

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

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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BASICSM
ENERGY SERVICES
PRESSURE PUMPING & WIRELINE

10244 NE Hwy. 61
P.O. Box 8613
Pratt, Kansas 67124
Phone 620-672-1201

FIELD SERVICE TICKET
1718 14853 A

DATE _____ TICKET NO. _____

DATE OF JOB: 12-16-16		DISTRICT: Pratt		NEW WELL <input checked="" type="checkbox"/> OLD WELL <input type="checkbox"/>		PROD <input type="checkbox"/> INJ <input type="checkbox"/> WDW <input type="checkbox"/>		CUSTOMER ORDER NO.:			
CUSTOMER: Deutsch oil company				LEASE: CURTIS				WELL NO. 2-13			
ADDRESS:				COUNTY: Pratt				STATE: KS			
CITY:				STATE:				SERVICE CREW: MATTAL, FRANKLIN, ADAMS			
AUTHORIZED BY:				JOB TYPE: Z 42 8 1/2 sq. ft.							
EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQUIPMENT#	HRS	TRUCK CALLED: 12-15-16		DATE	AM	TIME	
19843	x 1					ARRIVED AT JOB			PM	2:45	
						START OPERATION			AM	11:58	
19862	x 0.5					FINISH OPERATION		12-16-16	AM	12:42	
						RELEASED			AM	1:30	
						MILES FROM STATION TO WELL				25	

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).

The undersigned is authorized to execute this contract as an agent of the customer. As such, the undersigned agrees and acknowledges that this contract for services, materials, products, and/or supplies includes all of and only those terms and conditions appearing on the front and back of this document. No additional or substitute terms and/or conditions shall become a part of this contract without the written consent of an officer of Basic Energy Services LP.

SIGNED: *[Signature]*
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	\$ AMOUNT
CP106	A serve linc	SK	200		2,600 00
CP100C	COMMON CMT	SK	200		3,200 00
CC102	cellulose	lb	100		370 00
CC109	calcium chloride	lb	1086		1140 30
CC200	CMT gel	lb	376		94 00
CF153	WOOD - CMT plug 8 1/2	EA	1		160 00
E100	C.V. miles	mi	25		112 50
E101	heavy eq. mile	mi	50		375 00
E113	Prob. bulk del.	mi	453		1131 25
CC200	depth charge 0-500'	44'	1		1000 00
CC240	blend & mix	SK	400		560 00
CE504	plug cost	500'	1		250 00
S003	SMP-VIOL	mi	1		175 00
SUB TOTAL					11,168 05

CHEMICAL / ACID DATA:			

SERVICE & EQUIPMENT	%TAX ON \$	
MATERIALS	%TAX ON \$	
TOTAL		149 6,142 43

SERVICE REPRESENTATIVE: Mike Mattal

THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY: *[Signature]*
(WELL OWNER OPERATOR CONTRACTOR OR AGENT)

FIELD SERVICE ORDER NO.

BASICSM
ENERGY SERVICES
PRESSURE PUMPING & WIRELINE

10244 NE Hwy. 61
P.O. Box 8613
Pratt, Kansas 67124
Phone 620-672-1201

FIELD SERVICE TICKET
1718 14853 A

DATE _____ TICKET NO. _____

DATE OF JOB: 12-16-16		DISTRICT: Pratt		NEW WELL <input checked="" type="checkbox"/> OLD WELL <input type="checkbox"/>		PROD <input type="checkbox"/> INJ <input type="checkbox"/> WDW <input type="checkbox"/>		CUSTOMER ORDER NO.:		
CUSTOMER: Deutsch Oil Company				LEASE: CURTIS				WELL NO. 2-13		
ADDRESS:				COUNTY: Pratt		STATE: KS				
CITY:				STATE:		SERVICE CREW: MATTAL, FRANKLIN, ADAMS				
AUTHORIZED BY:				JOB TYPE: 2 42 8 8 8 8 8 8 8 8						
EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQUIPMENT#	HRS	TRUCK CALLED: 12-15-16		DATE	AM/PM	TIME
19843	x 1					ARRIVED AT JOB			AM/PM	2:45
						START OPERATION			AM/PM	11:58
19862	x 0.5					FINISH OPERATION		12-16-16	AM/PM	12:42
						RELEASED			AM/PM	1:30
						MILES FROM STATION TO WELL				25

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).

The undersigned is authorized to execute this contract as an agent of the customer. As such, the undersigned agrees and acknowledges that this contract for services, materials, products, and/or supplies includes all of and only those terms and conditions appearing on the front and back of this document. No additional or substitute terms and/or conditions shall become a part of this contract without the written consent of an officer of Basic Energy Services LP.

SIGNED: *[Signature]*
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	\$ AMOUNT
CP106	A Serve 11c	SK	200		2,600 00
CP100C	COMMON CMT	SK	200		3,200 00
CC102	cellulose	lb	370		370 00
CC109	calcium chloride	lb	1086		1140 30
CC200	CMT gel	lb	376		94 00
CF153	WOOD - CMT plug 8 1/2	EA	1		160 00
E100	C.V. miles	mi	25		112 50
E101	heavy eq. miles	mi	50		375 00
E113	Prob. bulk del.	mi	453		1131 25
CC200	depth charge 0-500'	44'	1		1000 00
CC240	blend & mix	SK	400		560 00
CE504	plug cost	500'	1		250 00
S003	SMP-VIOL	mi	1		175 00
SUB TOTAL					11,168 05

CHEMICAL / ACID DATA:			

SERVICE & EQUIPMENT	%TAX ON \$	
MATERIALS	%TAX ON \$	
TOTAL		149 6,142 43

SERVICE REPRESENTATIVE: Mike Mattal

THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY: *[Signature]*
(WELL OWNER OPERATOR CONTRACTOR OR AGENT)

FIELD SERVICE ORDER NO.



DRILL STEM TEST REPORT

Prepared For: **Deutsch Oil Co**

8100 E 22nd St N Bldg 600
Wichita, KS 67226

ATTN: Aaron Young

Curtis #2-15

15-26S-15W Pratt,KS

Start Date: 2017.01.03 @ 15:05:30

End Date: 2017.01.03 @ 23:20:30

Job Ticket #: 63557 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.01.09 @ 10:33:55



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Deutsch Oil Co
 8100 E 22nd St N Bldg 600
 Wichita, KS 67226
 ATTN: Aaron Young

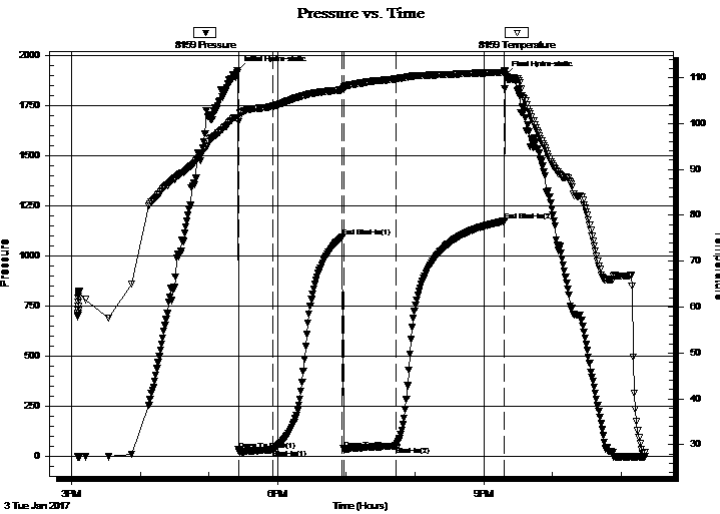
15-26S-15W Pratt,KS
Curtis #2-15
 Job Ticket: 63557 **DST#: 1**
 Test Start: 2017.01.03 @ 15:05:30

GENERAL INFORMATION:

Formation: **LKC "B"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 17:25:45 Tester: Leal Cason
 Time Test Ended: 23:20:30 Unit No: 74
 Interval: **3924.00 ft (KB) To 3954.00 ft (KB) (TVD)** Reference Elevations: 2063.00 ft (KB)
 Total Depth: 3954.00 ft (KB) (TVD) 2056.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 7.00 ft

Serial #: 8159 Inside
 Press@RunDepth: 52.09 psig @ 3925.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.01.03 End Date: 2017.01.03 Last Calib.: 2017.01.03
 Start Time: 15:05:31 End Time: 23:20:30 Time On Btm: 2017.01.03 @ 17:25:00
 Time Off Btm: 2017.01.03 @ 21:18:45

TEST COMMENT: IF: Strong Blow , BOB in 4 minutes
 IS: No Blow Back
 FF: Fair Blow , BOB in 12 minutes
 FS: No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1927.75	101.22	Initial Hydro-static
1	32.67	100.43	Open To Flow (1)
31	34.02	103.70	Shut-In(1)
92	1096.65	107.31	End Shut-In(1)
93	35.57	107.74	Open To Flow (2)
139	52.09	109.73	Shut-In(2)
234	1175.00	111.16	End Shut-In(2)
234	1899.96	111.40	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
78.00	GOMCW 5%G 5%O 36%M 54%W	1.09

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Deutsch Oil Co

15-26S-15W Pratt, KS

8100 E 22nd St N Bldg 600
Wichita, KS 67226

Curtis #2-15

Job Ticket: 63557

DST#: 1

ATTN: Aaron Young

Test Start: 2017.01.03 @ 15:05:30

Tool Information

Drill Pipe:	Length: 3910.00 ft	Diameter: 3.80 inches	Volume: 54.85 bbl	Tool Weight:	2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 54.85 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial	55000.00 lb
Depth to Top Packer:	3924.00 ft			Final	55000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	30.00 ft				
Tool Length:	56.00 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			3903.00	
Hydraulic tool	5.00			3908.00	
Jars	5.00			3913.00	
Safety Joint	2.00			3915.00	
Packer	5.00			3920.00	26.00 Bottom Of Top Packer
Packer	4.00			3924.00	
Stubb	1.00			3925.00	
Recorder	0.00	8159	Inside	3925.00	
Recorder	0.00	6806	Outside	3925.00	
Perforations	26.00			3951.00	
Bullnose	3.00			3954.00	30.00 Bottom Packers & Anchor

Total Tool Length: 56.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Deutsch Oil Co

15-26S-15W Pratt,KS

8100 E 22nd St N Bldg 600
Wichita, KS 67226

Curtis #2-15

Job Ticket: 63557

DST#: 1

ATTN: Aaron Young

Test Start: 2017.01.03 @ 15:05:30

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:

85000 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.77 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
78.00	GOMCW 5%G 5%O 36%M 54%W	1.094

Total Length: 78.00 ft Total Volume: 1.094 bbl

Num Fluid Samples: 0

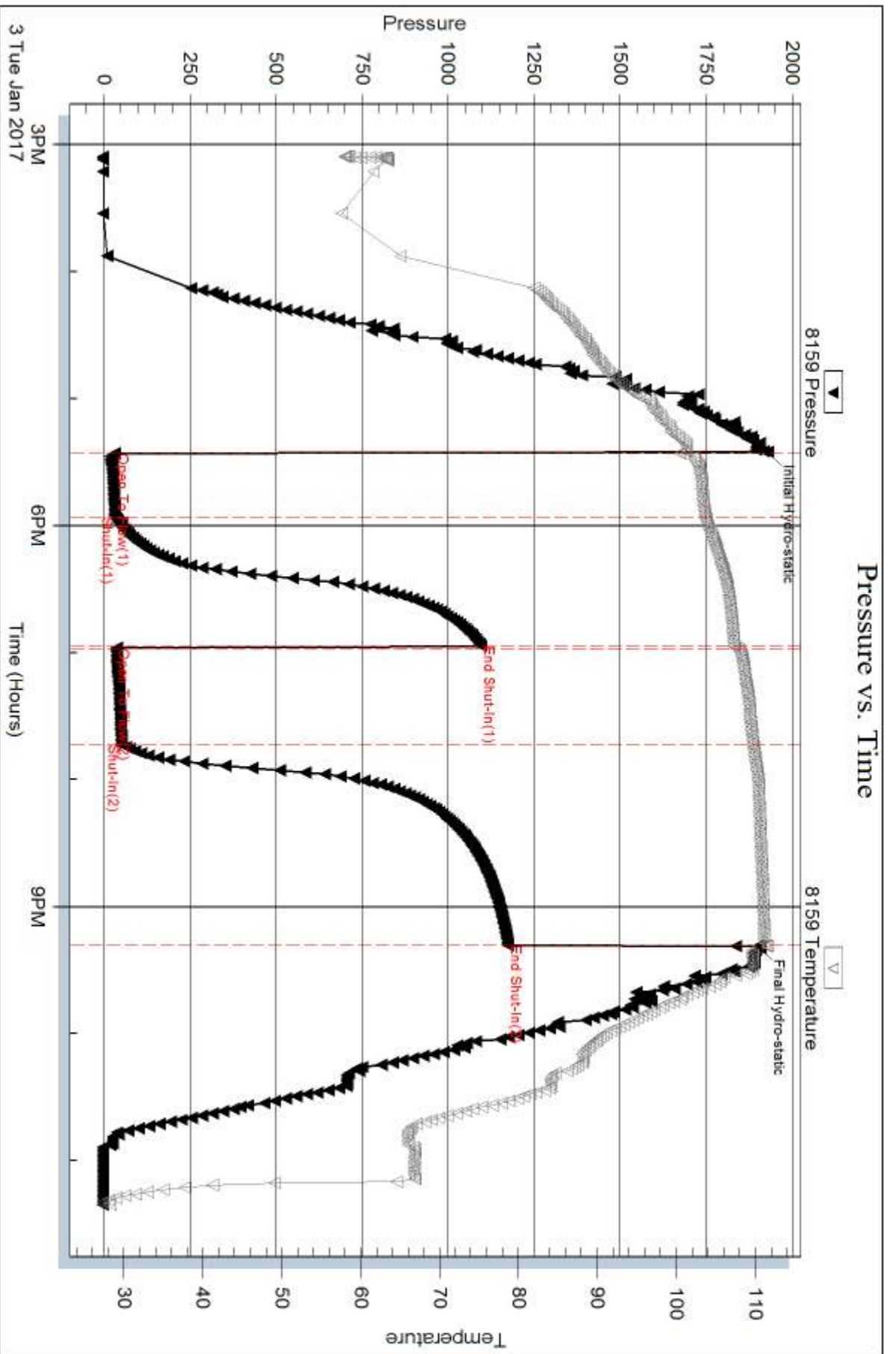
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW w as .18 @ 35 degrees

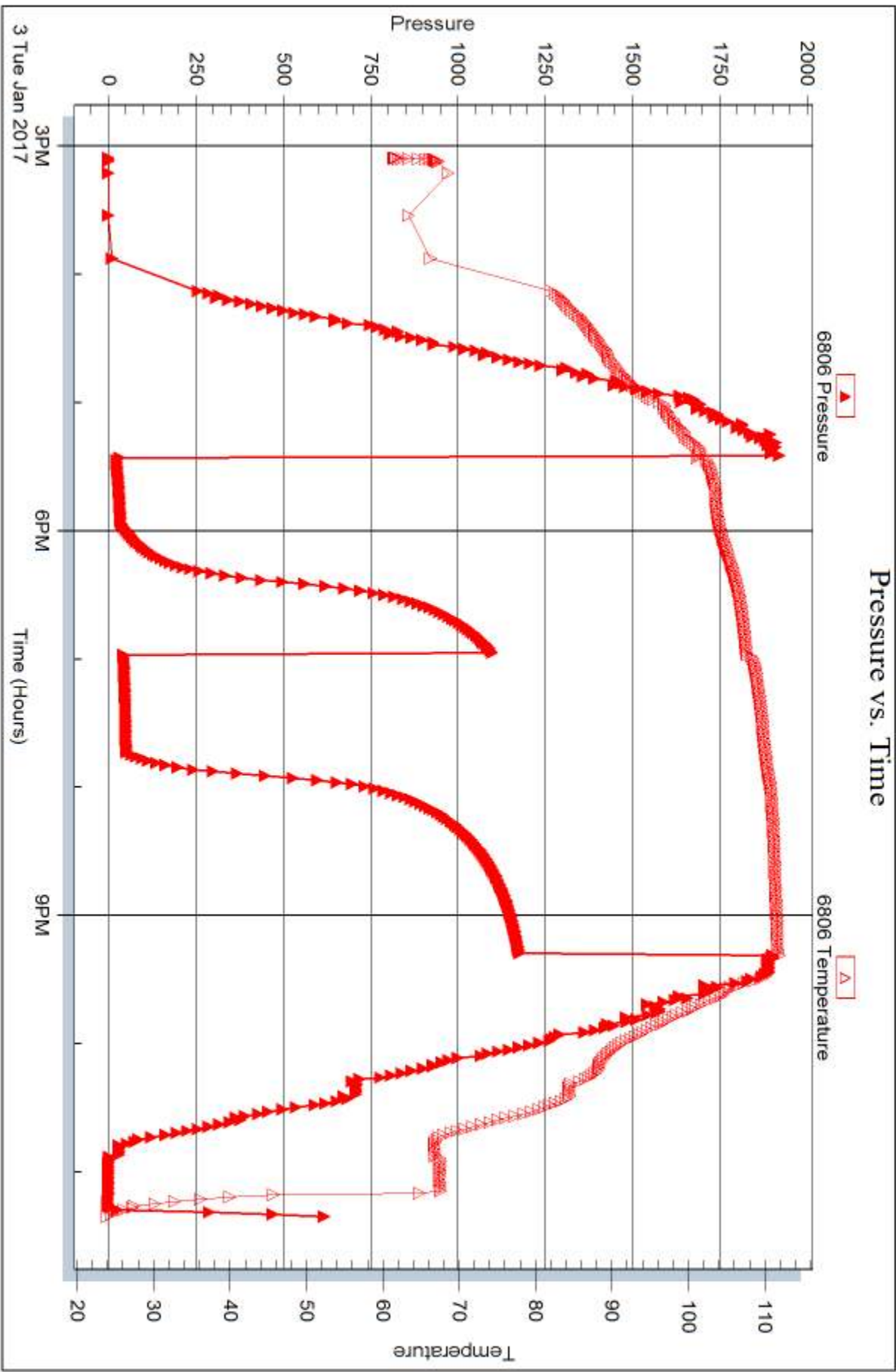


Serial #: 6806

Outside Deutsch Oil Co

Curtis #2-15

DST Test Number: 1



Tribble Testing, Inc

Ref. No: 63557

Printed: 2017.01.09 @ 10:33:56



DRILL STEM TEST REPORT

Prepared For: **Deutsch Oil Co**

8100 E 22nd St N Bldg 600
Wichita, KS 67226

ATTN: Aaron Young

Curtis #2-15

15-26S-15W Pratt,KS

Start Date: 2017.01.04 @ 16:33:52

End Date: 2017.01.05 @ 01:31:07

Job Ticket #: 63558 DST #: 2

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

Printed: 2017.01.09 @ 10:33:34



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Deutsch Oil Co
8100 E 22nd St N Bldg 600
Wichita, KS 67226
ATTN: Aaron Young

15-26S-15W Pratt,KS
Curtis #2-15
Job Ticket: 63558 **DST#: 2**
Test Start: 2017.01.04 @ 16:33:52

GENERAL INFORMATION:

Formation: **LKC "H"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 18:56:22
Time Test Ended: 01:31:07
Interval: **4050.00 ft (KB) To 4078.00 ft (KB) (TVD)**
Total Depth: 4078.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Reset)
Tester: Leal Cason
Unit No: 74
Reference Elevations: 2063.00 ft (KB)
2056.00 ft (CF)
KB to GR/CF: 7.00 ft

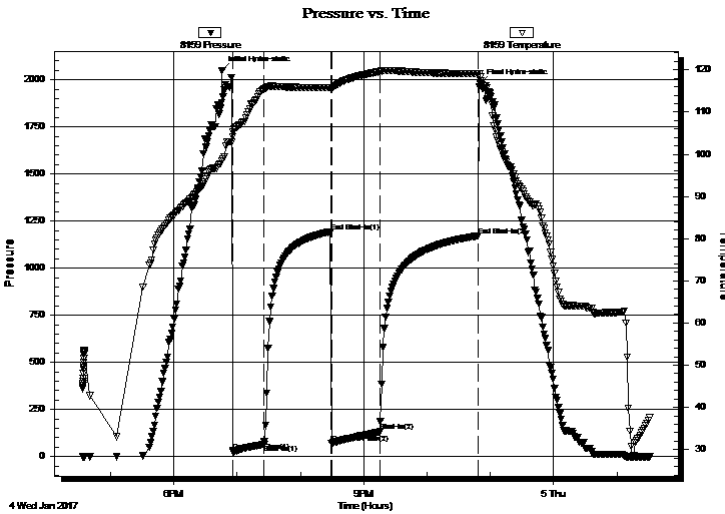
Serial #: 8159

Inside

Press@RunDepth: 131.34 psig @ 4051.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.01.04 End Date: 2017.01.05 Last Calib.: 2017.01.05
Start Time: 16:33:53 End Time: 01:31:07 Time On Btm: 2017.01.04 @ 18:45:52
Time Off Btm: 2017.01.04 @ 22:50:37

TEST COMMENT: IF: Strong Blow , BOB in 1 minute
IS: No Blow Back
FF: Strong Blow , BOB 90 Sec
FS: Weak Surface Blow Back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2049.70	98.47	Initial Hydro-static
11	24.83	105.20	Open To Flow (1)
40	65.09	115.42	Shut-In(1)
103	1193.70	115.78	End Shut-In(1)
104	71.09	115.44	Open To Flow (2)
150	131.34	119.58	Shut-In(2)
243	1171.65	119.07	End Shut-In(2)
245	1978.82	118.38	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
63.00	Water	0.88
126.00	GOMCW 10%G 20%O 30%M 40%W	1.77
63.00	GOCM 30%G 20%O 50%M	0.88
5.00	Oil	0.07

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Deutsch Oil Co
8100 E 22nd St N Bldg 600
Wichita, KS 67226
ATTN: Aaron Young

15-26S-15W Pratt, KS
Curtis #2-15
Job Ticket: 63558 **DST#: 2**
Test Start: 2017.01.04 @ 16:33:52

Tool Information

Drill Pipe:	Length: 4034.00 ft	Diameter: 3.80 inches	Volume: 56.59 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 58000.00 lb
			<u>Total Volume: 56.59 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	4050.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	28.00 ft			
Tool Length:	54.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4029.00	
Hydraulic tool	5.00			4034.00	
Jars	5.00			4039.00	
Safety Joint	2.00			4041.00	
Packer	5.00			4046.00	26.00 Bottom Of Top Packer
Packer	4.00			4050.00	
Stubb	1.00			4051.00	
Recorder	0.00	8159	Inside	4051.00	
Recorder	0.00	6806	Outside	4051.00	
Perforations	24.00			4075.00	
Bullnose	3.00			4078.00	28.00 Bottom Packers & Anchor

Total Tool Length: 54.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Deutsch Oil Co

15-26S-15W Pratt, KS

8100 E 22nd St N Bldg 600
Wichita, KS 67226

Curtis #2-15

Job Ticket: 63558

DST#: 2

ATTN: Aaron Young

Test Start: 2017.01.04 @ 16:33:52

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

25.2 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

70000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
63.00	Water	0.884
126.00	GOMCW 10%G 20%O 30%M 40%W	1.767
63.00	GOCM 30%G 20%O 50%M	0.884
5.00	Oil	0.070

Total Length: 257.00 ft Total Volume: 3.605 bbl

Num Fluid Samples: 0

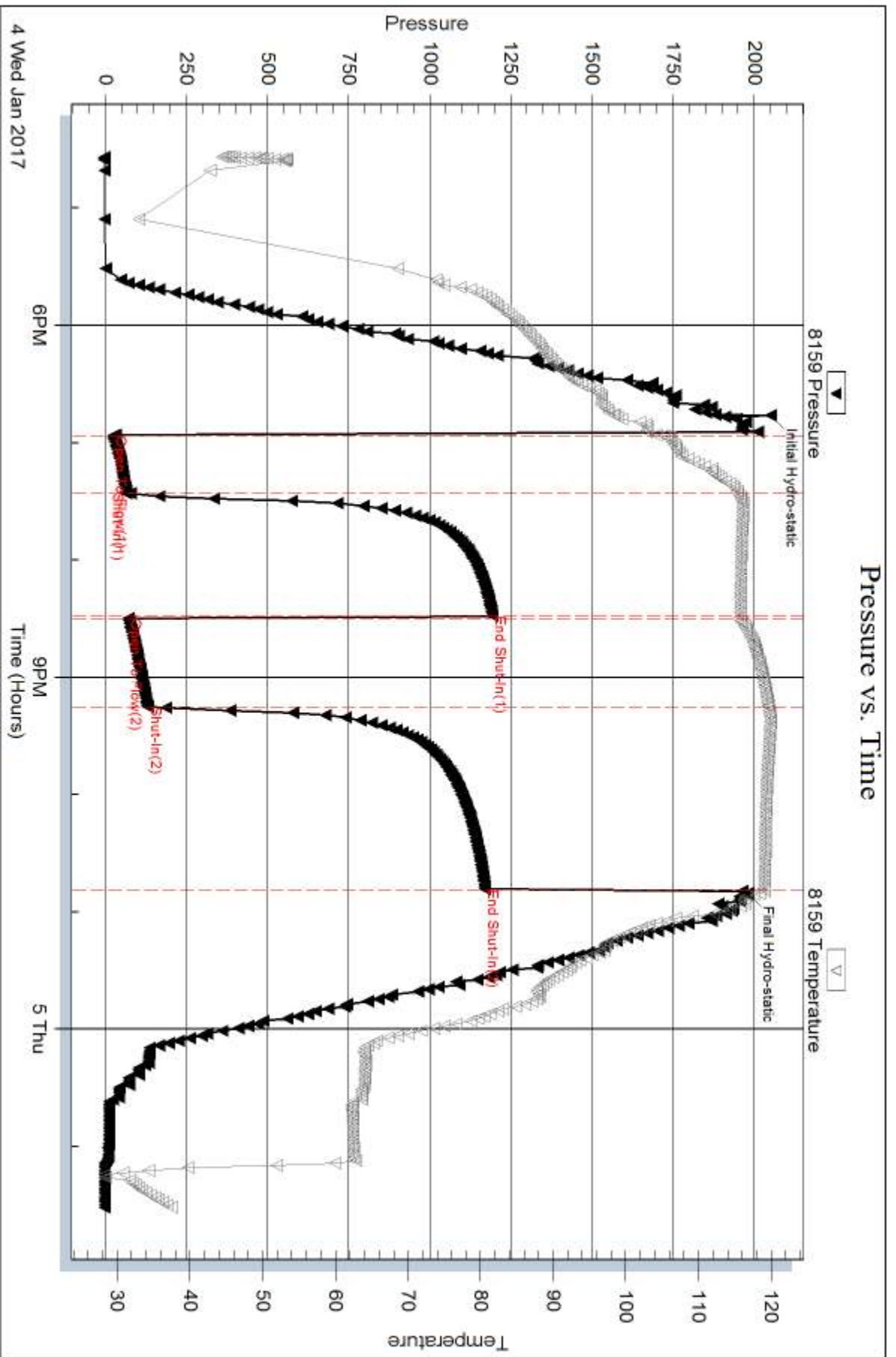
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity Was 24@ 48degrees
RW was .25 @29. degrees

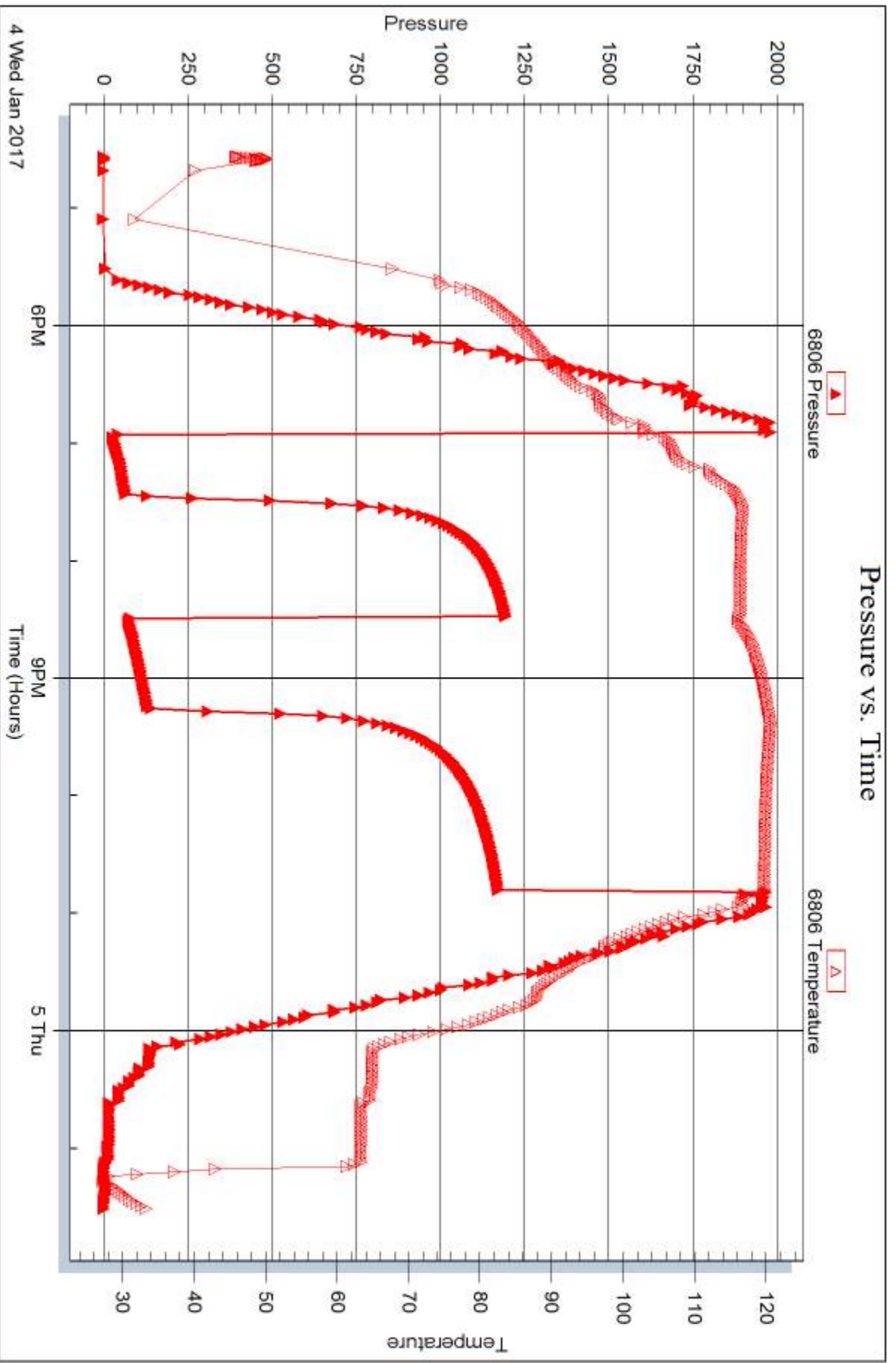


Serial #: 6806

Outside Deutsch Oil Co

Curtis #2-15

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 63558

Printed: 2017.01.09 @ 10:33:35



DRILL STEM TEST REPORT

Prepared For: **Deutsch Oil Co**

8100 E 22nd St N Bldg 600
Wichita, KS 67226

ATTN: Aaron Young

Curtis #2-15

15-26S-15W Pratt,KS

Start Date: 2017.01.06 @ 09:48:15

End Date: 2017.01.06 @ 17:44:30

Job Ticket #: 63559 DST #: 3

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

Printed: 2017.01.09 @ 10:33:12



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Deutsch Oil Co
 8100 E 22nd St N Bldg 600
 Wichita, KS 67226
 ATTN: Aaron Young

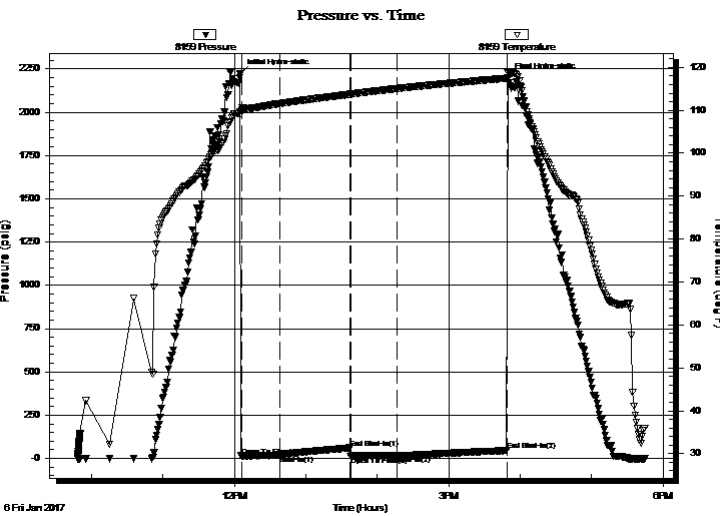
15-26S-15W Pratt, KS
Curtis #2-15
 Job Ticket: 63559 **DST#: 3**
 Test Start: 2017.01.06 @ 09:48:15

GENERAL INFORMATION:

Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 12:06:00
 Time Test Ended: 17:44:30
 Interval: **4426.00 ft (KB) To 4448.00 ft (KB) (TVD)**
 Total Depth: 4448.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Leal Cason
 Unit No: 74
 Reference Elevations: 2063.00 ft (KB)
 2056.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8159 Inside
 Press@RunDepth: 16.18 psig @ 4427.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.01.06 End Date: 2017.01.06 Last Calib.: 2017.01.06
 Start Time: 09:48:16 End Time: 17:44:30 Time On Btm: 2017.01.06 @ 12:04:45
 Time Off Btm: 2017.01.06 @ 15:49:30

TEST COMMENT: IF: Weak Blow , Built to 4"
 IS: No Blow Back
 FF: Weak 1" Blow
 FS: No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2224.75	109.64	Initial Hydro-static
2	14.26	110.23	Open To Flow (1)
34	19.90	111.58	Shut-In(1)
93	60.54	113.74	End Shut-In(1)
93	12.85	113.74	Open To Flow (2)
132	16.18	115.07	Shut-In(2)
224	45.59	117.47	End Shut-In(2)
225	2198.13	118.83	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	SGCM 2%G 98%M	0.07

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Deutsch Oil Co

15-26S-15W Pratt, KS

8100 E 22nd St N Bldg 600
Wichita, KS 67226

Curtis #2-15

Job Ticket: 63559

DST#: 3

ATTN: Aaron Young

Test Start: 2017.01.06 @ 09:48:15

Tool Information

Drill Pipe:	Length: 4407.00 ft	Diameter: 3.80 inches	Volume: 61.82 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 61.82 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4426.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	22.00 ft			
Tool Length:	48.00 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			4405.00	
Hydraulic tool	5.00			4410.00	
Jars	5.00			4415.00	
Safety Joint	2.00			4417.00	
Packer	5.00			4422.00	26.00 Bottom Of Top Packer
Packer	4.00			4426.00	
Stubb	1.00			4427.00	
Recorder	0.00	8159	Inside	4427.00	
Recorder	0.00	6806	Outside	4427.00	
Perforations	18.00			4445.00	
Bullnose	3.00			4448.00	22.00 Bottom Packers & Anchor

Total Tool Length: 48.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Deutsch Oil Co

15-26S-15W Pratt, KS

8100 E 22nd St N Bldg 600
Wichita, KS 67226

Curtis #2-15

Job Ticket: 63559

DST#: 3

ATTN: Aaron Young

Test Start: 2017.01.06 @ 09:48:15

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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.77 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	SGCM 2%G 98%M	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl

Num Fluid Samples: 0

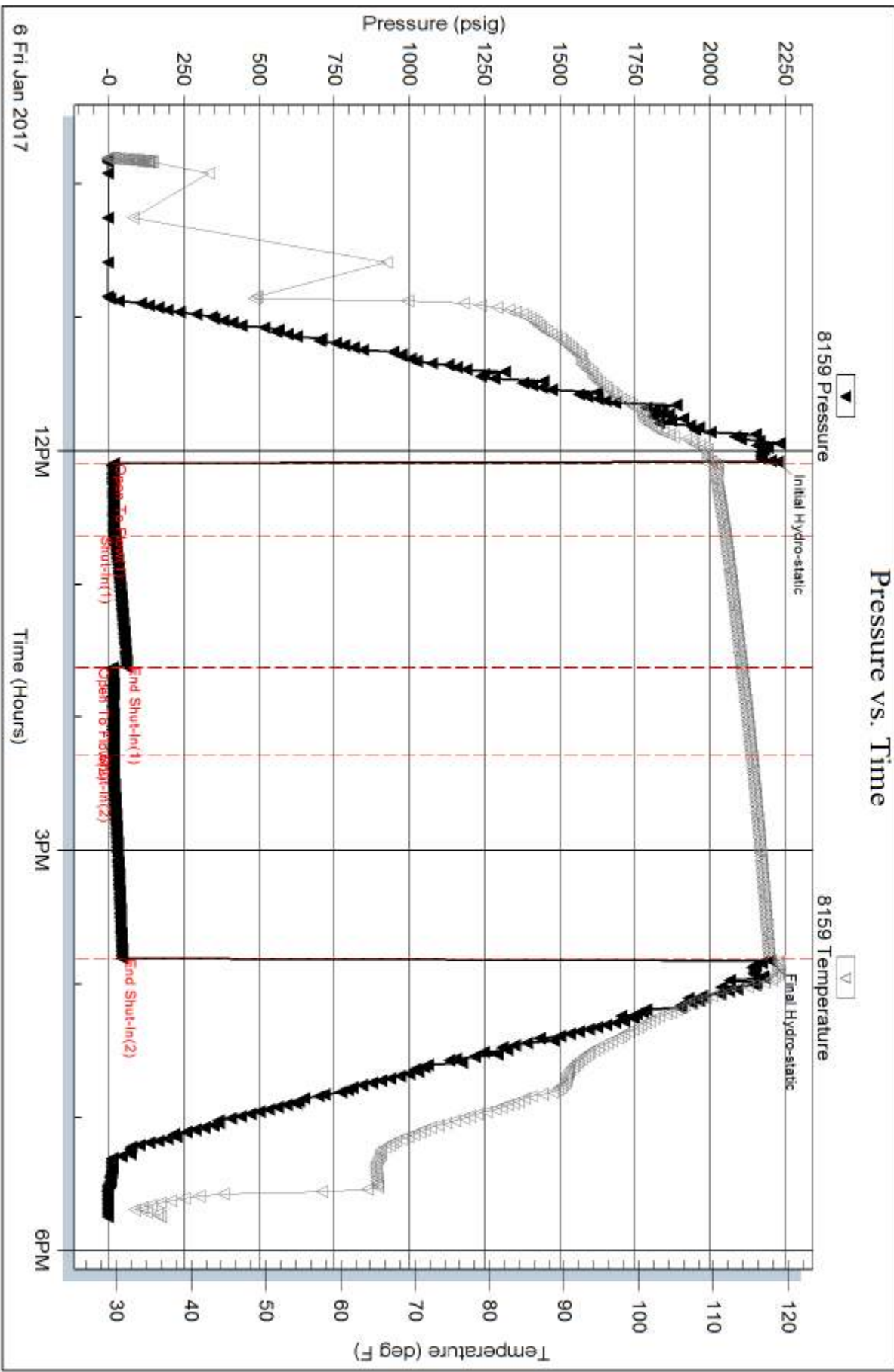
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

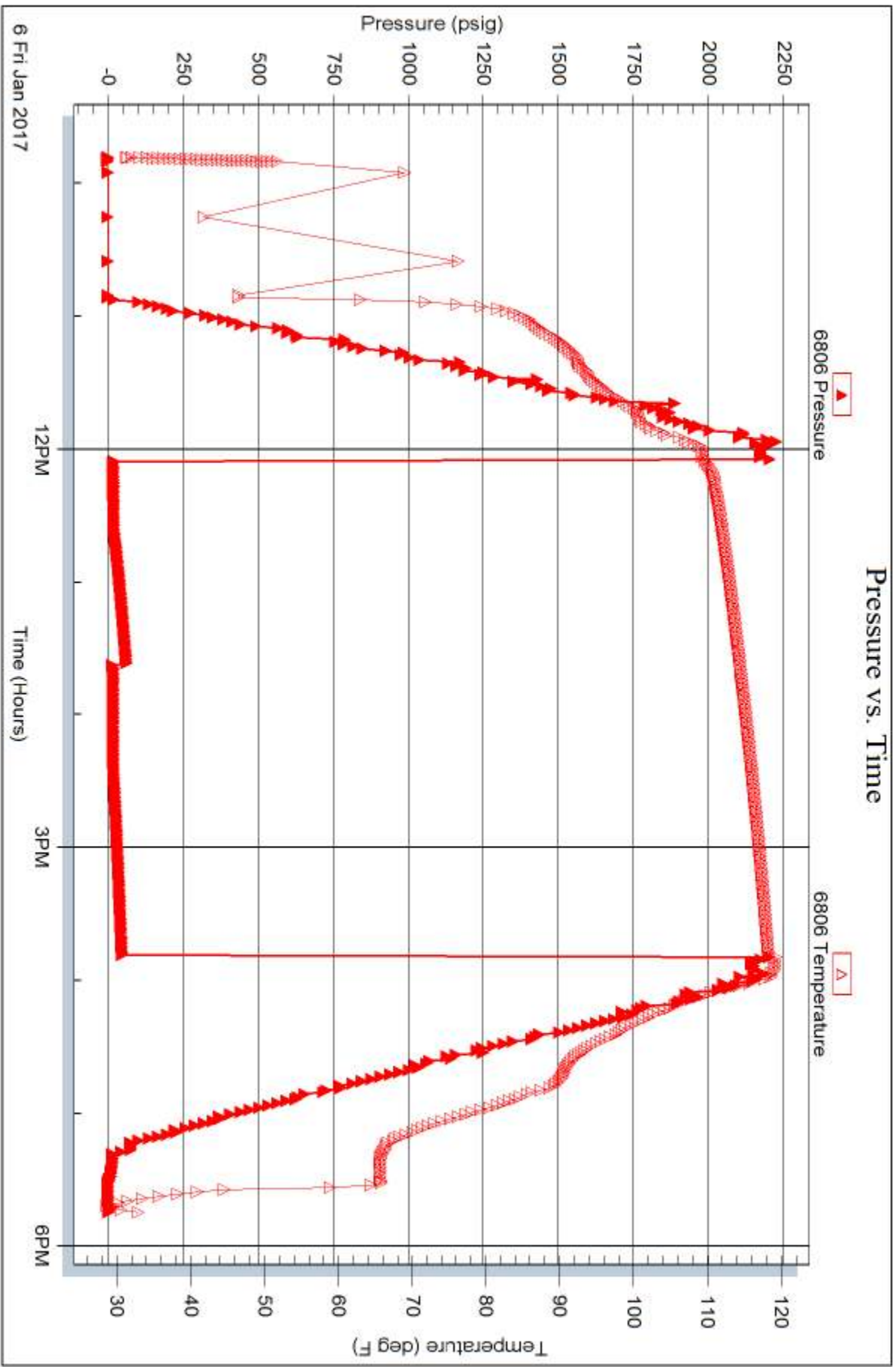


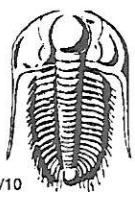
Serial #: 6806

Outside Deutsch Oil Co

Curtis #2-15

DST Test Number: 3





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63557**

Well Name & No. Curtis 2-15 Test No. 1 Date 01/03/17
 Company Deutsch oil co Elevation 2063 KB 2056 GL
 Address 8100 E 22nd St N Bldg 600 Wichita, KS 67226
 Co. Rep / Geo. Aaron Young Rig Pickrell 10
 Location: Sec. 15 Twp. 26S Rge. 15W Co. Pratt State KS

Interval Tested 3924 - 3954 Zone Tested Lansing B
 Anchor Length 30 Drill Pipe Run 3910 Mud Wt. 9.2
 Top Packer Depth 3919 Drill Collars Run 0 Vis 49
 Bottom Packer Depth 3924 Wt. Pipe Run 0 WL 8.8
 Total Depth 3954 Chlorides 4000 ppm System LCM 2

Blow Description IF: strong Blow, BOB in 4 minutes
ISI: No Blow Back
FF: Fair Blow, BOB in 12 minutes
FSI: no Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>78</u>	<u>GOMCW</u>	<u>5</u>	<u>5</u>	<u>54</u>	<u>36</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 78 BHT 111 Gravity N/C API RW -18 @ 35° F Chlorides 85000 ppm

- (A) Initial Hydrostatic 1928
- (B) First Initial Flow 33
- (C) First Final Flow 34
- (D) Initial Shut-In 1097
- (E) Second Initial Flow 35
- (F) Second Final Flow 52
- (G) Final Shut-In 1175
- (H) Final Hydrostatic 1899

- Test
- Jars
- Safety Joint
- Circ Sub
- Hourly Standby
- Mileage (40)
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total

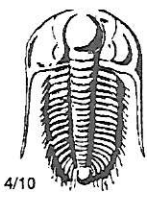
T-On Location 10:00
 T-Started 15:05
 T-Open 17:25
 T-Pulled 21:18
 T-Out 23:20

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

Initial Open 30
 Initial Shut-In 60
 Final Flow 45
 Final Shut-In 90

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63558**

Well Name & No. Curtis 2-15 Test No. 2 Date 01/04/17
 Company Deutsch Oil Com Elevation 2063 KB 2056 GL
 Address 8100 E 22nd st N Bldg 600 Wichita KS 67226
 Co. Rep / Geo. Aaron Youngs Rig Pickrell 10
 Location: Sec. 15 Twp. 26S Rge. 15W Co. Pratt State KS

Interval Tested 4050 - 4078 Zone Tested LKC H
 Anchor Length 28 Drill Pipe Run 4034 Mud Wt. 94
 Top Packer Depth 4055 Drill Collars Run 0 Vis 53
 Bottom Packer Depth 4050 Wt. Pipe Run 0 WL 9.6
 Total Depth 4078 Chlorides 4000 ppm System LCM 2

Blow Description IF: Strong Blow, BOB in 1 min
ISI: NO Blow Back
FF: Strong Blow, BOB 90 sec.
ESI: Weak surface blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>oil</u>				
<u>63</u>	<u>GOCM</u>	<u>30%</u>	<u>20%</u>	50%	<u>50%</u>
<u>126</u>	<u>GOMCW</u>	<u>10%</u>	<u>20%</u>	<u>40%</u>	<u>30%</u>
<u>63</u>	<u>water</u>				

Rec Total 257 BHT 118 Gravity 25.2 API RW .25 @ 29 °F Chlorides 70000 ppm

- (A) Initial Hydrostatic 2050
- (B) First Initial Flow 23
- (C) First Final Flow 65
- (D) Initial Shut-In 1194
- (E) Second Initial Flow 71
- (F) Second Final Flow 131
- (G) Final Shut-In 1172
- (H) Final Hydrostatic 1979

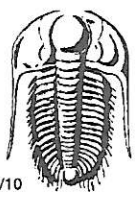
- Test
- Jars
- Safety Joint
- Circ Sub
- Hourly Standby
- Mileage (40)
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility

- T-On Location 1500
- T-Started _____
- T-Open _____
- T-Pulled 22:48
- T-Out _____
- Comments _____
- Ruined Shale Packer
- Ruined Packer
- Extra Copies
- Sub Total _____
- Total _____
- MP/DST Disc't _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 45
 Final Shut-In 90

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63559**

Well Name & No. Curtis 2-15 Test No. 3 Date 01/06/17
 Company Deutsch Oil Co Elevation 2063 KB 2056 GL
 Address 8100 E 22nd St N Bldg 600 Wichita, KS 67226
 Co. Rep / Geo. Aaron Young Rig Pickrell 10
 Location: Sec. 15 Twp. 26S Rge. 15W Co. Pratt State KS

Interval Tested 4426 - 4448 Zone Tested Mississippi
 Anchor Length 22 Drill Pipe Run 4407 Mud Wt. 9.5
 Top Packer Depth 4421 Drill Collars Run 0 Vis 53
 Bottom Packer Depth 4426 Wt. Pipe Run 0 WL 8.8
 Total Depth 4448 Chlorides 4000 ppm System LCM 3

Blow Description IF: weak Blow, Built to 4 inches
ISI: No Blow Back
FF: weak 1 inch Blow
FSI: NO Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>56CM</u>	<u>2</u>		<u>98</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 5 BHT 118 Gravity NK API RW NK @ NK °F Chlorides NK ppm

(A) Initial Hydrostatic 2225 Test _____ T-On Location 08:45
 (B) First Initial Flow 14 Jars _____ T-Started 09:48
 (C) First Final Flow 20 Safety Joint _____ T-Open 12:06
 (D) Initial Shut-In 61 Circ Sub _____ T-Pulled 15:48
 (E) Second Initial Flow 13 Hourly Standby _____ T-Out 17:44
 (F) Second Final Flow 16 Mileage (40) _____ Comments Loaded Tools
 (G) Final Shut-In 46 Sampler _____ @ 6:15 on 01/07
 (H) Final Hydrostatic 2198 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total _____

Approved By [Signature] Our Representative [Signature]

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