



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **GW Energy, LLC.**

225 N. Market, Ste. 230
Wichita, KS 67202

ATTN: Dave Williams

20 26s16w Edwards KS

Welsch # 1-20

Start Date: 2008.12.05 @ 06:42:11

End Date: 2008.12.05 @ 16:11:11

Job Ticket #: 32949

DST #: 1

15-047-24580

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

GW Energy, LLC.

225 N. Market, Ste. 230
Wichita, KS 67202

ATTN: Dave Williams

Welsch # 1-20

20 26s16w Edwards KS

Job Ticket: 32949

DST#: 1

Test Start: 2008.12.05 @ 06:42:11

GENERAL INFORMATION:

Formation: **Dennis**

Deviated: **No** Whipstock: **ft (KB)**

Time Tool Opened: 10:33:11

Time Test Ended: 16:11:11

Test Type: **Conventional Bottom Hole**

Tester: **Jerry Adams**

Unit No: **45**

Interval: **4177.00 ft (KB) To 4228.00 ft (KB) (TVD)**

Total Depth: **4228.00 ft (KB) (TVD)**

Hole Diameter: **7.88 inches** Hole Condition: **Fair**

Reference Elevations: **2102.00 ft (KB)**

2090.00 ft (CF)

KB to GR/CF: **12.00 ft**

Serial #: **6798**

Inside

Press@RunDepth: **540.97 psig @ 4179.00 ft (KB)**

Start Date: **2008.12.05**

End Date:

2008.12.05

Capacity: **7000.00 psig**

Last Calib.: **2008.12.05**

Start Time: **06:42:12**

End Time:

16:11:11

Time On Btm: **2008.12.05 @ 10:31:41**

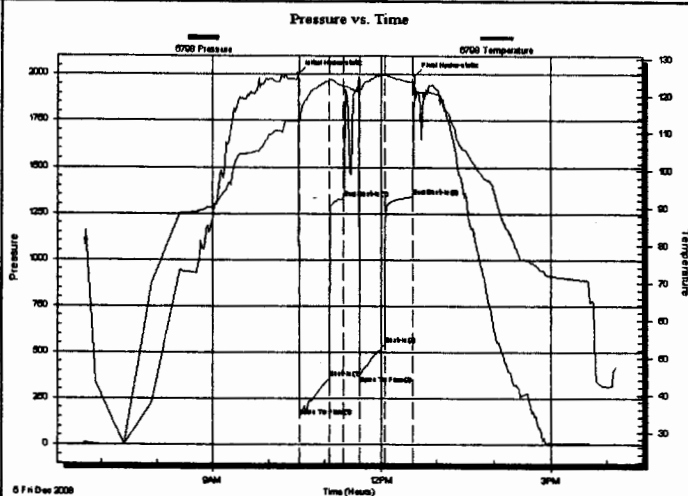
Time Off Btm: **2008.12.05 @ 12:36:11**

TEST COMMENT: IF: Strong blow . BOB in 4 mins.

IS: Weak blow . Built to 2 1/2".

FF: Fair blow . BOB in 8 mins.

FS: Weak blow . Built to 1".



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2002.98	113.24	Initial Hydro-static
2	151.80	113.04	Open To Flow (1)
33	359.66	124.03	Shut-In(1)
49	1332.94	122.50	End Shut-In(1)
66	376.74	121.34	Open To Flow (2)
93	540.97	125.62	Shut-In(2)
123	1340.57	123.64	End Shut-In(2)
125	1992.84	121.11	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1060.00	Muddy Saltwater 80%w 20%w	13.75
0.00	RW= .081 @ 51 deg.	0.00

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

GW Energy, LLC.

Welsch # 1-20

225 N. Market, Ste. 230
Wichita, KS 67202

20 26s16w Edwards KS

Job Ticket: 32949

DST#: 1

ATTN: Dave Williams

Test Start: 2008.12.05 @ 06:42:11

Tool Information

Drill Pipe:	Length: 4043.00 ft	Diameter: 3.80 inches	Volume: 56.71 bbl	Tool Weight: 2500.00 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: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 60000.00 lb
		Total Volume: 57.31 bbl		Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4177.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	51.00 ft			
Tool Length:	79.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool slid 15'. Tested 12' from bottom.

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4154.00	
Hydraulic tool	5.00			4159.00	
Jars	5.00			4164.00	
Safety Joint	3.00			4167.00	
Packer	5.00			4172.00	28.00 Bottom Of Top Packer
Packer	5.00			4177.00	
Stubb	1.00			4178.00	
Change Over Sub	1.00			4179.00	
Recorder	0.00	6798	Inside	4179.00	
Recorder	0.00	8367	Inside	4179.00	
Blank Spacing	31.00			4210.00	
Change Over Sub	1.00			4211.00	
Perforations	14.00			4225.00	
Bullnose	3.00			4228.00	51.00 Bottom Packers & Anchor

Total Tool Length: 79.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

GW Energy, LLC.

Welsch # 1-20

225 N. Market, Ste. 230
Wichita, KS 67202

20 26s16w Edwards KS

ATTN: Dave Williams

Job Ticket: 32949

DST#: 1

Test Start: 2008.12.05 @ 06:42:11

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: 155000 ppm

Viscosity: 44.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.17 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 8800.00 ppm

Filter Cake: 0.20 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1060.00	Muddy Saltwater 80%w 20%m	13.749
0.00	RW= .081 @ 51 deg.	0.000

Total Length: 1060.00 ft

Total Volume: 13.749 bbl

Num Fluid Samples: 0

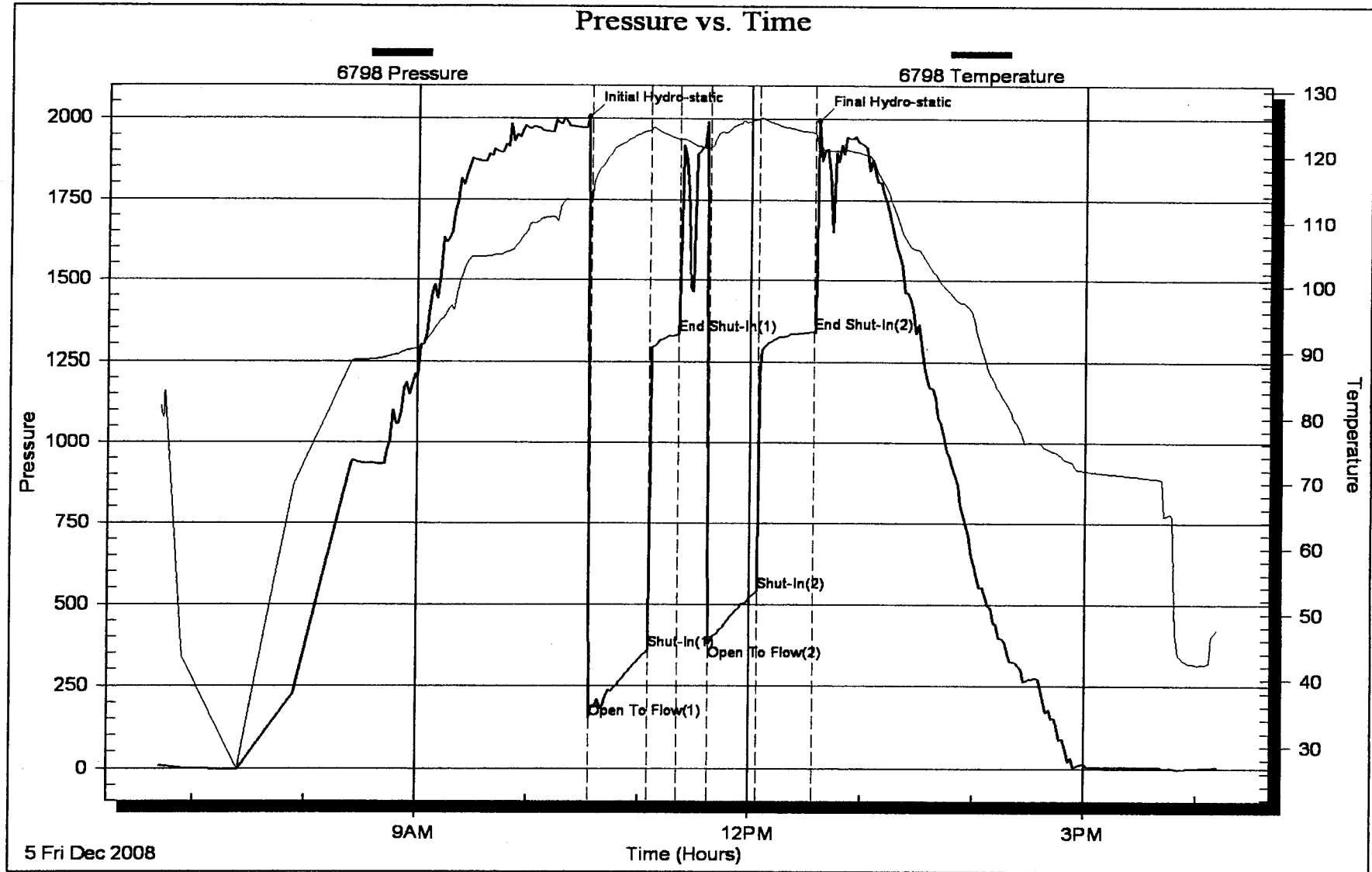
Num Gas Bombs: 0

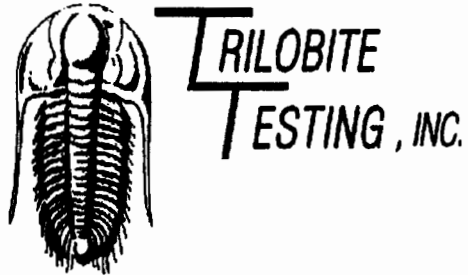
Serial #: none

Laboratory Name:

Laboratory Location:

Recovery Comments:





DRILL STEM TEST REPORT

Prepared For: **GW Energy, LLC.**

225 N. Market, Ste. 230
Wichita, KS 67202

ATTN: Dave Williams

20 26s16w Edwards KS

Welsch # 1-20

Start Date: 2008.12.06 @ 18:55:34

End Date: 2008.12.07 @ 04:16:04

Job Ticket #: 32950 DST #: 2

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620



**TRILOBITE
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DRILL STEM TEST REPORT

GW Energy, LLC.

225 N. Market, Ste. 230
Wichita, KS 67202

ATTN: Dave Williams

Welsch # 1-20

20 26s16w Edwards KS

Job Ticket: 32950

DST#: 2

Test Start: 2008.12.06 @ 18:55:34

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:30:34

Time Test Ended: 04:16:04

Test Type: Conventional Bottom Hole

Tester: Jerry Adams

Unit No: 45

Interval: **4461.00 ft (KB) To 4512.00 ft (KB) (TVD)**

Total Depth: 4512.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2102.00 ft (KB)

2090.00 ft (CF)

KB to GR/CF: 12.00 ft

Serial #: 6798

Inside

Press@RunDepth: 32.84 psig @ 4463.00 ft (KB)

Start Date: 2008.12.06

End Date:

2008.12.07

Start Time: 18:55:35

End Time:

04:16:04

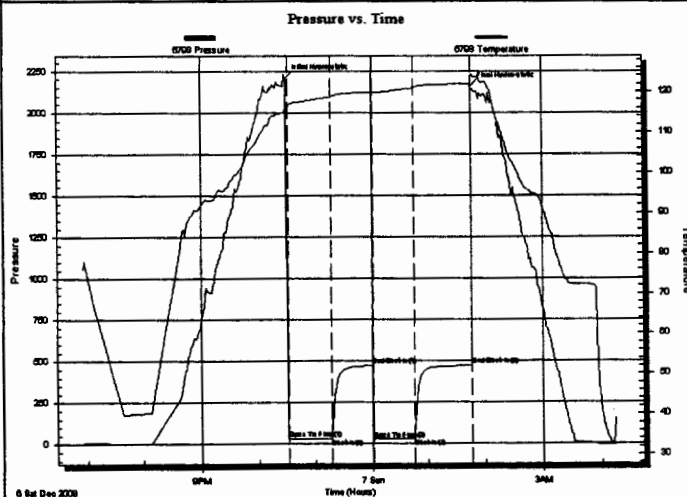
Capacity: 7000.00 psig

Last Calib.: 2008.12.07

Time On Btm: 2008.12.06 @ 22:28:34

Time Off Btm: 2008.12.07 @ 01:46:34

TEST COMMENT: IF: Strong blow. BOB. in 3 1/2 mins.
IS: No blow.
FF: Strong blow. BOB in 10 secs. GTS in 11 mins. (see gas flow report.)
FSI: No blow.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2205.41	116.24	Initial Hydro-static
2	28.99	115.97	Open To Flow (1)
48	33.46	118.68	Shut-In(1)
92	472.01	119.88	End Shut-In(1)
93	28.73	119.73	Open To Flow (2)
137	32.84	120.88	Shut-In(2)
198	471.97	121.99	End Shut-In(2)
198	2158.77	124.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
65.00	VSGCM 3%g 97%cm	0.36
0.00	4385' GIP	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.25	1.00	24.43
Last Gas Rate	0.25	1.50	25.22
Max. Gas Rate	0.25	1.50	25.22



**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

GW Energy, LLC.

225 N. Market, Ste. 230
Wichita, KS 67202

ATTN: Dave Williams

Weisch # 1-20

20 26s16w Edwards KS

Job Ticket: 32950

DST#: 2

Test Start: 2008.12.06 @ 18:55:34

Tool Information

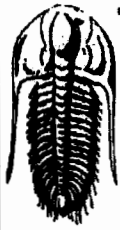
Drill Pipe:	Length: 4388.00 ft	Diameter: 3.80 inches	Volume: 61.55 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 61.00 ft	Diameter: 2.25 inches	Volume: 0.30 bbl	Weight to Pull Loose: 60000.00 lb
			Total Volume: 61.85 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 46000.00 lb
Depth to Top Packer:	4461.00 ft			Final 46000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	51.00 ft			
Tool Length:	79.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4438.00	
Hydraulic tool	5.00			4443.00	
Jars	5.00			4448.00	
Safety Joint	3.00			4451.00	
Packer	5.00			4456.00	28.00 Bottom Of Top Packer
Packer	5.00			4461.00	
Stubb	1.00			4462.00	
Change Over Sub	1.00			4463.00	
Recorder	0.00	6798	Inside	4463.00	
Recorder	0.00	8367	Inside	4463.00	
Blank Spacing	30.00			4493.00	
Change Over Sub	1.00			4494.00	
Perforations	15.00			4509.00	
Bullnose	3.00			4512.00	51.00 Bottom Packers & Anchor

Total Tool Length: 79.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

GW Energy, LLC.

Welsch # 1-20

225 N. Market, Ste. 230
Wichita, KS 67202

20 26s16w Edwards KS

Job Ticket: 32950

DST#: 2

ATTN: Dave Williams

Test Start: 2008.12.06 @ 18:55:34

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: 7.97 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 9000.00 ppm

Filter Cake: 0.20 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
65.00	VSGCM 3%g 97%m	0.356
0.00	4385' GIP	0.000

Total Length: 65.00 ft

Total Volume: 0.356 bbl

Num Fluid Samples: 0

Num Gas Bombs: 1

Serial #: JA-1

Laboratory Name: Caraway

Laboratory Location: Liberal, KS

Recovery Comments:



TRILOBITE
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DRILL STEM TEST REPORT

GAS RATES

GW Energy, LLC.

Welsch # 1-20

225 N. Market, Ste. 230
Wichita, KS 67202

20 26s16w Edwards KS

ATTN: Dave Williams

Job Ticket: 32950

DST#: 2

Test Start: 2008.12.06 @ 18:55:34

Gas Rates Information

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

Gas Rates Table

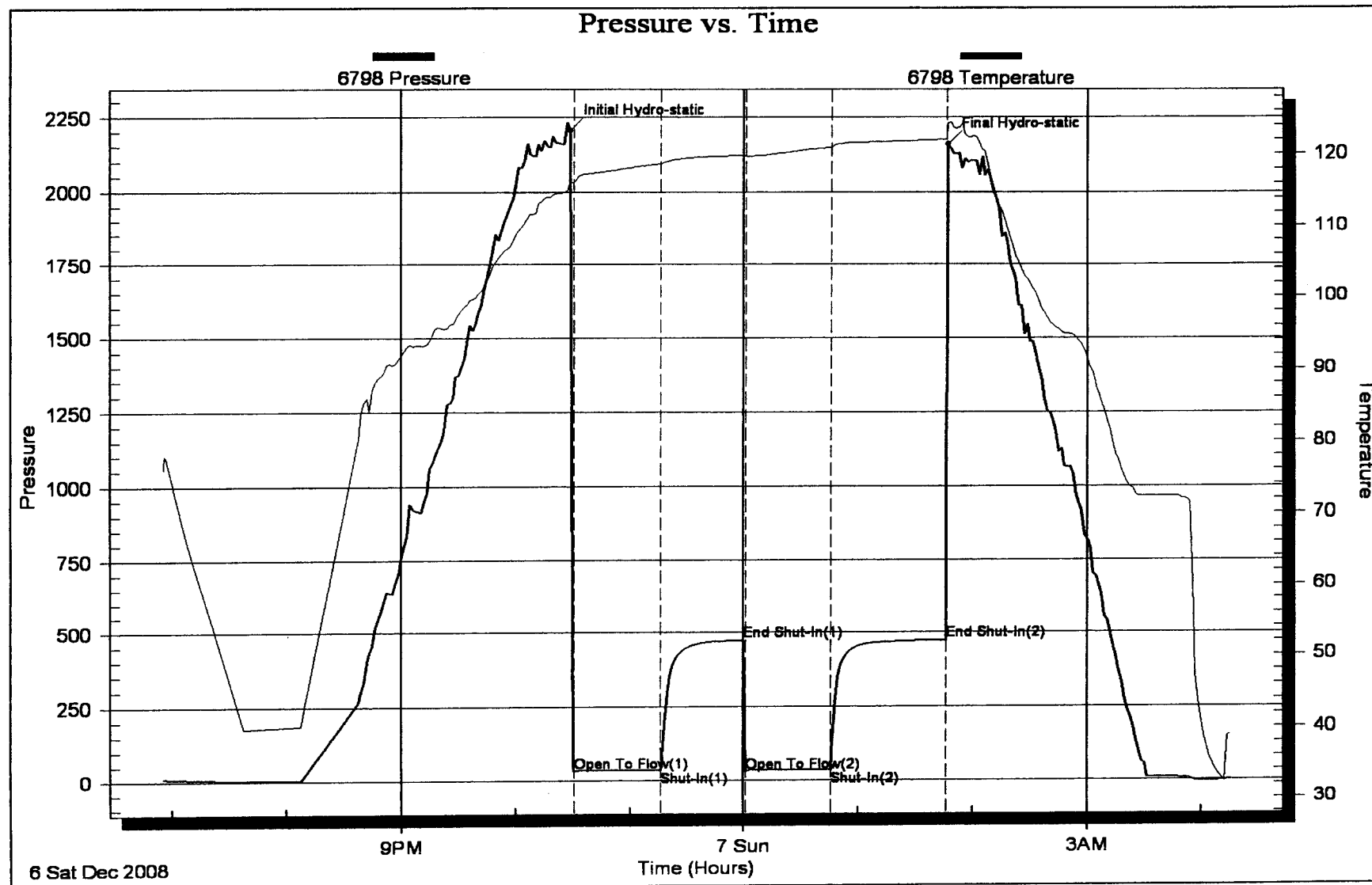
Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m ³ /d)
2	15	0.25	1.00	24.43
2	15	0.25	1.00	24.43
2	20	0.25	1.00	24.43
2	30	0.25	1.50	25.22
2	40	0.25	1.50	25.22

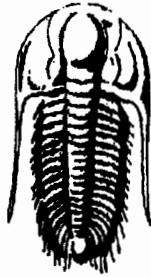
Serial #: 6798

Inside GW Energy, LLC.

20 26s16w Edwards KS

DST Test Number: 2





**TRILOBITE
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DRILL STEM TEST REPORT

Prepared For: **GW Energy, LLC.**

225 N. Market, Ste. 230
Wichita, KS 67202

ATTN: Dave Williams

20 26s16w Edwards KS

Welsch # 1-20

Start Date: 2008.12.07 @ 16:44:26

End Date: 2008.12.08 @ 01:44:26

Job Ticket #: 32976 DST #: 3

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

GW Energy, LLC.

Welsch # 1-20

20 26s16w Edwards KS

DST # 3

Kinderhook

2008.12.07



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

GW Energy, LLC.

225 N. Market, Ste. 230
Wichita, KS 67202

ATTN: Dave Williams

Welsch # 1-20

20 26s16w Edwards KS

Job Ticket: 32976

DST#: 3

Test Start: 2008.12.07 @ 16:44:26

GENERAL INFORMATION:

Formation: **Kinderhook**

Deviated: **No Whipstock** ft (KB)

Time Tool Opened: 20:20:56

Time Test Ended: 01:44:26

Test Type: **Conventional Bottom Hole**

Tester: **Jerry Adams**

Unit No: **45**

Interval: **4510.00 ft (KB) To 4560.00 ft (KB) (TVD)**

Total Depth: **4560.00 ft (KB) (TVD)**

Hole Diameter: **7.88 inches** Hole Condition: **Fair**

Reference Elevations: **2102.00 ft (KB)**

2090.00 ft (CF)

KB to GR/CF: **12.00 ft**

Serial #: 6798

Inside

Press@RunDepth: **117.03 psig @ 4512.00 ft (KB)**

Start Date: **2008.12.07**

End Date:

2008.12.08

Start Time: **16:44:27**

End Time:

01:44:26

Capacity: **7000.00 psig**

Last Calib.: **2008.12.08**

Time On Btm: **2008.12.07 @ 20:18:56**

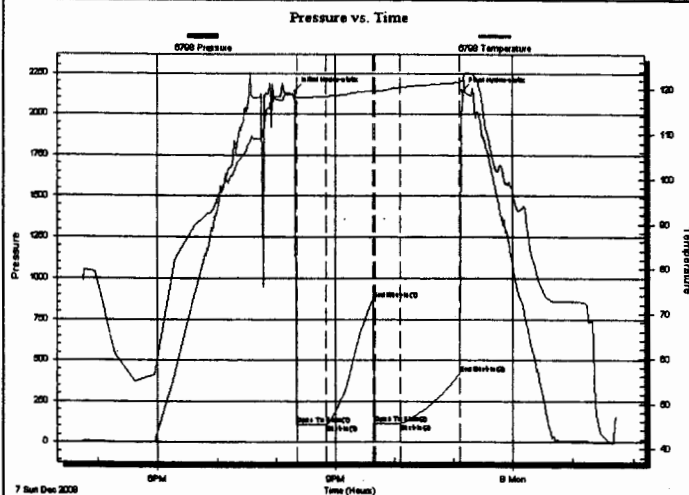
Time Off Btm: **2008.12.07 @ 23:08:56**

TEST COMMENT: IF:Weak blow . Steady at 1".

IS:No blow .

FF:Very weak surface blow .

FS:No blow .



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2141.89	118.70	Initial Hydro-static
2	109.04	118.26	Open To Flow (1)
32	110.48	118.44	Shut-In(1)
79	870.50	119.77	End Shut-In(1)
81	113.81	119.42	Open To Flow (2)
107	117.03	120.43	Shut-In(2)
168	421.75	121.66	End Shut-In(2)
170	2144.29	121.89	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
185.00	Drilling Mud 100% m	2.04
0.00	Few oil specs in tool	0.00

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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DRILL STEM TEST REPORT

TOOL DIAGRAM

GW Energy, LLC.

Welsch # 1-20

225 N. Market, Ste. 230
Wichita, KS 67202

20 26s16w Edwards KS

Job Ticket: 32976

DST#: 3

ATTN: Dave Williams

Test Start: 2008.12.07 @ 16:44:26

Tool Information

Drill Pipe:	Length: 4449.00 ft	Diameter: 3.80 inches	Volume: 62.41 bbl	Tool Weight: 2500.00 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: 61.00 ft	Diameter: 2.25 inches	Volume: 0.30 bbl	Weight to Pull Loose: 80000.00 lb
		Total Volume: 62.71 bbl		Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	4510.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 ft			
Tool Length:	78.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Hit bridge approx. 75' off bottom, opened tool to get thru bridge, slid tool 72' to bottom, still 3' off bottom.

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4487.00	
Hydraulic tool	5.00			4492.00	
Jars	5.00			4497.00	
Safety Joint	3.00			4500.00	
Packer	5.00			4505.00	28.00 Bottom Of Top Packer
Packer	5.00			4510.00	
Stubb	1.00			4511.00	
Change Over Sub	1.00			4512.00	
Recorder	0.00	6798	Inside	4512.00	
Recorder	0.00	8367	Inside	4512.00	
Blank Spacing	30.00			4542.00	
Change Over Sub	1.00			4543.00	
Perforations	14.00			4557.00	
Bullnose	3.00			4560.00	50.00 Bottom Packers & Anchor

Total Tool Length: 78.00



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DRILL STEM TEST REPORT

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Welsch # 1-20

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Wichita, KS 67202

20 26s16w Edwards KS

Job Ticket: 32976

DST#: 3

ATTN: Dave Williams

Test Start: 2008.12.07 @ 16:44:26

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: 45.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 9500.00 ppm

Filter Cake: 0.20 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
185.00	Drilling Mud 100% _m	2.039
0.00	Few oil specs in tool	0.000

Total Length: 185.00 ft

Total Volume: 2.039 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #: none

Laboratory Name:

Laboratory Location:

Recovery Comments:

