

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
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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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Southwind Drilling, Inc.
Plugging Orders & Reports

Lease: OEK HETS # 1-4

Plugging Received from KCC Representative:

Name: Eric Date: 4-18-18 Time: 3:25

1st plug @ 1140 feet, 50 sacks Stands 18

2nd plug @ 510 feet, 50 sacks Stands 8

3rd plug @ 60 feet, 20 sacks Stands 1

4th plug @ _____ feet, _____ sacks Stands _____

5th plug @ _____ feet, _____ sacks Stands _____

Mousehole: _____ sacks

Rathole: 30 sacks

Total Cement Used: 150 sacks

Type of cement: 60/40 Poz 4% Gel

Plug Down @ 3:15 P.M 4-24-18

Call KCC When Completed:

Name: Eric Date: 4-20-18 Time: 3:20

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

none 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 747

Date	4-17-88	Sec.	4	Twp.	16	Range	19	County	Rush	State	KS	On Location		Finish	11:00am
------	---------	------	---	------	----	-------	----	--------	------	-------	----	-------------	--	--------	---------

Location *Schenck SW 2000 15 1W 1/4 Sinto*

Lease	<i>Oelkers</i>	Well No.	<i>1-4</i>	Owner	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.
Contractor	<i>Southwest #3</i>				
Type Job	<i>Surface</i>				
Hole Size	<i>12 1/4</i>	T.D.	<i>1106</i>	Charge To	<i>Cholla Production</i>
Csg.	<i>8 5/8</i>	Depth	<i>1105</i>	Street	
Tbg. Size		Depth		City	State
Tool		Depth		The above was done to satisfaction and supervision of owner agent or contractor.	
Cement Left in Csg.	<i>40'</i>	Shoe Joint	<i>40'</i>	Cement Amount Ordered	<i>450 8/10 3/12 2/1 62</i>
Meas Line		Displace	<i>67 3/4 BCL</i>		

EQUIPMENT

Pumptrk	<i>20</i>	No.	Cementer	<i>Chris</i>	Common	<i>360</i>
			Helper		Poz. Mix	<i>90</i>
Bulktrk		No.	Driver	<i>Don</i>	Gel.	<i>9</i>
			Driver		Calcium	<i>16</i>
Bulktrk	<i>19</i>	No.	Driver	<i>John</i>		
			Driver			

JOB SERVICES & REMARKS

Remarks:		Hulls	
Rat Hole		Salt	
Mouse Hole		Flowseal	
Centralizers		Kol-Seal	
Baskets		Mud CLR 48	
D/V or Port Collar		CFL-117 or CD110.CAF 38	
		Sand	
<i>8 5/8 on bottom. Est Circulation.</i>		Handling	<i>475</i>
<i>Mix 450 size Displace Plus</i>		Mileage	
<i>Cement Circulated!</i>		FLOAT EQUIPMENT <i>8 5/8</i>	
		Guide Shoe	
		Centralizer	<i>3</i>
		Baskets	<i>Robber Plug</i>
		AFU Inserts	
		Float Shoe	
		Latch Down	

Pumptrk Charge *Loag Surface*
Mileage *20*

Frank J. Rome
Signature

Tax	
Discount	
Total Charge	



DRILL STEM TEST REPORT

Prepared For: **Cholla Production LLC**

10390 Bradford Rd
Suite 201
Littleton CO 80127

ATTN: Clayton Erickson

Oelkers #1-14

4-16s-19w Rush,KS

Start Date: 2018.04.20 @ 15:57:00

End Date: 2018.04.20 @ 23:05:02

Job Ticket #: 63478 DST #: 1

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

Printed: 2018.04.25 @ 11:24:22



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Cholla Production LLC
10390 Bradford Rd
Suite 201
Littleton CO 80127
ATTN: Clayton Erickson

4-16s-19w Rush,KS

Oelkers #1-14

Job Ticket: 63478

DST#: 1

Test Start: 2018.04.20 @ 15:57:00

GENERAL INFORMATION:

Formation: **LKC C - D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:26:47

Time Test Ended: 23:05:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney/Cade Ger

Unit No: 72

Interval: 3330.00 ft (KB) To 3400.00 ft (KB) (TVD)

Reference Elevations: 2061.00 ft (KB)

Total Depth: 3400.00 ft (KB) (TVD)

2053.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6755

Inside

Press@RunDepth: 58.97 psig @ 3331.00 ft (KB)

Capacity: psig

Start Date: 2018.04.20

End Date:

2018.04.20

Last Calib.:

2018.04.20

Start Time: 15:57:01

End Time:

23:05:02

Time On Btm:

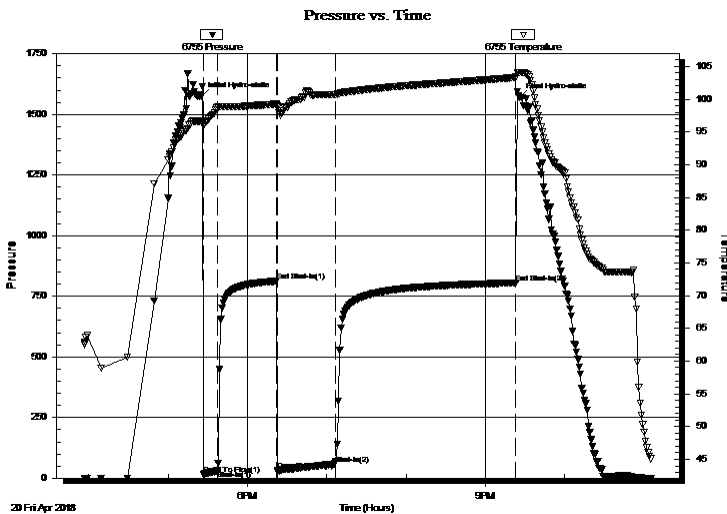
2018.04.20 @ 17:25:17

Time Off Btm:

2018.04.20 @ 21:26:02

TEST COMMENT: IFP 10 min Blow built to 2 3/4"
ISI 45 min No blow back
FFP 45 min Blow built to 4 3/4"
FSI 135 min No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1572.03	96.66	Initial Hydro-static
2	14.34	95.87	Open To Flow (1)
12	31.08	98.71	Shut-In(1)
57	811.91	99.22	End Shut-In(1)
58	31.49	99.00	Open To Flow (2)
101	58.97	100.72	Shut-In(2)
238	805.25	103.36	End Shut-In(2)
241	1567.77	104.08	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	Watery Mud/ Water 35% Mud 65%	1.26

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Cholla Production LLC
10390 Bradford Rd
Suite 201
Littleton CO 80127
ATTN: Clayton Erickson

4-16s-19w Rush,KS

Oelkers #1-14

Job Ticket: 63478

DST#: 1

Test Start: 2018.04.20 @ 15:57:00

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Tester: Ken Swinney/Cade Ger

Unit No: 72

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Reference Elevations: 2061.00 ft (KB)

Total Depth: 3400.00 ft (KB) (TVD)

2053.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6752 Outside

Press@RunDepth: 806.04 psig @ 3332.00 ft (KB)

Capacity: psig

Start Date: 2018.04.20

End Date:

2018.04.20

Last Calib.:

2018.04.20

Start Time: 15:57:01

End Time:

23:05:02

Time On Btm:

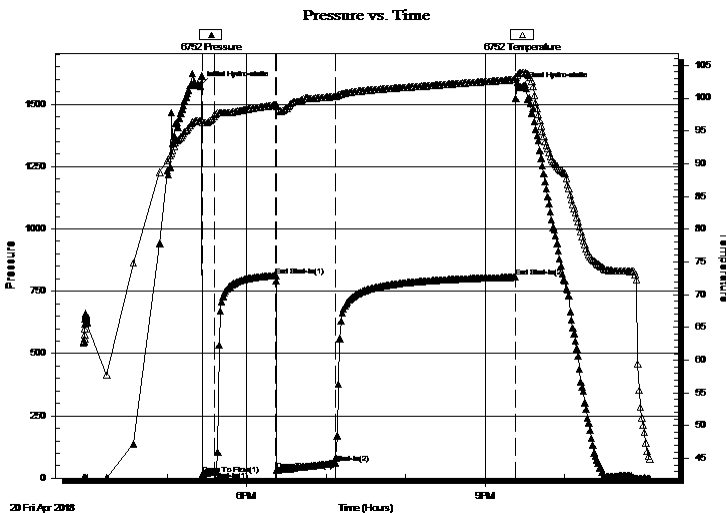
2018.04.20 @ 17:25:17

Time Off Btm:

2018.04.20 @ 21:27:02

TEST COMMENT: IFP 10 min Blow built to 2 3/4"
ISI 45 min No blow back
FFP 45 min Blow built to 4 3/4"
FSI 135 min No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1572.47	96.58	Initial Hydro-static
2	17.14	96.34	Open To Flow (1)
11	27.89	97.49	Shut-In(1)
57	812.75	98.92	End Shut-In(1)
58	32.41	98.73	Open To Flow (2)
102	60.76	100.30	Shut-In(2)
238	806.04	102.86	End Shut-In(2)
242	1569.79	103.87	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	Watery Mud/ Water 35% Mud 65%	1.26

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Cholla Production LLC

4-16s-19w Rush,KS

10390 Bradford Rd

Oelkers #1-14

Suite 201

Job Ticket: 63478

DST#: 1

Littleton CO 80127

ATTN: Clayton Erickson

Test Start: 2018.04.20 @ 15:57:00

Tool Information

Drill Pipe:	Length: 3330.00 ft	Diameter: 3.80 inches	Volume: 46.71 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:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	42000.00 lb
			<u>Total Volume: 46.71 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial	38000.00 lb
Depth to Top Packer:	3330.00 ft			Final	39000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	69.82 ft				
Tool Length:	100.82 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			3304.00	
Sampler	3.00			3307.00	
Hydraulic tool	5.00			3312.00	
Jars	6.00			3318.00	
Safety Joint	2.00			3320.00	
Top Packer	5.00			3325.00	
Packer	5.00			3330.00	31.00 Bottom Of Top Packer
Recorder	1.00	6755	Inside	3331.00	
Recorder	1.00	6752	Outside	3332.00	
Anchor	31.00			3363.00	
Change Over Sub	1.00			3364.00	
Drill Pipe	31.82			3395.82	
Change Over Sub	1.00			3396.82	
Bullnose	3.00			3399.82	69.82 Anchor Tool

Total Tool Length: 100.82



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Cholla Production LLC

4-16s-19w Rush,KS

10390 Bradford Rd

Oelkers #1-14

Suite 201

Job Ticket: 63478

DST#: 1

Littleton CO 80127

ATTN: Clayton Erickson

Test Start: 2018.04.20 @ 15:57:00

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:

14000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5400.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
90.00	Watery Mud/ Water 35% Mud 65%	1.262

Total Length: 90.00 ft Total Volume: 1.262 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

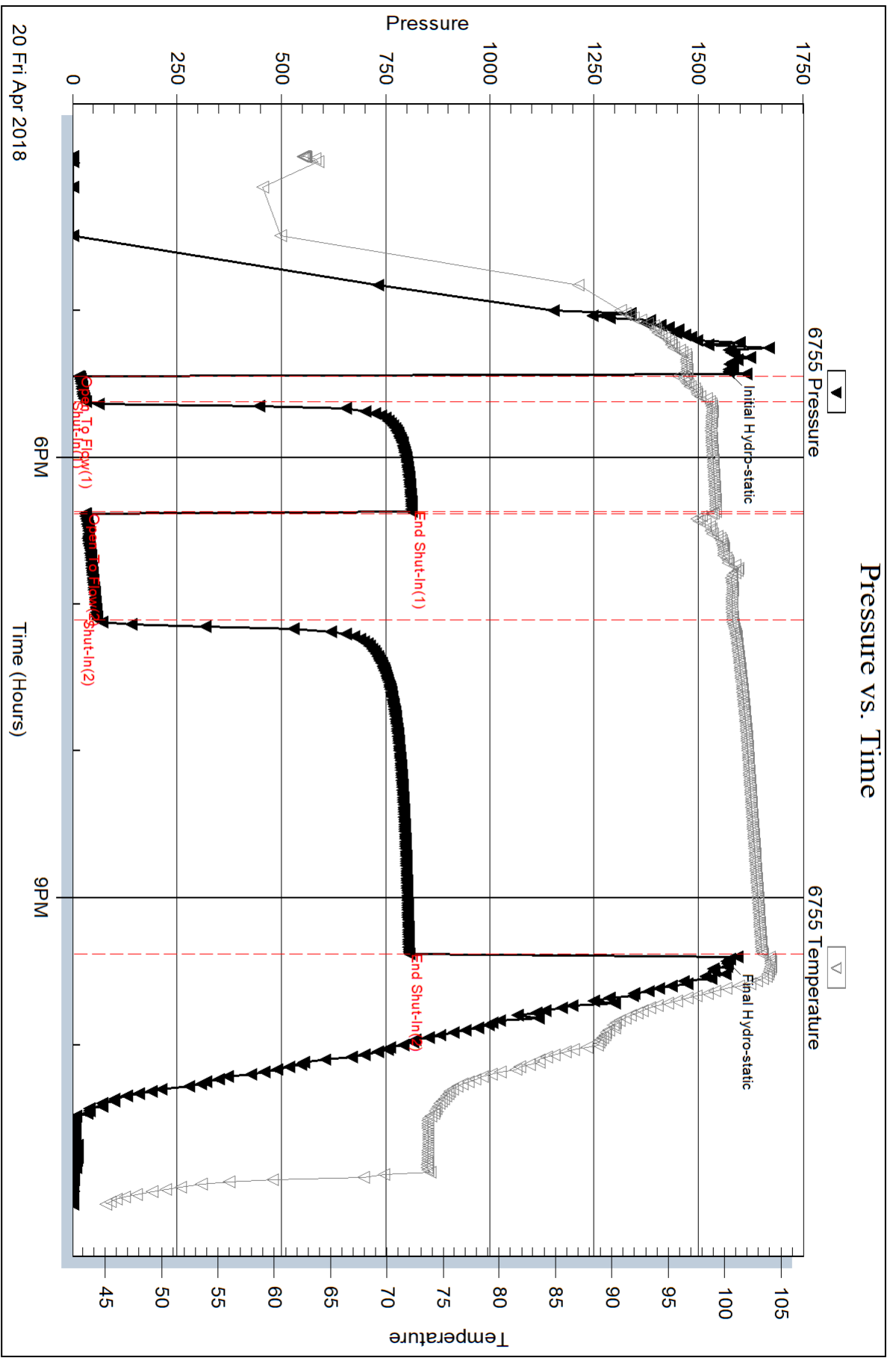
Laboratory Location:

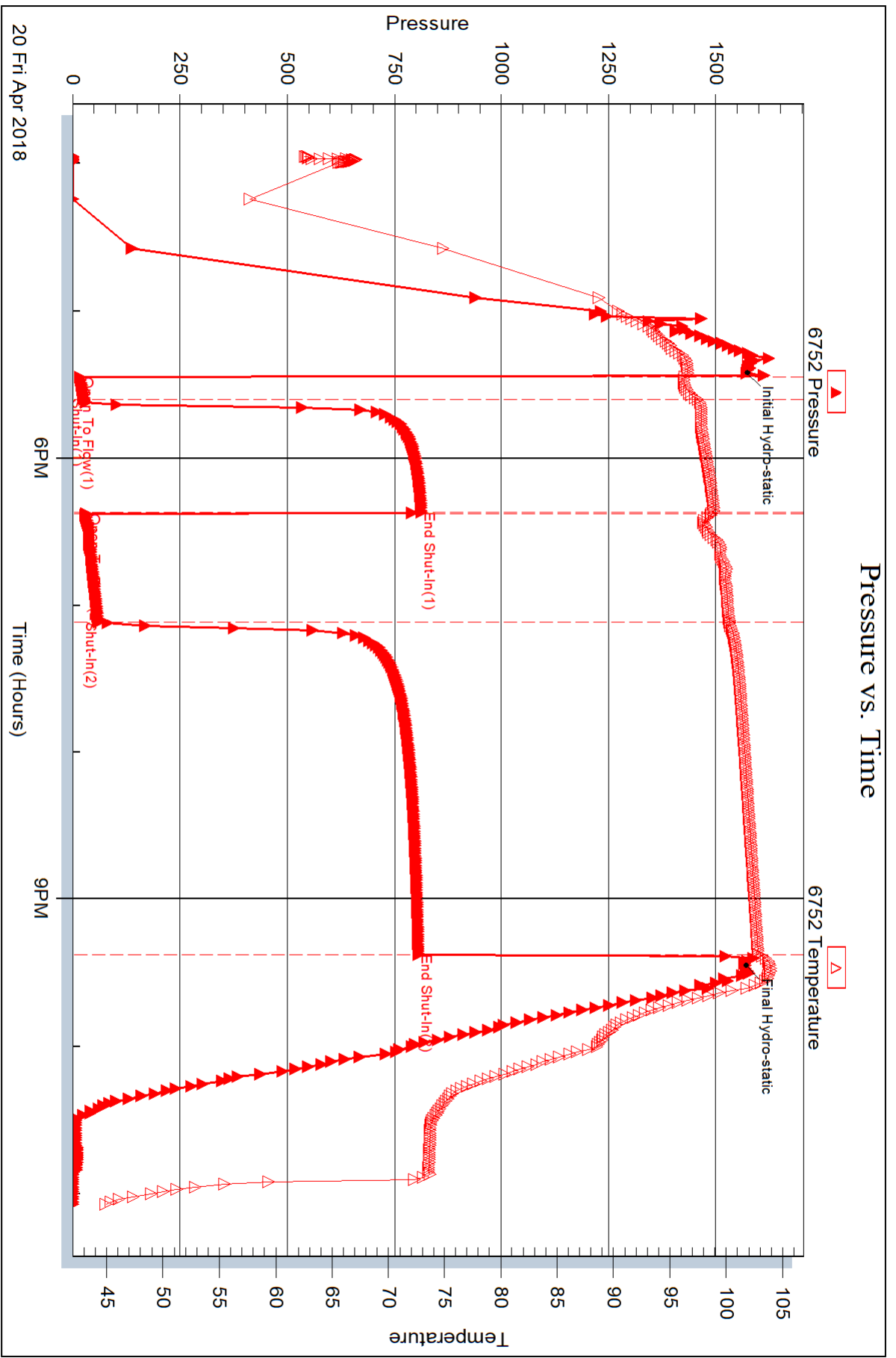
Recovery Comments: Recovery Resistivity .683 ohms @ 49 deg.

Sampler fluid recovery 3000 ml Mud 500 ml Water

Resistivity .499 ohms @ 49 deg

19,000 chlorides







DRILL STEM TEST REPORT

Prepared For: **Cholla Production LLC**

10390 Bradford Rd
Suite 201
Littleton CO 80127

ATTN: Clayton Erickson

Oelkers #1-14

4-16s-19w Rush,KS

Start Date: 2018.04.21 @ 05:45:00

End Date: 2018.04.21 @ 12:49:02

Job Ticket #: 63479 DST #: 2

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

Printed: 2018.04.25 @ 11:12:32



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Cholla Production LLC

4-16s-19w Rush,KS

10390 Bradford Rd

Oelkers #1-14

Suite 201

Job Ticket: 63479

DST#: 2

Littleton CO 80127

ATTN: Clayton Erickson

Test Start: 2018.04.21 @ 05:45:00

GENERAL INFORMATION:

Formation: **LKC E - F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:17:47

Time Test Ended: 12:49:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney/Cade Ger

Unit No: 72

Interval: 3395.00 ft (KB) To 3430.00 ft (KB) (TVD)

Reference Elevations: 2061.00 ft (KB)

Total Depth: 3430.00 ft (KB) (TVD)

2053.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6755

Inside

Press@RunDepth: 65.34 psig @ 3396.00 ft (KB)

Capacity: psig

Start Date: 2018.04.21

End Date:

2018.04.21

Last Calib.:

2018.04.21

Start Time: 05:45:01

End Time:

12:49:02

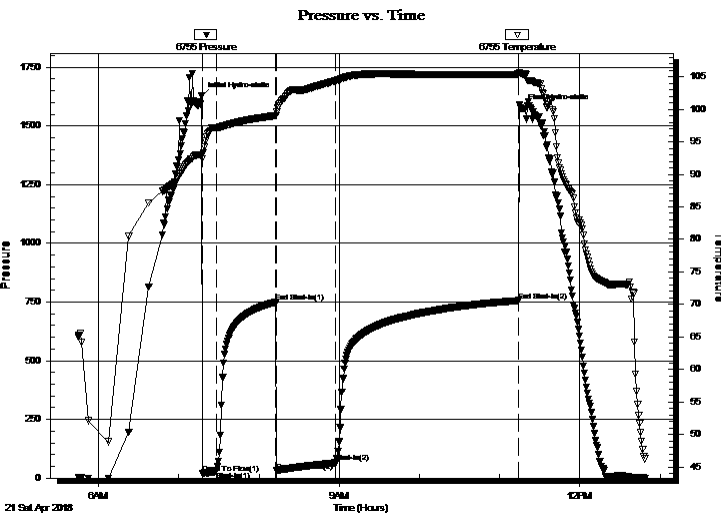
Time On Btm:

2018.04.21 @ 07:17:17

Time Off Btm:

2018.04.21 @ 11:16:02

TEST COMMENT: IF 10 min Blow built to 8"
 ISI 45 min No blow back
 FF 45 min Blow built to BOB in 35 min - total build 13 1/2"
 FSI 135 min No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1627.15	93.03	Initial Hydro-static
1	18.83	92.42	Open To Flow (1)
11	27.89	97.12	Shut-In(1)
56	748.40	99.04	End Shut-In(1)
56	31.32	99.63	Open To Flow (2)
101	65.34	104.39	Shut-In(2)
237	756.32	105.42	End Shut-In(2)
239	1573.63	105.45	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	EOCMW Emuls Oil 10% Mud 45% Water	40.84
45.00	VSOCMW Oil 2% Mud 10% Water 88%	0.63
2.00	Clean Oil 100%	0.03

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Cholla Production LLC
10390 Bradford Rd
Suite 201
Littleton CO 80127
ATTN: Clayton Erickson

4-16s-19w Rush,KS

Oelkers #1-14

Job Ticket: 63479

DST#: 2

Test Start: 2018.04.21 @ 05:45:00

GENERAL INFORMATION:

Formation: **LKC E - F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:17:47

Time Test Ended: 12:49:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney/Cade Ger

Unit No: 72

Interval: 3395.00 ft (KB) To 3430.00 ft (KB) (TVD)

Reference Elevations: 2061.00 ft (KB)

Total Depth: 3430.00 ft (KB) (TVD)

2053.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6752 Outside

Press@RunDepth: 745.35 psig @ 3397.00 ft (KB)

Capacity: psig

Start Date: 2018.04.21

End Date:

2018.04.21

Last Calib.:

2018.04.21

Start Time: 05:45:01

End Time:

12:49:02

Time On Btm:

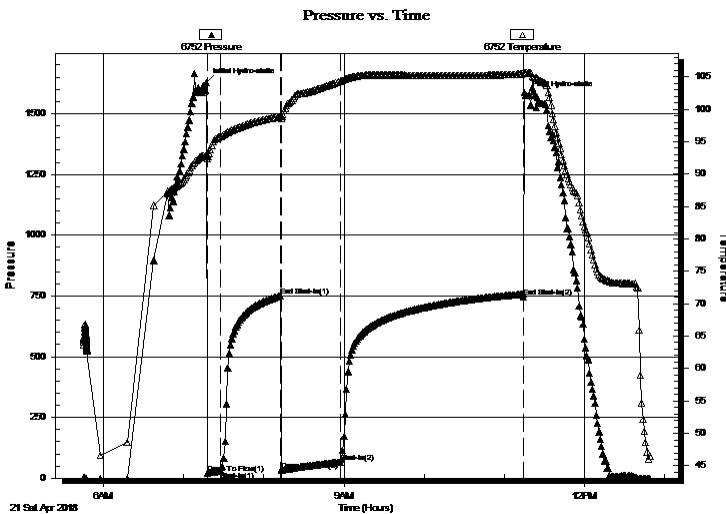
2018.04.21 @ 07:17:17

Time Off Btm:

2018.04.21 @ 11:16:17

TEST COMMENT: IF 10 min Blow built to 8"
ISI 45 min No blow back
FF 45 min Blow built to BOB in 35 min - total build 13 1/2"
FSI 135 min No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1627.72	92.93	Initial Hydro-static
1	19.88	92.37	Open To Flow (1)
11	28.64	95.82	Shut-In(1)
56	749.19	98.84	End Shut-In(1)
57	31.90	98.89	Open To Flow (2)
101	66.06	104.32	Shut-In(2)
237	745.35	105.49	End Shut-In(2)
239	1573.80	105.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	EOCMW Emuls Oil 10% Mud 45% Water	40.84
45.00	VSOCMW Oil 2% Mud 10% Water 88%	0.63
2.00	Clean Oil 100%	0.03

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Cholla Production LLC

4-16s-19w Rush,KS

10390 Bradford Rd

Oelkers #1-14

Suite 201

Job Ticket: 63479

DST#: 2

Littleton CO 80127

ATTN: Clayton Erickson

Test Start: 2018.04.21 @ 05:45:00

Tool Information

Drill Pipe:	Length: 3391.00 ft	Diameter: 3.80 inches	Volume: 47.57 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: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 42000.00 lb
			<u>Total Volume: 47.57 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3395.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	35.00 ft			
Tool Length:	65.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3370.00	
Sampler	3.00			3373.00	
Hydraulic tool	5.00			3378.00	
Jars	5.00			3383.00	
Safety Joint	2.00			3385.00	
Top Packer	5.00			3390.00	
Packer	5.00			3395.00	30.00 Bottom Of Top Packer
Recorder	1.00	6755	Inside	3396.00	
Recorder	1.00	6752	Outside	3397.00	
Anchor	30.00			3427.00	
Bullnose	3.00			3430.00	35.00 Anchor Tool

Total Tool Length: 65.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Cholla Production LLC

4-16s-19w Rush,KS

10390 Bradford Rd

Oelkers #1-14

Suite 201

Job Ticket: 63479

DST#: 2

Littleton CO 80127

ATTN: Clayton Erickson

Test Start: 2018.04.21 @ 05:45:00

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:

19000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5400.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	EOCMW Emuls Oil 10% Mud 45% Water 45%	0.842
45.00	VSOCMW Oil 2% Mud 10% Water 88%	0.631
2.00	Clean Oil 100%	0.028

Total Length: 107.00 ft Total Volume: 1.501 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

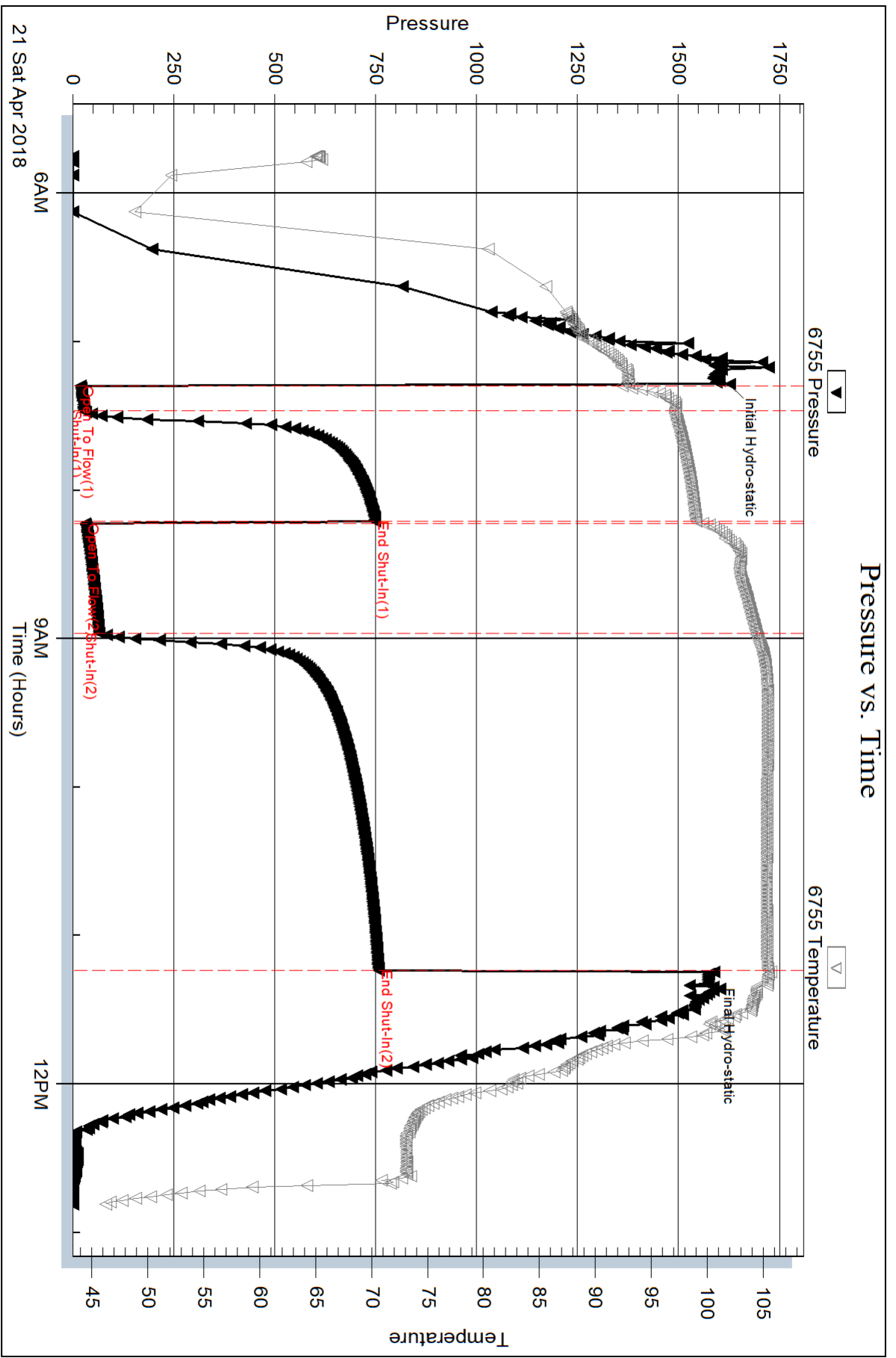
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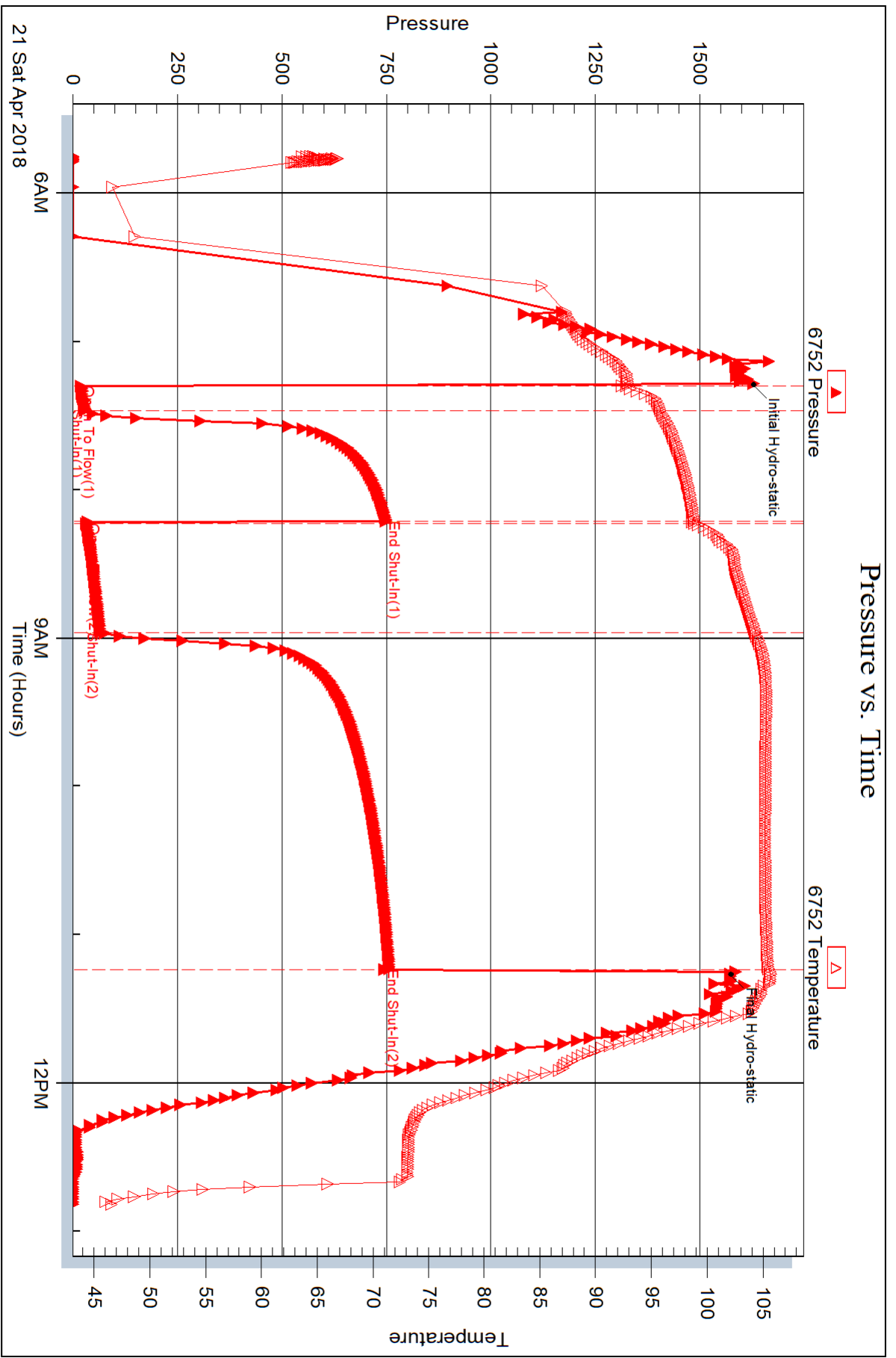
Laboratory Name:

Laboratory Location:

Recovery Comments: Recovery Resistivity .483 ohms @ 50 deg

Sample Chamber Recovery 3250 ml Water 250 ml Oil







DRILL STEM TEST REPORT

Prepared For: **Cholla Production LLC**

10390 Bradford Rd
Suite 201
Littleton CO 80127

ATTN: Clayton Erickson

Oelkers #1-14

4-16s-19w Rush,KS

Start Date: 2018.04.22 @ 05:02:00

End Date: 2018.04.22 @ 10:54:02

Job Ticket #: 63480 DST #: 3

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

Printed: 2018.04.25 @ 11:12:13



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Cholla Production LLC
 10390 Bradford Rd
 Suite 201
 Littleton CO 80127
 ATTN: Clayton Erickson

4-16s-19w Rush,KS

Oelkers #1-14

Job Ticket: 63480

DST#: 3

Test Start: 2018.04.22 @ 05:02:00

GENERAL INFORMATION:

Formation: **LKC H - J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:25:17

Time Test Ended: 10:54:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney/Cade Ger

Unit No: 72

Interval: 3462.00 ft (KB) To 3536.00 ft (KB) (TVD)

Reference Elevations: 2061.00 ft (KB)

Total Depth: 3536.00 ft (KB) (TVD)

2053.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6755

Inside

Press@RunDepth: 60.41 psig @ 3463.00 ft (KB)

Capacity: psig

Start Date: 2018.04.22

End Date:

2018.04.22

Last Calib.:

2018.04.22

Start Time: 05:02:01

End Time:

10:54:02

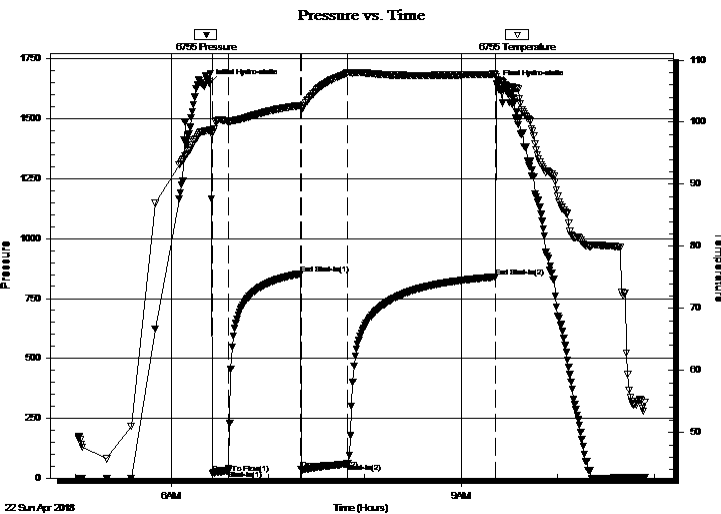
Time On Btm:

2018.04.22 @ 06:23:32

Time Off Btm:

2018.04.22 @ 09:21:47

TEST COMMENT: IF 10 min Light surge at open, then dead
 ISI 45 min No blow back
 FF 30 min Light surge at open then dead
 FSI 90 min No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1645.97	98.70	Initial Hydro-static
2	20.60	98.33	Open To Flow (1)
12	31.13	100.15	Shut-In(1)
57	853.10	102.64	End Shut-In(1)
57	35.45	102.36	Open To Flow (2)
86	60.41	107.94	Shut-In(2)
178	840.02	107.70	End Shut-In(2)
179	1645.18	107.36	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
65.00	MW Mud 25% Water 75%	0.91

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Cholla Production LLC
 10390 Bradford Rd
 Suite 201
 Littleton CO 80127
 ATTN: Clayton Erickson

4-16s-19w Rush,KS

Oelkers #1-14

Job Ticket: 63480

DST#: 3

Test Start: 2018.04.22 @ 05:02:00

GENERAL INFORMATION:

Formation: **LKC H - J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:25:17

Time Test Ended: 10:54:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney/Cade Ger

Unit No: 72

Interval: 3462.00 ft (KB) To 3536.00 ft (KB) (TVD)

Reference Elevations: 2061.00 ft (KB)

Total Depth: 3536.00 ft (KB) (TVD)

2053.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6752 Outside

Press@RunDepth: 840.88 psig @ 3464.00 ft (KB)

Capacity: psig

Start Date: 2018.04.22

End Date:

2018.04.22

Last Calib.:

2018.04.22

Start Time: 05:02:01

End Time:

10:54:02

Time On Btm:

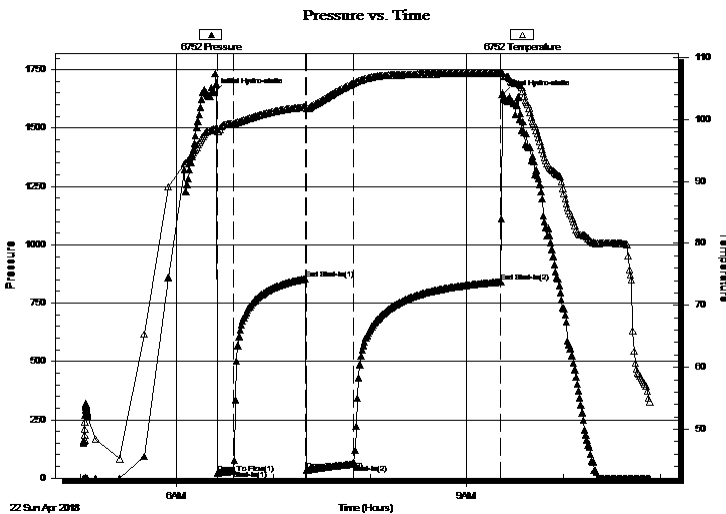
2018.04.22 @ 06:23:02

Time Off Btm:

2018.04.22 @ 09:21:47

TEST COMMENT: IF 10 min Light surge at open, then dead
 ISI 45 min No blow back
 FF 30 min Light surge at open then dead
 FSI 90 min No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1650.62	98.43	Initial Hydro-static
2	20.70	98.11	Open To Flow (1)
12	31.73	99.28	Shut-In(1)
57	853.92	101.96	End Shut-In(1)
58	34.99	101.75	Open To Flow (2)
87	60.93	105.83	Shut-In(2)
178	840.88	107.48	End Shut-In(2)
179	1644.33	107.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
65.00	MW Mud 25% Water 75%	0.91

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Cholla Production LLC

4-16s-19w Rush,KS

10390 Bradford Rd

Oelkers #1-14

Suite 201

Job Ticket: 63480

DST#: 3

Littleton CO 80127

ATTN: Clayton Erickson

Test Start: 2018.04.22 @ 05:02:00

Tool Information

Drill Pipe:	Length: 3457.00 ft	Diameter: 3.80 inches	Volume: 48.49 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: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 52000.00 lb
			<u>Total Volume: 48.49 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3462.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	74.26 ft			
Tool Length:	105.26 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

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

Shut-In Tool	5.00			3436.00	
Sampler	3.00			3439.00	
Hydraulic tool	5.00			3444.00	
Jars	6.00			3450.00	
Safety Joint	2.00			3452.00	
Top Packer	5.00			3457.00	
Packer	5.00			3462.00	31.00 Bottom Of Top Packer
Recorder	1.00	6755	Inside	3463.00	
Recorder	1.00	6752	Outside	3464.00	
Anchor	36.00			3500.00	
Change Over Sub	1.00			3501.00	
Drill Pipe	31.26			3532.26	
Change Over Sub	1.00			3533.26	
Bullnose	3.00			3536.26	74.26 Anchor Tool

Total Tool Length: 105.26



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Cholla Production LLC

4-16s-19w Rush,KS

10390 Bradford Rd
Suite 201
Littleton CO 80127
ATTN: Clayton Erickson

Oelkers #1-14

Job Ticket: 63480

DST#: 3

Test Start: 2018.04.22 @ 05:02:00

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:

21000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbf

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5900.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
65.00	MW Mud 25% Water 75%	0.912

Total Length: 65.00 ft Total Volume: 0.912 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

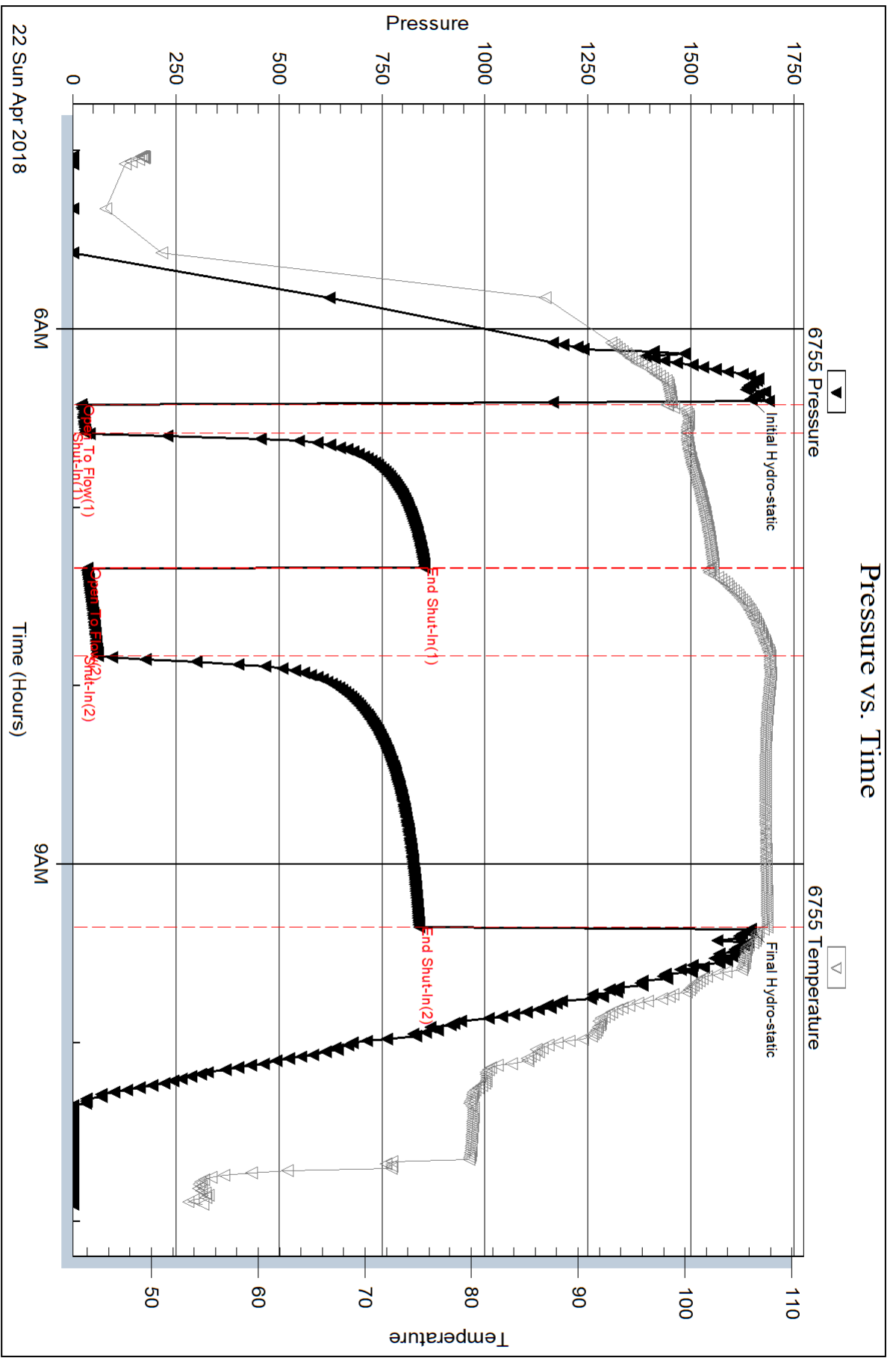
Laboratory Name:

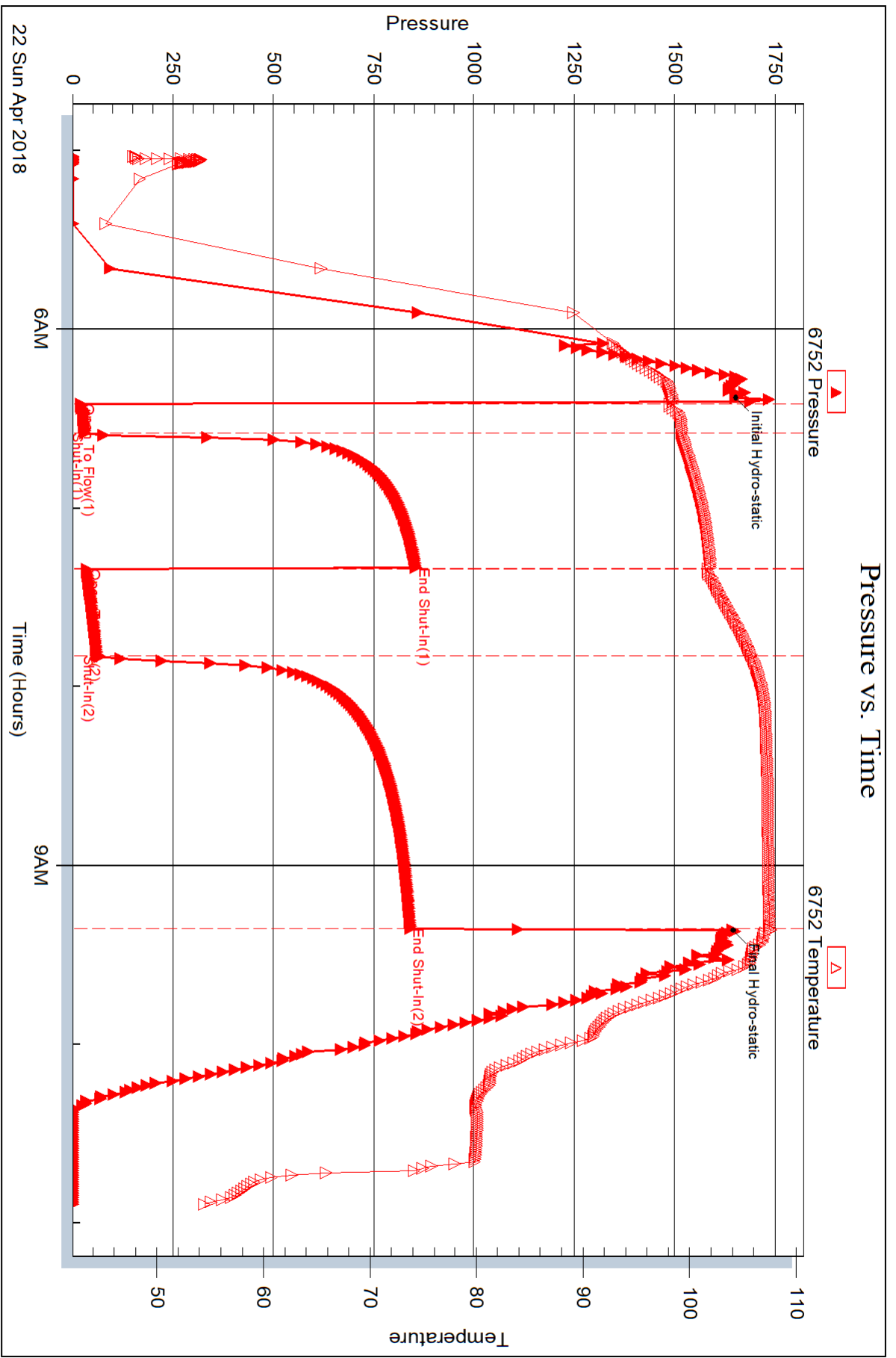
Laboratory Location:

Recovery Comments: Recovery Resistivity .348ohms @ 62 deg

Sampler Recovery

500ml Mud/3000ml Water







DRILL STEM TEST REPORT

Prepared For: **Cholla Production LLC**

10390 Bradford Rd
Suite 201
Littleton CO 80127

ATTN: Clayton Erickson

Oelkers #1-14

4-16s-19w Rush,KS

Start Date: 2018.04.23 @ 00:54:00

End Date: 2018.04.23 @ 06:52:02

Job Ticket #: 63481 DST #: 4

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

Printed: 2018.04.25 @ 11:11:50



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Cholla Production LLC
 10390 Bradford Rd
 Suite 201
 Littleton CO 80127
 ATTN: Clayton Erickson

4-16s-19w Rush,KS

Oelkers #1-14

Job Ticket: 63481

DST#: 4

Test Start: 2018.04.23 @ 00:54:00

GENERAL INFORMATION:

Formation: **Pawnee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 02:24:17
 Time Test Ended: 06:52:02
 Interval: **3589.00 ft (KB) To 3645.00 ft (KB) (TVD)**
 Total Depth: 3645.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney/Cade Ger
 Unit No: 72
 Reference Elevations: 2061.00 ft (KB)
 2053.00 ft (CF)
 KB to GR/CF: 8.00 ft

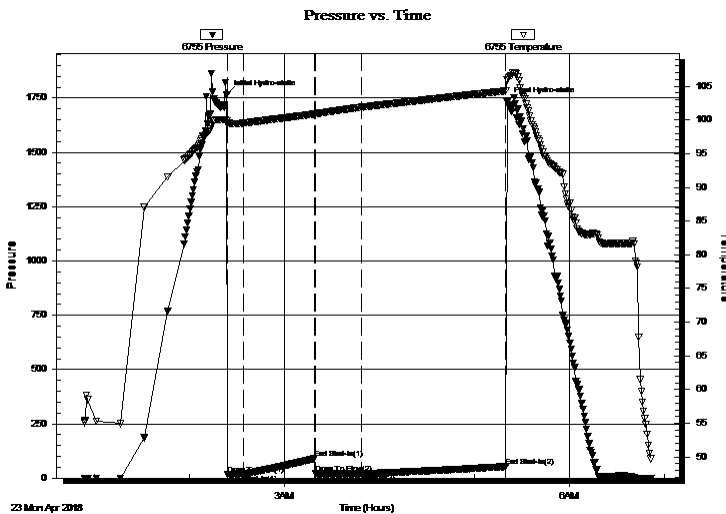
Serial #: 6755

Inside

Press@RunDepth: 19.96 psig @ 3590.00 ft (KB) Capacity: psig
 Start Date: 2018.04.23 End Date: 2018.04.23 Last Calib.: 2018.04.23
 Start Time: 00:54:01 End Time: 06:52:02 Time On Btm: 2018.04.23 @ 02:24:02
 Time Off Btm: 2018.04.23 @ 05:20:47

TEST COMMENT: IF 10 Min Weak surface blow for 3 minutes then dead
 ISI 45 Min No blow back
 FF 30 Min Dead no blow
 FSI 90 Min No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1767.79	99.90	Initial Hydro-static
1	18.37	99.24	Open To Flow (1)
11	18.85	99.53	Shut-In(1)
56	90.01	100.89	End Shut-In(1)
56	20.02	100.92	Open To Flow (2)
85	19.96	101.89	Shut-In(2)
176	53.50	104.35	End Shut-In(2)
177	1731.75	105.94	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	Mud 100%	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Cholla Production LLC
10390 Bradford Rd
Suite 201
Littleton CO 80127
ATTN: Clayton Erickson

4-16s-19w Rush,KS

Oelkers #1-14

Job Ticket: 63481

DST#: 4

Test Start: 2018.04.23 @ 00:54:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:24:17

Time Test Ended: 06:52:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney/Cade Ger

Unit No: 72

Interval: 3589.00 ft (KB) To 3645.00 ft (KB) (TVD)

Reference Elevations: 2061.00 ft (KB)

Total Depth: 3645.00 ft (KB) (TVD)

2053.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6752 Outside

Press@RunDepth: 54.44 psig @ 3591.00 ft (KB)

Capacity: psig

Start Date: 2018.04.23

End Date:

2018.04.23

Last Calib.:

2018.04.23

Start Time: 00:54:01

End Time:

06:52:02

Time On Btm:

2018.04.23 @ 02:24:02

Time Off Btm:

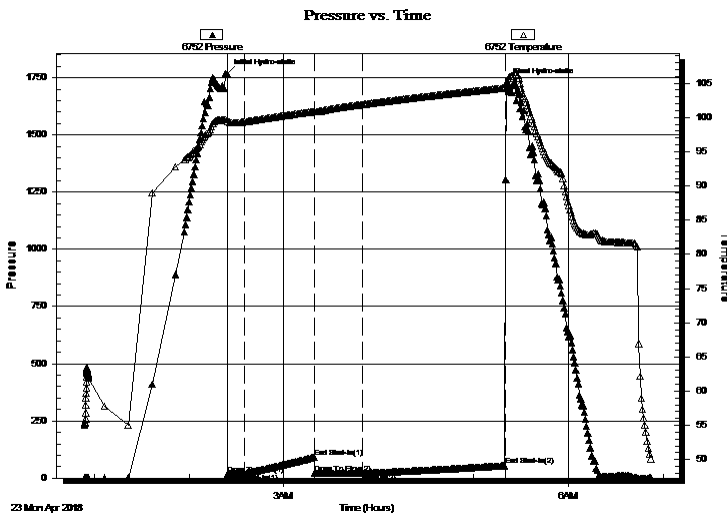
2018.04.23 @ 05:20:47

TEST COMMENT: IF 10 Min Weak surface blow for 3 minutes then dead

ISI 45 Min No blow back

FF 30 Min Dead no blow

FSI 90 Min No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1768.24	99.67	Initial Hydro-static
1	18.60	99.36	Open To Flow (1)
11	19.34	99.36	Shut-In(1)
56	92.18	100.86	End Shut-In(1)
56	21.98	100.86	Open To Flow (2)
86	20.49	101.90	Shut-In(2)
176	54.44	104.34	End Shut-In(2)
177	1727.91	105.03	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	Mud 100%	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Cholla Production LLC

4-16s-19w Rush,KS

10390 Bradford Rd

Oelkers #1-14

Suite 201

Job Ticket: 63481

DST#: 4

Littleton CO 80127

ATTN: Clayton Erickson

Test Start: 2018.04.23 @ 00:54:00

Tool Information

Drill Pipe:	Length: 3584.00 ft	Diameter: 3.80 inches	Volume: 50.27 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: 20000.00 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: 50.27 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 39000.00 lb
Depth to Top Packer:	3589.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	56.28 ft			
Tool Length:	87.28 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

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

Shut-In Tool	5.00			3563.00	
Sampler	3.00			3566.00	
Hydraulic tool	5.00			3571.00	
Jars	6.00			3577.00	
Safety Joint	2.00			3579.00	
Top Packer	5.00			3584.00	
Packer	5.00			3589.00	31.00 Bottom Of Top Packer
Recorder	1.00	6755	Inside	3590.00	
Recorder	1.00	6752	Outside	3591.00	
Anchor	18.00			3609.00	
Change Over Sub	1.00			3610.00	
Drill Pipe	31.28			3641.28	
Change Over Sub	1.00			3642.28	
Bullnose	3.00			3645.28	56.28 Anchor Tool

Total Tool Length: 87.28



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Cholla Production LLC

4-16s-19w Rush,KS

10390 Bradford Rd

Oelkers #1-14

Suite 201

Job Ticket: 63481

DST#: 4

Littleton CO 80127

ATTN: Clayton Erickson

Test Start: 2018.04.23 @ 00:54:00

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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	Mud 100%	0.014

Total Length: 1.00 ft Total Volume: 0.014 bbl

Num Fluid Samples: 0

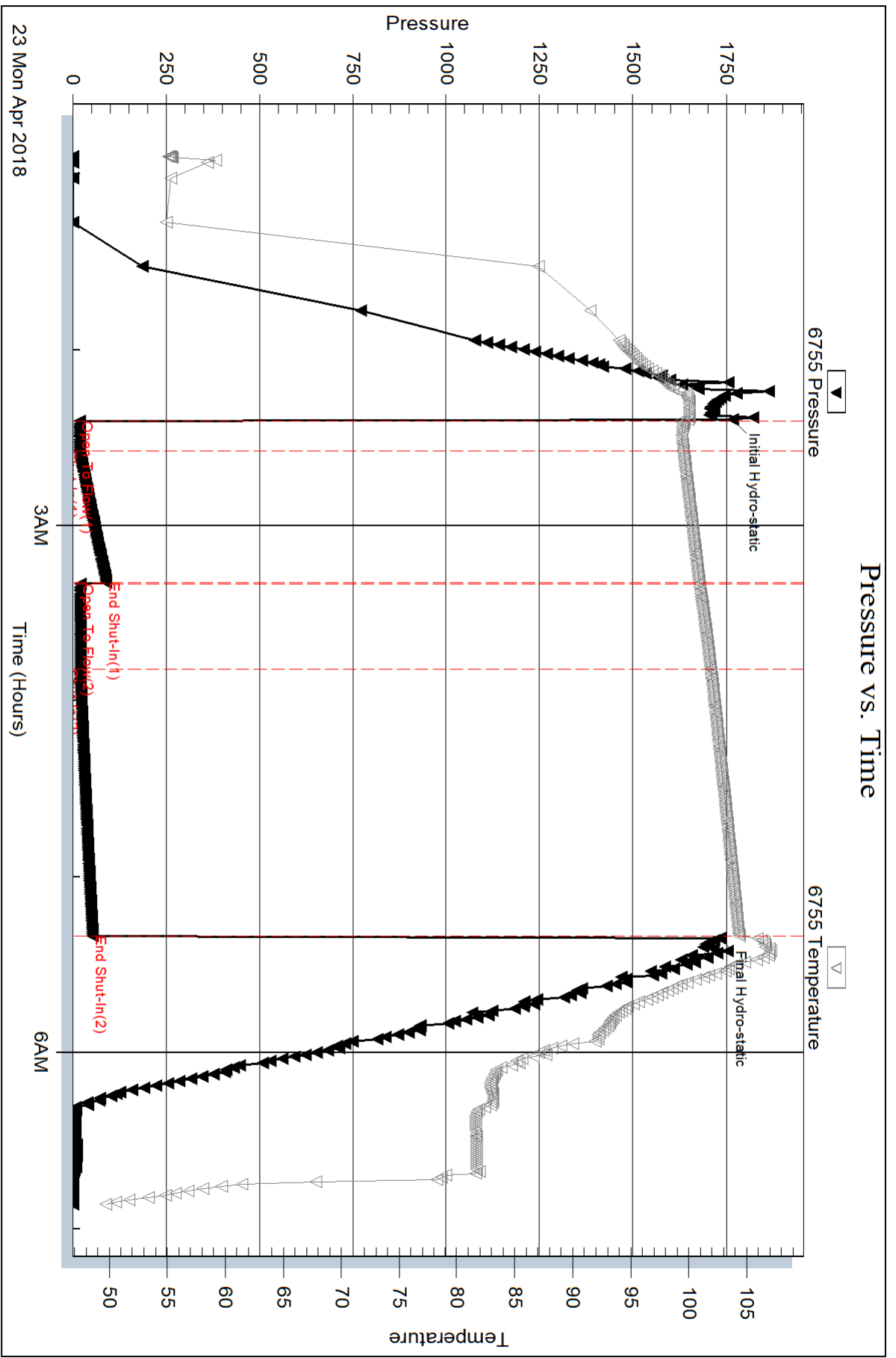
Num Gas Bombs: 0

Serial #:

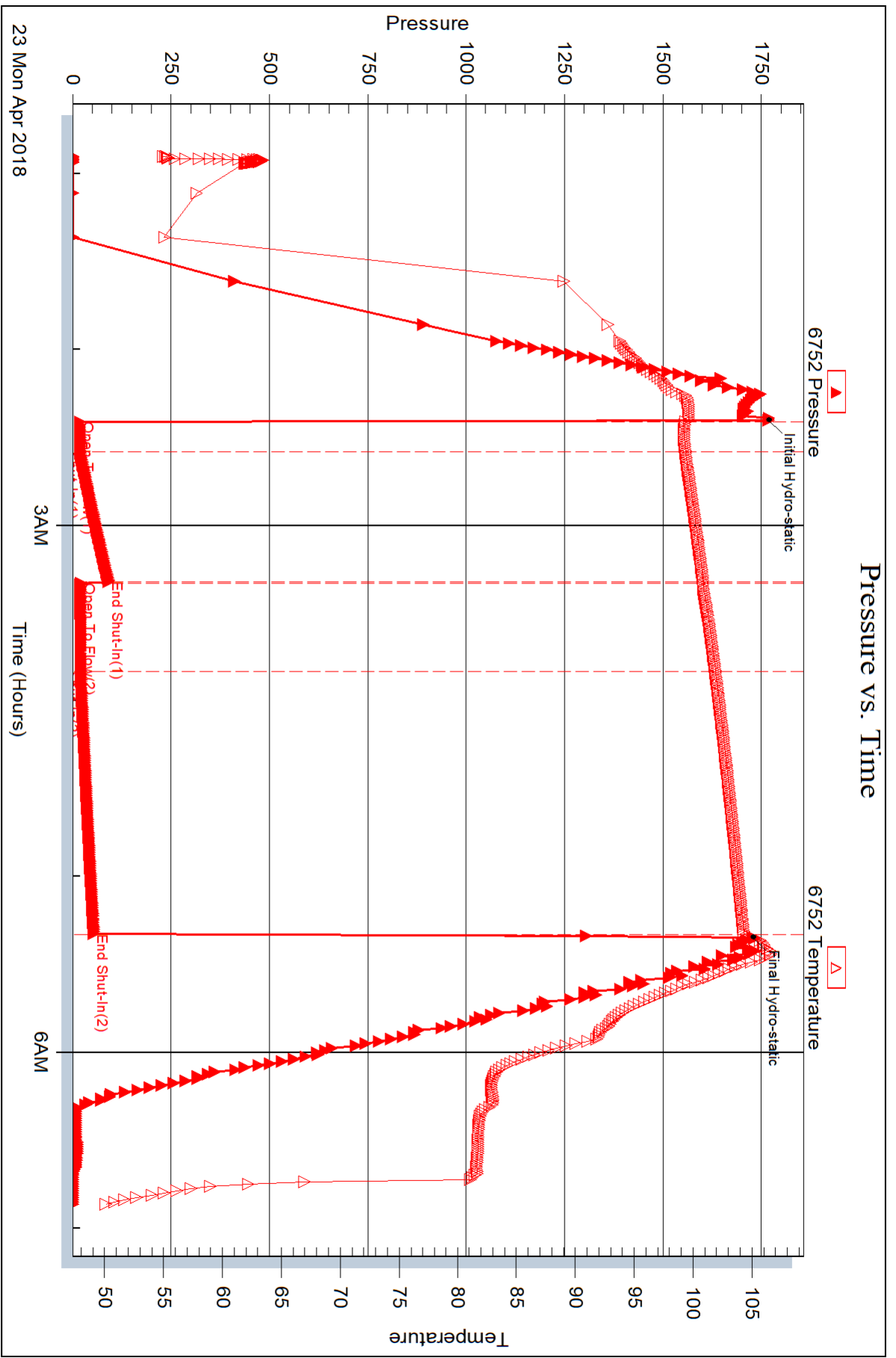
Laboratory Name:

Laboratory Location:

Recovery Comments: Sampler Fluid Recovery
3500ml Mud



23 Mon Apr 2018





DRILL STEM TEST REPORT

Prepared For: **Cholla Production LLC**

10390 Bradford Rd
Suite 201
Littleton CO 80127

ATTN: Clayton Erickson

Oelkers #1-14

4-16s-19w Rush,KS

Start Date: 2018.04.23 @ 14:59:00

End Date: 2018.04.23 @ 20:03:17

Job Ticket #: 63482 DST #: 5

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

Printed: 2018.04.25 @ 11:11:21



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Cholla Production LLC
 10390 Bradford Rd
 Suite 201
 Littleton CO 80127
 ATTN: Clayton Erickson

4-16s-19w Rush,KS

Oelkers #1-14

Job Ticket: 63482

DST#: 5

Test Start: 2018.04.23 @ 14:59:00

GENERAL INFORMATION:

Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 16:18:02
 Time Test Ended: 20:03:17

Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney/Cade Ger
 Unit No: 72

Interval: **3640.00 ft (KB) To 3660.00 ft (KB) (TVD)**
 Total Depth: 3660.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2061.00 ft (KB)
 2053.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6755

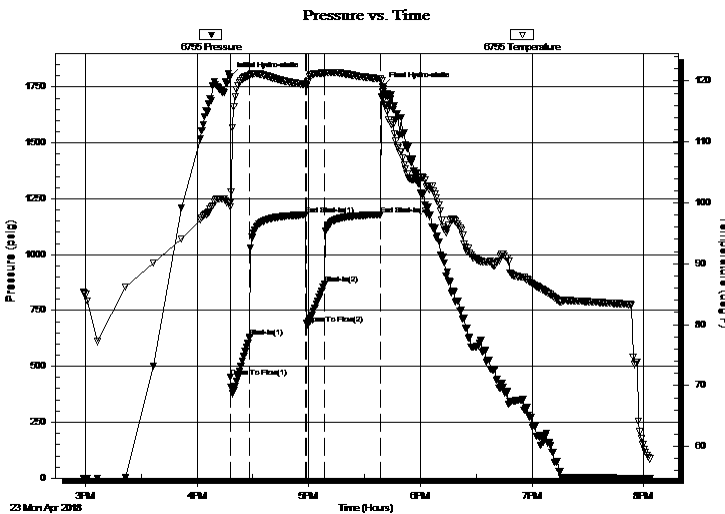
Inside

Press@RunDepth: 866.65 psig @ 3634.00 ft (KB)
 Start Date: 2018.04.23 End Date: 2018.04.23
 Start Time: 14:59:01 End Time: 20:03:17

Capacity: psig
 Last Calib.: 2018.04.23
 Time On Btm: 2018.04.23 @ 16:17:47
 Time Off Btm: 2018.04.23 @ 17:39:47

TEST COMMENT: IF 10 Minutes BOB in 1 minute Total build to 98"
 ISI 30 Minutes No blow back
 FF 10 Minutes BOB in 1 1/2 minutes Total built to 16"
 FSI 30 Mintues No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1794.76	99.99	Initial Hydro-static
1	451.18	99.34	Open To Flow (1)
11	630.43	120.95	Shut-In(1)
41	1177.47	119.37	End Shut-In(1)
41	691.52	119.13	Open To Flow (2)
51	866.65	121.32	Shut-In(2)
81	1179.09	120.30	End Shut-In(2)
82	1750.87	118.30	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
372.00	MW Mud 30% Water 70%	5.22
1426.00	SMCW Mud 2% Water 98%	20.00

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Cholla Production LLC
 10390 Bradford Rd
 Suite 201
 Littleton CO 80127
 ATTN: Clayton Erickson

4-16s-19w Rush,KS

Oelkers #1-14

Job Ticket: 63482

DST#: 5

Test Start: 2018.04.23 @ 14:59:00

GENERAL INFORMATION:

Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 16:18:02
 Time Test Ended: 20:03:17

Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney/Cade Ger
 Unit No: 72

Interval: **3640.00 ft (KB) To 3660.00 ft (KB) (TVD)**
 Total Depth: 3660.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2061.00 ft (KB)
 2053.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6752

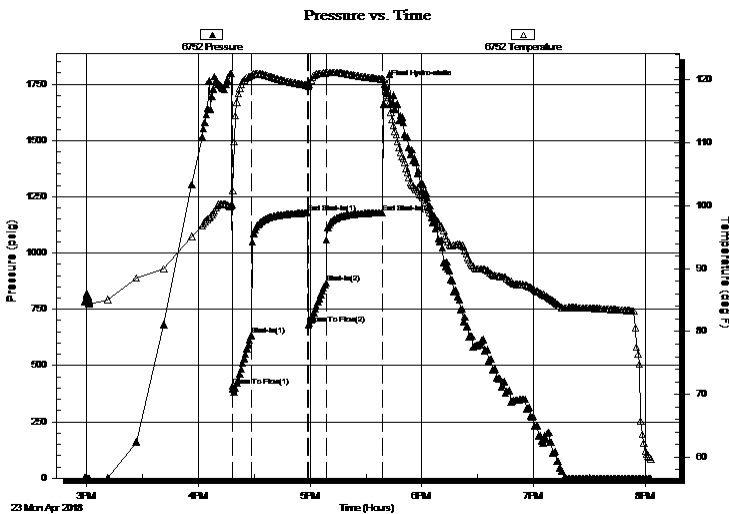
Outside

Press@RunDepth: 1179.50 psig @ 3635.00 ft (KB)
 Start Date: 2018.04.23 End Date: 2018.04.23
 Start Time: 14:59:01 End Time: 20:03:02

Capacity: psig
 Last Calib.: 2018.04.23
 Time On Btm:
 Time Off Btm: 2018.04.23 @ 17:40:02

TEST COMMENT: IF 10 Minutes BOB in 1 minute Total build to 98"
 ISI 30 Minutes No blow back
 FF 10 Minutes BOB in 1 1/2 minutes Total built to 16"
 FSI 30 Mintues No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	408.03	100.14	Open To Flow (1)
11	636.19	120.73	Shut-In(1)
41	1177.90	119.18	End Shut-In(1)
41	682.66	119.03	Open To Flow (2)
51	866.70	121.13	Shut-In(2)
81	1179.50	120.13	End Shut-In(2)
82	1750.07	119.26	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
372.00	MW Mud 30% Water 70%	5.22
1426.00	SMCW Mud 2% Water 98%	20.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Cholla Production LLC

4-16s-19w Rush,KS

10390 Bradford Rd

Oelkers #1-14

Suite 201

Job Ticket: 63482

DST#: 5

Littleton CO 80127

ATTN: Clayton Erickson

Test Start: 2018.04.23 @ 14:59:00

Tool Information

Drill Pipe:	Length: 3613.00 ft	Diameter: 3.80 inches	Volume: 50.68 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: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 53000.00 lb
		Total Volume: 50.68 bbl		Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	3640.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	18.00 ft			
Tool Length:	50.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3613.00	
Sampler	3.00			3616.00	
Hydraulic tool	5.00			3621.00	
Jars	5.00			3626.00	
Safety Joint	2.00			3628.00	
Top Packer	5.00			3633.00	
Recorder	1.00	6755	Inside	3634.00	
Recorder	1.00	6752	Outside	3635.00	
Packer	5.00			3640.00	32.00 Bottom Of Top Packer
Anchor	15.00			3655.00	
Bullnose	3.00			3658.00	18.00 Anchor Tool

Total Tool Length: 50.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Cholla Production LLC

4-16s-19w Rush,KS

10390 Bradford Rd

Oelkers #1-14

Suite 201

Job Ticket: 63482

DST#: 5

Littleton CO 80127

Test Start: 2018.04.23 @ 14:59:00

ATTN: Clayton Erickson

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:

17000 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.40 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 9400.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
372.00	MW Mud 30% Water 70%	5.218
1426.00	SMCW Mud 2% Water 98%	20.003

Total Length: 1798.00 ft Total Volume: 25.221 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

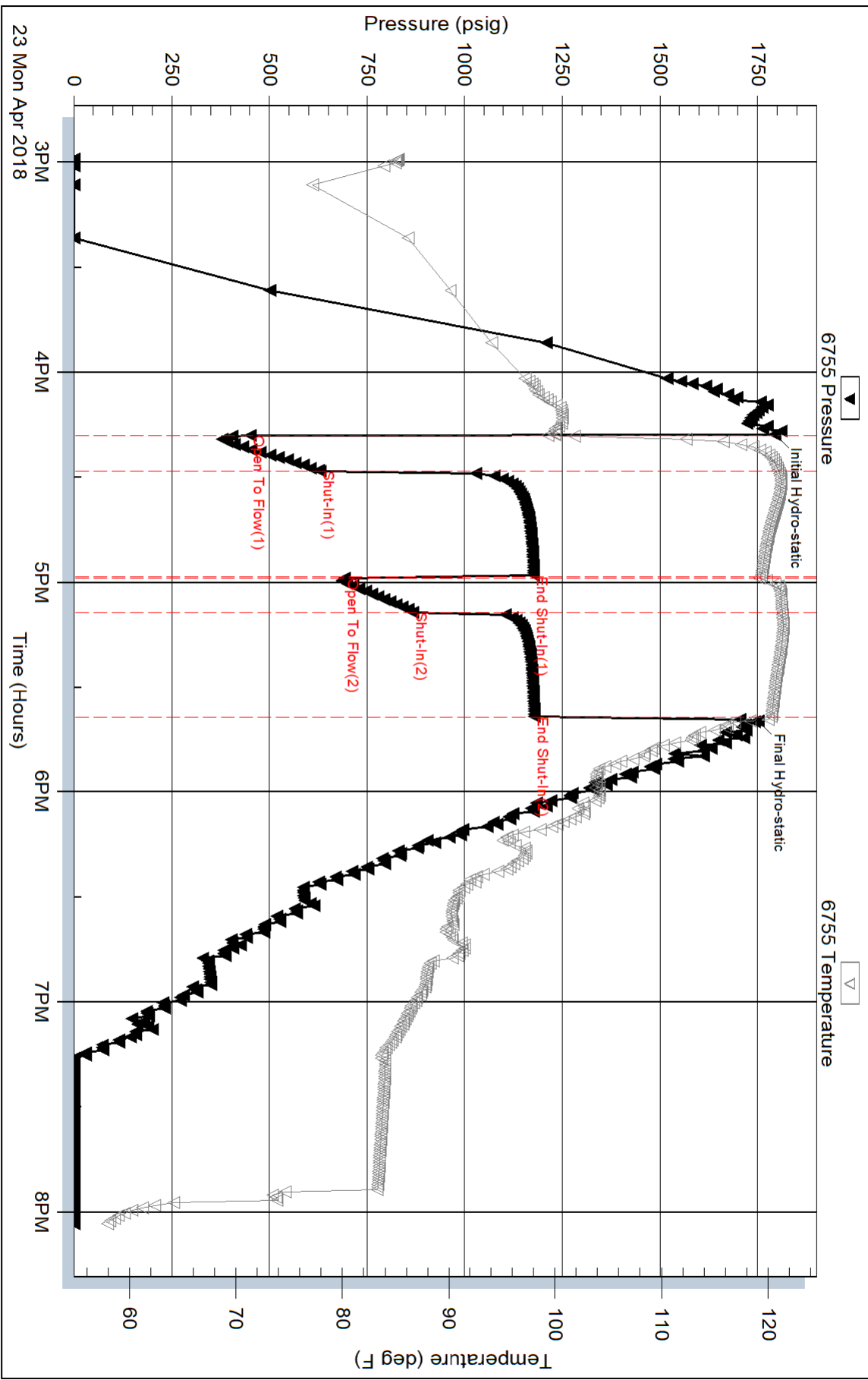
Recovery Comments: Recovery Resistivity .426 @ 66 deg

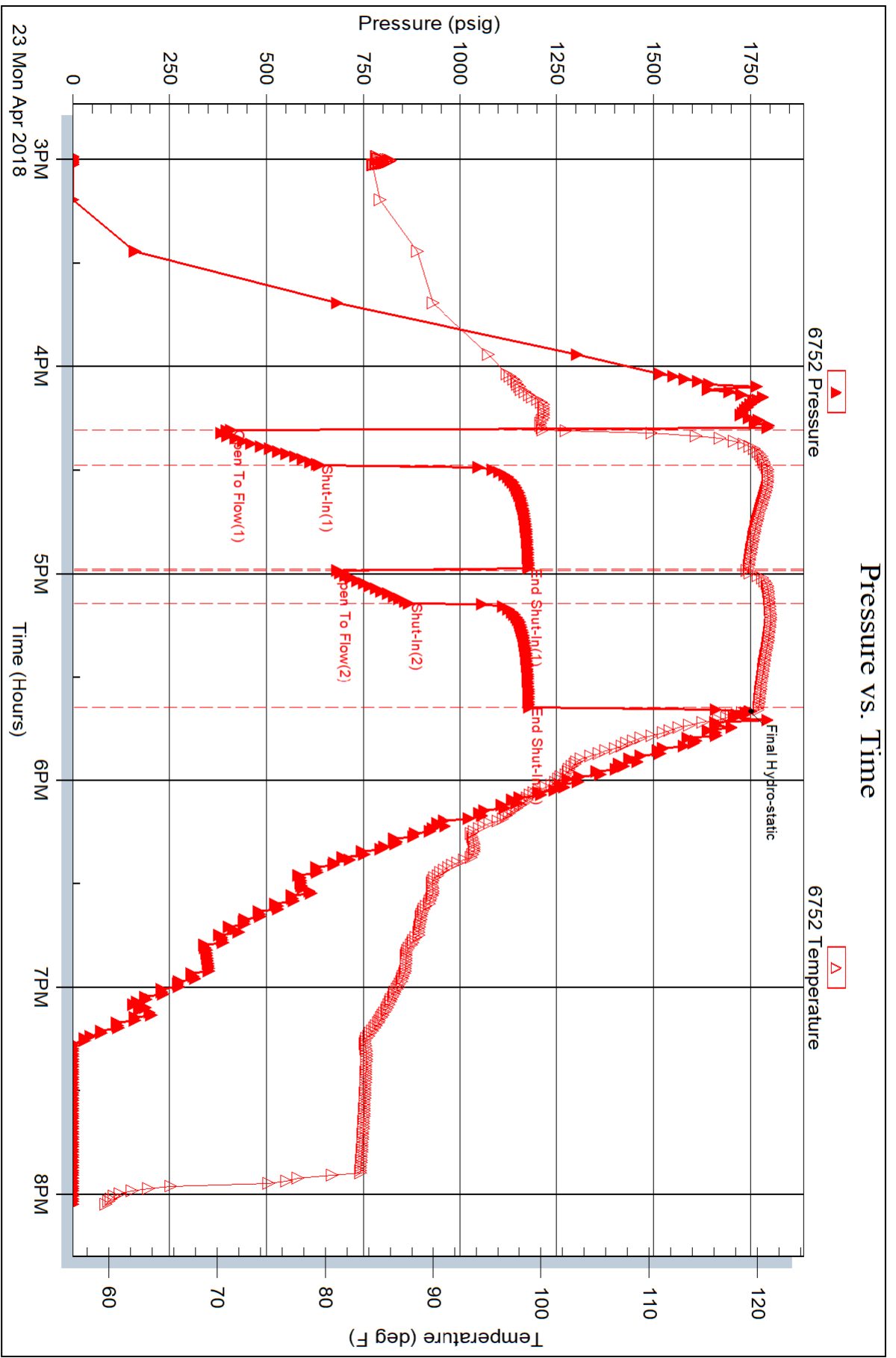
Sampler Recovery 3500 ml Water

Resistivity .390 ohms @ 71deg

Chlorides 17,000

Pressure vs. Time







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63478

Well Name & No. Oelkers #1-4 Test No. 1 Date 20 Apr 18
 Company Cholla Production LLC Elevation 2058 KB 2053 GL
 Address 10390 Bradford Rd Suite 201 Littleton Co 80127
 Co. Rep/Geo. Clayton Erickson Rig Southwind Rig 3
 Location: Sec. 4 Twp 16S Rge. 19W Co. Rush State KS

Interval Tested 3330-3400 Zone Tested Lansing/Kansas City zones C&D
 Anchor Length 70 Drill Pipe Run _____ Mud Wt. 8.9
 Top Packer Depth 3325 Drill Collars Run _____ Vls 5-4
 Bottom Packer Depth 3330 Wt. Pipe Run _____ WL 6.4
 Total Depth 3400 Chlorides 5400 ppm System LCM 2#

Blow Description I.F. Blow built to 2 3/4 inches
I.S.I No blow back
F.F. Blow built to 4 3/4 inches
F.S.I No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>90</u>	<u>Watery mud</u>			<u>35</u>	<u>65</u>
____	____	____	____	____	____
____	____	____	____	____	____
____	____	____	____	____	____
____	____	____	____	____	____

Rec Total 90 BHT 104 Gravity _____ API RW .638@ 79 °F Chlorides 17,000 ppm
 (A) Initial Hydrostatic 1572 Test 1050 T-On Location 2:43 pm
 (B) First Initial Flow 17 Jars 250 T-Started 3:57 pm
 (C) First Final Flow 31 Safety Joint 75 T-Open 5:26 pm
 (D) Initial Shut-In 811 Circ Sub _____ T-Pulled 9:21 pm
 (E) Second Initial Flow 31 Hourly Standby _____ T-Out 11:06 pm
 (F) Second Final Flow 58 Mileage 42 Comments _____
 (G) Final Shut-In 805 Sampler 250 _____
 (H) Final Hydrostatic 1567 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____

Initial Open 10 Extra Recorder _____ Sub Total _____
 Initial Shut-In 45 Day Standby _____ Total 1667
 Final Flow 45 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 135 Sub Total 1667

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING, INC.

1515 Commerce Parkway • Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. 63478 Date 20 Apr 18
 Company Name Cholla Production LLC
 Lease Oelkers #1-4 Test No. 1
 County Rush Sec. 4 Twp. 16S Rng. 19W

SAMPLER RECOVERY

Gas _____ ML
 Oil _____ ML
 Mud 3000 ML
 Water 500 ML
 Other _____ ML
 Pressure 190 psi ML
 Total 3500 ML

PIT MUD ANALYSIS

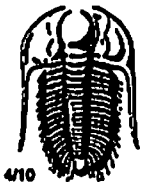
Chlorides 5400 ppm.
 Resistivity _____ ohms @ _____ F
 Viscosity 54
 Mud Weight 8.9
 Filtrate 6.4
 Other _____

SAMPLER ANALYSIS

Resistivity .499 ohms @ 49 F
 Chlorides 19,000 ppm.
 Gravity _____ corrected @60F

PIPE RECOVERY

TOP
 Resistivity _____ ohms @ _____ F
 Chlorides _____ ppm.
MIDDLE
 Resistivity _____ ohms @ _____ F
 Chlorides _____ ppm.
BOTTOM
 Resistivity _____ ohms @ _____ F
 Chlorides _____ ppm.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63479

Well Name & No. Oelkers #1-4 Test No. 2 Date 21 Apr 18
 Company Cholla Production LLC Elevation 2058 KB 2053 GL
 Address 10390 Bradford Rd Suite 201 Littleton CO 80127
 Co. Rep / Geo. Clayton Erickson Rig Southwind Rig 3
 Location: Sec. 4 Twp 16S Rge. 19W Co. R45h State K5

Interval Tested 3395-3430 Zone Tested Lansing/Kansas City zones E&F
 Anchor Length 35 Drill Pipe Run 3391 Mud Wt. 8.9
 Top Packer Depth 3390 Drill Collars Run - Vls 54
 Bottom Packer Depth 3395 Wt. Pipe Run - WL 6.4
 Total Depth 3430 Chlorides 5400 ppm System LCM 2#

Blow Description IF Blow built to 8 inches
ISE No blow back
FF Blow built to BOB in 35 minutes / Total build 13 1/2 inches
FSE No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>Emulsified oil cut Muddy Water</u>	<u>10</u>	<u>45</u>	<u>45</u>	<u>45</u>
<u>45</u>	<u>oil cut Muddy Water</u>	<u>2</u>	<u>88</u>	<u>10</u>	<u>10</u>
<u>2</u>	<u>Clean Oil</u>	<u>100</u>			

Rec Total 107 BHT 105 Gravity 1050 API RW 483 @ 50 °F Chlorides 19000 ppm
 (A) Initial Hydrostatic 1627 Test 1050 T-On Location 4:45 am
 (B) First Initial Flow 18 Jars 250 T-Started 5:45 am
 (C) First Final Flow 27 Safety Joint 75 T-Open 7:18 am
 (D) Initial Shut-In 748 Circ Sub _____ T-Pulled 11:13 am
 (E) Second Initial Flow 31 Hourly Standby _____ T-Out 12:57 pm
 (F) Second Final Flow 65 Mileage 42 Comments _____
 (G) Final Shut-In 756 Sampler 250 _____
 (H) Final Hydrostatic 1573 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open 10 Extra Packer _____ Extra Copies _____
 Initial Shut-In 45 Extra Recorder _____ Sub Total 0
 Final Flow 45 Day Standby _____ Total 1667
 Final Shut-In 135 Accessibility _____ MP/DST Disc't _____
 Sub Total 1667

Approved By [Signature] Our Representative [Signature]
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FLUID SAMPLER DATA

Ticket No. 63479 Date 21 Apr 18

Company Name Cholla Production LLC

Lease Oelkers #1-4 Test No. 2

County Rush Sec. 4 Twp. 16S Rng. 19W

SAMPLER RECOVERY

Gas _____ ML

Oil 250 ML

Mud _____ ML

Water 3250 ML

Other _____ ML

Pressure 190 ML

Total 3500 ML

PIT MUD ANALYSIS

Chlorides 5400 ppm.

Resistivity _____ ohms @ _____ F

Viscosity 54

Mud Weight 8.9

Filtrate 6.4

Other _____

SAMPLER ANALYSIS

Resistivity _____ ohms @ _____ F

Chlorides _____ ppm.

Gravity _____ corrected @60F

PIPE RECOVERY

TOP

Resistivity _____ ohms @ _____ F

Chlorides _____ ppm.

MIDDLE

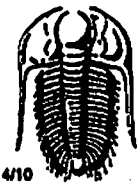
Resistivity _____ ohms @ _____ F

Chlorides _____ ppm.

BOTTOM

Resistivity _____ ohms @ _____ F

Chlorides _____ ppm.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63480

Well Name & No. Oelkers #1-4 Test No. 3 Date 4-27-18
 Company Cholla Productions LLC Elevation 2055 KB 2061 GL
 Address 10390 Bradford R. Suite 201 Littleton CO 80127
 Co. Rep / Geo. Clayton Erickson Rig Southwind Rig 3
 Location: Sec. 14 Twp 16^s Rge. 19^w Co. Rush State Ks

Interval Tested 3467-3536 Zone Tested LKC H-E-J
 Anchor Length 74' Drill Pipe Run 3457 Mud Wt. 9.0
 Top Packer Depth 3457 Drill Collars Run — Vis 53
 Bottom Packer Depth ~~3536~~ 3467 Wt. Pipe Run — WL 16.4
 Total Depth 3536 Chlorides 5900 ppm System LCM 2/65

Blow Description FE light surge at open then dead
ISE - No blow back

FE - No blow back light surge at open then dead
EST - light NO blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>65'</u>	<u>Muddy Water</u>			<u>75</u>	<u>25</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 65 BHT 107 Gravity — API RW .348 @ 62 °F Chlorides 21600 ppm

- (A) Initial Hydrostatic 1645
- (B) First Initial Flow 20
- (C) First Final Flow 31
- (D) Initial Shut-In 853
- (E) Second Initial Flow 35
- (F) Second Final Flow 60
- (G) Final Shut-In 840
- (H) Final Hydrostatic 1645

- Test 1050
- Jars 250
- Safety Joint 75
- Circ Sub
- Hourly Standby
- Mileage 42
- Sampler 250
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1667

T-On Location 4:27 am
 T-Started 5:02 am
 T-Open 6:24 am
 T-Pulled 8:19 am
 T-Out 10:54 am

Comments _____
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1667
 MP/DST Disc't _____

Initial Open 10
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 90

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TRILOBITE TESTING, INC.

1515 Commerce Parkway • Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. 63480 Date 4-27-18
 Company Name Cholle Productions LLC.
 Lease Oellers #1-4 Test No. 3
 County Rush Sec. 4 Twp. 16^s Rng. 19^w

SAMPLER RECOVERY

Gas _____ ML
 Oil _____ ML
 Mud 500 ML
 Water 3000 ML
 Other _____ ML
 Pressure 140 ML
 Total _____ ML

PIT MUD ANALYSIS

Chlorides 5900 ppm.
 Resistivity — ohms @ _____ F
 Viscosity 53
 Mud Weight 9.0
 Filtrate 6.4
 Other _____

SAMPLER ANALYSIS

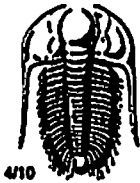
Resistivity .348 ohms @ 67 F
 Chlorides 21000 ppm.
 Gravity _____ corrected @60F

PIPE RECOVERY

TOP
 Resistivity _____ ohms @ _____ F
 Chlorides _____ ppm.

MIDDLE
 Resistivity _____ ohms @ _____ F
 Chlorides _____ ppm.

BOTTOM
 Resistivity _____ ohms @ _____ F
 Chlorides _____ ppm.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63481

Well Name & No. Oellers #1-4 Test No. 4 Date 4-23-18
 Company Cholla Productions LLC Elevation 2058 KB 2058 GL
 Address 10390 Bradford Rd Suite 201 Littleton CO 80127
 Co. Rep / Geo. Clayton Erickson Rig Southwind Rig 3
 Location: Sec. 4 Twp 16^s Rge. 19^w Co. Rush State Ks

Interval Tested 3589-3645 Zone Tested Paucal
 Anchor Length 56' Drill Pipe Run 3584 Mud Wt. 9.0
 Top Packer Depth 3584 Drill Collars Run — Vis 60
 Bottom Packer Depth 3589 Wt. Pipe Run — WL 7.2
 Total Depth 3645 Chlorides 5500 ppm System LCM 2

Blow Description FF - Light surface blow. Died in 7 min
EST - No blow back
FF - Dead no blow
FSE - No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>Mud</u>			<u>100</u>	

Rec Total 1 BHT 104 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1767 Test 1050 T-On Location 12:16am
 (B) First Initial Flow 18 Jars 250 T-Started 12:54am
 (C) First Final Flow 19 Safety Joint 75 T-Open 2:24am
 (D) Initial Shut-In 90 Circ Sub _____ T-Pulled 5:19am
 (E) Second Initial Flow 20 Hourly Standby _____ T-Out 6:54am
 (F) Second Final Flow 19 Mileage 42 Comments _____
 (G) Final Shut-In 53 Sampler 250 _____
 (H) Final Hydrostatic 1731 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1667
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1667

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING, INC.

1515 Commerce Parkway • Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. 63481 Date 23 Apr 18

Company Name Cholla Productions LLC

Lease Oelkers #1-4 Test No. 4

County Rush Sec. 4 Twp. 16S Rng. 19W

SAMPLER RECOVERY

Gas _____ ML
 Oil _____ ML
 Mud 3500 ML
 Water _____ ML
 Other _____ ML
 Pressure _____ ML
 Total 3500 ML

PIT MUD ANALYSIS

Chlorides 5500 ppm.
 Resistivity _____ ohms @ _____ F
 Viscosity 60
 Mud Weight 9.0
 Filtrate 7.2
 Other _____

SAMPLER ANALYSIS

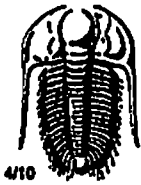
Resistivity _____ ohms @ _____ F
 Chlorides _____ ppm.
 Gravity _____ corrected @60F

PIPE RECOVERY

TOP
 Resistivity _____ ohms @ _____ F
 Chlorides _____ ppm.

MIDDLE
 Resistivity _____ ohms @ _____ F
 Chlorides _____ ppm.

BOTTOM
 Resistivity _____ ohms @ _____ F
 Chlorides _____ ppm.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63482

Well Name & No. Oelkers #1-4 Test No. 5 Date 4-23-18
 Company Cholla Productions LLC Elevation 2061 KB 2053 GL
 Address 10390 Bradford Rd Suite 201 Littleton CO 80127
 Co. Rep / Geo. Clayton Erickson Rig Southwind Rig 3
 Location: Sec. 4 Twp 16^s Rge. 19^w Co. Rush State KS

Interval Tested 3640 - 3660 Zone Tested Cherokee
 Anchor Length 20' Drill Pipe Run 3613 Mud Wt. 9.0
 Top Packer Depth 3635 Drill Collars Run — Vis 59
 Bottom Packer Depth 3640 Wt. Pipe Run — WL 7.4
 Total Depth 3660 Chlorides 9400 ppm System LCM 2
 Blow Description IF- BOB in 1 minute / Total build to 98 inches H2O
ISI - No blow back
FF- BOB in 1 1/2 minutes / Total build to 16 inches
FSI - No blow back

Rec	Feet of	%gas	%oil	%water	%mud
372	Muddy Water			70%	30%
1426	Mud cut water			98%	2%

Rec Total 1798 BHT 120 Gravity _____ API RW .42 @ 66 °F Chlorides 17000 ppm

(A) Initial Hydrostatic <u>1794</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>2:32 pm</u>
(B) First Initial Flow <u>451</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>2:59 pm</u>
(C) First Final Flow <u>630</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>4:17 pm</u>
(D) Initial Shut-In <u>1177</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>5:37 pm</u>
(E) Second Initial Flow <u>691</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>8:04 pm</u>
(F) Second Final Flow <u>866</u>	<input checked="" type="checkbox"/> Mileage <u>42</u>	Comments _____
(G) Final Shut-In <u>1179</u>	<input checked="" type="checkbox"/> Sampler <u>250</u>	_____
(H) Final Hydrostatic <u>1750</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>10</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>10</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby _____	Total <u>1667</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1667</u>	

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING, INC.

1515 Commerce Parkway • Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. 63482 Date 23 APR 18
 Company Name Cholla Productions LLC
 Lease Oelkers #1-4 Test No. 5
 County Rush Sec. 4 Twp. 16S Rng. 19W

SAMPLER RECOVERY

Gas _____ ML
 Oil _____ ML
 Mud _____ ML
 Water 3500 ML
 Other _____ ML
 Pressure 150 ML
 Total 3500 ML

PIT MUD ANALYSIS

Chlorides 9400 ppm.
 Resistivity _____ ohms @ _____ F
 Viscosity 59
 Mud Weight 9.0
 Filtrate 7.4
 Other _____

SAMPLER ANALYSIS

Resistivity ,390 ohms @ 71 F
 Chlorides 17,000 ppm.
 Gravity _____ corrected @60F

PIPE RECOVERY

TOP
 Resistivity _____ ohms @ _____ F
 Chlorides _____ ppm.

MIDDLE
 Resistivity _____ ohms @ _____ F
 Chlorides _____ ppm.

BOTTOM
 Resistivity _____ ohms @ _____ F
 Chlorides _____ ppm.

