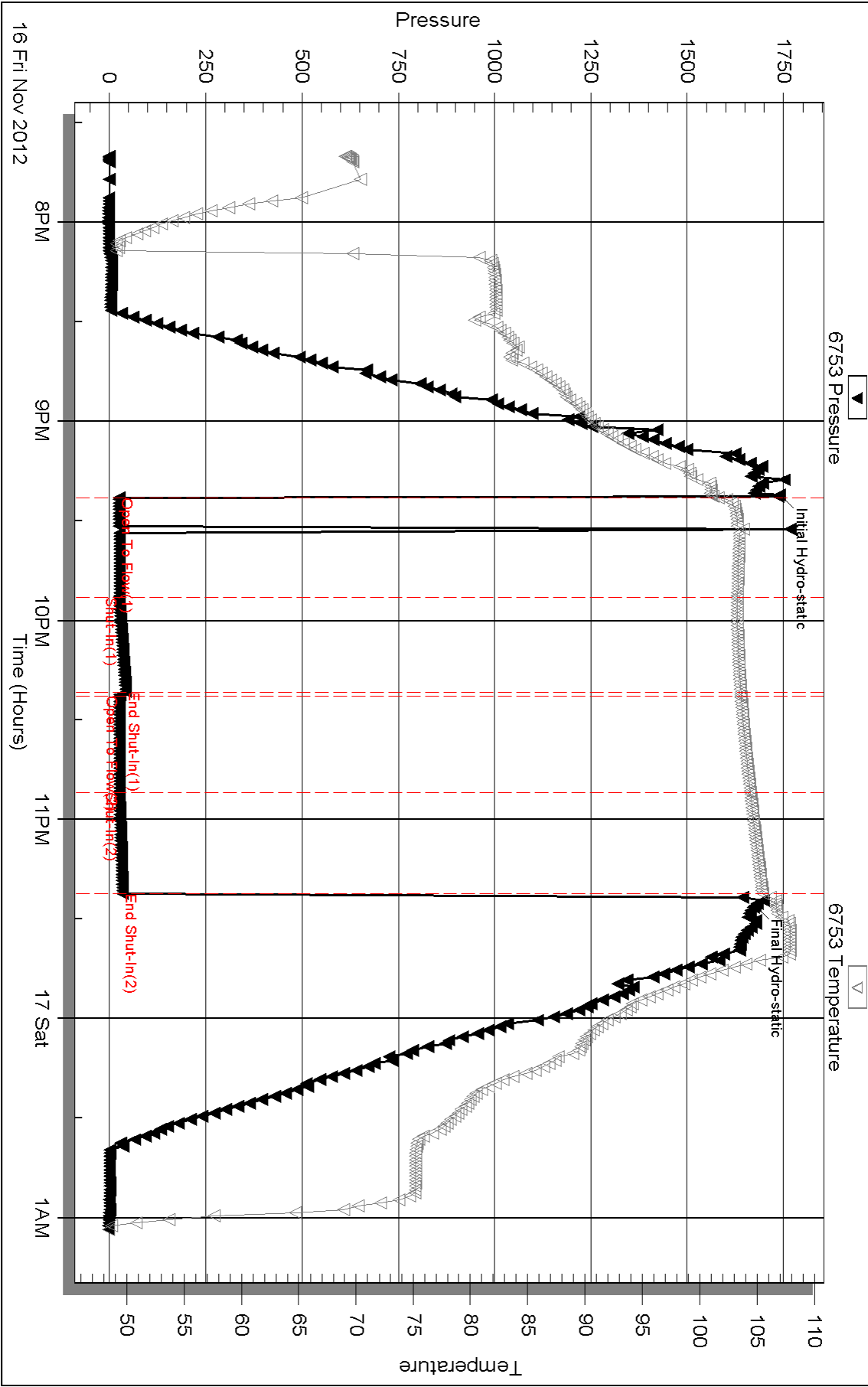
Inside

Dow nung-Nelson Oil Co.

Chas-Mar #1-13

DST Test Number: 5

Pressure vs. Time



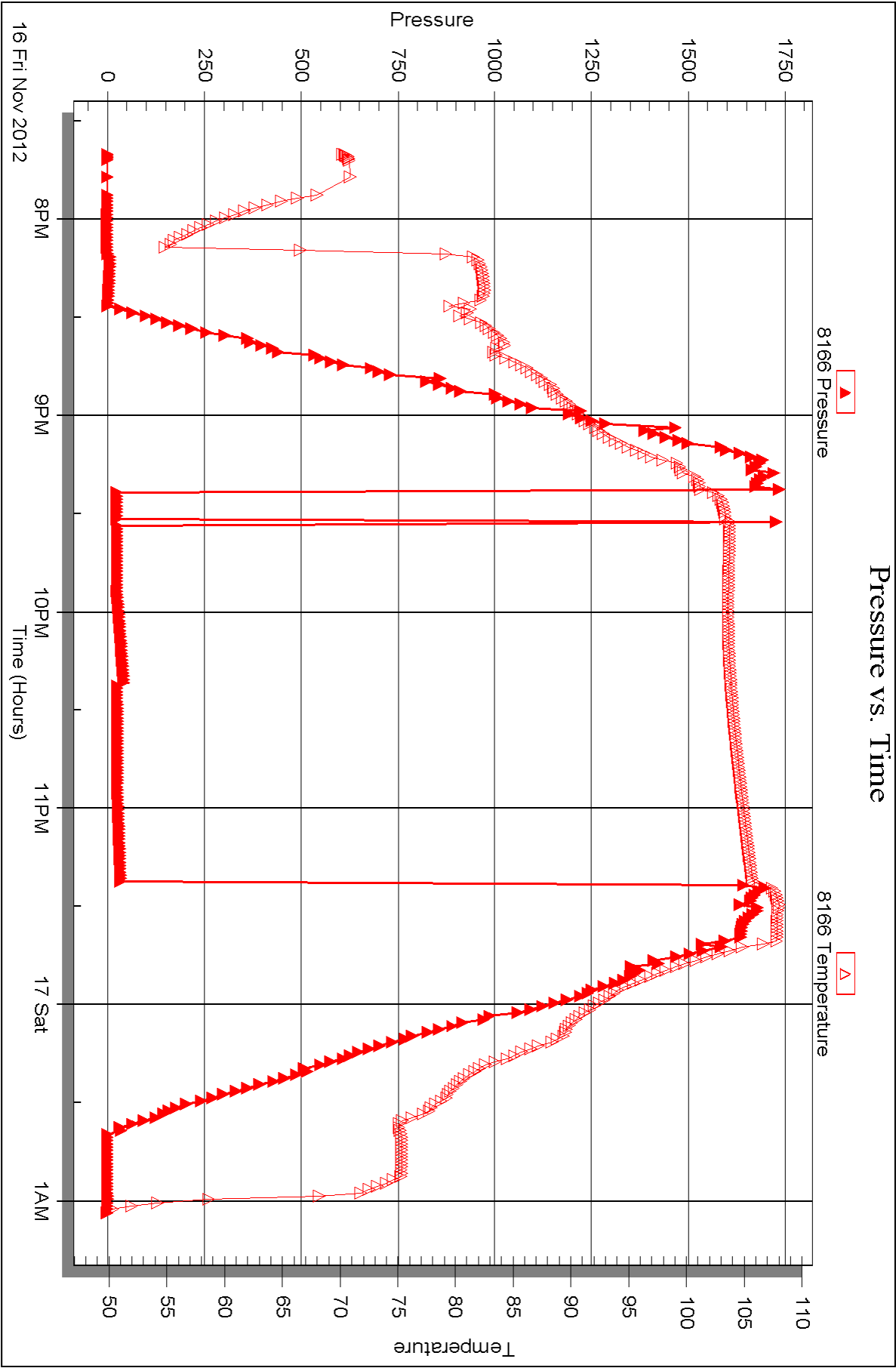
Serial #: 8166

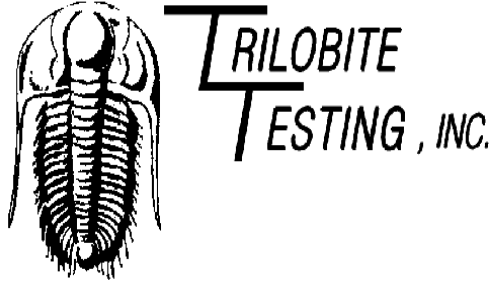
Outside

Dow nung-Nelson Oil Co.

Chas-Mar #1-13

DST Test Number: 5





DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co.**

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Chas-Mar #1-13

13-13s-19w Ellis,KS

Start Date: 2012.11.17 @ 13:30:00

End Date: 2012.11.17 @ 20:23:00

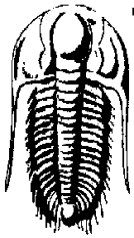
Job Ticket #: 51227 DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.23 @ 09:01:05



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 51227

DST#: 6

ATTN: Ron Nelson

Test Start: 2012.11.17 @ 13:30:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:29:30

Time Test Ended: 20:23:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3623.00 ft (KB) To 3684.00 ft (KB) (TVD)

Reference Elevations: 2082.00 ft (KB)

Total Depth: 3684.00 ft (KB) (TVD)

2074.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6753 Inside

Press@RunDepth: 45.22 psig @ 3624.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.17

End Date:

2012.11.17

Last Calib.: 2012.11.17

Start Time: 13:30:05

End Time:

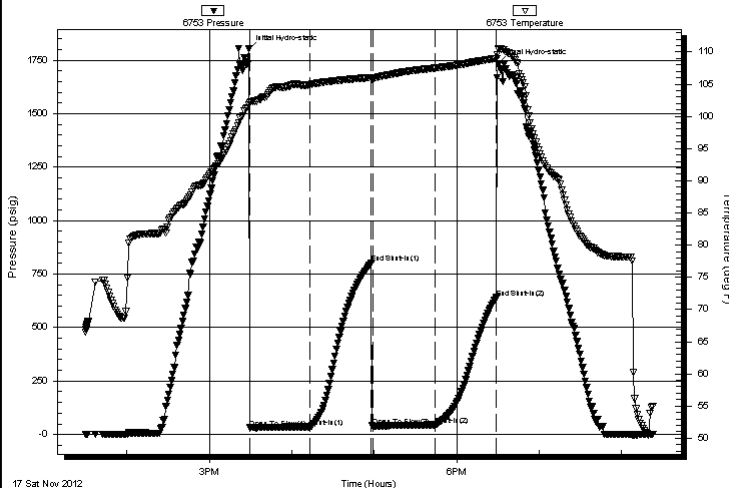
20:22:59

Time On Btm: 2012.11.17 @ 15:28:30

Time Off Btm: 2012.11.17 @ 18:30:30

TEST COMMENT: IF-1 1/4" blow
ISI-No blow
FF-1 1/2" blow
FSI-No blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1802.19	101.82	Initial Hydro-static
1	31.10	102.05	Open To Flow (1)
45	36.05	104.96	Shut-In(1)
90	800.58	106.02	End Shut-In(1)
91	38.50	105.82	Open To Flow (2)
136	45.22	107.50	Shut-In(2)
181	640.08	108.99	End Shut-In(2)
182	1732.30	110.56	Final Hydro-static

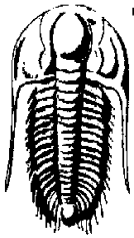
Recovery

Length (ft)	Description	Volume (bbl)
55.00	SOCM 20%O 80%M	0.50
15.00	SGO 5%G 95%O	0.21

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

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 51227

DST#: 6

ATTN: Ron Nelson

Test Start: 2012.11.17 @ 13:30:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:29:30

Time Test Ended: 20:23:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3623.00 ft (KB) To 3684.00 ft (KB) (TVD)

Total Depth: 3684.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2082.00 ft (KB)

2074.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8166 Outside

Press@RunDepth: psig @ 3624.00 ft (KB)

Start Date: 2012.11.17

End Date:

2012.11.17

Start Time: 13:30:05

End Time:

20:22:59

Capacity: 8000.00 psig

Last Calib.:

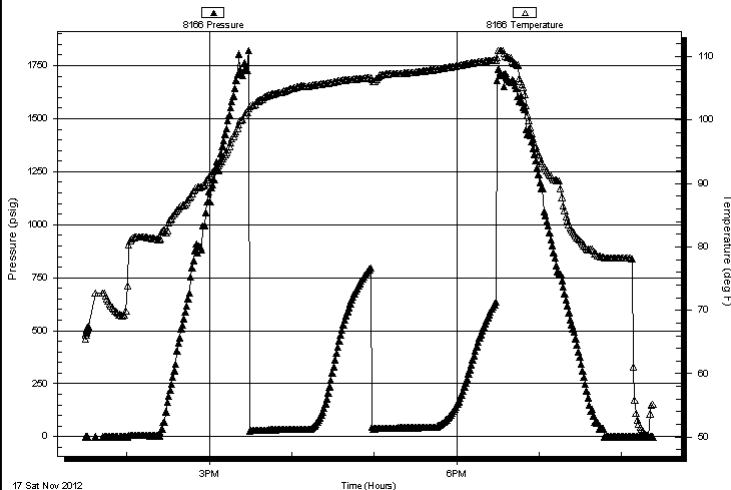
2012.11.17

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-1 1/4" blow
ISI-No blow
FF-1 1/2" blow
FSI-No blow

Pressure vs. Time



PRESSURE SUMMARY

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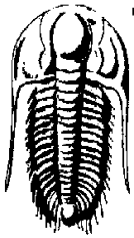
Recovery

Length (ft)	Description	Volume (bbl)
55.00	SOCM 20%O 80%M	0.50
15.00	SGO 5%G 95%O	0.21

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 51227

DST#: 6

ATTN: Ron Nelson

Test Start: 2012.11.17 @ 13:30:00

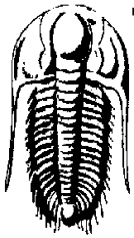
Tool Information

Drill Pipe:	Length:	3582.00 ft	Diameter:	3.80 inches	Volume:	50.25 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:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:	60000.00 lb
					Total Volume:	- bbl	Tool Chased	2.00 ft
Drill Pipe Above KB:		10.00 ft					String Weight: Initial	51000.00 lb
Depth to Top Packer:		3623.00 ft					Final	51000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		61.00 ft						
Tool Length:		82.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				
Tool Comments:								

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Change Over Sub	1.00			3603.00	
Shut In Tool	5.00			3608.00	
Hydraulic tool	5.00			3613.00	
Packer	5.00			3618.00	21.00 Bottom Of Top Packer
Packer	5.00			3623.00	
Stubb	1.00			3624.00	
Recorder	0.00	6753	Inside	3624.00	
Recorder	0.00	8166	Outside	3624.00	
Perforations	23.00			3647.00	
Change Over Sub	1.00			3648.00	
Drill Pipe	32.00			3680.00	
Change Over Sub	1.00			3681.00	
Bullnose	3.00			3684.00	61.00 Bottom Packers & Anchor

Total Tool Length: 82.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co.

13-13s-19w Ellis,KS

PO Box 1019
Hays KS 67601

Chas-Mar #1-13

Job Ticket: 51227

DST#: 6

ATTN: Ron Nelson

Test Start: 2012.11.17 @ 13:30:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 51.00 sec/qt

Water Loss: 10.79 in³

Resistivity: ohm.m

Salinity: 8000.00 ppm

Filter Cake: inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

33 deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
55.00	SOCM 20%O 80%M	0.498
15.00	SGO 5%G 95%O	0.210

Total Length: 70.00 ft

Total Volume: 0.708 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 6753

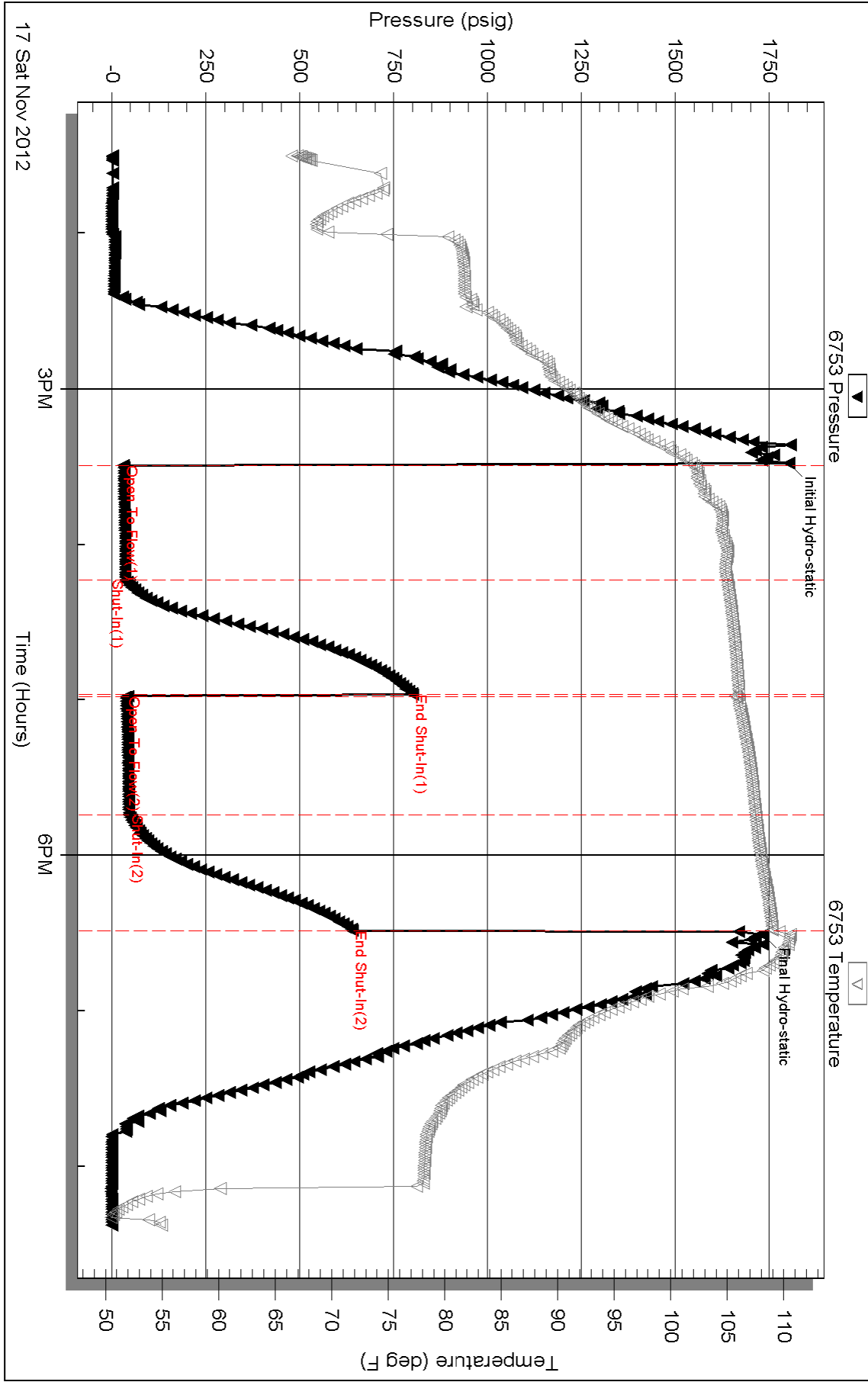
Inside

Dow nung-Nelson Oil Co.

Chas-Mar #1-13

DST Test Number: 6

Pressure vs. Time



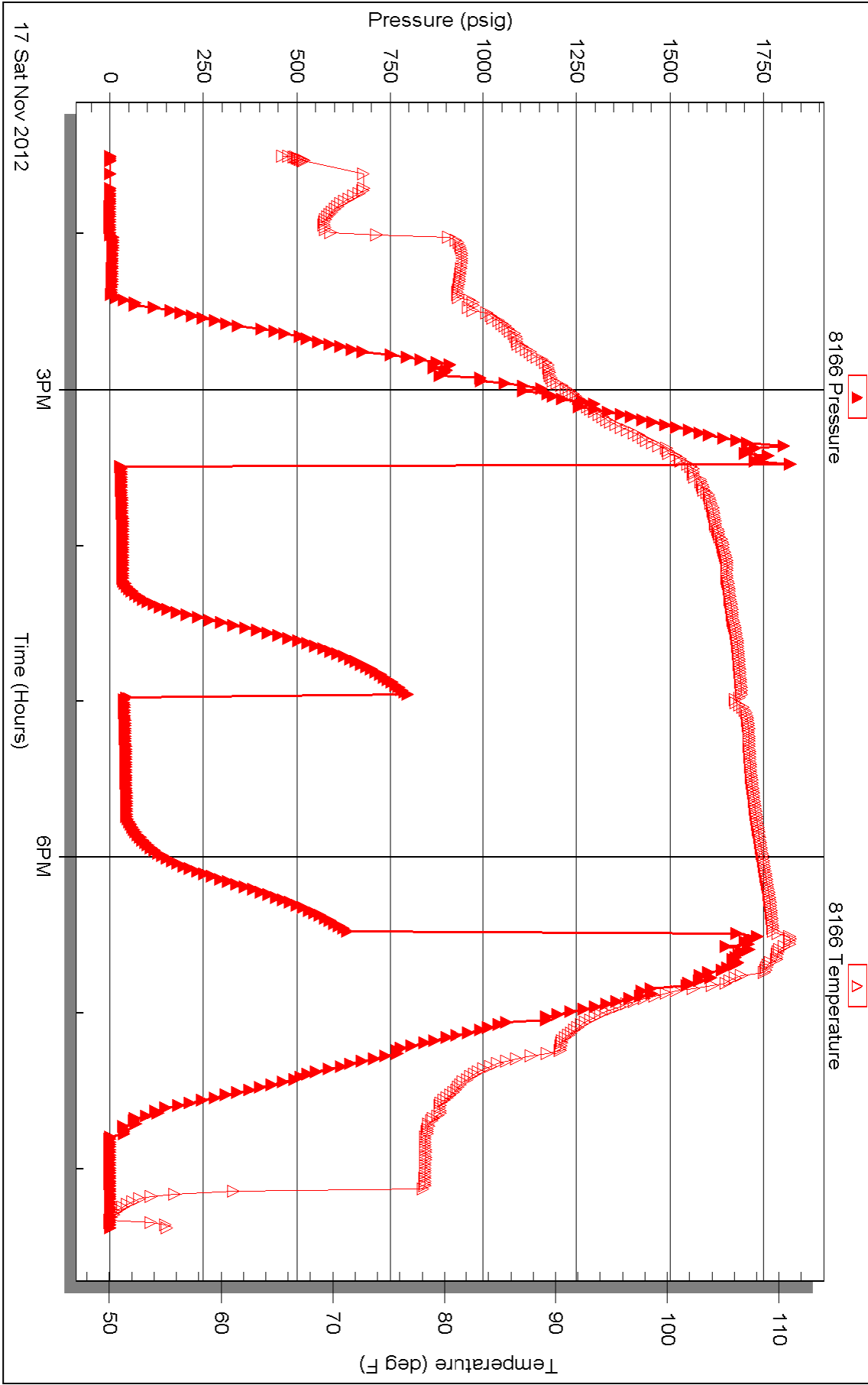
Serial #: 8166

Outside Dow nting-Nelson Oil Co.

Chas-Mar #1-13

DST Test Number: 6

Pressure vs. Time





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **50796**

Well Name & No. chas-Mar #1-13 Test No. 1 Date 11/14/12
 Company Downing-Nelson Oil Co Inc. Elevation 2082 KB 2074 GL
 Address PO Box 1019 Hays KS 67601
 Co. Rep / Geo. Ron Nelson Rig Discovery #3
 Location: Sec. 13 Twp. 13 Rge. 19 Co. Ellis State KS

Interval Tested 3107 - 3150 Zone Tested Topack a
 Anchor Length 43 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth 3102 Drill Collars Run 30 Vis _____
 Bottom Packer Depth 3107 Wt. Pipe Run _____ WL _____
 Total Depth 3150 Chlorides _____ ppm System LCM _____

Blow Description IF - very weak surface blow
IS - No blow
FF - Very weak surface blow died in 10 min
FS - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>50</u>	<u>oil spotted wcm</u>		<u>40</u>	<u>60</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 50 BHT 99 Gravity _____ API RW 155 @ 35 °F Chlorides 25000 ppm
 (A) Initial Hydrostatic 1,491 ☒ Test 1150 T-On Location 1:05
 (B) First Initial Flow 20 ☐ Jars _____ T-Started 1:30
 (C) First Final Flow 34 ☐ Safety Joint _____ T-Open 3:48
 (D) Initial Shut-In 700 ☐ Circ Sub _____ T-Pulled 5:48
 (E) Second Initial Flow 35 ☐ Hourly Standby _____ T-Out 7:35
 (F) Second Final Flow 46 ☒ Mileage 20.7 31 Comments _____
 (G) Final Shut-In 667 ☐ Sampler _____
 (H) Final Hydrostatic 1,461 ☐ Straddle _____
☐ Shale Packer _____
☐ Extra Packer _____
☐ Extra Recorder _____
☐ Day Standby _____
☐ Accessibility _____

Initial Open 30 ☐ Ruined Shale Packer _____
 Initial Shut-In 30 ☐ Ruined Packer _____
 Final Flow 30 ☐ Extra Copies _____
 Final Shut-In 30 Sub Total 0
 Sub Total 1181 Total 1181
 MP/DST Disc't _____

Approved By _____ Our Representative Butt Dine
 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. **50797**

Well Name & No. chas-Mar # 1-13 Test No. 2 Date 11/14/12
 Company Powning-Nelson Oil Co Inc. Elevation 2082 KB 2074 GL
 Address PO Box 1019 Hays KS 67601
 Co. Rep / Geo. Ron Nelson Rig Discovery #3
 Location: Sec. 13 Twp. 13 Rge. 19 Co. Ellis State KS

Interval Tested 3320 - 3381 Zone Tested Toronto - KC "A"
 Anchor Length 61 Drill Pipe Run _____ Mud Wt. 8.7
 Top Packer Depth 3315 Drill Collars Run 30 Vis 46
 Bottom Packer Depth 3320 Wt. Pipe Run — WL 8.0
 Total Depth 3381 Chlorides 1,000 ppm System LCM _____
 Blow Description IF - 1 1/4 in blow
ISL - No blow
FF - Very weak surface blow
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>3</u>	<u>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 5 BHT 104 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm
 (A) Initial Hydrostatic 1623 ☒ Test 1150 T-On Location 22:10
 (B) First Initial Flow 16 ☐ Jars _____ T-Started 22:53
 (C) First Final Flow 19 ☐ Safety Joint _____ T-Open 00:35
 (D) Initial Shut-In 79 ☐ Circ Sub _____ T-Pulled 3:55
 (E) Second Initial Flow 20 ☐ Hourly Standby _____ T-Out 5:40
 (F) Second Final Flow 25 ☒ Mileage 20-1 31 Comments _____
 (G) Final Shut-In 62 ☐ Sampler _____
 (H) Final Hydrostatic 1569 ☐ Straddle _____

☐ Ruined Shale Packer _____
☐ Ruined Packer _____
☐ Extra Copies _____
 Initial Open 45 ☐ Shale Packer _____
 Initial Shut-In 45 ☐ Extra Packer _____
 Final Flow 45 ☐ Extra Recorder _____
 Final Shut-In 45 ☐ Day Standby _____
☐ Accessibility _____
 Sub Total 1181 Sub Total 1181

Approved By _____ Our Representative Bud Jones
 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. **50798**

Well Name & No. chas-Mar # 1-13 Test No. 3 Date 11/15/12
 Company Downing-Nelson Oil Co Inc. Elevation 2082 KB 2074 GL
 Address PO Box 1019 Hays KS 67601
 Co. Rep / Geo. Ron Nelson Rig Discovery #3
 Location: Sec. 13 Twp. 13 Rge. 19 Co. Ellis State KS

Interval Tested 3386-~~3402~~ 3432 Zone Tested KCC, D"
 Anchor Length 46 Drill Pipe Run 3358 Mud Wt. _____
 Top Packer Depth 3381 Drill Collars Run 30 Vis _____
 Bottom Packer Depth 3386 Wt. Pipe Run — WL _____
 Total Depth 3436 Chlorides _____ ppm System LCM _____

Blow Description IF - BOB in 2min
IST - No blow
FF - BOB Immediately
FST - BOB 18min

Rec	Feet of	%gas	%oil	%water	%mud
<u>310-40</u>	<u>60 GSOCH</u>	<u>40 30%</u>	<u>60 20%</u>	<u>45%</u>	<u>5%</u>
<u>185</u>	<u>650CH</u>	<u>40%</u>	<u>10%</u>	<u>50%</u>	<u>%mud</u>
<u>245</u>	<u>650CH</u>	<u>10%</u>	<u>5%</u>	<u>85%</u>	<u>%mud</u>
<u>390</u>	<u>60CH</u>	<u>10%</u>	<u>20%</u>	<u>70%</u>	<u>%mud</u>
<u>430</u>	<u>water</u>	<u>440-4 GTP</u>	<u>%gas</u>	<u>%oil</u>	<u>%water</u>

Rec Total 1550 BHT 118 Gravity 38 API RW .07 @ 65 °F Chlorides 130,000 ppm

(A) Initial Hydrostatic <u>1,660</u>	☒ Test <u>1150</u>	T-On Location <u>12:50</u>
(B) First Initial Flow <u>78</u>	☐ Jars _____	T-Started <u>13:10</u>
(C) First Final Flow <u>548</u>	☐ Safety Joint _____	T-Open <u>15:15</u>
(D) Initial Shut-In <u>1,065</u>	☐ Circ Sub _____	T-Pulled <u>17:15</u>
(E) Second Initial Flow <u>544</u>	☐ Hourly Standby _____	T-Out <u>20:25</u>
(F) Second Final Flow <u>785</u>	☒ Mileage <u>20.1</u> <u>31</u>	Comments _____
(G) Final Shut-In <u>999</u>	☐ Sampler _____	
(H) Final Hydrostatic <u>1,595</u>	☐ Straddle _____	

Initial Open <u>30</u>	☐ Shale Packer _____	☐ Ruined Shale Packer _____
Initial Shut-In <u>45 30</u>	☐ Extra Packer _____	☐ Ruined Packer _____
Final Flow <u>30</u>	☐ Extra Recorder _____	☐ Extra Copies _____
Final Shut-In <u>45 30</u>	☐ Day Standby _____	Sub Total <u>0</u>
	☐ Accessibility _____	Total <u>1181</u>
	Sub Total <u>1181</u>	MP/DST Disc't _____

Approved By _____ Our Representative Brian 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. 50799

Well Name & No. Chas-Mar #1-13 Test No. 4 Date 11/16/12
 Company Downing - Nelson Oil Co Inc Elevation 2082 KB 2074 GL
 Address PO Box 1019 Hays KS 67601
 Co. Rep / Geo. Ron Nelson Rig Discovery #3
 Location: Sec. 13 Twp. 13 Rge. 19 Co. Ellis State KS

Interval Tested 3426 - 3444 Zone Tested KC"E"
 Anchor Length 18 Drill Pipe Run _____ Mud Wt. 8.7
 Top Packer Depth 3421 Drill Collars Run 30 Vis 50
 Bottom Packer Depth 3426 Wt. Pipe Run _____ WL 8.8
 Total Depth 3444 Chlorides 2000 ppm System LCM 1 1/2

Blow Description IF - BOB in 2 1/2 min
ISI - No blow
FF - BOB in 3 1/2 min
FSI - 1/2 in blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>Free Oil</u>				
<u>794</u>	<u>VSOCW</u>		<u>2</u>	<u>98</u>	
<u>435</u>	<u>water</u>				
	<u>304 GIP</u>				

Rec Total 1230 BHT _____ Gravity _____ API RW .06 @ 55 °F Chlorides 200,000 ppm

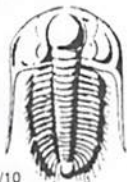
(A) Initial Hydrostatic 1682
 (B) First Initial Flow 51
 (C) First Final Flow 424
 (D) Initial Shut-In 988
 (E) Second Initial Flow 434
 (F) Second Final Flow 685
 (G) Final Shut-In 965
 (H) Final Hydrostatic 1610

☒ Test 1150
☐ Jars _____
☐ Safety Joint _____
☐ Circ Sub _____
☐ Hourly Standby _____
☒ Mileage 20.1 31
☐ Sampler _____
☐ Straddle _____
☐ Shale Packer _____
☐ Extra Packer _____
☐ Extra Recorder _____
☐ Day Standby _____
☐ Accessibility _____
 Sub Total 1181

T-On Location 2:05
 T-Started 2:20
 T-Open 4:28
 T-Pulled 6:38
 T-Out 9:39
 Comments _____
☐ Ruined Shale Packer _____
☐ Ruined Packer _____
☐ Extra Copies _____
 Sub Total 0
 Total 1181
 MP/DST Disc't _____

Initial Open 30
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 45

Approved By _____ Our Representative Burd
 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. **50800**

Well Name & No. chas-Mar #1-13 Test No. 5 Date 11/16/12
 Company Downing-Nelson Oil Co Inc. Elevation 2082 KB 2074 GL
 Address PO Box 1019 Hays KS 67601
 Co. Rep / Geo. Ron Nelson Rig Discovery #3
 Location: Sec. 13 Twp. 13 Rge. 19 Co. Ellis State KS

Interval Tested 3536-3555 Zone Tested AC"J"
 Anchor Length 19 Drill Pipe Run 3515 Mud Wt. 8.9
 Top Packer Depth 3531 Drill Collars Run 30 Vis 48
 Bottom Packer Depth 3536 Wt. Pipe Run — WL 10.8
 Total Depth 3555 Chlorides 11,000 ppm System LCM 1 1/2

Blow Description IF - 1 1/2 in blow
ISI - No blow
FF - Very weak surface blow
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>Oil Spilled 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 20 BHT 105 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

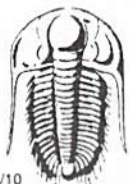
(A) Initial Hydrostatic 1740
 (B) First Initial Flow 26
 (C) First Final Flow 26
 (D) Initial Shut-In 43
 (E) Second Initial Flow 27
 (F) Second Final Flow 27
 (G) Final Shut-In 35
 (H) Final Hydrostatic 1,676

☒ Test 1150
☐ Jars _____
☐ Safety Joint _____
☐ Circ Sub _____
☐ Hourly Standby _____
☒ Mileage 20 RT 31
☐ Sampler _____
☐ Straddle _____
☐ Shale Packer _____
☐ Extra Packer _____
☐ Extra Recorder _____
☐ Day Standby _____
☐ Accessibility _____
 Sub Total 1181

T-On Location 19:15
 T-Started 19:40
 T-Open 21:20
 T-Pulled 23:20
 T-Out 1:00
 Comments _____
☐ Ruined Shale Packer _____
☐ Ruined Packer _____
☐ Extra Copies _____
 Sub Total 0
 Total 1181
 MP/DST Disc't _____

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

Approved By _____ Our Representative Burt Jan
 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. **51227**

4/10

Well Name & No. Chas-Mar #1-13 Test No. 6 Date 11/12/12
 Company Downing-Nelson Oil Co Inc. Elevation 2082 KB 2074 GL
 Address PO Box 1019 Hays KS 67601
 Co. Rep / Geo. Ron Nelson Rig Discovery #3
 Location: Sec. 13 Twp. 13 Rge. 19 Co. Ellis State KS

Interval Tested 3623-3684 Zone Tested A-b
 Anchor Length 61 Drill Pipe Run 3582 Mud Wt. 9.1
 Top Packer Depth 3618 Drill Collars Run 30 Vis 51
 Bottom Packer Depth 3623 Wt. Pipe Run - WL 10.8
 Total Depth 3684 Chlorides 8,000 ppm System LCM #1

Blow Description IF - 1 1/4 in blow
IS - No blow
EF - 1 1/2 in blow
ES - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>SGO</u>	<u>5</u>	<u>95</u>		
<u>55</u>	<u>SOCM</u>		<u>20</u>		<u>80</u>

Rec Total 70 BHT _____ Gravity 33 API RW _____ @ _____ °F Chlorides _____ ppm
 (A) Initial Hydrostatic 1,802 ☒ Test 1150 T-On Location 13:00
 (B) First Initial Flow 31 ☐ Jars _____ T-Started 13:30
 (C) First Final Flow 36 ☐ Safety Joint _____ T-Open 15:30
 (D) Initial Shut-In 801 ☐ Circ Sub _____ T-Pulled 18:30
 (E) Second Initial Flow 38 ☐ Hourly Standby _____ T-Out 20:20
 (F) Second Final Flow 45 ☒ Mileage 20.7 x 2 62 Comments pick up tools
 (G) Final Shut-In 640 ☐ Sampler _____
 (H) Final Hydrostatic 1,732 ☐ Straddle _____
☐ 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 1212 Total 1212
 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]
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