



DRILL STEM TEST REPORT

Prepared For: **Cobalt Energy LLC**

PO Box 8037
Wichita, KS 67208

ATTN: Larry Nicholson

Caroline " A " #2-19

19-6S-25W Graham,KS

Start Date: 2018.11.21 @ 01:20:00

End Date: 2018.11.21 @ 08:39:20

Job Ticket #: 64736 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2018.11.23 @ 11:10:53



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Cobalt Energy LLC

19-6S-25W Graham,KS

PO Box 8037
Wichita, KS 67208

Caroline " A " #2-19

ATTN: Larry Nicholson

Job Ticket: 64736

DST#: 1

Test Start: 2018.11.21 @ 01:20:00

GENERAL INFORMATION:

Formation: **LKC " B "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:00:10

Time Test Ended: 08:39:20

Test Type: Conventional Bottom Hole (Initial)

Tester: Martine Salinas

Unit No: 82

Interval: 3708.00 ft (KB) To 3732.00 ft (KB) (TVD)

Reference Elevations: 2618.00 ft (KB)

Total Depth: 3732.00 ft (KB) (TVD)

2613.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8959

Inside

Press@RunDepth: 152.84 psig @ 3709.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.11.21

End Date:

2018.11.21

Last Calib.:

2018.11.21

Start Time: 01:20:01

End Time:

08:39:20

Time On Btm:

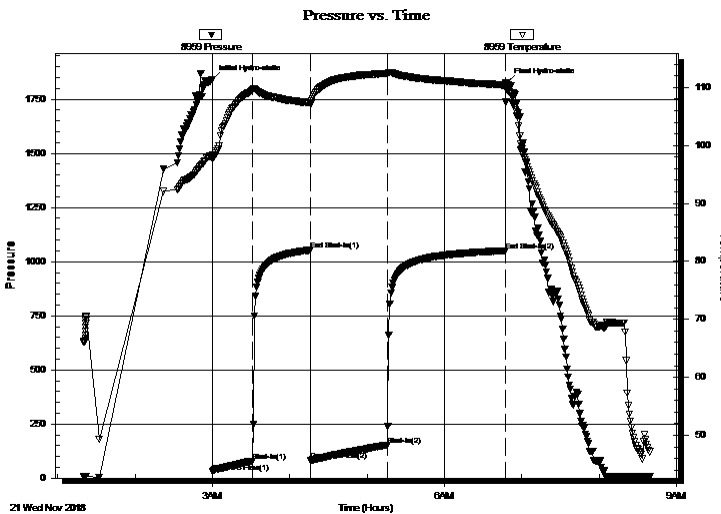
2018.11.21 @ 02:59:50

Time Off Btm:

2018.11.21 @ 06:48:30

TEST COMMENT: 30-IF-BOB (12 inches) @ 27 mins (blow increased to 13")
45-ISI-Surface blow back @ 1 1/2mins built to 1/8" dead @ 38 mins
60-FF-BOB (12 inches) @ 35 mins (blow increased to 19")
90-FSI-Surface blow back @ 3 mins built to 1/8" dead @ 45 mins

PRESSURE SUMMARY



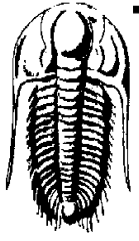
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1842.14	98.29	Initial Hydro-static
1	29.01	97.73	Open To Flow (1)
32	79.26	109.61	Shut-In(1)
77	1053.38	107.38	End Shut-In(1)
77	82.87	107.12	Open To Flow (2)
136	152.84	112.44	Shut-In(2)
228	1050.26	110.37	End Shut-In(2)
229	1825.36	109.68	Final Hydro-static

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
270.00	OSMCW 3%O, 8%M, 89%W	3.52
20.00	CGO 8%G, 92%O	0.28
0.00	90' GIP	0.00

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Cobalt Energy LLC

19-6S-25W Graham, KS

PO Box 8037
Wichita, KS 67208

Caroline " A " #2-19

Job Ticket: 64736

DST#: 1

ATTN: Larry Nicholson

Test Start: 2018.11.21 @ 01:20:00

GENERAL INFORMATION:

Formation: **LKC " B "**

Deviated: No Whipstock: ft (KB)

Test Type: Conventional Bottom Hole (Initial)

Time Tool Opened: 03:00:10

Tester: Martine Salinas

Time Test Ended: 08:39:20

Unit No: 82

Interval: 3708.00 ft (KB) To 3732.00 ft (KB) (TVD)

Reference Elevations: 2618.00 ft (KB)

Total Depth: 3732.00 ft (KB) (TVD)

2613.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8734 Outside

Press@RunDepth: psig @ 3709.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.11.21

End Date:

2018.11.21

Last Calib.:

2018.11.21

Start Time: 01:20:01

End Time:

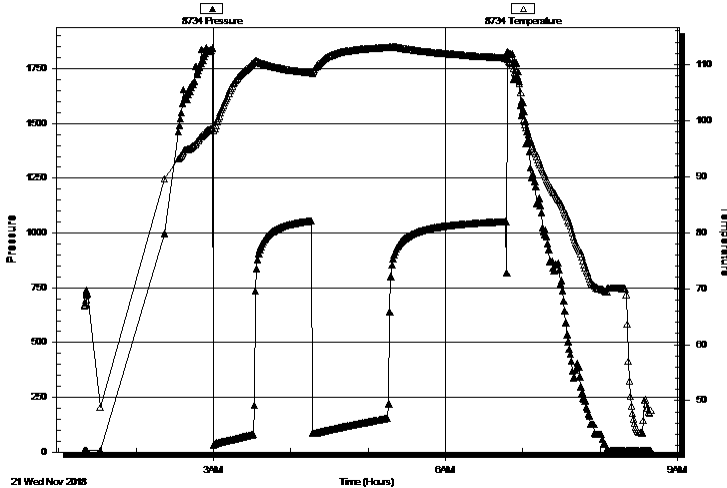
08:39:20

Time On Btm:

Time Off Btm:

TEST COMMENT: 30-IF-BOB (12 inches) @ 27 mins (blow increased to 13")
 45-ISI-Surface blow back @ 1 1/2mins built to 1/8" dead @ 38 mins
 60-FF-BOB (12 inches) @ 35 mins (blow increased to 19")
 90-FSI-Surface blow back @ 3 mins built to 1/8" dead @ 45 mins

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
270.00	OSMCW 3%O, 8%M, 89%W	3.52
20.00	CGO 8%G, 92%O	0.28
0.00	90' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Cobalt Energy LLC

19-6S-25W Graham,KS

PO Box 8037
Wichita, KS 67208

Caroline " A " #2-19

Job Ticket: 64736

DST#: 1

ATTN: Larry Nicholson

Test Start: 2018.11.21 @ 01:20:00

Tool Information

Drill Pipe:	Length: 3675.00 ft	Diameter: 3.80 inches	Volume: 51.55 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 29.00 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 56000.00 lb
			<u>Total Volume: 51.69 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 49000.00 lb
Depth to Top Packer:	3708.00 ft			Final 49000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	52.00 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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Shut In Tool	5.00			3685.00	
Hydraulic tool	5.00	1113		3690.00	
Jars	5.00	01-07		3695.00	
Safety Joint	3.00	-001		3698.00	
Packer	5.00			3703.00	28.00 Bottom Of Top Packer
Packer	5.00			3708.00	
Stubb	1.00			3709.00	
Recorder	0.00	8959	Inside	3709.00	
Recorder	0.00	8734	Outside	3709.00	
Perforations	18.00			3727.00	
Bullnose	5.00			3732.00	24.00 Bottom Packers & Anchor

Total Tool Length: 52.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Cobalt Energy LLC

19-6S-25W Graham,KS

PO Box 8037
Wichita, KS 67208

Caroline " A " #2-19

Job Ticket: 64736

DST#: 1

ATTN: Larry Nicholson

Test Start: 2018.11.21 @ 01:20:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

26.2 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

57000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
270.00	OSMCW 3%O, 8%M, 89%W	3.523
20.00	CGO 8%G, 92%O	0.281
0.00	90' GIP	0.000

Total Length: 290.00 ft Total Volume: 3.804 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

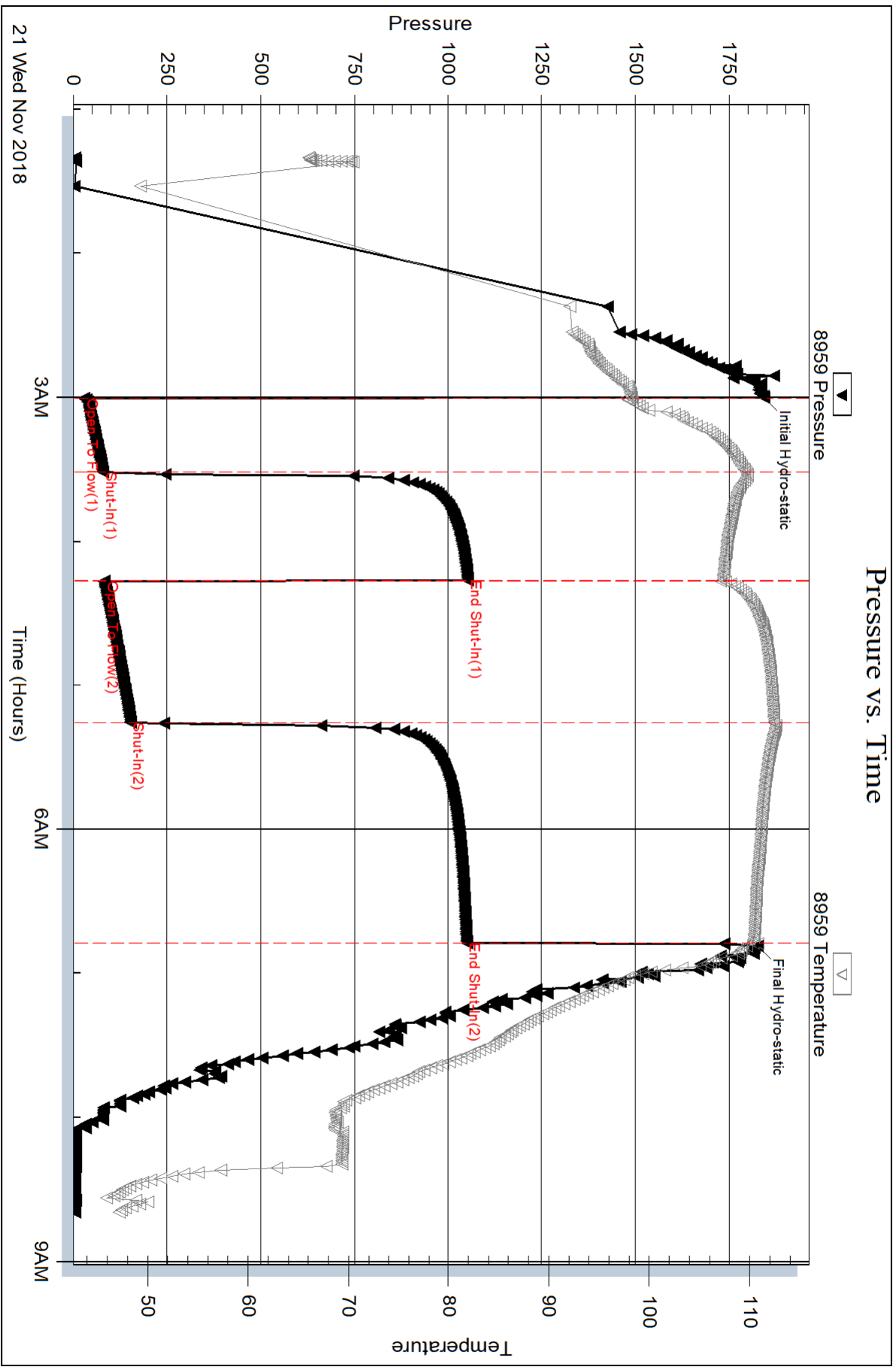
Laboratory Name:

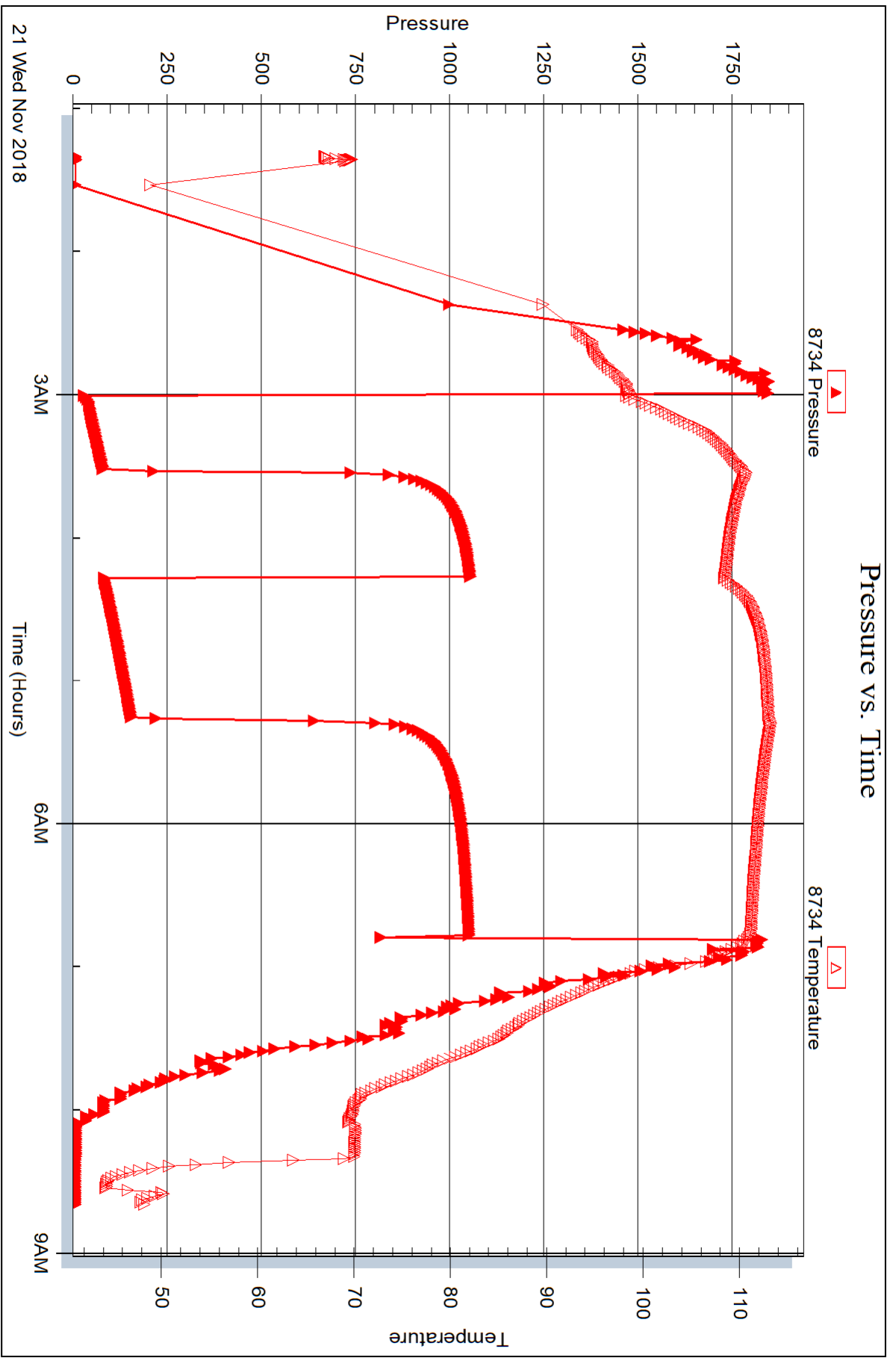
Laboratory Location:

Recovery Comments: Gravity of oil = 25.2 @ 50 degs

Gravity corrected to 26.2 @ 60 degs

RW= .175 @ 56.5 degs= 57,000PPM







DRILL STEM TEST REPORT

Prepared For: **Cobalt Energy LLC**

PO Box 8037
Wichita, KS 67208

ATTN: Larry Nicholson

Caroline " A " #2-19

19-6S-25W Graham,KS

Start Date: 2018.11.21 @ 15:41:00

End Date: 2018.11.21 @ 23:10:20

Job Ticket #: 64737 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2018.11.23 @ 11:09:20



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Cobalt Energy LLC

19-6S-25W Graham, KS

PO Box 8037
Wichita, KS 67208

Caroline " A " #2-19

ATTN: Larry Nicholson

Job Ticket: 64737

DST#: 2

Test Start: 2018.11.21 @ 15:41:00

GENERAL INFORMATION:

Formation: **LKC " C - F "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:31:40

Time Test Ended: 23:10:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

Interval: 3733.00 ft (KB) To 3770.00 ft (KB) (TVD)

Reference Elevations: 2618.00 ft (KB)

Total Depth: 3770.00 ft (KB) (TVD)

2613.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8959

Inside

Press@RunDepth: 46.55 psig @ 3734.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.11.21

End Date:

2018.11.21

Last Calib.:

2018.11.21

Start Time: 15:41:01

End Time:

23:10:20

Time On Btm:

2018.11.21 @ 17:31:30

Time Off Btm:

2018.11.21 @ 21:19:39

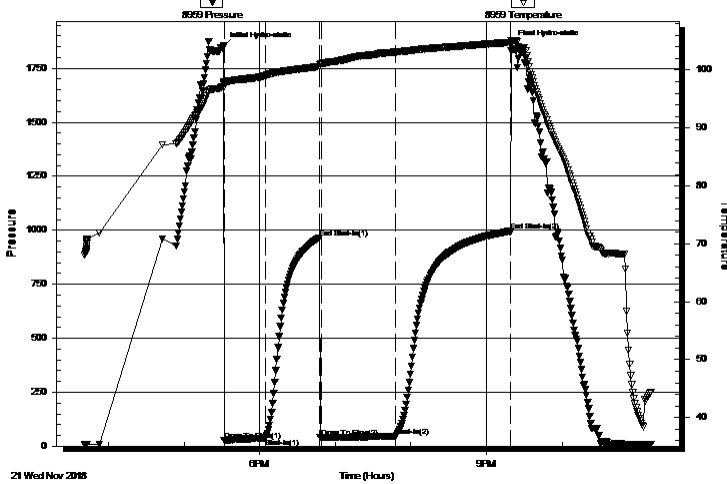
TEST COMMENT: 30-IF-Surface blow built to 3 1/2"

45-ISI- No blow

60-FF-Surface .blow built to 4 3/4"

90-FSI- No blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1852.28	97.94	Initial Hydro-static
1	27.27	97.17	Open To Flow (1)
33	37.73	99.08	Shut-In(1)
76	963.76	100.60	End Shut-In(1)
78	39.84	101.15	Open To Flow (2)
137	46.55	103.11	Shut-In(2)
228	994.87	104.78	End Shut-In(2)
229	1860.65	105.04	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	OCM 20% O 80% M	0.44

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Cobalt Energy LLC

19-6S-25W Graham,KS

PO Box 8037
Wichita, KS 67208

Caroline " A " #2-19

Job Ticket: 64737

DST#: 2

ATTN: Larry Nicholson

Test Start: 2018.11.21 @ 15:41:00

Tool Information

Drill Pipe:	Length: 3706.00 ft	Diameter: 3.80 inches	Volume: 51.99 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 29.00 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 56000.00 lb
			<u>Total Volume: 52.13 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	35.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3733.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.00 ft			
Tool Length:	70.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3705.00	
Hydraulic tool	5.00	1113		3710.00	
Jars	5.00	01-07		3715.00	
EM Tool	5.00			3720.00	
Safety Joint	3.00	-001		3723.00	
Packer	5.00			3728.00	33.00 Bottom Of Top Packer
Packer	5.00			3733.00	
Stubb	1.00			3734.00	
Recorder	0.00	8959	Inside	3734.00	
Recorder	0.00	8734	Outside	3734.00	
Perforations	31.00			3765.00	
Bullnose	5.00			3770.00	37.00 Bottom Packers & Anchor

Total Tool Length: 70.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Cobalt Energy LLC

19-6S-25W Graham,KS

PO Box 8037
Wichita, KS 67208

Caroline " A " #2-19

Job Ticket: 64737

DST#: 2

ATTN: Larry Nicholson

Test Start: 2018.11.21 @ 15:41:00

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:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	OCM 20% O 80% M	0.437

Total Length: 50.00 ft Total Volume: 0.437 bbl

Num Fluid Samples: 0

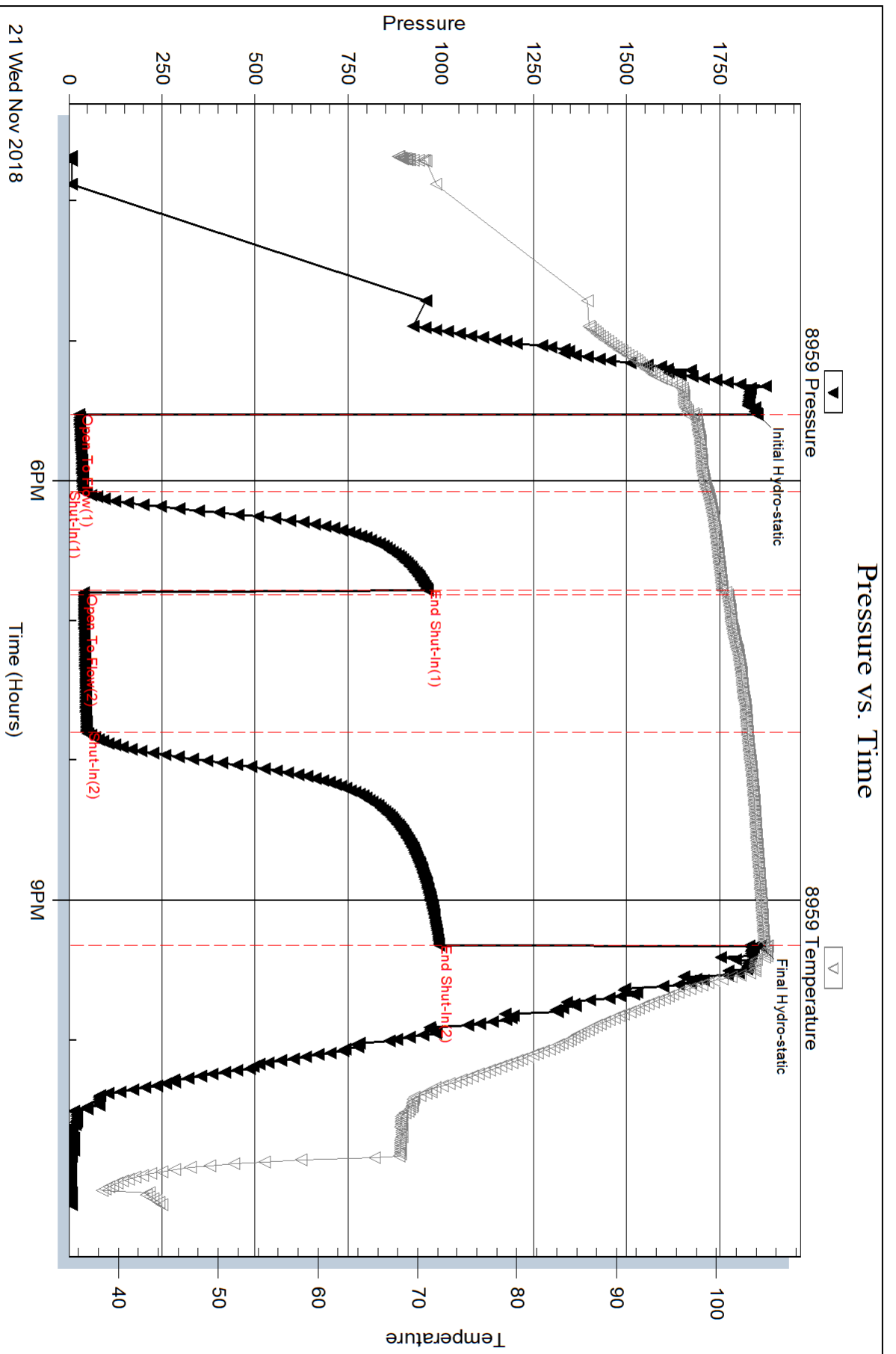
Num Gas Bombs: 0

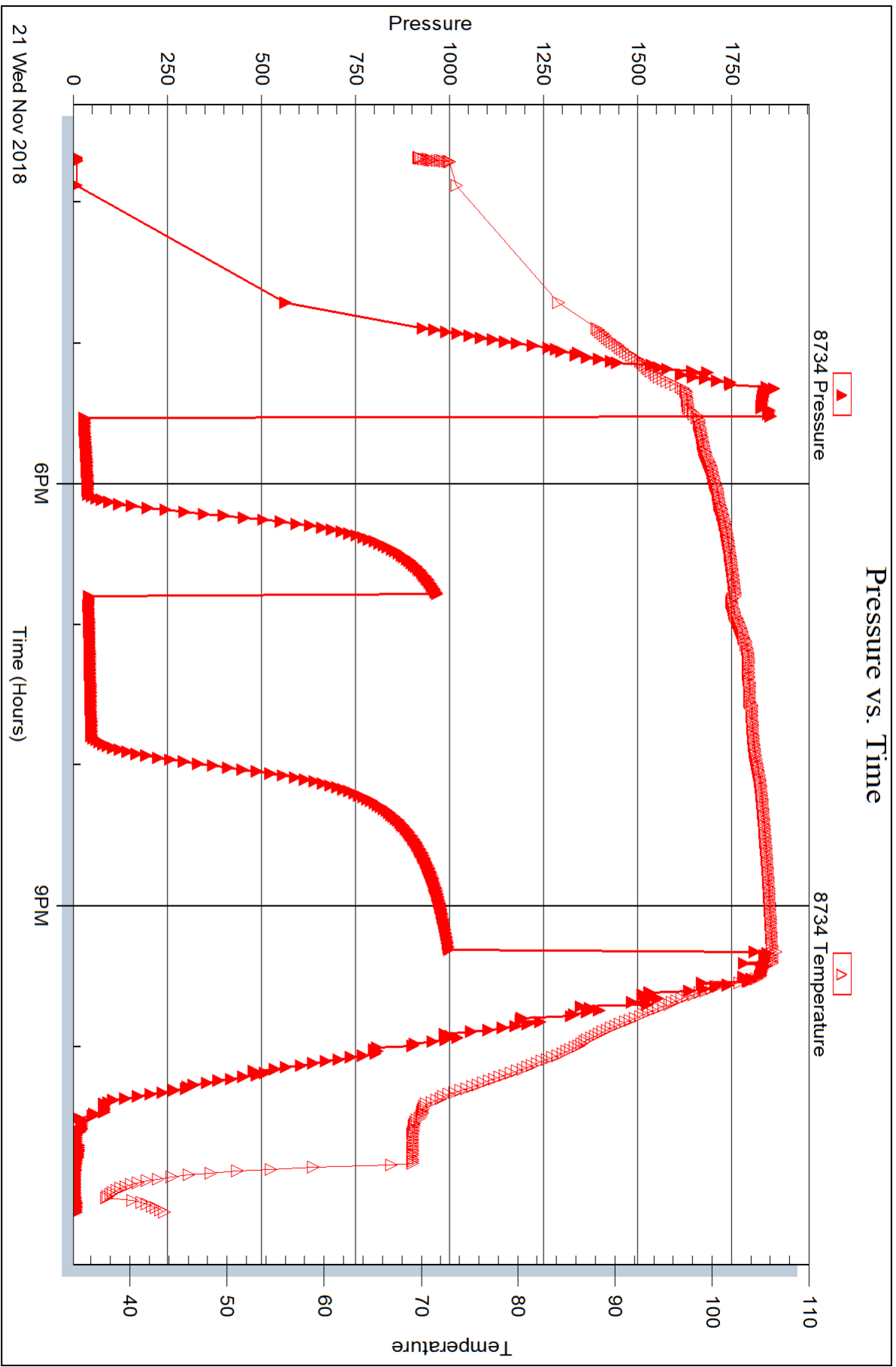
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Cobalt Energy LLC**

PO Box 8037
Wichita, KS 67208

ATTN: Larry Nicholson

Caroline " A " #2-19

19-6S-25W Graham,KS

Start Date: 2018.11.22 @ 08:53:00

End Date: 2018.11.22 @ 16:25:30

Job Ticket #: 64738 DST #: 3

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2018.11.23 @ 11:08:43



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Cobalt Energy LLC

19-6S-25W Graham, KS

PO Box 8037
Wichita, KS 67208

Caroline " A " #2-19

ATTN: Larry Nicholson

Job Ticket: 64738

DST#: 3

Test Start: 2018.11.22 @ 08:53:00

GENERAL INFORMATION:

Formation: **LKC " J "**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:35:50
 Time Test Ended: 16:25:30
 Interval: **3821.00 ft (KB) To 3846.00 ft (KB) (TVD)**
 Total Depth: 3846.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Martine Salinas
 Unit No: 82
 Reference Elevations: 2618.00 ft (KB)
 2613.00 ft (CF)
 KB to GR/CF: 5.00 ft

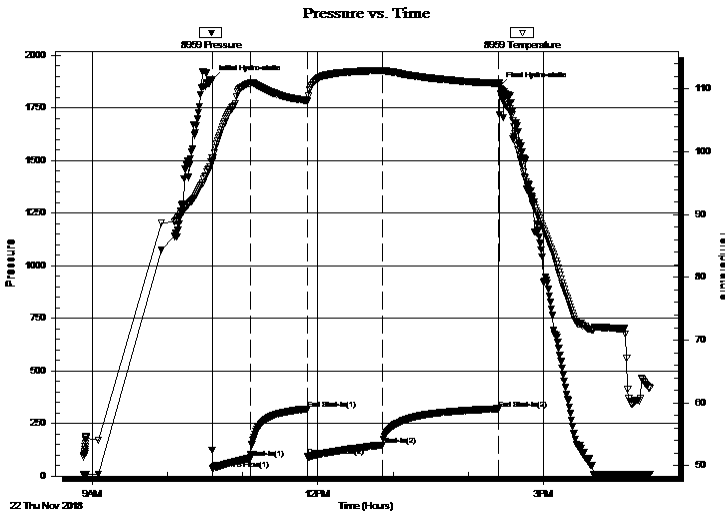
Serial #: 8959

Inside

Press@RunDepth: 147.94 psig @ 3822.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.11.22 End Date: 2018.11.22 Last Calib.: 2018.11.22
 Start Time: 08:53:01 End Time: 16:25:30 Time On Btm: 2018.11.22 @ 10:35:30
 Time Off Btm: 2018.11.22 @ 14:25:00

TEST COMMENT: 30-IF- BOB (12 inches) @ 21 mins (blow increased to 14 3/4")
 45-ISI-Surface blow back @ 10 mins maintained
 60-FF- BOB (12 inches) @ 36 mins (blow increased to 16 3/4")
 90-FSI- Surface blow back built to 1/8"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1882.88	99.04	Initial Hydro-static
1	34.74	98.52	Open To Flow (1)
31	86.44	110.93	Shut-In(1)
76	317.69	108.19	End Shut-In(1)
77	95.17	108.06	Open To Flow (2)
137	147.94	112.96	Shut-In(2)
229	320.21	110.94	End Shut-In(2)
230	1852.33	110.61	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
125.00	MSW 3%M, 97%W	1.49
140.00	GOS/MCW 5%G, 3%O, 19%M, 73%W	1.96
20.00	CGO 4%G, 96%O	0.28
0.00	20' 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

Cobalt Energy LLC

19-6S-25W Graham,KS

PO Box 8037
Wichita, KS 67208

Caroline " A " #2-19

Job Ticket: 64738

DST#: 3

ATTN: Larry Nicholson

Test Start: 2018.11.22 @ 08:53:00

Tool Information

Drill Pipe:	Length: 3770.00 ft	Diameter: 3.80 inches	Volume: 52.88 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 29.00 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 56000.00 lb
			<u>Total Volume: 53.02 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 49000.00 lb
Depth to Top Packer:	3821.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	25.00 ft			
Tool Length:	58.00 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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Shut In Tool	5.00			3793.00	
Hydraulic tool	5.00	1113		3798.00	
Jars	5.00	01-07		3803.00	
EM Tool	5.00			3808.00	
Safety Joint	3.00			3811.00	
Packer	5.00			3816.00	33.00 Bottom Of Top Packer
Packer	5.00			3821.00	
Stubb	1.00			3822.00	
Recorder	0.00	8959	Inside	3822.00	
Recorder	0.00	8734	Outside	3822.00	
Perforations	19.00			3841.00	
Bullnose	5.00			3846.00	25.00 Bottom Packers & Anchor

Total Tool Length: 58.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Cobalt Energy LLC

19-6S-25W Graham,KS

PO Box 8037
Wichita, KS 67208

Caroline " A " #2-19

Job Ticket: 64738

DST#: 3

ATTN: Larry Nicholson

Test Start: 2018.11.22 @ 08:53:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

34.2 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

65000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
125.00	MSW 3%M, 97%W	1.489
140.00	GOS/MCW 5%G, 3%O, 19%M, 73%W	1.964
20.00	CGO 4%G, 96%O	0.281
0.00	20' GIP	0.000

Total Length: 285.00 ft Total Volume: 3.734 bbl

Num Fluid Samples: 0

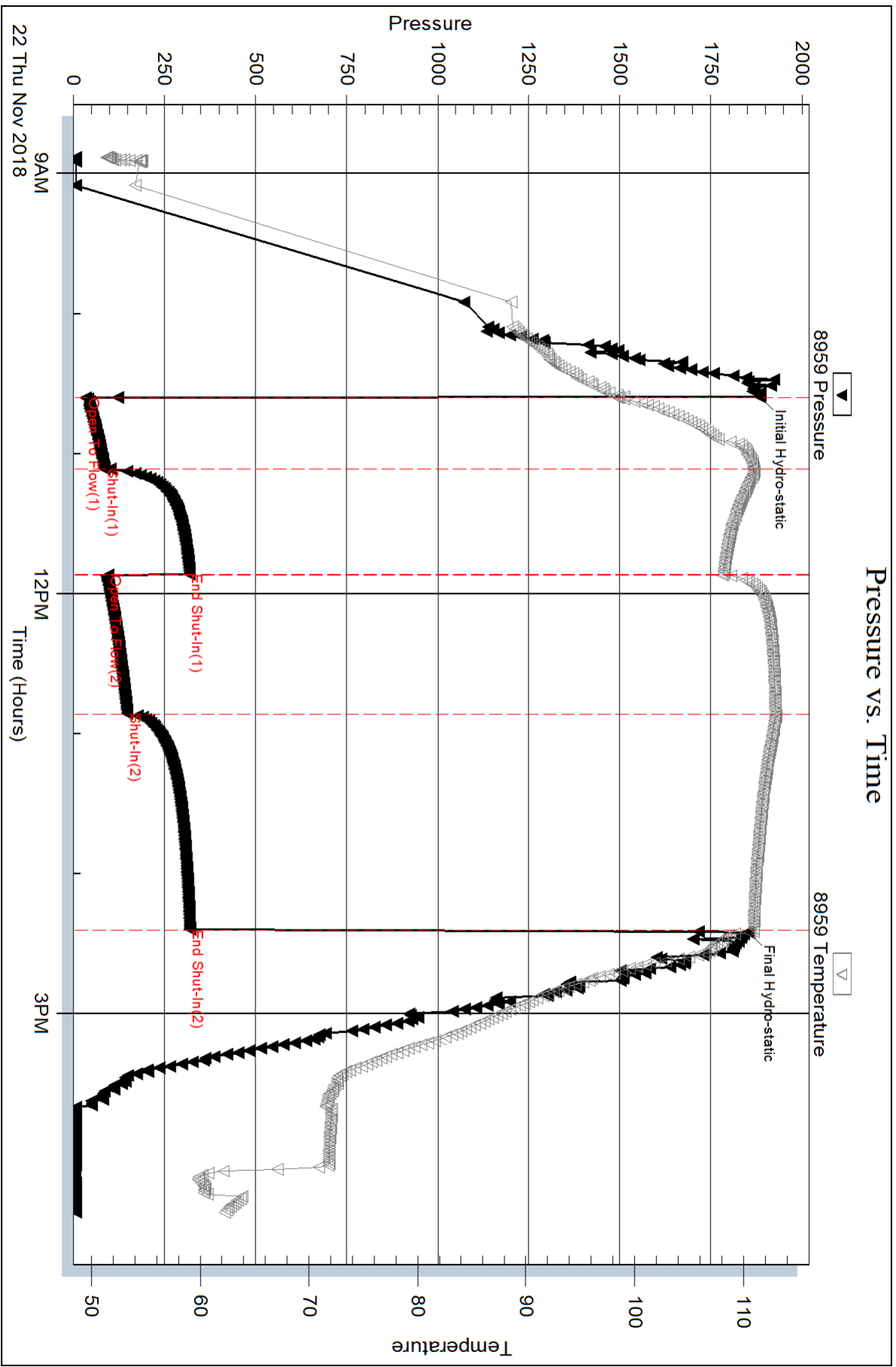
Num Gas Bombs: 0

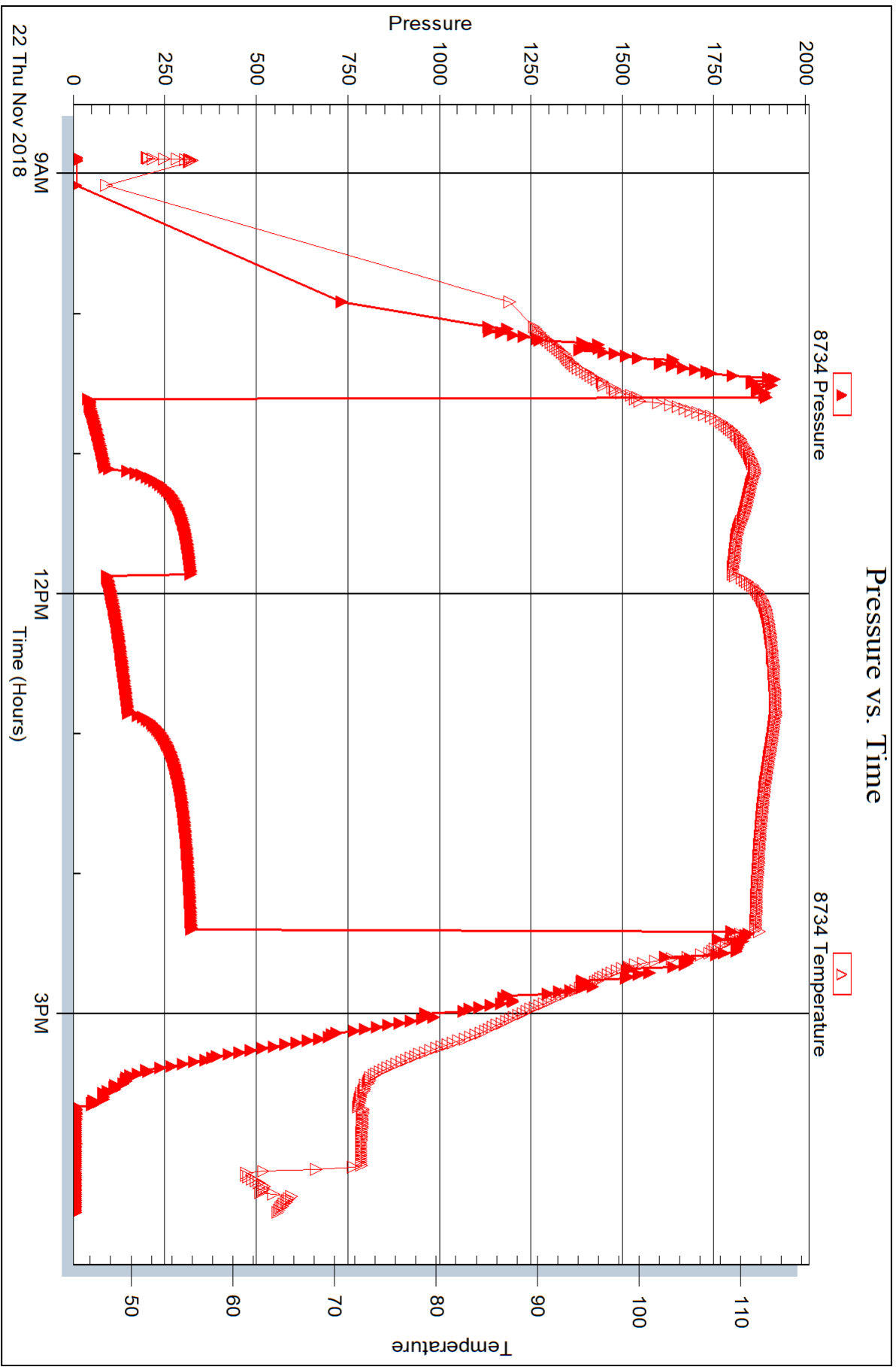
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity of oil = 35.6 @ 74 degs
Gravity corrected to 34.2 @ 60 degs
RW= .139 @ 68.5 = 65,000PPM







DRILL STEM TEST REPORT

Prepared For: **Cobalt Energy LLC**

PO Box 8037
Wichita, KS 67208

ATTN: Larry Nicholson

Caroline " A " #2-19

19-6S-25W Graham,KS

Start Date: 2018.11.22 @ 23:03:00

End Date: 2018.11.23 @ 05:53:20

Job Ticket #: 64739 DST #: 4

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2018.11.23 @ 11:08:26



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Cobalt Energy LLC

19-6S-25W Graham, KS

PO Box 8037
Wichita, KS 67208

Caroline " A " #2-19

ATTN: Larry Nicholson

Job Ticket: 64739

DST#: 4

Test Start: 2018.11.22 @ 23:03:00

GENERAL INFORMATION:

Formation: **LKC " K "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:39:50

Time Test Ended: 05:53:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

Interval: 3843.00 ft (KB) To 3864.00 ft (KB) (TVD)

Reference Elevations: 2618.00 ft (KB)

Total Depth: 3864.00 ft (KB) (TVD)

2613.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8959

Inside

Press@RunDepth: 29.05 psig @ 3844.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.11.22

End Date:

2018.11.23

Last Calib.:

2018.11.23

Start Time: 23:03:01

End Time:

05:53:20

Time On Btm:

2018.11.23 @ 00:39:40

Time Off Btm:

2018.11.23 @ 04:29:20

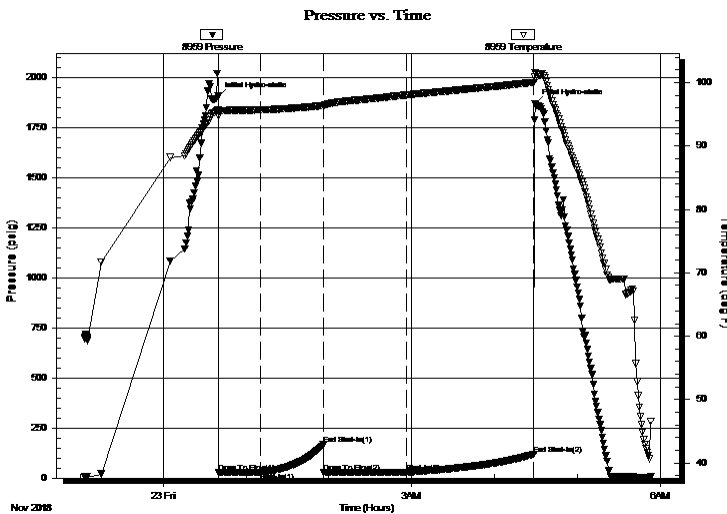
TEST COMMENT: 30-IF-Surface blow built to 1" @ 15 mins, maintained 1"

45-ISI-No blow

60-FF-No blow

90-FSI-No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1907.20	95.63	Initial Hydro-static
1	29.15	94.73	Open To Flow (1)
31	27.50	95.70	Shut-In(1)
77	167.22	96.38	End Shut-In(1)
77	30.03	96.33	Open To Flow (2)
137	29.05	98.05	Shut-In(2)
229	119.79	100.05	End Shut-In(2)
230	1871.37	101.61	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OSM 3%O, 97%M	0.02

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Cobalt Energy LLC

19-6S-25W Graham,KS

PO Box 8037
Wichita, KS 67208

Caroline " A " #2-19

Job Ticket: 64739

DST#: 4

ATTN: Larry Nicholson

Test Start: 2018.11.22 @ 23:03:00

Tool Information

Drill Pipe:	Length: 3802.00 ft	Diameter: 3.80 inches	Volume: 53.33 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 29.00 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 58000.00 lb
			<u>Total Volume: 53.47 bbl</u>	Tool Chased 9.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3843.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	21.00 ft			
Tool Length:	54.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3815.00	
Hydraulic tool	5.00	1113		3820.00	
Jars	5.00	01-07		3825.00	
EM Tool	5.00			3830.00	
Safety Joint	3.00	-001		3833.00	
Packer	5.00			3838.00	33.00 Bottom Of Top Packer
Packer	5.00			3843.00	
Stubb	1.00			3844.00	
Recorder	0.00	8959	Inside	3844.00	
Recorder	0.00	8734	Outside	3844.00	
Perforations	15.00			3859.00	
Bullnose	5.00			3864.00	21.00 Bottom Packers & Anchor

Total Tool Length: 54.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Cobalt Energy LLC

19-6S-25W Graham,KS

PO Box 8037
Wichita, KS 67208

Caroline " A " #2-19

Job Ticket: 64739

DST#: 4

ATTN: Larry Nicholson

Test Start: 2018.11.22 @ 23:03:00

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: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
5.00	OSM 3%O, 97%M	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbf

Num Fluid Samples: 0

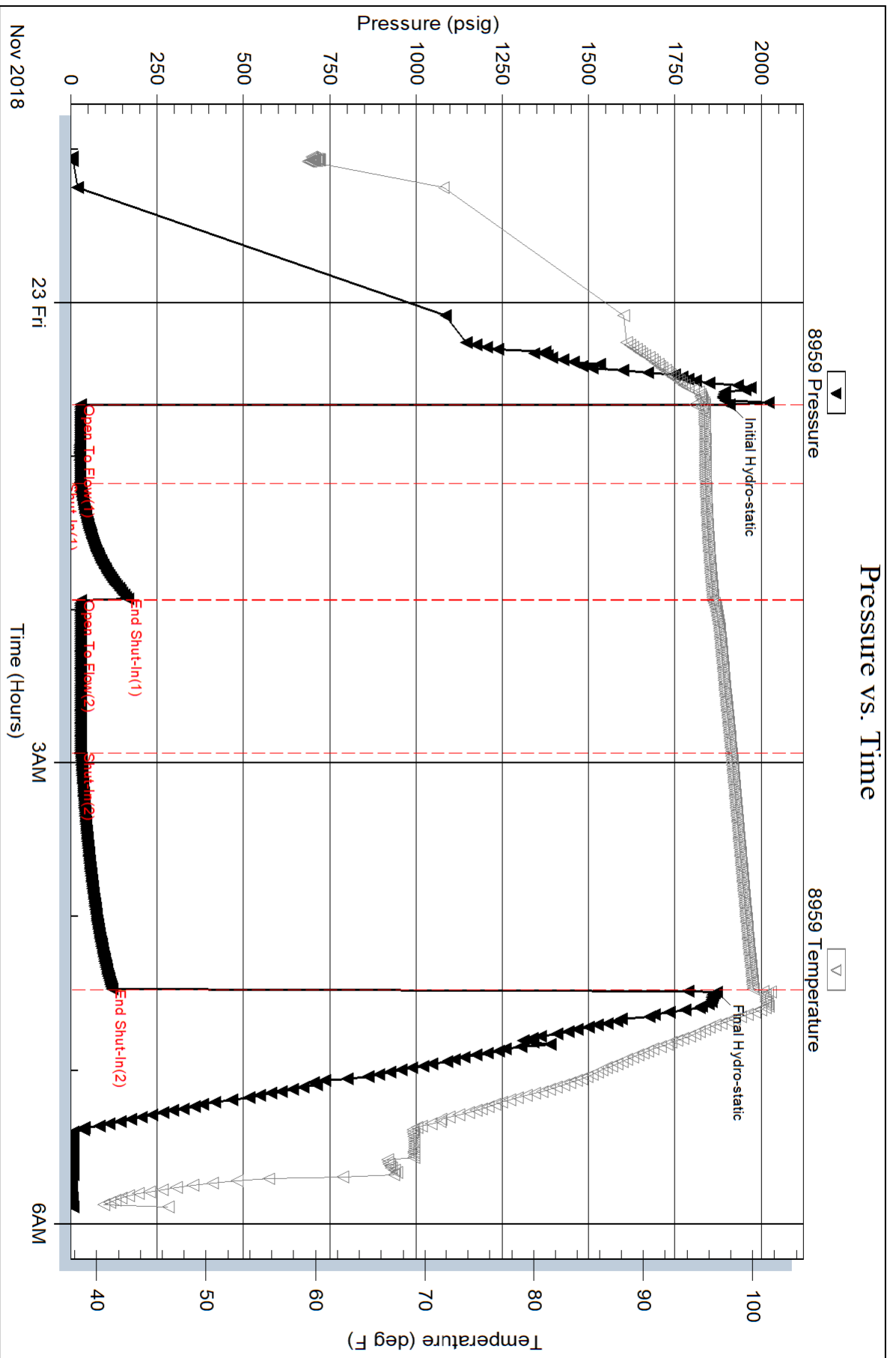
Num Gas Bombs: 0

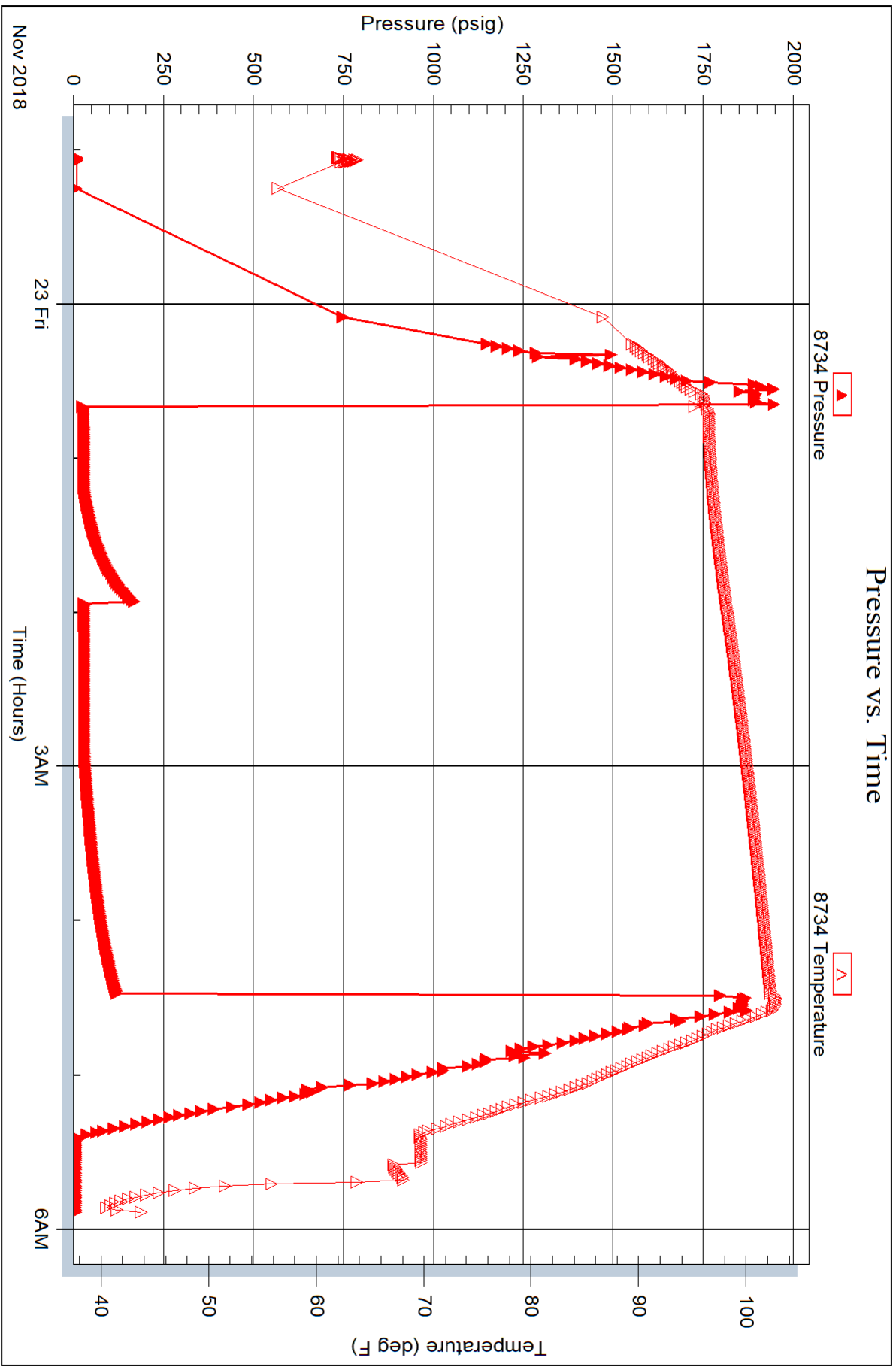
Serial #:

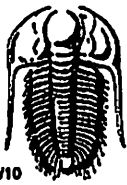
Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64736

Well Name & No. Caroline "A" #2-19 Test No. ~~11-21-18~~ 1 Date 11-21-18
 Company Cobalt Energy LLC Elevation 2618 KB 2613 GL
 Address P.O. Box 8037 Wichita, KS 67208
 Co. Rep / Geo. Larry Nicholson Rig Murfin #16
 Location: Sec. 19 Twp 6S Rge. 25W Co. Graham State KS

Interval Tested 3708-3732 Zone Tested Lansing "B"
 Anchor Length 24 Drill Pipe Run 3675 Mud Wt. 9.1
 Top Packer Depth 3703 Drill Collars Run 29 Vls 52
 Bottom Packer Depth 3708 Wt. Pipe Run — WL 6.0
 Total Depth 3732 Chlorides 700 ppm System LCM 2#

Blow Description IF - S. blow built to B.O.B (12 inches) @ 27 mins (blow increased to 13")
ISI - S. blow back @ 1 1/2 mins built to 1/8" dead @ 38 mins.
FF - S. blow built to B.O.B (12 inches) @ 35 mins (blow increased to 19")
FSI - S. blow back @ 3 mins built to 1/8" dead @ 45 mins

Rec	Feet of	%gas	%oil	%water	%mud
<u>290</u>	<u>OSMCW</u>	<u>3</u>	<u>89</u>	<u>8</u>	
<u>20</u>	<u>CGO</u>	<u>8</u>	<u>92</u>		
<u>0</u>	<u>90' GIP</u>				

Rec Total 290 BHT 110 Gravity 26.2 API RW .175 @ 56.5 °F Chlorides 57,000 ppm

- (A) Initial Hydrostatic 1842
- (B) First Initial Flow 29
- (C) First Final Flow 79
- (D) Initial Shut-In 1053
- (E) Second Initial Flow 83
- (F) Second Final Flow 153
- (G) Final Shut-In 1050
- (H) Final Hydrostatic 1825

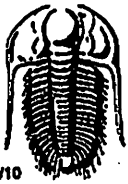
- Test 1050
- Jars 250
- Safety Joint 75
- Circ Sub
- Hourly Standby
- Mileage 97 RT 97
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1472

T-On Location 00:45
 T-Started 01:20
 T-Open 03:00
 T-Pulled 06:45
 T-Out 08:40
 Comments _____
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1472
 MP/DST Disc't _____

Initial Open 30
 Initial Shut-In 45
 Final Flow 60
 Final Shut-In 90

Approved By _____ Our Representative [Signature]

Triobite 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.



TRIBOLITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64737

Well Name & No. Caroline "A" #2-19 Test No. 2 Date 11-21-18
 Company Cobalt Energy LLC Elevation 2618 KB 2613 GL
 Address P.O. Box 8037 Wichita, KS 67208
 Co. Rep / Geo. Larry Nicholson Rig Murfin #16
 Location: Sec. 19 Twp 6S. Rge. 25W. Co. Graham State KS

Interval Tested 3733-3770 Zone Tested LKC "C" F"
 Anchor Length 37' Drill Pipe Run 3706 Mud Wt. 9.0
 Top Packer Depth 3728 Drill Collars Run 29 Vls 48
 Bottom Packer Depth 3733 Wt. Pipe Run --- WL 6.0
 Total Depth 3770 Chlorides 700 ppm System LCM 2#
 Blow Description IF - S. blow built to 3 1/2"
ISI - No blow
FF - S. blow @ 1 min built to 4 3/4"
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>50</u>	<u>OCM</u>	<u>20</u>		<u>80</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 105 Gravity --- API RW --- @ --- ° F Chlorides --- ppm

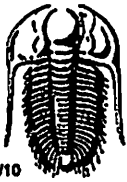
(A) Initial Hydrostatic 1852
 (B) First Initial Flow 27
 (C) First Final Flow 38
 (D) Initial Shut-In 964
 (E) Second Initial Flow 40
 (F) Second Final Flow 47
 (G) Final Shut-In 995
 (H) Final Hydrostatic 1861

Test 1050
 Jars 250
 Safety Joint 75
 Circ Sub
 Hourly Standby
 Mileage 97 RT 97
 Sampler
 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1472

T-On Location 15:20
 T-Started 15:41
 T-Open 17:32
 T-Pulled 21:17
 T-Out 23:11
 Comments Ran EM Tool
350
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 350
 Total 1822
 MP/DST Disc't ---

Initial Open 30
 Initial Shut-In 45
 Final Flow 60
 Final Shut-In 90

Approved By _____ Our Representative [Signature]
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64738

Well Name & No. Caroline "A" #2-19 Test No. 3 Date 11-22-18
 Company Cobalt Energy LLC Elevation 2618 KB 2613 GL
 Address P.O. Box 8037 Wichita, KS 67208
 Co. Rep / Geo. Larry Nicholson Rig Murfin #16
 Location: Sec. 19 Twp 6S Rge. 25W Co. Graham State KS

Interval Tested 3821 - 3846 Zone Tested LKS "J"
 Anchor Length 25 Drill Pipe Run 3770 Mud Wt. 9.2
 Top Packer Depth 3816 Drill Collars Run 29 Vis 55
 Bottom Packer Depth 3821 Wt. Pipe Run — WL 6:6
 Total Depth 3846 Chlorides 700 ppm System LCM 2#

Blow Description IF - S. blow built to B.O.B (12 inches) @ 21 mins (blow increased to 14 3/4")
ISI - S. blow back @ 10 mins. maintained 5. blow
FF - S. blow built to B.O.B (17 inches) @ 36 mins (blow increased to 16 3/4")
FSI - S. blow back @ 5 mins

Rec	Feet of	%gas	%oil	%water	%mud
<u>125</u>	<u>MSW</u>		<u>97</u>	<u>3</u>	
<u>140</u>	<u>GOS/MCW</u>	<u>5</u>	<u>3</u>	<u>73</u>	<u>19</u>
<u>20</u>	<u>CGO</u>	<u>4</u>	<u>96</u>		
<u>0</u>	<u>20' GIP</u>				
<u>Rec Total 285</u>	<u>BHT 111</u>				

Gravity 34.2 API RW .139 @ 68.5 °F Chlorides 65,000 ppm

(A) Initial Hydrostatic 1883
 (B) First Initial Flow 35
 (C) First Final Flow 86
 (D) Initial Shut-In 318
 (E) Second Initial Flow 95
 (F) Second Final Flow 148
 (G) Final Shut-In 320
 (H) Final Hydrostatic 1852

Test 1050
 Jars 250
 Safety Joint 75
 Circ Sub
 Hourly Standby
 Mileage 97 RT 97
 Sampler
 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1472

T-On Location 08:30
 T-Started 08:53
 T-Open 10:36
 T-Pulled 14:21
 T-Out 16:26
 Comments Ran EFM TEST
350
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 350
 Total 1822
 MP/DST Disc't

Initial Open 30
 Initial Shut-In 45
 Final Flow 60
 Final Shut-In 90

Approved By _____

Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64739

Well Name & No. Caroline "A" # 2-19 Test No. 4 Date 11-22-18
 Company Cobalt Energy LLC Elevation 2618 KB 2613 GL
 Address P.O. Box 8037 Wichita, KS 67208
 Co. Rep / Geo. Larry Nicholson Rig Murfin #16
 Location: Sec. 19 Twp 6S Rge. 25W Co. Graham State KS

Interval Tested ~~3843-3864~~ 3843-3864 Zone Tested UKC "K"
 Anchor Length 21 Drill Pipe Run 3802 Mud Wt. 9.1
 Top Packer Depth 3838 Drill Collars Run 29 Vls 60
 Bottom Packer Depth 3843 Wt. Pipe Run — WL 6.0
 Total Depth 3864 Chlorides 900 ppm System LCM 1#

Blow Description IF - S. blow built to 1" @ 15 mins, maintained 1"
ISI - No blow
FF - No blow
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>OSM</u>	<u>3</u>		<u>97</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 102 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1907
 (B) First Initial Flow 29
 (C) First Final Flow 28
 (D) Initial Shut-In 167
 (E) Second Initial Flow 30
 (F) Second Final Flow 29
 (G) Final Shut-In 120
 (H) Final Hydrostatic 1871

Test 1050
 Jars 250
 Safety Joint 75
 Circ Sub _____
 Hourly Standby _____
 Mileage 97 RT 97
 Sampler _____
 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1472

T-On Location 22:30
 T-Started 23:03
 T-Open 00:40
 T-Pulled 04:25
 T-Out 05:53
 Comments Ren EM Tool
350
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 350
 Total 1822
 MP/DST Disc't _____

Initial Open 30
 Initial Shut-In 45
 Final Flow 60
 Final Shut-In 90

Approved By _____ Our Representative [Signature]
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