



DRILL STEM TEST REPORT

Prepared For: **Sam Gary Jr. & Assoc.inc.**

1515 Wynkoop
Suite 700
Denver Co. 80202

ATTN: Neil Sharp

22-16s-16w Rush Co.

Hoss 1-22

Start Date: 2010.12.04 @ 09:43:05

End Date: 2010.12.04 @ 16:50:20

Job Ticket #: 039995 DST #: 3

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Sam Gary Jr. & Assoc.inc.

Hoss 1-22

1515 Wynkoop
Suite 700
Denver Co. 80202
ATTN: Neil Sharp

22-16s-16w Rush Co.

Job Ticket: 039995

DST#: 3

Test Start: 2010.12.04 @ 09:43:05

GENERAL INFORMATION:

Formation: **LKC"K-L-M"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:42:00

Time Test Ended: 16:50:20

Test Type: Conventional Bottom Hole

Tester: Andy Carreira

Unit No: 31

Interval: 3432.00 ft (KB) To 3454.00 ft (KB) (TVD)

Reference Elevations: 1939.00 ft (KB)

Total Depth: 3454.00 ft (KB) (TVD)

1931.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8352 Outside

Press @ Run Depth: 15.57 psig @ 3433.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2010.12.04

End Date:

2010.12.04

Last Calib.:

2010.12.04

Start Time:

09:43:05

End Time:

16:50:20

Time On Btm:

2010.12.04 @ 11:40:30

Time Off Btm:

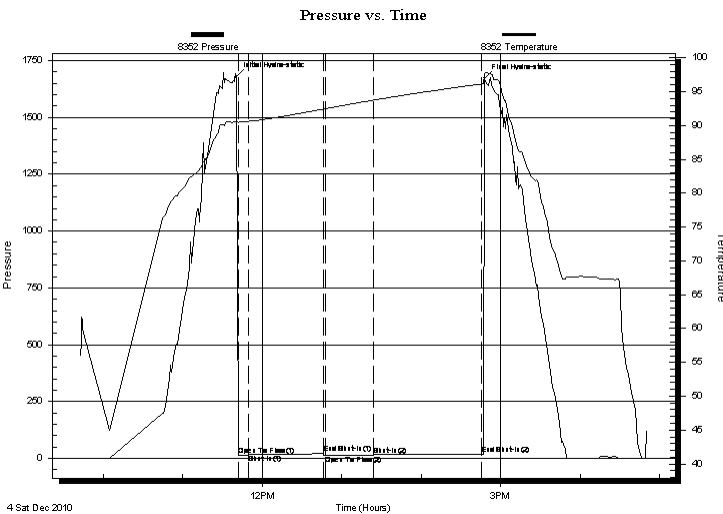
2010.12.04 @ 14:47:59

TEST COMMENT: IF: Weak, Surface blow

IS: No Return

FF: No Blow

FS: No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1678.69	90.65	Initial Hydro-static
2	14.48	90.46	Open To Flow (1)
10	15.62	90.62	Shut-In(1)
66	20.54	92.44	End Shut-In(1)
68	15.36	92.50	Open To Flow (2)
104	15.57	93.75	Shut-In(2)
186	19.22	96.15	End Shut-In(2)
188	1672.15	97.70	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
3.00	Mud m=100%	0.01

Gas Rates

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



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Job Ticket: 039995

DST#: 3

Test Start: 2010.12.04 @ 09:43:05

GENERAL INFORMATION:

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Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:42:00

Time Test Ended: 16:50:20

Test Type: Conventional Bottom Hole

Tester: Andy Carreira

Unit No: 31

Interval: 3432.00 ft (KB) To 3454.00 ft (KB) (TVD)

Total Depth: 3454.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1939.00 ft (KB)

1931.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8017 Inside

Press @ Run Depth: psig @ 3433.00 ft (KB)

Start Date: 2010.12.04

End Date: 2010.12.04

Start Time: 09:43:05

End Time: 16:50:29

Capacity: 8000.00 psig

Last Calib.: 2010.12.04

Time On Btm:

Time Off Btm:

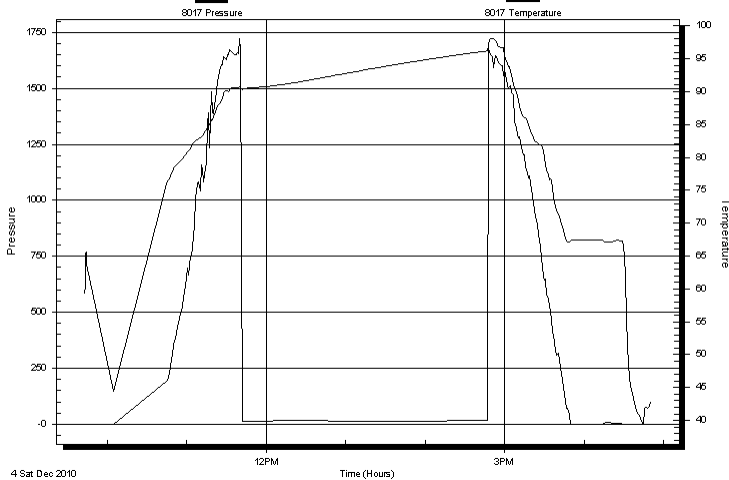
TEST COMMENT: IF: Weak, Surface blow

IS: No Return

FF: No Blow

FS: No Return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
3.00	Mud m=100%	0.01

Gas Rates

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



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DRILL STEM TEST REPORT

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Hoss 1-22

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22-16s-16w Rush Co.

Job Ticket: 039995 **DST#: 3**

Test Start: 2010.12.04 @ 09:43:05

GENERAL INFORMATION:

Formation: **LKC"K-L-M"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:42:00

Time Test Ended: 16:50:20

Test Type: Conventional Bottom Hole

Tester: Andy Carreira

Unit No: 31

Interval: 3432.00 ft (KB) To 3454.00 ft (KB) (TVD)

Reference Elevations: 1939.00 ft (KB)

Total Depth: 3454.00 ft (KB) (TVD)

1931.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8650 Fluid

Press@RunDepth: psig @ 3398.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2010.12.04 End Date: 2010.12.04

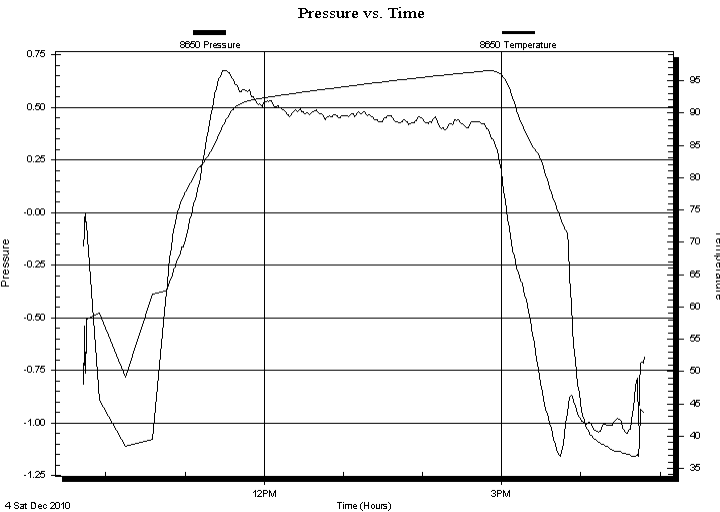
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Start Time: 09:43:01 End Time: 16:49:00

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Weak, Surface blow
IS: No Return
FF: No Blow
FS: No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
3.00	Mud m=100%	0.01

Gas Rates

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



**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

Sam Gary Jr. & Assoc.inc.

Hoss 1-22

1515 Wynkoop
Suite 700
Denver Co. 80202
ATTN: Neil Sharp

22-16s-16w Rush Co.

Job Ticket: 039995

DST#: 3

Test Start: 2010.12.04 @ 09:43:05

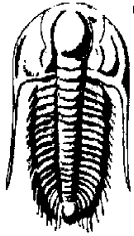
Tool Information

Drill Pipe:	Length: 3392.00 ft	Diameter: 3.80 inches	Volume: 47.58 bbl	Tool Weight:	3000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	24000.00 lb
Drill Collar:	Length: 30.81 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume: 47.73 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	25.81 ft			String Weight: Initial	47000.00 lb
Depth to Top Packer:	3432.00 ft			Final	47000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	22.00 ft				
Tool Length:	57.00 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			3398.00	
Recorder	0.00	8650	Fluid	3398.00	
Blank Spacing	4.00			3402.00	
Shut In Tool	5.00			3407.00	
Sampler	3.00			3410.00	
Hydraulic tool	5.00			3415.00	
Jars	5.00			3420.00	
Safety Joint	3.00			3423.00	
Packer	5.00			3428.00	35.00 Bottom Of Top Packer
Packer	4.00			3432.00	
Stubb	1.00			3433.00	
Recorder	0.00	8017	Inside	3433.00	
Recorder	0.00	8352	Outside	3433.00	
Perforations	18.00			3451.00	
Bullnose	3.00			3454.00	22.00 Bottom Packers & Anchor

Total Tool Length: 57.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Sam Gary Jr. & Assoc.inc.

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ATTN: Neil Sharp

22-16s-16w Rush Co.

Job Ticket: 039995

DST#: 3

Test Start: 2010.12.04 @ 09:43:05

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: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.80 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3.00	Mud m=100%	0.015

Total Length: 3.00 ft Total Volume: 0.015 bbl

Num Fluid Samples: 0

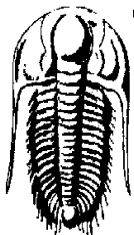
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Sampler Recovery- Mud= 700 ML Pressure=25LBS



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DRILL STEM TEST REPORT

GAS RATES

Sam Gary Jr. & Assoc.inc.

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Job Ticket: 039995

DST#: 3

Test Start: 2010.12.04 @ 09:43:05

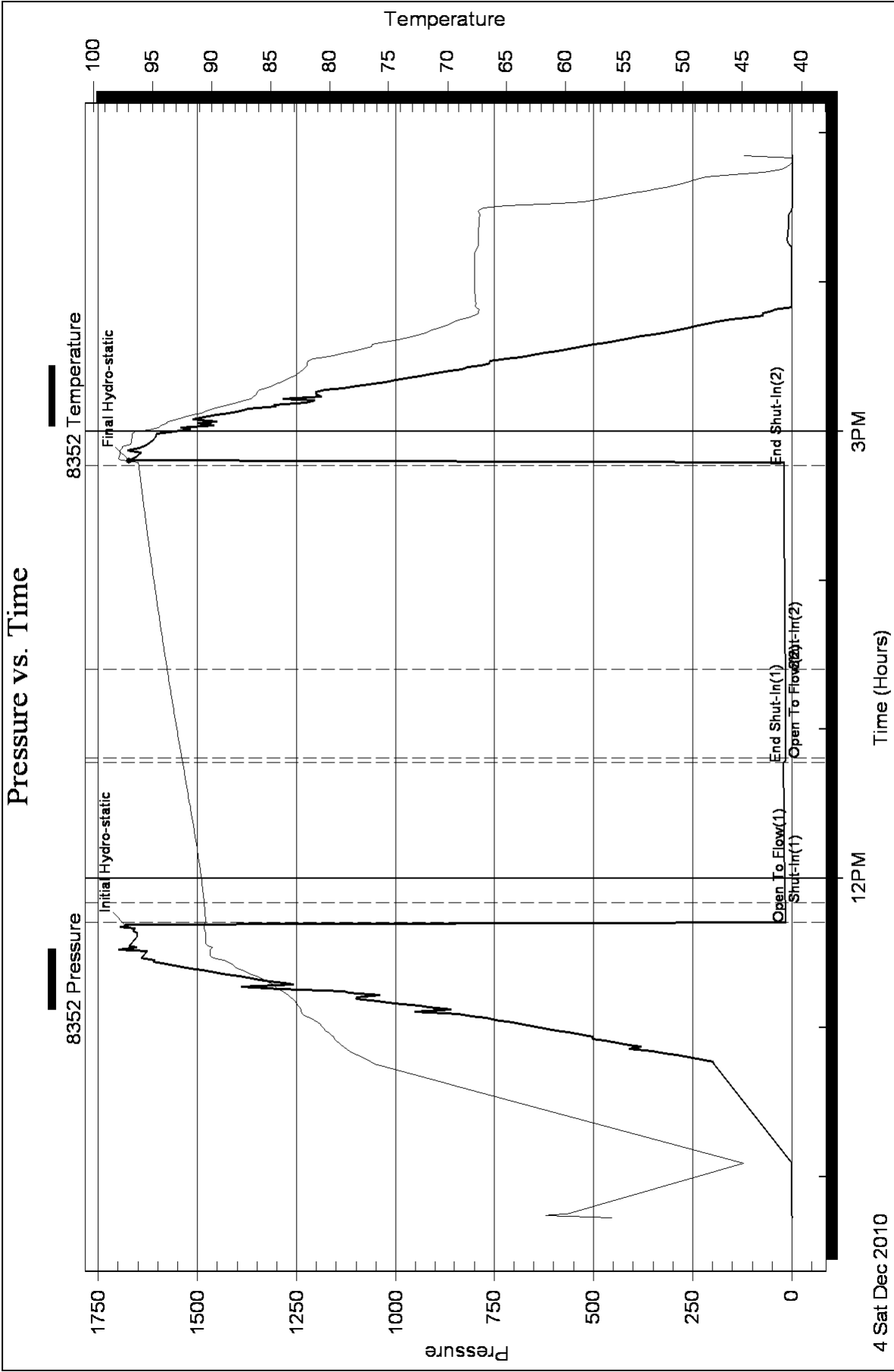
Gas Rates Information

Temperature: 59 deg C
Relative Density: 0.65
Z Factor: 0.8

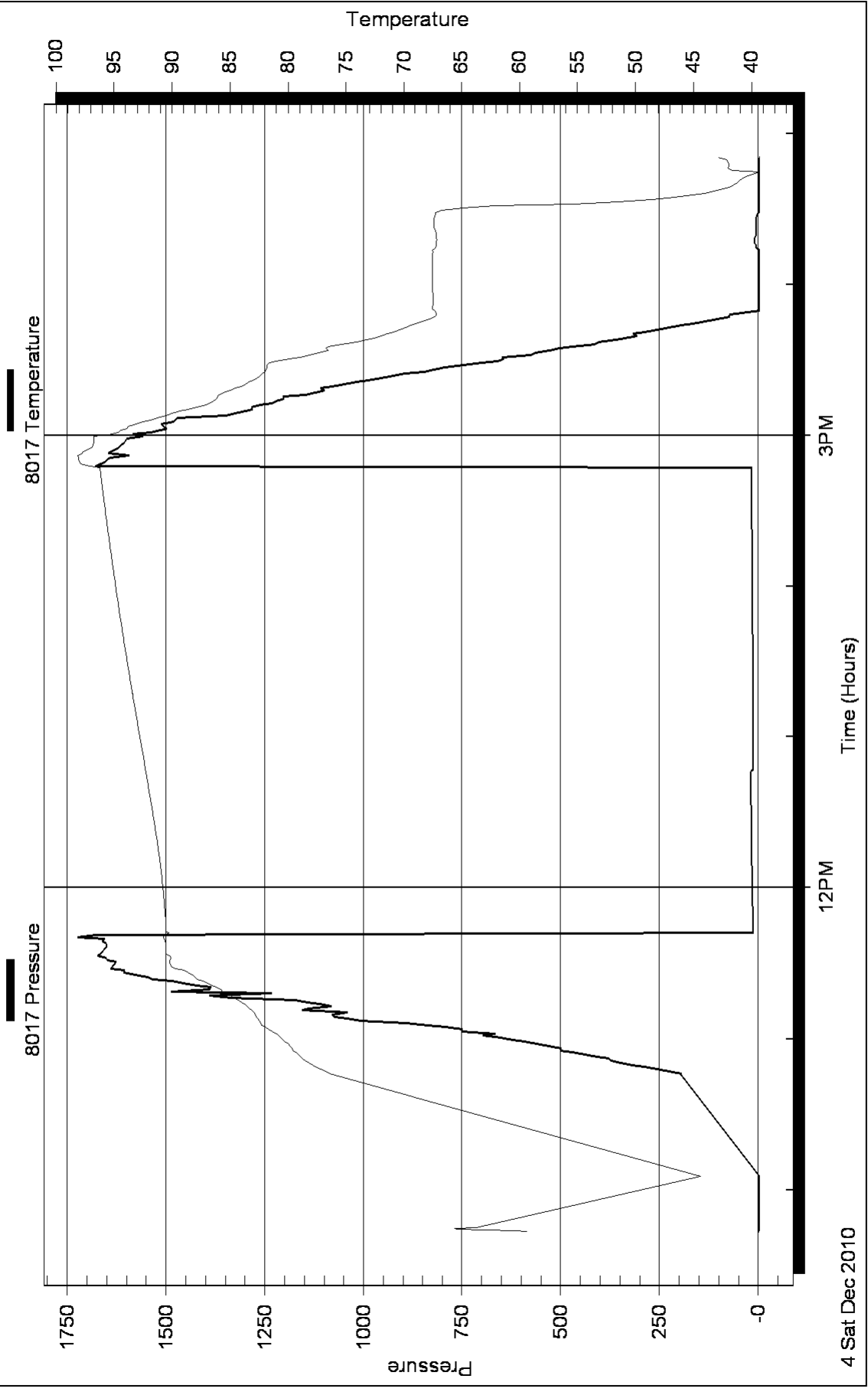
Gas Rates Table

Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m ³ /d)
		0.00	0.00	0.00

Pressure vs. Time



Pressure vs. Time



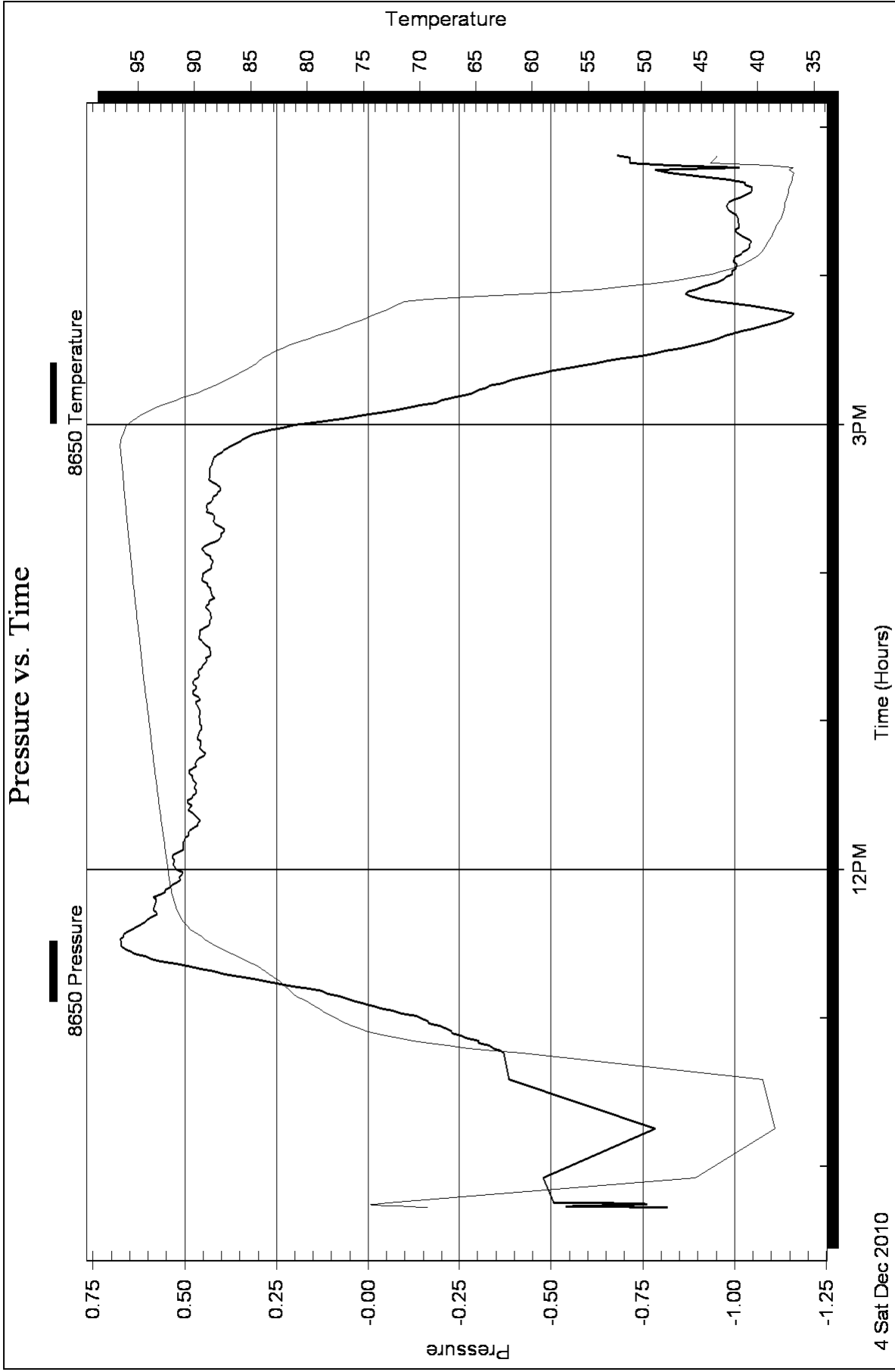
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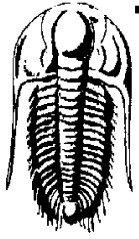
Fluid

Sam Gary Jr. & Assoc. inc.

22-16s-16w Rush Co.

DST Test Number: 3





**TRILOBITE
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DRILL STEM TESTING - DATA LISTING

Sam Gary Jr. & Assoc.inc.

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1515 Wynkoop
Suite 700
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ATTN: Neil Sharp

22-16s-16w Rush Co.

Job Ticket: 039995

DST#: 3

Test Start: 2010.12.04 @ 09:43:05

Serial # 8352 Outside				Serial # 8352 Outside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	0.0	-1.37	56.1		95.6	1330.75	85.5
	0.6	-1.39	60.2		96.8	1375.52	86.1
	1.2	-1.22	61.5		97.9	1424.66	86.5
	1.8	-1.23	59.6		99.1	1454.65	87.2
	51.9	-1.28	42.0		100.3	1625.12	87.7
	62.9	197.46	76.5		101.4	1547.58	88.1
	64.1	259.53	76.9		102.6	1775.18	88.5
	65.3	289.49	77.6		103.8	1606.64	88.9
	66.4	320.11	78.1		104.9	1638.85	90.0
	67.6	349.76	78.5		106.1	1632.07	90.1
	68.8	379.50	78.8		107.3	1625.11	90.1
	69.9	454.60	79.1		108.4	1654.72	90.0
	71.1	471.01	79.3		109.6	1672.06	90.3
	72.3	502.04	79.6		110.8	1664.86	90.5
	73.4	532.15	79.8		111.9	1657.76	90.5
	74.6	562.62	80.1		113.1	1651.27	90.5
	75.8	688.29	80.4		114.3	1652.21	90.5
	76.9	655.37	80.5		115.4	1661.50	90.5
	78.1	684.25	80.9		116.6	1654.94	90.6
	79.3	698.32	81.2		117.1	1695.03	90.6
	80.4	769.32	81.7		117.3	1677.41	90.6
	81.6	805.86	82.2	Initial Hydro-static	117.4	1678.69	90.7
	82.8	836.56	82.3		117.6	1679.88	90.7
	83.9	899.19	82.5		117.8	1679.87	90.7
	85.1	929.42	82.7		117.9	1679.81	90.7
	86.3	1003.16	82.8		118.6	13.70	90.3
	87.4	1021.74	83.0		118.8	14.47	90.4
	88.6	1038.46	83.2	Open To Flow (1)	118.9	14.48	90.5
	89.8	1131.80	83.5		119.1	14.50	90.5
	90.9	1143.99	83.9		119.3	14.53	90.5
	92.1	1292.28	84.3		119.4	14.54	90.5
	93.3	1236.58	84.6		120.6	14.71	90.5
	94.4	1390.38	85.1		121.8	14.69	90.5

Printing every 7 samples

Serial # 8352 Outside				Serial # 8352 Outside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	122.9	14.69	90.6		164.8	19.44	91.8
	124.1	14.51	90.6		165.9	19.52	91.8
	125.3	15.27	90.6		167.1	19.61	91.9
	126.4	15.51	90.6		168.3	19.70	91.9
Shut-In(1)	126.6	15.55	90.6		169.4	19.76	91.9
	126.8	15.58	90.6		170.6	19.80	92.0
	126.9	15.62	90.6		171.8	19.87	92.0
	127.1	15.65	90.6		172.9	19.96	92.1
	127.3	15.68	90.6		174.1	20.04	92.1
	127.4	15.72	90.6		175.3	20.12	92.2
	128.6	15.93	90.7		176.4	20.19	92.2
	129.8	16.08	90.7		177.6	20.26	92.2
	130.9	16.23	90.7		178.8	20.34	92.3
	132.1	16.42	90.7		179.9	20.43	92.3
	133.3	16.57	90.8		181.1	20.50	92.4
	134.4	16.71	90.8		182.3	20.51	92.4
	135.6	16.85	90.8		182.8	20.53	92.4
	136.8	16.98	90.9		182.9	20.54	92.4
	137.9	17.10	90.9	End Shut-In(1)	183.1	20.54	92.4
	139.1	17.24	90.9		183.3	20.52	92.4
	140.3	17.38	91.0		183.4	15.20	92.4
	141.4	17.49	91.0		183.6	15.20	92.5
	142.6	17.61	91.0		184.6	15.35	92.5
	143.8	17.74	91.1		184.8	15.35	92.5
	144.9	17.86	91.1	Open To Flow (2)	184.9	15.36	92.5
	146.1	17.97	91.1		185.1	15.37	92.5
	147.3	18.06	91.2		185.3	15.38	92.5
	148.4	18.15	91.2		185.4	15.39	92.5
	149.6	18.24	91.2		186.6	15.42	92.6
	150.8	18.34	91.3		187.8	15.45	92.6
	151.9	18.45	91.3		188.9	15.45	92.6
	153.1	18.56	91.4		190.1	15.46	92.7
	154.3	18.65	91.4		191.3	15.44	92.7
	155.4	18.73	91.4		192.4	15.43	92.8
	156.6	18.81	91.5		193.6	15.50	92.8
	157.8	18.89	91.5		194.8	15.44	92.9
	158.9	18.98	91.6		195.9	15.37	92.9
	160.1	19.08	91.6		197.1	15.42	92.9
	161.3	19.17	91.6		198.3	15.48	93.0
	162.4	19.28	91.7		199.4	15.49	93.0
	163.6	19.37	91.7		200.6	15.39	93.1

Printing every 7 samples

Serial # 8352 Outside				Serial # 8352 Outside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	201.8	15.35	93.1		243.6	16.65	94.5
	202.9	15.42	93.1		244.8	16.70	94.5
	204.1	15.46	93.2		245.9	16.76	94.5
	205.3	15.48	93.2		247.1	16.83	94.6
	206.4	15.43	93.3		248.3	16.86	94.6
	207.6	15.39	93.3		249.4	16.89	94.7
	208.8	15.43	93.3		250.6	16.95	94.7
	209.9	15.48	93.4		251.8	17.01	94.7
	211.1	15.50	93.4		252.9	17.07	94.8
	212.3	15.41	93.5		254.1	17.13	94.8
	213.4	15.23	93.5		255.3	17.20	94.8
	214.6	15.20	93.5		256.4	17.25	94.9
	215.8	15.29	93.6		257.6	17.28	94.9
	216.9	15.36	93.6		258.8	17.32	94.9
	218.1	15.41	93.6		259.9	17.38	95.0
	219.3	15.47	93.7		261.1	17.43	95.0
	220.4	15.54	93.7		262.3	17.48	95.0
	220.6	15.55	93.7		263.4	17.54	95.1
	220.8	15.56	93.7		264.6	17.60	95.1
Shut-In(2)	220.9	15.57	93.7		265.8	17.65	95.1
	221.1	15.57	93.8		266.9	17.69	95.2
	221.3	15.58	93.8		268.1	17.74	95.2
	221.4	15.59	93.8		269.3	17.80	95.2
	222.6	15.66	93.8		270.4	17.83	95.3
	223.8	15.74	93.8		271.6	17.88	95.3
	224.9	15.78	93.9		272.8	17.94	95.3
	226.1	15.82	93.9		273.9	17.98	95.4
	227.3	15.87	94.0		275.1	18.03	95.4
	228.4	15.92	94.0		276.3	18.09	95.4
	229.6	15.99	94.0		277.4	18.15	95.5
	230.8	16.06	94.1		278.6	18.21	95.5
	231.9	16.10	94.1		279.8	18.26	95.5
	233.1	16.15	94.1		280.9	18.30	95.6
	234.3	16.21	94.2		282.1	18.35	95.6
	235.4	16.26	94.2		283.3	18.39	95.6
	236.6	16.30	94.3		284.4	18.46	95.7
	237.8	16.34	94.3		285.6	18.52	95.7
	238.9	16.42	94.3		286.8	18.56	95.7
	240.1	16.47	94.4		287.9	18.63	95.8
	241.3	16.53	94.4		289.1	18.69	95.8
	242.4	16.60	94.4		290.3	18.73	95.8

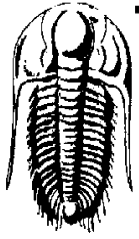
Printing every 7 samples

Serial # 8352 Outside				Serial # 8352 Outside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	291.4	18.78	95.8		328.8	1215.65	87.3
	292.6	18.83	95.9		329.9	1225.88	86.5
	293.8	18.89	95.9		331.1	1203.33	86.2
	294.9	18.94	95.9		332.3	1202.61	86.1
	296.1	18.98	96.0		333.4	1173.26	85.7
	297.3	19.03	96.0		334.6	1088.09	85.0
	298.4	19.08	96.0		335.8	1089.70	84.3
	299.6	19.12	96.1		336.9	1051.07	83.9
	300.8	19.17	96.1		338.1	966.09	83.4
	301.9	19.20	96.1		339.3	959.10	82.8
	302.6	19.21	96.1		340.4	900.27	82.5
	302.8	19.22	96.1		341.6	867.05	82.1
End Shut-In(2)	302.9	19.22	96.2		342.8	835.60	81.9
	303.1	19.22	96.2		343.9	760.65	81.9
	303.3	19.22	96.2		345.1	743.64	81.7
	303.4	19.23	96.2		346.3	672.51	80.9
	304.6	1674.31	97.1		347.4	651.63	79.3
	304.8	1668.55	97.5		348.6	562.73	78.4
Final Hydro-static	304.9	1672.15	97.7		349.8	560.23	77.2
	305.1	1669.44	97.8		350.9	507.16	76.3
	305.3	1667.13	97.8		352.1	478.63	76.1
	305.4	1664.37	97.8		353.3	438.93	74.3
	306.6	1651.23	97.8		354.4	349.91	73.3
	307.8	1644.05	97.7		355.6	349.07	72.3
	308.9	1675.90	97.7		356.8	319.38	71.4
	310.1	1643.15	97.5		357.9	288.57	70.9
	311.3	1627.24	96.9		359.1	220.16	70.2
	312.4	1616.81	96.8		360.3	197.05	69.5
	313.6	1608.13	96.7		361.4	154.11	68.8
	314.8	1602.37	96.7		362.6	105.58	68.0
	315.9	1605.57	96.7		363.8	75.12	67.3
	317.1	1584.93	95.4		364.9	44.33	67.3
	318.3	1541.28	94.4		366.1	-1.28	67.4
	319.4	1498.40	93.8		367.3	-1.27	67.6
	320.6	1450.72	93.7		368.4	-1.27	67.6
	321.8	1445.12	92.8		369.6	-1.27	67.6
	322.9	1453.24	91.8		370.8	-1.26	67.6
	324.1	1421.02	90.8		371.9	-1.26	67.6
	325.3	1346.16	90.1		373.1	-1.25	67.6
	326.4	1301.46	89.1		374.3	-1.25	67.7
	327.6	1297.25	88.1		375.4	-1.25	67.7

Printing every 7 samples

Serial # 8352 Outside				Serial # 8352 Outside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	376.6	-1.27	67.7		424.4	-1.70	40.8
	377.8	-1.27	67.7		425.6	-1.68	40.8
	378.9	-1.27	67.7		426.8	-1.66	40.9
	380.1	-1.27	67.7		427.3	-1.95	44.9
	381.3	-1.26	67.6				
	382.4	-1.26	67.6				
	383.6	-1.26	67.6				
	384.8	-1.25	67.6				
	385.9	-1.24	67.6				
	387.1	-1.22	67.6				
	388.3	-1.09	67.6				
	389.4	-0.95	67.5				
	390.6	-0.81	67.4				
	391.8	6.61	67.4				
	392.9	9.76	67.4				
	394.1	10.64	67.4				
	395.3	10.58	67.3				
	396.4	8.25	67.4				
	397.6	5.72	67.4				
	398.8	6.36	67.3				
	399.9	6.48	67.3				
	401.1	6.63	67.3				
	402.3	6.76	67.3				
	403.4	6.82	67.2				
	404.6	4.40	67.3				
	405.8	-0.03	67.2				
	406.9	-1.36	65.3				
	408.1	-1.53	60.5				
	409.3	-1.63	58.0				
	410.4	-1.67	56.5				
	411.6	-1.69	55.0				
	412.8	-1.70	53.6				
	413.9	-1.71	52.4				
	415.1	-1.73	51.2				
	416.3	-1.74	50.1				
	417.4	-1.70	49.1				
	418.6	-1.63	48.3				
	419.8	-1.60	45.8				
	420.9	-1.66	42.5				
	422.1	-1.70	41.5				
	423.3	-1.70	41.1				

Printing every 6 samples



**TRILOBITE
TESTING, INC.**

DRILL STEM TESTING - DATA LISTING

Sam Gary Jr. & Assoc. inc.

Hoss 1-22

1515 Wynkoop
Suite 700
Denver Co. 80202
ATTN: Neil Sharp

22-16s-16w Rush Co.

Job Ticket: 039995

DST#: 3

Test Start: 2010.12.04 @ 09:43:05

Serial # 8017 Inside				Serial # 8017 Inside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	0.0	-1.38	59.4		90.1	1112.64	83.6
	0.5	-1.12	61.2		91.1	1142.96	83.9
	1.0	-1.97	65.9		92.1	1173.13	84.3
	1.5	-1.88	64.6		93.1	1259.83	84.6
	11.9	-1.98	62.0		94.1	1265.77	84.9
	62.1	194.04	75.9		95.1	1297.86	85.5
	63.1	208.75	76.4		96.1	1467.19	85.8
	64.1	289.99	76.8		97.1	1385.87	86.2
	65.1	279.38	77.3		98.1	1423.34	86.7
	66.1	316.06	77.7		99.1	1454.23	87.1
	67.1	348.40	78.2		100.1	1406.78	87.7
	68.1	360.83	78.5		101.1	1451.91	88.0
	69.1	436.01	78.8		102.1	1577.67	88.2
	70.1	467.68	79.0		103.1	1609.05	88.8
	71.1	468.50	79.2		104.1	1620.81	89.0
	72.1	500.62	79.5		105.1	1637.67	90.0
	73.1	464.27	79.7		106.1	1631.82	90.1
	74.1	640.36	79.9		107.1	1625.89	90.2
	75.1	582.58	80.0		108.1	1657.64	90.1
	76.1	622.41	80.4		109.1	1651.21	90.0
	77.1	652.41	80.6		110.1	1668.93	90.4
	78.1	682.84	80.9		111.1	1662.60	90.5
	79.1	713.85	81.2		112.1	1656.58	90.6
	80.1	743.98	81.6		113.1	1650.95	90.6
	81.1	838.60	82.0		114.1	1651.10	90.6
	82.1	835.88	82.3		115.1	1650.12	90.6
	83.1	833.47	82.3		116.1	1657.48	90.6
	84.1	897.69	82.5		117.1	1722.88	90.7
	85.1	928.33	82.6		118.1	1678.98	90.7
	86.1	953.59	82.8		119.1	12.25	90.5
	87.1	1040.78	82.9		120.1	12.38	90.5
	88.1	1060.76	83.1		121.1	12.43	90.5
	89.1	1078.94	83.4		122.1	12.36	90.5

Printing every 6 samples

Serial # 8017 Inside				Serial # 8017 Inside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	123.1	12.40	90.5		164.1	17.04	91.6
	124.1	12.15	90.6		165.1	17.10	91.6
	125.1	12.96	90.6		166.1	17.16	91.6
	126.1	13.19	90.6		167.1	17.24	91.7
	127.1	13.39	90.6		168.1	17.29	91.7
	128.1	13.55	90.6		169.1	17.36	91.7
	129.1	13.70	90.6		170.1	17.45	91.8
	130.1	13.85	90.7		171.1	17.50	91.8
	131.1	14.00	90.7		172.1	17.54	91.9
	132.1	14.13	90.7		173.1	17.60	91.9
	133.1	14.26	90.7		174.1	17.69	91.9
	134.1	14.37	90.7		175.1	17.75	92.0
	135.1	14.48	90.7		176.1	17.81	92.0
	136.1	14.61	90.8		177.1	17.86	92.0
	137.1	14.74	90.8		178.1	17.92	92.1
	138.1	14.86	90.8		179.1	17.98	92.1
	139.1	14.97	90.8		180.1	18.04	92.2
	140.1	15.08	90.9		181.1	18.09	92.2
	141.1	15.18	90.9		182.1	18.10	92.2
	142.1	15.25	90.9		183.1	18.11	92.3
	143.1	15.33	90.9		184.1	13.05	92.3
	144.1	15.44	90.9		185.1	13.09	92.3
	145.1	15.53	91.0		186.1	13.12	92.4
	146.1	15.61	91.0		187.1	13.10	92.4
	147.1	15.70	91.0		188.1	13.10	92.5
	148.1	15.81	91.1		189.1	13.12	92.5
	149.1	15.88	91.1		190.1	13.15	92.5
	150.1	15.96	91.1		191.1	13.12	92.6
	151.1	16.07	91.1		192.1	13.09	92.6
	152.1	16.14	91.2		193.1	13.14	92.6
	153.1	16.23	91.2		194.1	13.21	92.7
	154.1	16.30	91.2		195.1	13.11	92.7
	155.1	16.39	91.3		196.1	13.05	92.8
	156.1	16.46	91.3		197.1	13.08	92.8
	157.1	16.55	91.3		198.1	13.12	92.8
	158.1	16.64	91.4		199.1	13.14	92.9
	159.1	16.71	91.4		200.1	13.11	92.9
	160.1	16.77	91.4		201.1	13.05	92.9
	161.1	16.82	91.5		202.1	13.05	93.0
	162.1	16.88	91.5		203.1	13.11	93.0
	163.1	16.97	91.5		204.1	13.12	93.0

Printing every 6 samples

Serial # 8017 Inside				Serial # 8017 Inside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	205.1	13.13	93.1		246.1	14.02	94.5
	206.1	13.13	93.1		247.1	14.06	94.5
	207.1	13.06	93.2		248.1	14.10	94.6
	208.1	13.00	93.2		249.1	14.12	94.6
	209.1	13.08	93.2		250.1	14.16	94.6
	210.1	13.14	93.3		251.1	14.18	94.7
	211.1	13.13	93.3		252.1	14.23	94.7
	212.1	13.06	93.3		253.1	14.29	94.7
	213.1	12.91	93.4		254.1	14.33	94.8
	214.1	12.81	93.4		255.1	14.34	94.8
	215.1	12.88	93.4		256.1	14.36	94.8
	216.1	12.92	93.5		257.1	14.39	94.9
	217.1	12.95	93.5		258.1	14.44	94.9
	218.1	13.00	93.6		259.1	14.48	94.9
	219.1	13.03	93.6		260.1	14.50	95.0
	220.1	13.08	93.6		261.1	14.52	95.0
	221.1	13.12	93.7		262.1	14.57	95.0
	222.1	13.15	93.7		263.1	14.60	95.0
	223.1	13.19	93.7		264.1	14.64	95.1
	224.1	13.24	93.8		265.1	14.67	95.1
	225.1	13.28	93.8		266.1	14.71	95.1
	226.1	13.33	93.8		267.1	14.77	95.2
	227.1	13.35	93.9		268.1	14.84	95.2
	228.1	13.38	93.9		269.1	14.92	95.2
	229.1	13.41	93.9		270.1	14.98	95.3
	230.1	13.47	94.0		271.1	15.04	95.3
	231.1	13.50	94.0		272.1	15.16	95.3
	232.1	13.54	94.0		273.1	15.26	95.3
	233.1	13.57	94.1		274.1	15.34	95.4
	234.1	13.59	94.1		275.1	15.37	95.4
	235.1	13.62	94.1		276.1	15.42	95.4
	236.1	13.64	94.2		277.1	15.46	95.5
	237.1	13.68	94.2		278.1	15.52	95.5
	238.1	13.72	94.2		279.1	15.55	95.5
	239.1	13.78	94.3		280.1	15.59	95.6
	240.1	13.83	94.3		281.1	15.65	95.6
	241.1	13.87	94.3		282.1	15.71	95.6
	242.1	13.91	94.4		283.1	15.74	95.6
	243.1	13.93	94.4		284.1	15.77	95.7
	244.1	13.98	94.4		285.1	15.81	95.7
	245.1	14.01	94.5		286.1	15.85	95.7

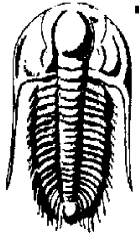
Printing every 6 samples

Serial # 8017 Inside				Serial # 8017 Inside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	287.1	15.89	95.8		328.1	1243.17	87.8
	288.1	15.94	95.8		329.1	1223.33	87.1
	289.1	15.98	95.8		330.1	1224.21	86.5
	290.1	16.03	95.8		331.1	1202.52	86.2
	291.1	16.05	95.9		332.1	1203.02	86.1
	292.1	16.09	95.9		333.1	1186.42	86.0
	293.1	16.12	95.9		334.1	1140.55	85.2
	294.1	16.17	95.9		335.1	1111.74	84.6
	295.1	16.23	96.0		336.1	1080.92	84.1
	296.1	16.26	96.0		337.1	1049.24	83.7
	297.1	16.30	96.0		338.1	976.44	83.3
	298.1	16.34	96.1		339.1	936.39	82.9
	299.1	16.38	96.1		340.1	921.07	82.5
	300.1	16.43	96.1		341.1	895.94	82.2
	301.1	16.47	96.1		342.1	846.21	82.0
	302.1	16.51	96.2		343.1	786.52	81.8
	303.1	16.54	96.2		344.1	761.59	81.8
	304.1	16.50	96.2		345.1	742.01	81.7
	305.1	1669.54	97.8		346.1	699.20	81.2
	306.1	1656.00	98.0		347.1	644.90	79.9
	307.1	1647.30	98.1		348.1	618.51	78.7
	308.1	1641.76	98.1		349.1	589.22	77.8
	309.1	1631.47	97.9		350.1	518.75	77.0
	310.1	1642.95	97.7		351.1	498.70	76.5
	311.1	1626.67	97.4		352.1	470.36	76.5
	312.1	1619.62	96.9		353.1	438.90	75.0
	313.1	1610.98	96.8		354.1	406.89	73.7
	314.1	1604.97	96.8		355.1	377.14	72.8
	315.1	1600.34	96.7		356.1	347.14	72.1
	316.1	1604.95	96.7		357.1	317.62	71.4
	317.1	1584.49	95.5		358.1	286.88	70.9
	318.1	1541.43	94.5		359.1	220.89	70.3
	319.1	1448.52	94.2		360.1	193.87	69.6
	320.1	1508.32	93.8		361.1	165.00	69.1
	321.1	1512.27	93.2		362.1	134.67	68.4
	322.1	1480.57	92.5		363.1	88.00	67.7
	323.1	1451.76	91.7		364.1	73.36	67.2
	324.1	1420.31	90.8		365.1	42.63	67.2
	325.1	1388.63	90.1		366.1	-2.25	67.2
	326.1	1356.80	89.4		367.1	-2.21	67.5
	327.1	1280.97	88.6		368.1	-2.20	67.5

Printing every 6 samples

Serial # 8017 Inside				Serial # 8017 Inside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	369.1	-2.19	67.5		410.1	-2.44	49.7
	370.1	-2.20	67.5		411.1	-2.47	47.0
	371.1	-2.20	67.5		412.1	-2.50	45.1
	372.1	-2.23	67.5		413.1	-2.52	43.9
	373.1	-2.23	67.5		414.1	-2.51	43.0
	374.1	-2.19	67.5		415.1	-2.49	42.3
	375.1	-2.20	67.5		416.1	-2.50	41.6
	376.1	-2.22	67.5		417.1	-2.46	41.2
	377.1	-2.23	67.5		418.1	-2.44	40.9
	378.1	-2.24	67.5		419.1	-2.43	40.8
	379.1	-2.21	67.5		420.1	-2.38	40.1
	380.1	-2.19	67.5		421.1	-2.38	39.4
	381.1	-2.20	67.5		422.1	-2.41	41.6
	382.1	-2.23	67.5		423.1	-2.39	42.0
	383.1	-2.23	67.5		424.1	-2.38	41.9
	384.1	-2.24	67.5		425.1	-2.33	42.0
	385.1	-2.27	67.5		426.1	-2.36	42.1
	386.1	-2.29	67.5		427.1	-2.03	42.9
	387.1	-2.27	67.5		427.4	-2.45	48.3
	388.1	-2.27	67.5				
	389.1	-2.26	67.5				
	390.1	-2.24	67.5				
	391.1	3.09	67.3				
	392.1	5.74	67.2				
	393.1	8.22	67.1				
	394.1	9.12	67.1				
	395.1	9.10	67.1				
	396.1	6.33	67.1				
	397.1	5.83	67.2				
	398.1	4.86	67.2				
	399.1	4.91	67.3				
	400.1	4.96	67.4				
	401.1	5.07	67.4				
	402.1	5.17	67.4				
	403.1	5.23	67.4				
	404.1	4.90	67.2				
	405.1	2.26	67.2				
	406.1	-2.34	66.9				
	407.1	-2.33	64.9				
	408.1	-2.35	60.1				
	409.1	-2.39	53.7				

Printing every 3 samples



**TRILOBITE
TESTING, INC.**

DRILL STEM TESTING - DATA LISTING

Sam Gary Jr. & Assoc.inc.

Hoss 1-22

1515 Wynkoop
Suite 700
Denver Co. 80202
ATTN: Neil Sharp

22-16s-16w Rush Co.

Job Ticket: 039995

DST#: 3

Test Start: 2010.12.04 @ 09:43:05

Serial # 8650 Fluid				Serial # 8650 Fluid			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	0.0	-0.71	69.4		1.6	-0.75	73.5
	0.1	-0.82	69.7		1.7	-0.75	73.5
	0.1	-0.79	69.9		1.8	-0.73	73.4
	0.2	-0.79	70.1		1.8	-0.70	73.3
	0.2	-0.80	70.3		1.9	-0.68	73.2
	0.3	-0.79	70.3		1.9	-0.59	73.0
	0.3	-0.75	70.4		2.0	-0.52	72.9
	0.3	-0.68	70.4		12.0	-0.48	45.5
	0.4	-0.63	70.4		42.0	-0.73	37.1
	0.4	-0.59	70.5		62.5	-0.37	60.9
	0.5	-0.55	70.6		64.0	-0.35	64.6
	0.6	-0.54	70.9		65.5	-0.33	67.5
	0.6	-0.55	71.1		67.0	-0.30	69.9
	0.7	-0.56	71.5		68.5	-0.27	71.9
	0.7	-0.56	71.8		70.0	-0.24	73.5
	0.8	-0.60	72.1		71.5	-0.23	74.8
	0.8	-0.61	72.4		73.0	-0.21	75.7
	0.9	-0.64	72.7		74.5	-0.17	76.5
	0.9	-0.65	73.0		76.0	-0.15	77.2
	0.9	-0.64	73.3		77.5	-0.13	77.8
	1.0	-0.65	73.5		79.0	-0.08	78.4
	1.1	-0.66	73.8		80.5	-0.03	79.0
	1.1	-0.67	74.1		82.0	0.00	79.5
	1.1	-0.69	74.3		83.5	0.04	80.1
	1.2	-0.72	74.4		85.0	0.06	80.8
	1.3	-0.73	74.4		86.5	0.11	81.2
	1.3	-0.75	74.3		88.0	0.15	81.6
	1.4	-0.76	74.3		89.5	0.21	81.9
	1.4	-0.76	74.1		91.0	0.27	82.3
	1.5	-0.76	74.0		92.5	0.31	82.7
	1.5	-0.76	73.8		94.0	0.37	83.2
	1.6	-0.75	73.7		95.5	0.42	83.7
	1.6	-0.75	73.6		97.0	0.47	84.2

Printing every 3 samples

Serial # 8650				Serial # 8650			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	98.5	0.52	84.8		160.0	0.48	93.1
	100.0	0.58	85.5		161.5	0.49	93.1
	101.5	0.61	86.2		163.0	0.49	93.1
	103.0	0.64	86.9		164.5	0.49	93.2
	104.5	0.66	87.5		166.0	0.48	93.2
	106.0	0.68	88.2		167.5	0.47	93.3
	107.5	0.67	88.8		169.0	0.47	93.3
	109.0	0.68	89.2		170.5	0.47	93.3
	110.5	0.67	89.7		172.0	0.48	93.4
	112.0	0.66	90.2		173.5	0.48	93.4
	113.5	0.63	90.6		175.0	0.48	93.5
	115.0	0.62	90.9		176.5	0.49	93.5
	116.5	0.60	91.1		178.0	0.47	93.6
	118.0	0.58	91.3		179.5	0.47	93.6
	119.5	0.58	91.4		181.0	0.47	93.6
	121.0	0.58	91.6		182.5	0.45	93.7
	122.5	0.58	91.7		184.0	0.45	93.7
	124.0	0.58	91.8		185.5	0.46	93.8
	125.5	0.59	91.9		187.0	0.46	93.8
	127.0	0.56	92.0		188.5	0.46	93.8
	128.5	0.55	92.1		190.0	0.46	93.9
	130.0	0.54	92.1		191.5	0.46	93.9
	131.5	0.52	92.2		193.0	0.46	93.9
	133.0	0.51	92.2		194.5	0.45	94.0
	134.5	0.51	92.3		196.0	0.46	94.0
	136.0	0.51	92.3		197.5	0.46	94.1
	137.5	0.53	92.4		199.0	0.46	94.1
	139.0	0.53	92.4		200.5	0.46	94.1
	140.5	0.53	92.5		202.0	0.47	94.2
	142.0	0.53	92.5		203.5	0.47	94.2
	143.5	0.52	92.6		205.0	0.46	94.3
	145.0	0.50	92.6		206.5	0.46	94.3
	146.5	0.50	92.6		208.0	0.48	94.3
	148.0	0.51	92.7		209.5	0.47	94.4
	149.5	0.50	92.7		211.0	0.47	94.4
	151.0	0.49	92.8		212.5	0.48	94.5
	152.5	0.49	92.8		214.0	0.47	94.5
	154.0	0.47	92.9		215.5	0.46	94.5
	155.5	0.46	92.9		217.0	0.46	94.6
	157.0	0.47	93.0		218.5	0.45	94.6
	158.5	0.47	93.0		220.0	0.45	94.6

Printing every 3 samples

Serial # 8650				Serial # 8650			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	221.5	0.44	94.7		283.0	0.44	96.1
	223.0	0.43	94.7		284.5	0.44	96.1
	224.5	0.43	94.7		286.0	0.42	96.1
	226.0	0.44	94.8		287.5	0.42	96.2
	227.5	0.44	94.8		289.0	0.41	96.2
	229.0	0.45	94.9		290.5	0.40	96.2
	230.5	0.46	94.9		292.0	0.40	96.3
	232.0	0.46	94.9		293.5	0.43	96.3
	233.5	0.46	95.0		295.0	0.42	96.3
	235.0	0.44	95.0		296.5	0.43	96.4
	236.5	0.43	95.0		298.0	0.43	96.4
	238.0	0.43	95.1		299.5	0.43	96.4
	239.5	0.43	95.1		301.0	0.42	96.4
	241.0	0.43	95.2		302.5	0.42	96.5
	242.5	0.44	95.2		304.0	0.41	96.5
	244.0	0.44	95.2		305.5	0.40	96.5
	245.5	0.43	95.3		307.0	0.39	96.6
	247.0	0.43	95.3		308.5	0.37	96.6
	248.5	0.43	95.3		310.0	0.35	96.6
	250.0	0.43	95.4		311.5	0.33	96.4
	251.5	0.44	95.4		313.0	0.31	96.3
	253.0	0.44	95.4		314.5	0.27	96.2
	254.5	0.45	95.5		316.0	0.22	96.1
	256.0	0.45	95.5		317.5	0.15	95.8
	257.5	0.44	95.5		319.0	0.08	95.3
	259.0	0.43	95.6		320.5	0.01	94.8
	260.5	0.43	95.6		322.0	-0.05	94.2
	262.0	0.43	95.6		323.5	-0.11	93.4
	263.5	0.43	95.7		325.0	-0.16	92.6
	265.0	0.45	95.7		326.5	-0.20	91.7
	266.5	0.45	95.7		328.0	-0.25	90.8
	268.0	0.44	95.8		329.5	-0.29	89.8
	269.5	0.41	95.8		331.0	-0.31	88.9
	271.0	0.40	95.8		332.5	-0.33	88.2
	272.5	0.40	95.9		334.0	-0.39	87.5
	274.0	0.40	95.9		335.5	-0.41	86.9
	275.5	0.40	95.9		337.0	-0.46	86.2
	277.0	0.42	96.0		338.5	-0.51	85.6
	278.5	0.42	96.0		340.0	-0.56	85.0
	280.0	0.42	96.0		341.5	-0.62	84.5
	281.5	0.44	96.1		343.0	-0.67	84.1

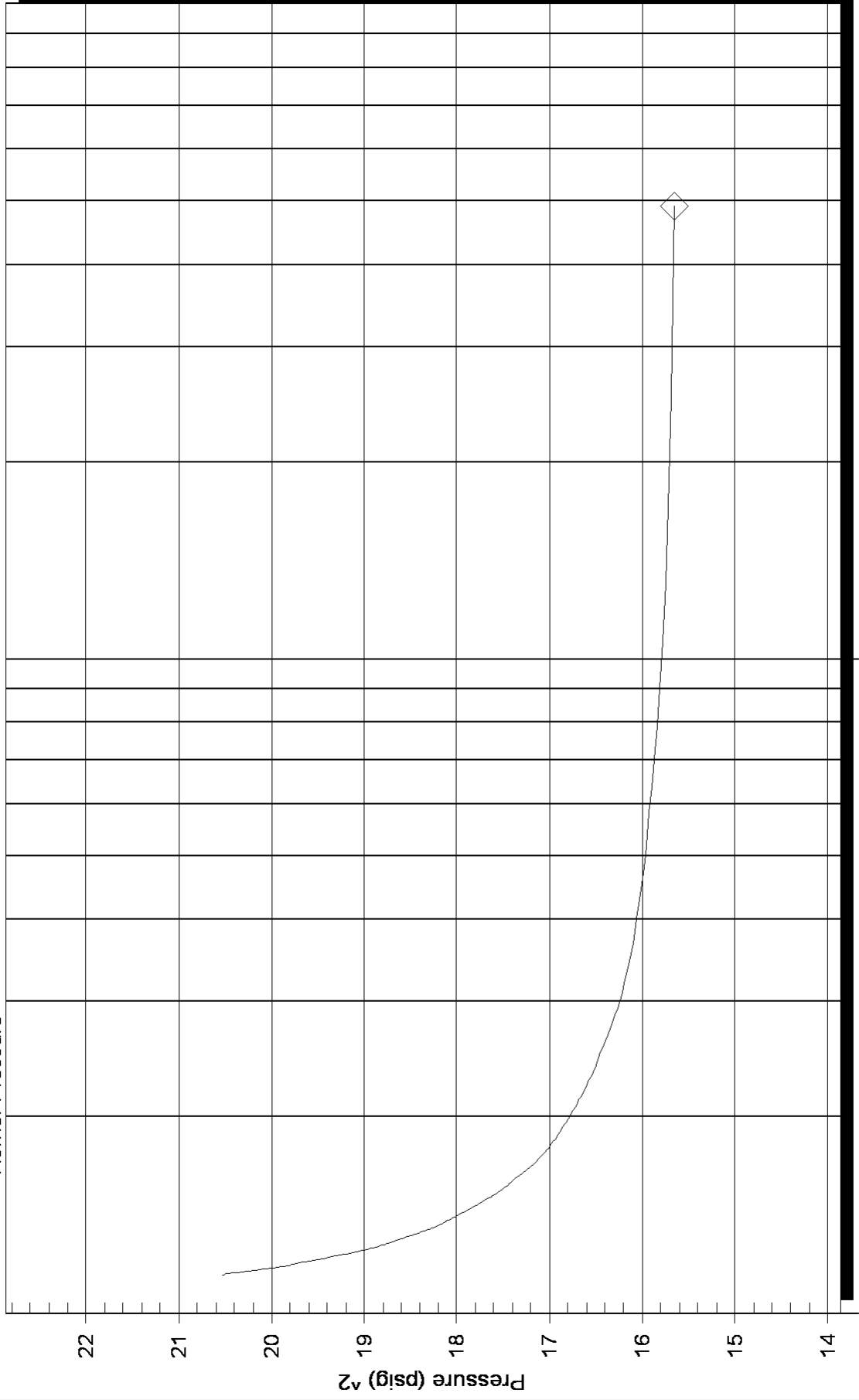
Printing every 3 samples

Serial # 8650				Serial # 8650			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	344.5	-0.75	83.7		406.0	-0.99	37.6
	346.0	-0.79	83.0		407.5	-0.99	37.5
	347.5	-0.85	82.2		409.0	-1.02	37.4
	349.0	-0.90	81.4		410.5	-1.04	37.3
	350.5	-0.94	80.5		412.0	-1.04	37.2
	352.0	-0.96	79.5		413.5	-1.03	37.1
	353.5	-1.00	78.5		415.0	-1.01	37.0
	355.0	-1.03	77.5		416.5	-0.93	36.9
	356.5	-1.08	76.6		418.0	-0.85	36.8
	358.0	-1.11	75.8		419.5	-0.78	37.2
	359.5	-1.14	74.9		421.0	-1.07	36.8
	361.0	-1.15	74.1		422.5	-0.72	44.1
	362.5	-1.13	73.3		424.0	-0.68	43.8
	364.0	-1.07	72.5		425.5	-0.68	43.6
	365.5	-1.00	71.8		426.0	-0.72	43.6
	367.0	-0.93	71.2				
	368.5	-0.88	64.6				
	370.0	-0.86	58.7				
	371.5	-0.90	54.1				
	373.0	-0.92	50.8				
	374.5	-0.96	48.0				
	376.0	-0.97	46.0				
	377.5	-0.99	44.1				
	379.0	-1.00	42.8				
	380.5	-1.00	41.9				
	382.0	-1.00	41.0				
	383.5	-1.00	40.4				
	385.0	-1.01	40.0				
	386.5	-1.02	39.6				
	388.0	-1.04	39.4				
	389.5	-1.04	39.2				
	391.0	-1.04	39.0				
	392.5	-1.02	38.8				
	394.0	-1.01	38.6				
	395.5	-1.00	38.5				
	397.0	-1.01	38.3				
	398.5	-1.01	38.1				
	400.0	-1.02	37.9				
	401.5	-1.00	37.8				
	403.0	-0.99	37.7				
	404.5	-0.98	37.6				

Printing every 3 samples

Homer Plot

Horner Pressure



Horner Time: (Twf + dt) / dt

Slope (m) : kpa/log cycle

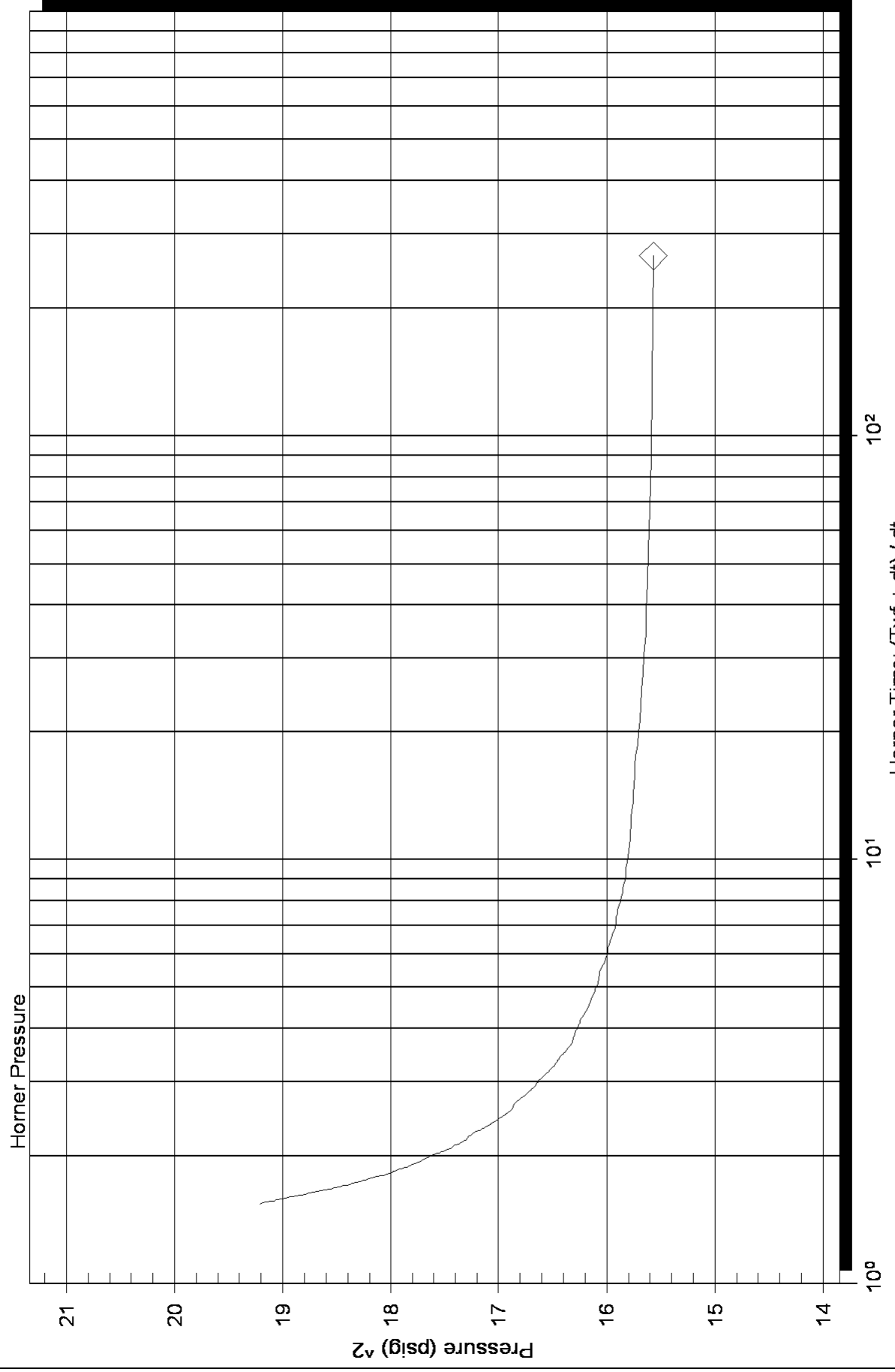
P* :

Serial Number: 8352 (Outside)

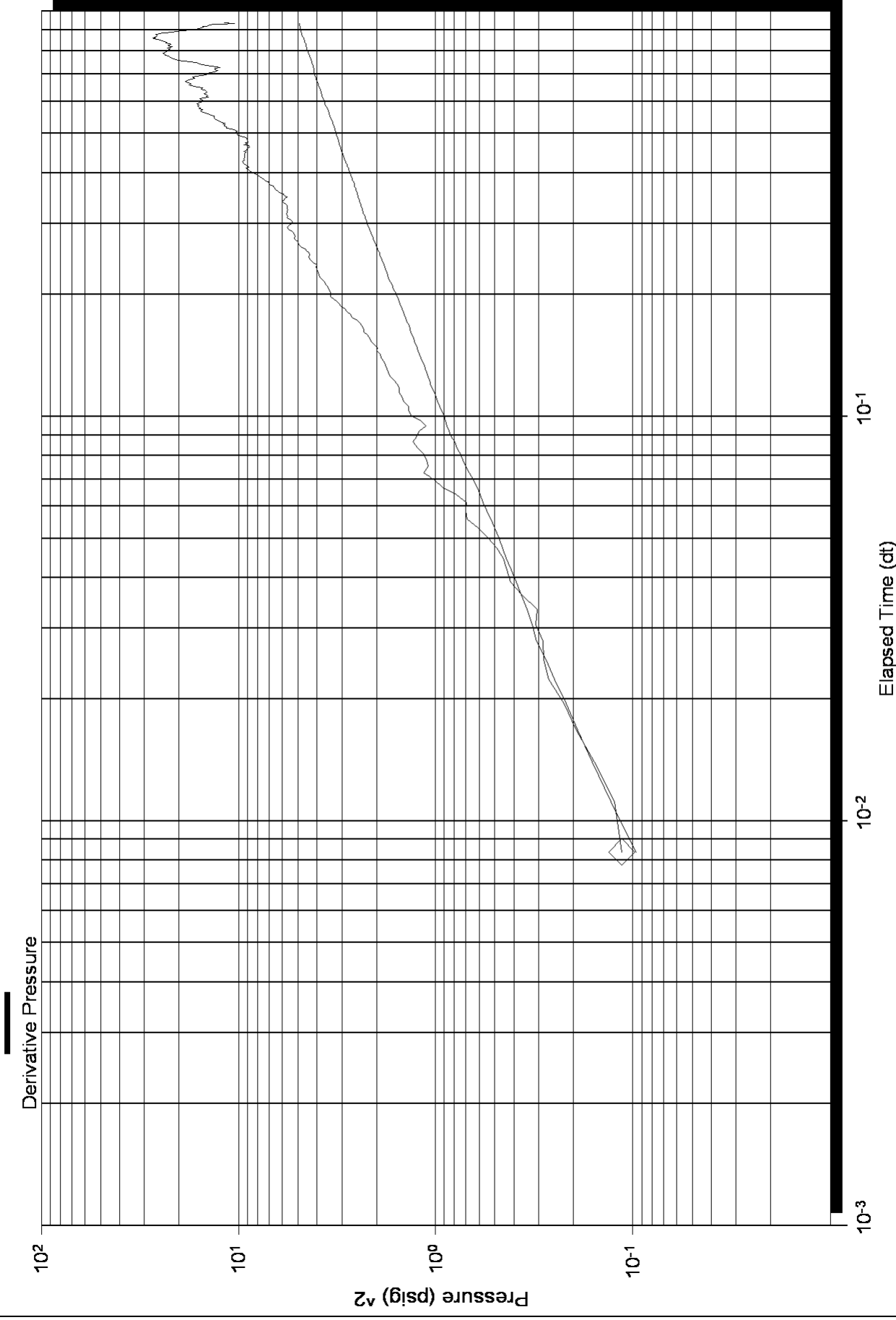
Flow Cycle: 1

Homer Plot

Horner Pressure



Log-Log and Pseudo-Derivative



Log-Log and Pseudo-Log-Derivative

