

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

**WELL COMPLETION FORM**  
**WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

New Well  Re-Entry  Workover

Oil  WSW  SWD

Gas  DH  EOR

OG  GSW

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 EOR  Conv. to SWD  
 Plug Back  Liner  Conv. to GSW  Conv. to Producer

Commingled Permit #: \_\_\_\_\_

Dual Completion Permit #: \_\_\_\_\_

SWD Permit #: \_\_\_\_\_

EOR Permit #: \_\_\_\_\_

GSW Permit #: \_\_\_\_\_

Spud Date or Date Reached TD Completion Date or  
Recompletion Date Recompletion Date

API No.: \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE  NW  SE  SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum:  NAD27  NAD83  WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  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: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

**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**

Confidentiality Requested

Date: \_\_\_\_\_

Confidential Release Date: \_\_\_\_\_

Wireline Log Received  Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops 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.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No  List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> 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

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:		Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____					
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity		

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:
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Form	ACO1 - Well Completion
Operator	Arcadian Resources, LLC
Well Name	LIAM 2-19
Doc ID	1467834

Tops

Name	Top	Datum
Anhydrite	2730	+394
Base/Anhydrite	2756	+368
Heebner	4073	-949
Lansing	4111	-987
Stark	4318	-1194
Marmaton	4400	-1276
Pawnee	4486	-1362
Ft. Scott	4552	-1428
Cherokee	4585	-1461
Mississippi	4678	-1554





Schippers Oilfield Services LLC

1255 E HWY 24  
Hoxie, KS 67740

Phone # 785-675-8974  
Fax # 785-675-9938

sosllc@ruraltel.net

# Invoice

Date 6/10/2019  
Invoice # 660

Bill To
ARCADIAN RESOURCE, LLC 1302 OLIVE STREET CONCORDIA, KS 66901

Ship To

P.O. # Liam-2  
Terms Net 30

Ship Date 6/10/2019  
Due Date 7/10/2019  
Other

Item	Description	Qty	Price	Amount
Cement	Common	185	18.00	3,330.00T
Gel		3	22.00	66.00T
chloride	calcium chloride	10	52.00	520.00T
Handling of mater...	per sack	198	2.10	415.80
Bulk truck	mileage	29	15.84	459.36
PUMP TRUCK CHA...	TRI-PLEX PUMP CHARGE		1,050.00	1,050.00
Light vehicle mile...	One way to Location	29	2.00	58.00
PUMPTRUCK MILE...	ONE WAY TO LOCATION	29	6.00	174.00

<b>Subtotal</b>	\$6,073.16
<b>Sales Tax (8.0%)</b>	\$313.28
<b>Total</b>	\$6,386.44
<b>Payments/Credits</b>	\$0.00
<b>Balance Due</b>	\$6,386.44

Schippers Oilfield Services LLC



REMIT TO  
 RR 1 BOX 90 D  
 HOXIE, KS 67740

**SCHIPPERS OIL FIELD SERVICE L.L.C.**

NO 000660

DATE <i>6/10</i>	SEC.	RANGE/TWP.	CALLED OUT	ON LOCATION	JOB START	JOB FINISH
					COUNTY <i>711</i>	STATE <i>KS</i>
LEASE <i>Academy</i>			WELL # <i>2-109</i>			

CONTRACTOR <i>Duke 4</i>	OWNER <i>Paul</i>			
TYPE OF JOB				
HOLE SIZE <i>13 3/4</i>	T.D. <i>250</i>	CEMENT		
CASING SIZE <i>8 3/4</i>	DEPTH <i>249</i>	AMOUNT ORDERED		
TUBING SIZE	DEPTH			
DRILL PIPE <i>1 1/4</i>	DEPTH			
TOOL	DEPTH			
PRES. MAX	MINIMUM	COMMON	<i>185</i>	@ <i>18"</i> <i>3,800"</i>
DISPLACEMENT	SHOE JOINT	POZMIX		@
CEMENT LEFT IN CSG.		GEL	<i>3</i>	@ <i>22"</i> <i>66"</i>
PERFS		CHLORIDE	<i>10</i>	@ <i>50"</i> <i>500"</i>
		ASC		@ <i>2</i>
EQUIPMENT				@
				@
PUMP TRUCK				@
# <i>3</i>				@
BULK TRUCK				@
# <i>1</i>				@
BULK TRUCK				@
#				@
		HANDLING	<i>198</i>	@ <i>2"</i> <i>4150</i>
		MILEAGE	<i>29</i>	@ <i>15"</i> <i>457"</i>
				TOTAL

REMARKS <i>Plug Down 6:00 PM</i>	SERVICE <i>Sorter</i>		
	DEPT OF JOB	@	
	PUMP TRUCK CHARGE	@	<i>1050</i>
	EXTRA FOOTAGE	@	
<i>600 Cement to Pit</i>	MILEAGE	<i>29</i>	@ <i>6"</i> <i>174</i>
	MANIFOLD	@	
	<i>Light Drilled</i>	<i>29</i>	@ <i>2.00</i> <i>5800</i>
			TOTAL

CHARGES TO: <i>Arcadia</i>	
STREET	STATE
CITY	ZIP

To: Schippers Oil Field Services L.L.C.

You are hereby requested to rent cementing equipment and furnish staff to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "TERMS AND CONDITIONS" listed on the reverse side.

PLUG & FLOAT EQUIPMENT	
	@
	@
	@
	@
	@
	TOTAL
TAX	
TOTAL CHARGE	
DISCOUNT (IF PAID IN 20 DAYS)	

SIGNATURE *John Doe*

PRINTED NAME





## DRILL STEM TEST REPORT

Prepared For: **Arcadian Resources, LLC**

PO Box 816  
Hays, KS 67601

ATTN: Patrick Deenihan

**Liam #1-19**

**19-8S-32W Thomas,KS**

Start Date: 2019.01.03 @ 00:36:31

End Date: 2019.01.03 @ 16:51:36

Job Ticket #: 65023                      DST #: 1

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.01.07 @ 14:53:25



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Arcadian Resources, LLC

**19-8S-32W Thomas,KS**

PO Box 816  
Hays, KS 67601

**Liam #1-19**

Job Ticket: 65023

**DST#: 1**

ATTN: Patrick Deenihan

Test Start: 2019.01.03 @ 00:36:31

## GENERAL INFORMATION:

Formation: **Altamont A**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:29:36

Time Test Ended: 16:51:36

Test Type: Conventional Bottom Hole (Initial)

Tester: Brannan Lonsdale

Unit No: 73

Interval: **4392.00 ft (KB) To 4415.00 ft (KB) (TVD)**

Reference Elevations: 3120.00 ft (KB)

Total Depth: 4415.00 ft (KB) (TVD)

3111.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 8700 Outside**

Press@RunDepth: 22.66 psig @ 4393.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.01.03

End Date:

2019.01.03

Last Calib.:

2019.01.03

Start Time:

00:36:32

End Time:

16:51:36

Time On Btm:

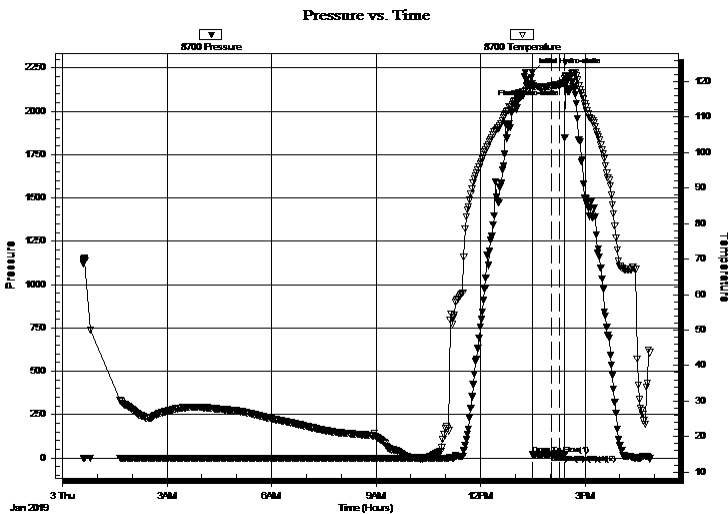
2019.01.03 @ 13:29:06

Time Off Btm:

2019.01.03 @ 14:26:36

TEST COMMENT: 30- IF- Slowly built to 1.31"  
15- IS- No blow  
10- FF- No blow . Pulled tool

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2222.48	119.34	Initial Hydro-static
1	20.22	118.53	Open To Flow (1)
33	22.66	118.74	Shut-In(1)
46	23.53	119.19	End Shut-In(1)
47	22.16	119.20	Open To Flow (2)
56	21.35	119.58	Shut-In(2)
58	2173.49	121.42	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
3.00	M	0.04

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Arcadian Resources, LLC

**19-8S-32W Thomas,KS**

PO Box 816  
Hays, KS 67601

**Liam #1-19**

Job Ticket: 65023

**DST#: 1**

ATTN: Patrick Deenihan

Test Start: 2019.01.03 @ 00:36:31

## Tool Information

Drill Pipe:	Length: 4369.00 ft	Diameter: 3.82 inches	Volume: 61.93 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 66000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4392.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	23.00 ft			
Tool Length:	54.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4362.00	
Shut In Tool	5.00			4367.00	
Hydraulic tool	5.00			4372.00	
Jars	5.00			4377.00	
Gap Sub	3.00			4380.00	
Safety Joint	3.00			4383.00	
Packer	5.00			4388.00	31.00 Bottom Of Top Packer
Packer	4.00			4392.00	
Stubb	1.00			4393.00	
Recorder	0.00	6771	Inside	4393.00	
Recorder	0.00	8700	Outside	4393.00	
Perforations	19.00			4412.00	
Bullnose	3.00			4415.00	23.00 Bottom Packers & Anchor

**Total Tool Length: 54.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Arcadian Resources, LLC

**19-8S-32W Thomas,KS**

PO Box 816  
Hays, KS 67601

**Liam #1-19**

Job Ticket: 65023

**DST#: 1**

ATTN: Patrick Deenihan

Test Start: 2019.01.03 @ 00:36:31

### 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: 64.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3.00	M	0.043

Total Length: 3.00 ft      Total Volume: 0.043 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

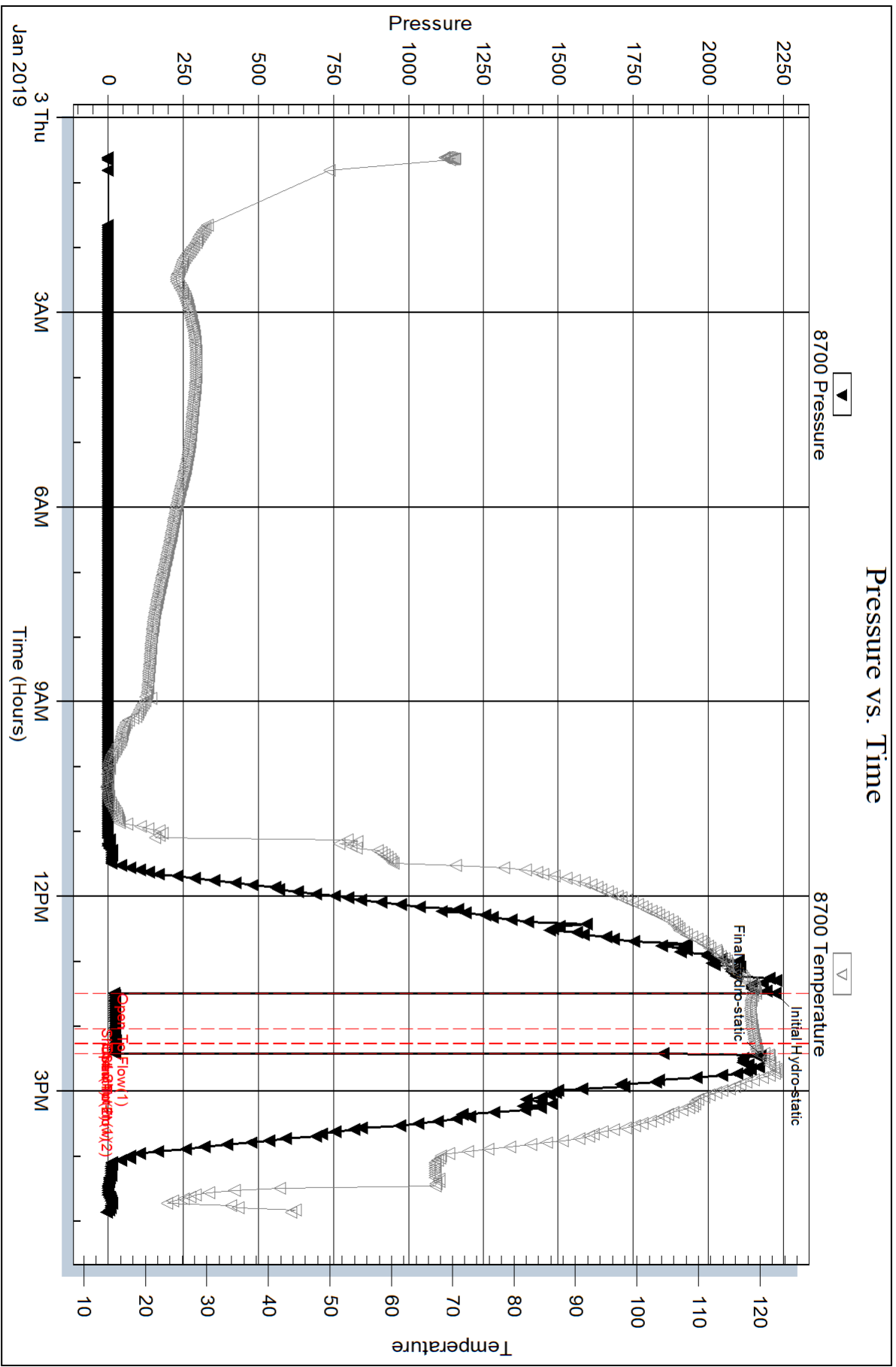
Serial #:

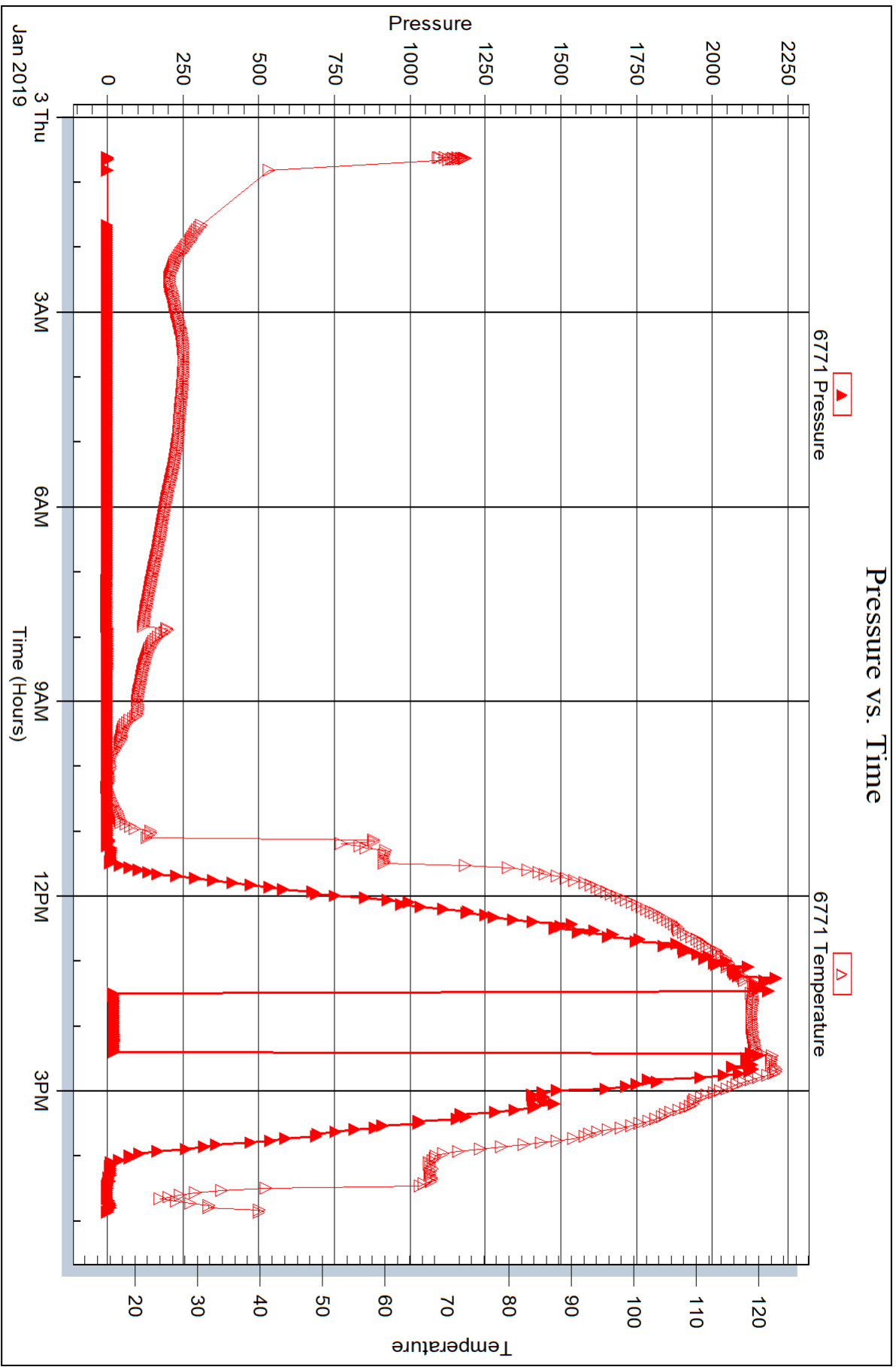
Laboratory Name:

Laboratory Location:

Recovery Comments:









## DRILL STEM TEST REPORT

Prepared For: **Arcadian Resources, LLC**

PO Box 816  
Hays, KS 67601

ATTN: Patrick Deenihan

**Liam #1-19**

**19-8S-32W Thomas,KS**

Start Date: 2019.01.03 @ 19:35:13

End Date: 2019.01.04 @ 03:11:04

Job Ticket #: 65024                      DST #: 2

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.01.07 @ 14:49:00





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Arcadian Resources, LLC

**19-8S-32W Thomas,KS**

PO Box 816  
Hays, KS 67601

**Liam #1-19**

Job Ticket: 65024

**DST#: 2**

ATTN: Patrick Deenihan

Test Start: 2019.01.03 @ 19:35:13

## GENERAL INFORMATION:

Formation: **Altamont B - C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:14:04

Time Test Ended: 03:11:04

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 73

**Interval: 4423.00 ft (KB) To 4466.00 ft (KB) (TVD)**

Reference Elevations: 3120.00 ft (KB)

Total Depth: 4466.00 ft (KB) (TVD)

3111.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 8700**

**Outside**

Press@RunDepth: 23.28 psig @ 4424.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.01.03

End Date:

2019.01.04

Last Calib.:

2019.01.04

Start Time:

19:35:14

End Time:

03:11:04

Time On Btm:

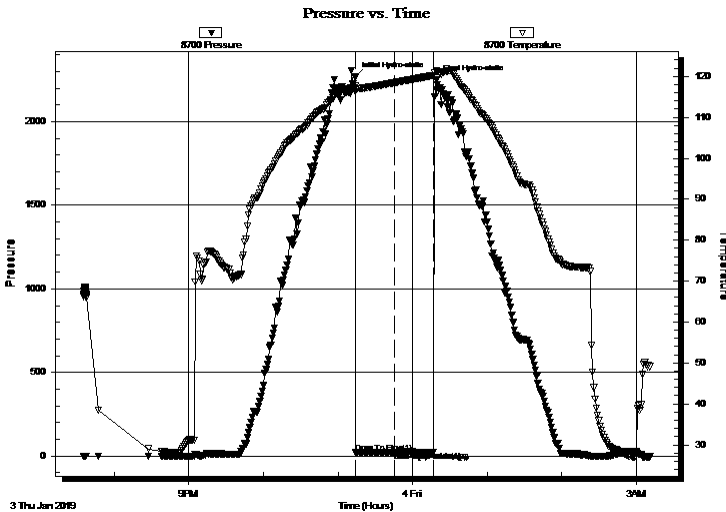
2019.01.03 @ 23:13:49

Time Off Btm:

2019.01.04 @ 00:19:19

**TEST COMMENT:** 30- IF- Slowly built to 1.03"  
15- IS- No blow  
15- FF- No blow . Pulled tool

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2266.37	117.65	Initial Hydro-static
1	20.69	116.36	Open To Flow (1)
32	23.28	118.48	Shut-In(1)
46	26.35	119.28	End Shut-In(1)
47	23.39	119.30	Open To Flow (2)
64	23.93	120.22	Shut-In(2)
66	2248.24	121.23	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2.00	M	0.03

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Arcadian Resources, LLC

**19-8S-32W Thomas,KS**

PO Box 816  
Hays, KS 67601

**Liam #1-19**

Job Ticket: 65024

**DST#: 2**

ATTN: Patrick Deenihan

Test Start: 2019.01.03 @ 19:35:13

## Tool Information

Drill Pipe:	Length: 4399.00 ft	Diameter: 3.82 inches	Volume: 62.36 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	2.00 ft			String Weight: Initial 51000.00 lb
Depth to Top Packer:	4423.00 ft			Final 51000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	43.00 ft			
Tool Length:	69.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

**Length (ft) Serial No. Position Depth (ft) Accum. Lengths**

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4398.00	
Shut In Tool	5.00			4403.00	
Hydraulic tool	5.00			4408.00	
Gap Sub	3.00			4411.00	
Safety Joint	3.00			4414.00	
Packer	5.00			4419.00	26.00 Bottom Of Top Packer
Packer	4.00			4423.00	
Stubb	1.00			4424.00	
Recorder	0.00	6771	Inside	4424.00	
Recorder	0.00	8700	Outside	4424.00	
Perforations	6.00			4430.00	
Change Over Sub	1.00			4431.00	
Drill Pipe	31.00			4462.00	
Change Over Sub	1.00			4463.00	
Bullnose	3.00			4466.00	43.00 Bottom Packers & Anchor

**Total Tool Length: 69.00**





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Arcadian Resources, LLC

**19-8S-32W Thomas,KS**

PO Box 816  
Hays, KS 67601

**Liam #1-19**

Job Ticket: 65024

**DST#: 2**

ATTN: Patrick Deenihan

Test Start: 2019.01.03 @ 19:35:13

## 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: 63.00 sec/qt

Cushion Volume: bbl

Water Loss: 7.97 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 750.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	M	0.028

Total Length: 2.00 ft      Total Volume: 0.028 bbl

Num Fluid Samples: 0

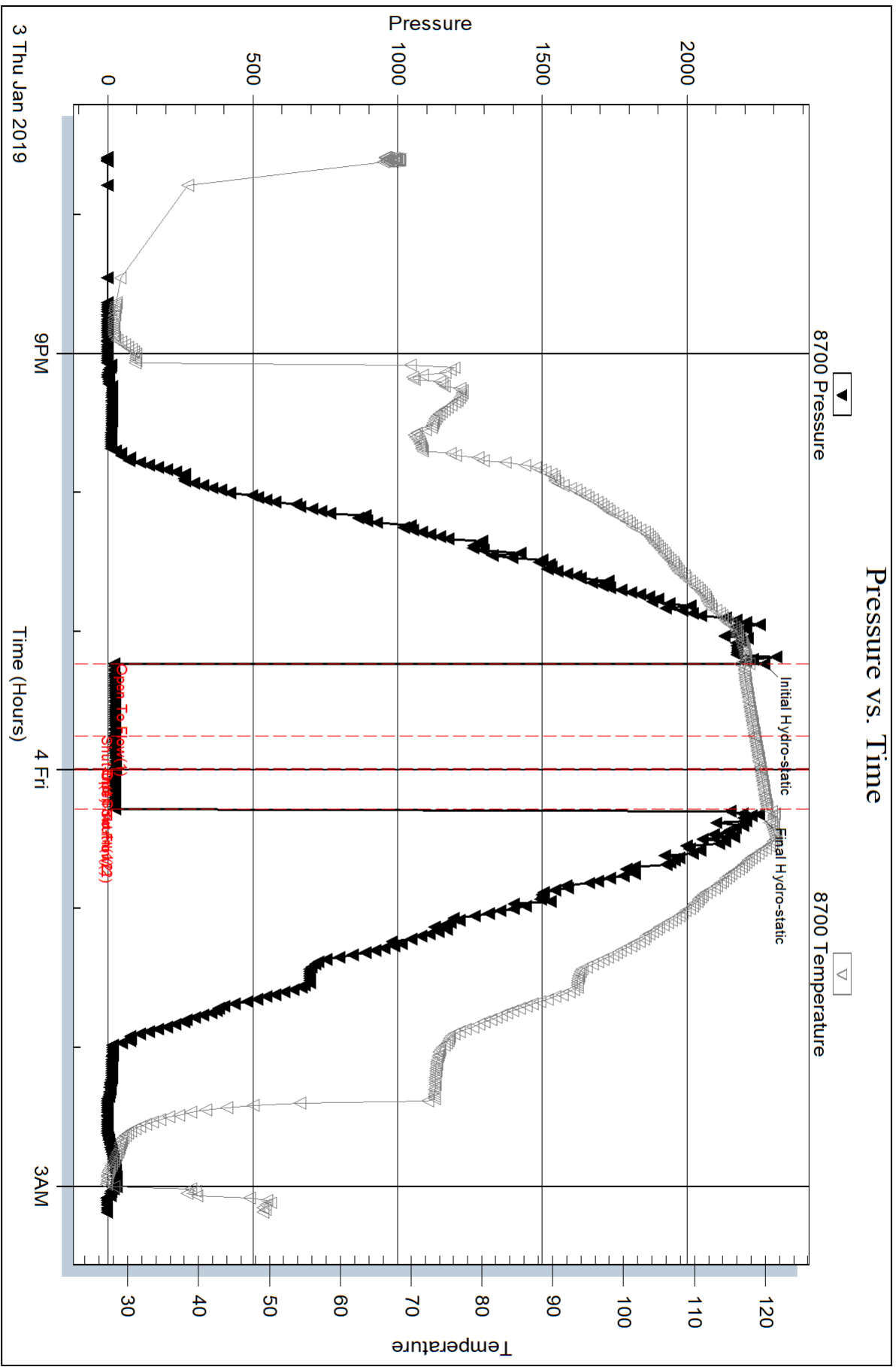
Num Gas Bombs: 0

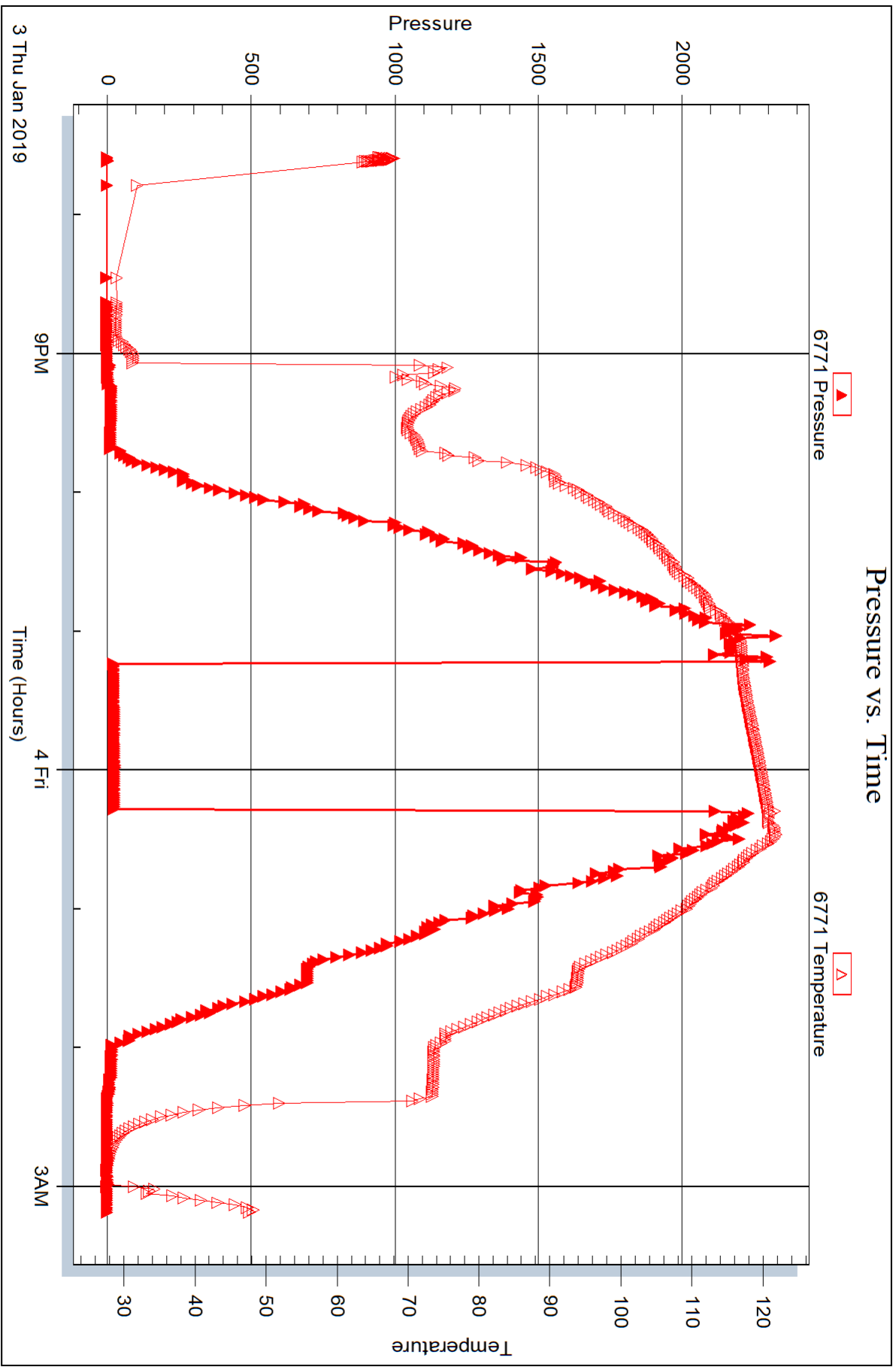
Serial #:

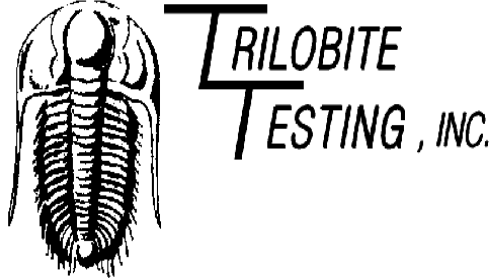
Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Arcadian Resources, LLC**

PO Box 816  
Hays, KS 67601

ATTN: Patrick Deenihan

**Liam #1-19**

**19-8S-32W Thomas,KS**

Start Date: 2019.01.04 @ 11:59:47

End Date: 2019.01.04 @ 20:01:38

Job Ticket #: 65025                      DST #: 3

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.01.07 @ 14:48:29



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Arcadian Resources, LLC

**19-8S-32W Thomas,KS**

PO Box 816  
Hays, KS 67601

**Liam #1-19**

Job Ticket: 65025

**DST#: 3**

ATTN: Patrick Deenihan

Test Start: 2019.01.04 @ 11:59:47

## GENERAL INFORMATION:

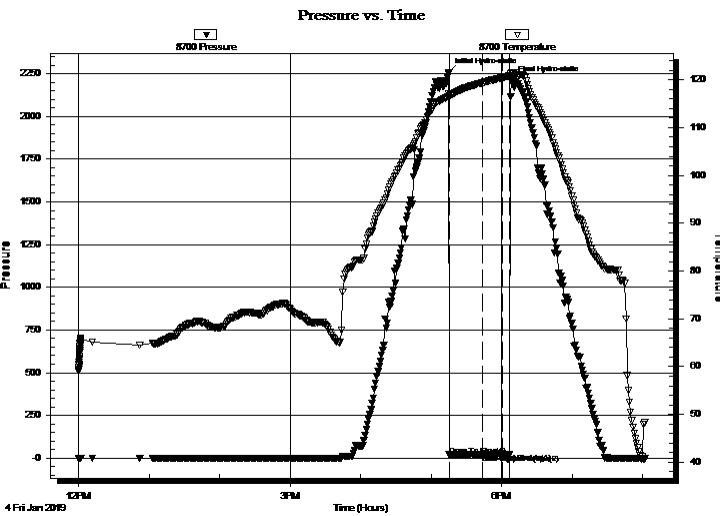
Formation: **Pawnee**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 17:15:08  
 Time Test Ended: 20:01:38  
 Interval: **4472.00 ft (KB) To 4516.00 ft (KB) (TVD)**  
 Total Depth: 4516.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Brannan Lonsdale  
 Unit No: 73  
 Reference Elevations: 3120.00 ft (KB)  
 3111.00 ft (CF)  
 KB to GR/CF: 9.00 ft

## Serial #: 8700

**Outside**

Press@RunDepth: 20.14 psig @ 4473.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2019.01.04 End Date: 2019.01.04 Last Calib.: 2019.01.04  
 Start Time: 11:59:48 End Time: 20:01:38 Time On Btm: 2019.01.04 @ 17:14:53  
 Time Off Btm: 2019.01.04 @ 18:07:53

TEST COMMENT: 30- IF- Weak blow 0.16"  
 15- IS- No blow  
 05- FF- No blow . Pulled tool



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2257.39	117.15	Initial Hydro-static
1	19.12	116.33	Open To Flow (1)
29	20.14	119.41	Shut-In(1)
46	25.56	120.46	End Shut-In(1)
46	19.35	120.48	Open To Flow (2)
52	19.82	120.80	Shut-In(2)
53	2212.21	121.31	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2.00	M	0.03

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Arcadian Resources, LLC

**19-8S-32W Thomas,KS**

PO Box 816  
Hays, KS 67601

**Liam #1-19**

Job Ticket: 65025

**DST#: 3**

ATTN: Patrick Deenihan

Test Start: 2019.01.04 @ 11:59:47

## Tool Information

Drill Pipe:	Length: 4461.00 ft	Diameter: 3.82 inches	Volume: 63.24 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 57000.00 lb
			Total Volume: - bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	4472.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	44.00 ft			
Tool Length:	70.00 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			4447.00	
Shut In Tool	5.00			4452.00	
Hydraulic tool	5.00			4457.00	
Gap Sub	3.00			4460.00	
Safety Joint	3.00			4463.00	
Packer	5.00			4468.00	26.00 Bottom Of Top Packer
Packer	4.00			4472.00	
Stubb	1.00			4473.00	
Recorder	0.00	6771	Inside	4473.00	
Recorder	0.00	8700	Outside	4473.00	
Perforations	7.00			4480.00	
Change Over Sub	1.00			4481.00	
Drill Pipe	31.00			4512.00	
Change Over Sub	1.00			4513.00	
Bullnose	3.00			4516.00	44.00 Bottom Packers & Anchor

**Total Tool Length: 70.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Arcadian Resources, LLC

**19-8S-32W Thomas,KS**

PO Box 816  
Hays, KS 67601

**Liam #1-19**

Job Ticket: 65025

**DST#: 3**

ATTN: Patrick Deenihan

Test Start: 2019.01.04 @ 11:59:47

## 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:

bbbl

Water Loss: 7.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
2.00	M	0.028

Total Length: 2.00 ft      Total Volume: 0.028 bbl

Num Fluid Samples: 0

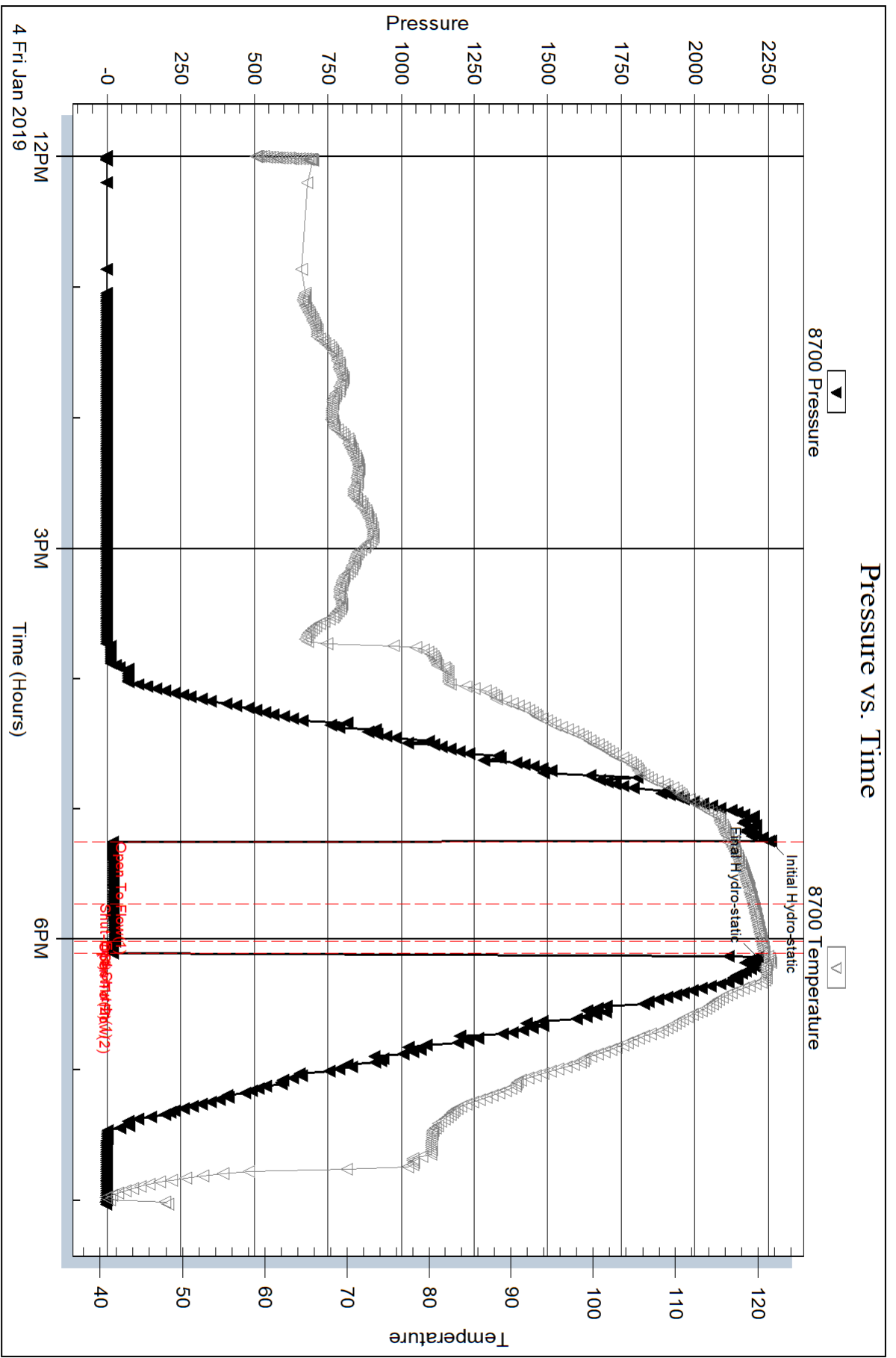
Num Gas Bombs: 0

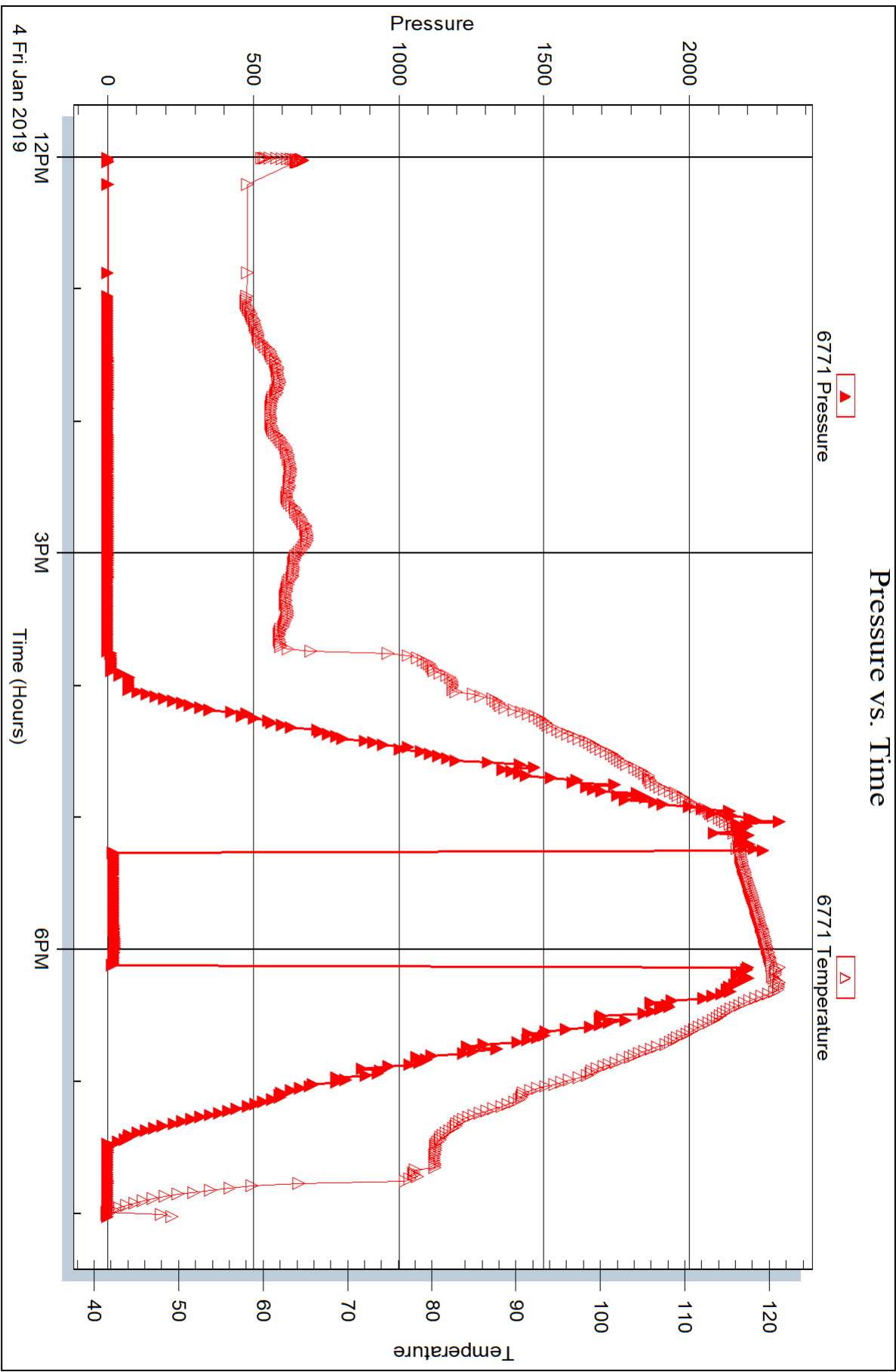
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Arcadian Resources, LLC**

PO Box 816  
Hays, KS 67601

ATTN: Patrick Deenihan

**Liam #1-19**

**19-8S-32W Thomas,KS**

Start Date: 2019.01.06 @ 02:22:35

End Date: 2019.01.06 @ 10:23:41

Job Ticket #: 65501                      DST #: 4

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.01.07 @ 14:47:53



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Arcadian Resources, LLC

**19-8S-32W Thomas,KS**

PO Box 816  
Hays, KS 67601

**Liam #1-19**

Job Ticket: 65501

**DST#: 4**

ATTN: Patrick Deenihan

Test Start: 2019.01.06 @ 02:22:35

## GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:22:26

Time Test Ended: 10:23:41

Test Type: Conventional Straddle (Reset)

Tester: Brannan Lonsdale

Unit No: 73

**Interval: 4561.00 ft (KB) To 4617.00 ft (KB) (TVD)**

Reference Elevations: 3120.00 ft (KB)

Total Depth: 4724.00 ft (KB) (TVD)

3111.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 6771 Inside**

Press@RunDepth: 53.33 psig @ 4562.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.01.06

End Date:

2019.01.06

Last Calib.:

2019.01.06

Start Time:

02:22:36

End Time:

10:23:41

Time On Btm:

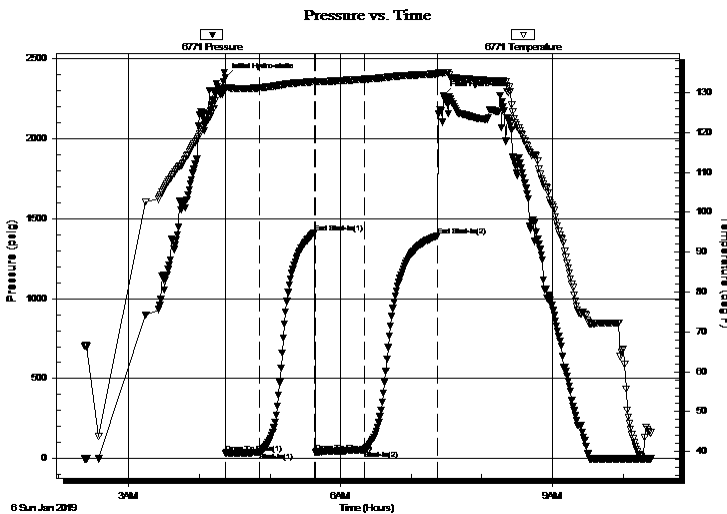
2019.01.06 @ 04:22:11

Time Off Btm:

2019.01.06 @ 07:27:11

**TEST COMMENT:** 30- IF- Slow ly built to 10.69"  
45- IS- No blow  
45- FF- Slow ly built to 18.00"  
60- FSI- No blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2382.74	131.32	Initial Hydro-static
1	32.67	130.75	Open To Flow (1)
29	38.66	131.17	Shut-In(1)
76	1414.06	132.73	End Shut-In(1)
77	39.45	132.71	Open To Flow (2)
118	53.33	133.32	Shut-In(2)
181	1393.97	134.68	End Shut-In(2)
185	2272.16	134.96	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	MCO, 30%M 70%O	0.85
30.00	CGO, 20%G 80%O	0.43
0.00	280' GIP	0.00

## Gas Rates

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

\* Recovery from multiple tests









**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Arcadian Resources, LLC

**19-8S-32W Thomas,KS**

PO Box 816  
Hays, KS 67601

**Liam #1-19**

Job Ticket: 65501

**DST#: 4**

ATTN: Patrick Deenihan

Test Start: 2019.01.06 @ 02:22:35

## Tool Information

Drill Pipe:	Length: 4556.00 ft	Diameter: 3.82 inches	Volume: 64.58 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 82000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4561.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	4617.00 ft			
Interval between Packers:	56.00 ft			
Tool Length:	183.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

**Length (ft) Serial No. Position Depth (ft) Accum. Lengths**

Change Over Sub	1.00			4542.00	
Shut In Tool	5.00			4547.00	
Hydraulic tool	5.00			4552.00	
Packer	5.00			4557.00	20.00 Bottom Of Top Packer
Packer	4.00			4561.00	
Stubb	1.00			4562.00	
Recorder	0.00	6771	Inside	4562.00	
Recorder	0.00	8700	Outside	4562.00	
Perforations	3.00			4565.00	
Change Over Sub	1.00			4566.00	
Drill Pipe	31.00			4597.00	
Change Over Sub	1.00			4598.00	
Safety Joint	15.00			4613.00	
Blank Off Sub	1.00			4614.00	
Blank Spacing	3.00			4617.00	56.00 Tool Interval
Packer	1.00			4618.00	
Stubb	1.00			4619.00	
Perforations	7.00			4626.00	
Change Over Sub	1.00			4627.00	
Recorder	0.00	8367	Below	4627.00	
Drill Pipe	93.00			4720.00	
Change Over Sub	1.00			4721.00	
Bullnose	3.00			4724.00	107.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>183.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Arcadian Resources, LLC

**19-8S-32W Thomas,KS**

PO Box 816  
Hays, KS 67601

**Liam #1-19**

Job Ticket: 65501

**DST#: 4**

ATTN: Patrick Deenihan

Test Start: 2019.01.06 @ 02:22:35

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

24 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
60.00	MCO, 30%M 70%O	0.851
30.00	CGO, 20%G 80%O	0.425
0.00	280' GIP	0.000

Total Length: 90.00 ft      Total Volume: 1.276 bbl

Num Fluid Samples: 0

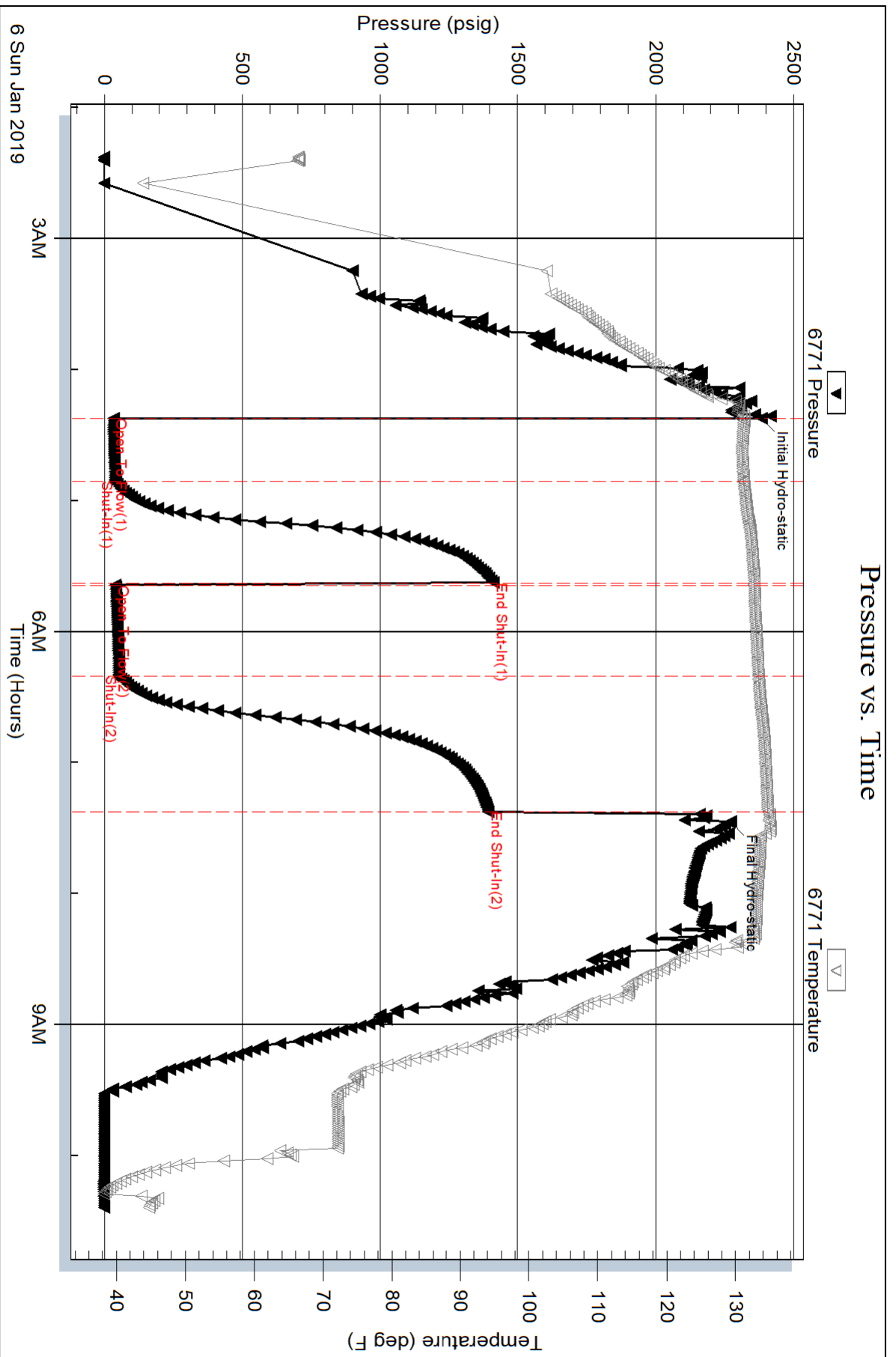
Num Gas Bombs: 0

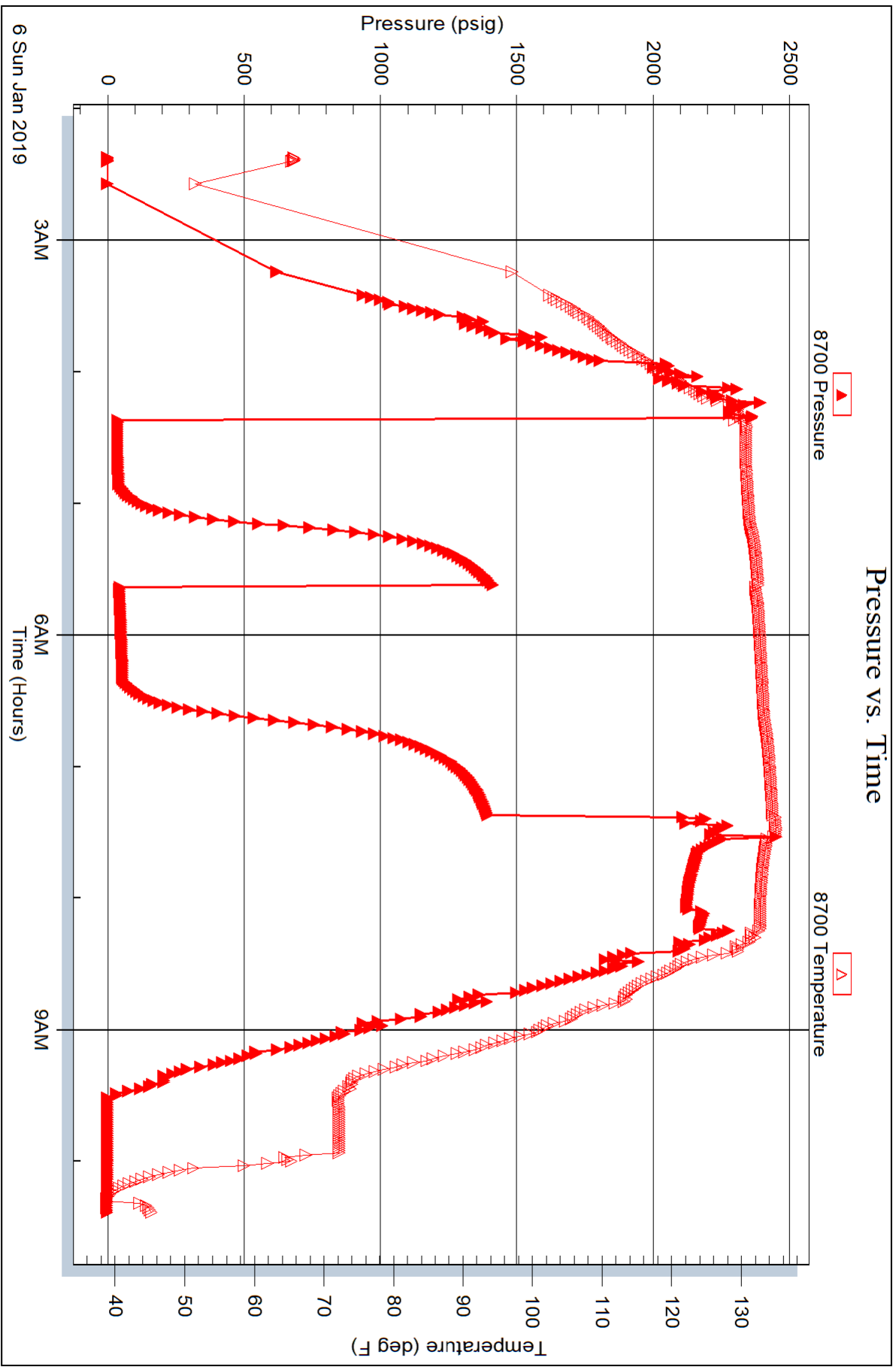
Serial #:

Laboratory Name:

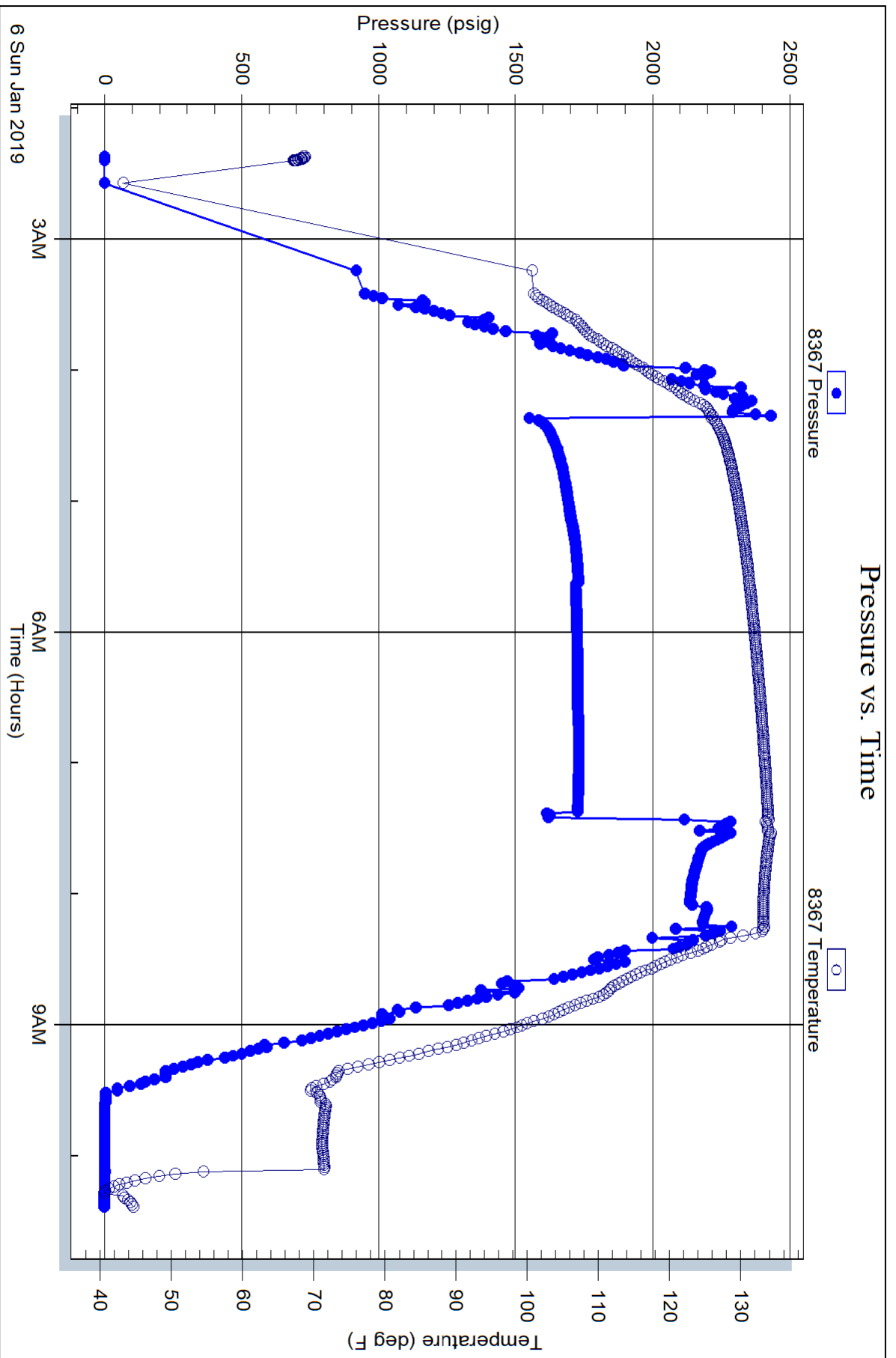
Laboratory Location:

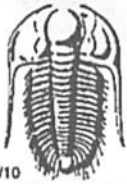
Recovery Comments:











# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 65023

Well Name & No. Liam # 1-19 Test No. 1 Date 1/3/19  
 Company Aradian Resources, LLC Elevation 3120 KB 3111 GL  
 Address PO Box 816 Hays, KS 67601  
 Co. Rep / Geo. Patrick Deenihan Rig Duke 4  
 Location: Sec. 19 Twp 8 S Rge. 32 Wco. Thomas State KS

Interval Tested 4392-4415 Zone Tested Altamont A  
 Anchor Length 23' Drill Pipe Run 4369 Mud Wt. 9.3  
 Top Packer Depth 4387 Drill Collars Run --- Vis 64  
 Bottom Packer Depth 4392 Wt. Pipe Run --- WL 8.0  
 Total Depth 4415 Chlorides 500 ppm System LCM 4 1/2  
 Blow Description IF - slowly built to 1.31"  
ISF - No blow  
FF - No blow, pulled tool  
FST -

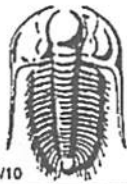
Rec	Feet of	%gas	%oil	%water	%mud
3	M				

Rec Total 3' BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>2222</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>1/2 1548</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>0037 1625</u>
(C) First Final Flow <u>23</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>0518</u>
(D) Initial Shut-In <u>24</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>0613</u>
(E) Second Initial Flow <u>22</u>	<input checked="" type="checkbox"/> Hourly Standby _____	T-Out <u>0840</u>
(F) Second Final Flow <u>21</u>	<input checked="" type="checkbox"/> Mileage <u>212 RT + 18</u>	Comments <u>Pulled tight</u>
(G) Final Shut-In _____	<input type="checkbox"/> Sampler <u>98rt + 18</u>	<u>Went to town.</u>
(H) Final Hydrostatic <u>2173</u>	<input type="checkbox"/> Straddle _____	<input checked="" type="checkbox"/> EM Tool <u>350</u>
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Shale Packer _____
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Packer _____
Final Flow <u>10</u>	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Extra Copies _____
Final Shut-In _____	<input type="checkbox"/> Day Standby _____	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility _____	Total <u>2191</u>
	Sub Total <u>2191</u>	MP/DST Disc't _____

Approved By \_\_\_\_\_ Our Representative Brian Lonsdale

Trilobite Testing Inc. shall not be liable for damaged 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.



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 65024

Well Name & No. Liam #1-19 Test No. 2 Date 1/3/19  
 Company Arcadian Resources, LLC Elevation 3120 KB 3111 GL  
 Address PO Box 816 Hays, KS 67601  
 Co. Rep / Geo. Dick Deenihan Rig Duke 4  
 Location: Sec. 19 Twp 8 S Rge. 32 W Co. Thomas State KS

Interval Tested 4423-4466 Zone Tested Attamont BTC  
 Anchor Length 43' Drill Pipe Run 4399 Mud Wt. 9.4  
 Top Packer Depth 4418 Drill Collars Run — Vis 63  
 Bottom Packer Depth 4423 Wt. Pipe Run — WL 8.0  
 Total Depth 4466 Chlorides 250 ppm System LCM 4#

Blow Description IF - Slowly built to 1.03"  
ISF - No flow  
FF - No flow, pulled tool  
FSI -

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>M</u>				
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

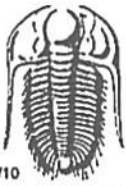
Rec Total 2' BHT 120° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2266</u>	<input checked="" type="checkbox"/> Test 1150	T-On Location <u>1913</u>
(B) First Initial Flow <u>21</u>	<input type="checkbox"/> Jars	T-Started <u>1935</u>
(C) First Final Flow <u>23</u>	<input type="checkbox"/> Safety Joint	T-Open <u>2313</u>
(D) Initial Shut-In <u>26</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>1/4</u> <u>0013</u>
(E) Second Initial Flow <u>23</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0311</u>
(F) Second Final Flow <u>24</u>	<input checked="" type="checkbox"/> Mileage <u>212 RT</u> 98	Comments
(G) Final Shut-In	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2248</u>	<input type="checkbox"/> Straddle	<input checked="" type="checkbox"/> EM Tool <u>350</u>
Initial Open <u>80</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Final Flow <u>15</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Shut-In	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility	Total <u>1848</u>
	Sub Total <u>1848</u>	MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative Brannan Lousdale

Trilobite Testing Inc. shall not be liable for damaged 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.





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 65025

Well Name & No. Liam #1-19 Test No. 3 Date 1/4/19  
 Company Arcadian Resources, LLC Elevation 3120 KB 3111 GL  
 Address PO Box 816 Hays, KS 67601  
 Co. Rep / Geo. Patrick Deenihan Rig Duke 4  
 Location: Sec. 19 Twp 8 S Rge. 32 W Co. Thomas State KS

Interval Tested 4472-4516 Zone Tested Pawnee  
 Anchor Length 44' Drill Pipe Run 4461 Mud Wt. 9.4  
 Top Packer Depth 4467 Drill Collars Run --- Vis 56  
 Bottom Packer Depth 4472 Wt. Pipe Run --- WL 7.6  
 Total Depth 4516 Chlorides 500 ppm System LCM 3#  
 Blow Description IF - Weak blow 0.16"  
ISF - No blow  
FF - No blow. Pulled tool  
FSF -

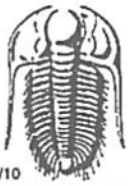
Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>NA</u>				

Rec Total 2' BHT 121° Gravity --- API RW --- @ --- °F Chlorides --- ppm

(A) Initial Hydrostatic <u>2257</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>1140</u>
(B) First Initial Flow <u>19</u>	<input type="checkbox"/> Jars <u>---</u>	T-Started <u>1200</u>
(C) First Final Flow <u>20</u>	<input type="checkbox"/> Safety Joint <u>---</u>	T-Open <u>1715</u>
(D) Initial Shut-In <u>26</u>	<input type="checkbox"/> Circ Sub <u>---</u>	T-Pulled <u>1805</u>
(E) Second Initial Flow <u>19</u>	<input type="checkbox"/> Hourly Standby <u>---</u>	T-Out <u>2002</u>
(F) Second Final Flow <u>20</u>	<input checked="" type="checkbox"/> Mileage <u>212 RT + 18</u>	Comments <u>Tools loaded</u>
(G) Final Shut-In <u>---</u>	<input type="checkbox"/> Sampler <u>98 x 2</u>	<u>1/5 @ 1030</u>
(H) Final Hydrostatic <u>2212</u>	<input type="checkbox"/> Straddle <u>---</u>	<u>3 night motel stay</u>
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input checked="" type="checkbox"/> EM Tool <u>350</u>
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Packer <u>---</u>	<input type="checkbox"/> Ruined Shale Packer <u>---</u>
Final Flow <u>05</u>	<input type="checkbox"/> Extra Recorder <u>---</u>	<input type="checkbox"/> Ruined Packer <u>---</u>
Final Shut-In <u>---</u>	<input type="checkbox"/> Day Standby <u>---</u>	<input type="checkbox"/> Extra Copies <u>---</u>
	<input type="checkbox"/> Accessibility <u>---</u>	Sub Total <u>0</u>
	Sub Total <u>1946</u>	Total <u>1946</u>
		MP/DST Disc't <u>---</u>

Approved By \_\_\_\_\_ Our Representative Brannan Lonsdale

Trilobite Testing Inc. shall not be liable for damaged 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.



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 65501

Well Name & No. Liam #1-19 Test No. 4 Date 1/6/19  
 Company Arcadian Resources LLC Elevation 3120 KB 3111 GL  
 Address PO Box 816 Hays, KS 67601  
 Co. Rep / Geo. Patrick Deenihan Rig Duke 4  
 Location: Sec. 19 Twp 8 S Rge. 32 W Co. Thomas State KS

Interval Tested 4561-4617 Zone Tested Cherokee  
 Anchor Length 56' tail: 107' Drill Pipe Run 4556 Mud Wt. 9.4  
 Top Packer Depth 4556-4561 Drill Collars Run — Vis 63  
 Bottom Packer Depth 4617 Wt. Pipe Run — WL 8.0  
 Total Depth 4724 Chlorides 500 ppm System LCM 2 1/2"  
 Blow Description IF - Stubby built to 10.69"  
ISF - No Blow  
FF - Stubby built to 18.00"  
FSF - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>MCO</u>	<u>70</u>	<u>0</u>	<u>30</u>	<u>0</u>
<u>30</u>	<u>CGO</u>	<u>20</u>	<u>80</u>	<u>0</u>	<u>0</u>
<u>—</u>	<u>280' CJP</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Rec Total 90' BHT 135° Gravity 24 API RW — @ — F Chlorides — ppm

(A) Initial Hydrostatic <u>2383</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>0045</u>
(B) First Initial Flow <u>33</u>	<input type="checkbox"/> Jars <u>—</u>	T-Started <u>0221</u>
(C) First Final Flow <u>39</u>	<input type="checkbox"/> Safety Joint <u>—</u>	T-Open <u>0421</u>
(D) Initial Shut-In <u>1414</u>	<input type="checkbox"/> Circ Sub <u>—</u>	T-Pulled <u>0721</u>
(E) Second Initial Flow <u>39</u>	<input type="checkbox"/> Hourly Standby <u>—</u>	T-Out <u>1023</u>
(F) Second Final Flow <u>53</u>	<input checked="" type="checkbox"/> Mileage <u>212 BT</u> 98	Comments <u>—</u>
(G) Final Shut-In <u>1394</u>	<input type="checkbox"/> Sampler <u>—</u>	<u>—</u>
(H) Final Hydrostatic <u>2272</u>	<input checked="" type="checkbox"/> Straddle <u>600</u>	<input type="checkbox"/> EM Tool <u>—</u>
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Shale Packer <u>—</u>
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer <u>—</u>	<input type="checkbox"/> Ruined Packer <u>—</u>
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder <u>—</u>	<input type="checkbox"/> Extra Copies <u>—</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby <u>—</u>	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility <u>—</u>	Total <u>2098</u>
	Sub Total <u>2098</u>	MP/DST Disc't <u>—</u>

Approved By — Our Representative Braman Lonsdale

Tribolite Testing Inc. shall not be liable for damaged 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.





# SWIFT



P. O. Box 466  
Ness City, KS 67560  
Off: 785-798-2300



## Invoice

DATE	INVOICE #
6/19/2019	27568

*Services, Inc.*

BILL TO
Arcadian Resources P. O. Box 816 Hays, KS 67601-0816

- Acidizing
- Cement
- Tool Rental

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#2	Liam	Thomas	Duke Drlg Rig #4	Oil	Development	Long String	David E
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				100	Miles	5.00	500.00
578D-1.	Pump Charge - Long String				1	Job	1,400.00	1,400.00
290	D-Air				2	Gallon(s)	42.00	84.00T
281	Mud Flush				500	Gallon(s)	1.50	750.00T
221	Liquid KCL (Clayfix)				2	Gallon(s)	25.00	50.00T
402-5	5 1/2" Centralizer				6	Each	75.00	450.00T
403-5	5 1/2" Cement Basket				1	Each	275.00	275.00T
406-5	5 1/2" Latch Down Plug & Baffle				1	Each	250.00	250.00T
407-5	5 1/2" Insert Float Shoe With Auto Fill				1	Each	325.00	325.00T
325	Standard Cement				200	Sacks	13.50	2,700.00T
284	Calseal				9	Sack(s)	40.00	360.00T
283	Salt				1,100	Lb(s)	0.25	275.00T
292	Halad 322				100	Lb(s)	8.50	850.00T
276	Flocele				50	Lb(s)	3.00	150.00T
581D	Service Charge Cement				200	Sacks	1.85	370.00
583D	Drayage				1,048	Ton Miles	0.95	995.60
	Subtotal							9,784.60
	Sales Tax Thomas County						8.00%	521.52
<b>We Appreciate Your Business!</b>							<b>Total</b>	\$10,306.12











JOB LOG

SWIFT Services, Inc.

DATE 6-17-19  
TICKET NO. 27548

CUSTOMER

WELL NO. # 2

LEASE

JOB TYPE

W. Adams

Line 1

Coil Spring

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1530							On location
								Csg - 5 1/2 x 17 - TA 4740 Set @ 4738 20 Shoc - 25.33 Pacific Centracizers 2, 4, 6, 7, 9, 11 Bucket - 1
	1520							START Running Csg
	1610							Break Circ on Bottom
	1740							Plug Rat 1 1/2 - 30 lbs pump mudfish 500 gal pump HCL spores
		5	12			200		
		5	20			200		
	1750	5	40			200		pump cont - 170 lbs @ 15 - 100 Drop plug - wash HCL
	1705	5	0			175		START Disp
	1724	5	109			1000/1500		LAND Plug - 1.4 - 1000 Land 1500
								Release ps. - Del
								Job Complete
								Thanks DAVID, ZACH & ISMAE