



DRILL STEM TEST REPORT

Prepared For: **Sam Gary Jr & Associates Inc**

1515 Wynkoop
Ste 700
Denver Co 80202

ATTN: Tom Fertal

Arron ET AI #1-11

11-16s-17w Rush

Start Date: 2012.05.09 @ 07:30:28

End Date: 2012.05.09 @ 15:08:22

Job Ticket #: 47374 DST #: 1

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

Printed: 2012.05.09 @ 15:26:15



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Sam Gary Jr & Associates Inc

11-16s-17w Rush

1515 Wynkoop
Ste 700
Denver Co 80202
ATTN: Tom Fertal

Arron ET Al #1-11

Job Ticket: 47374

DST#: 1

Test Start: 2012.05.09 @ 07:30:28

GENERAL INFORMATION:

Formation: **LKC**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 09:32:23
 Time Test Ended: 15:08:22
 Interval: **3389.00 ft (KB) To 3452.00 ft (KB) (TVD)**
 Total Depth: 3452.00 ft (KB) (TVD)
 Hole Diameter: 7.85 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ray Schwager
 Unit No: 42
 Reference Elevations: 1936.00 ft (KB)
 1928.00 ft (CF)
 KB to GR/CF: 8.00 ft

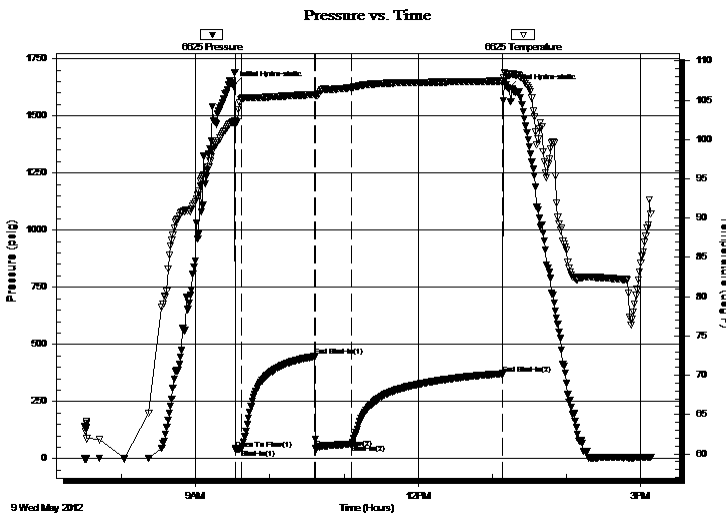
Serial #: 6625

Inside

Press @ Run Depth: 63.66 psig @ 3391.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.05.09 End Date: 2012.05.09 Last Calib.: 2012.05.09
 Start Time: 07:30:28 End Time: 15:08:22 Time On Btm: 2012.05.09 @ 09:30:23
 Time Off Btm: 2012.05.09 @ 13:12:52

TEST COMMENT: 5-IFP-w k to strg in 3 min
 60-ISIP-no bl
 FFP-strg bl thru-out
 FSIP-1/4" blow back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1632.20 | 102.19 | Initial Hydro-static |
| 2 | 39.56 | 102.08 | Open To Flow (1) |
| 7 | 42.80 | 105.15 | Shut-In(1) |
| 66 | 446.82 | 105.72 | End Shut-In(1) |
| 67 | 43.89 | 105.64 | Open To Flow (2) |
| 96 | 63.66 | 106.59 | Shut-In(2) |
| 218 | 371.97 | 107.45 | End Shut-In(2) |
| 223 | 1618.38 | 108.21 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|---------------------|--------------|
| 0.00 | 1630'GIP | 0.00 |
| 85.00 | HO&GCM 20%G20%O60%M | 0.92 |
| 20.00 | CO | 0.28 |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Sam Gary Jr & Associates Inc

11-16s-17w Rush

1515 Wynkoop
Ste 700
Denver Co 80202
ATTN: Tom Fertal

Arron ET Al #1-11

Job Ticket: 47374

DST#: 1

Test Start: 2012.05.09 @ 07:30:28

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3346.00 ft | Diameter: 3.80 inches | Volume: 46.94 bbl | Tool Weight: 2200.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight set on Packer: 25000.00 lb |
| Drill Collar: | Length: 30.00 ft | Diameter: 2.25 inches | Volume: 0.15 bbl | Weight to Pull Loose: 65000.00 lb |
| | | | <u>Total Volume: 47.09 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 22.00 ft | | | String Weight: Initial 52000.00 lb |
| Depth to Top Packer: | 3389.00 ft | | | Final 53000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 63.00 ft | | | |
| Tool Length: | 98.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|---------------------------|--------------|------------|----------|------------|-------------------------------|
| Recorder | 0.00 | 8374 | Fluid | 3354.00 | |
| Blank Spacing | 4.00 | | | 3358.00 | |
| Change Over Sub | 1.00 | | | 3359.00 | |
| Shut In Tool | 5.00 | | | 3364.00 | |
| Sampler | 2.00 | | | 3366.00 | |
| Hydraulic tool | 5.00 | | | 3371.00 | |
| Jars | 5.00 | | | 3376.00 | |
| Safety Joint | 3.00 | | | 3379.00 | |
| Packer | 5.00 | | | 3384.00 | 35.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 3389.00 | |
| Stubb | 1.00 | | | 3390.00 | |
| Perforations | 1.00 | | | 3391.00 | |
| Recorder | 0.00 | 6625 | Inside | 3391.00 | |
| Recorder | 0.00 | 8700 | Outside | 3391.00 | |
| Blank Spacing | 33.00 | | | 3424.00 | |
| Perforations | 25.00 | | | 3449.00 | |
| Bullnose | 3.00 | | | 3452.00 | 63.00 Bottom Packers & Anchor |
| Total Tool Length: | 98.00 | | | | |



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Sam Gary Jr & Associates Inc

11-16s-17w Rush

1515 Wynkoop
Ste 700
Denver Co 80202
ATTN: Tom Fertal

Arron ET Al #1-11

Job Ticket: 47374

DST#: 1

Test Start: 2012.05.09 @ 07:30:28

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 57.00 sec/qt
Water Loss: 8.75 cm³
Resistivity: ohm.m
Salinity: 7200.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 41 deg API
Water Salinity: ppm

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|---------------------|---------------|
| 0.00 | 1630'GIP | 0.000 |
| 85.00 | HO&GCM 20%G20%O60%M | 0.919 |
| 20.00 | CO | 0.281 |

Total Length: 105.00 ft Total Volume: 1.200 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

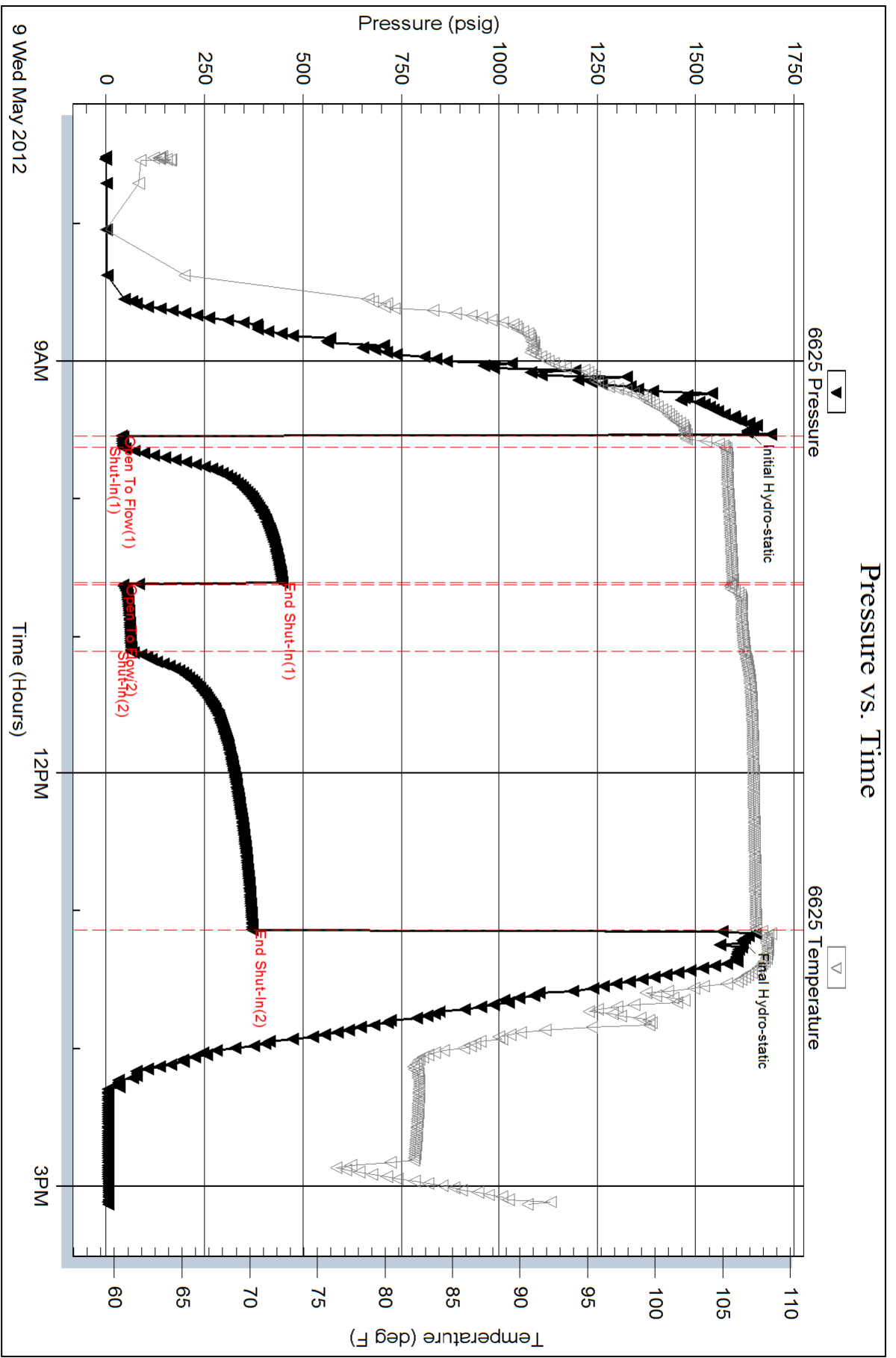
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Sampler Data: PSI,150#

900ML Gas 1000ML Oil 100MLmud

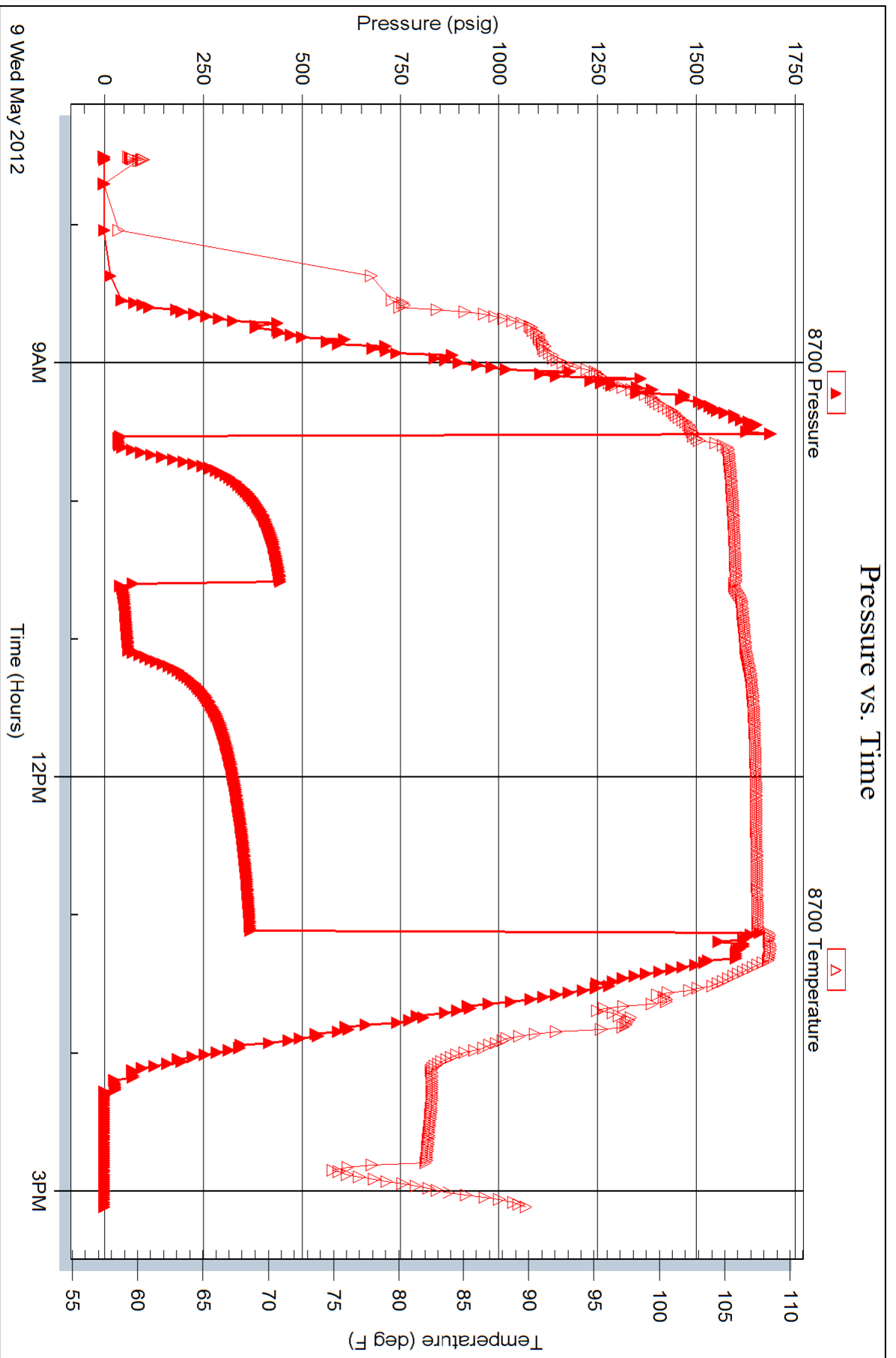


Serial #: 8700

Outside Sam Gary Jr & Associates Inc

Arron ET AI #1-11

DST Test Number: 1



Serial #: 8374

Fluid

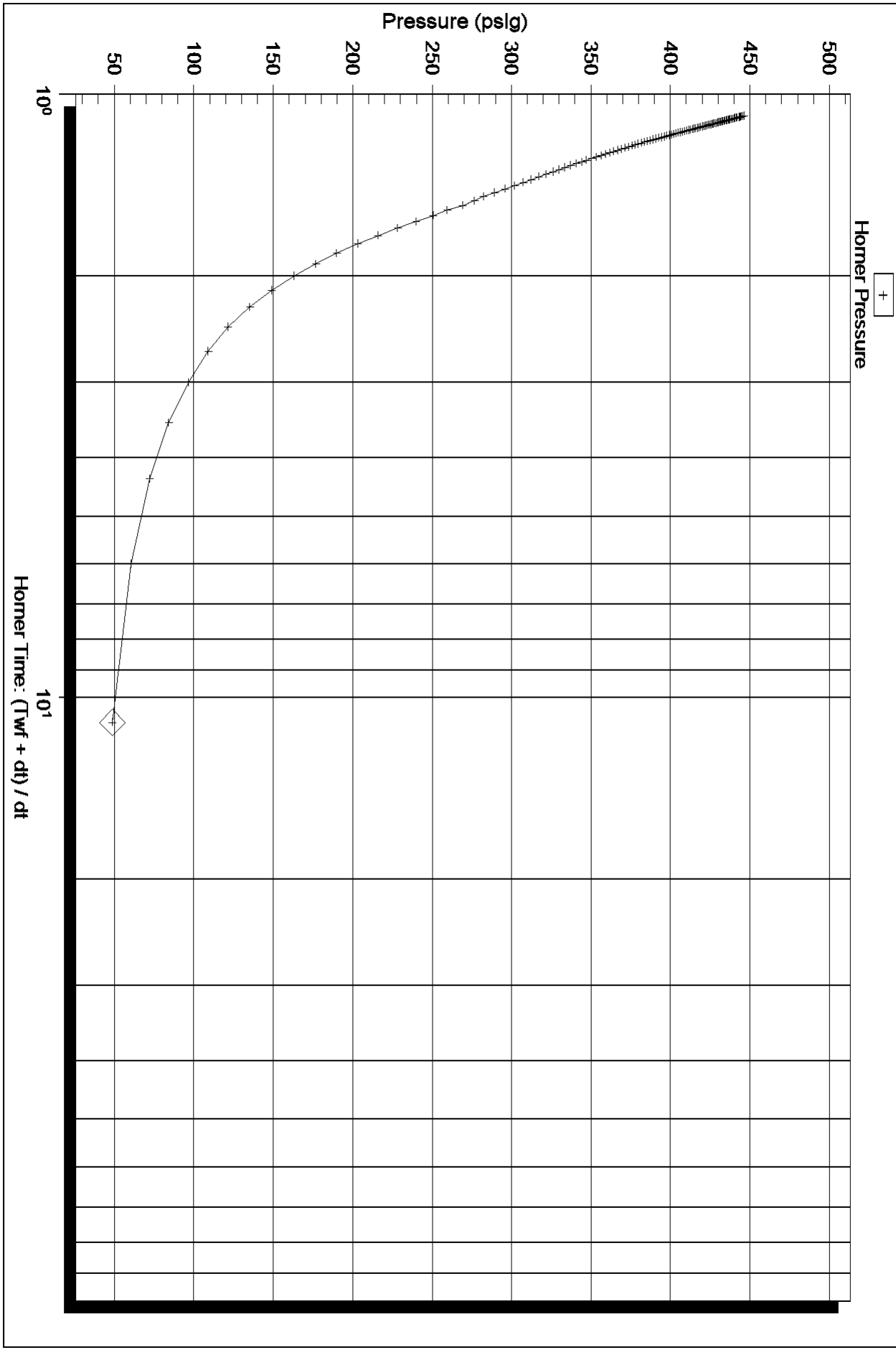
Sam Gary Jr & Associates Inc

Arron EI AI#1-11

DST Test Number: 1



Horner Plot



Serial Number: 6625 (Inside)

P* :

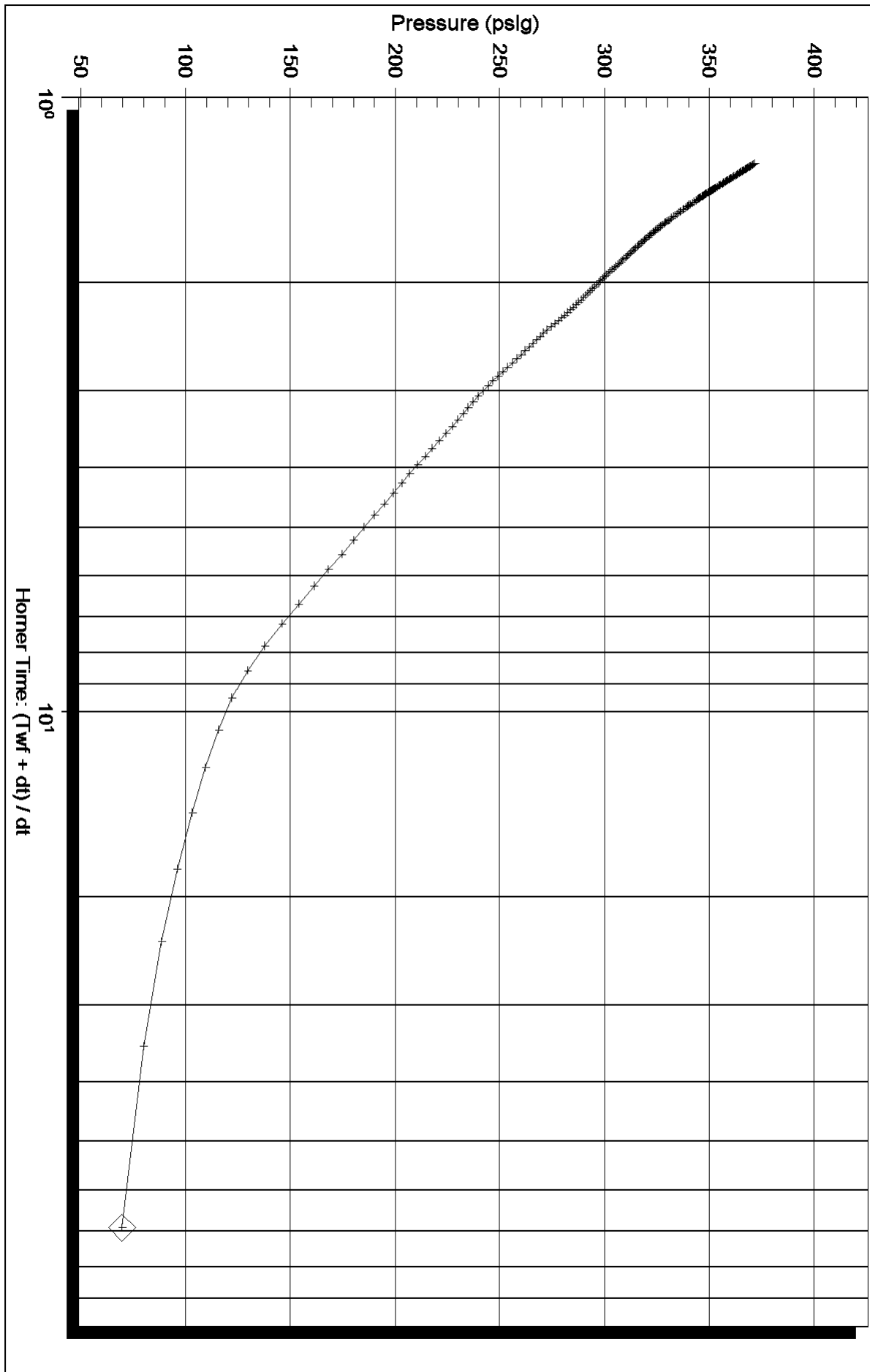
Slope (m) : kpa/log cycle

Flow Cycle: 1

Horner Plot

Horner Pressure

+



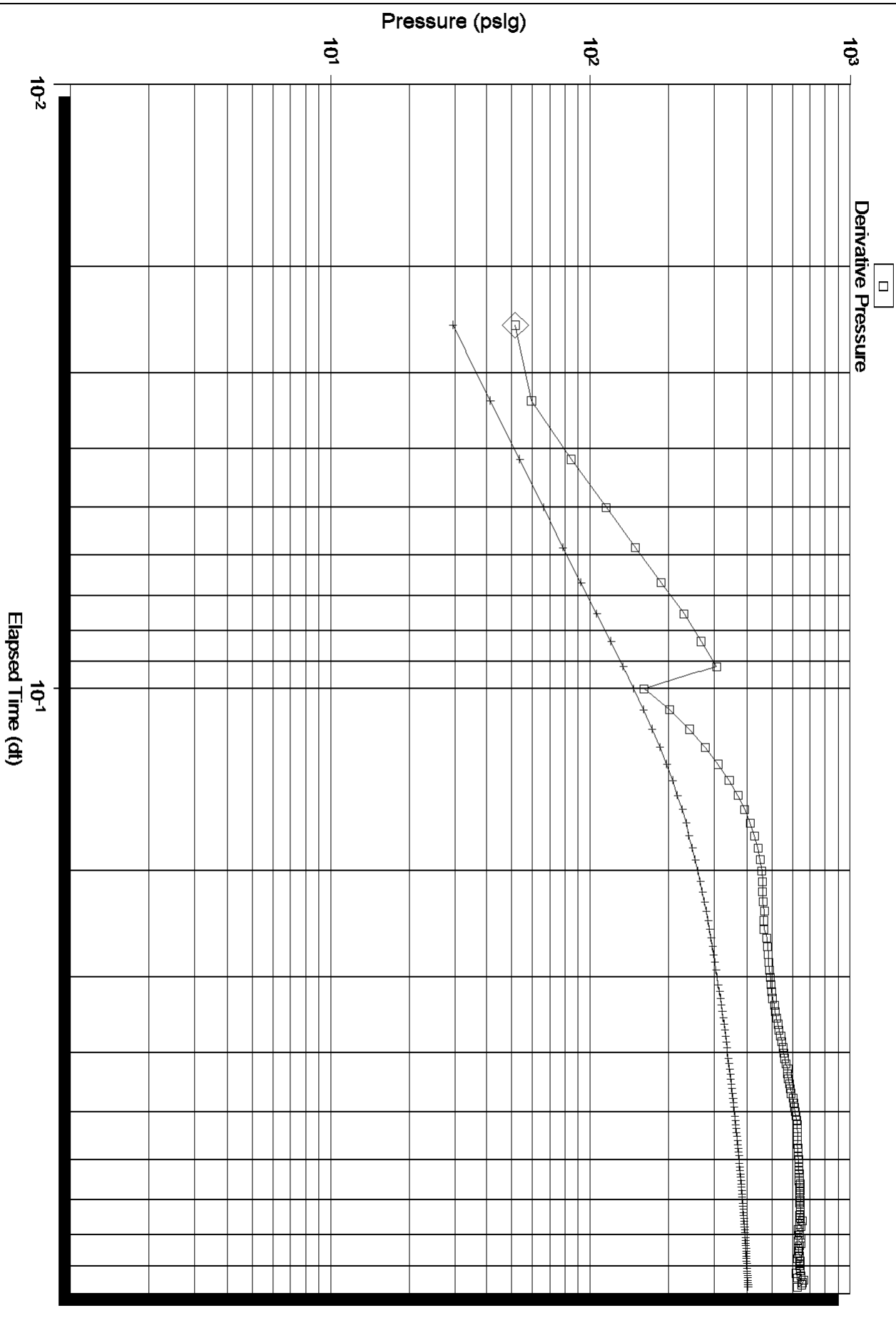
Serial Number: 6625 (Inside)

P* :

Slope (m) : kpa/log cycle

Flow Cycle: 2

Log-Log and Pseudo-Derivative



Log-Log and Pseudo-Derivative

