



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

TDI Inc
 1310 Bison Rd
 Hays Ks 67601-9696
 ATTN: Tom Denning

Irwin #2
6-15s-19w Ellis
 Job Ticket: 43462 **DST#: 1**
 Test Start: 2011.05.09 @ 16:25:29

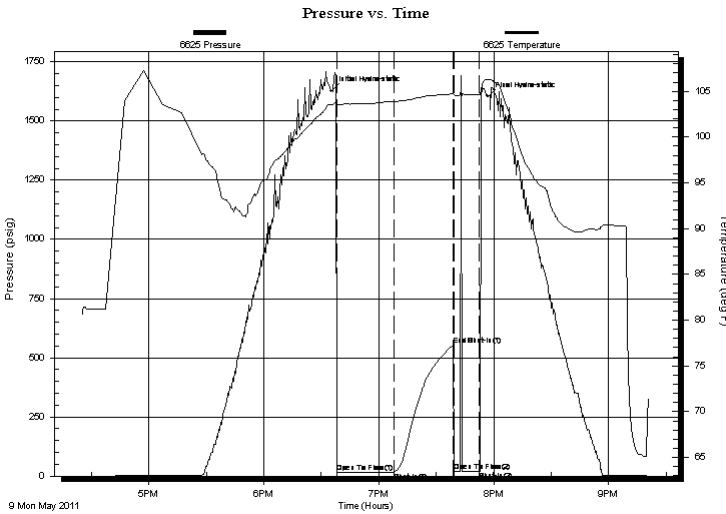
GENERAL INFORMATION:

Formation: **LKC A-C**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 18:38:24
 Time Test Ended: 21:21:23
Interval: 3348.00 ft (KB) To 3406.00 ft (KB) (TVD)
 Total Depth: 3406.00 ft (KB) (TVD)
 Hole Diameter: 7.85 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole
 Tester: Ray Schwager
 Unit No: 42
 Reference Elevations: 2063.00 ft (KB)
 2055.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6625 Inside
 Press @ Run Depth: 17.39 psig @ 3383.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2011.05.09 End Date: 2011.05.09 Last Calib.: 2011.05.09
 Start Time: 16:25:29 End Time: 21:21:23 Time On Btm: 2011.05.09 @ 18:35:24
 Time Off Btm: 2011.05.09 @ 19:56:54

TEST COMMENT: IFP-surface bl , died in 14 min
 ISIP-no bl
 FFP-no bl , flushed tool
 pull tool

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1627.91	103.57	Initial Hydro-static
3	16.65	103.54	Open To Flow (1)
33	17.39	103.87	Shut-In(1)
64	553.30	104.79	End Shut-In(1)
64	18.28	104.61	Open To Flow (2)
77	19.97	104.65	Shut-In(2)
82	1603.52	106.29	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud	0.07

Gas Rates

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



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Irwin #2
6-15s-19w Ellis
Job Ticket: 43462 **DST#: 1**
Test Start: 2011.05.09 @ 16:25:29

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: 53.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.80 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3400.00 ppm			
Filter Cake: 1.00 inches			

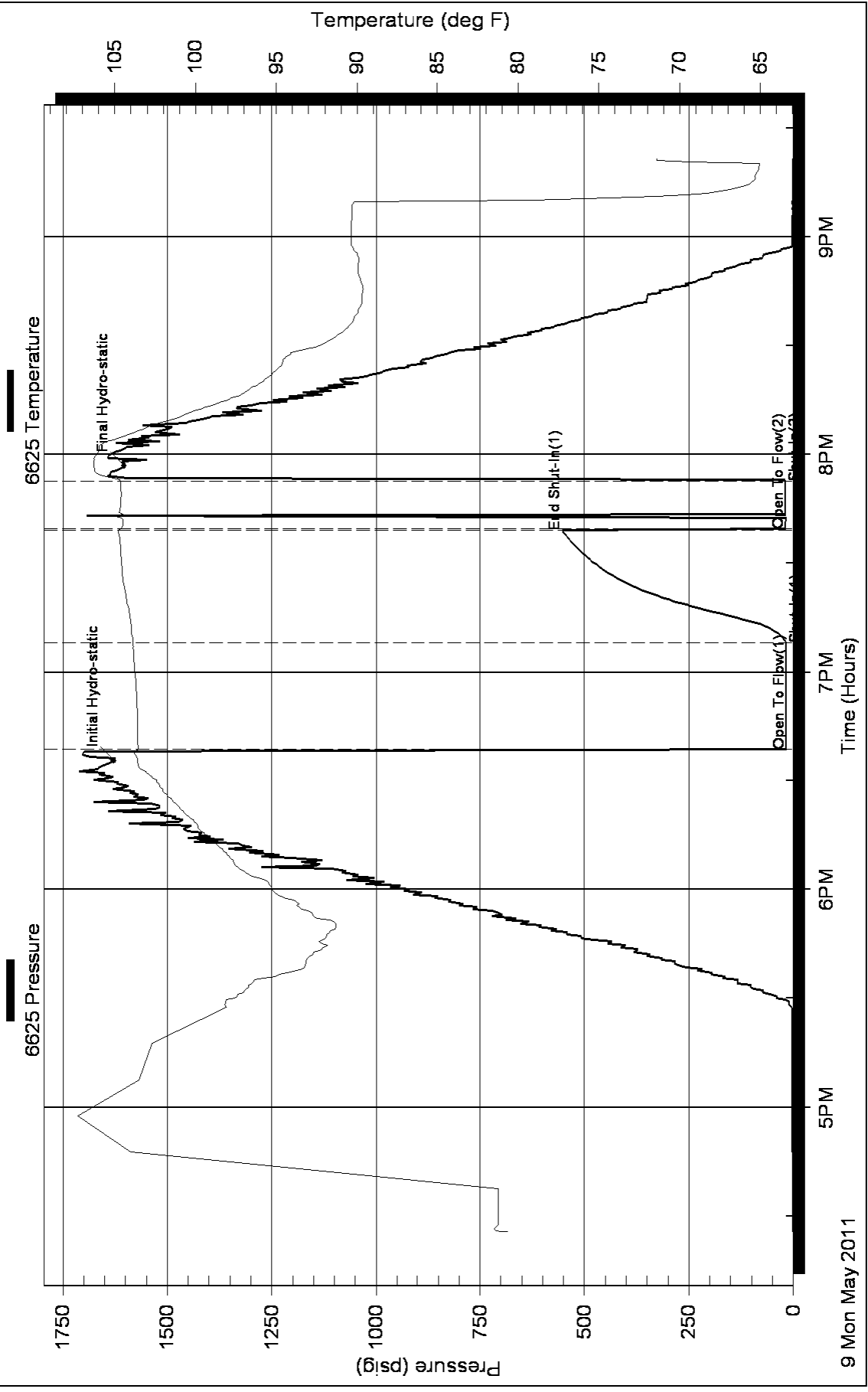
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Pressure vs. Time





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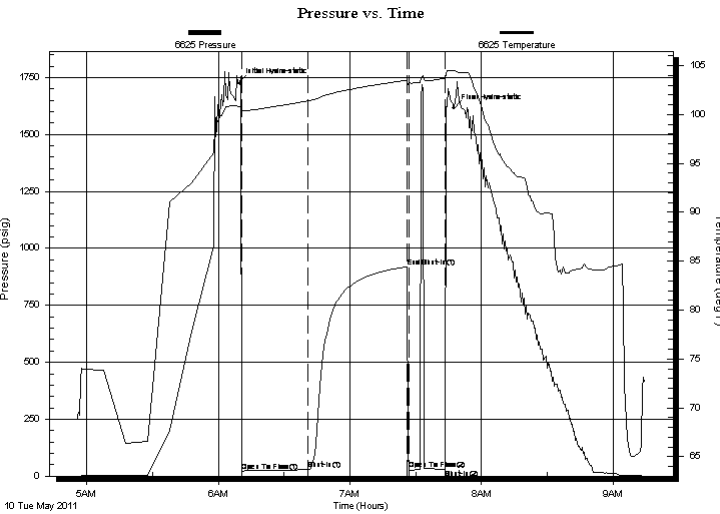
Irwin #2
6-15s-19w Ellis
 Job Ticket: 43463 **DST#: 2**
 Test Start: 2011.05.10 @ 04:55:53

GENERAL INFORMATION:

Formation: **LKC D,E,F**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:10:48
 Time Test Ended: 09:14:17
 Interval: **3402.00 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
 Tester: Ray Schwager
 Unit No: 42
 Reference Elevations: 2063.00 ft (KB)
 2055.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6625 Inside
 Press @ Run Depth: 28.96 psig @ 3416.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2011.05.10 End Date: 2011.05.10 Last Calib.: 2011.05.10
 Start Time: 04:55:53 End Time: 09:14:17 Time On Btm: 2011.05.10 @ 06:09:18
 Time Off Btm: 2011.05.10 @ 07:47:18

TEST COMMENT: IFP-w k bl 1/"to 1/2"bl
 ISIP-no bl
 FFP-no bl , flushed tool
 pull tool



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1726.77	100.82	Initial Hydro-static
2	22.77	100.48	Open To Flow (1)
32	28.96	101.41	Shut-In(1)
77	919.06	103.51	End Shut-In(1)
78	28.16	103.27	Open To Flow (2)
94	30.09	103.71	Shut-In(2)
98	1615.38	104.50	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud w /show of oil	0.21

Gas Rates

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



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Irwin #2
6-15s-19w Ellis
Job Ticket: 43463 **DST#: 2**
Test Start: 2011.05.10 @ 04:55:53

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: 53.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.79 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3400.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	Mud w/show of oil	0.210

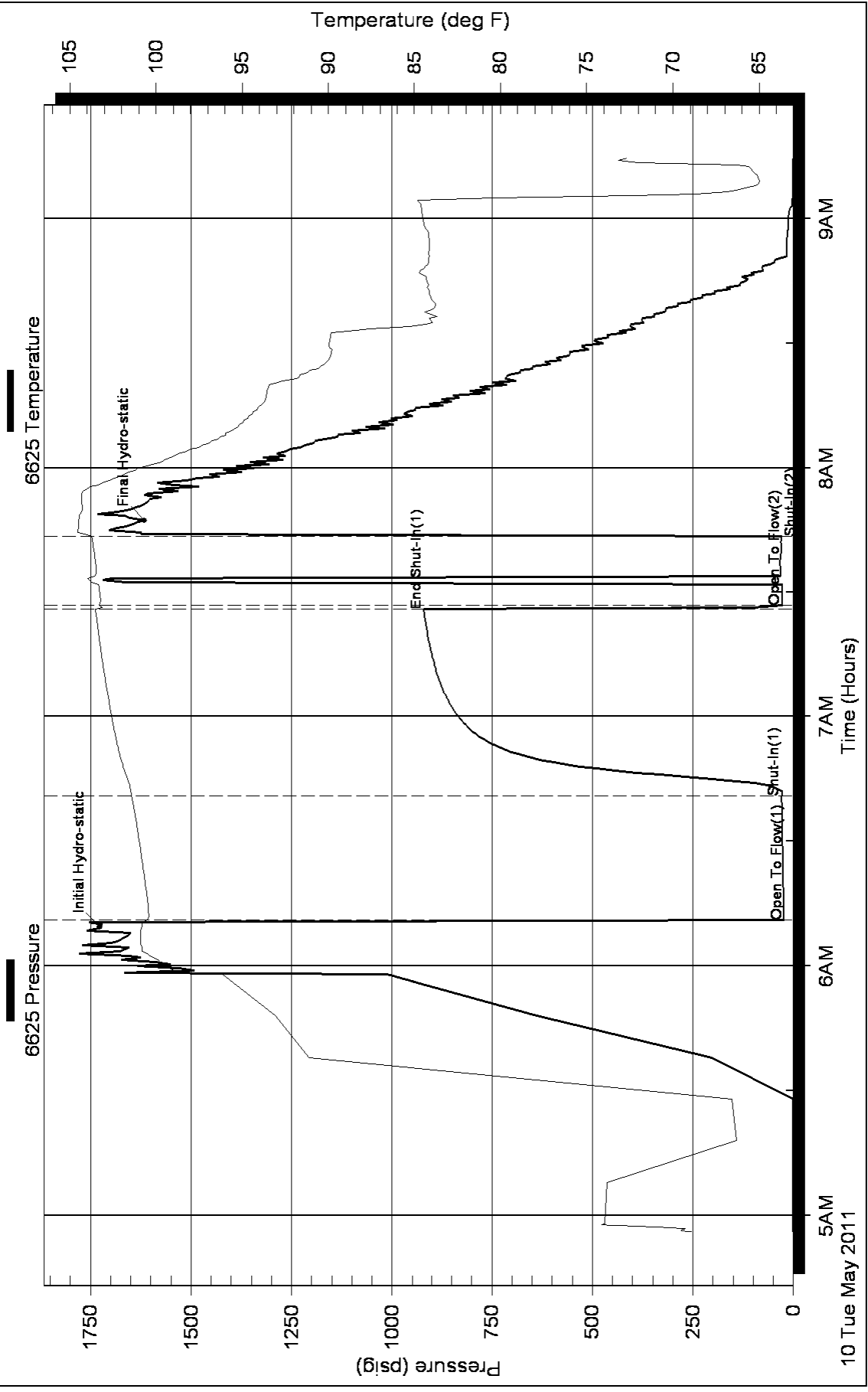
Total Length: 15.00 ft Total Volume: 0.210 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:

Pressure vs. Time





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TDI Inc
1310 Bison Rd
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ATTN: Tom Denning

Irwin #2
6-15s-19w Ellis
Job Ticket: 43464 **DST#: 3**
Test Start: 2011.05.10 @ 20:50:08

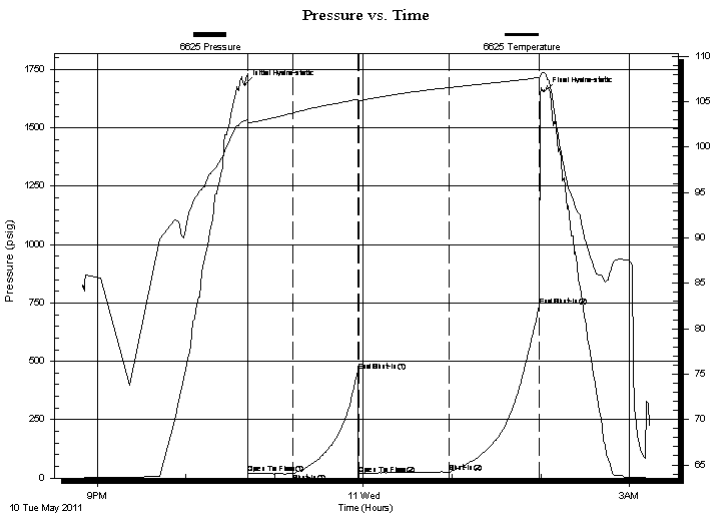
GENERAL INFORMATION:

Formation: **LKC H-K**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 22:42:03
 Time Test Ended: 03:14:02
 Interval: **3488.00 ft (KB) To 3580.00 ft (KB) (TVD)**
 Total Depth: 3580.00 ft (KB) (TVD)
 Hole Diameter: 7.85 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole
 Tester: Ray Schwager
 Unit No: 42
 Reference Elevations: 2063.00 ft (KB)
 2055.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6625 Inside
 Press @ Run Depth: 25.61 psig @ 3494.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2011.05.10 End Date: 2011.05.11 Last Calib.: 2011.05.11
 Start Time: 20:50:08 End Time: 03:14:02 Time On Btm: 2011.05.10 @ 22:40:03
 Time Off Btm: 2011.05.11 @ 02:02:32

TEST COMMENT: IFP-w k bl , 1/4"bl
 ISIP-no bl
 FFP-4"bl to strg bl in 49min
 FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1684.35	102.86	Initial Hydro-static
2	18.68	102.77	Open To Flow (1)
33	19.72	103.76	Shut-In(1)
76	457.09	105.24	End Shut-In(1)
77	18.24	105.14	Open To Flow (2)
138	25.61	106.53	Shut-In(2)
199	736.02	107.65	End Shut-In(2)
203	1656.02	108.21	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	150'GIP	0.00
30.00	O&GCM 5%G15%O80%M	0.42

Gas Rates

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



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Irwin #2
6-15s-19w Ellis
Job Ticket: 43464 **DST#: 3**
Test Start: 2011.05.10 @ 20:50:08

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 48.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.20 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4200.00 ppm			
Filter Cake: 1.00 inches			

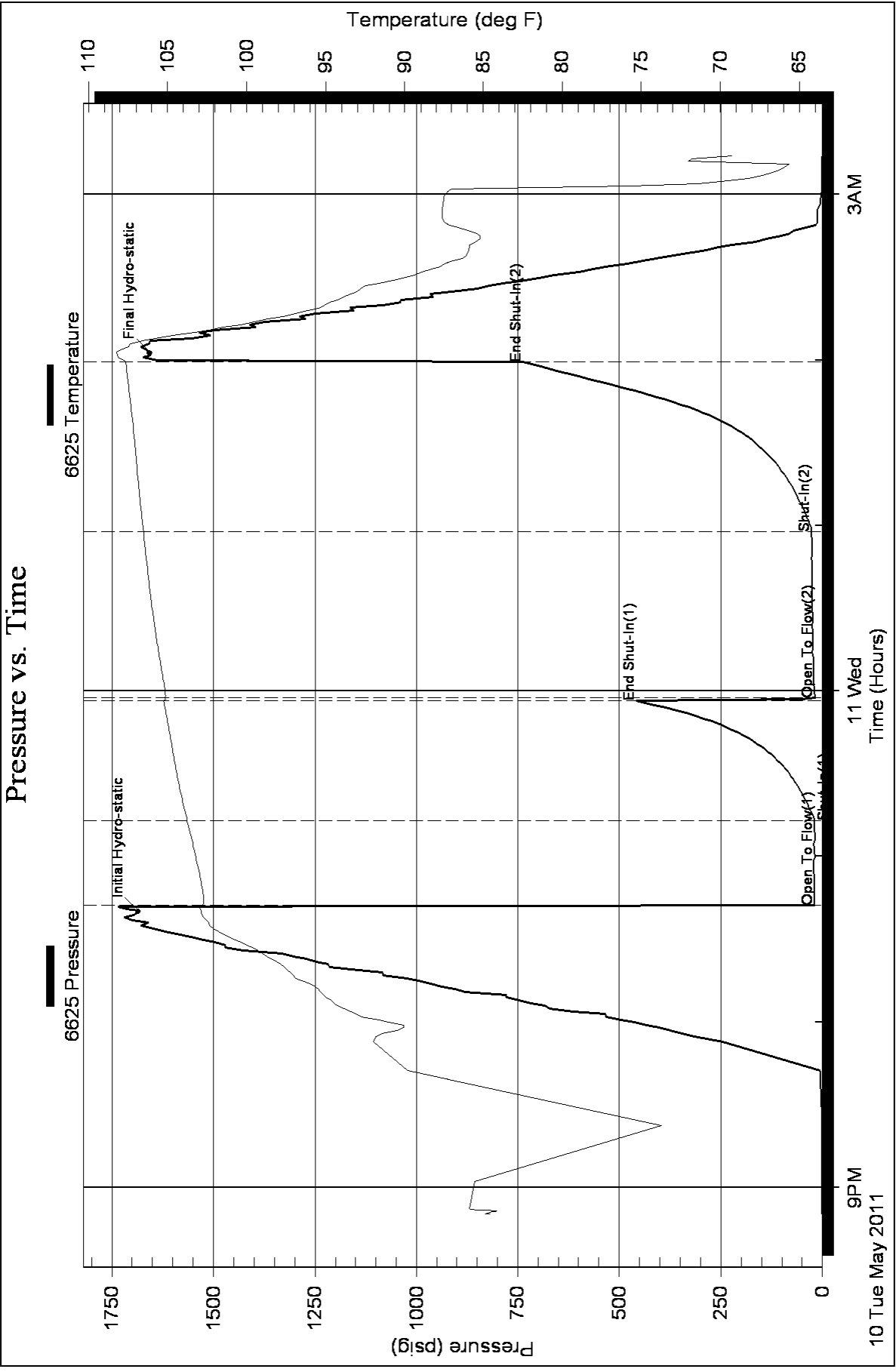
Recovery Information

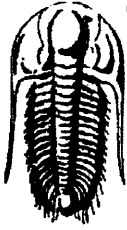
Recovery Table

Length ft	Description	Volume bbl
0.00	150'GIP	0.000
30.00	O&GCM 5%G15%O80%M	0.421

Total Length: 30.00 ft Total Volume: 0.421 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Pressure vs. Time





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TDI Inc
 1310 Bison Rd
 Hays, KS 67601-9696
 ATTN: Tom Denning

Irwin #2
6-15s-19w Ellis,KS
 Job Ticket: 43465 **DST#: 4**
 Test Start: 2011.05.11 @ 16:50:05

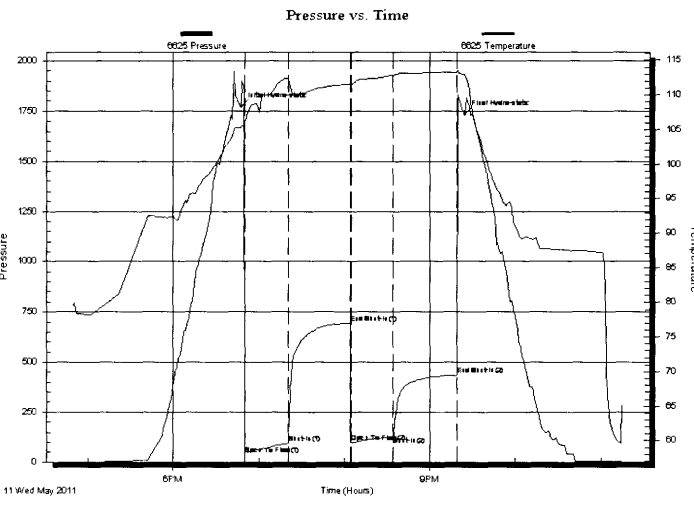
GENERAL INFORMATION:

Formation: Congl	Test Type: Conventional Bottom Hole
Deviated: No Whipstock: ft (KB)	Tester: Ray Schwager
Time Tool Opened: 18:50:00	Unit No: 42
Time Test Ended: 23:14:59	Reference Elevations: 2063.00 ft (KB)
Interval: 3676.00 ft (KB) To 3712.00 ft (KB) (TVD)	2055.00 ft (CF)
Total Depth: 3712.00 ft (KB) (TVD)	KB to GR/CF: 8.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Fair

Serial #: 6625 **Inside**

Press@RunDepth: 128.75 psig @ 3682.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2011.05.11 End Date: 2011.05.11	Last Calib.: 2011.05.11
Start Time: 16:50:05 End Time: 23:14:59	Time On Btm: 2011.05.11 @ 18:47:30
	Time Off Btm: 2011.05.11 @ 21:24:29

TEST COMMENT: IFF-w k to strg in 8 min
 ISIP-no bl 1st 30min, then 1/8"bl
 FFP-w k to strg in 30 min
 FSIP-surface bl bk



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1771.02	105.29	Initial Hydro-static
3	37.32	105.24	Open To Flow (1)
33	96.37	112.32	Shut-In(1)
77	694.83	111.61	End Shut-In(1)
77	99.08	111.42	Open To Flow (2)
107	128.75	112.84	Shut-In(2)
152	435.28	113.24	End Shut-In(2)
157	1732.53	113.00	Final Hydro-static

Length (ft)	Description	Volume (bbl)
0.00	225'GIP	0.00
270.00	CO	3.79
62.00	MGO 10%G30%M60%O	0.87

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



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TOOL DIAGRAM

TDI Inc
1310 Bison Rd
Hays, KS 67601-9696

ATTN: Tom Denning

Irwin #2
6-15s-19w Ellis,KS
Job Ticket: 43465 **DST#: 4**
Test Start: 2011.05.11 @ 16:50:05

Tool Information

Drill Pipe:	Length: 3678.00 ft	Diameter: 3.80 inches	Volume: 51.59 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: 51.59 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 37000.00 lb
Depth to Top Packer:	3676.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	36.00 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			3656.00	
Shut In Tool	5.00			3661.00	
Hydraulic tool	5.00			3666.00	
Packer	5.00			3671.00	21.00 Bottom Of Top Packer
Packer	5.00			3676.00	
Stubb	1.00			3677.00	
Perforations	5.00			3682.00	
Recorder	0.00	6625	Inside	3682.00	
Recorder	0.00	8700	Outside	3682.00	
Perforations	27.00			3709.00	
Bullnose	3.00			3712.00	36.00 Bottom Packers & Anchor

Total Tool Length: 57.00



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Job Ticket: 43465 **DST#: 4**
Test Start: 2011.05.11 @ 16:50:05

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	28 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.19 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4000.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	225'GIP	0.000
270.00	CO	3.787
62.00	MGO 10%G30%M60%O	0.870

Total Length: 332.00 ft Total Volume: 4.657 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

