

**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Raydon Exploration**

1601 NW Expressway  
Oklahoma City OK 73118

ATTN: Ed Grieves

### **Buffalo #1-27**

#### **27-26s-32w Finney KS**

Start Date: 2014.01.20 @ 01:45:18

End Date: 2014.01.20 @ 10:53:48

Job Ticket #: 55599                      DST #: 1

Raydon Exploration  
27-26s-32w Finney KS  
Buffalo #1-27  
DST # 1  
Pawnee  
2014.01.20

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.01.27 @ 11:02:54



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Raydon Exploration  
1601 NW Expressway  
Oklahoma City OK 73118  
ATTN: Ed Grieves

27-26s-32w Finney KS  
**Buffalo #1-27**  
Job Ticket: 55599      **DST#: 1**  
Test Start: 2014.01.20 @ 01:45:18

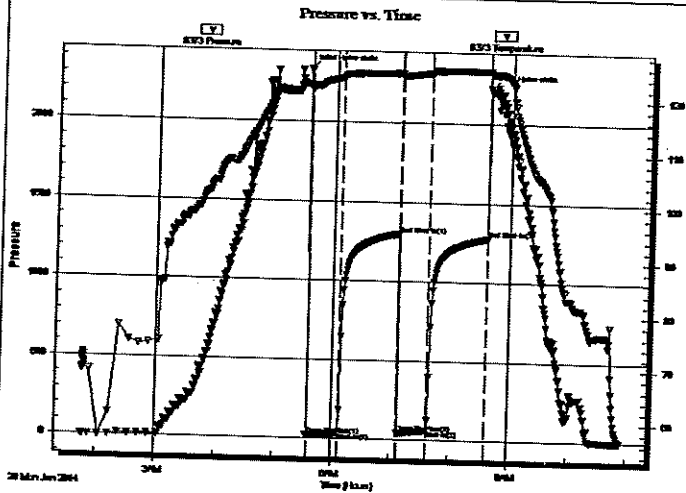
## GENERAL INFORMATION:

Formation: **Pawnee**  
Deviated: No Whipstock:      ft (KB)  
Time Tool Opened: 05:34:18  
Time Test Ended: 10:53:48  
Interval: **4695.00 ft (KB) To 4710.00 ft (KB) (TVD)**  
Total Depth: 4710.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Initial)  
Tester: Brandon Turley  
Unit No: 60  
Reference Elevations: 2884.00 ft (KB)  
2872.00 ft (CF)  
KB to GRV/CF: 12.00 ft

**Serial #: 8373**      Inside  
Press@RunDepth: 62.42 psig @ 4700.00 ft (KB)  
Start Date: 2014.01.20      End Date: 2014.01.20      Capacity: 8000.00 psig  
Start Time: 01:45:23      End Time: 10:53:48      Last Calib.: 2014.01.20  
Time On Btm: 2014.01.20 @ 05:32:48  
Time Off Btm: 2014.01.20 @ 08:37:18

TEST COMMENT: IF: Surface blow died in 10 min.  
IS: No return.  
FF: No blow.  
FS: No return.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2335.77	122.71	Initial Hydro-static
2	20.36	121.77	Open To Flow (1)
34	38.91	123.98	Shut-in(1)
94	1301.54	124.86	End Shut-in(1)
95	43.49	124.22	Open To Flow (2)
124	62.42	124.91	Shut-in(2)
184	1278.31	125.54	End Shut-in(2)
185	2226.37	125.04	Final Hydro-static

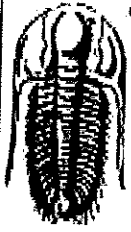
## Recovery

Length (ft)	Description	Volume (bbl)
90.00	mcw 90%w 10%m	0.44

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

TOOL DIAGRAM

Raydon Exploration  
1601 NW Expressway  
Oklahoma City OK 73118  
ATTN: Ed Grieves

**27-26s-32w Finney KS**  
**Buffalo #1-27**  
Job Ticket: 55599      **DST#: 1**  
Test Start: 2014.01.20 @ 01:45:18

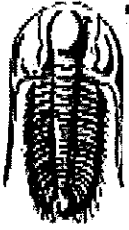
### Tool Information

Drill Pipe:	Length: 4096.00 ft	Diameter: 3.80 inches	Volume: 57.46 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 600.00 ft	Diameter: 2.25 inches	Volume: 2.95 bbl	Weight to Pull Loose: 110000.0 lb
			<u>Total Volume: 60.41 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 90000.00 lb
Depth to Top Packer:	4695.00 ft			Final 90000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	19.00 ft			
Tool Length:	43.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Stubb	1.00			4672.00	
Shut In Tool	5.00			4677.00	
Hydraulic tool	5.00			4682.00	
Jars	5.00			4687.00	
Safety Joint	3.00			4690.00	
Packer	5.00			4695.00	24.00      Bottom Of Top Packer
Packer - Shale	4.00			4699.00	
Stubb	1.00			4700.00	
Recorder	0.00	8373	Inside	4700.00	
Recorder	0.00	8356	Outside	4700.00	
Perforations	9.00			4709.00	
Bullnose	5.00			4714.00	19.00      Anchor Tool
<b>Total Tool Length:</b>	<b>43.00</b>				



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**FLUID SUMMARY**

Raydon Exploration

**27-26s-32w Finney KS**

1601 NW Expressway  
Oklahoma City OK 73118

**Buffalo #1-27**

Job Ticket: 55599

**DST#: 1**

ATTN: Ed Grieves

Test Start: 2014.01.20 @ 01:45:18

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

63000 ppm

Viscosity: 40.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbf
90.00	mcw 90%w 10%m	0.443

Total Length: 90.00 ft      Total Volume: 0.443 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

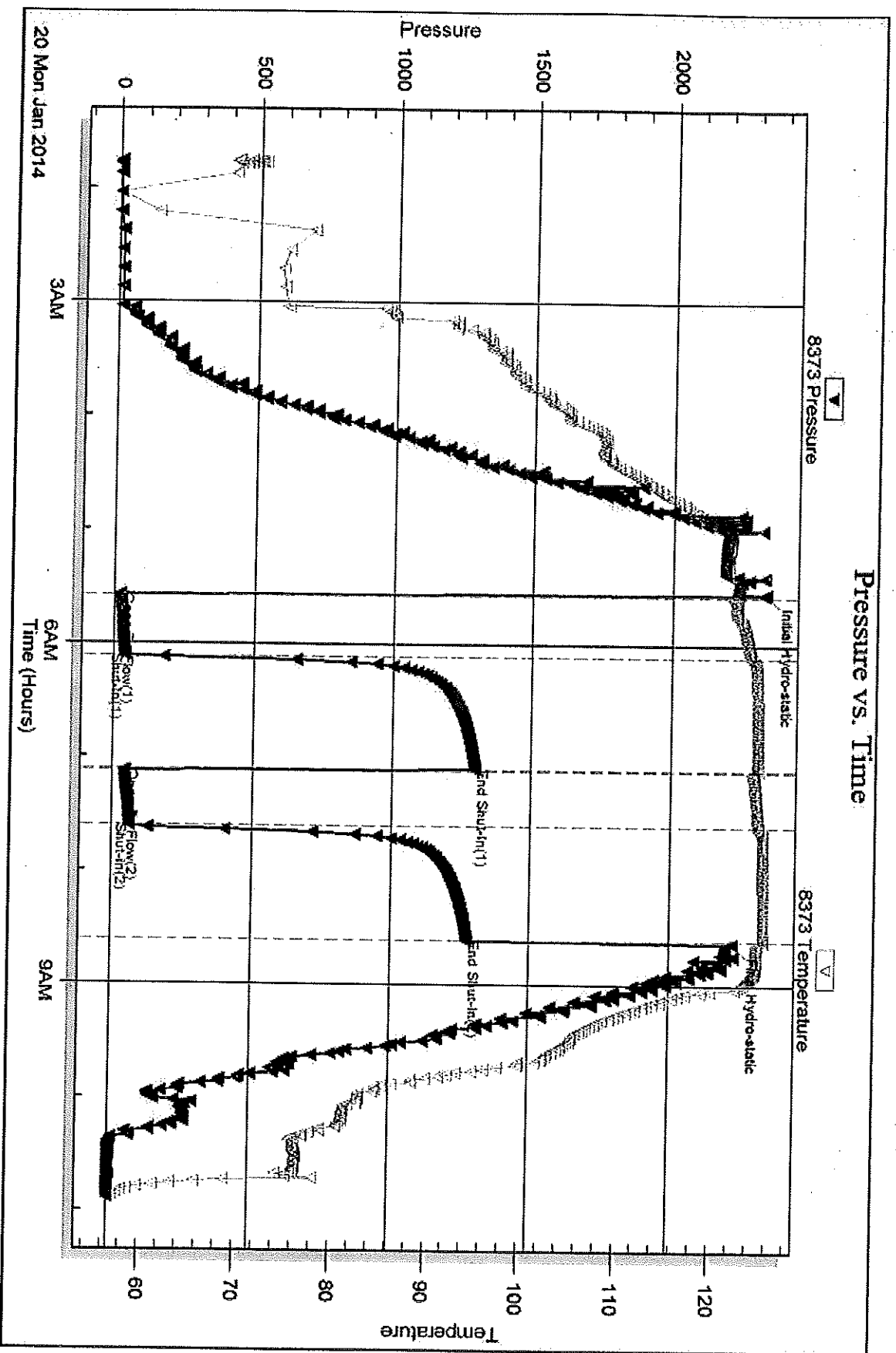
Laboratory Location:

Recovery Comments: .19@46=63000

Serial #: 8373      Inside      Raydon Exploration

Buffalo #1-27

DST Test Number: 1

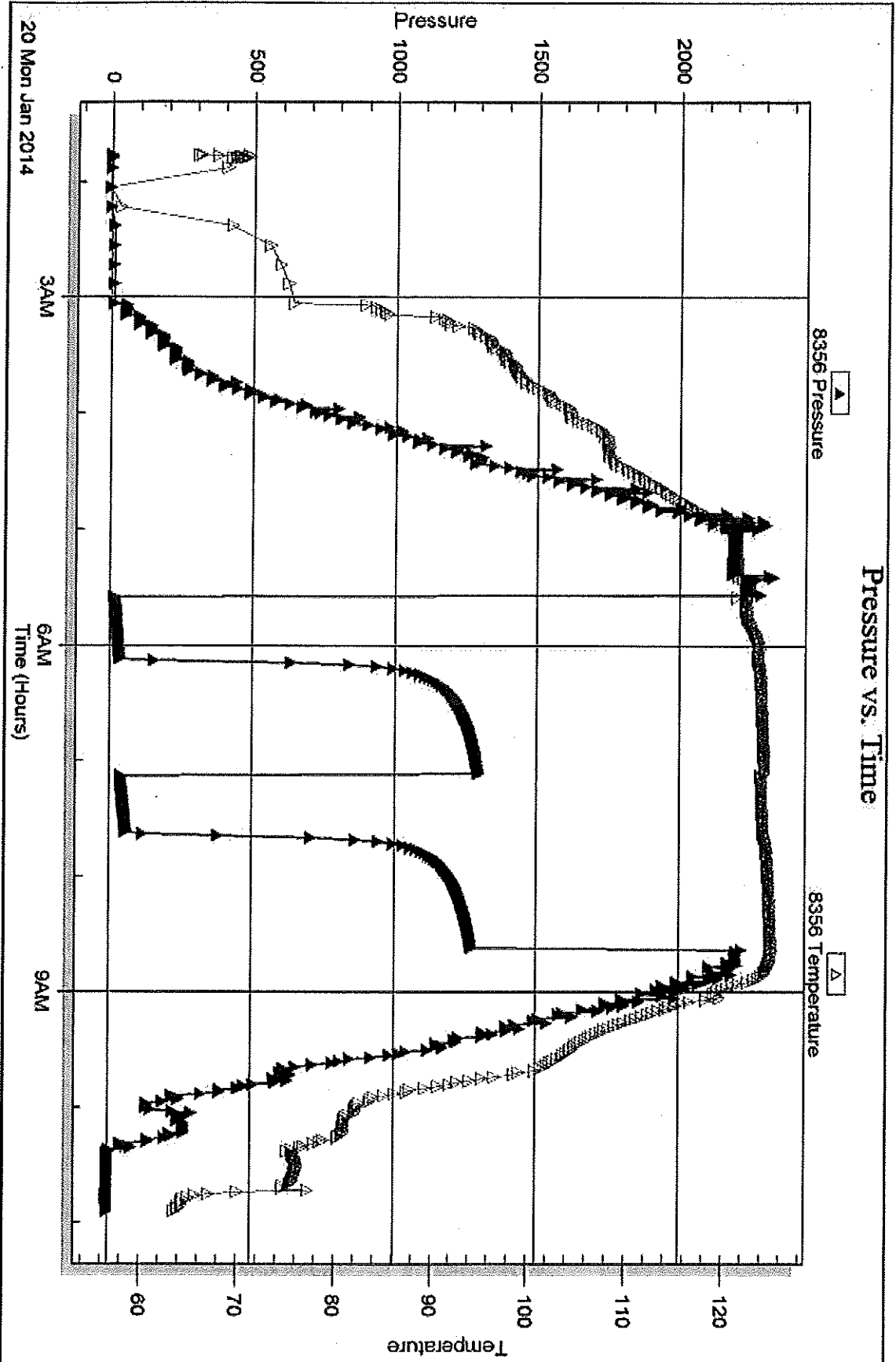


Serial #: 8356

Outside Raydon Exploration

Buffalo #1-27

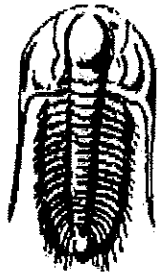
DST Test Number: 1



Tribble Testing, Inc

Ref. No: 55599

Printed: 2014.01.27 @ 11:02:57



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Raydon Exploration**

1601 NW Expressway  
Oklahoma City OK 73118

ATTN: Ed Grieves

**Buffalo #1-27**

**27-26s-32w Finney KS**

Start Date: 2014.01.23 @ 17:45:27

End Date: 2014.01.24 @ 05:18:27

Job Ticket #: 55600                      DST #: 2

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

Printed: 2014.01.27 @ 11:00:55

Raydon Exploration

27-26s-32w Finney KS

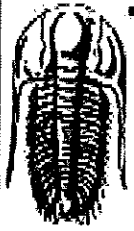
Buffalo #1-27

DST # 2

Spengen

2014.01.23





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Raydon Exploration  
 1601 NW Expressway  
 Oklahoma City OK 73118  
 ATTN: Ed Grieves

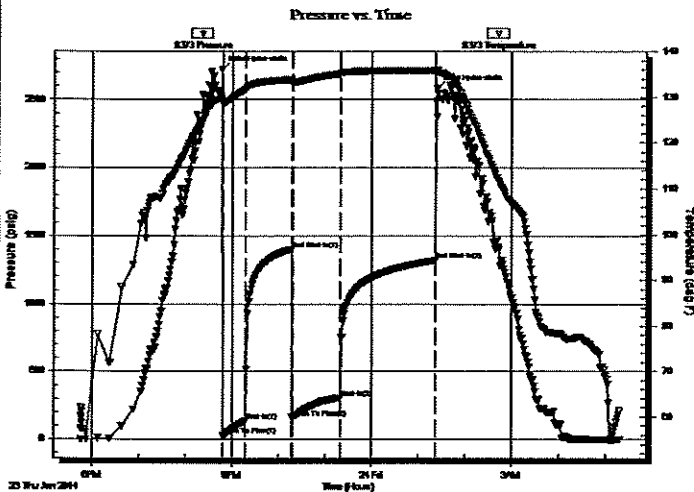
**27-26s-32w Finney KS**  
**Buffalo #1-27**  
 Job Ticket: 55600      **DST#: 2**  
 Test Start: 2014.01.23 @ 17:45:27

## GENERAL INFORMATION:

Formation: **Spergen**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 20:47:57  
 Time Test Ended: 05:18:27  
 Interval: **5450.00 ft (KB) To 5490.00 ft (KB) (TVD)**  
 Total Depth: 5490.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Brandon Turley  
 Unit No: 60  
 Reference Elevations: 2884.00 ft (KB)  
 2872.00 ft (CF)  
 KB to GR/CF: 12.00 ft

**Serial #: 8373**      **Inside**  
 Press@RunDepth: 306.92 psig @ 5455.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2014.01.23      End Date: 2014.01.24      Last Calib.: 2014.01.24  
 Start Time: 17:45:32      End Time: 05:18:27      Time On Btm: 2014.01.23 @ 20:46:27  
 Time Off Btm: 2014.01.24 @ 01:24:27

**TEST COMMENT:** IF: 1/4" blow built to 8"  
 IS: No return.  
 FF: Surface blow built to 6"  
 FS: No return.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2723.62	129.70	Initial Hydro-static
2	28.46	128.38	Open To Flow (1)
31	136.00	131.74	Shut-in(1)
91	1403.57	133.88	End Shut-in(1)
91	160.73	133.38	Open To Flow (2)
153	306.92	135.19	Shut-in(2)
275	1320.17	135.85	End Shut-in(2)
278	2584.52	135.77	Final Hydro-static

## Recovery

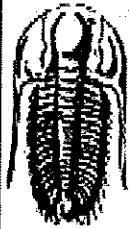
Length (ft)	Description	Volume (bbl)
475.00	mcw 90%w 10%m	2.34
190.00	mcw 70%w 30%m	1.53

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Raydon Exploration  
1601 NW Expressway  
Oklahoma City OK 73118  
  
ATTN: Ed Grieves

**27-26s-32w Finney KS**  
**Buffalo #1-27**  
Job Ticket: 55600      **DST#: 2**  
Test Start: 2014.01.23 @ 17:45:27

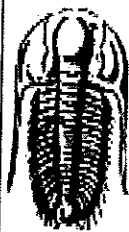
**Tool Information**

Drill Pipe:	Length: 4846.00 ft	Diameter: 3.80 inches	Volume: 67.98 bbl	Tool Weight: 2000.00 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: 600.00 ft	Diameter: 2.25 inches	Volume: 2.95 bbl	Weight to Pull Loose: 130000.0 lb
			<b>Total Volume: 70.93 bbl</b>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 105000.0 lb
Depth to Top Packer:	5450.00 ft			Final 105000.0 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	44.00 ft			
Tool Length:	68.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Stubb	1.00			5427.00	
Shut In Tool	5.00			5432.00	
Hydraulic tool	5.00			5437.00	
Jars	5.00			5442.00	
Safety Joint	3.00			5445.00	
Packer	5.00			5450.00	24.00      Bottom Of Top Packer
Packer - Shale	4.00			5454.00	
Stubb	1.00			5455.00	
Recorder	0.00	8373	Inside	5455.00	
Recorder	0.00	8356	Outside	5455.00	
Perforations	2.00			5457.00	
Change Over Sub	1.00			5458.00	
Drill Pipe	30.00			5488.00	
Change Over Sub	1.00			5489.00	
Bullnose	5.00			5494.00	44.00      Anchor Tool

**Total Tool Length: 68.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Raydon Exploration

**27-26s-32w Finney KS**

1601 NW Expressway  
Oklahoma City OK 73118

**Buffalo #1-27**

Job Ticket: 55600

**DST#: 2**

ATTN: Ed Grieves

Test Start: 2014.01.23 @ 17:45:27

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

70000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbf

Water Loss: 5.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1300.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
475.00	mcw 90%w 10%m	2.336
190.00	mcw 70%w 30%m	1.527

Total Length: 665.00 ft

Total Volume: 3.863 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

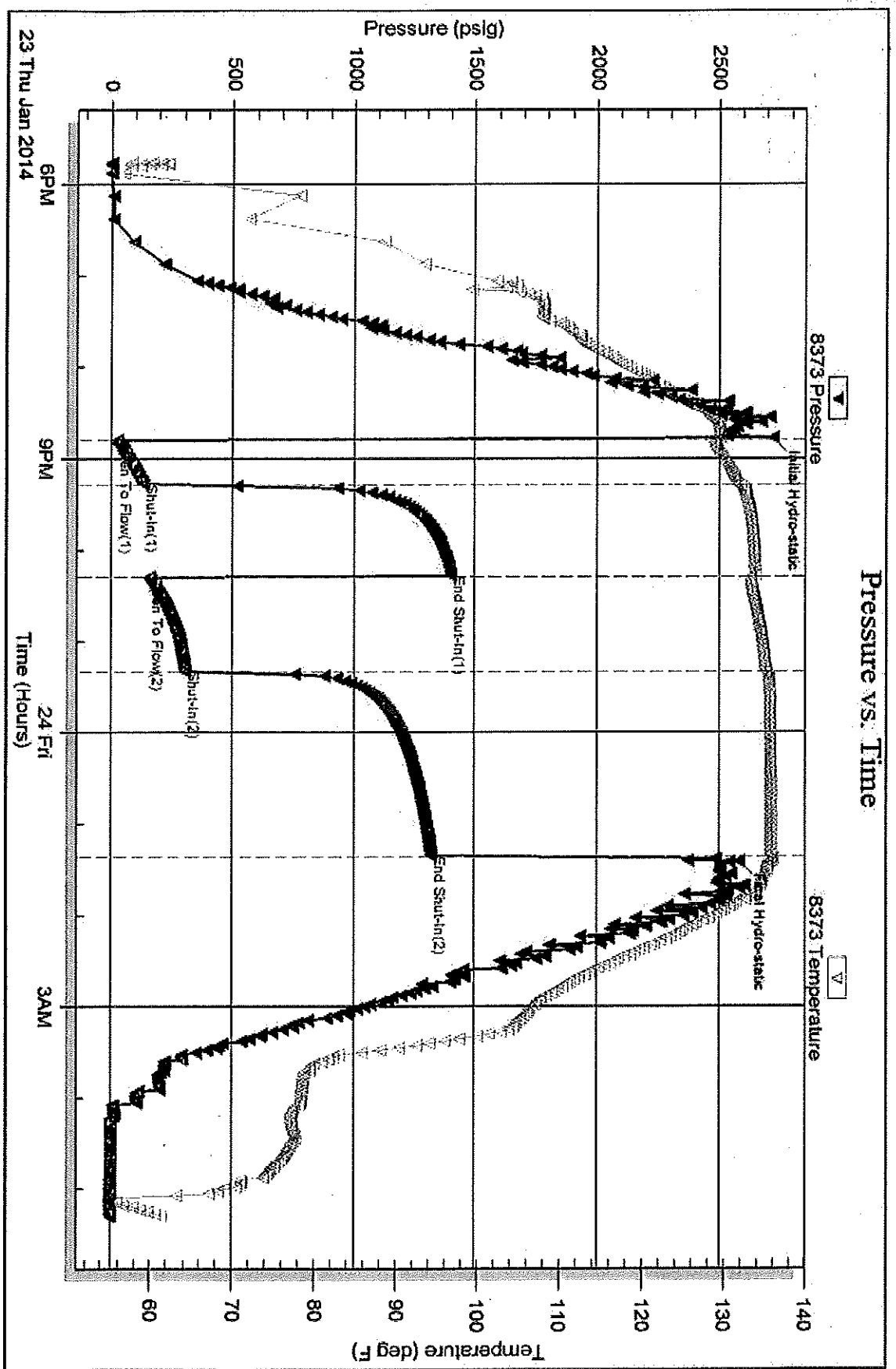
Recovery Comments: .14@57=70000

Serial #: 8373

Inside Raydon Exploration

Buffalo #1-27

DST Test Number: 2



Trouble Testing, Inc

Ref. No: 55600

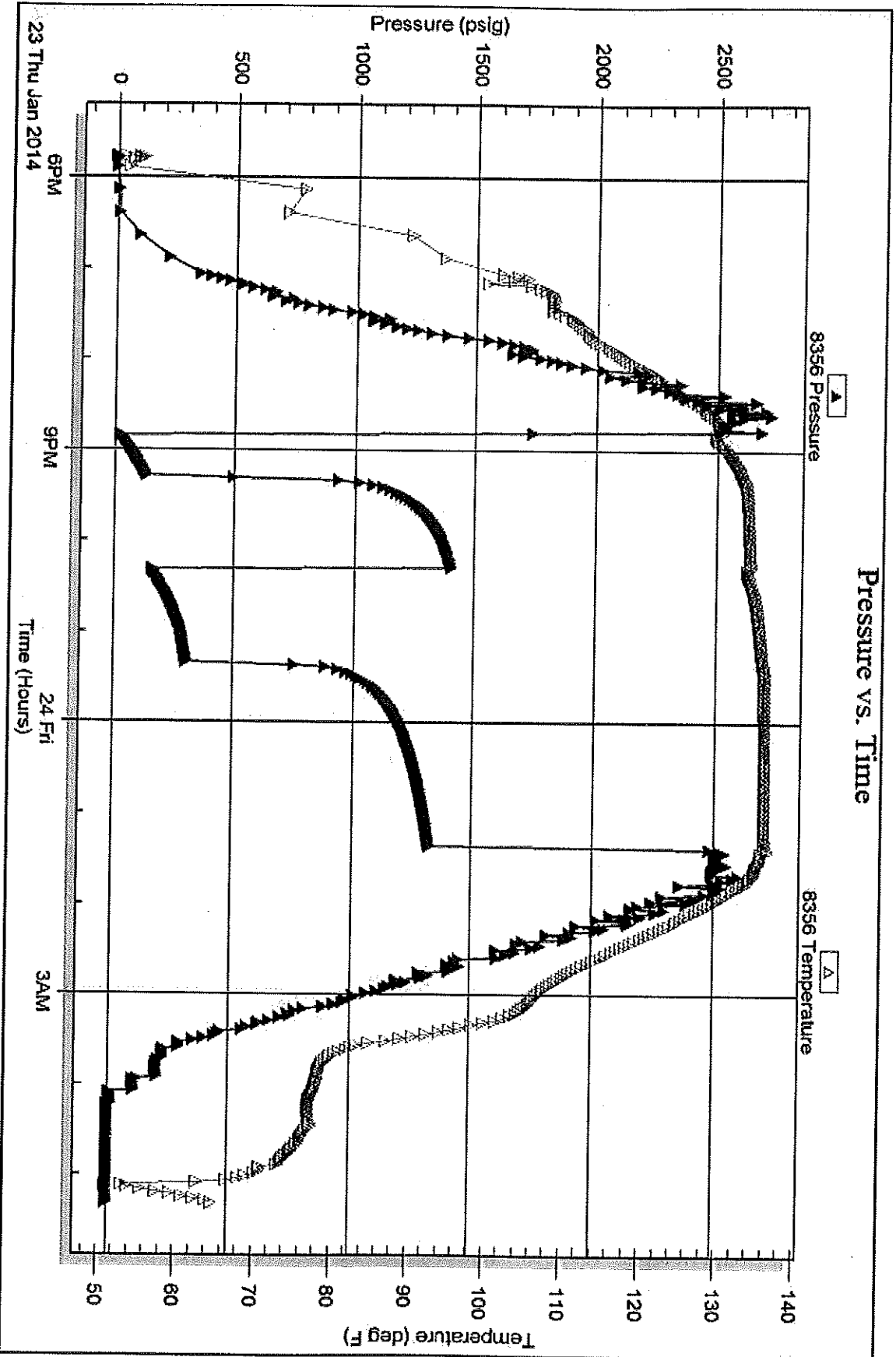
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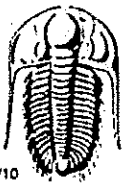
Serial #: 8356

Outside Raydon Exploration

Buffalo #1-27

DST Test Number: 2





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 55599

Well Name & No. Buffalo 1-27 Test No. 1 Date 1-20-14  
 Company Raydon Exploration Elevation 2884 KB 2872 GL  
 Address 1601 NW Expressway Oklahoma City, OK 73118  
 Co. Rep / Geo. Ed Grievos Rig Tomcat #3  
 Location: Sec. 27 Twp. 26 Rge. 32 Co. Finney State KS

Interval Tested 4695 4710 Zone Tested Pawnee  
 Anchor Length 15 Drill Pipe Run 4096 Mud Wt. 9.2  
 Top Packer Depth 4690 Drill Collars Run 600 Vis 40  
 Bottom Packer Depth 4695 Wt. Pipe Run --- WL 8.0  
 Total Depth 4710 Chlorides 2800 ppm System LCM 10

Blow Description IF: Surface blow died in 10 min.  
IS: No return.  
FF: No blow.  
FS: No return.

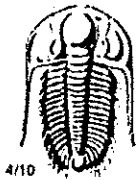
Rec	Feet of	%gas	%oil	%water	%mud
<u>90</u>	<u>MCW</u>			<u>90</u>	<u>10</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 90 BHT 129 Gravity --- API RW -19 @ 46 °F Chlorides 63,000 ppm

(A) Initial Hydrostatic <u>2335</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>00:40</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>1:45</u>
(C) First Final Flow <u>38</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>5:35</u>
(D) Initial Shut-In <u>1301</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIL</u>	T-Pulled <u>8:35</u>
(E) Second Initial Flow <u>43</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>10:55</u>
(F) Second Final Flow <u>62</u>	<input checked="" type="checkbox"/> Mileage <u>1204</u> 186	Comments
(G) Final Shut-In <u>1278</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2226</u>	<input type="checkbox"/> Straddle	

Initial Open 30  Shale Packer 250  
 Initial Shut-In 60  Extra Packer  
 Final Flow 30  Extra Recorder  
 Final Shut-In 60  Day Standby  
 Accessibility  
 Sub Total 2011 MP/DST Disc't

Approved By [Signature] Our Representative [Signature]  
 Trilobite Testing Inc. shall not be liable for damaged or any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 55600

Well Name & No.	<u>Buffalo 1.27</u>	Test No.	<u>2</u>	Date	<u>1-23-14</u>
Company	<u>Rydon Exploration</u>	Elevation	<u>2884</u>	KB	<u>2872</u> GL
Address					
Co. Rep / Geo.	<u>Ed Grivues</u>	Rig	<u>Tomcat #3</u>		
Location: Sec.	<u>27</u>	Twp.	<u>26</u>	Rge.	<u>32</u>
		Co.	<u>Finney</u>	State	<u>KS</u>

Interval Tested	<u>5450</u>	<u>5490</u>	Zone Tested	<u>Spergen</u>	
Anchor Length	<u>40</u>	Drill Pipe Run	<u>4846</u>	Mud Wt.	<u>9.1</u>
Top Packer Depth	<u>5445</u>	Drill Collars Run	<u>600</u>	Vis	<u>50</u>
Bottom Packer Depth	<u>5450</u>	Wt. Pipe Run	<u>—</u>	WL	<u>6.0</u>
Total Depth	<u>5490</u>	Chlorides	<u>1300</u>	ppm System	LCM <u>12</u>
Blow Description	<u>EF: 1/4 blow built to 8, FS: No return, FF: surface blow built to 6, FS: No return.</u>				

Rec	Feet of	%gas	%oil	%water	%mud
<u>190</u>	<u>MLW</u>		<u>70</u>	<u>30</u>	
<u>475</u>	<u>MLW</u>		<u>90</u>	<u>10</u>	

Rec Total	<u>665</u>	BHT	<u>135</u>	Gravity	<u>—</u>	API RW	<u>.14</u>	@	<u>57</u>	F	Chlorides	<u>70,000</u>	ppm
(A) Initial Hydrostatic	<u>2723</u>	<input checked="" type="checkbox"/>	Test	<u>1350</u>	T-On Location	<u>17:15</u>							
(B) First Initial Flow	<u>28</u>	<input checked="" type="checkbox"/>	Jars	<u>250</u>	T-Started	<u>17:45</u>							
(C) First Final Flow	<u>136</u>	<input checked="" type="checkbox"/>	Safety Joint	<u>75</u>	T-Open	<u>20:48</u>							
(D) Initial Shut-In	<u>1403</u>	<input checked="" type="checkbox"/>	Circ Sub	<u>N/C</u>	T-Pulled	<u>1:18</u>							
(E) Second Initial Flow	<u>160</u>	<input checked="" type="checkbox"/>	Hourly Standby		T-Out	<u>5:20</u>							
(F) Second Final Flow	<u>306</u>	<input checked="" type="checkbox"/>	Mileage	<u>120-X2</u>	372	Comments	<u>loaded tools 1/25 00:15</u>						
(G) Final Shut-In	<u>1320</u>	<input type="checkbox"/>	Sampler		<input checked="" type="checkbox"/>	Ruined Shale Packer	<u>350</u>						
(H) Final Hydrostatic	<u>2584</u>	<input type="checkbox"/>	Straddle		<input type="checkbox"/>	Ruined Packer							
Initial Open	<u>30</u>	<input checked="" type="checkbox"/>	Shale Packer	<u>250</u>	<input type="checkbox"/>	Extra Copies							
Initial Shut-In	<u>60</u>	<input type="checkbox"/>	Extra Packer		Sub Total	<u>1808.33</u>							
Final Flow	<u>60</u>	<input checked="" type="checkbox"/>	Extra Recorder		Total	<u>4455.33</u>							
Final Shut-In	<u>120</u>	<input checked="" type="checkbox"/>	Day Standby	<u>1d 54.25h</u>	MP/DST Disc't								
		<input type="checkbox"/>	Accessibility		Sub Total	<u>2297</u>							

Approved By [Signature] Our Representative [Signature]

Triobite Testing Inc. shall not be liable for damage of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.