KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1052818

Form ACO-1
June 2009
Form Must Be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 3882
Name: Samuel Gary Jr. & Associates, Inc.
Address 1: 1515 WYNKOOP, STE 700
Address 2:
City: DENVER State: CO Zip: 80202 + __ __ __ __
Contact Person: NEIL SHARP
Phone: (303) 831-4673
CONTRACTOR: License # 31548
Name: Discovery Drilling
Wellsite Geologist: TIM HEDRICK
Purchaser:

Designate Type of Completion:

- [x] New Well
- [ ] Re-Entry
- [ ] Workover

- [ ] Oil
- [ ] WSW
- [ ] SWD
- [ ] SIOW
- [ ] Gas
- [x] D&A
- [ ] ENHR
- [ ] SIGW
- [ ] OG
- [ ] GSW
- [ ] Temp. Abd.
- [ ] CM *(Coal Bed Methane)*
- [ ] Cathodic
- [ ] Other *(Core, Expl., etc.)*:

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

Operator:
Well Name:
Original Comp. Date: Original Total Depth:

- [ ] Deepening
- [ ] Re-perf.
- [ ] Conv. to ENHR
- [ ] Conv. to SWD
- [ ] Conv. to GSW
- [ ] Plug Back: Plug Back Total Depth
- [ ] Commingled Permit #:
- [ ] Dual Completion Permit #:
- [ ] SWD Permit #:
- [ ] ENHR Permit #:
- [ ] GSW Permit #:

11/27/2010	12/05/2010	12/05/2010
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-165-21911-00-00
Spot Description:
S2 - N2 - S2 - SE Sec. 22 Twp. 16 S. R. 16 [ ] East [x] West
890 Feet from [ ] North / [x] South Line of Section
1320 Feet from [x] East / [ ] West Line of Section
Footages Calculated from Nearest Outside Section Corner:
[ ] NE [ ] NW [x] SE [ ] SW
County: Rush
Lease Name: Hoss Well #: 1-22
Field Name:
Producing Formation: N/A
Elevation: Ground: 1931 Kelly Bushing: 1939
Total Depth: 3620 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 1049 Feet
Multiple Stage Cementing Collar Used? [ ] Yes [x] No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)

Chloride content: 22000 ppm Fluid volume: 480 bbls
Dewatering method used: Haul Off Pit

Location of fluid disposal if hauled offsite:

Operator Name: TDI INC.
Lease Name: DREILING B License #: 4787
Quarter SW Sec. 22 Twp. 14 S. R. 16 [ ] East [x] West
County: ELLIS Permit #: D25112

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- [x] **Letter of Confidentiality Received**
  Date: 03/24/2011
- [x] **Confidential Release Date:** 03/23/2013
- [x] **Wireline Log Received**
- [x] **Geologist Report Received**
- [ ] **UIC Distribution**

ALT [x] **I** [ ] **II** [ ] **III** **Approved by:** NAOMI JAMES **Date:** 03/28/2011

Side Two

1052818

Operator Name: Samuel Gary Jr. & Associates, Inc. Lease Name: Hoss Well #: 1-22

Sec. 22 Twp. 16 S. R. 16 ☐ East ☑ West County: Rush

INSTRUCTIONS: Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

Electric Log Submitted Electronically ☑ Yes ☐ No
(If no, Submit Copy)

List All E. Logs Run:
Attached

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
TOPEKA	2945	-1006
HEEBNER	3177	-1238
DOUGLAS	3210	-1271
LANSING	3232	-1293
ARBUCKLE	3520	-1581
TD	3620	

CASING RECORD ☑ New ☐ Used
Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
SURFACE	12.25	8.625	23	1049	CLASS A	400	2% GEL, 3% CC

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:
☐ Perforate
☐ Protect Casing
☐ Plug Back TD
☐ Plug Off Zone

Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
-			
-			

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

TUBING RECORD: Size: Set At: Packer At: Liner Run: ☐ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR. Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION:
☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)*

PRODUCTION INTERVAL:

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Samuel Gary Jr. & Associates, Inc.
Well Name	Hoss 1-22
Doc ID	1052818

All Electric Logs Run

DIL
MICRO
POR
SONIC

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

Kansas
Corporation Commission

phone: 316-337-6200
fax: 316-337-6211
http://kcc.ks.gov/

Thomas E. Wright, Chairman
Ward Loyd, Commissioner

Sam Brownback, Governor

March 24, 2011

NEIL SHARP
Samuel Gary Jr. & Associates, Inc.
1515 WYNKOOP, STE 700
DENVER, CO 80202

Re: ACO1
API 15-165-21911-00-00
Hoss 1-22
SE/4 Sec.22-16S-16W
Rush County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office at 303-831-4673.

Respectfully,
NEIL SHARP

QUALITY OILWELL CEMENTING, INC.
PO Box 32 - 740 West Wichita Ave, Russell KS 67665
Phone:785-324-1041 fax:785-483-1087
Email: cementing@ruraltel.net

Date: 11/30/2010
Invoice # 4461

P.O.#:

Due Date: 12/30/2010
Division: *Russell*

Invoice

Contact:
Samuel Gary Jr & Associates Inc
Address/Job Location:
Samuel Gary Jr & Associates Inc
3111 W. 10th Street
Great Bend, KS 67503

Reference:
HOSS 1-22

Description of Work:
LONG SURFACE JOB

☑ DRLG ☐ COMP ☐ W/O ☐ LOE
AFE #
ACCT # 8200-138
APPROVED BY

Services / Items Included:

	Quantity		Price	Taxable
Labor		$	693.97	No
Common-Class A	400	$	4,945.07	Yes
8 5/8" Basket	3	$	960.64	Yes
Bulk Truck Matl-Material Service Charge	422	$	855.25	No
Calcium Chloride	14	$	534.27	Yes
Pump Truck Mileage-Job to Nearest Camp	31	$	313.51	No
Flo Seal	100	$	202.67	Yes
8 5/8" Centralizer	3	$	194.56	Yes
Bulk Truck Mileage-Job to Nearest Bulk Plant	31	$	183.45	No
Premium Gel (Bentonite)	8	$	131.98	Yes
8 5/8" Top Rubber Plug	1	$	107.41	Yes

Item	Quantity	Price	Taxable
Baffle Plate Aluminum, 8 5/8"	1	$91.20	Yes

Invoice Terms:
Net 30

SubTotal:	$	*9,213.98*
Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice:	$	(1,382.10)
SubTotal for Taxable Items:	$	6,092.62
SubTotal for Non-Taxable Items:	$	1,149.38
Total:	$	7,831.88
6.30% Rush County Sales Tax Tax:	$	383.84
Amount Due:	**$**	**8,215.72**
Applied Payments:		
Balance Due:	**$**	**8,215.72**

Thank You For Your Business!

Past Due Invoices are subject to a service charge (annual rate of 24%)
This does not include any applicable taxes unless it is listed.

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025 Home Office P.O. Box 32 Russell, KS 67665 No. 4461
Cell 785-324-1041

	Sec.	Twp.	Range	County	State	On Location	Finish
Date 11-29-10	22	16	16	Rush	Kansas		2:30am
Lease Hoss	Well No. 1-22			Location Galatia 7W 15			
Contractor Discovery Drilling				Owner			
Type Job Surface				To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Hole Size 12¼	T.D. 1049			Charge To Samuel Gary Jr. & Associates			
Csg. 8⅝ 23lb	Depth 1049			Street			
Tbg. Size	Depth			City	State		
Tool	Depth			The above was done to satisfaction and supervision of owner agent or contractor.			
Cement Left in Csg. 36'	Shoe Joint 36'			Cement Amount Ordered 400 Common ¼ Flowseal 3%CC 2%Gel			
Meas Line	Displace 6½ Bbl						

EQUIPMENT

Pumptrk 5	No.	Cementer	Steve
		Helper	
Bulktrk 12	No.	Driver	Brandon
		Driver	
Bulktrk	No.	Driver	Brian
		Driver	

JOB SERVICES & REMARKS

Remarks:

Rat Hole

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

Cement did Circulate

Common	400
Poz. Mix	
Gel.	8
Calcium	14
Hulls	
Salt	
Flowseal	100#
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	422
Mileage	

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	3
Baskets	3
AFU Inserts	
Float Shoe	
Latch Down	
	Baffle Plate 8⅝ Rubber Plug
Pumptrk Charge	
Mileage	
Tax	
Discount	
Total Charge	

X Signature

QUALITY OILWELL CEMENTING, INC.
PO Box 32 - 740 West Wichita Ave, Russell KS 67665
Phone:785-324-1041 fax:785-483-1087
Email: cementing@ruraltel.net

Date: 12/6/2010
Invoice # 4429
P.O.#:
Due Date: 1/5/2011
Division: *Russell*

Invoice

☑ DRLG ☐ COMP ☐ W/O ☐ LOE ☐ GG

Account	8200 - 138
Well/Prospect	HOSS 1-22
Deck	
AFE	
Approval	
Description	

Contact:
Samuel Gary Jr & Associates Inc
Address/Job Location:
Samuel Gary Jr & Associates Inc
3111 W. 10th Street
Great Bend, KS 67503

Reference:
HOSS 1-22

Description of Work:
PLUG JOB

Services / Items Included:

	Quantity	Price	Taxable
Labor		$ 963.85	No
Common-Class A	126	$ 1,622.60	Yes
Bulk Truck Matl-Material Service Charge	217	$ 458.11	No
Pump Truck Mileage-Job to Nearest Camp	31	$ 326.57	No
Bulk Truck Mileage-Job to Nearest Bulk Plant	31	$ 191.10	No
POZ Mix-Standard	34	$ 165.09	Yes
Premium Gel (Bentonite)	7	$ 120.29	Yes
Flo Seal	53	$ 111.89	Yes

Item	Quantity	Price	Taxable

Invoice Terms:
Net 30

SubTotal:	$	*3,959.49*
Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice:	$	(593.92)
SubTotal for Taxable Items:	$	1,716.89
SubTotal for Non-Taxable Items:	$	829.41
Total:	$	3,365.57
6.30% Rush County Sales Tax Tax:	$	108.16
Amount Due:	**$**	**3,473.73**
Applied Payments:		
Balance Due:	**$**	**3,473.73**

Thank You For Your Business!

Past Due Invoices are subject to a service charge (annual rate of 24%)
This does not include any applicable taxes unless it is listed.

RECEIVED
DEC 16 2010
SAMUEL GARY JR.
& ASSOCIATES, INC.

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025 | Home Office P.O. Box 32 Russell, KS 67665 | No. 4429

Cell 785-324-1041

Date	Sec.	Twp.	Range	County	State	On Location	Finish
12-5-10	22	16	16	Rush	KS		9:00 p.m.

Lease Hoss | Well No. 1-22 | Location Galatia 7 1/2 W N into

Contractor Discovery #2

Owner

Type Job Rotary Plug

To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Hole Size 7 7/8 | T.D. 3620

Csg. | Depth

Charge To Sam Lucas Jr & Associates

Tbg. Size | Depth

Street

Tool | Depth

City | State

Cement Left in Csg. | Shoe Joint

The above was done to satisfaction and supervision of owner agent or contractor.

Meas Line | Displace

Cement Amount Ordered 210 60/40 4% Gel 1/4# Flo

EQUIPMENT

	No.		
Pumptrk 9	No.	Cementer Craig	
		Helper Paul	
Bulktrk	No.	Driver	
		Driver	
Bulktrk 12	No.	Driver	
		Driver Brian	

Common	126
Poz. Mix	34
Gel.	7
Calcium	
Hulls	
Salt	
Flowseal	53#
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	217
Mileage	

JOB SERVICES & REMARKS

Remarks:

Rat Hole 30sk

Mouse Hole 20sk

Centralizers

Baskets

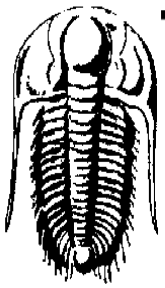
D/V or Port Collar

1st	3500	50sk
	1080	50sk
	460	40sk
	60	20sk

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
Pumptrk Charge	Plug
Mileage	31
Tax	
Discount	
Total Charge	

X Signature [signature]



TRILOBITE TESTING, INC.

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: 2010.12.02 @ 21:47:05
End Date: 2010.12.03 @ 05:34:09
Job Ticket #: 039993 DST #: 1

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

DRILL STEM TEST REPORT

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

22-16s-16w Rush Co.

Job Ticket: 039993 **DST#: 1**

Test Start: 2010.12.02 @ 21:47:05

GENERAL INFORMATION:

Formation: **LKC "F-G"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:37:10
Time Test Ended: 05:34:09

Test Type: Conventional Bottom Hole
Tester: Andy Carreira
Unit No: 31

Interval: 3300.00 ft (KB) To 3336.00 ft (KB) (TVD)
Total Depth: 3336.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

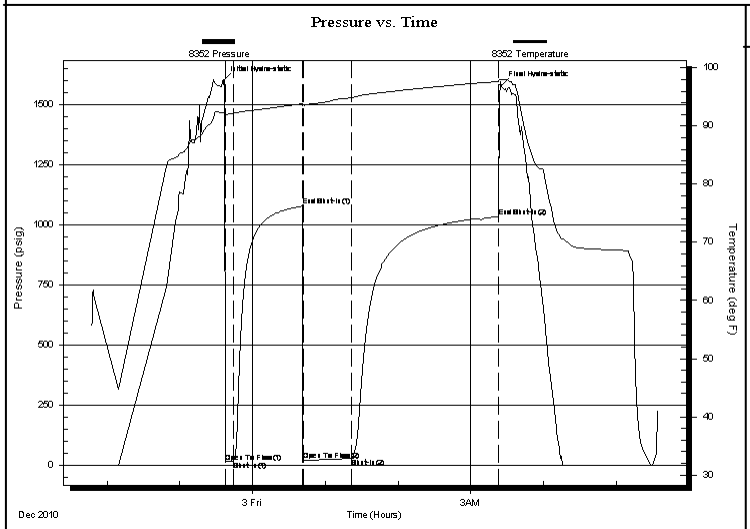
Reference Elevations: 1939.00 ft (KB)
1931.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8352 **Outside**

Press@RunDepth: 27.62 psig @ 3301.00 ft (KB)
Start Date: 2010.12.02 End Date: 2010.12.03
Start Time: 21:47:05 End Time: 05:34:10

Capacity: 8000.00 psig
Last Calib.: 2010.12.03
Time On Btm: 2010.12.02 @ 23:36:10
Time Off Btm: 2010.12.03 @ 03:24:50

TEST COMMENT: IF: Weak, 1 inch
IS: No Return
FF: Weak, 1inch
FS: No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1598.79	92.27	Initial Hydro-static
1	14.34	91.79	Open To Flow (1)
9	18.16	92.23	Shut-In(1)
66	1077.98	93.86	End Shut-In(1)
66	18.95	93.51	Open To Flow (2)
106	27.62	94.90	Shut-In(2)
227	1034.83	97.69	End Shut-In(2)
229	1580.73	97.99	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud with very slight oil specks	0.05

Gas Rates

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

DRILL STEM TEST REPORT

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

22-16s-16w Rush Co.

Job Ticket: 039993 **DST#: 1**

Test Start: 2010.12.02 @ 21:47:05

GENERAL INFORMATION:

Formation: **LKC "F-G"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:37:10
Time Test Ended: 05:34:09

Test Type: Conventional Bottom Hole
Tester: Andy Carreira
Unit No: 31

Interval: 3300.00 ft (KB) To 3336.00 ft (KB) (TVD)
Total Depth: 3336.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

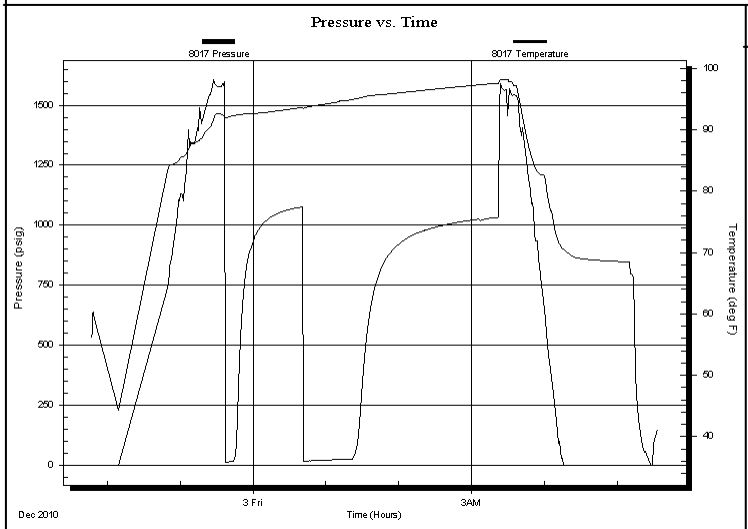
Reference Elevations: 1939.00 ft (KB)
1931.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8017 **Inside**

Press@RunDepth: psig @ 3301.00 ft (KB)
Start Date: 2010.12.02 End Date: 2010.12.03
Start Time: 21:47:05 End Time: 05:33:59

Capacity: 8000.00 psig
Last Calib.: 2010.12.03
Time On Btm:
Time Off Btm:

TEST COMMENT: IF: Weak, 1 inch
IS: No Return
FF: Weak, 1inch
FS: No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud with very slight oil specks	0.05

Gas Rates

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

DRILL STEM TEST REPORT

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

22-16s-16w Rush Co.

Job Ticket: 039993 **DST#: 1**

Test Start: 2010.12.02 @ 21:47:05

GENERAL INFORMATION:

Formation: **LKC "F-G"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:37:10
Time Test Ended: 05:34:09

Test Type: Conventional Bottom Hole
Tester: Andy Carreira
Unit No: 31

Interval: 3300.00 ft (KB) To 3336.00 ft (KB) (TVD)
Total Depth: 3336.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

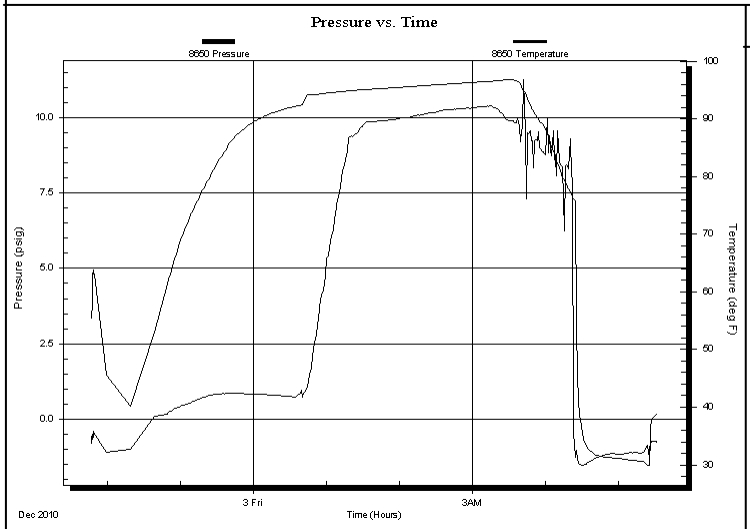
Reference Elevations: 1939.00 ft (KB)
1931.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8650 **Fluid**

Press@RunDepth: psig @ 3266.00 ft (KB)
Start Date: 2010.12.02 End Date: 2010.12.03
Start Time: 21:47:01 End Time: 05:32:30

Capacity: 8000.00 psig
Last Calib.: 2010.12.03
Time On Btm:
Time Off Btm:

TEST COMMENT: IF: Weak, 1 inch
IS: No Return
FF: Weak, 1inch
FS: No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud with very slight oil specks	0.05

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Sam Gary Jr. & Assoc.inc.

1515 Wynkoop
Suite 700
Denver Co. 80202

ATTN: Neil Sharp

Hoss 1-22

22-16s-16w Rush Co.

Job Ticket: 039993 **DST#: 1**

Test Start: 2010.12.02 @ 21:47:05

Tool Information

Drill Pipe:	Length:	3266.00 ft	Diameter:	3.80 inches	Volume:	45.81 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
					Total Volume:	45.96 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		31.81 ft					String Weight:	Initial	46000.00 lb
Depth to Top Packer:		3300.00 ft						Final	46000.00 lb
Depth to Bottom Packer:		ft							
Interval between Packers:		36.00 ft							
Tool Length:		71.00 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			3266.00		
Recorder	0.00	8650	Fluid	3266.00		
Blank Spacing	4.00			3270.00		
Shut In Tool	5.00			3275.00		
Sampler	3.00			3278.00		
Hydraulic tool	5.00			3283.00		
Jars	5.00			3288.00		
Safety Joint	3.00			3291.00		
Packer	5.00			3296.00	35.00	Bottom Of Top Packer
Packer	4.00			3300.00		
Stubb	1.00			3301.00		
Recorder	0.00	8017	Inside	3301.00		
Recorder	0.00	8352	Outside	3301.00		
Perforations	32.00			3333.00		
Bullnose	3.00			3336.00	36.00	Bottom Packers & Anchor
Total Tool Length:	**71.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Sam Gary Jr. & Assoc.inc.

1515 Wynkoop
Suite 700
Denver Co. 80202

ATTN: Neil Sharp

Hoss 1-22

22-16s-16w Rush Co.

Job Ticket: 039993 **DST#: 1**

Test Start: 2010.12.02 @ 21:47:05

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:	56.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	9.20 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	6300.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud with very slight oil specks	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: Sampler Recovery- Gas=.1/20th CF Mud=800 ML Pressure=450LBS

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

22-16s-16w Rush Co.

Job Ticket: 039993 **DST#: 1**

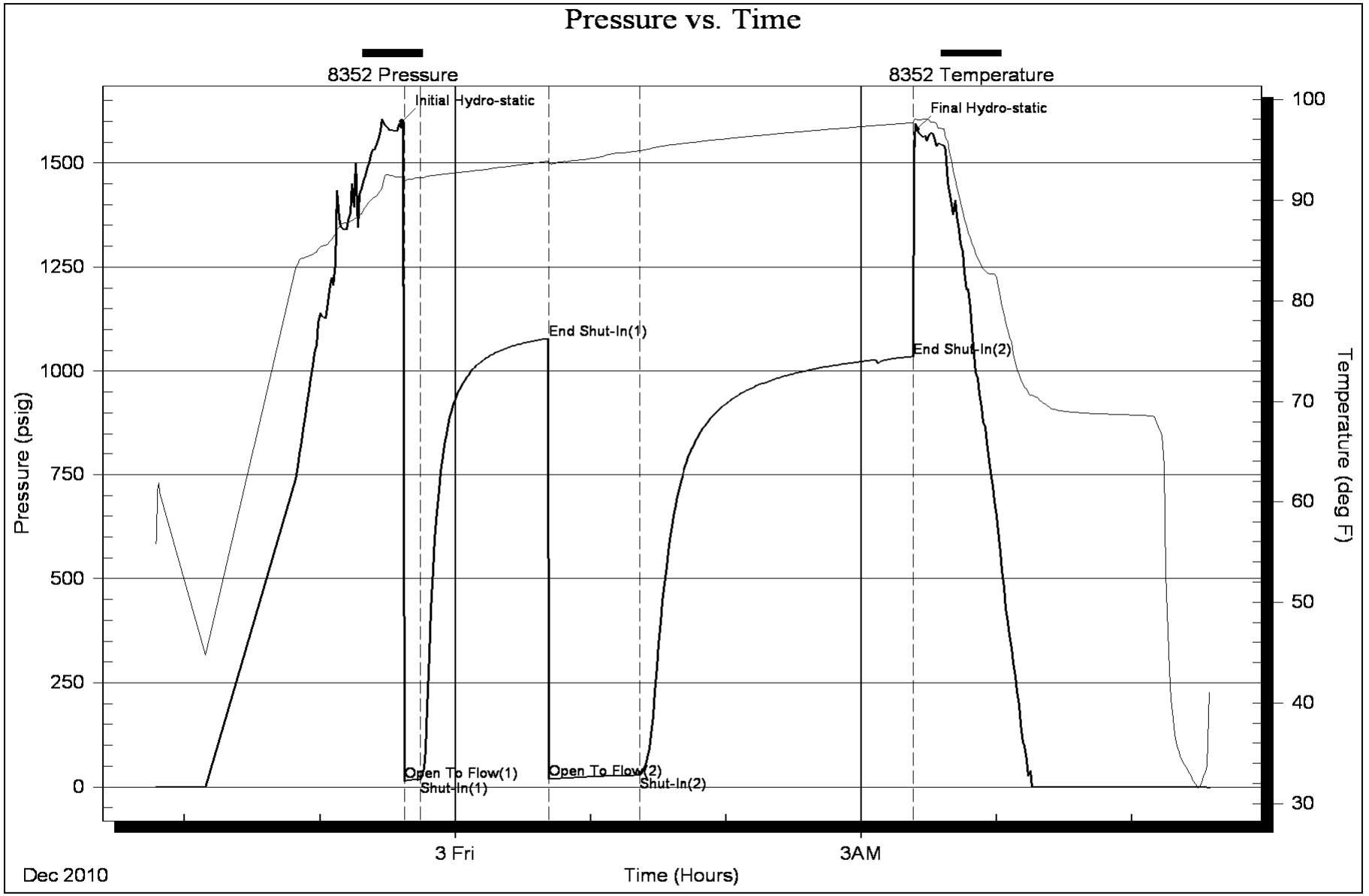
Test Start: 2010.12.02 @ 21:47:05

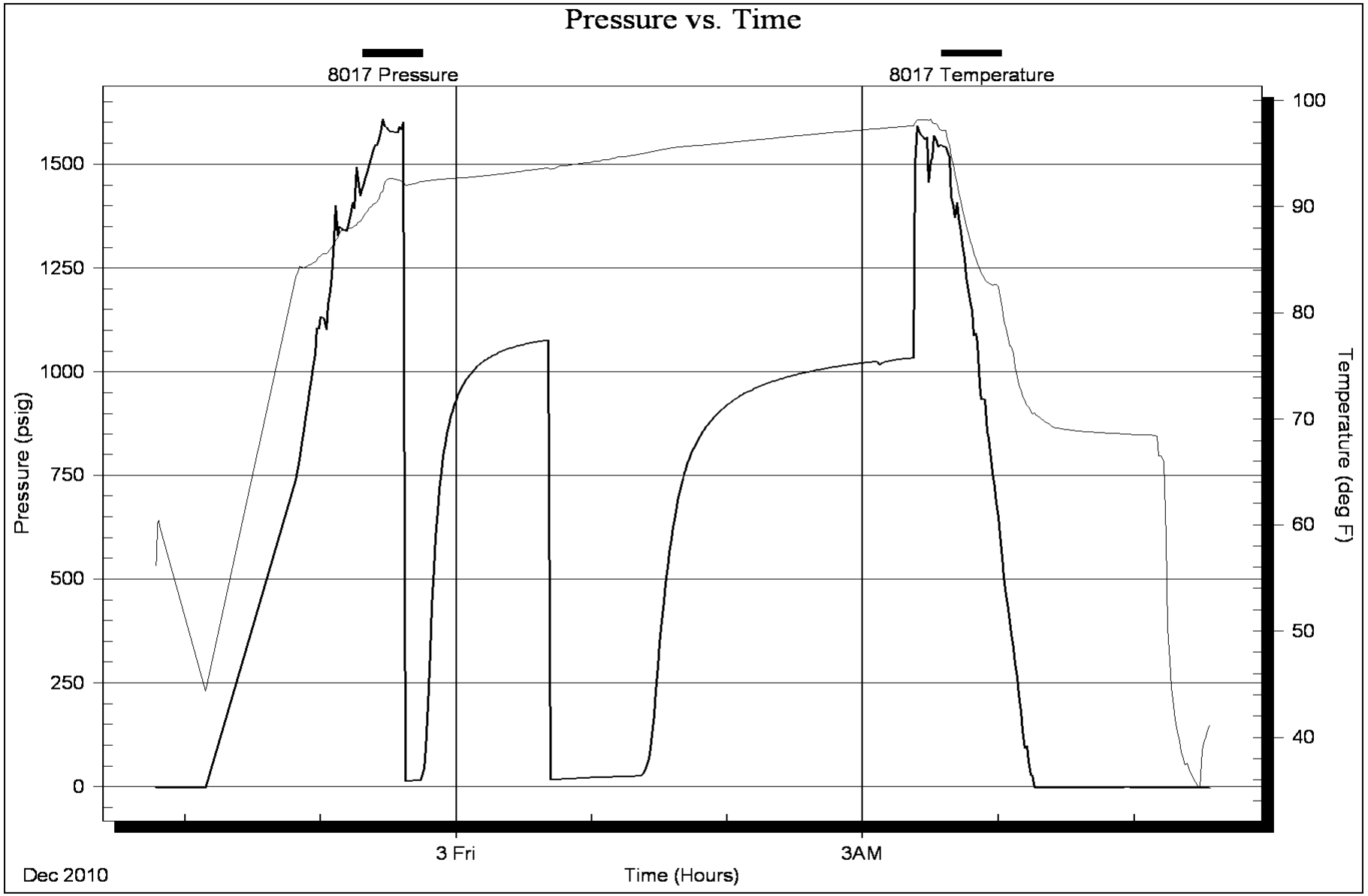
Gas Rates Information

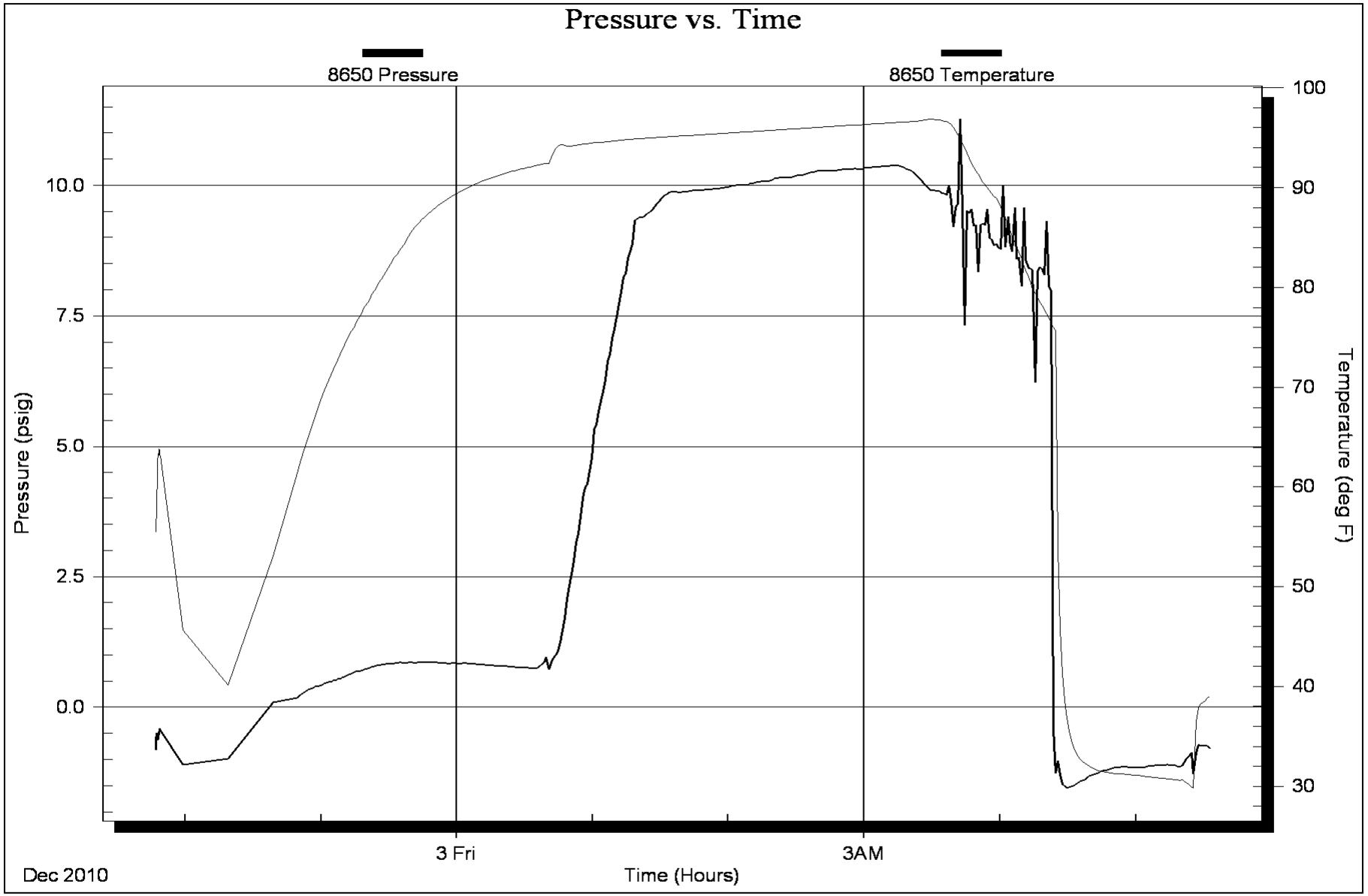
Temperature: 59 deg C
Relative Density: 0.65
Z Factor: 0.8

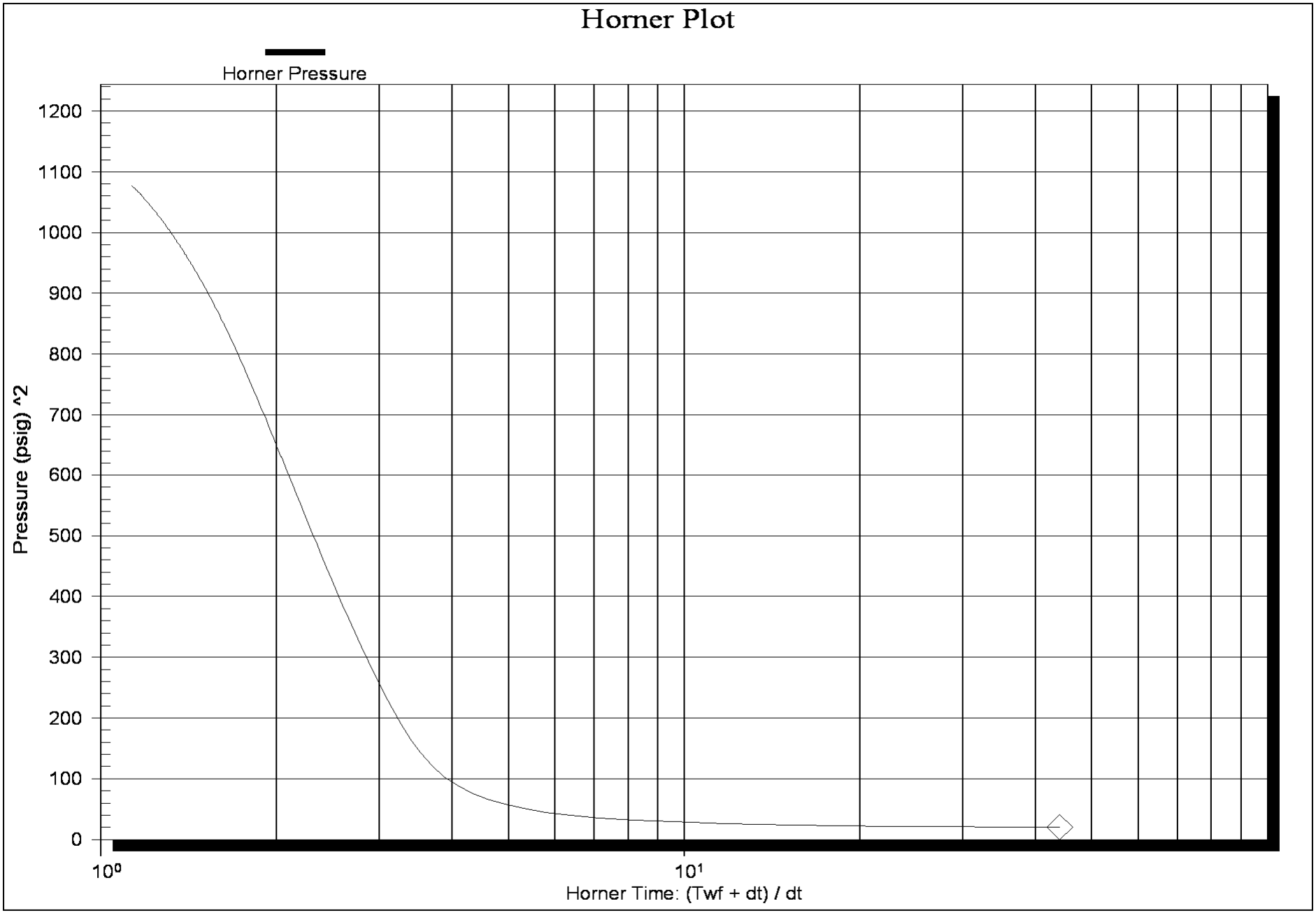
Gas Rates Table

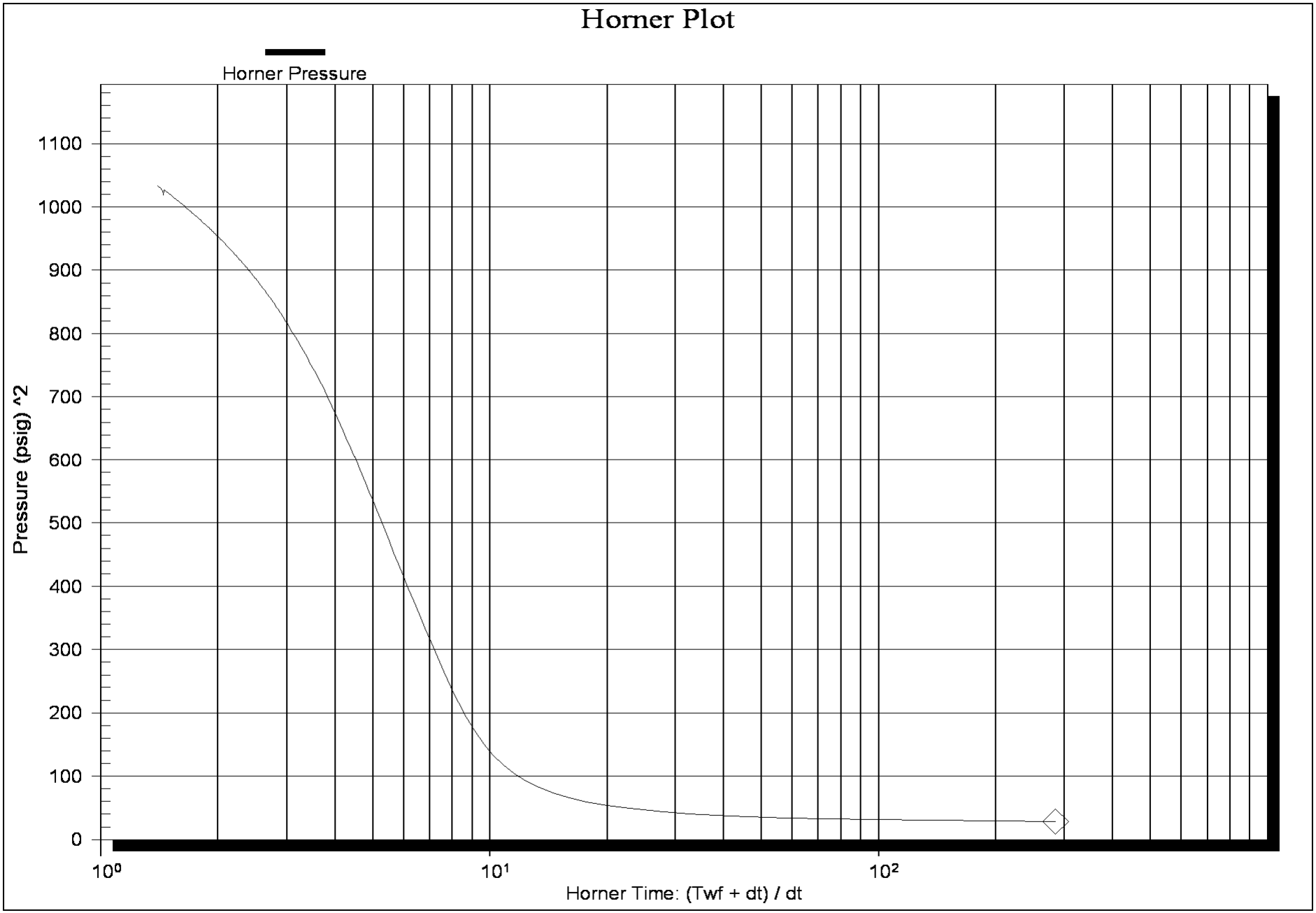
Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m^3/d)
		0.00	0.00	0.00


Pressure vs. Time
8352 Pressure
8352 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure (psig)
Temperature (deg F)
1500
1250
1000
750
500
250
0
100
90
80
70
60
50
40
30
3 Fri
3AM
Dec 2010
Time (Hours)

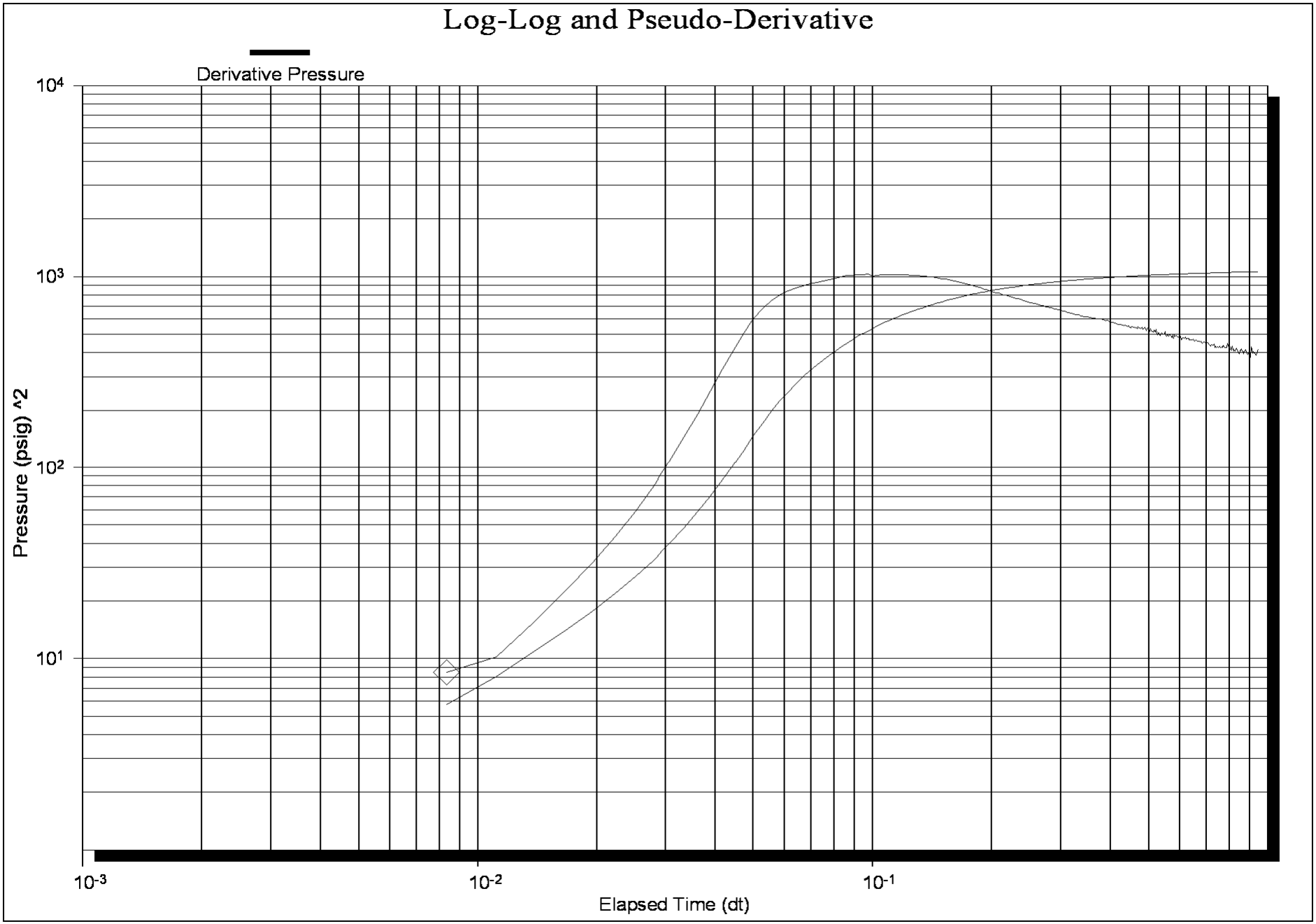

Pressure vs. Time
8017 Pressure
8017 Temperature
1500
1250
1000
750
500
250
0
Pressure (psig)
100
90
80
70
60
50
40
Temperature (deg F)
3 Fri
3AM
Dec 2010
Time (Hours)

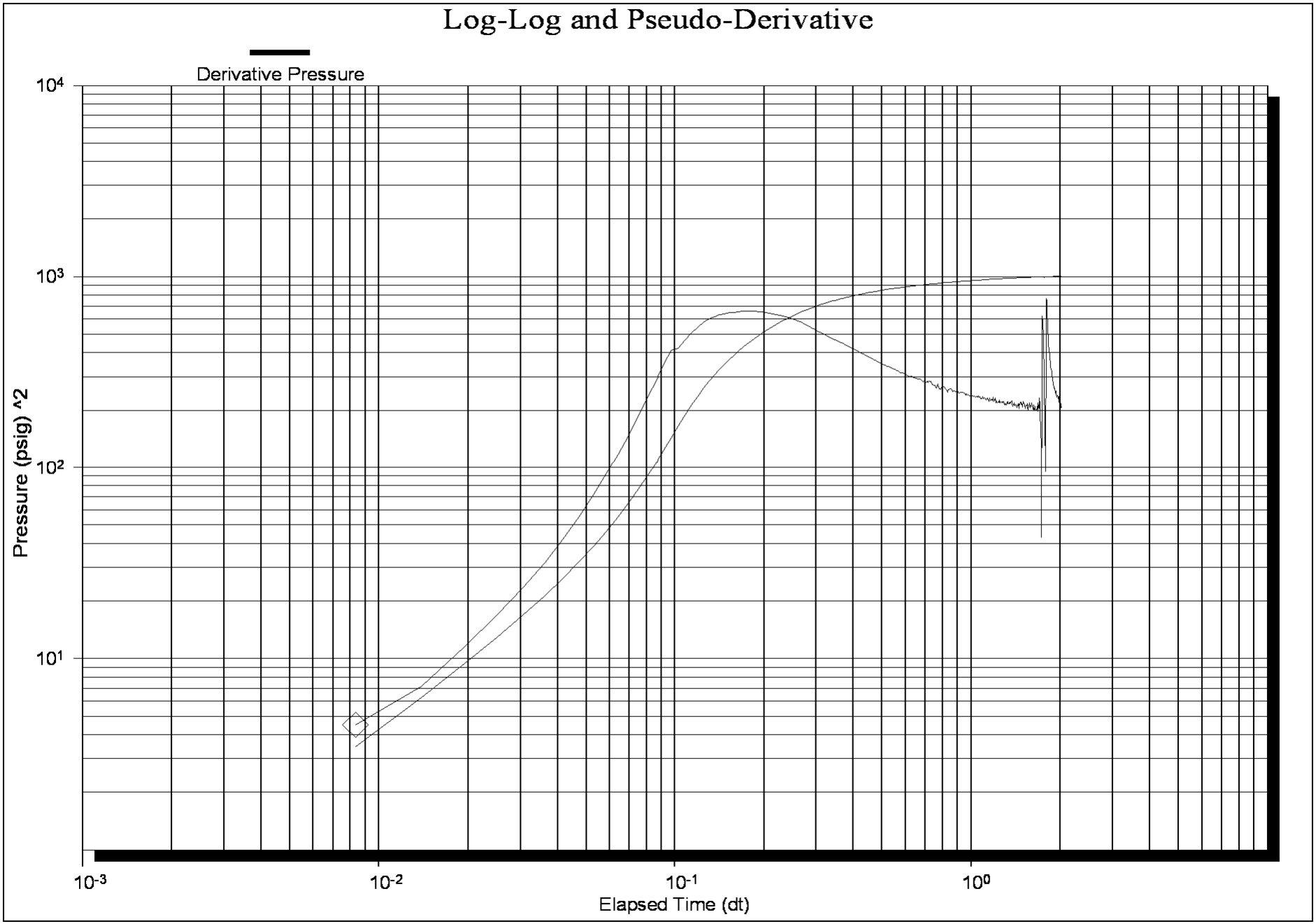

Pressure vs. Time
8650 Pressure
8650 Temperature
10.0
7.5
5.0
2.5
0.0
Pressure (psig)
100
90
80
70
60
50
40
30
Temperature (deg F)
3 Fri
3AM
Dec 2010
Time (Hours)

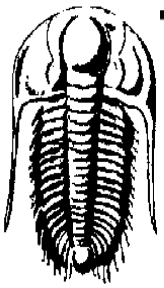

Horner Plot
Horner Pressure
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
Pressure (psig) ^2
10⁰
10¹
Horner Time: (Twf + dt) / dt



Serial Number: 8352 (Outside) P* : Slope (m) : kpa/log cycle Flow Cycle: 2


Log-Log and Pseudo-Derivative
Derivative Pressure
10^4
10^3
10^2
10^1
Pressure (psig) ^2
10^-3
10^-2
10^-1
Elapsed Time (dt)


Log-Log and Pseudo-Derivative
Derivative Pressure
10^4
10^3
10^2
10^1
Pressure (psig) ^2
10^{-3}
10^{-2}
10^{-1}
10^0
Elapsed Time (dt)



TRILOBITE TESTING, INC.

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: 2010.12.03 @ 17:51:05
End Date: 2010.12.04 @ 01:20:39
Job Ticket #: 039994 DST #: 2

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

DRILL STEM TEST REPORT

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

22-16s-16w Rush Co.

Job Ticket: 039994 **DST#: 2**

Test Start: 2010.12.03 @ 17:51:05

GENERAL INFORMATION:

Formation: **LKC"H"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 19:49:20
Time Test Ended: 01:20:39

Test Type: Conventional Bottom Hole
Tester: Andy Carreira
Unit No: 31

Interval: 3364.00 ft (KB) To 3411.00 ft (KB) (TVD)
Total Depth: 3411.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

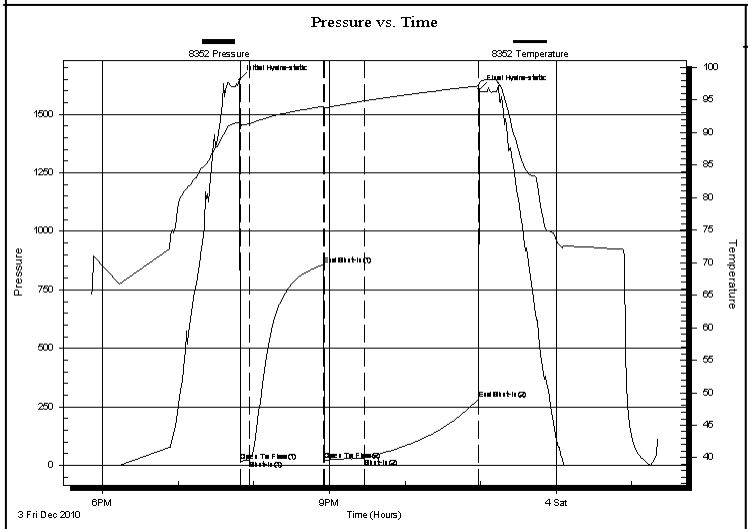
Reference Elevations: 1939.00 ft (KB)
1931.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8352 **Outside**

Press@RunDepth: 30.85 psig @ 3371.00 ft (KB)
Start Date: 2010.12.03 End Date: 2010.12.04
Start Time: 17:51:05 End Time: 01:20:40

Capacity: 8000.00 psig
Last Calib.: 2010.12.04
Time On Btm: 2010.12.03 @ 19:48:50
Time Off Btm: 2010.12.03 @ 22:58:50

TEST COMMENT: IF: Weak, half inch blow .
IS: No Return
FF: Weak, Surface blow
FS: No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1647.53	91.47	Initial Hydro-static
1	16.49	90.51	Open To Flow (1)
8	21.94	91.35	Shut-In(1)
67	856.93	94.02	End Shut-In(1)
67	22.42	93.75	Open To Flow (2)
99	30.85	94.83	Shut-In(2)
190	282.81	97.16	End Shut-In(2)
190	1606.53	97.56	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w ith slight oil specks	0.02

Gas Rates

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

DRILL STEM TEST REPORT

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

22-16s-16w Rush Co.

Job Ticket: 039994 **DST#: 2**

Test Start: 2010.12.03 @ 17:51:05

GENERAL INFORMATION:

Formation: **LKC"H"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 19:49:20
Time Test Ended: 01:20:39

Test Type: Conventional Bottom Hole
Tester: Andy Carreira
Unit No: 31

Interval: 3364.00 ft (KB) To 3411.00 ft (KB) (TVD)
Total Depth: 3411.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

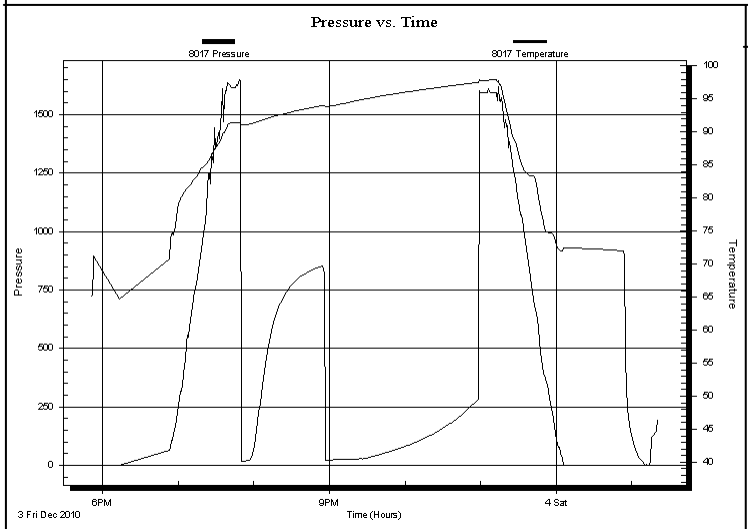
Reference Elevations: 1939.00 ft (KB)
1931.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8017 **Inside**

Press@RunDepth: psig @ 3371.00 ft (KB)
Start Date: 2010.12.03 End Date: 2010.12.04
Start Time: 17:51:05 End Time: 01:20:40

Capacity: 8000.00 psig
Last Calib.: 2010.12.04
Time On Btm:
Time Off Btm:

TEST COMMENT: IF: Weak, half inch blow .
IS: No Return
FF: Weak, Surface blow
FS: No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w ith slight oil specks	0.02

Gas Rates

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

DRILL STEM TEST REPORT

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

22-16s-16w Rush Co.

Job Ticket: 039994 **DST#: 2**

Test Start: 2010.12.03 @ 17:51:05

GENERAL INFORMATION:

Formation: **LKC"H"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 19:49:20
Time Test Ended: 01:20:39

Test Type: Conventional Bottom Hole
Tester: Andy Carreira
Unit No: 31

Interval: 3364.00 ft (KB) To 3411.00 ft (KB) (TVD)
Total Depth: 3411.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

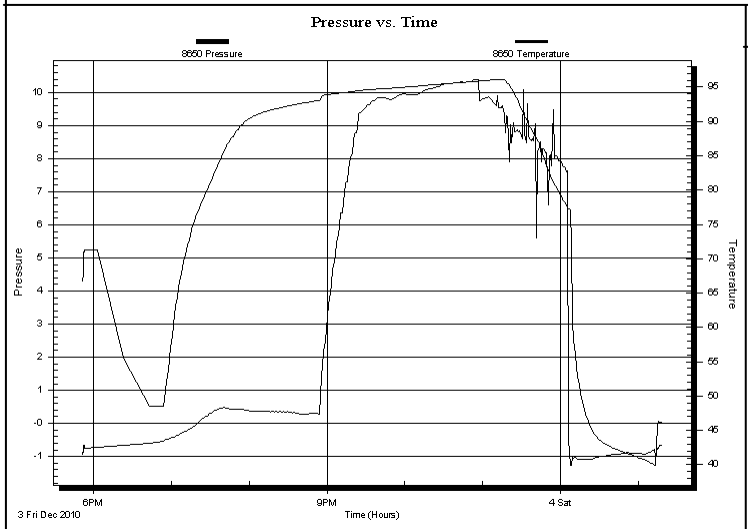
Reference Elevations: 1939.00 ft (KB)
1931.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8650 **Fluid**

Press@RunDepth: psig @ 3330.00 ft (KB)
Start Date: 2010.12.03 End Date: 2010.12.04
Start Time: 17:51:01 End Time: 01:19:00

Capacity: 8000.00 psig
Last Calib.: 2010.12.04
Time On Btm:
Time Off Btm:

TEST COMMENT: IF: Weak, half inch blow .
IS: No Return
FF: Weak, Surface blow
FS: No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w ith slight oil specks	0.02

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

22-16s-16w Rush Co.

Job Ticket: 039994 **DST#: 2**

Test Start: 2010.12.03 @ 17:51:05

Tool Information

Drill Pipe:	Length:	3330.00 ft	Diameter:	3.80 inches	Volume:	46.71 bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 inches	Volume:	0.00 bbl	
Drill Collar:	Length:	30.81 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	
					Total Volume:	46.86 bbl	

Drill Pipe Above KB:	31.81 ft
Depth to Top Packer:	3364.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	47.00 ft
Tool Length:	82.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:		3000.00 lb
Weight set on Packer:		24000.00 lb
Weight to Pull Loose:		55000.00 lb
Tool Chased		0.00 ft
String Weight:	Initial	45000.00 lb
	Final	45000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			3330.00		
Recorder	0.00	8650	Fluid	3330.00		
Blank Spacing	4.00			3334.00		
Shut In Tool	5.00			3339.00		
Sampler	3.00			3342.00		
Hydraulic tool	5.00			3347.00		
Jars	5.00			3352.00		
Safety Joint	3.00			3355.00		
Packer	5.00			3360.00	35.00	Bottom Of Top Packer
Packer	4.00			3364.00		
Stubb	1.00			3365.00		
Perforations	5.00			3370.00		
Change Over Sub	1.00			3371.00		
Recorder	0.00	8017	Inside	3371.00		
Recorder	0.00	8352	Outside	3371.00		
Drill Pipe	31.00			3402.00		
Change Over Sub	1.00			3403.00		
Perforations	5.00			3408.00		
Bullnose	3.00			3411.00	47.00	Bottom Packers & Anchor
Total Tool Length:	**82.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Sam Gary Jr. & Assoc.inc.

1515 Wynkoop
Suite 700
Denver Co. 80202

ATTN: Neil Sharp

Hoss 1-22

22-16s-16w Rush Co.

Job Ticket: 039994 **DST#: 2**

Test Start: 2010.12.03 @ 17:51:05

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:	bbl		
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
5.00	Mud with slight oil specks	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: Sampler Recovery= Gas=1/20th CF Oil=specks Mud=1200ML
Pressure= 250 LBS

Sam Gary Jr. & Assoc.inc.

1515 Wynkoop
Suite 700
Denver Co. 80202

ATTN: Neil Sharp

Hoss 1-22

22-16s-16w Rush Co.

Job Ticket: 039994 **DST#: 2**

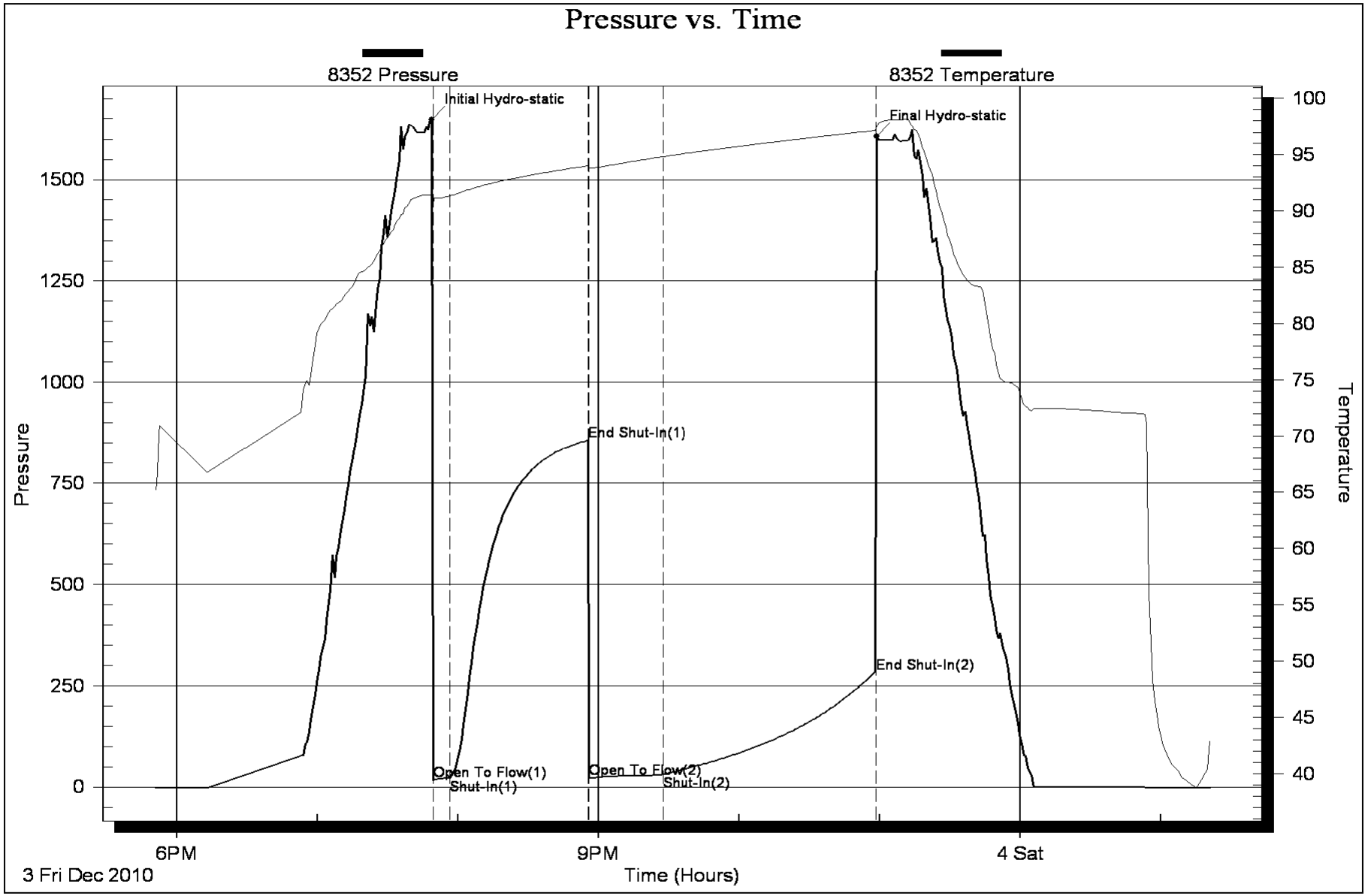
Test Start: 2010.12.03 @ 17:51:05

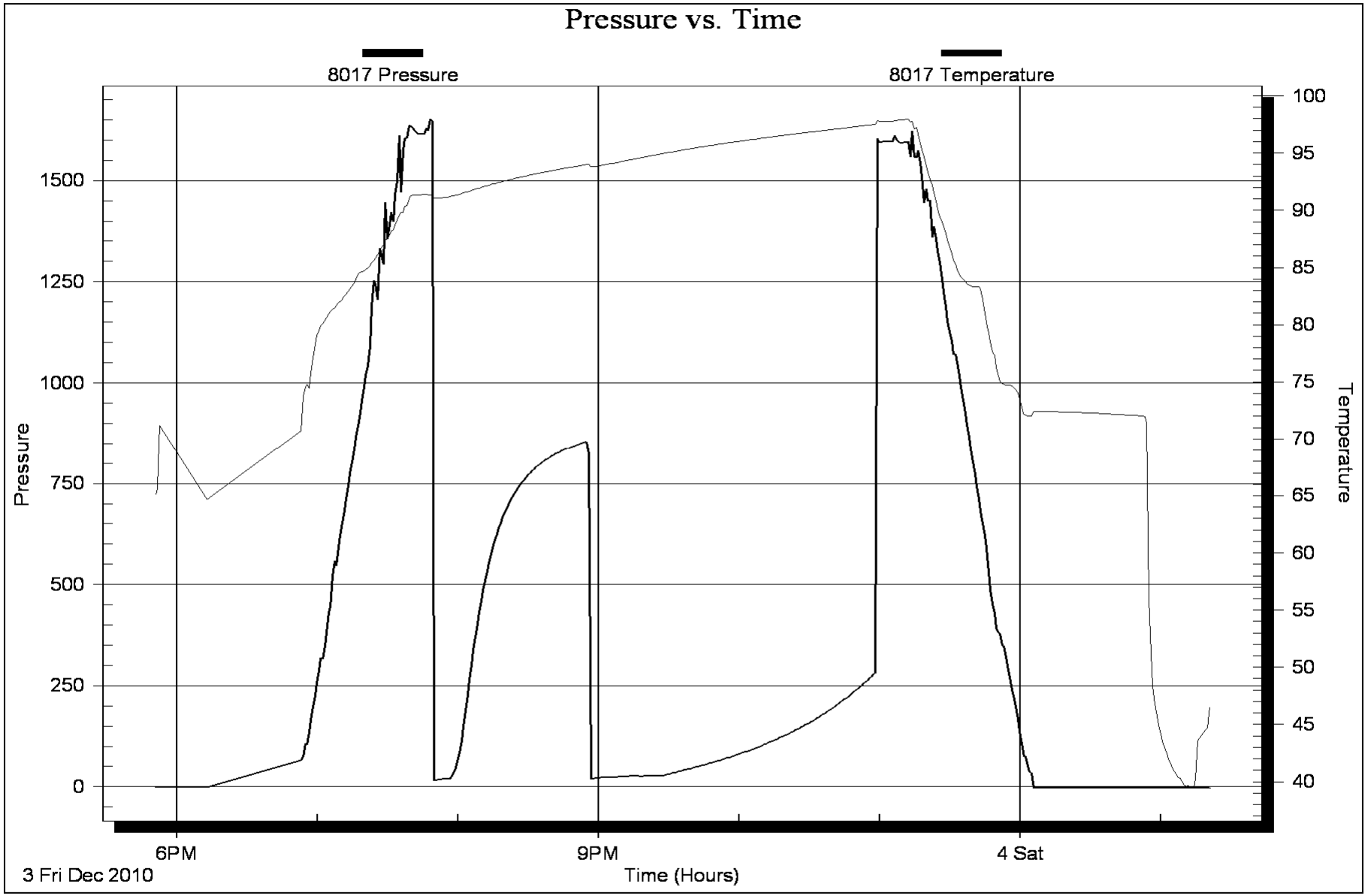
Gas Rates Information

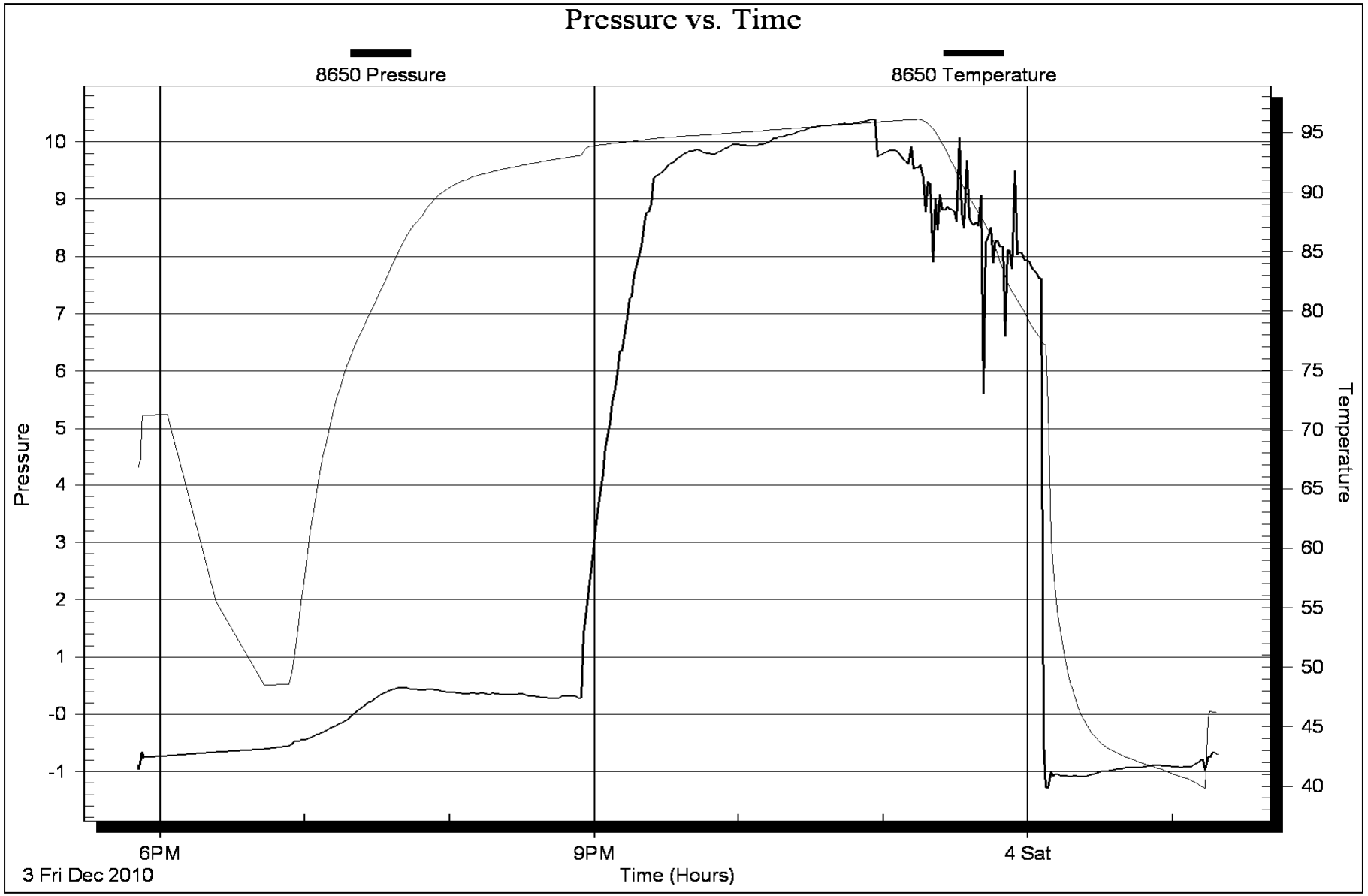
Temperature: 59 deg C
Relative Density: 0.65
Z Factor: 0.8

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
8352 Pressure
8352 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
1500
1250
1000
750
500
250
0
100
95
90
85
80
75
70
65
60
55
50
45
40
6PM
9PM
4 Sat
3 Fri Dec 2010
Time (Hours)


Pressure vs. Time
8017 Pressure
8017 Temperature
1500
1250
1000
750
500
250
0
Pressure
100
95
90
85
80
75
70
65
60
55
50
45
40
Temperature
6PM
9PM
4 Sat
3 Fri Dec 2010
Time (Hours)


Pressure vs. Time
8650 Pressure
8650 Temperature
Pressure
Temperature
10
9
8
7
6
5
4
3
2
1
-0
-1
95
90
85
80
75
70
65
60
55
50
45
40
6PM
9PM
4 Sat
3 Fri Dec 2010
Time (Hours)

DRILL STEM TESTING - DATA LISTING

TRILOBITE TESTING, INC.

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

22-16s-16w Rush Co.

Job Ticket: 039994 **DST#: 2**

Test Start: 2010.12.03 @ 17:51:05

Serial # 8352	**Outside**			**Serial # 8352**	**Outside**		
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	0.0	-1.61	65.2		95.6	1267.18	86.6
	0.6	-1.58	66.2		96.8	1295.85	87.0
	1.2	-1.28	69.5		97.9	1412.51	87.4
	1.8	-1.32	70.9		99.1	1456.50	87.6
	51.9	-1.50	52.4		100.3	1390.65	88.0
	62.9	77.06	74.1		101.4	1451.33	88.5
	64.1	107.99	74.9		102.6	1607.43	89.1
	65.3	137.44	74.6		103.8	1547.42	89.4
	66.4	167.20	75.6		104.9	1576.49	89.7
	67.6	232.80	77.4		106.1	1605.16	90.2
	68.8	258.27	79.2		107.3	1638.63	90.5
	69.9	289.37	79.8		108.4	1636.77	90.9
	71.1	319.07	80.2		109.6	1629.80	91.1
	72.3	372.82	80.4		110.8	1621.91	91.2
	73.4	409.90	80.9		111.9	1616.25	91.3
	74.6	484.88	81.2		113.1	1616.74	91.4
	75.8	502.53	81.5		114.3	1616.49	91.4
	76.9	584.36	81.8		115.4	1630.73	91.5
	78.1	591.15	81.9		116.6	1642.58	91.4
	79.3	683.47	82.1		117.4	1647.91	91.5
	80.4	683.70	82.4		117.6	1647.76	91.5
	81.6	756.12	82.8	Initial Hydro-static	117.8	1647.53	91.5
	82.8	776.46	83.1		117.9	1646.94	91.5
	83.9	848.82	83.4		118.1	1647.08	91.5
	85.1	868.40	83.9	Open To Flow (1)	118.3	16.49	90.5
	86.3	895.99	84.4		118.4	17.61	91.1
	87.4	950.29	84.6		118.6	17.80	91.1
	88.6	991.51	84.7		118.8	17.99	91.1
	89.8	1061.49	84.8		119.9	18.90	91.1
	90.9	1081.88	85.1		121.1	20.56	91.2
	92.1	1161.51	85.3		122.3	21.09	91.2
	93.3	1173.54	85.8		123.4	21.25	91.2
	94.4	1275.85	86.2		124.6	21.32	91.3

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)
	125.1	21.35	91.3		167.9	817.02	93.5
	125.3	21.33	91.3		169.1	821.13	93.5
Shut-In(1)	125.4	21.94	91.4		170.3	824.82	93.6
	125.6	23.11	91.4		171.4	828.37	93.6
	125.8	24.37	91.4		172.6	831.98	93.6
	125.9	25.80	91.4		173.8	835.18	93.7
	127.1	37.58	91.5		174.9	837.91	93.7
	128.3	55.87	91.5		176.1	840.75	93.8
	129.4	84.22	91.6		177.3	843.33	93.8
	130.6	125.37	91.7		178.4	845.94	93.8
	131.8	176.98	91.8		179.6	848.27	93.9
	132.9	231.62	91.9		180.8	850.50	93.9
	134.1	284.94	91.9		181.9	852.69	93.9
	135.3	335.11	92.0		183.1	854.69	94.0
	136.4	381.61	92.1		184.1	856.68	94.0
	137.6	424.65	92.2		184.3	856.81	94.0
	138.8	464.12	92.2	End Shut-In(1)	184.4	856.92	94.0
	139.9	499.94	92.3		184.6	50.21	93.5
	141.1	532.48	92.4	Open To Flow (2)	184.8	22.42	93.7
	142.3	561.83	92.4		184.9	22.31	93.8
	143.4	588.41	92.5		186.1	22.72	93.8
	144.6	612.17	92.5		187.3	23.17	93.9
	145.8	633.71	92.6		188.4	24.05	93.9
	146.9	653.13	92.7		189.6	24.65	93.9
	148.1	670.61	92.7		190.8	25.23	94.0
	149.3	686.57	92.8		191.9	26.07	94.0
	150.4	700.92	92.8		193.1	26.12	94.0
	151.6	713.95	92.9		194.3	26.11	94.1
	152.8	725.96	92.9		195.4	26.35	94.1
	153.9	736.86	93.0		196.6	26.42	94.2
	155.1	746.72	93.0		197.8	27.02	94.2
	156.3	755.95	93.1		198.9	27.52	94.2
	157.4	764.32	93.1		200.1	27.58	94.3
	158.6	772.12	93.1		201.3	27.96	94.3
	159.8	779.28	93.2		202.4	28.07	94.4
	160.9	785.83	93.2		203.6	28.16	94.4
	162.1	792.04	93.3		204.8	28.13	94.5
	163.3	797.78	93.3		205.9	28.19	94.5
	164.4	803.17	93.4		207.1	27.98	94.5
	165.6	808.13	93.4		208.3	28.87	94.6
	166.8	812.63	93.4		209.4	28.66	94.6

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)
	210.6	28.80	94.7		253.1	92.23	95.9
	211.8	28.68	94.7		254.3	94.77	95.9
	212.9	29.63	94.7		255.4	97.32	95.9
	214.1	29.69	94.8		256.6	99.85	95.9
	215.3	29.21	94.8		257.8	102.45	96.0
	216.1	30.38	94.8		258.9	105.19	96.0
	216.3	30.64	94.8		260.1	107.93	96.0
Shut-In(2)	216.4	30.85	94.8		261.3	110.69	96.1
	216.6	31.08	94.8		262.4	113.58	96.1
	216.8	31.29	94.8		263.6	116.70	96.1
	216.9	31.60	94.9		264.8	119.43	96.2
	218.1	33.22	94.9		265.9	122.44	96.2
	219.3	34.89	94.9		267.1	125.77	96.2
	220.4	36.56	95.0		268.3	128.68	96.2
	221.6	38.33	95.0		269.4	131.84	96.3
	222.8	39.99	95.0		270.6	135.43	96.3
	223.9	41.65	95.1		271.8	138.54	96.3
	225.1	43.32	95.1		272.9	142.21	96.4
	226.3	45.24	95.1		274.1	145.75	96.4
	227.4	46.97	95.2		275.3	149.12	96.4
	228.6	48.65	95.2		276.4	152.74	96.4
	229.8	50.56	95.2		277.6	156.50	96.5
	230.9	52.34	95.3		278.8	160.38	96.5
	232.1	54.28	95.3		279.9	164.31	96.5
	233.3	56.06	95.3		281.1	168.57	96.6
	234.4	57.88	95.4		282.3	172.36	96.6
	235.6	59.83	95.4		283.4	176.53	96.6
	236.8	61.70	95.4		284.6	180.82	96.6
	237.9	63.65	95.5		285.8	185.25	96.7
	239.1	65.79	95.5		286.9	189.60	96.7
	240.3	67.71	95.5		288.1	194.22	96.7
	241.4	69.82	95.5		289.3	198.87	96.7
	242.6	71.95	95.6		290.4	203.61	96.8
	243.8	74.07	95.6		291.6	208.49	96.8
	244.9	76.17	95.6		292.8	213.47	96.8
	246.1	78.33	95.7		293.9	218.67	96.9
	247.3	80.52	95.7		295.1	223.76	96.9
	248.4	82.83	95.7		296.3	229.05	96.9
	249.6	85.19	95.8		297.4	234.48	96.9
	250.8	87.45	95.8		298.6	240.09	97.0
	251.9	89.76	95.8		299.8	245.79	97.0

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)
	300.9	251.57	97.0		339.8	1078.00	86.8
	302.1	257.53	97.0		340.9	1083.08	86.0
	303.3	263.53	97.1		342.1	1028.31	85.4
	304.4	269.70	97.1		343.3	991.04	84.9
	305.6	276.08	97.1		344.4	959.36	84.5
	306.8	282.47	97.1		345.6	885.99	84.0
	306.9	283.37	97.2		346.8	871.62	83.8
	307.1	284.25	97.2		347.9	836.29	83.5
End Shut-In(2)	307.3	282.81	97.2		349.1	743.69	83.4
	307.4	1584.12	97.7		350.3	744.36	83.3
	307.6	1609.92	97.5		351.4	671.06	83.3
Final Hydro-static	307.8	1606.53	97.6		352.6	652.53	83.1
	307.9	1604.05	97.6		353.8	622.09	81.8
	308.1	1601.99	97.7		354.9	562.94	80.6
	308.3	1600.39	97.7		356.1	530.49	79.0
	309.4	1594.34	97.9		357.3	469.29	77.7
	310.6	1597.00	98.0		358.4	439.94	76.7
	311.8	1597.66	98.0		359.6	367.17	75.6
	312.9	1596.52	98.1		360.8	352.51	75.1
	314.1	1596.54	98.1		361.9	350.54	74.9
	315.3	1614.39	98.1		363.1	320.95	74.8
	316.4	1600.97	98.1		364.3	290.29	74.8
	317.6	1595.16	98.1		365.4	226.15	74.7
	318.8	1595.40	98.1		366.6	199.32	74.6
	319.9	1596.21	98.1		367.8	169.10	74.4
	321.1	1597.40	98.1		368.9	103.56	73.9
	322.3	1601.81	97.7		370.1	76.88	73.1
	323.4	1616.80	97.3		371.3	76.91	72.7
	324.6	1550.68	97.2		372.4	40.29	72.4
	325.8	1516.51	96.7		373.6	39.82	72.3
	326.9	1476.76	95.9		374.8	-1.12	72.5
	328.1	1489.97	95.3		375.9	-1.09	72.5
	329.3	1424.99	94.4		377.1	-1.07	72.5
	330.4	1407.14	93.7		378.3	-1.05	72.5
	331.6	1396.40	93.1		379.4	-1.06	72.5
	332.8	1357.62	92.0		380.6	-1.10	72.5
	333.9	1272.49	90.9		381.8	-1.12	72.5
	335.1	1246.59	90.0		382.9	-1.12	72.5
	336.3	1213.76	89.2		384.1	-1.11	72.5
	337.4	1203.23	88.3		385.3	-1.08	72.5
	338.6	1173.49	87.5		386.4	-1.07	72.5

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)
	387.6	-1.08	72.5		435.4	-1.61	40.4
	388.8	-1.09	72.4		436.6	-1.58	40.3
	389.9	-1.10	72.4		437.8	-1.55	39.7
	391.1	-1.09	72.4		438.9	-1.54	39.5
	392.3	-1.12	72.4		440.1	-1.53	39.3
	393.4	-1.11	72.4		441.3	-1.50	39.1
	394.6	-1.07	72.4		442.4	-1.51	38.9
	395.8	-1.08	72.4		443.6	-1.54	38.8
	396.9	-1.08	72.4		444.8	-1.55	39.0
	398.1	-1.07	72.3		445.9	-1.55	39.4
	399.3	-1.08	72.3		447.1	-1.54	39.8
	400.4	-1.09	72.3		448.3	-1.59	40.2
	401.6	-1.10	72.3		449.4	-1.71	40.8
	402.8	-1.09	72.3		449.6	-1.78	43.0
	403.9	-1.09	72.3				
	405.1	-1.08	72.2				
	406.3	-1.10	72.2				
	407.4	-1.12	72.2				
	408.6	-1.11	72.2				
	409.8	-1.11	72.2				
	410.9	-1.11	72.1				
	412.1	-1.13	72.1				
	413.3	-1.14	72.1				
	414.4	-1.15	72.1				
	415.6	-1.13	72.1				
	416.8	-1.11	72.1				
	417.9	-1.10	72.1				
	419.1	-1.12	72.1				
	420.3	-1.15	72.0				
	421.4	-1.10	72.0				
	422.6	-1.22	71.9				
	423.8	-1.21	56.1				
	424.9	-1.71	50.2				
	426.1	-1.76	46.8				
	427.3	-1.75	45.0				
	428.4	-1.72	43.7				
	429.6	-1.71	42.8				
	430.8	-1.68	42.1				
	431.9	-1.65	41.5				
	433.1	-1.62	41.0				
	434.3	-1.61	40.7				

Printing every 7 samples

DRILL STEM TESTING - DATA LISTING

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

22-16s-16w Rush Co.

Job Ticket: 039994 **DST#: 2**

Test Start: 2010.12.03 @ 17:51:05

Serial # 8017 **Inside**				**Serial # 8017** **Inside**			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	0.0	-1.75	65.1		95.6	1266.21	86.5
	0.6	-1.49	65.4		96.8	1295.05	87.0
	1.2	-1.40	68.5		97.9	1445.31	87.4
	1.8	-1.37	71.2		99.1	1376.15	87.6
	51.9	-2.32	50.8		100.3	1434.24	88.1
	62.9	75.06	73.7		101.4	1450.36	88.5
	64.1	106.06	74.7		102.6	1431.79	89.0
	65.3	135.56	74.5		103.8	1610.36	89.6
	66.4	165.58	75.9		104.9	1579.21	89.9
	67.6	212.03	77.7		106.1	1604.23	90.2
	68.8	256.53	79.1		107.3	1616.43	90.5
	69.9	287.44	79.7		108.4	1636.24	91.2
	71.1	317.26	80.1		109.6	1629.23	91.3
	72.3	432.84	80.4		110.8	1621.30	91.3
	73.4	408.44	80.9		111.9	1615.10	91.4
	74.6	444.02	81.2		113.1	1615.81	91.4
	75.8	500.97	81.4		114.3	1615.21	91.4
	76.9	563.08	81.7		115.4	1630.34	91.4
	78.1	589.73	81.9		116.6	1642.37	91.3
	79.3	606.39	82.1		117.8	1646.79	91.4
	80.4	682.29	82.5		118.9	15.69	91.1
	81.6	693.76	82.8		120.1	16.51	91.1
	82.8	775.38	83.1		121.3	18.27	91.1
	83.9	822.33	83.4		122.4	18.70	91.1
	85.1	867.36	83.9		123.6	18.87	91.1
	86.3	894.76	84.5		124.8	18.95	91.2
	87.4	941.56	84.6		125.9	22.94	91.2
	88.6	990.02	84.7		127.1	34.60	91.3
	89.8	1101.45	84.9		128.3	52.53	91.3
	90.9	1080.80	85.1		129.4	79.82	91.4
	92.1	1189.29	85.4		130.6	120.32	91.5
	93.3	1172.32	85.7		131.8	171.77	91.5
	94.4	1335.67	86.2		132.9	226.50	91.6

Printing every 7 samples

Serial # 8017 Inside				Serial # 8017 Inside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	134.1	279.99	91.7		181.9	850.40	94.0
	135.3	330.20	91.8		183.1	852.46	94.0
	136.4	377.30	91.9		184.3	854.58	94.0
	137.6	420.55	91.9		185.4	19.72	93.8
	138.8	459.99	92.0		186.6	20.31	93.8
	139.9	496.06	92.1		187.8	21.07	93.9
	141.1	528.78	92.1		188.9	21.98	93.9
	142.3	558.26	92.2		190.1	22.70	93.9
	143.4	584.92	92.3		191.3	23.09	94.0
	144.6	608.89	92.3		192.4	23.81	94.0
	145.8	630.45	92.4		193.6	23.82	94.0
	146.9	649.99	92.5		194.8	23.89	94.1
	148.1	667.59	92.5		195.9	23.75	94.1
	149.3	683.64	92.6		197.1	24.22	94.2
	150.4	698.11	92.6		198.3	24.77	94.2
	151.6	711.25	92.7		199.4	25.50	94.3
	152.8	723.25	92.8		200.6	24.79	94.3
	153.9	734.11	92.8		201.8	25.67	94.4
	155.1	744.12	92.9		202.9	25.68	94.4
	156.3	753.36	92.9		204.1	25.67	94.5
	157.4	761.79	93.0		205.3	26.00	94.5
	158.6	769.53	93.0		206.4	25.41	94.6
	159.8	776.77	93.1		207.6	25.83	94.6
	160.9	783.52	93.1		208.8	26.35	94.7
	162.1	789.50	93.2		209.9	26.17	94.7
	163.3	795.24	93.2		211.1	26.47	94.8
	164.4	800.50	93.3		212.3	26.48	94.8
	165.6	805.58	93.3		213.4	27.02	94.9
	166.8	810.14	93.4		214.6	27.35	94.9
	167.9	814.55	93.4		215.8	27.23	94.9
	169.1	818.61	93.5		216.9	28.78	95.0
	170.3	822.43	93.5		218.1	30.42	95.0
	171.4	826.23	93.6		219.3	31.92	95.1
	172.6	829.34	93.6		220.4	33.64	95.1
	173.8	832.62	93.7		221.6	35.29	95.2
	174.9	835.49	93.7		222.8	36.83	95.2
	176.1	838.43	93.7		223.9	38.52	95.2
	177.3	841.04	93.8		225.1	40.26	95.3
	178.4	843.52	93.8		226.3	42.13	95.3
	179.6	845.90	93.9		227.4	43.78	95.4
	180.8	848.28	93.9		228.6	45.53	95.4

Printing every 7 samples

Serial # 8017 Inside				Serial # 8017 Inside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	229.8	47.23	95.4		277.6	153.75	96.8
	230.9	49.11	95.5		278.8	157.52	96.8
	232.1	50.94	95.5		279.9	161.41	96.9
	233.3	52.93	95.6		281.1	165.48	96.9
	234.4	54.67	95.6		282.3	169.64	96.9
	235.6	56.62	95.6		283.4	173.76	96.9
	236.8	58.55	95.7		284.6	178.14	97.0
	237.9	60.39	95.7		285.8	182.43	97.0
	239.1	62.49	95.7		286.9	187.09	97.0
	240.3	64.42	95.8		288.1	191.53	97.1
	241.4	66.57	95.8		289.3	196.25	97.1
	242.6	68.66	95.8		290.4	201.01	97.1
	243.8	70.70	95.9		291.6	205.99	97.1
	244.9	72.87	95.9		292.8	210.80	97.2
	246.1	75.07	95.9		293.9	215.90	97.2
	247.3	77.37	96.0		295.1	221.19	97.2
	248.4	79.56	96.0		296.3	226.35	97.3
	249.6	81.94	96.0		297.4	231.80	97.3
	250.8	84.30	96.1		298.6	237.41	97.3
	251.9	86.73	96.1		299.8	242.93	97.3
	253.1	89.09	96.1		300.9	248.88	97.4
	254.3	91.61	96.2		302.1	254.75	97.4
	255.4	94.11	96.2		303.3	260.77	97.4
	256.6	96.73	96.2		304.4	266.91	97.5
	257.8	99.46	96.3		305.6	273.25	97.5
	258.9	102.09	96.3		306.8	279.65	97.5
	260.1	104.86	96.3		307.9	1603.72	97.9
	261.3	107.59	96.4		309.1	1593.96	97.8
	262.4	110.48	96.4		310.3	1597.55	97.8
	263.6	113.35	96.4		311.4	1596.03	97.8
	264.8	116.31	96.5		312.6	1595.74	97.8
	265.9	119.45	96.5		313.8	1596.08	97.8
	267.1	122.57	96.5		314.9	1620.85	97.8
	268.3	125.68	96.6		316.1	1603.59	97.9
	269.4	128.90	96.6		317.3	1595.90	97.9
	270.6	132.54	96.6		318.4	1591.01	97.9
	271.8	135.94	96.6		319.6	1596.67	97.9
	272.9	139.38	96.7		320.8	1594.92	97.9
	274.1	142.74	96.7		321.9	1530.85	97.7
	275.3	146.27	96.7		323.1	1620.33	97.5
	276.4	150.26	96.8		324.3	1604.48	97.2

Printing every 7 samples

Serial # 8017 Inside				Serial # 8017 Inside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	325.4	1573.25	96.7		373.3	38.22	72.0
	326.6	1489.89	95.6		374.4	-2.19	72.4
	327.8	1466.53	94.9		375.6	-2.24	72.4
	328.9	1450.97	93.9		376.8	-2.28	72.4
	330.1	1410.55	93.1		377.9	-2.34	72.4
	331.3	1360.39	92.2		379.1	-2.35	72.4
	332.4	1315.18	91.3		380.3	-2.34	72.4
	333.6	1325.87	90.2		381.4	-2.34	72.4
	334.8	1296.35	89.4		382.6	-2.34	72.4
	335.9	1264.63	88.7		383.8	-2.34	72.4
	337.1	1187.77	88.0		384.9	-2.37	72.4
	338.3	1169.61	87.1		386.1	-2.38	72.4
	339.4	1141.74	86.3		387.3	-2.37	72.4
	340.6	1051.79	85.6		388.4	-2.37	72.4
	341.8	1050.34	85.0		389.6	-2.36	72.4
	342.9	1018.05	84.5		390.8	-2.37	72.4
	344.1	985.62	84.1		391.9	-2.39	72.3
	345.3	927.41	83.8		393.1	-2.38	72.3
	346.4	887.38	83.6		394.3	-2.38	72.3
	347.6	842.34	83.4		395.4	-2.37	72.3
	348.8	803.54	83.3		396.6	-2.35	72.3
	349.9	720.72	83.3		397.8	-2.35	72.3
	351.1	712.11	83.3		398.9	-2.37	72.3
	352.3	638.44	83.1		400.1	-2.39	72.3
	353.4	620.84	81.4		401.3	-2.40	72.3
	354.6	589.43	80.2		402.4	-2.36	72.3
	355.8	527.81	78.9		403.6	-2.37	72.2
	356.9	499.41	77.7		404.8	-2.39	72.2
	358.1	434.36	77.1		405.9	-2.36	72.2
	359.3	408.66	75.6		407.1	-2.36	72.2
	360.4	378.05	75.1		408.3	-2.38	72.2
	361.6	349.72	74.8		409.4	-2.37	72.2
	362.8	319.88	74.8		410.6	-2.37	72.1
	363.9	288.67	74.7		411.8	-2.35	72.1
	365.1	257.84	74.7		412.9	-2.36	72.1
	366.3	225.88	74.5		414.1	-2.38	72.1
	367.4	166.02	74.3		415.3	-2.38	72.1
	368.6	136.51	73.6		416.4	-2.37	72.1
	369.8	105.84	72.7		417.6	-2.35	72.1
	370.9	75.68	72.1		418.8	-2.37	72.1
	372.1	53.68	72.0		419.9	-2.41	72.0

Printing every 7 samples

Serial # 8017 Inside				Serial # 8650 Fluid			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	421.1	-2.41	72.0				
	422.3	-2.30	72.0				
	423.4	-2.27	59.4				
	424.6	-2.42	51.2				
	425.8	-2.52	47.7				
	426.9	-2.55	45.9				
	428.1	-2.53	44.7				
	429.3	-2.50	43.8				
	430.4	-2.48	43.0				
	431.6	-2.46	42.3				
	432.8	-2.44	41.7				
	433.9	-2.44	41.1				
	435.1	-2.45	40.7				
	436.3	-2.44	40.4				
	437.4	-2.42	40.2				
	438.6	-2.43	39.8				
	439.8	-2.44	39.6				
	440.9	-2.43	39.6				
	442.1	-2.39	39.5				
	443.3	-2.45	39.4				
	444.4	-2.51	43.5				
	445.6	-2.47	43.9				
	446.8	-2.48	44.2				
	447.9	-2.50	44.5				
	449.1	-2.41	44.8				
	449.6	-2.69	46.5				

Printing every 3 samples

DRILL STEM TESTING - DATA LISTING

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

22-16s-16w Rush Co.

Job Ticket: 039994 **DST#: 2**

Test Start: 2010.12.03 @ 17:51:05

Serial # 8650	**Fluid**			**Serial # 8650**	**Fluid**		
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	0.0	-0.95	66.8		1.6	-0.65	71.2
	0.1	-0.91	66.9		1.7	-0.67	71.2
	0.1	-0.89	67.0		1.8	-0.67	71.2
	0.2	-0.89	67.0		1.8	-0.70	71.2
	0.2	-0.89	67.1		1.9	-0.76	71.2
	0.3	-0.88	67.1		1.9	-0.76	71.2
	0.3	-0.87	67.1		2.0	-0.75	71.2
	0.3	-0.88	67.2		12.0	-0.72	71.3
	0.4	-0.87	67.2		42.0	-0.64	51.4
	0.4	-0.88	67.2		62.5	-0.55	48.5
	0.5	-0.89	67.2		64.0	-0.50	50.2
	0.6	-0.88	67.3		65.5	-0.47	52.2
	0.6	-0.89	67.3		67.0	-0.46	54.6
	0.6	-0.90	67.3		68.5	-0.44	57.1
	0.7	-0.90	67.3		70.0	-0.43	59.5
	0.8	-0.88	67.3		71.5	-0.41	61.7
	0.8	-0.86	67.3		73.0	-0.37	63.8
	0.9	-0.81	67.4		74.5	-0.35	65.6
	0.9	-0.77	67.4		76.0	-0.32	67.2
	0.9	-0.74	67.6		77.5	-0.28	68.7
	1.0	-0.72	67.8		79.0	-0.25	70.1
	1.0	-0.70	68.1		80.5	-0.23	71.3
	1.1	-0.69	68.5		82.0	-0.20	72.4
	1.1	-0.68	68.9		83.5	-0.16	73.5
	1.2	-0.66	69.3		85.0	-0.13	74.5
	1.3	-0.66	69.8		86.5	-0.09	75.4
	1.3	-0.66	70.2		88.0	-0.03	76.2
	1.4	-0.66	70.5		89.5	0.02	77.0
	1.4	-0.66	70.7		91.0	0.07	77.7
	1.5	-0.66	70.9		92.5	0.12	78.3
	1.5	-0.65	71.0		94.0	0.16	79.0
	1.5	-0.65	71.1		95.5	0.21	79.6
	1.6	-0.64	71.1		97.0	0.24	80.3

Printing every 3 samples

Serial # 8650	Fluid		
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	98.5	0.29	80.9
	100.0	0.33	81.6
	101.5	0.36	82.2
	103.0	0.40	82.9
	104.5	0.42	83.5
	106.0	0.44	84.2
	107.5	0.45	84.9
	109.0	0.47	85.5
	110.5	0.47	86.1
	112.0	0.46	86.6
	113.5	0.44	87.0
	115.0	0.44	87.4
	116.5	0.42	87.8
	118.0	0.43	88.1
	119.5	0.43	88.6
	121.0	0.43	89.0
	122.5	0.43	89.3
	124.0	0.42	89.7
	125.5	0.41	89.9
	127.0	0.39	90.1
	128.5	0.39	90.3
	130.0	0.38	90.5
	131.5	0.38	90.7
	133.0	0.37	90.8
	134.5	0.35	90.9
	136.0	0.36	91.1
	137.5	0.37	91.2
	139.0	0.36	91.3
	140.5	0.36	91.4
	142.0	0.37	91.4
	143.5	0.37	91.5
	145.0	0.35	91.6
	146.5	0.36	91.7
	148.0	0.36	91.8
	149.5	0.35	91.8
	151.0	0.34	91.9
	152.5	0.35	92.0
	154.0	0.35	92.0
	155.5	0.35	92.1
	157.0	0.35	92.2
	158.5	0.35	92.2

Serial # 8650	Fluid		
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	160.0	0.34	92.3
	161.5	0.33	92.3
	163.0	0.32	92.4
	164.5	0.32	92.5
	166.0	0.30	92.5
	167.5	0.29	92.6
	169.0	0.29	92.6
	170.5	0.28	92.7
	172.0	0.28	92.7
	173.5	0.27	92.8
	175.0	0.30	92.8
	176.5	0.31	92.9
	178.0	0.31	92.9
	179.5	0.31	93.0
	181.0	0.31	93.0
	182.5	0.28	93.1
	184.0	0.38	93.1
	185.5	1.72	93.7
	187.0	2.29	93.8
	188.5	2.85	93.9
	190.0	3.39	93.9
	191.5	3.93	94.0
	193.0	4.44	94.0
	194.5	4.88	94.0
	196.0	5.33	94.1
	197.5	5.70	94.1
	199.0	6.10	94.1
	200.5	6.35	94.2
	202.0	6.76	94.2
	203.5	7.27	94.2
	205.0	7.49	94.3
	206.5	7.87	94.3
	208.0	8.12	94.4
	209.5	8.50	94.4
	211.0	9.18	94.4
	212.5	8.92	94.5
	214.0	9.39	94.5
	215.5	9.42	94.5
	217.0	9.48	94.6
	218.5	9.53	94.6
	220.0	9.60	94.6

Printing every 3 samples

Serial # 8650	Fluid		
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	221.5	9.64	94.6
	223.0	9.69	94.6
	224.5	9.75	94.7
	226.0	9.78	94.7
	227.5	9.81	94.7
	229.0	9.84	94.7
	230.5	9.85	94.7
	232.0	9.86	94.8
	233.5	9.84	94.8
	235.0	9.81	94.8
	236.5	9.80	94.8
	238.0	9.79	94.8
	239.5	9.80	94.9
	241.0	9.83	94.9
	242.5	9.87	94.9
	244.0	9.90	94.9
	245.5	9.93	94.9
	247.0	9.95	95.0
	248.5	9.95	95.0
	250.0	9.95	95.0
	251.5	9.94	95.0
	253.0	9.93	95.1
	254.5	9.93	95.1
	256.0	9.93	95.1
	257.5	9.95	95.1
	259.0	9.96	95.2
	260.5	9.98	95.2
	262.0	10.01	95.2
	263.5	10.05	95.2
	265.0	10.07	95.2
	266.5	10.09	95.3
	268.0	10.11	95.3
	269.5	10.12	95.3
	271.0	10.13	95.3
	272.5	10.15	95.4
	274.0	10.18	95.4
	275.5	10.19	95.4
	277.0	10.21	95.4
	278.5	10.24	95.5
	280.0	10.26	95.5
	281.5	10.26	95.5

Serial # 8650	Fluid		
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	283.0	10.28	95.5
	284.5	10.28	95.5
	286.0	10.28	95.6
	287.5	10.29	95.6
	289.0	10.29	95.6
	290.5	10.30	95.6
	292.0	10.31	95.7
	293.5	10.32	95.7
	295.0	10.31	95.7
	296.5	10.32	95.7
	298.0	10.33	95.8
	299.5	10.34	95.8
	301.0	10.35	95.8
	302.5	10.38	95.8
	304.0	10.40	95.8
	305.5	10.39	95.9
	307.0	9.74	95.9
	308.5	9.79	95.9
	310.0	9.81	95.9
	311.5	9.84	96.0
	313.0	9.86	96.0
	314.5	9.85	96.0
	316.0	9.77	96.0
	317.5	9.69	96.0
	319.0	9.63	96.1
	320.5	9.91	96.1
	322.0	9.54	96.1
	323.5	9.55	96.1
	325.0	9.60	96.1
	326.5	8.79	95.9
	328.0	9.30	95.6
	329.5	7.90	95.3
	331.0	9.12	94.9
	332.5	9.08	94.4
	334.0	8.79	93.9
	335.5	8.88	93.3
	337.0	8.81	92.7
	338.5	8.77	92.0
	340.0	8.80	91.4
	341.5	8.77	90.8
	343.0	8.27	90.1

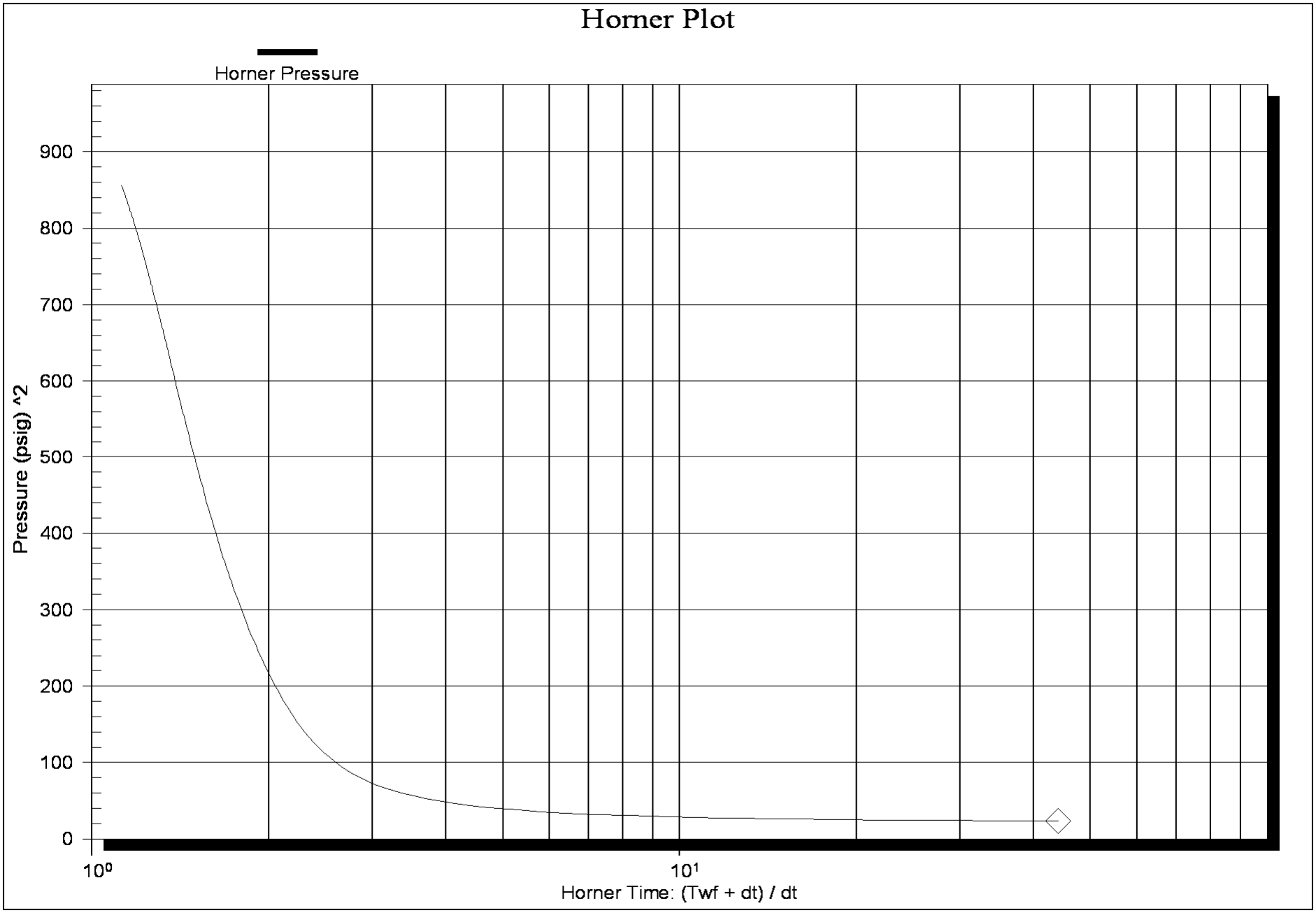
Printing every 3 samples

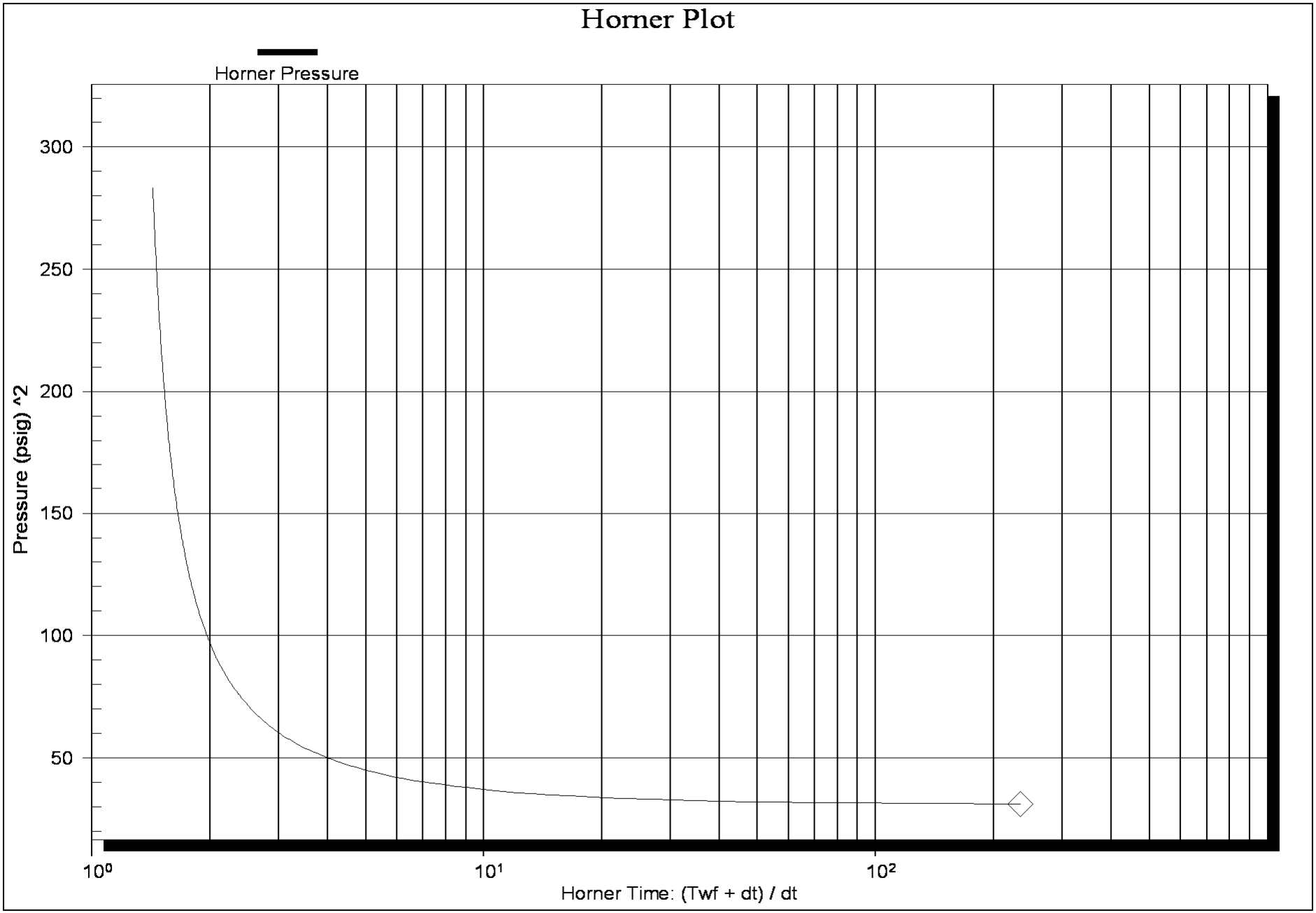
Serial # 8650	Fluid		
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	344.5	8.69	89.6
	346.0	8.56	89.1
	347.5	8.60	88.6
	349.0	8.55	88.1
	350.5	5.60	87.6
	352.0	7.95	87.0
	353.5	8.51	86.4
	355.0	7.76	85.6
	356.5	8.27	84.7
	358.0	8.20	83.8
	359.5	6.60	82.9
	361.0	8.09	82.2
	362.5	7.79	81.6
	364.0	8.04	81.1
	365.5	8.08	80.6
	367.0	7.99	80.1
	368.5	7.95	79.5
	370.0	7.85	78.9
	371.5	7.77	78.4
	373.0	7.66	78.0
	374.5	7.62	77.6
	376.0	-0.48	77.1
	377.5	-1.28	72.0
	379.0	-1.04	59.4
	380.5	-1.04	56.1
	382.0	-1.07	53.6
	383.5	-1.08	51.7
	385.0	-1.08	50.1
	386.5	-1.08	48.7
	388.0	-1.07	47.7
	389.5	-1.08	46.8
	391.0	-1.09	46.1
	392.5	-1.09	45.4
	394.0	-1.07	44.9
	395.5	-1.05	44.5
	397.0	-1.03	44.1
	398.5	-1.01	43.8
	400.0	-0.99	43.5
	401.5	-0.99	43.3
	403.0	-0.98	43.1
	404.5	-0.97	42.9

Serial # 8650	Fluid		
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	406.0	-0.95	42.8
	407.5	-0.95	42.6
	409.0	-0.93	42.5
	410.5	-0.94	42.4
	412.0	-0.94	42.3
	413.5	-0.93	42.2
	415.0	-0.93	42.0
	416.5	-0.92	41.9
	418.0	-0.91	41.8
	419.5	-0.90	41.7
	421.0	-0.89	41.6
	422.5	-0.89	41.5
	424.0	-0.90	41.4
	425.5	-0.90	41.3
	427.0	-0.90	41.2
	428.5	-0.91	41.1
	430.0	-0.91	41.0
	431.5	-0.92	40.9
	433.0	-0.92	40.8
	434.5	-0.92	40.7
	436.0	-0.92	40.6
	437.5	-0.89	40.4
	439.0	-0.85	40.2
	440.5	-0.80	40.0
	442.0	-0.91	39.9
	443.5	-0.74	45.6
	445.0	-0.78	46.3
	446.5	-0.67	46.2
	448.0	-0.76	46.2

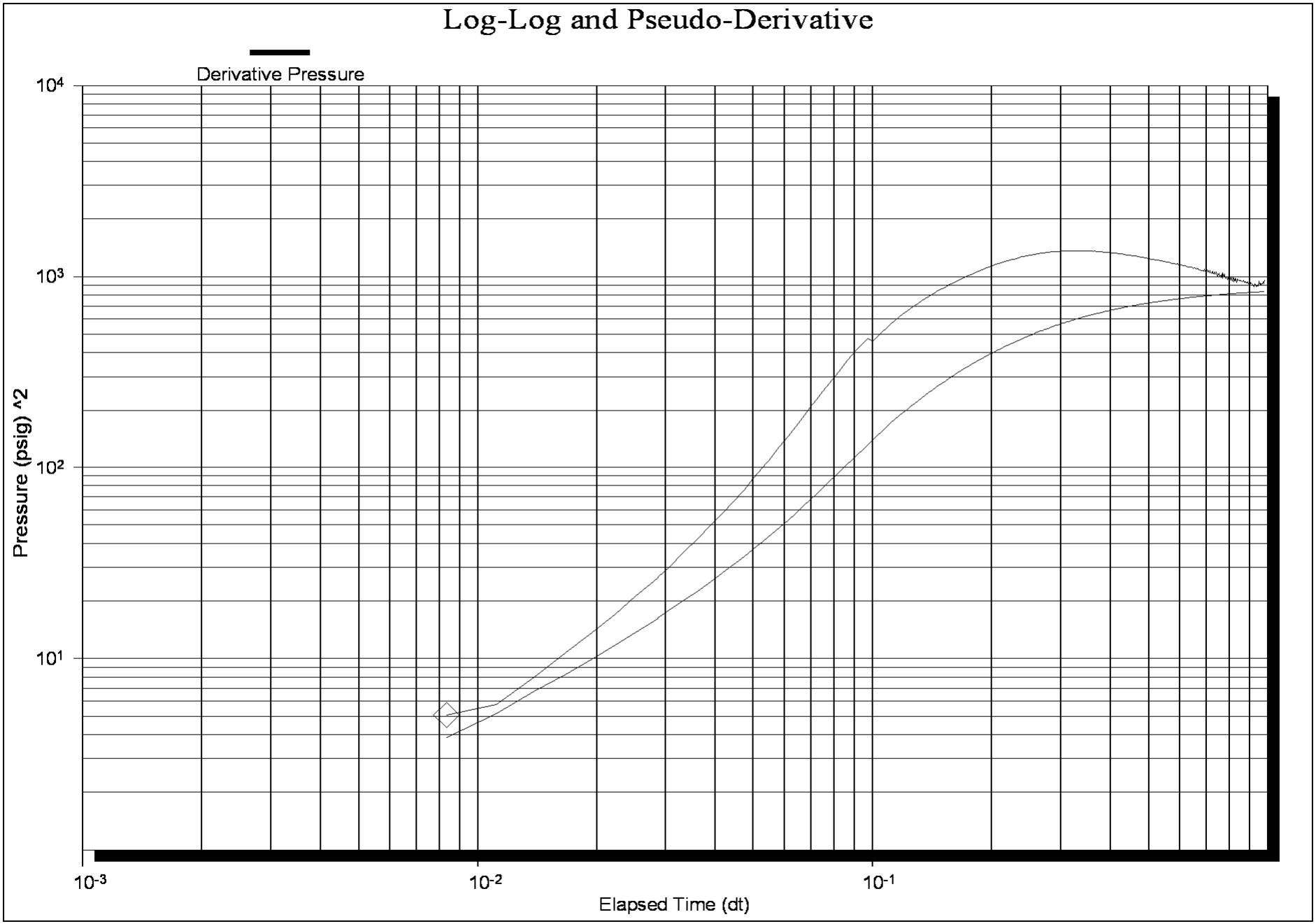
Printing every 3 samples

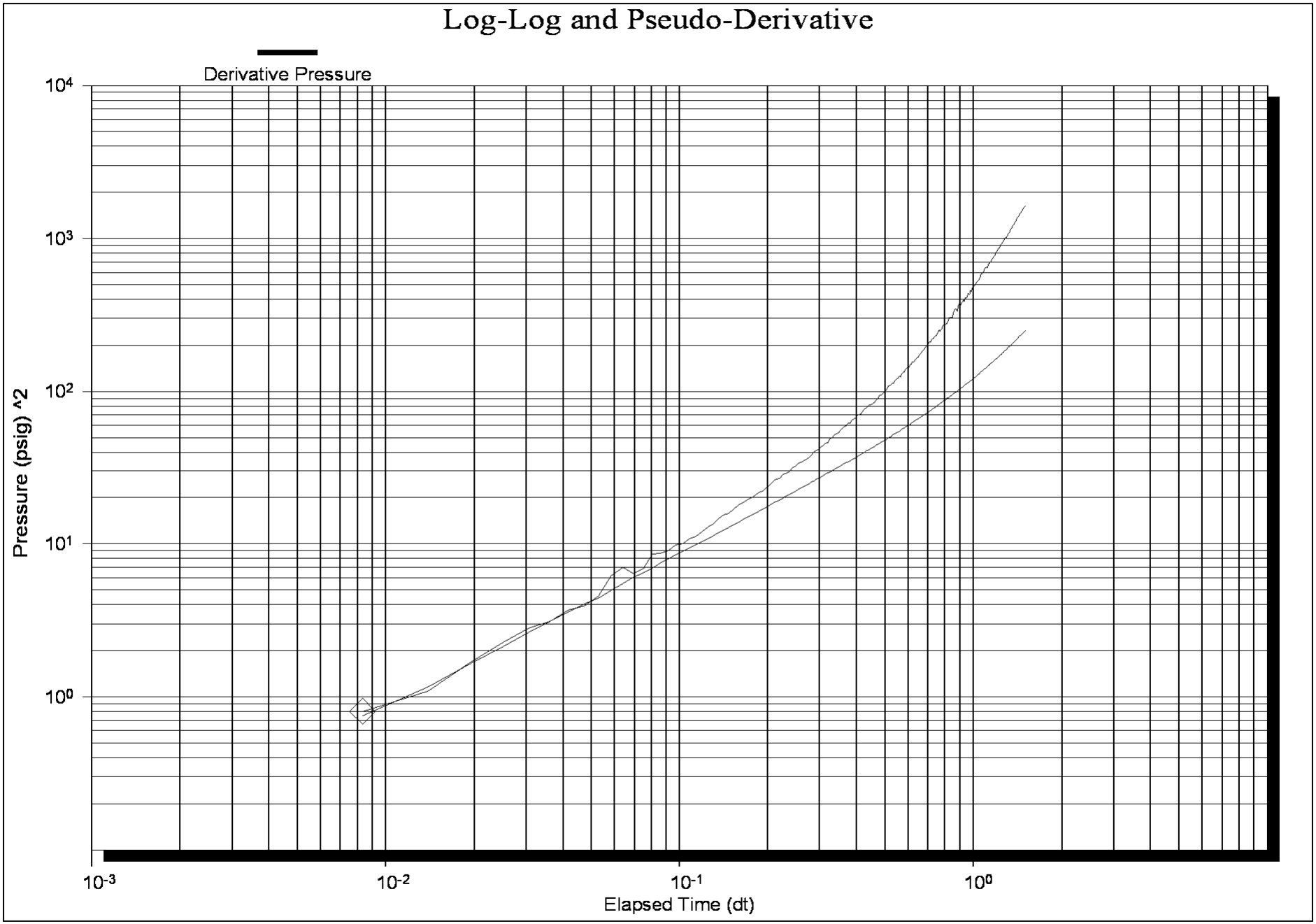
Horner Plot

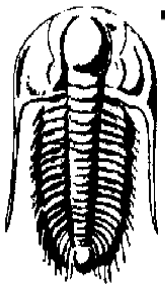

Horner Pressure
900
800
700
600
500
400
300
200
100
0
Pressure (psig) ^2
10⁰
10¹
Horner Time: (Twf + dt) / dt



Serial Number: 8352 (Outside) P* : Slope (m) : kpa/log cycle Flow Cycle: 2


Log-Log and Pseudo-Derivative
Derivative Pressure
10^4
10^3
10^2
10^1
Pressure (psig) ^2
10^-3
10^-2
10^-1
Elapsed Time (dt)


Log-Log and Pseudo-Derivative
Derivative Pressure
Pressure (psig) ^2
10^4
10^3
10^2
10^1
10^0
10^{-3}
10^{-2}
10^{-1}
10^0
Elapsed Time (dt)



TRILOBITE TESTING, INC.

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

DRILL STEM TEST REPORT

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

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)
Total Depth: 3454.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

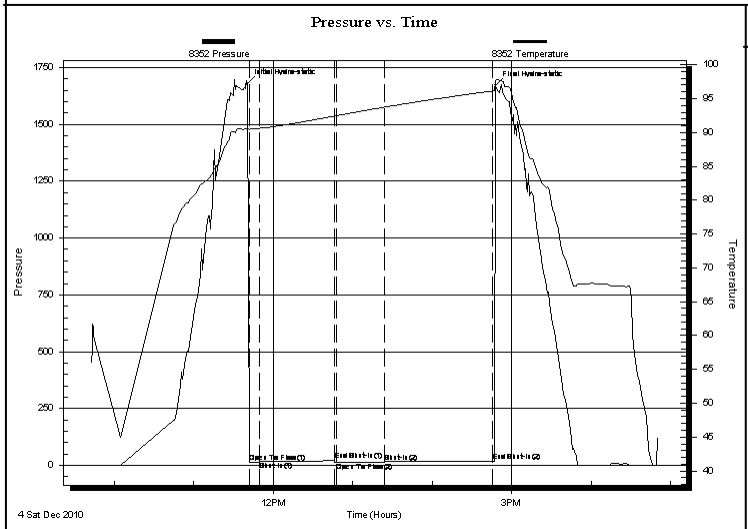
Reference Elevations: 1939.00 ft (KB)
1931.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8352 **Outside**

Press@RunDepth: 15.57 psig @ 3433.00 ft (KB)
Start Date: 2010.12.04 End Date: 2010.12.04
Start Time: 09:43:05 End Time: 16:50:20

Capacity: 8000.00 psig
Last Calib.: 2010.12.04
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)

DRILL STEM TEST REPORT

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

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)
Total Depth: 3454.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

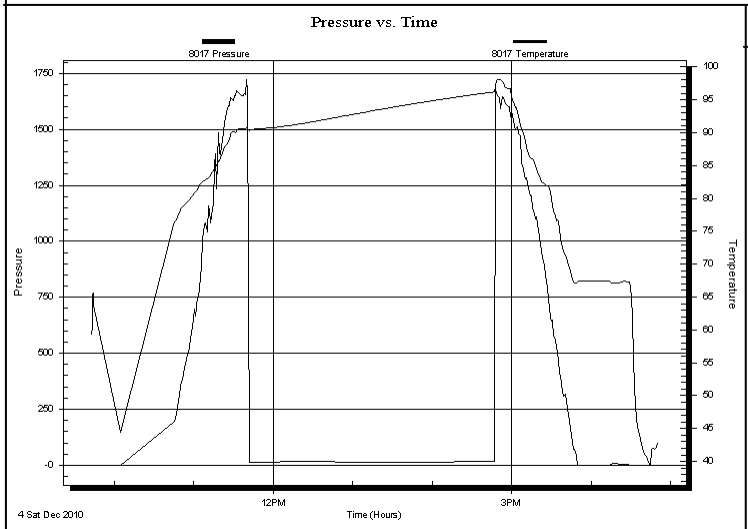
Reference Elevations: 1939.00 ft (KB)
1931.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8017 **Inside**

Press@RunDepth: 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 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)

DRILL STEM TEST REPORT

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

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)
Total Depth: 3454.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

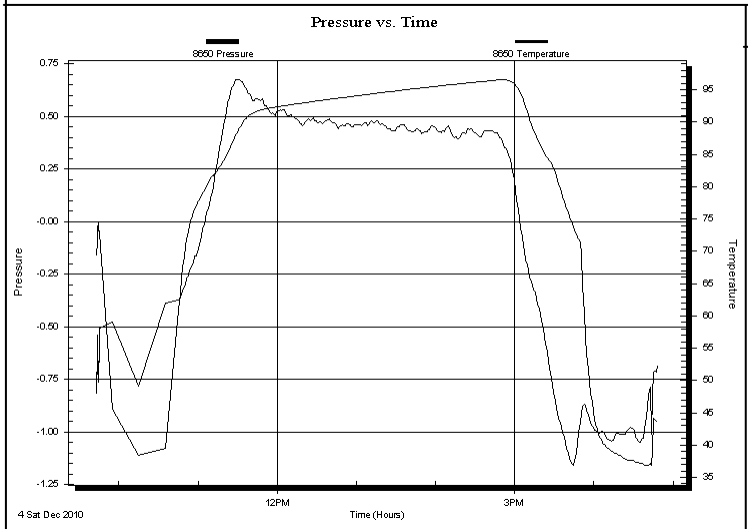
Reference Elevations: 1939.00 ft (KB)
1931.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8650 **Fluid**

Press@RunDepth: psig @ 3398.00 ft (KB)
Start Date: 2010.12.04 End Date: 2010.12.04
Start Time: 09:43:01 End Time: 16:49:00

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 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)

DRILL STEM TEST REPORT

TOOL DIAGRAM

Sam Gary Jr. & Assoc.inc.

1515 Wynkoop
Suite 700
Denver Co. 80202

ATTN: Neil Sharp

Hoss 1-22

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
					Total Volume:	47.73 bbl	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 betw een Packers:		22.00 ft							
Tool Length:		57.00 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			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**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Sam Gary Jr. & Assoc.inc.

1515 Wynkoop
Suite 700
Denver Co. 80202

ATTN: Neil Sharp

Hoss 1-22

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:	bbl		
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

Sam Gary Jr. & Assoc.inc.

1515 Wynkoop
Suite 700
Denver Co. 80202

ATTN: Neil Sharp

Hoss 1-22

22-16s-16w Rush Co.

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

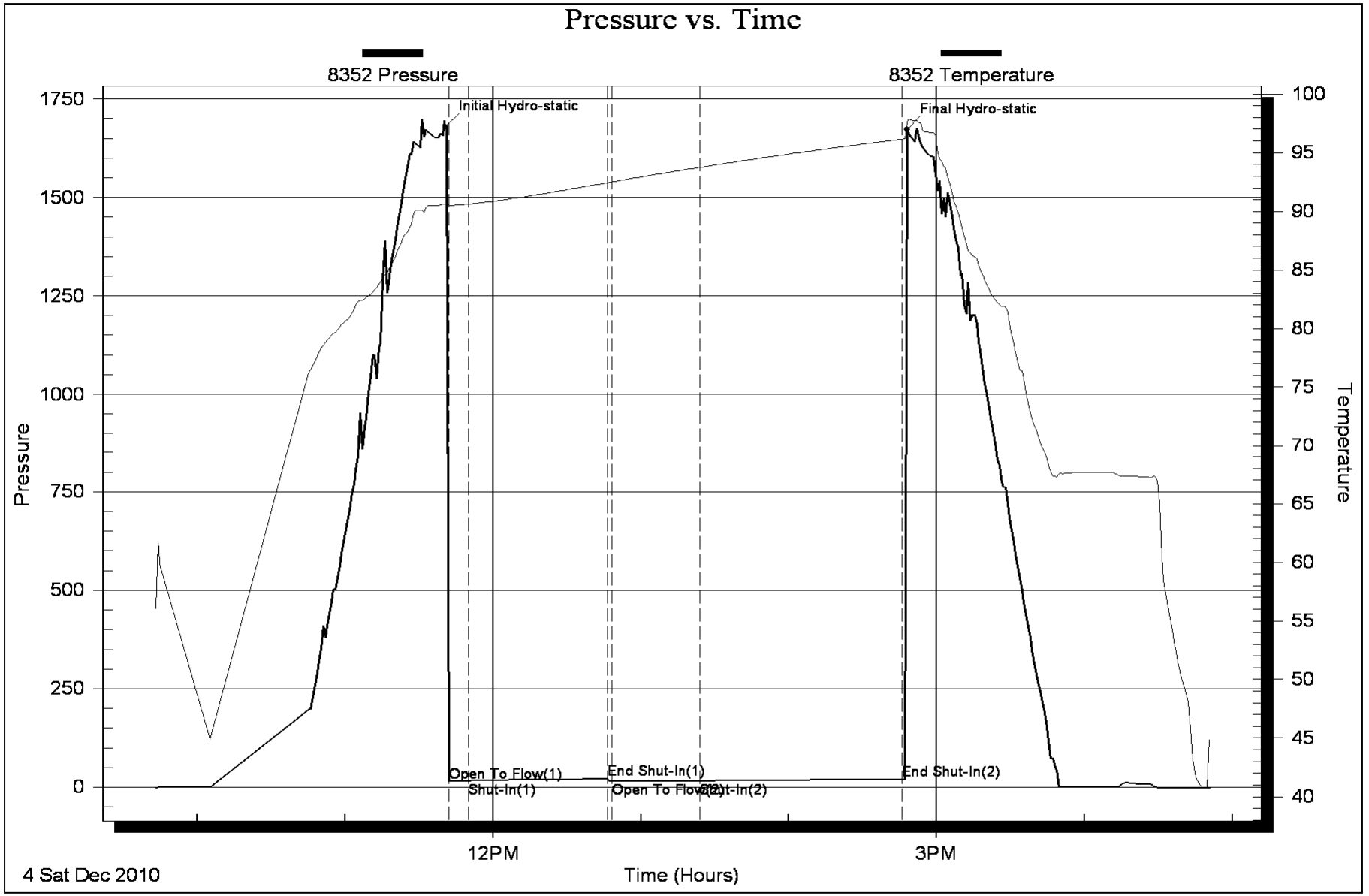
Test Start: 2010.12.04 @ 09:43:05

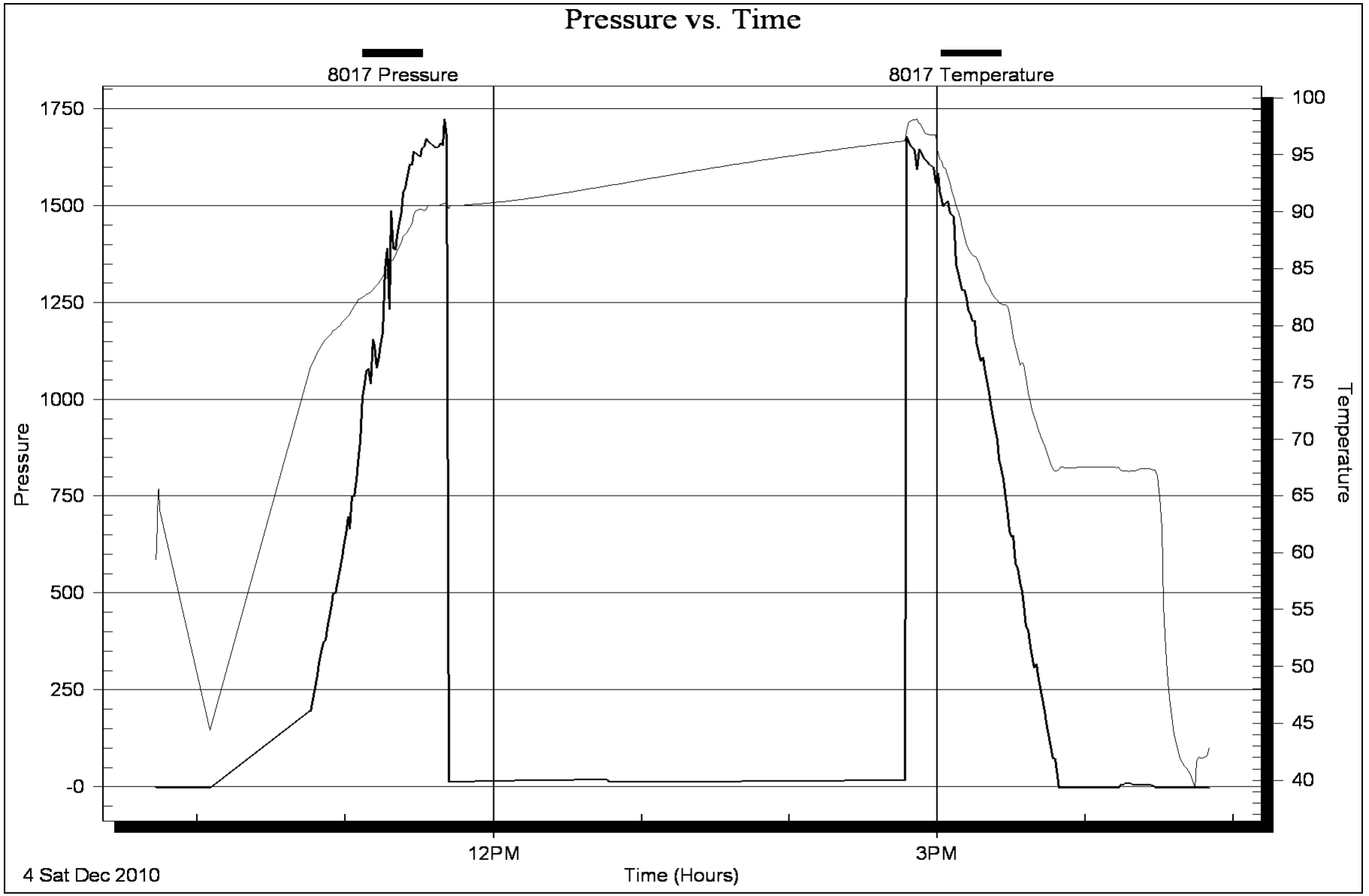
Gas Rates Information

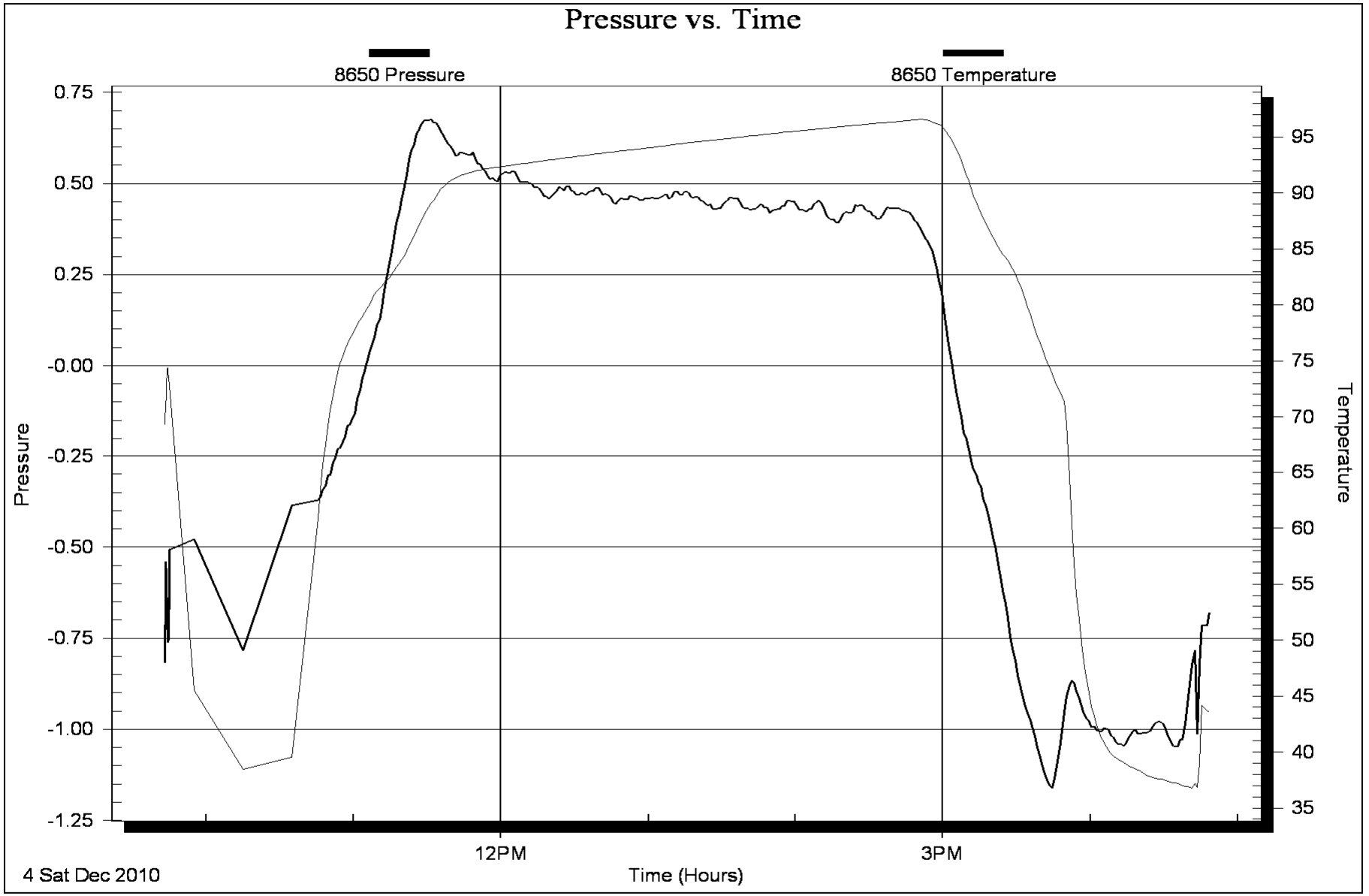
Temperature: 59 deg C
Relative Density: 0.65
Z Factor: 0.8

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
8352 Pressure
8352 Temperature
Initial Hydro-static
Final Hydro-static
Open To Flow(1)
Shut-In(1)
End Shut-In(1)
Open To Flow(2)
Shut-In(2)
End Shut-In(2)
Pressure
Temperature
Time (Hours)
12PM
3PM
4 Sat Dec 2010
1750
1500
1250
1000
750
500
250
0
100
95
90
85
80
75
70
65
60
55
50
45
40


Pressure vs. Time
8017 Pressure
8017 Temperature
1750
1500
1250
1000
750
500
250
-0
Pressure
100
95
90
85
80
75
70
65
60
55
50
45
40
Temperature
12PM
3PM
4 Sat Dec 2010
Time (Hours)


Pressure vs. Time
8650 Pressure
8650 Temperature
0.75
0.50
0.25
-0.00
-0.25
-0.50
-0.75
-1.00
-1.25
Pressure
95
90
85
80
75
70
65
60
55
50
45
40
35
Temperature
12PM
3PM
4 Sat Dec 2010
Time (Hours)

DRILL STEM TESTING - DATA LISTING

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

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
	126.6	15.55	90.6		169.4	19.76	91.9
	126.8	15.58	90.6		170.6	19.80	92.0
Shut-In(1)	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

DRILL STEM TESTING - DATA LISTING

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

22-16s-16w Rush Co.

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

Test Start: 2010.12.04 @ 09:43:05

Serial # 8017 Inside

Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	0.0	-1.38	59.4
	0.5	-1.12	61.2
	1.0	-1.97	65.9
	1.5	-1.88	64.6
	11.9	-1.98	62.0
	62.1	194.04	75.9
	63.1	208.75	76.4
	64.1	289.99	76.8
	65.1	279.38	77.3
	66.1	316.06	77.7
	67.1	348.40	78.2
	68.1	360.83	78.5
	69.1	436.01	78.8
	70.1	467.68	79.0
	71.1	468.50	79.2
	72.1	500.62	79.5
	73.1	464.27	79.7
	74.1	640.36	79.9
	75.1	582.58	80.0
	76.1	622.41	80.4
	77.1	652.41	80.6
	78.1	682.84	80.9
	79.1	713.85	81.2
	80.1	743.98	81.6
	81.1	838.60	82.0
	82.1	835.88	82.3
	83.1	833.47	82.3
	84.1	897.69	82.5
	85.1	928.33	82.6
	86.1	953.59	82.8
	87.1	1040.78	82.9
	88.1	1060.76	83.1
	89.1	1078.94	83.4

Serial # 8017 Inside

Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	90.1	1112.64	83.6
	91.1	1142.96	83.9
	92.1	1173.13	84.3
	93.1	1259.83	84.6
	94.1	1265.77	84.9
	95.1	1297.86	85.5
	96.1	1467.19	85.8
	97.1	1385.87	86.2
	98.1	1423.34	86.7
	99.1	1454.23	87.1
	100.1	1406.78	87.7
	101.1	1451.91	88.0
	102.1	1577.67	88.2
	103.1	1609.05	88.8
	104.1	1620.81	89.0
	105.1	1637.67	90.0
	106.1	1631.82	90.1
	107.1	1625.89	90.2
	108.1	1657.64	90.1
	109.1	1651.21	90.0
	110.1	1668.93	90.4
	111.1	1662.60	90.5
	112.1	1656.58	90.6
	113.1	1650.95	90.6
	114.1	1651.10	90.6
	115.1	1650.12	90.6
	116.1	1657.48	90.6
	117.1	1722.88	90.7
	118.1	1678.98	90.7
	119.1	12.25	90.5
	120.1	12.38	90.5
	121.1	12.43	90.5
	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			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	369.1	-2.19	67.5
	370.1	-2.20	67.5
	371.1	-2.20	67.5
	372.1	-2.23	67.5
	373.1	-2.23	67.5
	374.1	-2.19	67.5
	375.1	-2.20	67.5
	376.1	-2.22	67.5
	377.1	-2.23	67.5
	378.1	-2.24	67.5
	379.1	-2.21	67.5
	380.1	-2.19	67.5
	381.1	-2.20	67.5
	382.1	-2.23	67.5
	383.1	-2.23	67.5
	384.1	-2.24	67.5
	385.1	-2.27	67.5
	386.1	-2.29	67.5
	387.1	-2.27	67.5
	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

Serial # 8017 Inside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	410.1	-2.44	49.7
	411.1	-2.47	47.0
	412.1	-2.50	45.1
	413.1	-2.52	43.9
	414.1	-2.51	43.0
	415.1	-2.49	42.3
	416.1	-2.50	41.6
	417.1	-2.46	41.2
	418.1	-2.44	40.9
	419.1	-2.43	40.8
	420.1	-2.38	40.1
	421.1	-2.38	39.4
	422.1	-2.41	41.6
	423.1	-2.39	42.0
	424.1	-2.38	41.9
	425.1	-2.33	42.0
	426.1	-2.36	42.1
	427.1	-2.03	42.9
	427.4	-2.45	48.3

Printing every 3 samples

DRILL STEM TESTING - DATA LISTING

Sam Gary Jr. & Assoc.inc.

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

Hoss 1-22

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	Fluid			Serial # 8650	Fluid		
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	Fluid			Serial # 8650	Fluid		
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

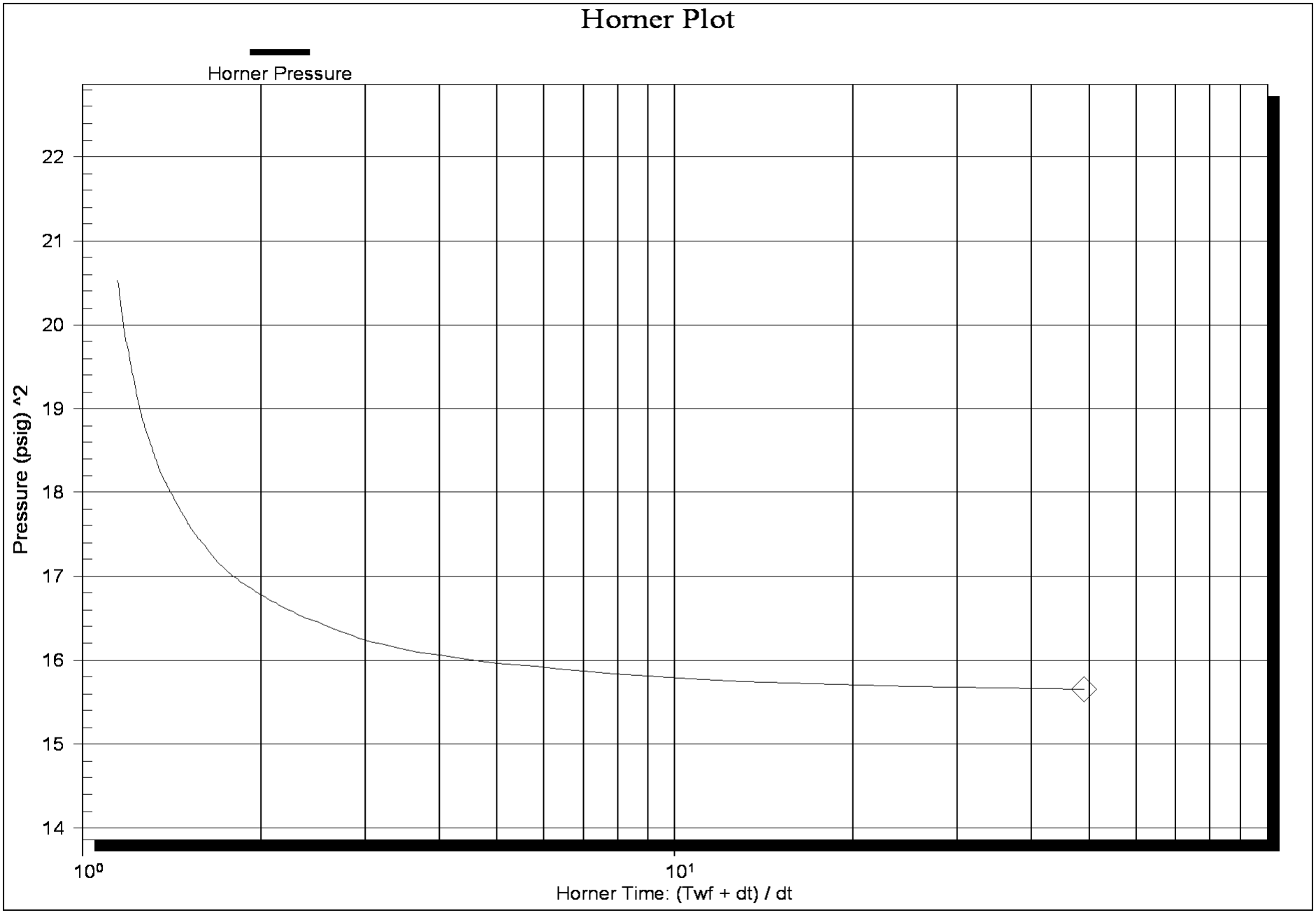
Printing every 3 samples

Serial # 8650	Fluid		
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	344.5	-0.75	83.7
	346.0	-0.79	83.0
	347.5	-0.85	82.2
	349.0	-0.90	81.4
	350.5	-0.94	80.5
	352.0	-0.96	79.5
	353.5	-1.00	78.5
	355.0	-1.03	77.5
	356.5	-1.08	76.6
	358.0	-1.11	75.8
	359.5	-1.14	74.9
	361.0	-1.15	74.1
	362.5	-1.13	73.3
	364.0	-1.07	72.5
	365.5	-1.00	71.8
	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

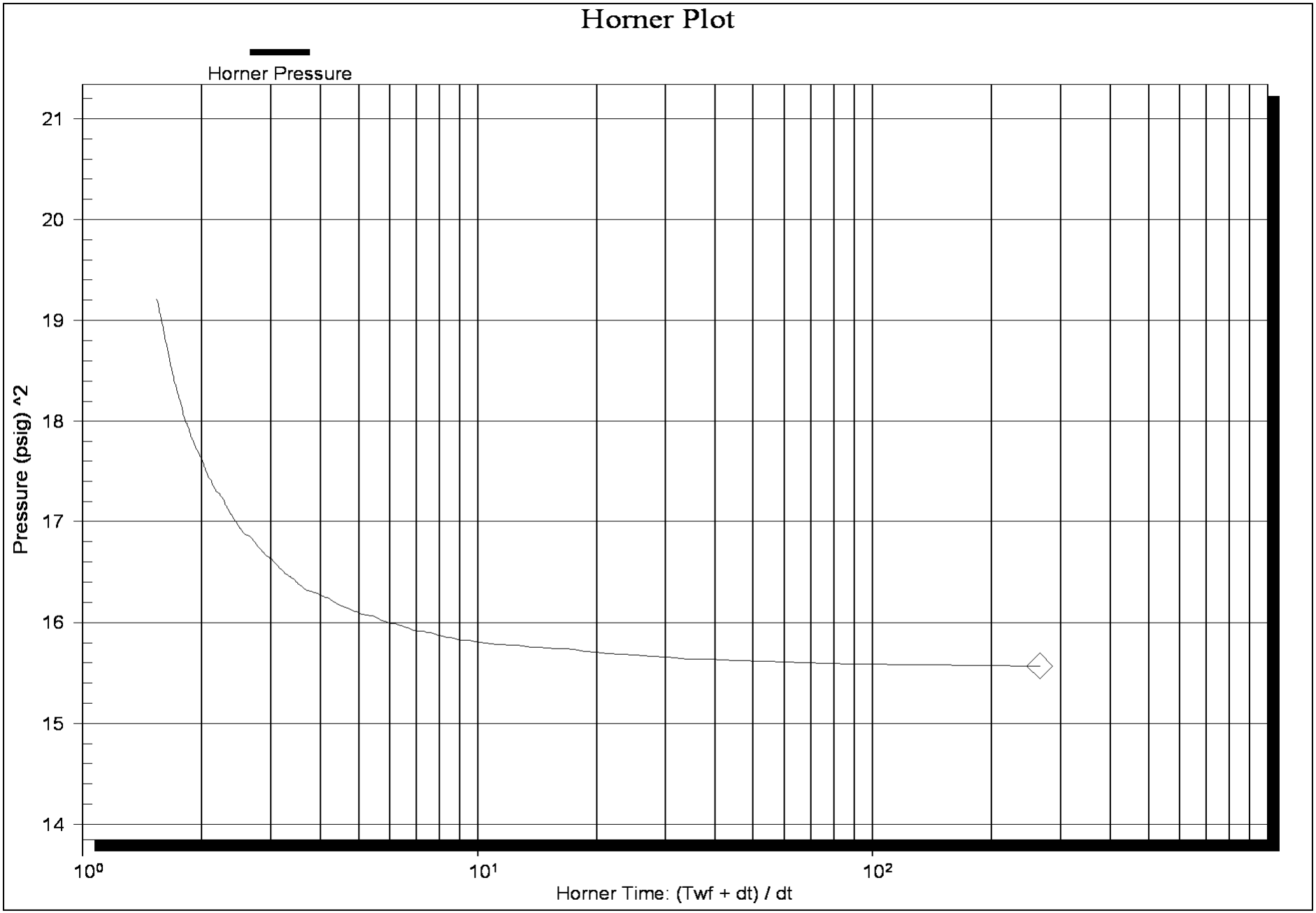
Serial # 8650	Fluid		
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	406.0	-0.99	37.6
	407.5	-0.99	37.5
	409.0	-1.02	37.4
	410.5	-1.04	37.3
	412.0	-1.04	37.2
	413.5	-1.03	37.1
	415.0	-1.01	37.0
	416.5	-0.93	36.9
	418.0	-0.85	36.8
	419.5	-0.78	37.2
	421.0	-1.07	36.8
	422.5	-0.72	44.1
	424.0	-0.68	43.8
	425.5	-0.68	43.6
	426.0	-0.72	43.6

Printing every 3 samples

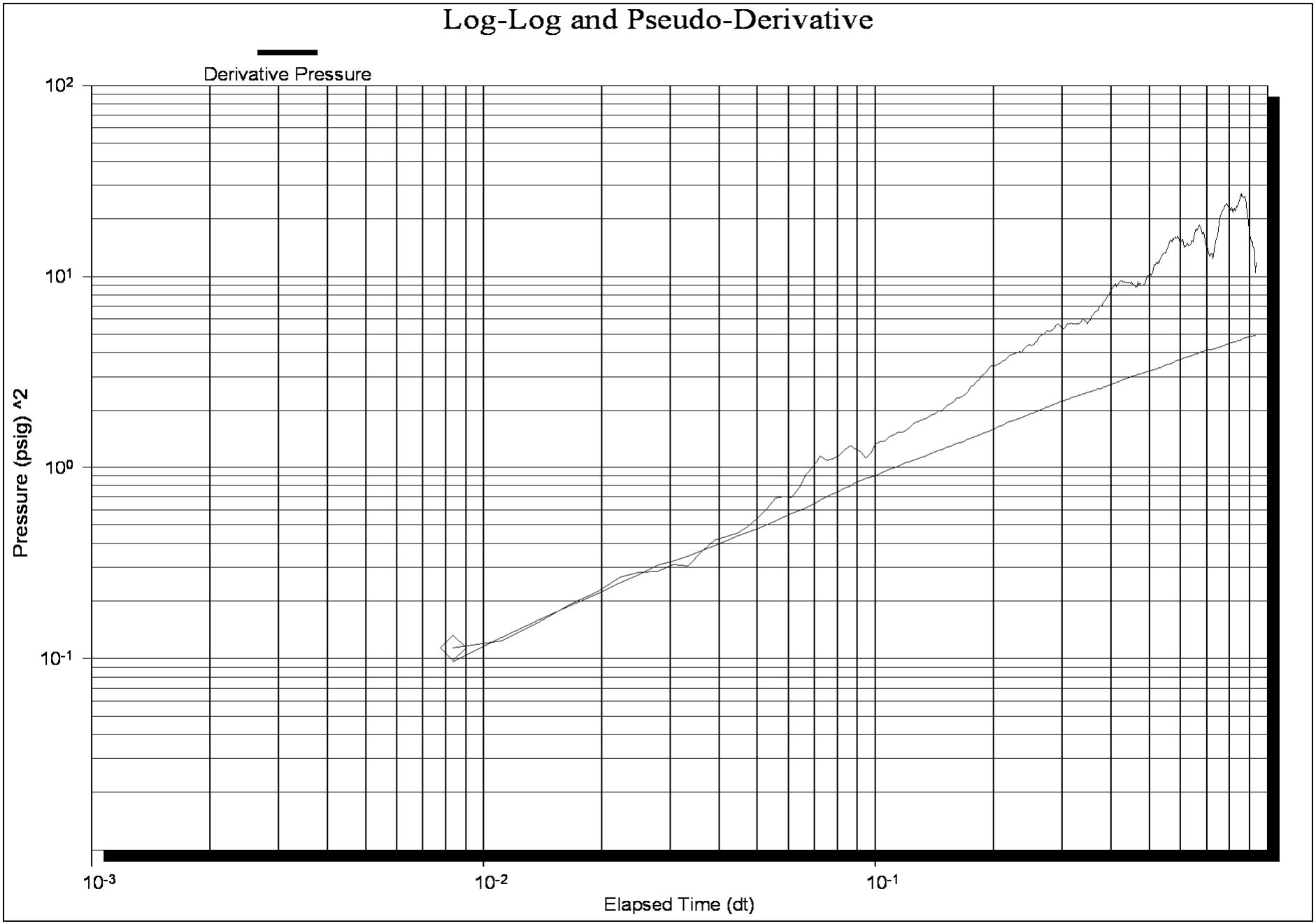
Horner Plot

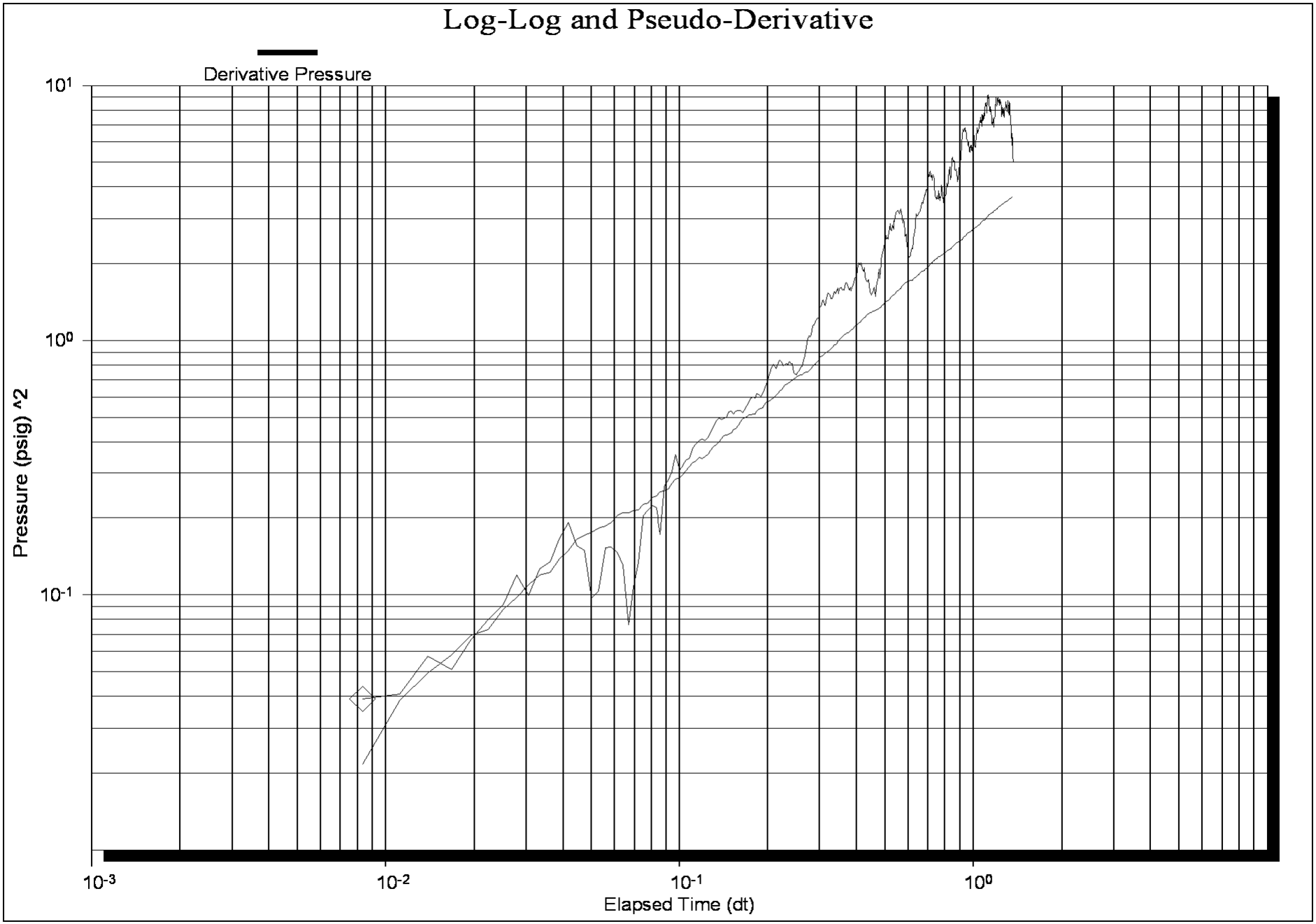

Horner Pressure
22
21
20
19
18
17
16
15
14
Pressure (psig) ^2
10⁰
10¹
Horner Time: (Twf + dt) / dt

Horner Plot



Serial Number: 8352 (Outside) P* : Slope (m) : kpa/log cycle Flow Cycle: 2


Log-Log and Pseudo-Derivative
Derivative Pressure
10^2
10^1
10^0
10^{-1}
Pressure (psig) ^2
10^{-3}
10^{-2}
10^{-1}
Elapsed Time (dt)


Log-Log and Pseudo-Derivative
Derivative Pressure
10^1
10^0
10^-1
Pressure (psig) ^2
10^-3
10^-2
10^-1
10^0
Elapsed Time (dt)

Notice: *Fill out COMPLETELY and return to Conservation Division at the address below within 60 days from plugging date.*

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1048528

Form CP-4
March 2009
Type or Print on this Form
Form must be Signed
All blanks must be Filled

WELL PLUGGING RECORD

K.A.R. 82-3-117

OPERATOR: License #: 3882
Name: Samuel Gary Jr. & Associates, Inc.
Address 1: 1515 WYNKOOP, STE 700
Address 2:
City: DENVER State: CO Zip: 80202 + ____
Contact Person: NEIL SHARP
Phone: (303) 831-4673
Type of Well: *(Check one)* ☐ Oil Well ☐ Gas Well ☐ OG ☑ D&A ☐ Cathodic
☐ Water Supply Well ☐ Other: ☐ SWD Permit #:
☐ ENHR Permit #: ☐ Gas Storage Permit #:
Is ACO-1 filed? ☐ Yes ☑ No If not, is well log attached? ☐ Yes ☐ No
Producing Formation(s): List All *(If needed attach another sheet)*
Depth to Top: Bottom: T.D.
Depth to Top: Bottom: T.D.
Depth to Top: Bottom: T.D.

API No. 15 - 15-165-21911-00-00
Spot Description:
S2 - N2 - S2 - SE Sec. 22 Twp. 16 S. R. 16 ☐ East ☑ West
890 Feet from ☐ North / ☑ South Line of Section
1,320 Feet from ☑ East / ☐ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☐ NW ☑ SE ☐ SW
County: Rush
Lease Name: Hoss Well #: 1-22
Date Well Completed: 12/5/2010
The plugging proposal was approved on: *(Date)*
by: CASE MORRIS *(KCC **District** Agent's Name)*
Plugging Commenced: 12/5/2010
Plugging Completed: 12/5/2010

Show depth and thickness of all water, oil and gas formations.

Oil, Gas or Water Records		*Casing Record (Surface, Conductor & Production)*			
Formation	Content	Casing	Size	Setting Depth	Pulled Out
		SURFACE	8.6250	1049	0

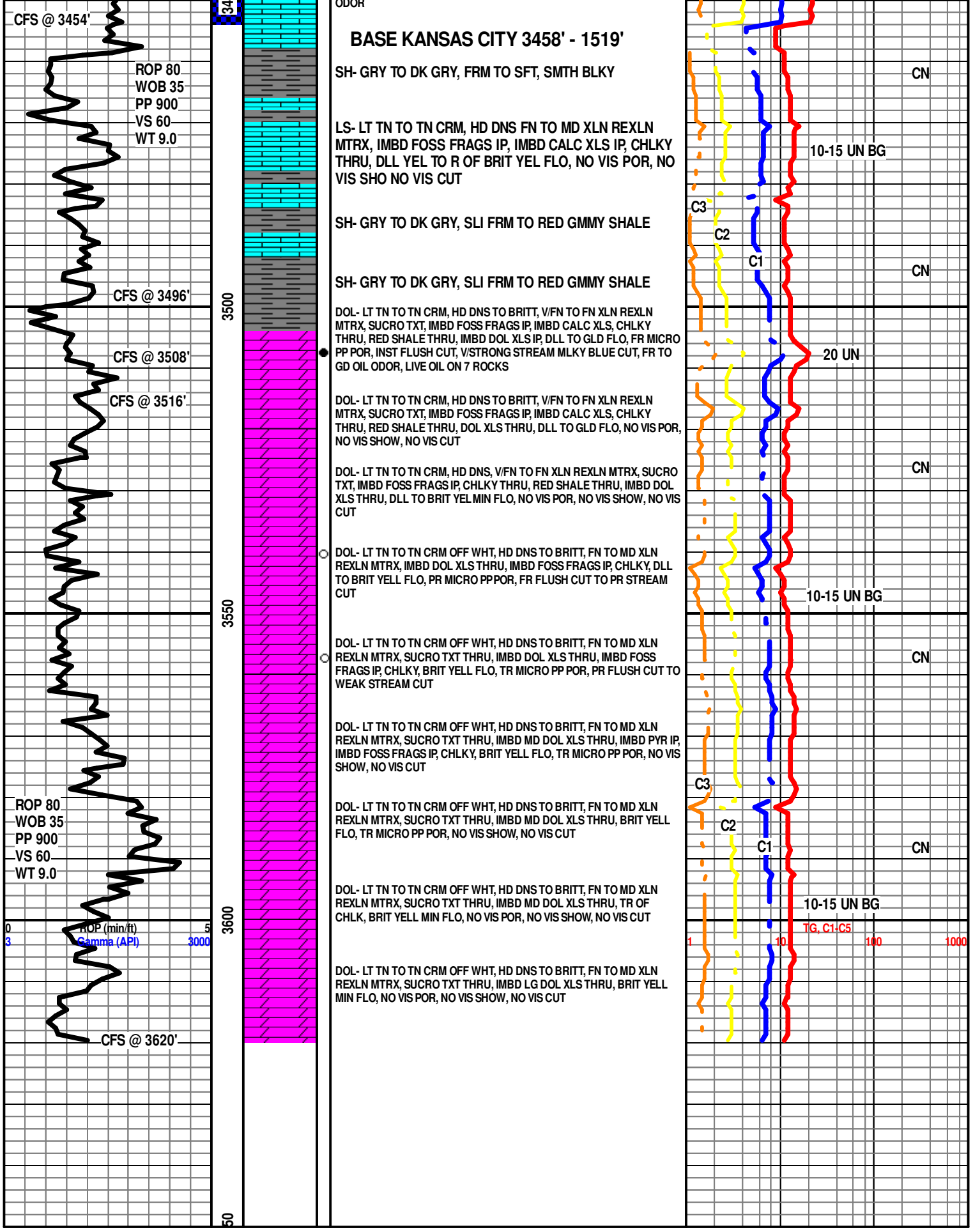
Describe in detail the manner in which the well is plugged, indicating where the mud fluid was placed and the method or methods used in introducing it into the hole. If cement or other plugs were used, state the character of same depth placed from (bottom), to (top) for each plug set.

CEMENT PLUGS SET THROUGH DRILL PIPE (210 SX 60/40 POZ WITH 4% GEL, 1/4#/SK FLOW SEAL)
50 SX @ 3500', 50 SX @ 1080', 40 SX @ 460', 20 SX @ 60' TO THE SURFACE
30 SX IN RATHOLE, 20 SX IN MOUSEHOLE

Plugging Contractor License #: 31548 Name: Discovery Drilling
Address 1: PO BOX 763 Address 2:
City: HAYS State: KS Zip: 67601 + 0763
Phone: (785) 623-2920
Name of Party Responsible for Plugging Fees: SAMUEL GARY JR. & ASSOCIATES, INC.
State of COLORADO County, DENVER , ss.
NEIL D. SHARP ☑ Employee of Operator or ☐ Operator on above-described well,
(Print Name)
being first duly sworn on oath, says: That I have knowledge of the facts statements, and matters herein contained, and the log of the above-described well is as filed, and the same are true and correct, so help me God.

Submitted Electronically

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202


ODOR
BASE KANSAS CITY 3458' - 1519'
SH- GRY TO DK GRY, FRM TO SFT, SMTH BLKY
LS- LT TN TO TN CRM, HD DNS FN TO MD XLN REXLN MTRX, IMBD FOSS FRAGS IP, IMBD CALC XLS IP, CHLKY THRU, DLL YEL TO R OF BRIT YEL FLO, NO VIS POR, NO VIS SHO NO VIS CUT
SH- GRY TO DK GRY, SLI FRM TO RED GMMY SHALE
SH- GRY TO DK GRY, SLI FRM TO RED GMMY SHALE
DOL- LT TN TO TN CRM, HD DNS TO BRITT, V/FN TO FN XLN REXLN MTRX, SUCRO TXT, IMBD FOSS FRAGS IP, IMBD CALC XLS, CHLKY THRU, RED SHALE THRU, IMBD DOL XLS IP, DLL TO GLD FLO, FR MICRO PP POR, INST FLUSH CUT, V/STRONG STREAM MLKY BLUE CUT, FR TO GD OIL ODOR, LIVE OIL ON 7 ROCKS
DOL- LT TN TO TN CRM, HD DNS TO BRITT, V/FN TO FN XLN REXLN MTRX, SUCRO TXT, IMBD FOSS FRAGS IP, IMBD CALC XLS, CHLKY THRU, RED SHALE THRU, DOL XLS THRU, DLL TO GLD FLO, NO VIS POR, NO VIS SHOW, NO VIS CUT
DOL- LT TN TO TN CRM, HD DNS, V/FN TO FN XLN REXLN MTRX, SUCRO TXT, IMBD FOSS FRAGS IP, CHLKY THRU, RED SHALE THRU, IMBD DOL XLS THRU, DLL TO BRIT YEL MIN FLO, NO VIS POR, NO VIS SHOW, NO VIS CUT
DOL- LT TN TO TN CRM OFF WHT, HD DNS TO BRITT, FN TO MD XLN REXLN MTRX, IMBD DOL XLS THRU, IMBD FOSS FRAGS IP, CHLKY, DLL TO BRIT YELL FLO, PR MICRO PP POR, FR FLUSH CUT TO PR STREAM CUT
DOL- LT TN TO TN CRM OFF WHT, HD DNS TO BRITT, FN TO MD XLN REXLN MTRX, SUCRO TXT THRU, IMBD DOL XLS THRU, IMBD FOSS FRAGS IP, CHLKY, BRIT YELL FLO, TR MICRO PP POR, PR FLUSH CUT TO WEAK STREAM CUT
DOL- LT TN TO TN CRM OFF WHT, HD DNS TO BRITT, FN TO MD XLN REXLN MTRX, SUCRO TXT THRU, IMBD MD DOL XLS THRU, IMBD PYR IP, IMBD FOSS FRAGS IP, CHLKY, BRIT YELL FLO, TR MICRO PP POR, NO VIS SHOW, NO VIS CUT
DOL- LT TN TO TN CRM OFF WHT, HD DNS TO BRITT, FN TO MD XLN REXLN MTRX, SUCRO TXT THRU, IMBD MD DOL XLS THRU, BRIT YELL FLO, TR MICRO PP POR, NO VIS SHOW, NO VIS CUT
DOL- LT TN TO TN CRM OFF WHT, HD DNS TO BRITT, FN TO MD XLN REXLN MTRX, SUCRO TXT THRU, IMBD MD DOL XLS THRU, TR OF CHLK, BRIT YELL MIN FLO, NO VIS POR, NO VIS SHOW, NO VIS CUT
DOL- LT TN TO TN CRM OFF WHT, HD DNS TO BRITT, FN TO MD XLN REXLN MTRX, SUCRO TXT THRU, IMBD LG DOL XLS THRU, BRIT YELL MIN FLO, NO VIS POR, NO VIS SHOW, NO VIS CUT
CFS @ 3454'
ROP 80
WOB 35
PP 900
VS 60
WT 9.0
CFS @ 3496'
CFS @ 3508'
CFS @ 3516'
ROP 80
WOB 35
PP 900
VS 60
WT 9.0
CFS @ 3620'
3500
3550
3600
0
ROP (min/ft)
5
3
Gamma (API)
3000
CN
10-15 UN BG
C3
C2
C1
CN
20 UN
CN
10-15 UN BG
CN
C3
C2
C1
CN
10-15 UN BG
TG, C1-C5
1
10
100
1000